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Introduction

Focusing on research works relevant to the fields of architecture and planning, the Journal of Research in Architecture and Planning (JRAP) explores issues of relevance to both scholars and practitioners in the field of architecture, urban design, urban planning, built form heritage and conservation. JRAP was initiated in 2000 as a peer reviewed journal, initially published annually, however, since 2011 its frequency has increased to biannual. In addition to the papers received through our regular submission process, the two volumes also include papers selected from those presented at the annual Conference of Urban and Regional Planning, hosted by the Department of Architecture and Planning at NEDUET. Contributions to the journal on general topics are accepted any time of the year, and incorporated in upcoming issues after going through a peer review process. A post conference review is also undertaken for the selection of conference papers, before their publication. JRAP holds the privilege of being the first, and perhaps the only peer reviewed journal in the discipline of architecture and planning, published from Pakistan. Contributions are received from across the globe and on average half the papers included in JRAP are from international scholars.

As of 2018, a new category entitled 'Young Scholar's Contribution' has been included in the Journal. In this category, papers from young faculty and early career scholars are accepted and editorial assistance and peer review feedback is provided to improve the research papers. One such paper is published under the head 'Young Scholar's Contribution' within each issue of JRAP.

Aims and Scope

The primary objective of JRAP is to provide an international forum for the dissemination of research knowledge, new developments and critique in architecture, urban design, urban planning and related disciplines for the enrichment and growth of the profession within the context. The journal focuses on papers with a broad range of topics within the related discipline, as well as other overlapping disciplines. JRAP publishes a wide range of research papers which deal with indepth theoretical reviews, design, research and development studies; investigations of experimental and theoretical nature.

Articles are contributed by faculty members, research scholars, professionals and other experts. The Editors welcome papers from interested academics and practicing architects. Papers published so far have been on topics as varied as Housing, Urban Design, Urban Planning, Built Environment, Educational Buildings, Domestic Architecture, Conservation and Preservation of Built Form. All back issues are free access and available online on the Journal's official webpage: http://jrap.neduet.edu.pk/online_journal.html.

EDITORS' NOTE

The five research papers included in this volume cover various themes related to urbanisation and built form development. The first three papers were presented at the Second Conference of Urban and Regional Planning, having the theme, 'Cities Beyond City', organised by the Department of Architecture and Planning, NED University of Engineering and Technology, in April 2018. A new section has been introduced from this issue of JRAP, entitled "Young Scholars Contribution' with the objective of encouraging and providing support to young faculty members and researchers in the field of architecture, urban design, urban planning and researches related to built environment.

The first paper is set in the context of Malaysia and reviews issues related to land rights enactment, entitlements and inheritance laws in Kampong Bharu Community in Kuala Lumpur. This paper presents the evolution of the case study area from agricultural land to one of the most well-known neighbourhood in the city. This paper also examines the various stakeholders involvement in recent redevelopment efforts.

The second paper is set in Lahore and deals with issues of urban mobility, infrastructure development and impacts on neighbourhoods through which the Metro Bus operates. In particular this paper analysis the impacts of Metro Bus Development in Lahore, Pakistan, within the theoretical framework of Neo-Traditional Neighbourhood Design (NTND).

The third paper is a research about the impact on solid waste services on the migrants coming and settling as refugees in Lebanon. As the displaced Syrian population generates waste, the local waste collection and disposal systems are burdened. It is suggested in the paper that any improvements in solid waste management for refugees has to negotiate through the existing challenges of waste collection and disposal systems in the city.

The fourth paper documents the current state of heritage monuments in Hasan Abdal, in Northern Punjab, Pakistan. The objective is to study the conservation process of these structures and to highlight their existing condition so that they can be saved from further deterioration.

The last paper which is included under the 'Young Scholar's Contribution', focuses on documentation and analysis of office space design in Karachi and connects the research findings to social and cognitive impacts on people working in various types of offices. The paper weaves together a theoretical framework that connects work space design to lasting psychological impacts on workers.

This volume also includes a book review on 'The Death and Life of Great American Cities', authored by Jane Jacobs. Although this is more than half a century old publication, but it has been included in this volume because of two reasons. Firstly because this is a timeless publication and the issues raised in this book still apply to the current urban living, and the second objective is to ascertain the importance of this publication to the newer generation and to current research scholars, who at times regard the publication as being out of date.

Editorial Board

AFFECTED COMMUNITIES – RISING SOCIAL DISPARITIES FORMULATING A BALANCE BETWEEN MAINTAINING UNIQUE VALUE OF AN ESTABLISHED COMMUNITY AND THE NEEDS TO IMPROVE ITS QUALITY OF LIFE – A CASE STUDY OF KAMPONG BHARU; A TRADITIONAL URBAN VILLAGE IN KUALA LUMPUR, MALAYSIA

Abd Muluk Bin Abd Manan*

ABSTRACT

The *Kampong Bharu* community was established by the Colonial British government in the late nineteenth century as a 'Malay Agricultural Settlement' – a riverside area strategically removed from the old city centre of Kuala Lumpur, where many of the economic activities fuelled the city's early growth. Ethnic Malay families from several villages were relocated here and given exclusive land rights to maintain a 'village life'.

Due to complex land rights enactment, entitlements and inheritance laws, many parcels in this neighbourhood have remained untouched for more than a century. The appearance and lifestyle associated with *Kampong Bharu* today are seemingly at odds with a city that aggressively grows around it. This paper explores the neighbourhood and documents the complexities and contradictions of urban development that the area encapsulates.

Kampong Bharu today sits in the heart of the city. Many parcels of the land have changed ownership. The agricultural land with its modest original house gradually expanded into a sprawling, ramshackle home for dozens of extended families. It has become the hotspot for resettlement for new urban migrants that come to the city to resettle during pre and post-independence. Many historical events have happened here and it has become one of the most well-known neighbourhood in the city.

Efforts by the authority to develop this area failed due to various reasons. They had tried to establish a balance between the concerns of long-term inhabitants and the demands of modern development. This paper examines the reasons and also explores how stakeholders in *Kampong Bharu* have been involved in recent redevelopment efforts. Key stakeholders including landowners, residents, village heads, and leaders of local associations were interviewed, and their concerns and aspirations were documented.

INTRODUCTION

Formulating a balance between maintaining unique value of an established community and the needs to improve its quality of life is not an easy task. In an established urban village, like *Kampong Bharu*, certain values will definitely be lost in the face of new development (figure 1). The pace of urbanization in East Asia is at the rate of three percent and the rate of expansion in major cities like Kuala Lumpur has

Figure 1: Map of Kampong Bharu

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Figure 2: A view of *Kampong Bharu*.

reached two and a half percent per year (figure 2) (World Bank, 2016). An initiative by the Malaysian Government which started in September 1978, to study how to develop the area, lead to the formation of *Kampong Bharu* Development Corporation (PKB) under a Parliamentary Act 733 in 2012, to facilitate the implementation of the development plan for this area. A Comprehensive Development Masterplan was prepared in 2014 and the planning process was initiated (DBKL, 2004).

Kampong Bharu began in the early 1900s when the Sultan of Selangor granted the land to the Malays under a special condition that only Malays could own the land and reside in the area. "Malay" means a person belonging to any Malay race who habitually speaks the language, professes Islam and practices its custom. A *kampong* is defined as a Malay hamlet or village in a Malay-speaking country, determined as a locality with ten thousand or fewer people. The terms of the special status of *Kampong Bharu* as Malay Agriculture Land (MAS) made this area protected against development. Over the years, the strain of being located in the middle of a fast-developing city and exploding population in the late sixties and seventies has taken its toll on the infrastructure and the quality of life.

Kampong Bharu houses five thousand and three hundred registered landowners owning eight hundred and ninety parcels of land with a total population of eighteen thousand people in seven villages. The challenges of developing this area among others are lack of infrastructure and community facilities to support big development. Despite piecemeal development and additions to building and houses, the *kampong* looks much as it did one hundred and twenty years ago. Traditional houses, small businesses, local food and delicacies have shaped its unique character. Haphazard parked vehicles in front of houses and shops and narrow alleyways also becomes a distinct character of the place.

With only about thirty five percent of its original residents remaining, the area has become a hybrid community. The arrival of people from other parts of Malaysia has resulted in the emergence of a transient community with a potentially weaker sense of place. The village has been subjected to incremental and unregulated development with little effort made to protect the character of the original *kampong*. Illegal extension and additional structures have been built around the original *kampung* houses (figure 3).

The concerns related to the development of this locality focus on the impact of new development on land values, ways of taking into account the multiple and shared ownership of land, the adverse impact of new development on patterns of everyday lives, and questions about who should make the final decisions. The sustainability of an urban village depends in part on how people are informed about and engaged in the allocation of economic and social benefits. Giving greater voice to the people in such villages, especially in cities that are developing, could better align city redevelopment objectives with the interests and values of people living in traditional enclaves to tackle social disparities (Wiryomartono, 2013).

Figure 3: Social disparities, contrasting lifestyles.

THE AIM AND METHODOLOGY

The methodology employed for this study relies on empirical field work that utilizes personal observation, interviews of stakeholders and questionnaire survey by architecture students between the period 2014-2016. The study also includes secondary data analysis which involved documents related to *Kampong Bharu*, including online resources, government reports and guidelines, journal articles, and books. The recent Master Plan of *Kampong Bharu* Development provided an understanding of planning and development strategies. In addition, semi-structured interviews guided by a list of questions were conducted among the members of the community. Key interviewees identified included professionals from local authority (PKB), village heads, leaders of the local association, and residents of *Kampong Bharu*. The researcher noted that some key interviewees held multiple roles in the community.

The aim of this study was to produce a comprehensive development plan outlining complete perspective, ethics and strategic moves in managing a sustainable development of *Kampong Bharu*. The objectives of the research were:

1. To identify the expectations of the locals regarding the improvement that they are going to benefit from in any proposed development.

2. To further enhance the redevelopment by taking into account the ideas and proposals from local residences.

3. To determine the types of development that would be suitable for *Kampong Bharu*.

4. To identify zones that would be given development priority based on the agreement of the land owners.

5. To propose layout and physical development design strategies that would be implemented, based on the development phasing.

KAMPONG BHARU UNIQUE VALUES

Historically

The area held a special place for Malay politics during the pro-independence movement that grew up after. Anti-colonial protests were held here, and founders of Malaysia's dominant political party, had origins at the Sultan Sulaiman Club in *Kampong Bharu*, and held their early meetings here according to the Culture, Arts and Heritage Minister . It also played a part in 1969, where bloody racial clashes occurred between ethnic Malays and Chinese. The riots started after Chinese-led opposition parties marched through the village to celebrate their good showing in general elections of that year. In recent years, *Kampong Bharu* has also played a central role in the protests of 1998, when former deputy premier launched protests against the then premier, calling for reforms of the government and its judiciary (Mohamed and Zen, 2000).

Cultural and Heritage

Kampong Bharu may very well be the last standing Malay village in Kuala Lumpur. This historic establishment, surrounded by the towering skyscrapers of the city, still thrive as a living testament to Malaysia's beginnings, current development and the future. The village is now part of an important tourist attraction featuring the living heritage and culture of Malaysia. The sense of place is defined by its physical fabric, also by its socio-cultural characteristics. Bunnel in "*Kampong* Rules" (Wiryomartono, 2013), refer to *kampong* as a place of traditional values, high morality, a space of resistance to the often-alienating project of modernisation, a space of community support, neighbourliness and pride in community (Fujita, 2010).

Kuala Lumpur Tourism Bureau organises walking tours that take visitors down the memory lane. The heritage walk takes tourists to several important sites to see a traditional Malay house built in 1921, known as Master Mat's house at the Kelab Sultan Suleiman Gallery, which showcases the history of the Malay political struggle, the Gurdwara Tatt Khalsa and the Jamek Mosque. The walk passes by many surviving old wooden houses and rows of traditional shops and along the way basic Malay customs and traditions are observed.

Kampong Bharu is also a thriving foodies' paradise and has brought renewed attention to the *kampung* life in Kuala Lumpur. Tourists have the opportunity to try out popular street-food such as *bubor lambok* (spiced rice porridge), *kuih-muih* (traditional cakes and sweets) and the famous *Nasi lemak antarabangsa* at the Malay food street. During *Ramadhan*, *Kampong Bharu* is flooded with people from all corners of the city to its food bazaar for traditional delicacies for *iftar* and late supper.

However, in the current context of Neoliberalism, the allocation of spatial, political and economic resources tends to favour economic growth rather than embracing social benefits that are widely shared (Fainstein, 2012).

THE VISION

The vision of PKB is to develop and transform the real estate in creating a better-living standard while balancing the requirement to preserve the historical values, culture and legacy (PKB, 2014). The mission was that no landowner or heir of the land would be left behind in this development beyond 2020 (PKB, 2014). The plan was expected to create a new economic and cultural enclave for the city. Inspired by the Malay and Islamic culture, the master plan was designed to ensure holistic, inclusive and balanced planning that gave positive impact to the key stakeholders in *Kampong Bharu* (PKB, 2014), indicating the importance of preserving *Kampong Bharu's* identity and recognizing that the landowners and inhabitants were an integral part of the development process.

The government foresaw *Kampong Bharu* becoming a new Malay urban centre, which could increase the social and economic status of the Malays. The Prime Minister emphasised this point in a speech: "I want the Malays in *Kampong Bharu* to have economic and social status that we can be proud of, because the concept behind the development of *Kampong Bharu* is that the Malays are not excluded from mainstream national development" (Speech by Prime Minister of Malaysia, 18th Oct 2015). Public involvement and participation can help the community exercise its power as a unified group in the face of proposed development (Marilyn, 2007).

Dato' Zahari Affendi, Chairman of the PKB, addressed the challenges in transforming the urban village. His observations indicated that things weren't necessarily going according to plan: "We have started this process and are talking to several local developers to see how they can help the *Kampong Bharu* people to unlock the value of the land. This is not easy, as there are many lots with multiple owners" (New Straits Times, 2016). The extent of the proposed changes was well described in the following statement: "After more than a century of being stuck in time, *Kampong Bharu* is set for dramatic changes that will see several ambitious projects coming up in the Malay enclave in the next ten to twenty years. Skyscrapers and pocket parks are among highlights of the town facelift". Besides the main quest to develop a comprehensive plan for *Kampong Bharu* beyond 2020, the PKB is also undertaking quick win projects focusing on upgrading certain areas to improve the village's image and identity. This effort is seen as crucial in attracting the owners, beneficiaries and investors to invest in the development of *Kampong Bharu*.

The PKB's Deputy Director of Urban Planning, Encik Zamri Mohammed Saharin, made the argument that

the redevelopment would be a virtuous circle, fuelling itself for the benefit of all stakeholders. The negative image and perception of the village as a "slum" would soon be changed, thanks to modern and high-density developments surrounding the area. The landowners and residents would enjoy great economic benefit, due to the rising value of their properties and potential development opportunities (PKB, 2014).

PHYSICAL DEVELOPMENT STRATEGY

In order to coordinate the physical development, a joint Inclusive Trust Board (ITB) would be formed to lead the main developer for master planning to form a Development Trust Board (DTB), where the execution would be meted out by the Development Trust Board. Selected representatives from government agencies, subsequent co-developer, alongside the main developer shall form the DTB. The main developer shall play the role of Project Delivery Partner, which would mean that they would assume the role and ownership of the project till the delivery of the project. The transitionary administration of the project site shall be under the corporatized branch of DTB, as a transitionary local authority (PKB, 2014).

IMPLEMENTATION

The latest implementation strategy adopted by PKB is to broadly divide the area into three zones. They have been identified through planning and implementation method, that have been adapted to suit the existing situation.

ZONE-A: Development through lot amalgamation
ZONE-B: Comprehensive development
ZONE-C: Development through 'Business Improvement District Scheme' (BIDS) Programme.

FINDING AND RESULTS

Currently all the three zones have started implementing development strategies with mix results. There is limited success in persuading the land owner on Zone A to amalgamate their small piece of land with their neighbours. Engagement with all stake holders are still ongoing and the full result will only be known in years to come (figure 4).

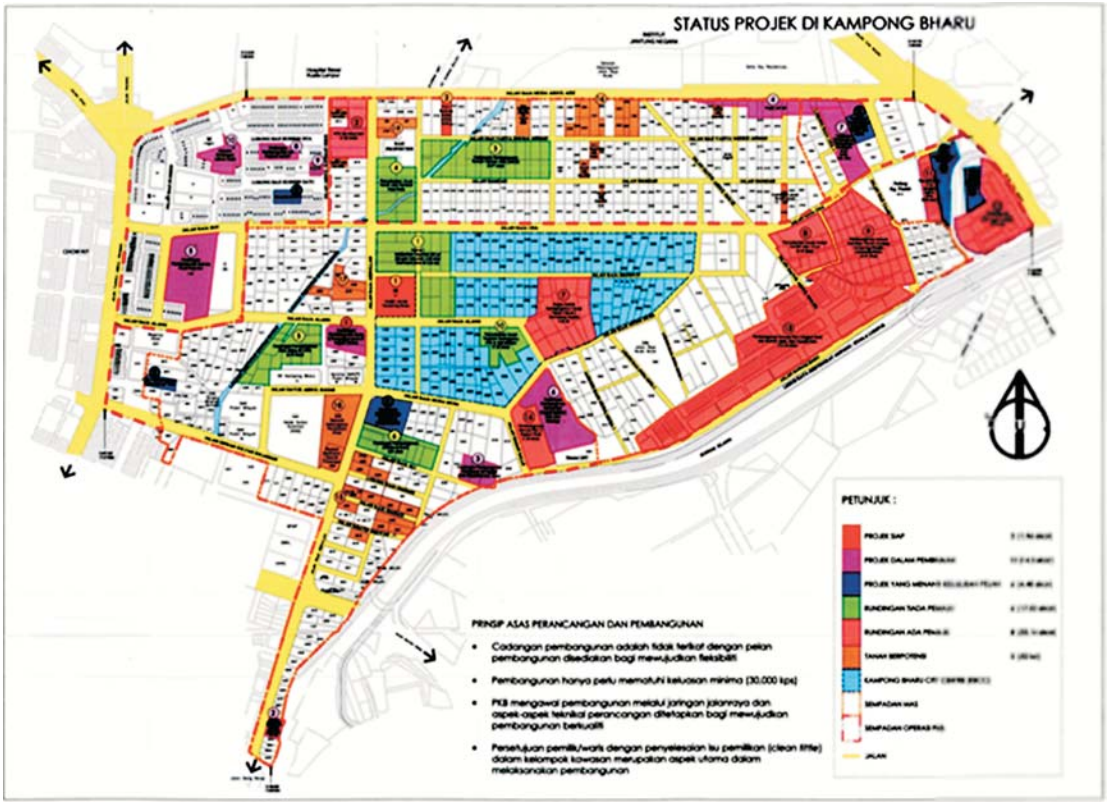

Figure 4: Current stage of development on 1st March 2018.

CONCLUSION

The right formula to balance between development and maintaining unique value of an established community derives from one to another. However, through engagement and shared information with the stake holders, a compromise can be negotiated. As developing Asian countries seek economic growth and stability, they must also plan for an equitable sharing of the social and economic benefits derived from that growth. The special conditions and aspirations of the community must be understood, through engagement and shared information and the rights of community must be respected. Giving greater voice to urban-village dwellers will better align city redevelopment objectives with the interests and values of all the city's residents.

The role of the local authority is important not only in enforcement, but also in engagement and as mediators to facilitate and expediate proposed development. Political intervention is also important to steer the development to benefit the majority of the stake holder while not neglecting the aspirations of the minority.

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REMAKE CITY FORM AND FUNCTION: NEO-TRADITIONAL NEIGHBOURHOOD DESIGN APPROACH IN COALITION WITH LAHORE METRO BUS SERVICE

Sadaf Saeed*

ABSTRACT

Developing countries are facing various challenges and mass scale urbanisation; and issues related to urban mobility are few of them. Particularly mega cities are struggling with increased rates of motorisation along with dilapidated conditions of public transport systems. To overcome these mobility hurdles the adoption of Bus Rapid Transit (BRT) is considered an optimal option for countries with limited financial and technical resources. Likewise, the policy makers of Pakistan introduced the first BRT named the Lahore Metro Bus (LMB) in 2013. This research examines the role of LMB under the lens of urban planning.

To determine the potentials of BRT (LMB) in terms of urban development this research paper is organised into two sections. In section one the nature of the executed metro bus service in Lahore is explored and in section two the potentials of this service from the perspective of urban planning are discussed. The methodology adopted in this study is a mixed method research structured on an exploratory sequential framework. Semi structured interviews are conducted with planning professionals of Lahore explaining the role that the service has or ought to have in terms of urban development. These interviews with planning professionals highlight certain discourses, explaining the current planning process of transit service and future policy implications.

The study concludes that the metro bus concept is executed as a stand-alone mobility component in Lahore. Therefore, the benefits are limited to move people from one place to another. However, if the metro service were envisioned as a component of urban policy then it could have had a wide potential to impact the urban form of the city. It was further determined that the adapted measures as a part of this concept are narrowly engineering focused towards the technical aspects of this service, while the socio-cultural components of the city are neglected.

To enhance the benefits of LMB service from the perception of urban planning, the concept of Neo-Traditionalism is suggested in conjunction with the existing transit facility. The application of Neo-Traditional Neighbourhood Design (NTND) approach would be the first step to turn the transit neighbourhoods into Neo-Traditional communities. These communities appear and function like old styled environment friendly towns. A Neo Transit Lahore Model (NTLM) is derived as an outcome of this paper. This model would curtail the negative impacts of urban sprawl by promoting the use of public transport and non-motorised travel in the transit neighbourhoods of Lahore. In this study the contemporary transit infrastructure is used as a tool to revive the conventional features of Lahore. The parameters of this approach are analysed in three selected neighbourhoods along the LMB corridor. The Neo-Traditional transit model approach will have social, economic and environmental implications.

Keywords: New Urbanism, Neo-traditional neighbourhoods, Connection between communities, Lahore Metro Bus Service

INTRODUCTION

Urbanisation is the biggest challenge of this century particularly for countries with limited financial and technical resources (Zhu, 2017). Mega developing cities are experiencing significant urban growth and consequently urban mobility has also increased. Furthermore, urban sprawl burgeons distances between various land uses and to meet higher travel demand citizens either rely on private modes or on public transport systems. In developing countries ownership of private travel modes is limited therefore significant proportion of urban population uses public transport

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to travel (Currie and Delbose, 2011). However, in many developing countries either there is no public transport system at all or it exists in dilapidated conditions. Therefore, the provision of an efficient and affordable public transport system is critical for the urban policy makers (Farrell, 2017).

To deal with mobility challenges the provision of 'mass transit system' is considered a panacea in developing countries. Mass transit system is composed of either light rail trains or high capacity buses, carrying large number of passengers to enhance the urban mobility. The concept of Bus Rapid Transit (BRT) is proved as a high-profile public transport mode in this regard. In the last decade the unprecedented surge of introducing BRT as a mass transit option is found in mega cities of Asia. The global BRT data clearly indicates that out of one hundred and sixty six BRTs worldwide forty three are already in Asia while many more are in the pipeline (BRT, 2018). But the nature of BRT in conjunction with the form of the city is relatively an unexplored feature, particularly in South Asia. It needs further attention of both the transport policy makers as well as of the urban researchers to determine the possible benefits of this mobility solution in terms of urban development (Cervero and Dai, 2014, Wright, 2014, Newman, 2005).

The aim of this research is to determine the potentials of BRT in changing the urban form of the city aligned with the available transit services in a more sustainable way. The BRT potentials are explored in a case study-based approach by determining the nature of BRT that is implemented in Lahore, Pakistan. At first, a comprehensive literature review of BRT focusing towards the nature of implemented BRT projects in developing countries is included. Later, a list of critical factors determining the success of BRT as an urban planning approach is identified in the context of the developing countries.

In the subsequent section of the paper, the type of bus rapid service executed in Lahore is explained. The type of BRT here is explored based on the existing features as well as on the acuities of the local planning professionals of Lahore. The analysis is completed with semi structured interviews from experts of urban planning in public-sector, members of Lahore Development Authority (LDA), private consultants, real estate developers, academics and researchers. Finally, the concept of Neo-Traditional neighbourhood design as an upcoming approach of new urbanism in conjunction with the existing transit facility is suggested for Lahore. The Neo-Transit Lahore model is recommended to be applied along the metro bus stations as a first step to change the existing transit areas into Neo-Transit neighbourhoods.

BACKGROUND

Progression of BRT

The concept of BRT started in 1930 from Chicago, North America as a bus priority lane but it got popularity in 1970's when it was implemented as the first BRT system in Curitiba, Latin America (Levinson et al., 2003). In Curitiba, the concept was introduced not only as a mode of transport but as a tool of urban development. The visionary Mayor of Curitiba, Jemmy Lerner envisioned BRT as a catalyst to induce urban transformation in the city. To contrivance the city vision, local transport experts collaborated with urban planners and architects with complete political support. A comprehensive development plan was developed as a part of this project where bus corridors were supported with the updated zoning regulations. This plan enhanced the component of mixed land uses as an urban policy with varied degree of urban densities along the bus routes. Therefore, BRT in Curitiba not only supported the urban mobility but created the modern urban fabric of the city as well (Cervero and Dai, 2014, Lindau et al., 2010, Andrade, 2013).

After Curitiba the city of Bogotá was considered another success story in BRT progression. In Bogota BRT was introduced in the form of Transmelnio and got phenomenal success being an affordable transportation mode. Here the concept was mainly introduced as a mode of mobility to overcome the transportation needs of the citizens who could not afford private travel. The policy makers of Bogota focused on enhancing the access factor for mobility rather than the development factor of the city. To support urban poor, cycling and walking facilities were designed as a part of Transmelnio service. Eventually, the citizens were provided with efficient and affordable service in the form of transit along with non-motorised modes (Cervero et al., 2009). In Bogota the 'Transmelnio' proved as a revolutionary step in public transport system of the city (Hidalgo, 2003, Ardila-Gomez, 2004).

The Bogota model attracted the policy makers of Asia because it was considered as cost-effective and easy to implement option. Jakarta, Indonesia was the first Asian city where the concept of Trans-Jakarta was implemented in 2004, with the collaboration of the Mayor of Bogotá (Hossain, 2006). In Jakarta BRT was termed as a cheap mobility option and the policy makers adopted the single bus corridor approach that later ended up into three other corridors without integrating any significant planning measures. Like the name Trans-milenio the Trans-Jakarta was implemented by the local experts only as a mode of public transport (Kumar et al., 2012, Matsumoto, 2006).

In Asia, China is the biggest devotee of BRT and Beijing BRT was developed after Jakarta in 2005. Till date twenty cities have adopted BRT in China and about ten are in the phase of planning (BRT, 2018). In most of the Chinese cities this service is working on a network-based approach. The organic nature of old Chinese city centres supports the non-motorised travel as a complementing factor of this service. However, in most of Chinese cities BRT is still operated as a feeder service for light rail trains (Andrade, 2013, Matsumoto, 2006).

Seoul, Korea is another example where BRT was embraced in 2005 and it is considered a patent Asian BRT. Because in Seoul the concept was not only adapted as a mobility solution but as a component of the comprehensive urban policy. Therefore, instead of following one city model, the lessons from both Curitiba and Bogota were derived and executed with the help of the local bus operators. The technical design requirements were completely formulated by the local experts and later the local bus operating companies were engaged to develop this new system. In Seoul the major focus was to enhance the city economy and urban life. That's why the policy makers engaged local experts and operators to share the ownership of this project to the locale. Likewise as a part of the project the concept of transit neighbourhoods was promoted and within five hundred meters around the station urban activities such as shopping, walking and green spaces were emphasized (Matsumoto, 2006, Hossain, 2006).

The latest successful BRT in Asia is considered '*Janmarg*' in Ahmedabad, India. This city followed Curitiba and initiated the BRT concept. Although eight cities of India have also implemented BRT but *Janmarg* (the people way) of Ahmedabad was declared as one of the best BRT of the country (Kumar et al., 2012). It started in 2009 and the ridership increased three times from 2009 till 2016 (Kathuria et al., 2016). Furthermore, this BRT project is completely backed by the local urban planning agencies. A comprehensive zoning plan along the transit corridors with varied floor area ratio, as well as development incentives for private developers and comprehensive city renewal plan are part of this BRT project. In the last three years the academic and professional researchers of transport planning in South Asia have explicitly quoted Ahmedabad as a good example to learn lessons from for future cities who intend to adopt BRT system (Rizvi and Sclar, 2014, Kumar et al., 2012).

The comprehensive literature review indicates that in Asia, BRT is envisioned mainly as a mode of transport by the policy makers with few exceptions (Kathuria et al., 2016). Therefore, the benefits are limited towards transporting people from one place to another. It is found that there are several reasons behind this mode only approach of BRT and the regnant one is quick implementation of the service if dreamed as a mode only solution. It is evident from the examples that if the BRT is planned only as a transport mode it requires less time and resources for execution. Therefore, easy and quick implementation- as a mode- is a big attraction for politicians who are interested to introduce the new concept in a single political tenure (Wright, 2014, Rizvi and Sclar, 2014). Nevertheless, the concept of BRT has become a panacea for all transportation problems, but how the Asian cities envision this concept needs to be explored further (Currie and Delbosc, 2011, Suzuki et al., 2013, Hossain, 2006). This paper describes how the policy makers of Lahore have visualised the concept of BRT.

Lahore- the selected case study

Pakistan is a new entrant in the BRT club in comparison to its neighbouring countries like China and India. Albeit policy makers of Pakistan were aware of the challenges of urban mobility and the country was looking towards mass transit systems since 1990 (Haider, 2013, Imran, 2009, Imran and Low, 2003, Russell and Anjum, 1997). But the unstable political conditions and lack of financial resources acted as major hindrances in the way of introducing transit system in its mega cities and eventually the dream came true in 2013 when the first mass transit option

in the country was introduced (Haider, 2013, Haider and Badami, 2004).

The provincial capital Lahore with eleven million population took the lead and the first mass transit service in the form of metro bus was implemented here. The Lahore Metro Bus Service (LMBS) as claimed by the then Chief Minister of the province, is a ride of a common man and is provided to overcome the needs of the urban poor of the city. The salient features of Pakistan's first BRT are:

a) Dedicated bus route in the form of twenty seven km corridor
b) Fleet of eighty six articulated buses
c) Total segregated corridor with one third elevated section
d) Entry restricted of any other mode of transport as it is a bus only corridor
e) Median bus way and stations
f) Pre-board fare collection system
g) Complete distinctive marketing identity as compared to rest of public transport modes

With these features, LMBS is appreciated by transit users and a significant ridership is observed. The ridership of 180,000 passengers per day is reported by the Punjab Transit Authority (Ahmed, 2016). It is also claimed that this service has improved the environmental conditions of the city by cutting down fifty precent private trips of motor bikes on major Ferozepur Road (Hameed and Anjum, 2016). Albeit, the provision of LMBS is a phenomenal step in the history of public transport of the city but the metropolitan Lahore is still looking for suitable planning strategies to turn this transit service into a tool for urban transformation of the city.

Lahore is the second largest city after Karachi in Pakistan, and certainly required efficient public transport system, but the local academic experts, researchers and practitioners of urban and transport planning have repeatedly pointed out the need of a well-articulated development plan with the efficient public transport. This combined approach of urban and transport planners is needed for the LMBS as well, to initiate the concept of compact urban development instead of enhancing the concept of urban sprawl in the city after the implementation of this service (Imran and Pearce, 2016, Imran, 2010, Rana et al., 2017).

Lahore used to be the 'Mughal city of gardens' in older times (Naz and Anjum, 2007) but now this city has become a victim of massive urban growth, inadequate infrastructure, high traffic congestion, severe air pollution and increasing urban poverty. The older garden city, at present is in phase of urban transition and is looking for some sustainable measures to narrow down this gap. Albeit one step towards sustainability has been taken by introducing transit system in the city and second possible step could be to reduce the share of motorised modes by integrating more active public transport options-walking and cycling- along the transit. It is assumed that provision of transit facility could help to initiate this safe, healthy and sustainable way of travelling at least in the immediate neighbourhoods. But how to create such neighbourhoods as an urban policy feature is an import question that is discussed in the next section.

CRITICAL FACTORS DETERMINING THE NATURE OF BRT

From comprehensive literature findings related to the role of BRT particularly in Asian cities, a list of factors making BRT successful as an urban policy component are put together. It is also determined that in Asia the model of Bogotá, based only on mobility option is preferred due to political support, having interest to implement it in a single political tenure (Wright, 2014). However, the example of Curitiba is neglected in many cases because it needs comprehensive planning and a considerable time frame to implement. Based on previous studies the following parameters are selected as a list of success parameters for the BRT as a component of an urban planning policy for Lahore (Hidalgo and Munoz, 204, Yazici et al., 2013). These six parameters are practised in cities where BRT worked as a tool for urban policy for instance in Curitiba, Seoul and Ahmedabad.

a) Strategic vision behind BRT

b) Strong political endorsement

c) Comprehensive land use support

d) Grass root level community acceptance

e) Incentives for private developers

f) Multi-tier transit-based development plan

Methodology- LMBS in the eyes of urban planners of Lahore

The alluring question of this research is to determine how did the policy makers of Lahore envision the new concept of transit in the city. The answer to this question was explored through semi structured interviews with the urban planning policy makers of Lahore. Priority was given to the planning practitioners of the Lahore Development Authority (LDA) because they were considered the key planning personals in the decision-making process regarding LMBS.

The discussion started with their experience of working on this project and about the vision of LDA in this regard. According to the stated vision of LDA, the authority aims to turn Lahore into an 'attainable city. Further explanation for the word attainable was asked for and with consensus it was concluded that this term referred to a manageable city.

It was highlighted by the planners of public sector that in Lahore the decision of implementing LMBS was narrowly focused towards the 'engineering nature' of this facility. They explained by quoting various events during implementation that only the hard-core infrastructure and quick completion was the main concern for the decision makers. Albeit huge transport infrastructure projects always had challenges for the policy makers, but successful outcome can not be linked only with hard components of projects as suggested by Flyvbjerg et al., (2003). While in Lahore although the BRT project was completed in record time of eleven months but only the hard-core infrastructure (the route design, station design, buses etc.) was the focus of attention of the decision makers. While the soft components such as planning regulations, new zoning policy for the transit corridor, area development plans and the incentives for the private developers, that could have complemented the transit facility in terms of urban development were not part of the project considerations.

It was further elaborated that since the inception of the project it was envisioned as a traffic engineering solution for the city to overcome the traffic congestion and was handled only on a technical basis. It was also accentuated that no representative of metropolitan planning section of LDA was part of planning team of LMBS during the design phase; however, the engineering section of LDA was involved in all the planning phase meetings of LMBS. Even the emphasis of policy makers was more on selection and construction of the bus routes, stations, junctions and other traffic engineering components such as intelligent traffic system and signalisation on the route etc. The role of existing land use, the potential changes after this service and the current socio-economic conditions of the users along this route were all sailent features in decision making of LMBS.

One of LDA's expert described that during the implementation of this project the role of planning institutions was limited while the Traffic Engineering and Planning agency (TEPA) on behalf of LDA was an active participant. TEPA was responsible to design and construct the infrastructure based on specifications finalised with international (Turkish) experts. Later, at the local level construction firms such as NESPAK and Habib Constructors were involved to construct the infrastructure, but the measures for urban development remained absent in this whole plan. In short, it was obvious from the LMBS plan, design and service of the facility that it was handled as an engineering solution and not as a development feature of the city. Albeit the role of planning organisation was limited or negligible at the time of planning and implementation of the route of LMBS, but at present local planning authorities could play the role by developing a suitable strategy to initiate a controlled and compact future development along this service.

Regarding the potential role of LMB from the perspective of urban development a focus group discussion was conducted with the planning officials of various organisations, the real estate developers, and the academic researchers. In this discussion the nature of BRT in Lahore was questioned. It was expressed by all groups that in Lahore at present this service is acting only as an improved public transport mode. However, the long term sustainable impacts of this service could only be visualised, if it were implemented with the socio- technical characteristics of the city attached with local cultural, social and planning considerations.

One of the representative of real estate agents also informed that the land value had increased almost two to three times around the corridor of Metro bus Lahore in the past three years. He further explained that an ongoing trend of land use conversion had started. This trend was observed more in certain belts such as Ichra,

Shama, Qanichi and Mazang etc. Although, LMBS has affected the land values and conversion of land uses from residential to commercial or from small commercial units towards larger ones but the city government has not paid much attention to regularise this development trend or even to channelize or accelerate this trend. Keeping in view the development potentials, the private developers endorsed that they were ready to invest and take advantage of this transit facility in terms of development feature of the city, but they were looking towards an approved public-sector development policy in this regard.

To formulate the development plan along the transit route, the location of the route and the nature of surrounding land uses were considered as critical factors. Regarding the selection of the route the Ferozepur Road was agreed upon by the urban planners who endorsed this selection as a favourite corridor for the transit facility on the following basis. From the geographical point of view this three lane Ferozepur Road connected north-south areas of Lahore from Shahdrah Chowk to Kasur District as shown in figure 1, which is an important connection in the city. It was also declared as a highly congested road in terms of traffic and about more than sixty precent private trips of motor bikes were recorded on this route, as reported in urban transport master plan of the city. It was assumed that this mega transport facility would cut down private trips, whilst the results of this assumption are not yet evaluated. Although high passenger ridership indicates that the service was a need of the city from the transport point of view, but the decision for future extension could not be made only on the grounds of traffic demand. The landuse condition along this transit route is equally important and must be kept in consideration for future transit-based development decisions.

Regarding the pattern of the land uses and the type of development along the metro bus route it is explored that the route included a variety of mixed uses ranging from high dense urban areas of the city such as Mozang, Ichara, Niazi chowk and medium and low dense areas along the terminal stations. Furthermore, the organic nature of the settlements also supported the idea of transit very well. Overall, the development pattern is wide-ranging, at one hand there are planned new communities such as Model Town, Garden Town and Iqbal Town, while on the other hand the old unplanned areas with mixed uses are observed such as Shahdrah, Niazi Chowk, Qainchi stop and Islam Pura. The institutional and cultural entities are also linked with this route such as Anarkali Bazar, Dinga Singh buiding Katachri, Civil Secretariat, the old campus of Punjab University and Government College Lahore. Therefore, the diversity of land uses along with historical importance has significant potential for urban transformation in the city.

From the perspective of urban design, it was agreed that the route had significant potential to revitalise the old city parts and realign the street connections where LMB route was elevated, but unfortunately this component was completely ignored by the policy makers. The example of Ahmedabad was repeatedly quoted by the experts where the BRT service was linked with the Nehru Revitalisation Project of the city, but in Lahore no measures were designed to uplift the old historic urban fabric along the route. At present another transit service in the form of light rail urban rail named Orange Line Metro Train has also started in the city running in the northern section (figure 1). It is therefore high time to realise the importance of integrating the urban design measures along the transit services in the city to make these decisions compatible with the urban morphology of Lahore.

In Lahore the metro bus service is considered as a ride of urban poor and the use of a car is symbolised as a status icon instead of mobility option. The reporting from previous studies on LMBS proved that the highest

Figure 1: Map of Lahore Transit System

number of transit users, approximately fifty two percent of the total commuters, approached this facility as pedestrians; however, the mode shift from car to bus was negligible, about three precent (Tabassum et al., 2017, Ahmed, 2016). In this situation how does one utilise the strength of the existing captive transit users, is a key question.

This research therefore ponders the possibility about how walkable transit neighbourhoods could be introduced in the city as a first step towards transit-based development strategy. Albeit, the previous research in urban planning supports this idea in the form of Neo-Traditionalism where walking is the key component of Neo-Traditional Neighbourhoods (Thomas et al., 2018), but to check the possibilities of this concept in Lahore the communities along the metro bus route are analysed under the framework of Neo-Traditional Neighbourhood design option as an upcoming approach for future development.

NEO TRADITIONAL NEIGHBOURHOOD DESIGN (NTND) APPROACH

The concept the of Neo-Traditional Neighbourhoods originated in early eighties in United States but now has invaded popularity as the latest fad among the planning professionals around the globe. It promotes the confined densification to promote environment friendly communities. The key proponents of this idea are architects Florids and Andrés who started designing neighbourhoods based on the principles of older communities. They idealise the American cities of 1920s as "good" urban designed settlements where people used to walk instead of using cars as mobility options (Christoforidis, 1994, Davies and Townshend, 2015). In contemporary literature of urban planning the scholarship that Neo-Traditionalism limits the auto-based mobility and promotes the use of non-motorised travel is promoted by urban planning theorists.

According to the Neo-Traditional Design approach it was assumed that people do what planners want them to do by arranging the city land uses. Based on this assumption it was concluded that car usage increased because after World War II, the concept of automobile circulation was encouraged by the urban designers themselves through functional zoning regulations where all the activities were separated. In the absence of functional zoning people could indulge in daily activities with active modes such as walking and cycling, in an environment friendly neighbourhood where children used to play without fear of cars. Urban designers such as Plater-Zyberk and Peter Calthorpe also support this neighbourhood approach by integrating the use of public transport as a key component of Neo-Traditional Communities. In this approach instead of cars the emphasis is on the use of mass transit and non-motorised modes. The transit based development, also termed as transit oriented development, is considered a key step towards sustainability in the eyes of transit experts (Cervero, 2015, Cervero, 2013, Cervero, 2004, Suzuki et al., 2013). However, to design Neo-Traditional neighbourhoods transit planners, urban designers, architects and real estate developers have had to work together.

The concept of Neo-Traditionalism could be approached at three different levels, starting from regional level to the city and then at the neighbourhood level. In this research the focus is on the neighbourhood level. By applying the NTND approach at micro level the transit neighbourhoods along the LMBS corridor have been analysed and potentials of this concept have been explored in the case of Lahore.

Parameters of NTND

The core objective of this approach is integration of urban land uses to reduce the vehicle kilometer travel. This design approach encourages grid iron pattern of street connections with maximum circulation in urban space. It supports the concept of transport planning linked with urban functionalities in the city. The idea of integrating transport in physical planning itself is not a new concept. The work of Howard is considered the earliest effort in this regard who introduced the idea of neighbourhood in Garden City. Later the concept of transportation network in the Garden City was characterized by the circular road patterns and segments of Garden City were connected to the central part (mega polis) through transport links (Sharifi, 2016).

While in contemporary era of planning theory the scholars are now again focusing to restore the original patterns of towns by designing the transit corridors as central part of the communities. As suggested by Calthorpe the concept of ‘pedestrian places’ could be designed near bus rapid transit or near light rail transit station where people would rely on transit rather than using cars to approach the daily activities. This concept is further endorsed by Cervero (2013, 2015) that transit

Figure 2: Parameters for Transit based NTND Communities (Cervero and Kockelman, 1997)

could also be an appropriate choice for the urban poor when complimented with the non-motorised modes. Based on these concepts the following components are suggested to design the Neo-Traditional Neighbourhoods (figure 2).

a) Access through grid iron parameters
b) Mixed residential and non-residential uses
c) Maximum connectivity of neighbourhood
d) Integration of public space
e) Promotion of non-motorised movement

How NTND compliments transit service

It is suggested by Ewing and Cervero (2001) that accessibility and neighbourhood designs complement each other. By comparing the travelling trends in car-based communities versus transit-based communities they conclude that the basic difference in traveling is due to physical design parameters of those communities. These parameters are street layouts, blocked spacing in urban areas, connection between alleys, provision of pedestrian facilities, integration of bicycle networks, type of links between residential and commercial activities, connections between daily activities etc. It is therefore suggested that physical design of a settlement should promote the traveling options and accordingly travelling behaviour would differ in various communities.

Now if we the travelling trend between developed and developing nations is compared, it is evident from various studies that pedestrian share of captive transit users are more in developing countries, where land uses are connected due to organic mixed nature of land uses (Cervero and Radisch, 1996, Cervero and Kockelman, 1997). The theory of commuting within communities (proposed by Dill, 2004) also confirms that albeit Neo-Traditional neighbourhoods could attract maximum number of non-motorised trips but it would depend on how the land uses are designed and connected. Furthermore, a recent study in Malaysia has also endorsed this viewpoint of transport scholars that the pattern of mega cities in Asia in general supports the idea of transit based development due to high densities and mixed landuses (Yap and Goh, 2017) (figure 3).

Ewing and Proffitt (2016) also prove that there is proportional relation between the travelling time and the travelling distance because travel time decreases in highly accessible communities due to mixed land uses. Based on these findings it could be summarised that traveling patterns are based on physical parameters and these parameters connect and promote mixed land uses. According to the conclusions drawn by Ewing and Cervero, by altering the forms of neighbourhood designs, the travel pattern of these areas could also change. Therefore, it is agreed by the urban designers that NTND with transit facility would complement

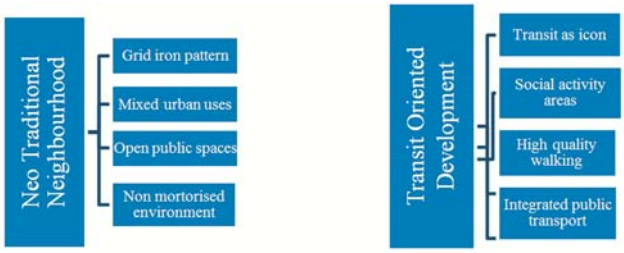

Figure 3: Parameters of Neo-Traditional Design Approach and Transit Oriented Development

each other. In this research this assumption is tested within the existing mass transit areas in Lahore.

NEO-TRANSIT LAHORE MODEL (NTLM)

In this paper a model along the metro bus route in conjunction with Neo-Traditionalism named Neo-Transit Lahore Model is designed. This model was analysed along three transit stations in Lahore, namely Ichra, Shahdara and Mall Road. These neighbourhoods were selected based on the land use pattern and behaviour of transit users. Ichara is a commercial area, Shahdrah is a residential community and Mall Road is an institutional zone. Therefore, these three areas provided the idea of diverse land use patterns along the metro bus route. Further, in these neighbourhoods' people approach the transit stations preferably as pedestrians instead of using other modes of public transport such as feeder buses, auto rickshaws and motorcycle rickshaws. The information provided by the Punjab Transit Authority also confirmed that the percentage of captive transit users is maximum along these stations.

A survey regarding the affordability of private modes along the transit neighbourhoods was conducted in 2015 as an academic project by the undergraduate students of Department of City and Regional Planning, University of Management and Technology Lahore, and the results revealed that approximately 74.8% of metro bus users had household income of around 25,000 PKR or even less. Therefore, the private vehicle affordability was limited and use of public transport for daily activities was the need of the citizens. However, people from high income group having cars did not use metro bus considering it a mode of urban poor of the city. It was further reported that the percentage of young workers and students was maximum towards transit use who walked from origin to destination. While female commuters and old aged passengers preferred to use auto rickshaws and motor cycle rickshaws to reach the station due to unsafe and uncomfortable pedestrian conditions (figure 4). These results were based on questionnaire survey with the passengers approaching the transit stations. It was also noted that the trend of walking in transit areas was based on personal choice and not as an outcome of LMB service, because no additional pedestrian measures were provided by the policy makers to promote walking or cycling along the transit corridor.

Regarding the pedestrian provisions along the metrobus route it is important to mention that albeit pedestrian measures in the form of pedestrian overheads and escalators at stations, promotion of active modes to access the transit stations as component of LMBS design are missing. It is also important to mention that

Figure 4: Pedestrian measures along main roads in Lahore after Transit services

Figure 5: Urban fabric of Lahore after LMBS

in Lahore not a single bicycle lane is provided as part of the facility, however in model BRT cities such as in Bogota and Curitiba bike sharing and cycling along the transit was highly promoted. The urban fabric of Lahore, after the introduction of LMBS is shown in figure 5, and it clearly depicts that provision of active modes of traveling and change of urban design in terms of urban transformation is not considered as a part of this transit facility.

From the initial findings about the nature of metro bus transit it is recommended that in Lahore the component of non-motorised access must be included as a part of the existing transit facility. Although, it could be challenging for Lahore to start this approach but it has already been successfully implemented in many other developing cities with certain variations such as in Bogota, Curitiba, Seoul, Ahmedabad and Jinan (Suzuki et.al., 2013).

It is also suggested that LMB could be used to attract the other features of Neo-Traditionalism as well, such as high dense urban development, variety of urban uses, mixed residential and non-residential activities. These features would not only complement the transit service in terms of more passenger ridership, but the concept of transit-oriented development could also be promoted. The components of transit oriented development are urban compactness, high dense mixed land uses and provision of public spaces in the transit neighbourhoods (Vuchic, 2017). Therefore, both the Neo-Traditionalism as well as transit-oriented development in principle support each other to minimise the use of private cars and to promote the usage of public transport in conjunction with non-motorised mobility.

Therefore, keeping in view the mobility trend of current captive transit users as well as the future potential of active modes in transit-based neighbourhoods, the Neo Transit Lahore model is suggested. It would be useful to promote the trend of commercial activity as well as mixed land uses along the transit corridor. This model would be applied as a stepwise approach and in this study, the focus is more towards the provision and promotion of pedestrian environment in the transit neighbourhoods. The steps of Neo-Transit Lahore Model are shown in figure 6, and details of these steps are discussed below.

1. Create planning buffers

First step of this model is to determine the area of transit neighbourhoods where Neo Traditional measures

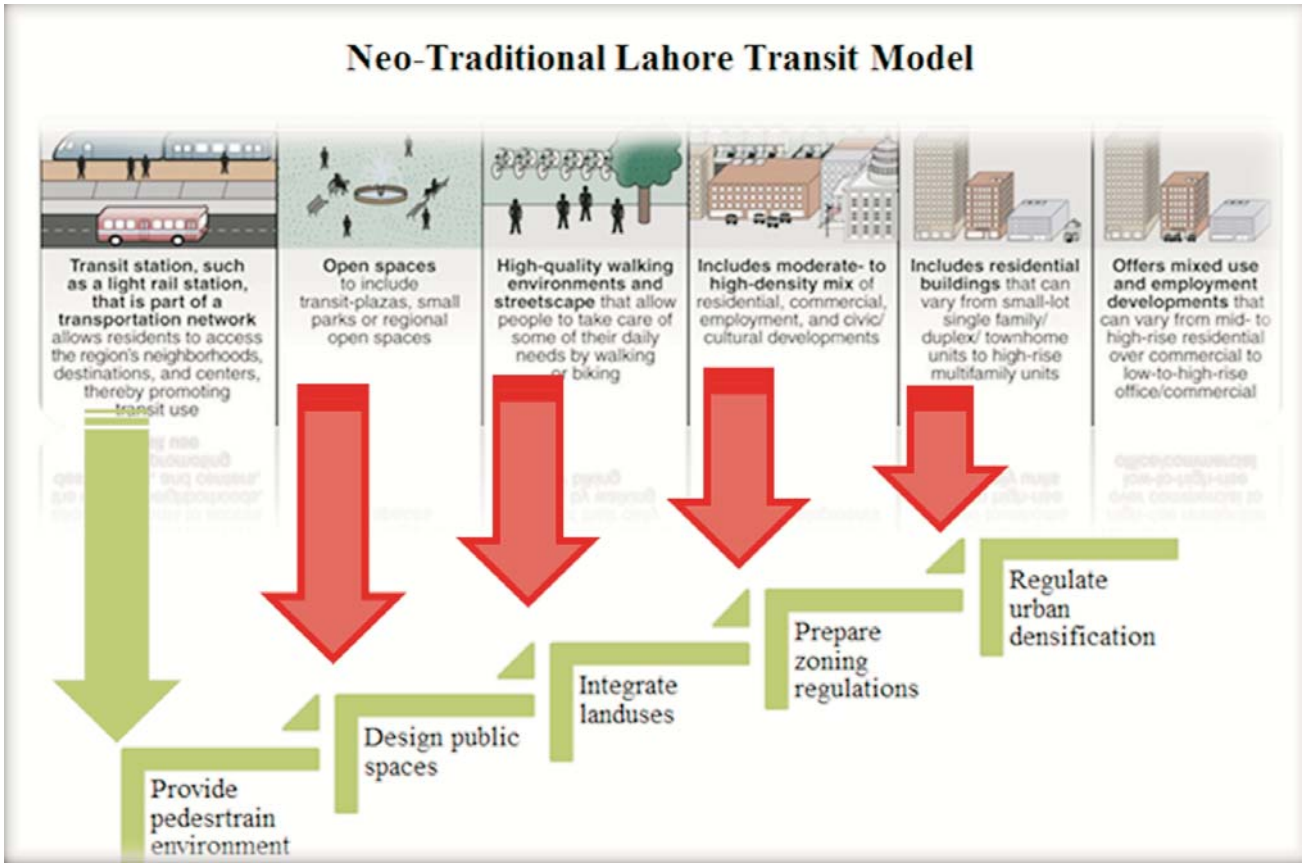

Figure 6: Neo Traditional Lahore Transit Model

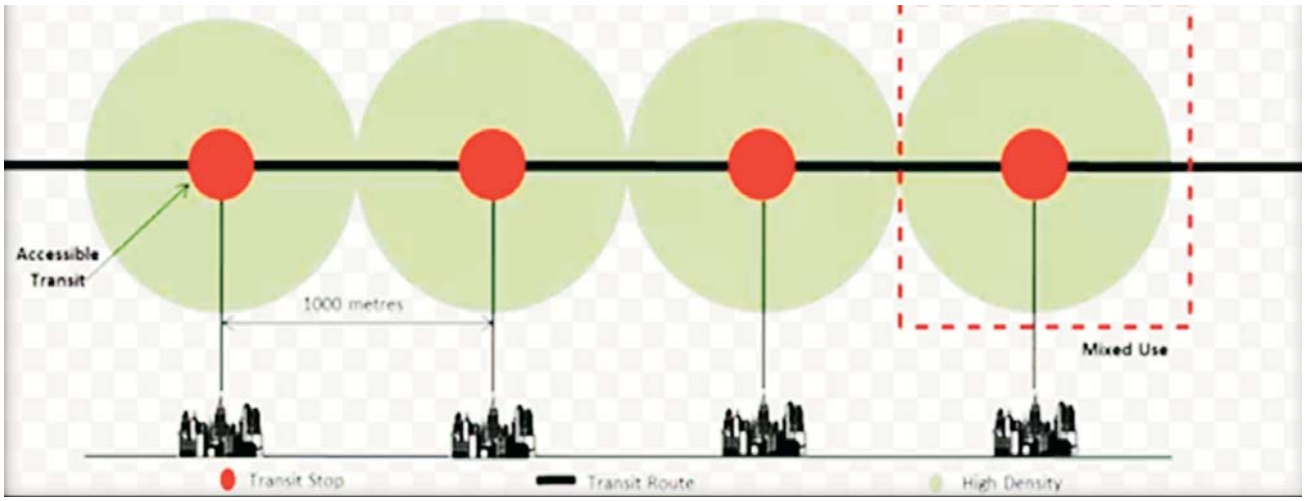

Figure 7: Design framework to create planning buffers along the Lahore metro bus transit station
Source: Adapted from Akbari et al., 2018, Newman, 2005.

could be designed. At present there is no concept of designated transit neighbourhoods along the station. There are twenty seven stations and on average the station distance is about one km between each station. In figure 7 the transit stations are marked with red point, these stations are connected through the bus corridor. Along the corridor a dense development circle is suggested, within five hundred meter distance of

the main station. The area of five hundred meter is selected based on the criteria of accepted walking distance within transit neighbourhoods from the previous practice of BRT in Seoul, Curitiba and Ahmedabad. In the designated planning buffer within half meter street connections and walking pathways would be realigned to ensure the grid iron pattern with maximum connectivity and circulation in the urban fabric of the city.

2. Improve walking environment

The second important step is to promote usage of active transport modes at least within the designated planning buffers. At present the pedestrian measures are provided only at site, mostly inside the metro bus stations in the form of pedestrian overhead bridges and escalators, but the overall approach supporting how to reach these stations as a pedestrian is narrowly focused. Therefore, to ensure the safe pedestrians access towards stations and within community uses the provision of sidewalks, pedestrian crossings, pedestrian signals and zebra crossings along the main streets is necessary to be provided. These measures in the form of network would be designed in first phase along the transit stations. The distance from the main station is divided into three sections, the quarter a mile, half a mile and above (figure 8). Starting from transit station, first the transit core within two hundred fifty metres could be designed and later the distance of five hundred meter and eight hundred meters could be considered according to the urban density in these areas.

3. Plan quality open urban spaces

The provision of high quality urban spaces is another important step to induce urban transformation in the city. By using the concept of brown field development, the old places that are of no use could be developed into new green open spaces. The old railway tracks and depots along this route could also be turned into urban green areas. The creation of green spaces will not only act as lungs for urban life but the social life of residents in these neighbourhoods would also be enhanced. At first, the land of LDA and the respective towns linked with metro route need to be identified and later the possibility of developing green areas on public-private partnership could be developed, by involving private land developers.

4. Comprehensive urban density plan

To initiate transit-based development in Lahore a comprehensive development strategy based on transit facility is needed. This strategy could be prepared by the local planning agencies along with the land use plan and new proposed urban densities. The concept of Neo Traditionalism would be supported by the comprehensive new zoning plan. But a plan of existing buildings determining the urban density along the

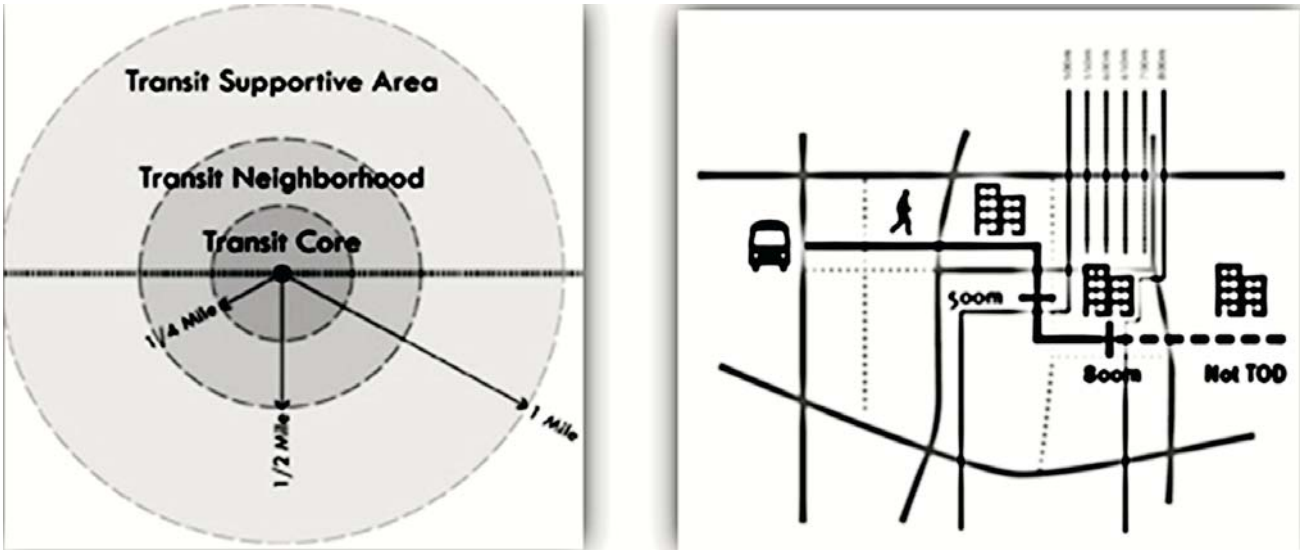

Figure 8: Stage-wise creation of walking environment along the metro bus station Lahore
Source: Adapted from Levinson et al., 2003, Suzuki et.al., 2013.

transit corridor must be prepared followed by the proposed future urban density plan suggested by the urban designers of the city. The new density plan and zoning regulations should support flexible floor area ratio as practiced in Curitiba and Ahmadabad. The new urban density plan would also help to initiate the use of active modes as part of Neo Traditionalism in the transit neighbourhoods.

BENEFITS OF NEO TRADITIONALISM IN THE LOCAL CONTEXT OF LAHORE

The Neo-Traditional Neighbourhoods could have several benefits in Lahore. This approach was highly practiced in Europe and due to colonial remains the older parts of Lahore still reflect the potentials for this practice. For instance, in the Walled City, Sanda, Krishan Nagar and Ichrca, the communities with mixed residential and commercial entities and short travel distances for daily activities is a prominent feature. In older times walking was a preferred mode of travel because the lower middle-class communities could not afford private travel modes. Still in these communities car ownership rate is not high but walking is replaced by use of motor bikes as an affordable private mode. Therefore, the traditional old pattern of these settlements naturally supports the idea of Neo-Traditional Neighbourhoods and this concept could revive the trend of walking in these communities.

From the economic perspective this approach is highly beneficial because it would cut down the automobile trips and consequently fuel expenditure could be reduced. In a country like Pakistan where energy crisis is at its peak and fuel costs have reached four times (Javaid et a., 2011), the concepts of old style neighbourhoods could reduce the cost of motorised trips and indirectly would contribute in managing the energy crisis of the nation as well.

Another significant advantage is the possibility to enhance historical value and cultural diversity in Neo-Traditional Neighbourhoods at a micro level, particularly at street level. The individual sites having strong heritage links could be selected, renovated and promoted for tourist attractions. In this way both tourism and traditional heritage would be positively impacted. Places like Anarkali Bazar, Tollington Market, Ichra Bazar, Food Street and other famous monuments located along LMB corridor could be renovated and promoted for tourists.

From the social perspective this approach would enhance social equity because according to the transport master plan study of Lahore more than half of the total population of Lahore cannot afford private travel modes (JICA, 2001). Therefore, significant proportion of urban population relies either on public transport or on para-transit modes for daily travelling. In this situation the concept of metro service was initiated by the political slogan that it is a ride of the common man. To make it a real common man ride it is necessary to promote the integration of non-motorised modes with LMB because majority of the captive transit users are pedestrians. Furthermore, the Neo-Traditional Neighbourhoods would make communities more inclusive. By connecting areas with transit and by promoting open green areas in these communities the interaction of people would enhance, making urban fabric more inclusive and sustainable.

The environmental benefits of this approach are obvious in the form of pollution free, healthy, open green areas. The City of Lahore is overcrowded and messed up with high rate of motorisation due to motor bikes and para-transit and by implementing this concept the transport-based emissions could be reduced. The concept of green modes travelling in the form of transit and active modes such as walking and cycling would enhance as well.

CONCLUSION

This research first determined the nature of the BRT service implemented in Lahore and concluded that the LMBS is applied here as a standalone transport component therefore the benefits of this approach are just limited to moving people from one place to another. However, if it was envisioned as a component of an urban policy then it could have had leverage and would have connected to the urban form of the city as well.

From the perspective of urban planning the concept of Neo-Traditionalism is suggested in conjunction with the existing transit service. Based on this approach at local level a development model named Neo Transit Lahore Model (NTLM) is recommended to maximise the future benefits of the existing transit facility. This model could be applied along the transit areas of the LMB corridor. The model would be beneficial due to the organic nature of existing settlements having mixed use development across the transit neighbourhoods in Lahore. It would also be helpful in formulating a future

urban planning strategy incorporating more green spaces as well as the enhanced non-motorised mobility in the city.

The suggested model is an outcome of an integrated planning and transportation vision for the city, where the bus transit corridor would act as a catalyst in turning the existing communities into future Neo-Traditional Neighbourhoods in Lahore. The parameters of Neo Traditionalism approach highly support active commuting to compliment the provided transit service. It is assumed that the Neo-Traditional approach will encourage people to walk instead of using automobiles. This assumption is made due to several reasons, such as limited affordability of private modes, high fuel expenditures, narrow streets, lack of secure parking spaces for private modes and poor public transport provisions in terms of route coverage of conventional buses and wagons.

The application of the Neo Traditional Neighbourhood Model approach would have social, environmental and economic benefits for the city as well as for the citizens. The outcomes of this study could broaden the understanding of policy makers and the local land developers in conjunction with New Urbanism. Further research is however needed to explore the role of urban planning and urban planners while designing the upcoming transit projects for other cities in Pakistan.

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IMPACT OF SYRIAN REFUGEES ON LEBANESE CITIES: A CASE STUDY OF SOLID WASTE MANAGEMENT

*Dr. Mansoor Ali**

ABSTRACT

Lebanon is one of the higher density countries in the world with a total population of four and a half million over an area of 10,000 square-kilometers. Its cities host around one and a half million displaced persons from Syria (including one million officially registered refugees), which is thirty percent of Lebanese population. The Government of Lebanon does not allow permanent refugee camps and the shelter provision is restricted to Informal Tented Settlements (ITS), but only twenty percent of the refugees are living in ITS[1]. The majority are integrated within the host population cities in rented housing, un-finished buildings and closed communities within communities. This has an impact on many basic services including solid waste management.

This paper focuses on the solid waste services in Lebanese cities after Syrian crisis. The displaced Syrian population generates waste, which adds to the municipal stream and adds to already burdened collection system, which is politically complex**.** Hence, any improvements in solid waste management for refugees has to negotiate through the existing challenges. There is a lack of clarity in the responsibility to provide basic services to refugees and their rights to work, stay, travel etc. While there are international and national organisations supporting refugees, there are many limitations on what can or cannot be done with the refugees' population. For example, an organization can provide the communal bins near ITS, but municipality may or may not agree to transport those for further disposal, as the Syrian refugees do not pay taxes directly to municipalities.

This paper is based on author's field work and case study methodology in this context and focuses on the background and complexity of solid waste service in Lebanese cities. The paper explains various institutional tensions in the given context and what can be done to overcome this. The paper concludes that in a situation like Lebanon, refugees supporting interventions must be prepared with a full understanding of the urban complexities, as there are 'cities beyond cities' to address.

Keywords: Syria, Solid waste management, Refugees, Lebanon

INTRODUCTION

In the last seven years, more than five million people have left Syria as refugees, while six million are internally displaced. Many face repeated displacements to Syrian neighbouring countries like Turkey, Lebanon and Jordan (Government of Lebanon and UN, 2017). Lebanon, Syria and Jordan have a history of migratory seasonal workers exchanges too. Lebanon has a land area of ten thousand square kilometers (Pakistan has an area of eight hundred thousand square kilometers for comparison) and a rolling terrain with hills and mountains.

All three refugee hosting countries have different policies towards Syrian refugees, especially in terms of shelter, rights to live and work. The Government of Lebanon (GoL) does not allow permanent refugee camps and the shelter provision is restricted to ITS. The integrated refugees' population receives services. For example, they generate waste, which adds to the local municipal stream and adds to already burdened collection system. Common guidelines and practices to support refugees assume a camp like situation and very little is researched and published on supporting refugees, already integrated with host population.

Refugees situation in Lebanon is not about 'camps management'. Any intervention has to negotiate with the institutional challenges and opportunities in the

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1 Various sources such as UNHCR database and Amnesty International.

Figure 1: Communal waste collection bins near refugee camps.

Figure 2: A waste dumping ground in Lebanon near a refugee camp site.

country. This includes political support, relevant ministries and municipalities lead by mayors. For example, an organization can provide the communal bins near the camps (figure 1), but the municipality may or may not agree to transport those for final disposal. The paper explains the complexity of solid waste system in the context of a middle income country hosting the refugees. While it also explores the possibilities of low investment and high impact options to improve solid waste systems.

SOLID WASTE MANAGEMENT IN LEBANON

Solid waste services are generally politically complex and receive quick public reaction if they fail to deliver as per expectations. Lebanon is not an exception in this respect. It is already a politically sensitive public service, facing severe challenges, and spans across a number of policy issues and around various stakeholders. Despite this, Lebanon provides a hundred percent waste collection service to its citizens. This level of service has been maintained even after the refugees' crisis.

Solid waste sector in Lebanon faces a number of challenges. These challenges include developing and maintaining large infrastructure such as landfills and incinerators, an expectation to continue to provide a reliable service to the citizens with increased population and un-certain budgets, un-certainty regarding maintenance of large infrastructure and lack of clarity of roles and responsibilities between federal government and municipalities. Shortage and high prices of suitable land, (figure 2) influx of refugees and additional burden of services on the hosting municipalities have added further complexity. Political and citizens response is divided over Lebanese support to Syrian refugees.

During the discussion on waste services, citizens frequently refer to the '2015 waste crisis' when large landfills which had reached their lifespan had to be closed down with a big impact on the collection system, leading to the accumulation of waste in streets of Beirut and Mount Lebanon regions. This brought citizens, media and civil society organisations protesting against the situation and politicians had to intervene. The vulnerable situation of final disposal of solid waste in Lebanon was also debated in the region, with Cyprus and Turkey worried for the impact and pollution of the Mediterranean Sea and shores, with a potential negative impact on the environment and tourism industry.

Lebanon's own political situation has an impact on the institutional framework required for solid waste management. This is often characterized by a lack of clarity on the division of responsibilities of the different public organisations for waste management. The impact of this lack of clarity has several major implications. This is particularly visible in the procurement of large infrastructure (large landfills, incinerators, waste to energy, large scale composting and recycling plants, etc.) and the lack of acceptance of responsibilities by the municipalities, which citizens expect, but ministries had promised to deliver. Projects which do not receive adequate investment from government, end up being implemented directly but reluctantly by the municipalities.

Institutional responsibilities span across a number of ministries. The Ministry of Environment (MoE) is responsible for reviewing all studies and tender documents related to solid waste, participating in

committees to decide on construction or changes related to solid waste treatment facilities and landfills, approval of environmental assessments, as well as authorizing facilities and providing permits, preparing and formulating master plans for the management of solid waste and defining environmental limit values for the disposal of non-hazardous solid waste (and liquid waste) in water bodies and on soil, as well as supervision and inspection of compliance. Currently MoE is preparing an inventory of an estimated seven hundred dumpsites in the country, which will inform the SWM draft strategy under preparation. While MoE is responsible for a number of areas in waste management, it does not manage the municipalities. The Ministry of Interior and Municipalities (MoIM) sets out the responsibilities of municipalities and manages the allocation and distribution of funds from the Independent Municipal Fund under the control of the Ministry of Finance. The Ministry of Public Health aims to improve population health by ensuring equal access to reliable health services. It also approves health facilities and thus is indirectly responsible for ensuring the existence of healthcare waste management facilities. Ministry of Public Health has only got an in-direct involvement in Solid Waste Management.

The Council for Development and Reconstruction (CDR) was formed in the year 1992 and was assigned the responsibility to construct large infrastructure for the management of solid waste facilities in Beirut and Mount Lebanon areas. CDR contracts out the private sector for the services of the collection, transport, treatment and disposal of the municipal waste for Beirut and Mount Lebanon, the largest urban areas in the country. It is also responsible for the rehabilitation of landfills in these areas. The CDR works closely with the concerned ministries in an effort to support infrastructure development, lends support to the CoM and manages infrastructure projects financed through international loan agreements. The CDR prepares plans and strategies together with the MoE and MoIM.

Municipalities are the leading organisations in providing solid waste services and planning for the future. These are responsible for solid waste collection and encourage sorting at source, which strongly depends on the cooperation from citizens. Municipalities highlight the urgent need for infrastructure for the final disposal, including landfills and incinerators. There are eleven hundred and eight municipalities in Lebanon, mostly operating according to a law from 1922, which established that municipalities are governed by elected municipal councils (*Muhafaza*), which are agents of the central government and where prior approval has to come from the central government for most decisions. Many of the municipalities have come together in municipal unions (reaching fifty one unions in 2013), grouping more than two-thirds of the one thousand one hundred and eight municipalities. The unions of municipalities have legal status with administrative and financial autonomy. The purpose of a union is to promote inter-municipal cooperation for projects of public interest or to implement large-scale technical projects that benefit all municipalities. SWM requires regional cooperation, hence the concept of the union is important. Municipalities are at the frontline of refugee crisis and there are municipalities where refugees' concentration is high.

TOWARDS INTEGRATED SOLID WASTE MANAGEMENT

In 2005 and 2006 the preparation of a Draft Law and Plan on Integrated Solid Waste Management (ISWM) was initiated by the CDR. This introduced many important aspects into the policies. For example, this was the first instance when recycling was included in the policy at a higher level. ISWM focused on reducing the quantities of waste streams requiring disposal, promoted waste reduction, encouraged source separation, recycling and energy recovery. The Draft Law also assigned responsibilities to a ministerial committee headed by the MoE to prepare strategies, adopt the "Polluter Pays Principle" and assign responsibilities to the local authorities to manage waste. The Draft Law and Plan was approved by the Council of Ministers in June 2006, however it has not been implemented, partly due to the 2006 war and partly due to disagreements (UNESCWA, 2016). However, the existence of this law is an important leverage to promote actions concerned with waste recycling, reuse and reduction at scale, which are important requisites for a modern solid waste system, with or without refugees.

In 2009 a Ministerial Declaration committed the Government of Lebanon to protect the environment by finding alternatives to open dumping and solutions for SWM, implementing energy conservation measures such as adopting waste-to-energy technologies for urban areas and major cities, promoting ISWM, covering municipal, industrial and hazardous waste

and defining guidelines for treatment of special waste, such as e-waste. The declaration also called for engaging the private sector in SWM services and mandated the Ministry of Environment and Water to draft regulation for Waste to Energy (WtE) generation by the private sector. The decision led to the development of the National Integrated Strategy for SWM, presented by MoE to the Council of Ministers (CoM) in 2010 with a policy framework for twenty five years. The strategy included rehabilitating dumps, replacing technologies previously foreseen for sorting, composting and landfilling by WtE technology (with moisture reduction and electricity generation), and building transfer stations to decrease the cost of transporting waste. However, at the time of the fieldwork, the CoM had not yet approved the strategy.

A number of UN agencies and civil society organisations are also implementing solid waste management activities. The most prominent and perhaps the most impressive is the work of Arc-en-ciel (AEC), a national civil society organization (AEC, 2015). This was established in 1985, working on the model of social enterprises and supporting people in needs and people with disabilities. AEC works across Lebanon and has seven other programmes. SWM activities fall under the Sustainable Agriculture and Environment programme. AECrc-en-ciel has more than a decade of experience in SWM, including setting up of a network for collection of recyclables and management of eighty percent of hospital waste in the country. The organization considers itself a leading player in determining Lebanon's waste strategy, assuming that learning from projects can be useful for SWM policy. Currently AECArc-en-Ciel advises municipalities and builds capacity in programme development, technical skills development and implementation. They are also involved in collection of recyclable material and operation of three sorting centers, as well as piloting a composting programme. AECrc-en-ciel sees an emerging interest in recycling, with an estimated five hundred organisations already working in it at different scales. ARC brings in institutional memory and technical expertise for future work in solid waste management.

TECHNICAL CONSIDERATIONS

Lebanon has a range of reports and data available on solid waste management. According to UN Habitat the waste generation rate per capita per day, is estimated at 0.97kg/ day in urban areas, 0.79 in rural areas and 0.50 for refugees. According to these statistics, Lebanon generates seven thousand one hundred and forty five tons of garbage per day or two and a half million tons a year. The largest generation of waste comes from Beirut and Mount Lebanon regions, estimated at two thousand eight hundred and fifty tons per day. In addition to this, an estimated twenty five tons of medical waste is generated each year, with five tons of the total being infectious waste (AEC, 2015). An estimated fifty two and half percent of waste is organic in nature, with sixteen percent paper and cardboard and eleven and half percent plastics. Thirty six percent of municipal solid waste is composed of recyclable material. However, so far in Lebanon only eight percent of all waste generated is recycled, due to the nature of the system, lack of awareness, political commitment, and lack of municipal initiative and resources.

According to Sweep-Net (2014) municipal solid waste collection (excluding Syrian refugee ITS) was up to one hundred percent in urban areas and ninety nine percent in rural areas. The collection system in general is through the provision of large public bins with capacity of twelve hundred litres where residents bring their waste, which is often mixed, and there is little practice of reducing waste, sorting at source and recycling. The high level of recyclables and organic content in Lebanon's municipal waste highlights the important opportunity of re-using, recycling and recovery. Where recycling is practiced, there are two types of systems in place;

1) Where waste is collected in compactor trucks and separated at transfer points. This is more common in larger municipalities, where streams are high in volume (figure 3).

2) Where it is separated at source and brought to be cleaned to sorting stations. This is practiced more in smaller municipalities, where pilot programmes are being tested (figure 4).

In the second system, the quality of separated material is good, while there is an additional cost of separated garbage collection. The first system requires effort to separate waste from mixed waste, while this service may be providing a cost-effective collection service.

Due to shortage of land and high quantities of waste, final disposal of solid waste is a critical issue in Lebanon. Currently around seventy seven percent of

Figure 3: A compactor truck which collects waste.

Figure 4: Sorting of garbage at source.

the waste is either disposed in sanitary landfill or at open dump sites, and twenty three percent is recovered for recycling and composting. The waste crisis of 2015 is an important evidence of the critical nature of waste disposal, when the closure of Nahme Landfill caused a general collapse of waste collection system in Beirut and Mount Lebanon. Some reports suggest that there was a sharp increase in the open dumping of waste after 2015 crisis. There is a desire to invest in large infrastructure solutions, such as waste to energy plants by municipalities, while waste reduction, recycling and composting is favoured by many stakeholders. Civil society sees recycling as an opportunity to create jobs and protect the environment. This may result in lesser quantities of waste requiring final disposal. Figures show that recycling and composting in Lebanon are still quite limited in relation to the potential. Eighty percent of the waste has potential for recycling or composting, and only twenty three percent is effectively processed and valorized (Arc-En-Ciel and AEC, 2015).

The cost of waste collection and final disposal varies in Lebanon. These costs are not available to the public and based on estimates made by previous studies, these costs also do not take into account the environmental externalities. One of UN's studies estimated that in 2015 the total cost of SWM was three hundred twenty million US dollars. On average, SWM consumes thirty three percent of the municipal budget, which is within the international estimates of twenty to forty percent of the municipal budget. One municipality estimates the following cost:

- Collection and transport: Eighteen to thirty two US dollars per ton (urban areas consuming higher costs, Beirut and Mount Lebanon are among highest due to urbanization and contractual arrangements);
- Landfilling: Thirty to fifty US dollars per ton (Beirut and Mount Lebanon among the highest).

CONCLUSIONS AND RECOMMENDATIONS

The fieldwork in Lebanon reveals a number of important aspects:

1) The refugees' crisis in Lebanon needs a different approach than 'camps management' or 'life saving' approaches, common in humanitarian work. Since refugees are integrated within the host population, the practitioners need a thorough understanding of the urban complexities, as refugees' form cities within and beyond the current cities. Lebanon provides an important context for refugees' integration and what can be done to support them needs to be looked into. The urban complexity needs to be comprehended and the concept of cities within cities needs a further understanding with respect to solid waste management issues and opportunities.

2) Refugees are often seen as additional burden on municipal services, such as solid waste management. However, there is a lack of clarity on the burden due to past issues, politics and institutional complexities and added needs from the refugees. Needs assessments and baseline are to be designed to provide clarity on the added burden. Otherwise, refugees support programmes may start addressing the past challenges of the cities. This may not provide targeted support to

the refugees. In the case of Lebanon, solid waste service are politically complex and addition of refugee population is just one dimension of the problem. The dimensions of solid waste management problems that can further an understanding of potential issues that need to be identified.

3) Direct support to refugees is only allowed by the host governments, while large infrastructure investment in the name of addressing the refugees crisis may not sustain. This leaves some large questions regarding the nature of programmes, where global funds are already allocated. In the case of Lebanon, one needs to have a mix of programming and cause and effect studies could provide much needed information regarding the impactful programmes. These studies can also be of great value to other regions of the world, where refugees are hosted or populations are internally displaced. Without this evidence the project support may continue to be provided with the two extremes of large infrastructure provision and low investment and low risk type interventions. The needs may be a combination of the two types. One potential opportunity could be that the donors invest in host community infrastructure in order to provide support to the local population and the refugees.

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STUDY OF CONSERVATION PROCESS ADOPTED FOR MUGHAL GARDEN AND MONUMENTS IN HASAN ABDAL, PAKISTAN

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ABSTRACT

It is an established fact that the conservation, preservation and restoration of historic monuments and urban areas is considered to promote regional assets at international level. Through historic literature review it was found that Pakistan has many such attractions which need appropriate attention by the authorities regarding their conservation. Hasan Abdal is a historic town, in Northern Punjab, Pakistan and was once, a desired place for many Mughal emperors for their stopovers. They constructed many monumental structures such as *Makbara-e-Hakeeman*, *Lalazar* Garden and Shahjehani *Sarai* here. These monuments are now under the supervision of Department of Archeology and Museums, Pakistan. Some of these monuments exist and others have deteriorated with the passage of time. This paper aims to study the conservation process of Mughal Monuments situated in Hasan Abdal Town to highlight their existing condition and to save them from further decay. The international conservation practices have been studied and the selected Mughal monuments are analyzed. Surveys, interviews with official and analysis of previous conservation work enabled the study to conclude the aspects effecting the conservation of these monuments. The research is helpful for the authorities to re-evaluate the conservation practice and to implement these in a more appropriate way.

Keywords: Conservation, garden, monuments, Mughal, tomb, Hasan Abdal.

INTRODUCTION

In history built environment is considered an important element as a record which encompasses the social and economic value of a particular urban area. It highlights the methods and techniques of construction and some sociopolitical constraints of the past, since heritage promotion and its values travel from one generation to another. Without knowing the history, people cannot analyse the living and cultural norms of their ancestors. The conservation of built heritage provides the perfect representation of the roots, identity, destiny and distinctiveness of a specific period of history (Fielden, 2003). Conservation and preservation of the built environment means to keep alive the historic setting, as long as possible in its original settings for the knowledge and pride of the future generations. The built environment consists of various monuments and archaeological sites having significant importance in terms of its construction style, decorative features and its historical association (Appleyard, 1979). The architectural conservation of monuments exhibits the value and significance of the constructed ornament. It contributes to the futuristic development related to original existence. It does not replicate the past but infact it enriches the harmony of the past into new features for the future. The traditions thus prolong in the form of built examples, and give an area economic and social enhancement.

Conservation of built heritage is a key issue under consideration worldwide. Internationally, it is believed

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that different values of heritage in terms of emotion, culture and usage are enhanced by its promotion. Pakistan is a developing country and the position of conservation is similar as that of other countries which are in the state of development. Though there are legislations and acts for conservation of built form, but there is a strong need for their implementation. The listing system is required to be refreshed at innovative levels. The positive aspect is the involvement and interest of local authorities and the emergence of some voluntary organizations that are interested in safeguarding the built heritage. These societies enhance awareness among the general puplic about the signicance and promotion of built heritage (Mumtaz, 1985).

RESEARCH OBJECTIVE

The objective of this research is to inspect the aspects of conservation and the processes adopted for the Mughal monuments, understanding the worth of these significant structures. The primary objective is to highlight the monumental gardens landscape of Mughal period so that the authorities pay attention to such edifices and preserve them with their original features, without compromising their authenticity.

METHODOLOGY

Qualitative research was carried out with key informants. Qualitative in-depth interviews were conducted with concerned officials. This type of interviews gave a clear picture of the requirements and conservation issues of the specific area. Images were taken to capture views of the specific area of study. Information available on the websites was gathered and literature review was conducted through reading different books, articles, journals and professional reviews related to the research. Reports and presentations were obtained from Tehsil Municipal Authority, Hasan Abdal. Detailed study of the reports and presentations, which were prepared by professionals involved in various developmental projects, was done. The monuments were also thoroughly surveyed and analysis was done.

LITERATURE REVIEW HISTORY OF CONSERVATION IN PAKISTAN

The history of conservation of built heritage in Pakistan starts from the British times back in the early ninteenth century. At this time conservation related legislation was prepared and its implementation started when British Raj was established in the sub-continent. The British Archaeology Department, made the Indian Act in 1885. The British Government wrote letters to the state (provincial) government. In the letters, they asked them to look after the monuments. In 1888, the provincial government refused to take over the monuments because of lack of man power. The national government also could not help a lot, but they made a list of monuments (Mughal, 2017). Passing through different stages, after partition, an Antiquities Act 1975 was approved in 1976 and according to it, any heritage building which was seventy five years old, was considered as a monument that should be conserved (figure 1).

Internationally, the Gardens are defined as a separate category as found in Florence Charter on Historic Gardens 1981. This was done after UNESCO's concern on the beautification and safeguarding recommendations of cultural landscape and gardens in 1962. The recommendations encompassed landscape management, planning and protection. In Pakistan prior attention was given to the large scale gardens in Lahore like Shalimar Garden and those in the vicinity of Lahore Fort. The dilemma was that other small cities' gardens were not given any attention although they have been a significant part of Mughal history.

Location of Hasan Abdal Town

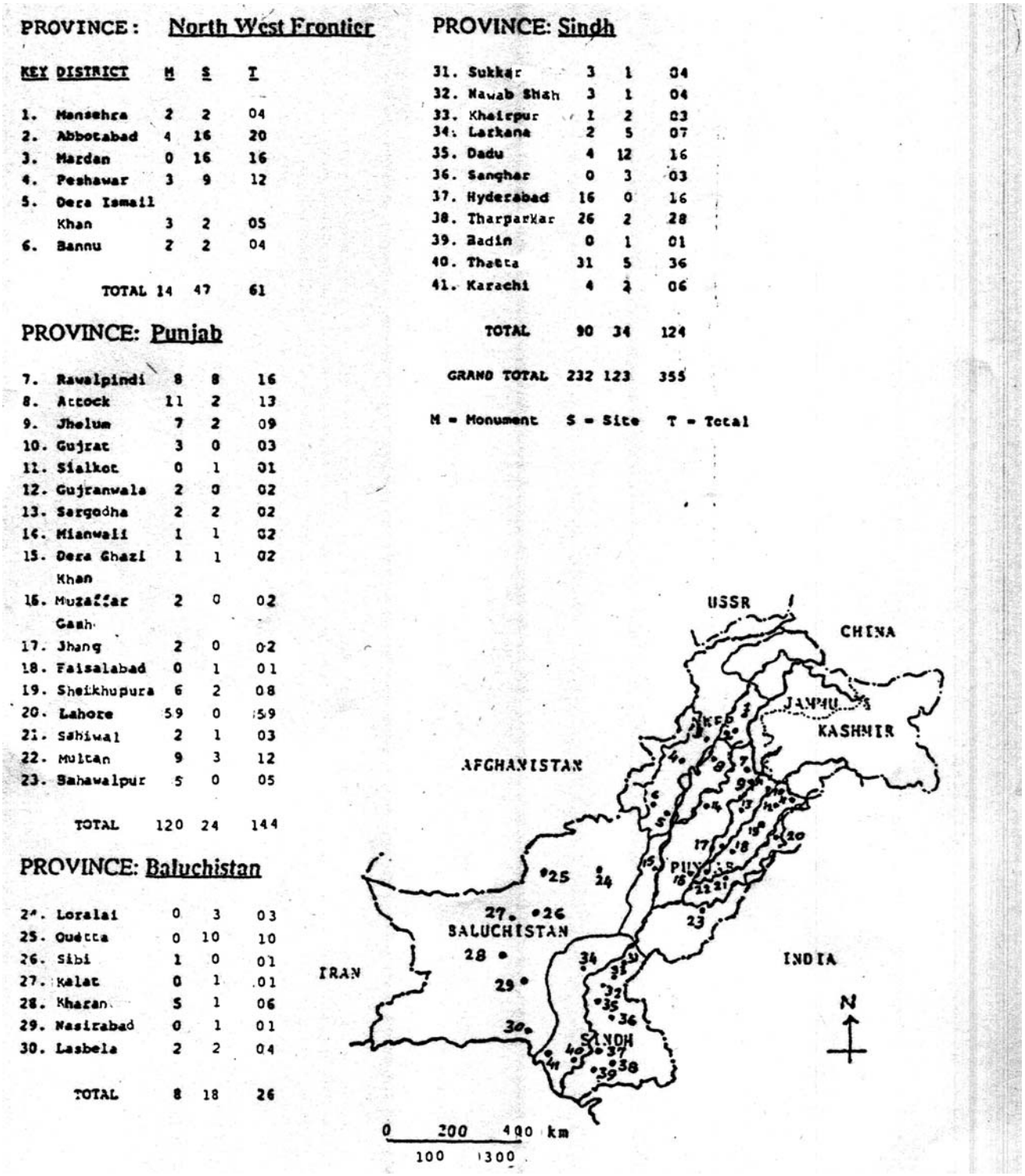
Hasan Abdal is situated in the North of Punjab, Pakistan. It is one tehsil of District Attock. It is located at a distance of forty kilometers northwest of Rawalpindi (figure 2).

Mughal Emperors in Hasan Abdal, Pakistan

Hasan Abdal Town has a long history. It was once the land of gorgeous views which was an attraction for many of the Mughal visitors, Sikh and British invaders. Mughal emperors had great interest in the natural beauty of this town and so they stayed here and constructed monumental structures (Cunningham and Alexander, 2015).

1. Emperor Akbar

In the reign of Emperor Akbar his allocated governor of the area was Shams al-Din Khawafi. He constructed



PROVINCE : North West Frontier

KEY	DISTRICT	M	S	T
1.	Mansehra	2	2	04
2.	Abbotabad	4	16	20
3.	Mardan	0	16	16
4.	Peshawar	3	9	12
5.	Dera Ismail Khan	3	2	05
6.	Bannu	2	2	04
	TOTAL	14	47	61

PROVINCE: Punjab

7.	Rawalpindi	8	8	16
8.	Attock	11	2	13
9.	Jhelum	7	2	09
10.	Gujrat	3	0	03
11.	Sialkot	0	1	01
12.	Gujranwala	2	0	02
13.	Sargodha	2	2	02
14.	Mianwali	1	1	02
15.	Dera Ghazi Khan	1	1	02
16.	Muzaffar Garh	2	0	02
17.	Jhang	2	0	02
18.	Faisalabad	0	1	01
19.	Sheikhupura	6	2	08
20.	Lahore	59	0	59
21.	Sahiwal	2	1	03
22.	Multan	9	3	12
23.	Bahawalpur	5	0	05
	TOTAL	120	24	144

PROVINCE: Baluchistan

24.	Loralai	0	3	03
25.	Quetta	0	10	10
26.	Sibi	1	0	01
27.	Kalat	0	1	01
28.	Kharan	5	1	06
29.	Nasirabad	0	1	01
30.	Lasbela	2	2	04
	TOTAL	8	18	26

PROVINCE: Sindh

31.	Sukkar	3	1	04
32.	Nawab Shah	3	1	04
33.	Khairpur	1	2	03
34.	Larkana	2	5	07
35.	Dadu	4	12	16
36.	Sanghar	0	3	03
37.	Hyderabad	16	0	16
38.	TharparKar	26	2	28
39.	Badin	0	1	01
40.	Thatta	31	5	36
41.	Karachi	4	2	06
	TOTAL	90	34	124
	GRAND TOTAL	232	123	355

M = Monument S = Site T = Total

Figure 1: Listed monuments by Department of Archaeology and Museums, Pakistan
Source: Department of Archaeology, Pakistan

Figure 2: Location of Hasan Abdal, Pakistan

a vault for himself to be his tomb, known as *Makbara Hakeeman*. Akbar also stayed in the town while coming back from Kashmir. He visited this town almost seven times in the years 1581, 1585, 1586, 1589, 1590 and 1592 (Jarret, A., et.al., 1907).

2. Emperor Jahangir

Hasan Abdal was visited by many famous people in history, mostly by Mughal and Sikh Emperors. Emperor Jehangir spent three days in this city, and cited Hasan Abdal as a very beautiful place with sweet river water and gorgeous mountains (Rampuri, 2012). He stayed at least six times here during his lifetime. In his own words, he felt glad to do fishing here and have put golden pins in the fish's nose.

3. Emperor Shah Jahan

Emperor Shah Jahan visited Hasan Abdal five times on his journeys back to Kashmir and he always preferred to stay here. He constructed the famous *Lala Rukh* Garden and Shahjahani *Sarai* (Lahori, 1875).

4. Emperor Aurangzeb Alamgir

Emperor Aurangzeb stayed here from 2nd July 1647 – 2nd January 1676 which is the most time spent by any other Mughal emperor in Hasan Abdal (Saddique, 1977). Hasan Abdal gained administrative importance in his region. He spent his two *Ramadan* and Eid here (Kahn and Nath, 1947).

5. Mughal Prince and Princess

Dara Shikho's sister, Jahan Ara Begam visited and stayed here many times and enjoyed her stay here, which is reflected in her poetry. She praises the gorgeous and pleasant environment in poetic words (Saddique, 1977).

ANALYSIS AND DISCUSSIONS

The Mughal period constructions are found in a compound or an enclosure in Hasan Abdal consisting of the:

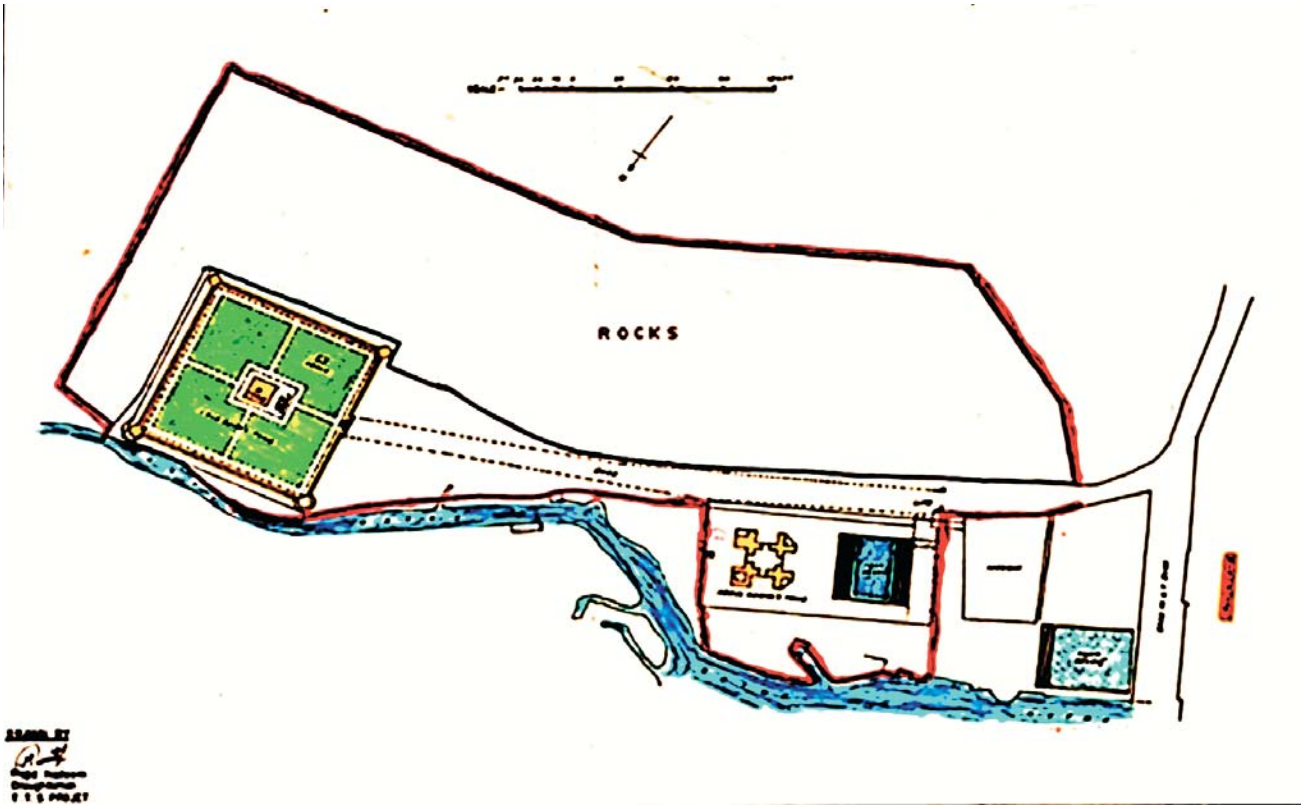


Figure 3: Map of enclosure of Mughal period construction.

- Tomb and Garden of *Lala Rukh*
- *Maqbara Hakeeman* and the fish pond.

These monuments are listed monuments under the Directorate General of Archeology, Government of Punjab, Pakistan (GoP Religious Monuments, 2017). Figure 3 shows the map of the enclosure located at the center of Hasan Abdal Town, Pakistan.

At the entrance of *Lala Rukh* Garden, there is an enclosure containing a fish pond. There is a monumental Mughal tomb on the left hand side and lush green mountain on the right. Just at the front there is a gateway of Mughal Garden of *Lala Rukh*. This Garden has a centrally raised platform having a grave on its top. The details of these structures are described here.

A. Tomb and Garden of Lala Rukh

This garden is a typical *Caharbagh* design, i.e. a famous Mughal construction style of gardens. It is surrounded by a brick wall finished with traces of lime plaster. With the condition of the wall it seems that it has been changed and repaired with cement plaster many times (Siddique, 1977). The garden was originally constructed at the bank of a fresh natural water stream (figure 4). The garden is now surrounded by various added constructions.

Moreover, figure 5, shows that this garden inspired the painter to paint its gorgeous surroundings also.

Figure 4: Painting of Lala Rukh Garden in 1924 (Siddique, 1977).

Figure 5a,b: Views of *Chaharbagh* of Mughal Garden known as "Lala Rukh Garden".

There were open backgrounds, beautiful vistas which attracted the Mughal emperors for the construction of this garden.

The grave within the Garden is associated to a Mughal princess Lala Rukh who got sick and died while passing from this area. Some people associate this grave with Noor Jahan. This however has not been proven because Emperor Jahangir does not mention this tomb in his memorial. In 1905, in revenue records it is mentioned as *Maqbara Bibi* LalaRukh (Tomb of Lala Rukh). It is said that she was the daughter of Emperor Aurangzeb Alamgir and was fortunate lady of British officer Thomas Moore. The early 19th century English travelers, like Elfinstone and William Moor-Craft and even Alexander Cunningham visiting the area in 1888 AD do not call it Lala Rukh's Tomb. The tomb is mentioned in the publication of Thomas Moor's Lala Rukh, published from London in 1846 AD (Siddique, 1977). Hence, who is in this grave is unknown. This Garden is also mentioned as the Tomb of Cypress trees or "*Saroo Wala Maqbara*". The garden has Cypress trees as its identity of a Mughal garden like Shalimar Garden and others (Hussain, 2015).

The cenotaph is in sandstone and stands on a high platform at the middle of a large enclosure, which is approached through a door on the west. This raised platform has a width of twelve feet eleven inches by fifteen feet and height of eight feet. A spring flows at the north of the enclosure wall. To save this area from being washed away a small wall was built at the north side in the past. The part of the wall was constructed with one thousand eighteen cubit feet of coursed rubble stone masonry cement mortar laid over one hundred fifty two cubic feet six inches thick layer of cement concrete in 1952-53 (Siddique, 1977).

The tomb fascinates a number of tourists for its picturesque beauty and dreamy associations. The Sikhs visiting Hasan Abdal on their pilgrimage frequently visit this place. There is another unknown grave at one corner of this *chaharbagh* of Lala Rukh Tomb.

Conservation process

The Department of Archeology has a pipeline project for the conservation of this garden. The initial survey was done in the year 2006 (Hussain, 2015). According to the Head of the Department of Archaeology, the project was taken as a part of their ongoing conservation project, i.e. Master Plan for Development and Restoration of Archaeological Sites from Taxila to Swat (Taxila Section) (Government of Pakistan, 2012). Figure 6 shows the survey being done by the Department of Archaeology.

Figure 6: Official from the Department of Archaeolgy undertaking survey (pictures taken in 2006).

Figure 7: Views of Lala Rukh Garden under Conservation Process in November 2016.

Figure 8: View of fish pond.

In November 2016, Lala Rukh Garden conservation process was completed (figure 7). In the process, the plaster on the walls was repaired but *surkhi* was mixed in it. The officials of the Department of Archeology and Museum claim that the original plaster done on the wall was lime plaster with traces of *surkhi* in it. *Surkhi* is a powder of red bricks which gives red color to plaster (Gohar, 2015).

Makbara Hakeeman (Hakim's Tomb)

Makbara-e-Hakeeman or Hakim's Tomb lies just at the entrance of the Mughal monuments enclosure at the west side of Lala Rukh Garden. It is located just opposite the *Gurdwara* (Sikh's place of worship). The tomb and the fish pond are situated on an extensive platform measuring one hundred twenty-six feet long and sixty eight feet wide. This Tomb was constructed by Khawaja Shams uddin Khawafi who was the Governor of Punjab in 1589 AD. The construction of the Tomb was completed in almost two years. This tomb is constructed with a similar material as used in Attock Fort and the construction period is also the same. Khawaja Shams uddin Khawafi constructed this tomb for himself, but Emperor Akbar had two very reputable ministers, Hakim Abdul Fateh Gilani and Hakim Hamam buried here. When *hakims* died in 1599, Emperor Akbar ordered to bury them in this tomb overlooking the wish of Khawaja Shams uddin Khawafi (Jarret, et.al., 1907). During the Sikh rule (1799-1849), the graves of respected *hakims* were leveled and this tomb was used as *Munshi Khana* (clerk office) (figures 8 & 9).

Figure 9: View of the Tomb of Hakim.

Conservation process in 2005-2006

The Tomb was conserved in 2013 by the Department of Archeology. The facade of the Tomb was re-plastered with lime plaster and the roof and its access steps were cleared by removing plants from the structure (Hussain, 2015).

Labourers from Chiniot, Lahore and Multan were hired by the Department of Archaeology and they worked on the Tomb of Hakeeman. *Pucca Qali* plaster was done with ingredients such as lime, sand, *surkhi* and jute. There were no traces of fresco painting found on the walls so plaster finish was taken as the final finish (Gohar, 2015) (figures 10 – 12).

Figure 10: Interior views before conservation works.

Figure 11: Preparation of Mughal lime plaster on site with traditional methods.

Figure 12a,b: Roof top of the tomb before and after renovation (Government of Punjab, 2012).

The fish pond is adjacent to the Tomb *Hakiman* having its own character. This pond is a fresh water pond through which the nearby water steam passes. It contains *Mahasheer* fish. There is a famous myth about these fish that they have golden pins in their noses and they are sacred because if they are caught the meat becomes blood. Emperor Aurangzeb Alamgir has also described this pond in his writings and it is quoted that he put golden pins in the noses of some fish (Rampuri, 2012) (figure 13).

Figure 13: Fish pond containing Mahasheer fish.

Landscaping of the pathway and park

In 1997, the pathway between Tomb of *Hakiman* and Lala Rukh Garden was paved with tiles on the orders of a local Member of Parliament. In this conservation process the sides and walls of the pathway were left untouched. In the process of conservation in 2005-2006, the Tomb of *Hakiman* and its premises till Lala Rukh Garden were maintained to some extent. Some landscape elements such as benches and rose plants were added (figure 14). Access plantation, shrubs and vines were removed and paths were cleared for the visitors and tourists to relish the Mughal monuments.

Figure 14a,b,c&d: Rose plants been embadded along the path leading from Hakeem's Tomb to Lala Rukh Garden (Government of Pakistan, 2012).

Moreover local crafted concrete benches were erected in the garden to facilitate the visitors.

Shahjehani *Sarai*

A *Sarai* complex has almost vanished from its original location. This was constructed in the reign of Emperor Shahjehan on a contoured area which was leveled out. The surrounding wall was fifteen feet high from inside and varied from fifteen feet to twenty five feet from outside. It had a width of thirty one and half inch and length of five hundred thirty eight feet. It was a total square site. There were double story tower rooms at each corner in round shape having diameter of twelve feet. They were domed structures on the inside but these structures were flat roofed from top. On all sides there were ten feet square rooms with eight feet three inches veranda on the front. All construction was in brick. The roof of the rooms and verandas were in round shape and the entrance door was at the centre of the complex. The main entrance consisted of a huge door constructed with bricks, brick ballast, lime plasters and jute. Its wall was of a height of two feet seven and half inches. The mosque inside this *Sarai* was later added. During the Sikh reign this complex was occupied by Sikhs and Muslims were thrown out (Saddique, 1977). Now this space is over populated and crowded with small residences and is known as *Mohallah Androon* (Inner neighbourhood) (figure 15).

Figure 15: View of main gate of Shahjehani *Sarai* vanished from the scene due to illegal occupation (Siddique, 1977).

Because of the illegal occupation and encroachments of the *bazaar*, the *Sarai* has vanished and some ruins can be seen (figure 16). Now it seems impossible to conserve this *Sarai* back to its original shape, as once it was a significant edifice.

CONCLUSION

The study and research on the selected Mughal monuments concludes that the conservation processes have been applied on them, but somehow the authenticity of the monuments has been affected with the passage of time. The international charters and policies have available guidelines which instruct the authorities not to compromise the authenticity of monuments but these policies were not applied in the case of Hasan Abdal. This happened because the original ingredients of the Mughal plaster have been replaced by some locally available substitutes. Furthermore, schematic surveys with latest instruments, such as laser scanners should have been used while conducting the surveys of such monuments. The major

Figure 16a,b: Existing condition of main entrance gate of Shahjehani *Sarai*.

issue in the conservation of these monuments seems to be the lack of funds, lack of study of historic literature, lack of realization of the significance of heritage conservation and fragile coordination of the structures. Hence the significance of the conservation issues should be understood by the authorities and the visitors to safeguard these monuments in much deliberate way.

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Young Scholar's Contribution

EFFECTS OF WORK PLACE DESIGN ON BEHAVIORS

*Madiha Salam**

ABSTRACT

Nowadays people spend most of their time inside an enveloped building, their thoughts molded by the walls. In the eagerness of running with time the capitalist minds have forced humans to live like a machine which has resulted in much distress and mental tension as a part and parcel. So today, an average office worker has less productivity at the workplace and he/she comes home carrying the burden of work, which can hypothetically be improved by designing better spaces. Good architecture can heal a person and develop positive attributes in him/her. To be an architect with moral values, one must have deep appreciation of a human lifestyle and its capacity to adapt from its surroundings. This paper focuses on workplace environment and spaces in Karachi, considering the question how different spaces influence cognition? And is there an ideal architectural space for various kinds of thinking? The paper considers antiquity of the architectural determinism as a theory, and works upon the attributes which can diverge and positively enhance architectural perseverance through the review of archival data, articles, books and historical reference with support of questionnaires. The conclusion points towards the need of architecture to be developed into not just an envelope, but as a space which shapes the behavior, attribute and positivity of its users.

Keywords: Architecture and behaviours, Cognitive architecture, work place environment.

INTRODUCTION

It is a well-known fact that the environment impacts on our mood and health. Aesthetically improved, psychologically designed spaces effect our disposition and vigor. Since the surrounding is readily taken for granted, it can influence us very powerfully. Every single space one breathes in matters, whether one designs the spaces to have positive effect, or designs them haphazardly, can effect adversely on the health, mind and ultimately the soul. This makes architecture a potentially dangerous tool to manipulate people. One must aim to design constructive spaces that not only are comfort zones, but have long-lasting effect and people feel relaxed not only in their work place but also when they go home.

Most of the office designs in Karachi are cramped spaces with necessary office furniture and basic requirements with barely any space to move around. These spaces are very rarely well ventilated or have access to day light. The imbalance has lead to an alarming situation where employees are suffering from frustration, depression and mental agony. Internationally the office spaces are more focused on how to magnetically attract more money, seeing the short-term advantages, than on how to give more comfort to the employees and make them more productive for long-term gains. In researches (Alker, 2014) it is proven that the design of a space effects the general behavior of the human being and its constant contact makes a lasting psychological effect. An office space can have a negative effect on the office worker and he/she can become stressed and the productivity can be impacted. This research looks into the possibility to formulate better designed office spaces with comfortable environment leading to increase in the productivity of an average office worker and in helping to bring the average stress levels down. By experiencing better designed spaces on a daily basis the workers will become less frustrated, feel more comfortable in their office spaces and will have an overall positive impact on their after-office life. The main research question outlined for this research is what role does an office environment play in shaping the behavior and the productivity of its users?

The aim of the research is to take stock of the existing situation of workplace spaces in the city of Karachi and to focus on how environmentally responsive

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architectural spaces can be salubrious and bring change in behaviors, attributes and positivity of its users.

LITERATURE REVIEW

Archival data, journals, books and historical references have been used as secondary sources of information. The literature review is divided into three major headings: architectural determinism, effects of work place environment on people and fundamental concepts of person-built environment relationship.

For architects and designers, the awareness that built environment influences health, wellbeing and productivity of their inhabitants is not new. Studies demonstrate that poor air quality and lighting intensifies the number of sick days and can affect sleep, but the evidence is still not persuasive enough for most of the design, financing and leasing choices. Good indoor air quality, thermal comfort, high quality views, daylight, good acoustics and indeed location and amenities – all play a crucial role in creating a healthy, productive workplace. The connection between individuals and buildings in which people are employed is vital. Most of the businesses are missing the trick in overlooking the massive prospects that this relationship can bring. This literature review circulates around all the ideas which incur the knowledge on the subject and the impact of a well-designed space on office workers.

Architectural Determinism

Architectural Determinism is a social theory which states that all human behavior can be derived in relation to one's environment. Many sociologists and architects claim that the built environment is accountable for all human connections, some discard this theory by claiming it as superfluous and something that glorifies the role of an architect, and others believe that architecture is a tributary that influences social and cultural history. Architects and theorists over time have been very vigilant about the impacts on behaviors of the environment. This theory was supported by architect Leon Battista Alberti, who claimed that a balanced Classical form can even compel the most aggressive invaders to put down their arms and become more civilized. Later architect Frank Lloyd Wright, in early 19th century, supported this theory by stating that most corruption can be easily curtailed by appropriate architecture and people can turn to wholesome activities. Similarly, Sir Ebenezer Howard in 1898, forced upon

Figure 1: The demolition of Pruitt-Igoe in 1972 fueled resistance to deterministic thinking (Golembiewski, 2014).

his opinion that for the companies to be more efficient the employees should be living in village like garden communities. Interestingly, it took a lengthy list of failures over the millennia, before theorists took to critiquing architectural fantasy with nasty reprisals of Modernism. They believed just the opposite and focused more on the celebration of form, such that at the high-point of this inclination was the delight shared over the demolition of the famously dangerous and dysfunctional urban housing complex in St Louis in the US, which was initially the epitome of modern architectural determinism and was made on a very strong concept of how the urban living designs, community interactions and enclosed playyards amongst the lower income groups can help in reducing criminal activities (figure 1). In reality this served in reverse and became the hotspot for crime and poverty (Marmot, 2002).

According to sociologist William Cameron, the physical forms in many cases can limit, permit or determine the kind of activities that one can be engaged in, thus a designed office administration must consider that the built environments may increase the productivity of a worker (Cameron, 1963). This can be done by creating a communicative environment and letting people meet each other more often. It is difficult to ascertain whether architectural determinism is evident in this manner; the effect on workers' productivity may stem from the newness of the environment inspiring one to work, or

the fact that workers feel appreciated by the management to improve their surroundings that drive their work (Marmot, 2002).

Although the environment may influence some behavior, it is not the chief factor influencing social interactions. Another sociologist Alice Coleman agrees with this statement to some extent. Coleman conducted an extensive study of a housing estate in Clover Hill, in Rochdale, England and found many links between the atmosphere of "social malaise" and crime rates, and the conditions of the built environment. According to Marmot, "Environmental determinism is a concept that is too simplified to describe the complex relationships between individuals and their physical, social, and psychological world" (Marmot, 2002: 253). Some aspects of the built environment make human interactions or attitudes more likely to occur, but do not govern them. Despite this, architects, planners and designers still must consider the physical and psychological impact of their building designs, if they are to positively contribute to the daily lives of human beings and keep them safe from stress and frustrations, experienced commonly today.

Effects of work place environment on people

The efficiency of staff, or anything that distresses their capability to be prolific, should be a major concern for any employer, and therefore the building design in which they function, should be the key focus. Concentrating on the office sector, it can be stated that the physical work environment has a direct impact on the health and productivity of the office workers. Health includes physical and mental health, wellbeing includes broader feelings or perceptions of satisfaction and happiness, and productivity denotes more explicitly to business-oriented outputs. For example, a meta-analysis in 2006 of twenty four trainings found that deprived air quality sank performance by up to ten percent, such as typing speed. Short term sick leave has also been found to be thirty five percent lower in offices ventilated with greater supply rates of outdoor air. A research in 2006 on thermal comfort indicated a ten percent reduction in performance at both 30°C and 15°C, compared with a baseline between 21°C and 23°C. And in terms of lighting, another, which investigated the relationship between view quality, daylighting and sick leave of employees in administration offices of Northwest University, Washington, found those in offices with better daylight and views took six percent

Figure 2: Working in a decorated office can promote happiness and help people concentrate on the task at hand (Haslam, 2010).

fewer sick days (Haslam, 2010) (figure 2). Neuroscientists have also concluded that workers with offices that have windows which receive more daylight exposure during work hours sleep an average of forty six minutes more per night and are more relaxed. If daylight access to windows is maximized, it not only reduces the need for electric lighting, it also improves productivity and even workers' sleeping patterns. Even if people are given more personal control over temperature it typically makes them happier, while also saving energy (Alker, 2014).

According to another research, most of the present-day offices offer very little user control, but studies suggest this practice needs to be challenged. When people sense uncomfortability in their environs they are less involved, not only with the space but also with what they do in it. If they are given some control, this behaviour changes and people report being happier at work, relating more with their employer, and are more effective when doing their jobs.

Another study suggested that participants take on a series of tasks in a workspace that are either lean (bare and functional), enriched (decorated with plants and pictures), empowered (allowing the individual to design the area) or disempowered (where the individual's design was redesigned by a 'manager'). According to the literature review people working in enriched spaces were seventeen percent more productive than those in lean spaces, but those sitting at empowered desks were even more efficient - being thirty two percent more productive than their lean counterparts without any increase in errors (Haslam, 2010).

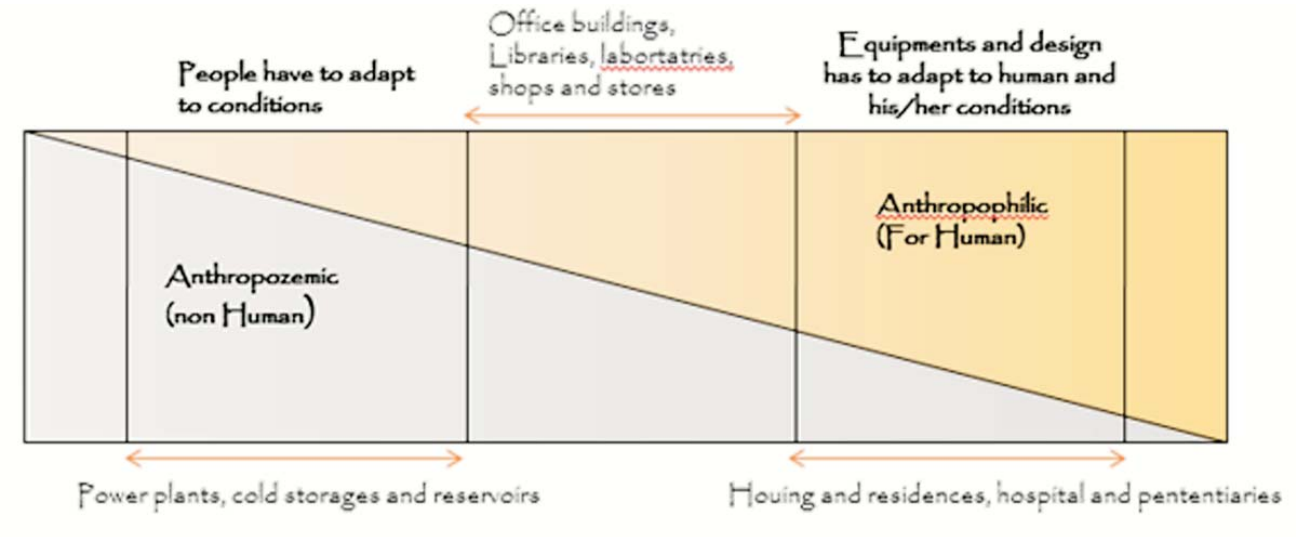

Figure 3: The concept of Competence (Lang, 1987).

Thus, it is the need of time to recognize the potential improvements that can be made by handing some control of space over to workers and thereby giving them an opportunity to realize their own identity in the workplace. Not only does office design determine simple things like whether people's backs ache, it has the potential to affect how much they accomplish, how much initiative they take, and their overall professional satisfaction.

Fundamental Concepts of Person-Built Environment Relationship

Lang (1987), suggests that some buildings are designed more for the successful functioning of machines and equipment than for the people who run them. In other buildings, the needs of people are paramount (figure 3). He labels the former type as "anthropozemic buildings" and the latter type as "anthropophilic." In anthropozemic buildings people adapt to the conditions, in anthropophilic buildings the equipment has to be adapted to the conditions of people (Lang, 1987).

An environment can be considered to consist of interrelated geographic, built, social and cultural components that contribute to certain behaviors in consistent ways. The set of affordances of the environment at a location constitutes the potential environment for human behavior at that place. Not all these affordances are perceived by people involved. Each individual has a variety of competencies in dealing with different aspects of the built environment. Some of these aspects are physiological and some are social and some are cultural. These differences affect the way the environment is perceived, the images people have of it and the way it can be and is used. The environment in which people socialize shapes competencies, because what one knows and what one learns to look at is shaped by what the environment offers. It is possible for people to be able to perceive the affordances of the environment for others, while being unable to use these affordances themselves, because they do not have the competence to do so, or because cultural pressures prevent them from doing so or because they lack resources in money or time. Attitudes may change because of factors within the person. An important factor here is the principle of cognitive consistency. This theory starts from the idea that one seeks consistency in one's belief and attitude in any situation where two cognitions are inconsistent (McLeod, 2014).

Even though an environment impacts on the set of behaviors, this does not mean that the behaviors will take place, even though people perceive the affordances and are component enough to use them. On the other hand, if the affordances are not there, the behavior cannot take place. The environment can be adapted to afford the desired behavior, or else the people concerned may adapt their behavior to cope with the environment as it is. These adaptations may be accompanied by physiological or psychological stress. This particularly

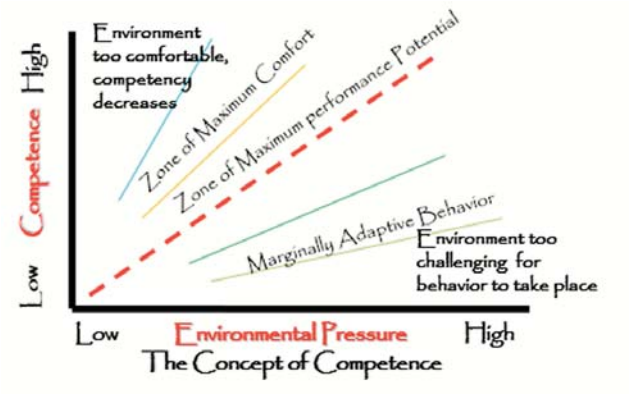

Figure 4: The concept of competence (Lang, 1987).

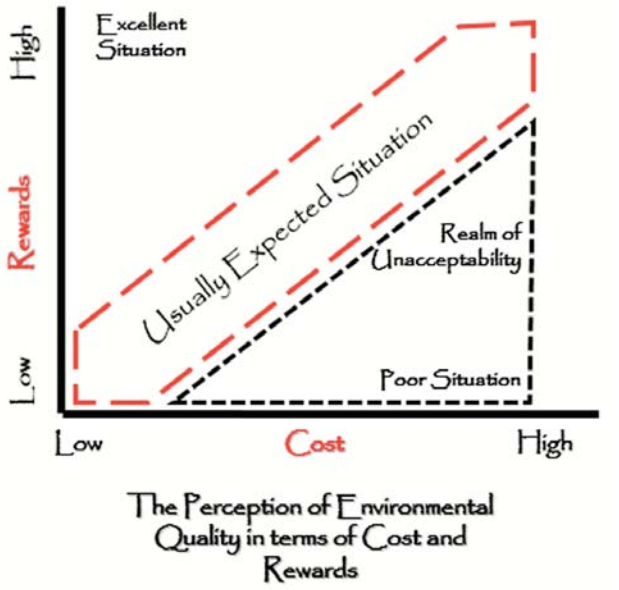

Figure 5: Perception of Environmental Quality (Lang, 1987).

occurs, as dissonance theory explains, when people are in situations that are not self-chosen. The role of architectural environment is thus accommodative and not deterministic except in a negative sense; if the built environment does not encourage the behavior, the behavior cannot take place (figures 4 and 5) (Saarinen, 1976).

A building design impinges on people's lives through the affordances it possesses. It cannot be assumed, simply because the environment contains a set of affordances for the activities for policymakers or designers. Not all people perceive the affordances of the environment in the same way.

Effective environment is different for different people. If the differences occur haphazardly, then the conclusion one would reach is that all that can be achieved through design is to allow some behaviors and to exclude others a purely possibility stance. Behavior does not however, occur haphazardly. It has certain predictability. It is possible to make predictions, but who will use what facility, who will bother to look at which architectural composition, and who will respond to spaces warmly and who will not respond at all can only be predicted without much certainty.

Research Methodology

Quantitative interviews were conducted with thirty five office going people in Karachi, to find out the pattern of office life that people have and what type of behavioral changes they are enduring because of office environment. The effect of office design on mental health, psychological and physical needs was also investigated. The questionnaires were made on google forms and were filled online, and were limited to the office workers of Karachi. The questionnaires were answered by thirty five individuals working in different types of Karachi's offices. The questions asked were related to office design, ergonomics, thermal controls in the office, relations with the colleagues and management, and the way people commute from their house to their office and back. Questions mostly focused on how the above-mentioned aspects impacted on the behavioral changes in people. It was made sure that the questions covered all types of queries that generally depict the moods of office workers and how their surroundings affect them. Questions regarding the after-work life and the behaviors after work were also made part of this exercise. The collected data was analyzed using quantitative analysis and was put together in the form of pie charts, whereas the explanations and the qualitative analysis were also done in detail.

Initial observations through informal interviews

Common observations deduced from the research were that almost all the people who work in offices in Karachi suffer from frustration, stress and anxiety. This data was gathered from questionnaires as well as through three informal interviews from people who

are inhabitants of Karachi and work within the city. The hypothesis, that normally everyone who goes to work in the vicinity of Karachi is bound to have a higher stress and frustration level than the other cities of Pakistan, was made. The reasons behind the stress are variant but mostly revolve around the design incapabilities of the workplaces. Office spaces have no concern for the comfort and mental relaxation of the workers. The focus is just on earning money, thus expensive equipment, which is the liability of the company, is given much more importance and comfort than the people working in that space. Most of the businesses focus on short-term feasibilities and are not concerned about the long-term goals. This is the reality of most of the offices in Karachi and users are forced to accept this situation as the unemployment rates are high. The irony is that even the architectural firms mostly work in small cramped spaces or small houses are utilized for the purpose of giving more space to the plotter, desktop systems and furniture, then the person working there. Over all, these spaces mostly do not see the daylight and are either ventilated through air-conditioning or are suffocated with almost no proper cross ventilation. On the contrary, it is observed that few spaces which are designed properly and make the users comfortable have been more productive not in terms of the business but in the long run positive behavioral changes of the employees. Secondly these people have a better after office life, and are more productive and healthy, as the employees do not suffer from after work stresses.

FINDINGS

The age brackets of the respondents was between twenty one and forty years with fifteen percent being between twenty one and twenty five years, thirty two percent being between twenty five and thirty years and fifty three percent being between thirty and forty years. The respondents were all from the private sector. Fifty percent of the people who responded worked in formal type of workplaces, the rest worked in semi-formal places and just a very minute six percent people worked in informal offices.

Mostly the informal and semi-formal office setups belonged to the people who worked in creative and arts related fields. Two of the people related to the creative field gave a detailed insight about the office environment and how they felt about it. These people had mixed reaction about their jobs, as according to them, they loved their jobs but also had the most hectic and over board schedules, which made them cranky and frustrated on some days and over the moon on other. According to them, most workers in their field sat in combined open spaces, so that they could interact easily and share and get views on their ideas more efficiently, without leaving their seats. This was a nuisance in some places, as the creative ideas got copied. Some creative design offices and the architectural firms let people sit where they wanted to give more boost in their thinking capability. The spaces designed for these sitting spaces were normally relaxing and comfortable and produced better results. The formal offices had closed cabins intended to isolate people from each other so that they were able to do more work without being disturbed. Individual offices belonged to the workers in the upper management. Eighty seven percent of the office workers did not have comfortable seating arrangement and ended up tired after the day, whereas twelve percent complained about a constant backache. Though almost all the employees liked their own sitting space, mostly because either it gave them a view to the outside world or they had customized their spaces with some personal belongings of their own. Some of the employees did not like their seating spaces, especially those who had seating near the entrances, washrooms or those who lacked privacy (figures 7 and 8).

On asking whether their office spaces were well ventilated, seventy percent responded that their offices

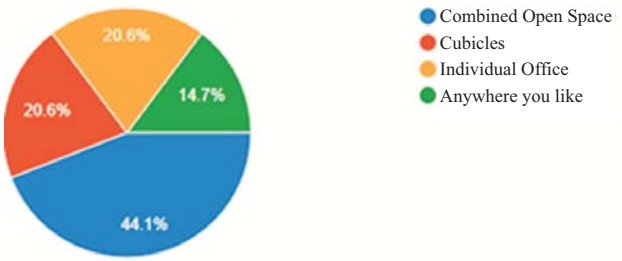

Figure 7: Seating arrangements in offices.

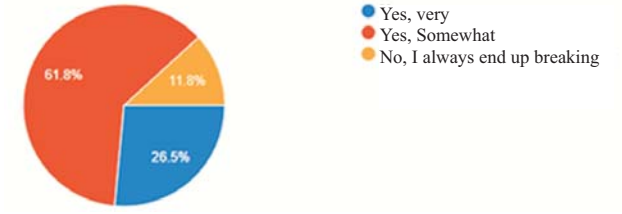

Figure 8: Is the chair comfortable?

were ventilated through artificial air conditioning only, whereas eighteen percent thought they had suffocating spaces and almost twelve percent claimed that their offices were well ventilated (figure 9). Forty two percent of the respondents claimed that they had control of the micro temperature, though thirty four percent of the offices were centrally air-conditioned. About forty seven percent of the offices caught daylight which did not hamper the indoor temperatures, whereas thirty five percent of the office workers did not see the sun throughout the day (figures 10 and 11).

About fifty percent of the respondents were comfortable with their workplace. Almost the same percentage claimed that their comfort depends on several other things. Just twenty percent of the offices were designed by interior designers, whereas most offices (i.e. about forty eight percent) used the space only as per need and did not care about the design according to the user's comfort. Almost fifty percent of the office workers claimed that they barely had enough space to walk and move around, out of which twelve percent claimed that they bumped into things while moving. Though fifty percent claimed that their office spaces were relaxing and soothing, the rest found their office spaces chaotic (figures 12 to 14).

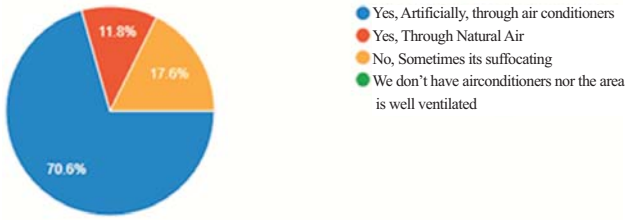

Figure 9: Is your office well ventilated? November 2016.

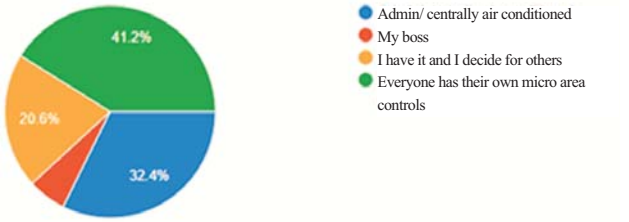

Figure 10: Who has the control of the room temperatures?

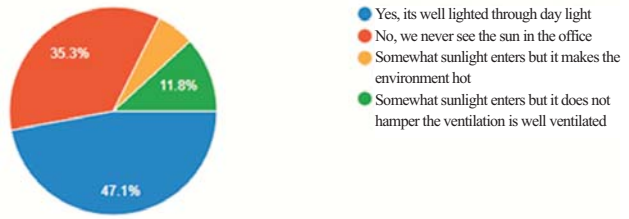

Figure 11: Does sunlight enter your office?

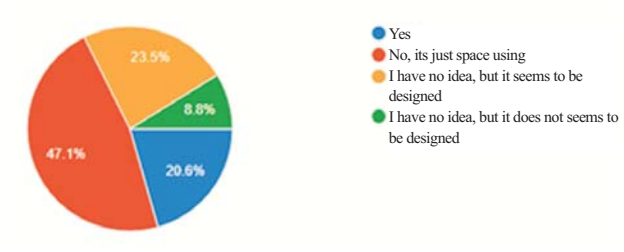

Figure 12: Is your office designed by an interior designer?

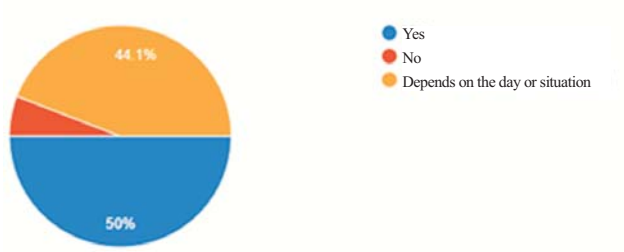

Figure 13: Do you feel comfortable at your workplace?

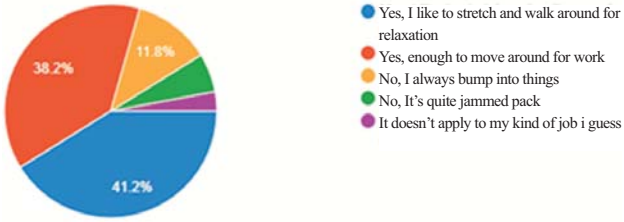

Figure 14: Do you have ample space to walk around the office comfortably?

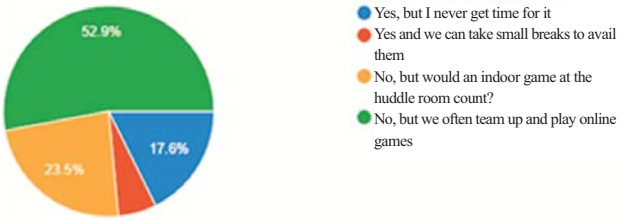

Figure 15: Does your office have a gaming zone or a gym?

None of the offices from the above surveyed group had a gym or a gaming zone for their workers relaxation, but about fifty percent of the workers played online and indoor games in their break hours (figure 15). About sixty percent of the respondents worked overtime when needed, which happened almost twice a week, and twenty percent had a constant overtime requirement which they considered extended office hours only. Interestingly, more than seventy five percent of the office workers were not paid overtime, though they sacrificed their family times for it. The survey also found that mostly office workers did not have

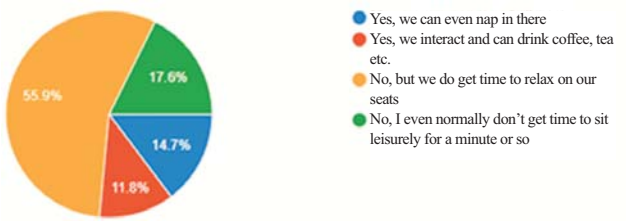

Figure 16: Does your workplace have a relaxation room?

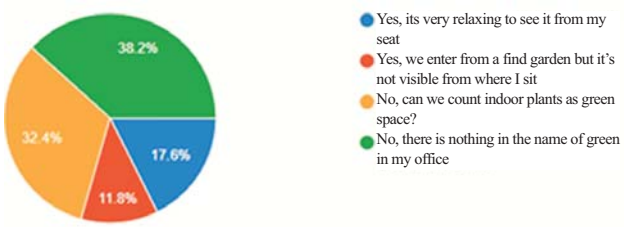

Figure 17: Does your office have green outdoor spaces?

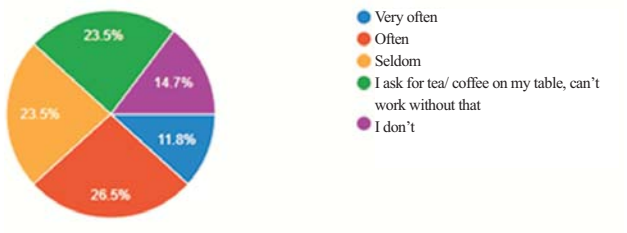

Figure 18: How often do you take breaks?

any relaxation rooms except for the doctor's clinic. The artist's studio had napping spaces in the workplace (figure 16). This was not because they were being given a relaxation time or an extra leverage, but because they had double duties and needed breaks.

Just eighteen percent offices had green or open spaces which were visible from the seating areas, though twelve percent did have a green space at the entrance only. The rest of the seventy two percent of the office had no green spaces, though some potted indoor plants were placed (figure 17). Eighty five percent of the office workers took tea breaks whereas about thirty percent moved around and got some relaxation in tea breaks, though twenty five percent of them took tea break on their seats (figure 18). Almost all the workers found their office space smaller in size as per their need and thought the designs were of average to poor quality. The lighting system in the offices were generally good, though they were artificially lit and even if the daylight did enter the office, it was not enough for every day office tasks.

Most of the workers thought that their offices were in good locations with adequate security conditions, but their offices had poor parking spaces, which made it a daily stress to park before the office hours in a rush and reach office on time. Almost all offices had access to public transport, although only twenty five percent of the respondents thought that the public transport was either not easily available or a nuisance to get. About fifty five percent of the workers had good working relations with their colleagues, whereas thirty percent thought that good and bad people existed together so they had good relations with some and not with others, but the bad relations effected on their stress levels leading to over thinking and making things difficult.

About sixty five percent of the employees travelled more than six kilometers for work, out of which about thirty eight percent travelled more than twelve kilometers one way. Fifty six percent used car pools, twenty eight percent moved around with their bikes and twenty two percent travelled on public transport. Seventy percent of the travelers suffered from hectic travelling routine and disliked daily travel for this much time, with a lot of traffic jams, which they thought was one of the major reasons they felt frustrated. The ones who drove mostly complained of more stress due to traffic (about thirty three percent). Almost all the workers felt very tired, frustrated and stressed after work, out of which seventy five percent thought that it effected their daily lives and after office life, because they were never out of the "after office tired" syndrome. Forty percent of the employees thought that office load was enough for a day and they could not get involved in any outside activity after office hours, whereas twenty nine percent of the respondents indulged in outside activities with their families.

Almost thirty five percent of the office workers wanted to change their office furniture, whereas fifty percent thought that an addition to an open or green space would be quite relaxing. Forty four percent thought that the change in the overall design of their office could affect their stress levels and moods, whereas twenty percent thought that can only get better with better upper management policies, leaving twenty eight percent claiming that they had other things to stress over.

ANALYSIS

According to the literature reviewed, one can conclude that it is an evident fact that architects have always thought about how the environment effects people. The fact cannot be denied that environment does affect people, whether in a negative or a positive manner. Taking the example of Villa Savoye, Architect Le Corbusier thought that the house was a healing machine, whereas it turned people sick. The environment of Villa Savoye did effect the inhabitants but in a negative way. Similarly Pruitt-Igoe was thought to be the epitome of Modern Architectural Determinism and was made as a very strong concept of urban living, community interactions and enclosed playgrounds intended to reduce criminal activities, but it was not successful and became a breeding ground for criminal activities.

With respect to this research and in the case of Karachi, office workers spend forty five to sixty percent of their days in office spaces which are mostly too crammed and more suitable for the expensive equipment than for the people who use them. If these situations are carefully studied and offices are designed according to the needs of the workers and the type of people using it, it will surely impact the behavior of the office workers on a positive note. Health, physical wellbeing and productivity should be the focus of the designs of offices with adequate ventilation, air quality, comfortable temperatures, ergonomics of furniture, green spaces, beautiful views, ambiance and ownership of spaces being the premium tools for design.

From the questionnaires it can be deduced that the average users of office spaces face a lot of stress and frustration, because of the social and physical conditions of these workers, but a sizeable unit of this comes from the environment of the offices which effects them directly. Particularly, office workers prefer green spaces in their offices as these spaces help them relax. The ventilation, temperature control and lighting also plays an important role in making the environment comfortable.

A common trend in Karachi is to ventilate the offices with artificial air conditioning, which is quite disastrous to health and the environment in the long run. Other than that, in the short term too, office workers face non-comfortable temperatures, sometimes they are under the flu zone because of the low temperatures or due to sitting constantly in a suffocating office they develop a reccurring headache. The temperatures must not be in super comfort zone that they effect the productivity of the workers, neither should they be too suffocating. The ability to control temperatures gives the workers enough authority to regulate it to their working comfort. It is also more feasible to let the workers personalize their spaces. Some offices can also have informal setups, which gives freedom to the workers to move according to convenience. These offices can have lounges and lobby seating that can be isolated or combined at will, with lots of green spaces, water bodies and connection with nature to enhance creative thinking. The term creative block is quite common amongst these workers. Sometimes creative office workers have been found to claim that they got an idea by only changing a mere seating arrangement.

In formal offices, the office designs should be according to the need of the people working in them. They should be given feasible breaks to relax. Some gyms, or gaming zones should be part of the design of offices to make the workers stress free. It is quite healthy and relaxing for an office worker to follow a proper break schedule, as it not only increases the productivity but also gives them a recharge to work better. Thus, it is suggested to take about seventeen minutes break after almost every fifty two minutes of work, as it turns out that to be more productive, one does not need to work more, but to work smarter with frequent breaks. Our brains are not made to work for eight hours continuously, so to be a smart productive worker one must take frequent breaks which is spent away from computers, emails and anything related to work and spent on activities such as walking, light exercise, power napping, yoga, tea, chatting with colleagues or even breathing in clearer air (Evans, 2014). To take these breaks, spaces should be designed within the offices (Evans, 2014).

Most of the workers in Karachi travel more than six kilometers for getting to their work place, which becomes very tiring, considering the amount of stress that is experienced on the roads for anyone who is either traveling through public or private transport. This again adds to the behavior of workers in the after-work life, and it effects the daily productivity. It must be considered in the plans for the workers and their comfortability that a proper system of transportation is provided which is comfortable. Most of the companies that provide this facility claim that their

workers are happier in their environment and female population prefers such jobs.

Thus, a clear understanding is needed by the employers to address the workers' health and wellbeing, not only to save their viable asset but to bring more productivity in their businesses. A deep environmental psychological study should be part of any start of the design of an office space to give the workers more strength in the offices, to design the space according to people's requirements and make it more adaptable by the users themselves. Work routines should be scheduled in a manner that no stress or frustration is accumulated from the work place. This not only helps to gain better productivity in a work place, but is also an asset for the company.

CONCLUSIONS

Considering the research questions of how different spaces influence cognition and if there is an ideal kind of architectural space for various kinds of thinking this research concludes that every space impacts upon its users. For architects and designers, the awareness that built environment influences health, wellbeing and productivity of their inhabitants is not new. Studies demonstrate clearly how poor air quality and lighting intensifies the number of sick days and can affect sleep of employees. Sitting spaces, their vicinity, the views which are seen from the space, along with how many breaks a person takes in working hours, all effect the behavior of a person. Creating good indoor air quality, thermal comfort, high quality views, daylight, good acoustics and aesthetical locations and amenities – all play a crucial role in creating a healthy and productive workplace. It all comes to the point that the connection between individuals and the building in which they are employed is vital and impacts on the cognitive behavioral changes of a person. Most of the businesses are missing this understanding and are overlooking the massive prospects this relationship can bring, specially when they are well equipped with all the relative data collected by their departments. In the context of Karachi, with the city being a busy metropolis and having many transit issues, it adds to the stress and frustrations of the workers. Furthermore, offices must include safety and security, as well as good conditional transportation facility from work to home and back. Offices must aim to design better constructive spaces that not only are comfort zones, but the long-lasting effects are in the form of more productive people with employees feeling relaxed in their workspaces, working peacefully and carrying the same positivity to their homes or after work lives. This is again necessary to avoid the mistakes from the past, emerging in the period of Modernism supporting the Architectural Determinism, where architects thought they were creating better spaces but in reality they were adversely impacting the users. For this it is essential that an office design is assisted with proper Environmental Psychology Department, which assists the design team and space typology that should be applied according to the need of the worker and the hierarchal system to produce strategies which are cognitive, supportive and effects the behavior of an employee in a constructive manner.

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BOOK REVIEW

A PROFOUND VIEW OF MODERN CITY PLANNING PRINCIPLES

The Death and Life of Great American Cities

Jane Jacobs

Re-Published in 1992 by Vintage Books, New York (A Division of Random House, Inc)

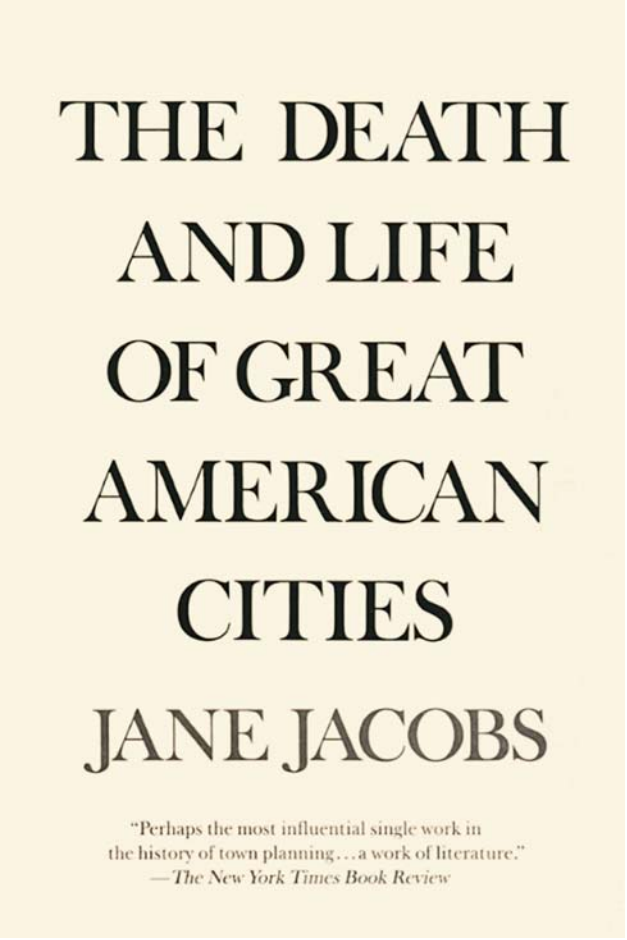
Review by *Hira Qureshi**

The early 1900s, witnessed that cities' character helped to understand the larger process of urban planning. When this role was lost half a century later, it was Jane Jacobs who provided a visionary insight into the complex nature of cities.

"The Death and Life of Great American Cities", since its first publication in 1961 provides a comprehensive insight into the complex nature of cities' growth, predominantly the modern urban planning principles. This book can be considered the standard to deliberate on the current practice within the domain of urban planning. This monumental work also provides an essential framework for assessing how cities work in real life and how they can become socially and economically viable. Furthermore, reflecting on the arguments about the existing planning principles, Jacobs effectively claims to introduce some revolutionary principles of city planning and rebuilding.

Jane Jacobs had no professional training as a city planner. She based this first publication on personal observation of life in large cities, reinforced by indicating how the biological sciences were developing at that time. She lived in New York but frequently travelled to Boston, Philadelphia and Chicago where she met scores of people whose unending support shored up her endeavors. Jacobs acknowledges her husband, Robert Jacobs and generously claims that the offered ideas in the book are either his or hers. Jacobs's book describes the real factors affecting cities and recommends strategies to enhance actual city performance.

Built on an analytical prose, Jacobs's book significantly defines the urban space as the key building block of a city. It briefly explains the influential ideas in Orthodox planning, starting from Howard's Garden City which was a set of self-sufficient small towns and ideal for



all but those with a plan for their own lives. Concurrently, City Beautiful was developed to sort out the monuments from the rest of the city and assemble them in a unit. Later, Le Corbusier devised the Radiant City, composed of skyscrapers within a park. Considering all these planning styles as irrelevant, Jacobs's concept of achieving a sense of place by identifying the real working of cities crucially structures this entire book into four sections.

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The book starts with a section on the "peculiar nature of cities". It appears that Jacobs noticeably contributes the design of a successful neighborhood to radically viable cities. She further explains her claim by mentioning sidewalks and streets as places for movement within a city, and also functional parks for play and relaxation. Elaborating on the fact that pavements can clearly mark a public/private separation to create safe streets, the spontaneous watch of both pedestrians and those gazing at the continual flux of pedestrians from buildings can render streets to become accessible and visible. Well used streets are safe which can be made possible by integrating small neighborhood businesses to attract public, as more people mean more safety. Moreover, the quality of life can be further improved as more functional parks are planned and used by a diverse set of users.

The set of intellectual views in the first part sequentially unfold into the second part, where Jacobs upholds "diversity" as the most rudimentary component of a healthy city. Diversity is an accepted phenomenon of big cities and the conditions for city diversity or the economic mechanism that produce lively cities advocate the central idea of this section of the book. Jacobs argues that diversity is not the root cause of city degradation. Instead, her opinion that diversity forms the core of viable cities emphasizes on four essential generators. The first generator up fronts that mixed land uses would largely generate enterprises to benefit social and economic diversity. The creation of short blocks with readily accessible opportunities at small distances is discussed as the second generator, which aims to control sporadic development. The third generator considers that an attractive mix of different periods of construction should be able to direct economic sustainability. Lastly, the interaction of dense concentration of people, including residents of buildings must productively create economically and socially congenial places for diversity to generate itself.

The discussion on causes and consequences of diversity leads into the third section of this publication which examines four interrelated forces that can influence city decline and its regeneration. Analyzing these forces categorically, Jacob takes the position that "successful diversity can also become self-destructive", suggesting that "some districts might attract more diversified businesses because of their location while leaving the less profitable areas to stagnate and decay", as in the case of erosion from the city center and spillover in the multiple neighborhood districts. "Massive single facilities such as railroad tracks, public parks and school campuses can create borders with adjoining areas and terminate the generalized uses within a city". The resulting population instability increases the growth of slums that predate on the city's resources and even the public and private money having its limitations is incapable of buying instinctive success for livable environment in cities. Therefore, Jacobs recommends that dwellers should seek to stay and develop neighborhoods.

For pursuing the above stated situations, the book concludes with a series of specific suggestions to essentially improve city performance. This last part specifically addresses city planners and architects at large. Jacobs suggests subsidized dwellings should be offered to those who cannot afford standard housing. She proposes that the government should guarantee a rent to the landlords so that in the case that tenants' incomes increase, they are not forced to leave and their rents would be adjusted. Therefore, "diversity would be enhanced by encouraging those wishing to live at locations of their choice". Similarly, Jacobs insists that accessibility of city transportation at those locations should persuade the compact city development. Further on, the author also suggests tactics for providing opportunities to other desired land uses such as widening sidewalks for street displays and more pedestrian traffic to effectively restrict the vehicular roadbed to minimize traffic.

In the light of present cities' circumstances, this book is worth reading to re-evaluate the existing city character and revisit on significant parameters to increase city livability and viability. Although, a very old work of literature, the essence of its intricate blend of events and experiences on how and why compact development should be promoted, unlocks and triggers the thinking of a common man as well as professionals to explore various ground realities of a city's development in a coherent progression. Urban sprawl is a daunting reality today, which invades the core city resources. Likewise, it destroys the natural land cover to accommodate accelerated population growth and is thus, observed as an unsustainable development. This in turn, thwarts the capacity building of cities and proposes greater challenges for city planners, architects and other technical professionals in the field. In the wake of this dilemma, the assertive reputation of this publication dictates diversity, which forms the most valuable section

of this book. The book initiates an analytical foundation for the rest of the reading and delivers a sequential inquiry into the inherent physical nature of a city, which is controlled by overarching forces, to the core of how crucially the citizens can impact their environment. While presenting a comprehensive overview, the author has cautiously aimed to outline some relevant planning principles too, which fall right on target. This book serves well as a tool for students, academics, researchers, decision makers as well as citizens. Any reader can easily identify with the author's claims and arguments, but those unfamiliar with the geography of United States need to refer to maps and photos every now and then. Least to mention, it's been nearly fifty seven years since its first publication and the time of the illustrations and descriptions then and now, has induced a followup analysis of the impact of this book and changes in urban planning over the period of time. The author's own interpretation on a city's evolution, in addition to the critiques of whom she generously recognizes as her utmost support and description of individual experiences of urban spaces positively, makes this book a useful read.

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Urban Design Case Based: Theory and Practice(II)	Vol. 6, 2007
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Journal of Research in Architecture and Planning	Vol. 21, 2016 (Second Issue)
Journal of Research in Architecture and Planning	Vol. 22, 2017 (First Issue)
Journal of Research in Architecture and Planning	Vol. 23, 2017 (Second Issue)
Journal of Research in Architecture and Planning	Vol. 24, 2018 (First Issue)

RANGE OF ACCEPTED TOPICS

Architectural philosophy, Building conservation, Building integrated renewable energy technologies, Conservation led urban regeneration, Eco-housing, Interactive architecture, Land use planning, Low carbon impact buildings, Secondary cities, Sustainable architecture, Urban ecology/ Urban renewal / Urban sprawl, Urban sustainablity / Urban transportation, urbanization .....and many more

BOOK REVIEW: Contributions for our 'Book Review' section are welcome in the form of a brief summary and a sample of the publication related to the field of archiecture, planning and developmen.

For Further Information, please write to JRAP Coordinator 2017-2018
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