

Undividing Lahore

The Temple of Dialogue

Utilizing abandoned Heritage as in order to enhance citizen participation and catalyse a movement for equity

Colofon

M.B. Haq

Explore Lab Graduation Studio 2020-2021
Faculty of Architecture and the Built Environment
Delft, University of Technology

Design Mentor: Harald Mooij

Building Technology Mentor: Freek Speksnijder

Research Mentor: Roberto Rocco

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Acknowledgements

September 2014 was the moment when I started my journey at the faculty as a student. Back then, I was dreaming of designing skyscrapers and becoming a star architect after graduating. This is what most of us dreamt about in the beginning. The reality is different. The journey of the past years made me realise that actually doing something is more important than becoming someone. I started believing that serving people and improving our urban landscapes through design is what an architect needs to do.

This graduation project is related to the elements that are needed, rather demanded in creating resilient communities around us. Creating awareness among people and making them realise what they can achieve through cooperation.

The journey of the last few year was a journey with ups and down, new insights and despairs, moments of inspirations and exhausting all-nighters. But merely happy moments I could not have had without the amazing people around me. People that showed me the way, challenged me and my ideas, exchanged inspirational thoughts with me over good coffee and supported me at all times. I would like to thank my graduation tutors for helping preparing and challenging me in this process, close people around me for helping to evolve and keeping me accompany. My relatives in Lahore, for sharing valuable information with me and sending out my survey. And at last but not least, a special thanks to my wonderful parents and siblings. Who have been there for me since the beginning, supported me to become the person I am today, and will be there for me till the end unconditionally.

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Abstract

The city of Lahore (Pakistan) is suffering from a severe environmental crisis. Water related issues such as droughts, floods and waterborne diseases have interrupted the accessibility of citizens to basic amenities. At the TU Delft, I have been approaching these issues in the Explore Lab Studio for my Master's graduation. In my approach as a future architect, abandoned heritage – Bradlaugh Hall - will serve as an experimental laboratory for testing new ideas along with the reimplantation of local methods for climatization. In terms of programming, a common ground will be set up to narrate the existing boundaries to impede people from meeting fellow citizens out of their circle. Addressing the socio-economic segregation that has characterized Lahore since the colonial rule and has worsened in the last decades. The interaction and transgression among people will allow to learn, express and exchange ideas. Contributing to provoke awareness among citizens regarding their role in society. Along with an urban vision of reconnecting the city with the green structures as an mitigation strategy, the gardens culture will be reintegrated in the life of communities. Who have inherited the beautiful environment as part of their heritage.

Keywords: Water resilience – Duality – Citizen participation – Common ground – Heritage as laboratory

1. Introduction

Large parts of the world are suffering from water stress. As a result of climate change, some regions are suffering from extended periods of extreme droughts and heavier monsoons causing floods. This is also the case in Pakistan. Pakistan ranks among the top eight countries that are threatened the most by climate change and among the top 15 most water stressed countries worldwide (Anwar, 2017; World Recourse Institute, 2020). A changing climate is already disrupting life in cities on different scales and disrupt the agricultural productions. This is visible in the rising temperatures, extreme droughts followed by unpredictable precipitation and unprecedented floods, and displacement of people (Anwar, 2017). To make things worse, Pakistan is already chronically facing issues in water supply, sanitation, floods, deteriorating infrastructure, and degrading aquatic ecosystem (Wescoat, 2007). This research will be focusing on the city of Lahore, the 2nd largest city of Pakistan with almost 13 million inhabitants (The World Factbook, 2020). In terms of commerce, trade and industries, Lahore is the 2nd most important city in Pakistan (Bhatti & Rana, 2017).

Problem statement

Lahore is suffering from a severe environmental crisis relating to climate and water issues than mentioned above (Abubakr, 2016). Namely shortages, polluted water bodies, waterborne diseases, insufficient drainages and floods (Wescoat, 2007). Coupled with the ongoing disputes about recourses, infrastructures, amenities and ecology, allowing unsustainable constructions, that are a devastation for Lahore and its heritage (Anwar, 2017; Latif, 2018). Decades of erratic urban planning, corruption in state run institutions and greedy developments have resulted in the local ecology to vanish - which would have mitigated the effects of natural disasters - increasing pollution and affecting the health of citizens (Abubakr, 2016; Anwar, 2017). However, the current legal frameworks and governance are limiting planners and designers from adapting or implementing new methods and ways of operating. Hampering the transformation of Pakistani cities into sustainable environments.

Relevance

Lahore has already become one of the most polluted cities in the world (Zahra-Malik, 2017). The numbers of PM 2.5 particles measured in the air, crossed 30 times the maximum limit of what is considered safe by the safety standards of the Pakistani government (Zahra-Malik, 2017).

In the following decades, Pakistan will face an unprecedented growth of the urban population and rates of urbanization (Westcoat, 2007). Similar to other large cities in the Global South, the city is expanding rapidly being considered as an expanding Megapolis (Khosa, 2015). The built-up area doubled between 1999-2011 (Bhatti & Rana, 2017). The population has almost tripled in between 1998-2020, from 5.1 to 13 million (Sajjad et al., 2009; The World Factbook, 2020). The high rates are pressuring city administrations which are already dealing with small funding, corruption and the absence of knowledge to cope with the issues which will come from rapid uncontrolled urbanisation coupled with the effects of climate change (Bhatti & Rana, 2017). The consequences are reflected in the current state of affairs of the city. The massive urban growth already had a significant effect on the climate, producing vast effects on the urban temperature (Sajjad et al., 2009). Meanwhile, already 30% of the population is living in substandard housing, with little access to sanitation and running water (Sewidan, 2015).

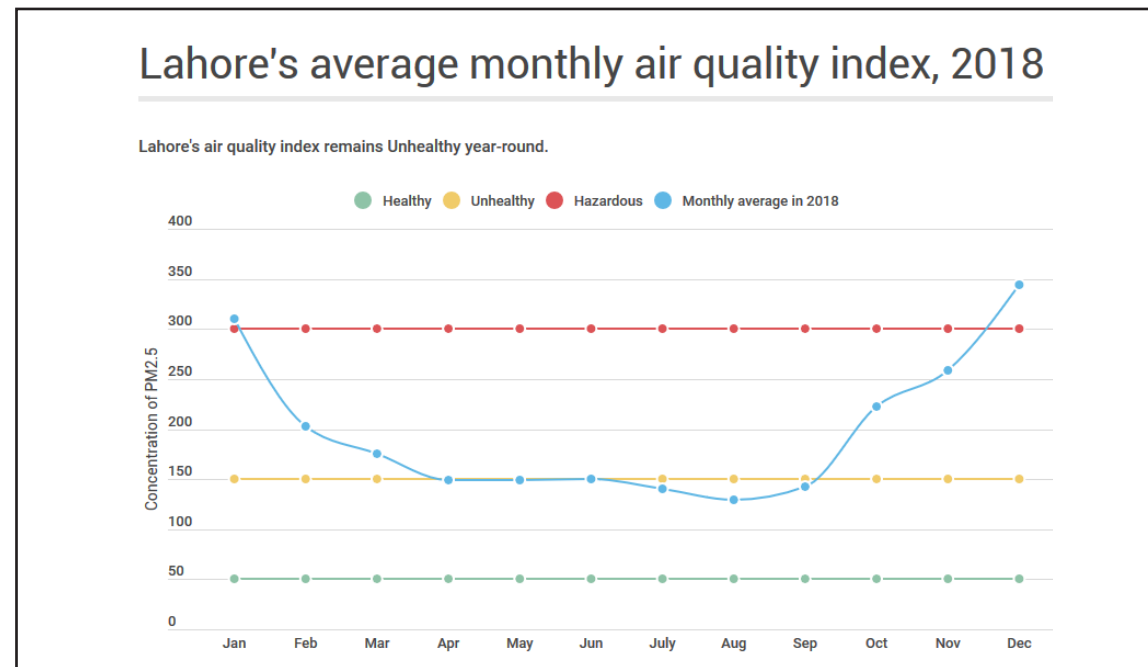


Figure 1: Air quality in Lahore (retrieved from: dawn.com; Butt 2019b)

Structure of paper

In the following chapters, the relevance of this paper and theoretical framework will be defined and elaborated relating to space and identity and the Genius Loci. After addressing the research question **'How can architecture address and translate the local Genius Loci of Lahore, while addressing the (broken) relationship with water?'** explanation will be given regarding methodology in chapter 6. Before answering the sub-questions background information will be given regarding Pakistan and Lahore general in chapter 7. Chapters 8, 9 and 10, in-depth analysis will be elaborated regarding the relationship of Lahore with water followed by 11 chapter elaborating the spirit of Lahore. In chapter 12, the strategy will be proposed for the design and function followed discussion and conclusion. The appendixes after the reference list will provide background information regarding various topics.

2. Tools of an architect

Position

This research addresses the issues and case from the perspective of a future architect. Hereby, the implementation will be on an architectural scale engaging the enclosing space around the building. The architect is not in a position to solve the issues urban level or reform the state run institutions. However, he may opt for a tool to address these problems, and start from a smaller scale, and give certain tools to the citizens to advocate for their interest, for their community, in their own city. Hereby an architect will take a role of an activist and initiator in a process-based initiation. Yet, in order propose a solid long-term strategy, it is a necessity to understand the issue profoundly and address the root of the issue. A sustainable proposal is viable only when the neglected aspects – such as identity and context - are considered in the strategy.

The issues mentioned are partly rooted in the socio-economic segregation that have been characterizing society since the former British colonial rule. The recurring model of a once built narrative, the one of colonizer and the colonized is still continuing (Aslam, 2016). This pattern of duality has segregated society in terms of social-spatial planning, privileges, reflecting in the policies of the local governments where the rights to access basic amenities of the urban poor have been neglected (Anwar, 2017). Citizens are ill-informed and have little to no input in the decision making policies. Even when the government has failed to provide basic amenities for all, wealth and the technological developments have allowed the rich separately from the poor in gated communities where amenities were provided to those who could afford (Altaf, 2007). Reflecting two different Lahores at same times in parallel. Chapter 8, 9 and 10 will elaborate the points mentioned.

Vision

As an future architect and activist, my vision for Lahore is to become an inclusive resilient city for all, with no differences regarding socio-economic status or background. Breaking up the duality that has divided the city for decades. In long term, the awareness among citizens is a way to mobilize them and catalysing a movement in long term. To threshold as a counterforce for advocating a shift towards resilience. The cooperation with activists and people specialised in these fields is a cornerstone in this proposal. These actors are in procession of knowledge and insights that is essential to inform citizens. This matter will be further elaborated in chapter 10.

This translated in architecture in two ways. Firstly, a program pursues interaction, dialogue and transgression among people, bridging the gap and allow the exchange of useful information. Secondly, the building as an physical laboratory, experimenting with new techniques in Lahore regarding sustainability, and setting an example for people.

Sustainability

Sustainability is a lexicon widely used in architecture. In common sense sustainability is merely related to carbon neutral construction, multiple glazing, solar panels for energy production, rainwater collection and the use of smart engineering for data collection. Despite the importance of this elements mentioned, I am convinced that people, place and their identity are a critical part of sustainability. By looking at the deeper cultural meaning, understanding the city, morphology and architecture, hidden elements from the past will become visible. Realising that traditional architecture was not merely about aesthetics, but rather eco-friendly and practical (Ilyas, 2017) . This is a ground reason for referencing literature related to Identity and space, written by Norberg-Schultz (1979), Loh (2007) and Nasr (2001). Only when these elements are taken into consideration, we will be able to construct buildings which will meet the needs of the people and limit the damage done to the environment. The theory mentioned will be elaborated in the next chapter.

3. Theoretical framework

The causes of the current environmental crises are rooted deeply in the culture and have shaped the society as it is today. The environmental crisis is part of a larger the existential crisis. Therefore, understanding the place and its identity is fundamental in this research. Authors have already conducted research about the issues regarding place and identity. The theoretical framework of three authors are consulted in this research. Till a certain extent, these three are related to each other, replenishing one another. The Norwegian architect Christian Norberg-Schutz addresses (1979) addressed the identity of space as the spirit of the space, calling it the Genius Loci. Conservation architect and cultural heritage expert Laurence Loh (2007) from Malaysia, addresses the authenticity of a place by using the human body and soul as a metaphor. Similar to this, Iranian historian and philosopher Syed Hossein Nasr (2001), uses the cosmic huma metaphor in defining the city. These frameworks contribute to frame the elements of the city of Lahore and relate them with the past and the possible mutation of the identity of Lahore. These lexicons and theory remain abstract till a certain extent. They need to be elaborated from my own perspective, in order to clarify and give a direction. In the following paragraph, the theoretical frameworks regarding identity and space will be elaborated.

Genius Loci

The architect Christian Norberg-Schultz (1979) is well-known for his proclamations concerning identity and space. According to him, the significance of the place and psychological implications are essential for human life and development. In his essay *Genius Loci: Towards a phenomenology of Architecture* (1979), Norberg-Schultz elaborates the spirit of space (Genius Loci) through the lexicons of **meaning, identity and space**. Aspiring to preserve and reinforcing the sense of space. The lexicon of meaning is elaborated by using three aspects. Firstly, the **meaning** of objects, stating than an individual object is not merely an independent element, but related to other bunch of **objects**, characterized by the virtue of its gathering. On an individual scale, humans are attracted to the characters of these objects. A constant correspondence between own physic and the forces of the environment develops consciously and unconsciously a personal bond. Stating that through these elements, human will consider the environment as meaningful (Norberg-Schultz, 1979). Taking buildings as a physical example, man gives meaning to the concrete presence to visualize and symbolize his form of life as totality (Norberg-Schultz, 1979).

Norberg-Schultz (1979) distinguishes the relationship between architecture and context in rural and urban context. In rural context, vernacular architecture objectifies immediately the meaning of the local earth and sky into architecture. In contrary to urban architecture, where architecture carries a more general values, based on symbolisation and transposition or obtain its own spirit relatively related to the natural environment (Norberg-Schultz, 1979). Thus, the **urban Genius** is never purely local. It is a place where the local Genius meets the foreign, creating a more complex systems of meanings (Norberg-Schultz, 1979).

Regarding History, Norberg-Schultz (1979) addresses the challenges of preservation of an identity under the pressure of historic forces. The conditions of location, spatial configurations and characterizing articulation should be preserved as these marks help in the orientation and identification of the place and the people themselves. Aspects regarding economy, politics and culture should be concretized in a way that respects the Genius Loci. Which means to determine the identity in a way that respects the Genius Loci (Nor-

berg-Schultz, 1979). This is contrasting modernist movements who have lost the association with context.

In relation to spirit of a place, Laurence Loh (2007) talks in his essay *Conveying the spirit of place* about **authenticity** of the place. The authenticity of the place is determined merely my two main elements: The **body**, depicting the physical fabric in its original state and setting. Secondly, the **soul**, carrying the spirit of the place - the memories, traditions, myths - and the continuity of meanings connected with the people and use over time. All together, these narrate the story of a place, generating the identity and giving emotional impact. Additionally, Loh (2007) states that the spirit of the place is not preserved by conserving and presenting, but the way it is used and **valued** by the people (Loh, 2007).

Similar to Loh (2007), Syed Hossein Nasr (2001) considers the city in his essay *The spirits of the cities*, the city as a reflection of the human body. He states that a city should not be considered in terms of physical appearance such as infrastructure, streets and its buildings only. these aspects are comparable with the human anatomy. However, the anatomy is only an element of a human body. Humans are characterized by its physical, psychological, emotive, intellectual, spiritual and psychological elements as well. He advocates to analyse cities in the same way in order to understand its place. According to him, the traditional city was the body that expanded macrocosmically, conceding the loci in elements mentioned with the heart as its centre (Nasr, 2001).

The elements that convey a place as possibly sacred, are subtle forces of people, geography, nature, involving certain events from the past (Nasr, 2001). In this context, the definition of the sacred is an addition for the loci as defined by Norberg-Schultz (1979). Without the heart-centre approach related to the sacred, there can no veritable human city. This is why Nasr (2001) convinces that modern cities are lacking the sense of intimacy, belongings, sense of being in the centre as the constructions were based on a planning without a heart.

Chapter 10 will attend the matter of the Genius Loci of Lahore.

4. Heritage

The ruins as tool

Aside from taking a role depending on capabilities and proficiencies, an architect should seek to utilise tools that are available within reach. In a dense populated city as Lahore, free space is scarce. However, abandoned structures contour parts of the city. Mainly pre-partition buildings that are abandoned and sealed off by the Evacuee Trust Property Board (ETPB). The buildings that were once meaningful are neglected and are rarely valued by many. Nonetheless, these buildings are all opportunities and tool to meet the current needs of the people.

Laurence Loh (2007): 'The spirit of place is not preserved by conserving and presenting, but the it is used and valued by the people. These elements should carry a meaning.'

Bradlaugh Hall

The Bradlaugh hall in one of the buildings abandoned an sealed by the ETPB. Sardar Dyal Singh initiated for the construction for the Bradlaugh Hall in 1900. The Hall is located in Sant Nagar*, Nearby the Data Darbar Shrine just outside the Walled city. The Hall served predominantly in the last decades of the British rule, bearing a meaningful place in the revolt against the British. From the beginning freethinkers, politicians, and writers used this place as a hub to gather and inform the people concerning various matters. Along the frequent visitors were Muhammad Iqbal and Mian Iftikhar Uddin (Ali, 2015). Generally, these writers who are well known for their literature in the East. Irrespective to creed, religion, or political ideologies; debates, literary sittings or mushairas - poetic recitations - would fill the hall with spectators. Along with the political background of the hall, the hall would serve as a cultural forum related to literature, arts and culture, hosting stage dramas and theatrical performances (Ali, 2015).

*Aerial Analysis of Sant Nagar in Appendix D

Value and meaning

Aside for those who are residing in the neighbourhood, the Hall does not serve any purposes for the people or possess any meaning, . In the shadows of the building, older residents often sit together giving them a chance socialise outside in the hot weather (Moffat, 2019). The interior has been neglected and left in terrible state, with traces of cigarette butts and discarded blankets, suggesting the use of the space by rough sleepers and seeking temporary escape (Moffat, 2019).

Intendedly, Bradlaugh Hall was valued for the served purpose. A century later, the few people who know about this building, value the building for its architectural appearance, as a standing historic artifact. The eclectic architectural qualities are considerably valuable in appearance and authenticity. the British architectural elements blend with the local architecture and requirements (Ali, 2015).

Elsewhere in Lahore, it seems that people are unaware of the role this place has played in the history of Lahore. Rather than preserving and restoring - which does not guarantee a relevant purpose and a sustainable future – Bradlaugh has an opportunity for contemporary Lahore to give the people a common ground for transgression and exchange of ideas. As an opportunity to mingle, interact, and bridge people in order to create awareness among citizens of their role in society, and catalysing a movement in long-term. Reviving the original purpose and restoring the Genius Loci of the building.



Figure 2: Bradlaugh Hall front view (Dawn.com; Ali, 2015)



Figure 3a: Interior of the Bradlaugh Hall (Moffat, 2019)

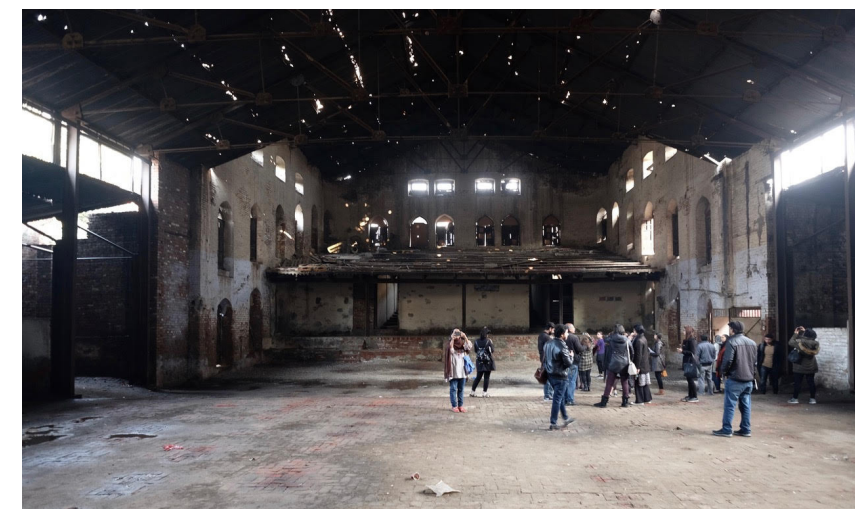


Figure 3b: Interior of the Bradlaugh Hall (Moffat, 2019)

5. Research question

The research question ‘**How can architecture address and translate the local Genius Loci of Lahore, while addressing the (broken) relationship with water?**’ will be evaluated by answering the following four sub-questions:

1. What role did water play in the development of Lahore through its history?

Relating to water, Lahore is a city with a long and rich history. The purpose of addressing the history is to understand how the city has developed over the centuries and the contributions of water infrastructure in the many facets of life regarding culture, technology, architecture and climatization. By examining various factors and the intervention of external forces over time, we will gain insights on the transformation that came along reshaping the society. Information regarding architecture and climatization are useful in the design process later.

2. What is the relation between urban water and Lahore?

A few issues related to water and climate have already been framed in the introduction. This part will excavate the relation between the water infrastructure that contributed a role in the developments in the past, and the role they are contributing at this moment in the collective memories of the people in Lahore. The conditions of the Ravi river and the Canal will be used as examples to set out the issues related to water and the developments that are threatening these public domains.

Note: The Bradlaugh Hall is not directly located to one of these locations. The water infrastructure merely serve as an example in framing the current issues and developments.

3. What is the Genius Loci of Lahore?

The theoretical framework and the outcomes of the first three sub-questions regarding history and characteristics, will give us the tools in defining our own interpretation regarding the spirit of Lahore. The Genius Loci is free to be interpreted in multiple ways. This sub question will define the Genius Loci of Lahore in this particular context related to our design assignment.

4. What actions have activists proposed in order to create awareness among citizens?

This sub question addresses the possible counterreactions in solving the issues mentioned. Citing experts regarding water conservation, creating awareness among citizens, and environmental friendly city planning. These elements will be taken in account in the proposal related to program, redesign and adaptation of the Bradlaugh Hall, and the urban masterplan for Sant Nagar.

6. Methodology

Research was mostly conducted through literature studies. Many researchers within Pakistan and abroad have conducted research regarding the issues mentioned in Lahore. These (scientific) sources provide information about issues regarding water, climate and environment. Framing the issues carefully by giving an in-depth analysis related to issues and the history.

Additionally, actual media depicts the current state of affairs relating to the issues mentioned. A few Pakistani magazines and newspapers - such as Dawn, Tribune, Herald - are characterized by independence journalism providing in-depth articles giving information related to current state of affair. Interviews with activists in these papers frame the pictures related to history and cultural challenges. Additionally, popular media such as blogs and magazines provided background information regarding culture, society and lifestyle. However, images online could not compensate the absence of Google Street view in Lahore. Popular and social media depicted the image of the city and streets adequately, but were limited in the contextual setting of the Bradlaugh Hall. Yet, the presence of researches conducted earlier about the Bradlaugh helped in getting the footages of the building and its setting.

Intendedly, a site visit was supposed to be a part of the research and data collection. Due to the pandemic in the year 2020, this plan was scrapped. In order to overcome limitations, an online survey was set up via Google Forms* to collect information. This survey was forwarded to people in Lahore via relatives living there. This was a way to collect data regarding water and climate and to contact locals. However, the fast diversity of people living in Lahore is not reflected in the survey. All participants were aged between 18 - 34, higher educated, and middle class people. Despite the lack in diversity, they elaborated the situation well and were considerably informed regarding the issues.

*Graphics generated by Google relating to the outcomes of the survey are attached in Appendix A.

The conducted information was framed by writing, mapping and drawing. Additionally, self-made collages helped to frame thoughts and interpretations regarding the topic. These are attached in Appendix G.

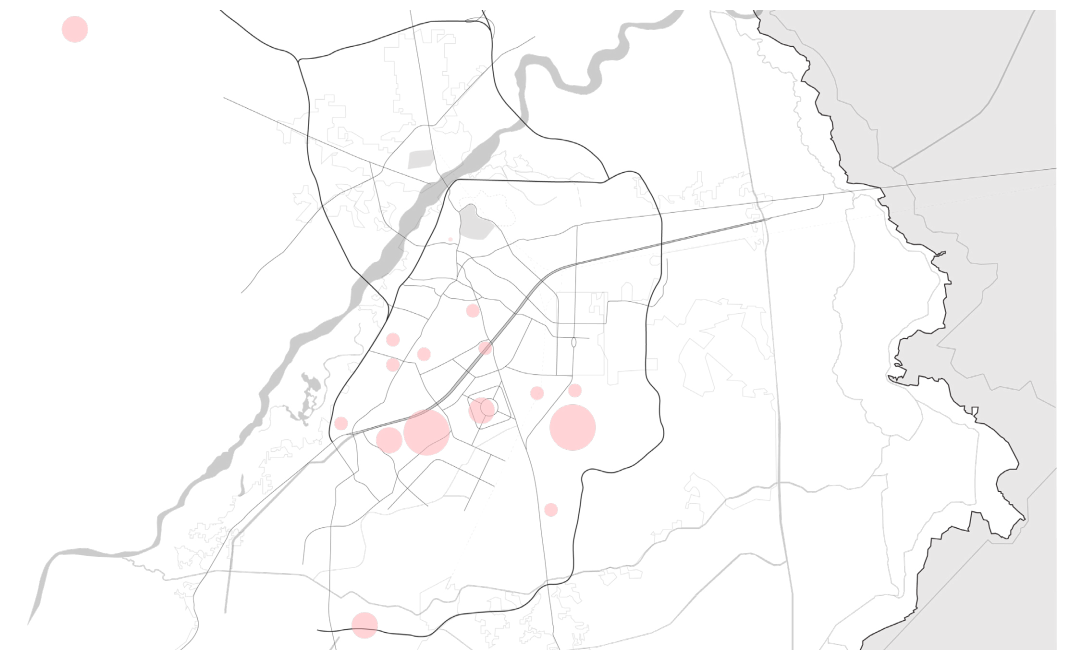


Figure 4: Responses survey (Source: own image)

7. General Information

Pakistan

Pakistan is a country situated in South-Asia, bordering (clockwise) the countries of Iran, Afghanistan, China and India. Pakistan borders the Arabian Sea in the south, which connects the Persian Gulf to the Indian Ocean. Pakistan is 20 times larger than The Netherlands, and has a population of approximately 233 million inhabitants (The World Factbook, 2020). The vast majority of the people are Muslim. However, Christianity, Hinduism, Buddhism and Zoroastrianism are also represented. In terms of ethnicity, the society is more evenly representing Punjabis, Sindhis, Balochis, Pashtuns and Kashmiris (The World Factbook, 2020). The largest city of the country is coastal city of Karachi, with officially 16 million inhabitants (The World Factbook, 2020). This was the capital till the constructed of Islamabad commenced in the 1960s.

Economy

The aftermaths of the War on terror and instability related to safety and political disputes in 2000s and early 2010s, had resulted low foreign investments (The World Factbook, 2020). Currently, main sources of income are exports from agricultural sector and the industrial sector such as textiles, sports equipment, food processing and medical equipment (The World Factbook, 2020). However, the informal trade and services play a major role in the economy and the livelihood of the working class.



Figure 5: Map of Pakistan (Source: own image, base retrieved from Google)

Politics

Since independence in 1947, The politics have been turbulent. Between 1947-2020, the country has been ruled by militants for almost half of the time. Namely during the periods of 1958-1971, 1977-1988 and 1999-2008 (Hashim, 2013).

Yet, Pakistan still has a long way to become a full democracy with independent state run institutions. Only since 2013, governments have completed their a five-year terms that were previously dismissed by presidents or abruptly ended by a military coups (Hashim, 2013). The current ruling party (PTI) has been in power since 2018, breaking the 50-year long duopoly of the two other main political parties which are under dynasty control of the two richest families of the country. These families - the Bhutto and Shareef clan – are accused of gaining their wealth by taking bribes and nepotism (BBC, 2019). The current governing party has advocated for new financial and social reform, an attractive investment climate and fighting climate change by a mass tree plantation program. Since being in control in the Khyber Pakhtunkhwa province since 2015, 600.000 hectares of forests have been recovered in three year time (Hutt, 2018).

Lahore

Lahore had a significant importance in the history of South Asia (Khan, 2015). For centuries, Lahore has contributed as main cultural, administrative and economic centre. Abdul, vizier during Emperor Akbar's reign – between 1555-1605 - cited Lahore as "a very populous city, the grand resort of people of all nations, and a centre of extensive commerce." (Khosa, 2015).

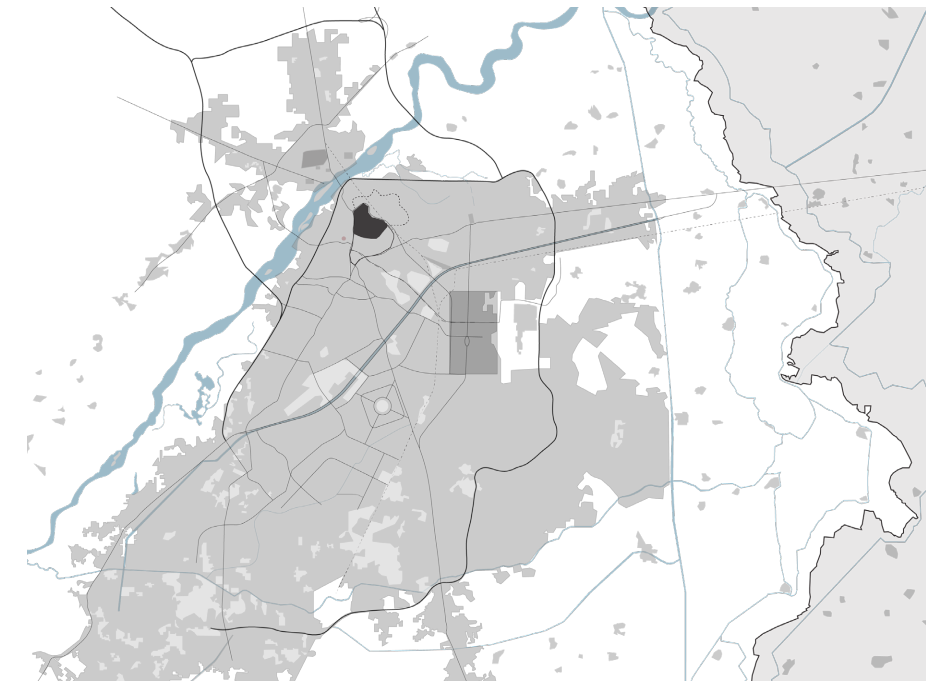


Figure 7: Map of Lahore (Source: own image, base retrieved from Google)

In the Walled city, traces are visible of Afghan, Turk, Hindu and Mughal interventions from the periods before the colonial rule (Khosa, 2015). This ancient city has played a role in the reign of the Mughal Empire from 1524 – 1748 and as capital of the Mughal Empire in the 17th century (Bosworth, 2007). It is strategically located on the Grand Trunk Road, the millennia old trade route linking the cities of Kabul, Peshawar, Delhi and Calcutta (Khan, 2011; Rehman, 2009). In literature, the city is often recalled as the City of Gardens. Referring to the gardens that were laid out during the Mughal Empire throughout the city with trees, ponds, fountains in order to cope with the harsh and dry weather (Ali, 2015). Back then, networks of wells, canals and cisterns were used to provide water to the city and its gardens (Siddiqui, 1986). Examples of Mughal architecture in the cities are the Badshahi Mosque, Shalimar Gardens (a UNESCO world heritage site) and Lahore Fort (Bhatti & Rana, 2017). After the reign of the Mughals in Lahore, the city felt in the hands of the Durrani Empire for a short period in 1748 (Bosworth, 2007). In 1767, Lahore was captured by the Sikhs till the colonisation of Punjab by the British in 1849 (Glover, 2008). The city is lesser known for the architectural heritage of the Sikh Period, such as the shrines and temples. The British for example, have constructed various landmarks during their reign such as the University of the Punjab, Lahore Museum building and the King Edward Medical University. In present day, Lahore is still the cultural heart of Pakistan and provincial hub of Punjab. Hosting arts, music, film, festivals, cuisine, politics and significant hub of publications and education (Asim et al., 2016; Khan, 2015; Sajjad et al., 2009). Since November 2019, Lahore has been included as a City of Literature by UNESCO in the Creative Cities Network (Booksandpublishing.com, 2019; UNESCO, 2020). The rich history of visible in the presence of old mosques, shrines, forts, palaces and gardens. The Shalimar Gardens for example, are appointed as a UNESCO World Heritage Site.

Partition

The Partition – the independence of the Indian sub-continent from British rule and Pakistan’s breakaway from India in 1947 left the city with deep scars. Till the last moment, the exact route of the Radcliff line - border of Pakistan and India - was unknown to people, leaving people in Punjab uncertain whether they would belong to India or Pakistan (Talbot, 2007). The announcement that Lahore – the centre of Punjab - would be given to Pakistan caused riots and turmoil among the people of Lahore (Kudaisya & Tan, 2000). At that time, Lahore was for 65% Muslim and the other 35% percent were Hindi or Sikhs (Talbot, 2007). Riots and fires destroyed almost 10% of all property of the city, leaving various areas in the city were in ruins (Talbot, 2007)

Additionally, The partition was the largest migration of the 20th century displacing 13 million people in the subcontinent, of which 10 million in Punjab only (Talbot, 2007). At that time, the city received a large amount of refugees coming from the eastern part of Punjab and the north western part of India. Lahore was the gateway most refugees entered from, as the city is located only 8 km from the border with India. At its peak Lahore facilitated 1 million refugees (Talbot, 2007). For a long time, Lahore suffered from economic decline and the aftermaths of the turmoil during partition. It weakened its economy and industrial production (Kudaisya & Tan, 2000). This was worsened by the denomination of Karachi as capital, which had remained relatively undamaged and calm during partition and was more prosperous and industrialized after independence (Kudaisya & Tan, 2000). After the post-partition decline, Industries started emerging in Lahore from 1965, concentrated in the southwestern part. These industries led to an increase in pollution and migration to Lahore in the decades that followed (Khosla, 2015; Talbot, 2007).

The events of the partition were described as traumatizing for the people in the subcontinent. The first generation Pakistani people never had the opportunity to recover and heal from the events in the past. Especially in Lahore, were the destruction of the city was compared with London during the Blitzkrieg.

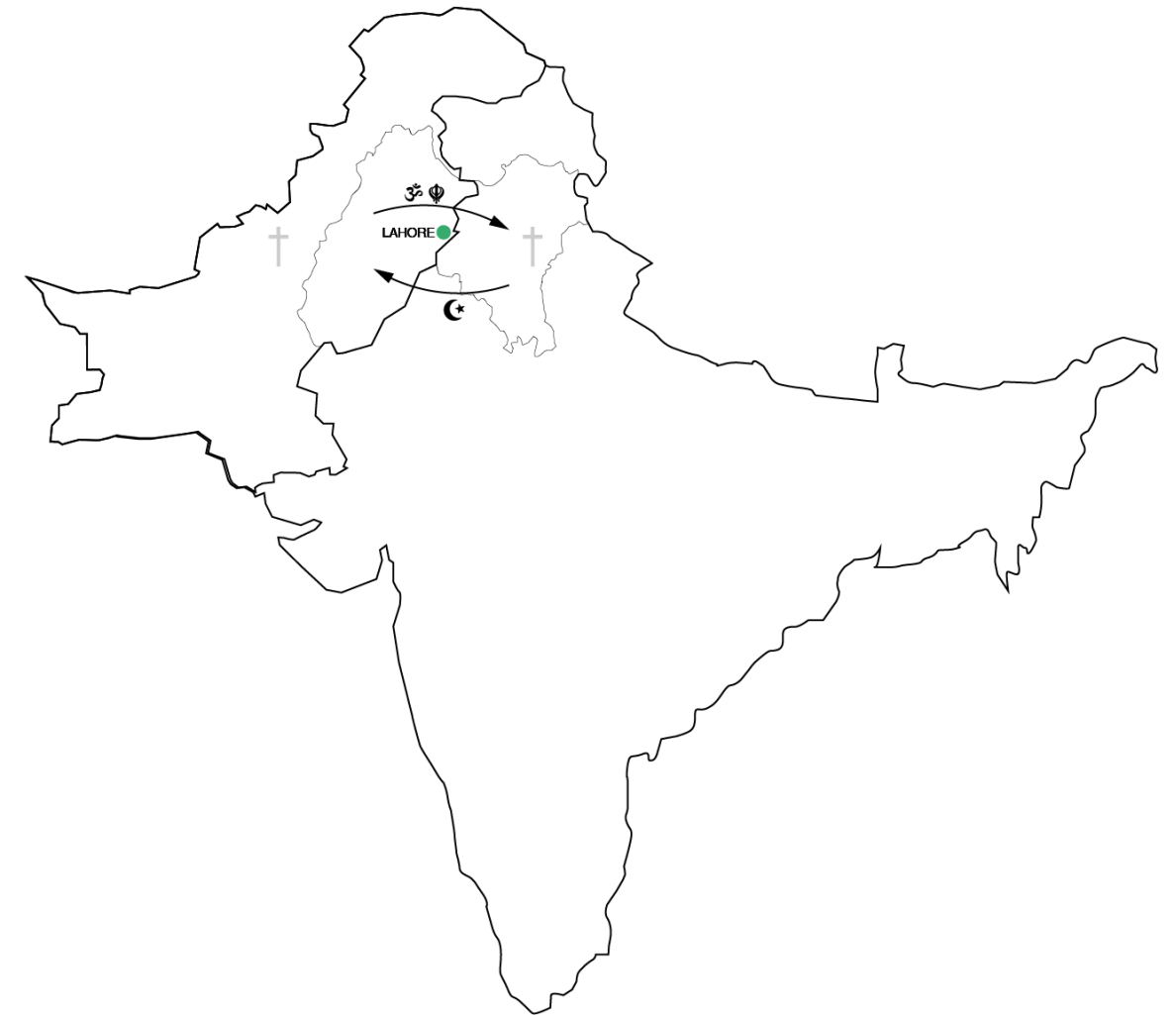


Figure 8: Migration during partition (Source: own image)



Figure 9: Parts of Lahore in ruins during partition.
(Source: ideastream.org)

8. History of Water

General

The climate of Lahore is a semi-arid climate with monsoons starting in July lasting till the end of August (Ali et al., 2009). To guarantee growth and developments in an environment that is naturally hot and arid, a fast network of canals and wells for irrigation is required. Since the beginning of civilisation, the prosperity of Punjab depended on the water flowing in the area (Siddique, 1986). The first traces of water management and irrigation date back to 3000 BC. At that time, the Indus Civilization used innovative tools along the river banks, irrigated by the annual tides of the Indus river and its branches (Rehman, 2009). These presence and cultivation of water would catalyse urbanization along the river banks. (Wescoat, 2007)

Relating to water, Siddique (1986) has described the characteristics of the northern part of the subcontinent before the arrival of the Mughals in early 16th century. In his research *Water works and irrigation system in India during pre-Mughal times*, Siddique (1986) has mentioned a few works that were quite advanced in that time. This was made possible through trade and close cultural ties with neighbouring countries, that would enable Indo-Muslim rulers to utilize skills and services from abroad. These folks from different places would contribute the developments with new technology and types of arts. The synergy of different ideas, types of techniques, arts and architecture delivered from foreign lands, would encourage/inspire new ideas and types of architecture, arts and technology to emerge, which would be a modification of traditional crafts adapted to the new context, blend (Siddique, 1986). These features were added in architecture and design of gardens and water-works but also in script and language (Siddique, 1986).

The elements mentioned reflect a highly developed society which formed the social milieu domain of the aristocracy of medieval Indian. The prosperity enjoyed by the farmers in Punjab, Haryana and Delhi were associated with the advanced methods of irrigation (Siddique, 1986).

Mughals

The rulers of the Mughal Dynasty originated from Central Asia. Upon the arrival of the first Mughal Emperor Babur in South Asia in 1519 AD, inscribed his early impressions in his memoirs – *Tazuk-e-Babri* – mentioning the cultivation of rice and sugar-canes, that was highly depending upon the irrigation through the Persian Wheel (Siddique, 1986). regarding climate, he complained for being harsh and dusty climate, citing:



Figure 10: Map of Mughal Empire (Source: own image, base retrieved from Google)

'One of the great defects of Hindustan being its lack of running water, it kept coming to my mind that water should be made to flow by means of wheels erected wherever I might settle down, also that grounds should be laid out in an orderly and symmetrical way. With this object in view, we crossed the Jun water (the river Yamuna) to look at garden – grounds a few days after entering Agra. Those grounds were so bad and unattractive that we traversed them with a hundred disgusts and repulsions.'

Babur and his army had spent most time in Central Asia, making it difficult for them to cope with the climate. In his memoirs, Babur mentioned gardens which were laid out orderly and symmetrically, corresponding with the concept of gardens inspired from the gardens in Central Asia which were constructed on foundation of the Chahar Bagh principle, such as Herat's Timurid Gardens where the grounds were laid out orderly and symmetrical which Babur had experienced earlier in his career (Ali, 2016). By his means, he intended to introduce a new type of garden. Though the geographical differences required different species (Herat was cooler, and located on hill). The flowing water were possible in regions like Kashmir where topography would allow the flow of water by gravity. In other areas hydraulic systems were necessary (Mughal, 2005). These gardens with canals, of running water, fountains and pavilions were entirely different in expression than the gardens of earlier periods (Mughal, 2005). Resources have stated that the Mughal garden were greatly inspired by the concept of paradise as described in the holy Quran (Ali, 2016; Siddique, 1986).

These gardens which were constructed by the Mughals in virtue of irrigation canals, did not serve any agricultural purposes, but rather as "field of representation" as cited by James Wescoat (2007) in Rehman (2009). This is in contrast with the eras that would follow after the Mughals and Sikhs.

Typologies of gardens

In early days, gardens were isolated and used as enclaved private gardens for pleasure inside the Mughal Courts and residential complexes. In the case of Lahore, these were located in the citadel in the heart of the walled city (Rehman, 2009). By time, new gardens were added along the banks of the Ravi river and other places outside the citadel and the Walled City, which would become an integral part of the physical structure of the city. The physical relation between the city, suburbs and garden grew stronger over time when new gardens were added along the routes the city. The gardens were commissioned by the Mughals and built hanging gardens, terraced gardens, hunting estates, tanks or gardens without vegetation. Despite the varieties in position, scale, typologies and locations, these gardens were rarely used

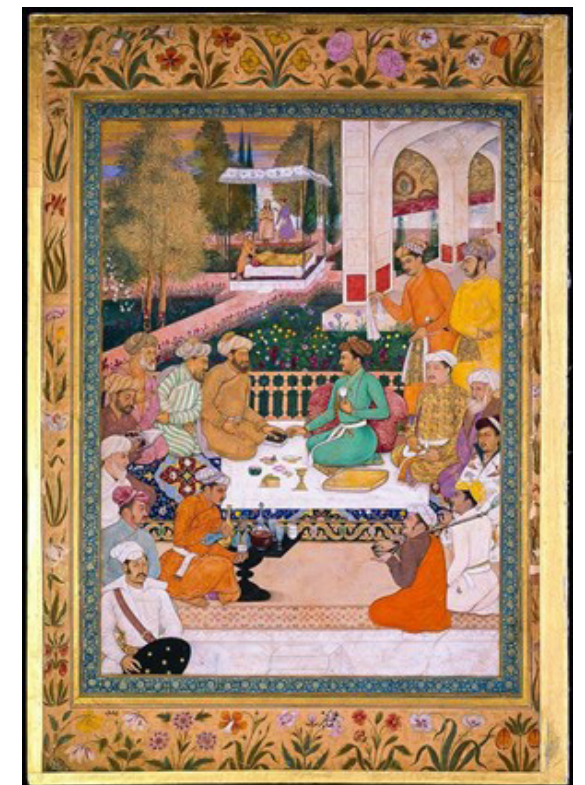


Figure 11: Painting of a gathering in a Mughal Garden (Source: pinterest.com)

by the public or serve community purposes (Rehman, 2009). At peak, there would be more than fifty Mughal gardens in and around Lahore. Even though Lahore had started to decline from the 2nd half of the 18th century The Sikhs would have added at least 24 more gardens (Mughal, 2005). Despite the decline of Lahore, the City of Lahore managed to maintain its identity as The city of Gardens in Central and South Asia.

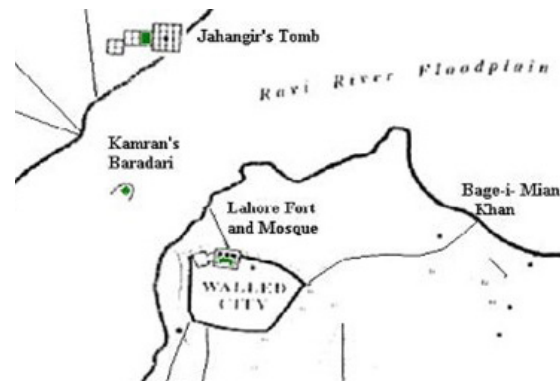


Figure 12: Lahore centred around Ravi. (Source: Wescoat in Gilani et al., 2013)

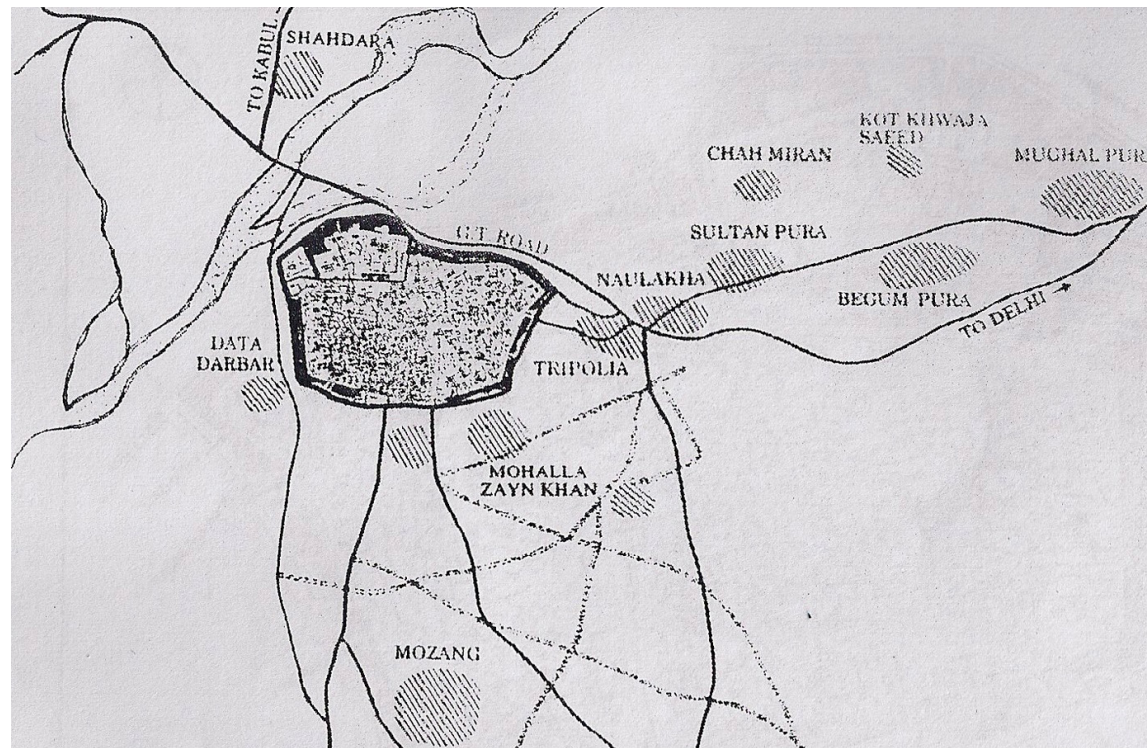


Figure 13: Mughal Lahore with settlement around outside the Walled city (Source: Khan, 2015)

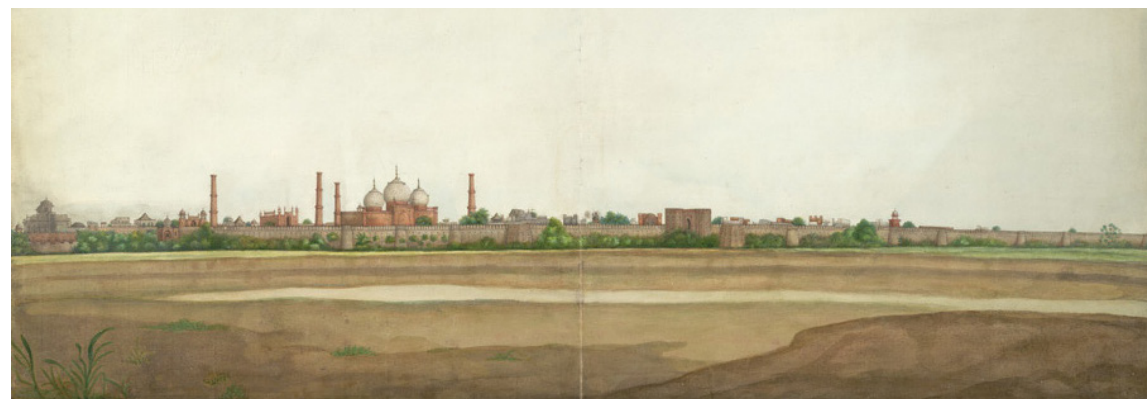


Figure 14: Lahore 1825. (Source: Khan, 2015)



Figure 15: Lahore before 19th century. (source: Khan, 2015)

British (Colonial rule)

Upon the arrival of the British, the region had been declining for decades. When Punjab was formally annexed in 1849, writers mentioned that precipitation and the flooding of the rivers were the sole sources of irrigation (Rehman, 2009). The life of people was depending on the seasons and tides, rather than the constant flow of water. The presence of deserted wells and numerous ruins, writers found archaeological evidence that this place had not always been inhospitable and infertile. The characteristics as beauty, fertility and productivity had gone lost. The state of the place was the result of the aftermaths of incur-



Figure 16: Map of British India
(Source: own image, base retrieved from Google)

sions over many years (Rehman, 2009). In a time span of 120 years, desolating hordes and anarchy haunted Lahore. The Durrani, Sikhs and Maharashtra and their armies were all responsible for the destruction of the cities in the 120 years prior the arrival of the British. The army of the Durrani empire passed eight times through the city, Sikhs fought their battles in conquering the city (Gilani et al., 2013; Rehman 2009). A little was left from the city that was once praised described as 'magnificent' by people as Bernier and Milton (Rehman, 2009). Lahore was in a state of decay and devastation.

A series of reforms would be addressed to the rural hinterland. With the renovations of the existing networks, expansions and extensions of canals. The implementation of management through hydraulic engineering would guarantee a constant flow of freshwater, making it possible to construct new gardens (Wescoat, 2007). The decreased aridity and increase of agricultural productivity resulted in a better livelihood the Punjab province. Moreover, social reforms would drive to a more egalitarian structure. In contrary, these reform would in contrary allow the British to gain more control. These reforms had a hidden social and political agenda By inserting a new system of distribution, that would divert natural waters, they would be the ones who would be in control of these resources (Rehman, 2009).



Figure 15: Lahore before 19th century.
(source: Khan, 2015)

Prior to the construction of the modern irrigation systems implemented by the British, the river flood plains were the most heavily cultivated areas in the Indus valley system (Rehman, 2009; Wescoat, 2009). The positioning of the walled city with its enclosing suburbs and many gardens around indicated a strong orientation of the Walled City towards the river, embellished with shrines and monuments on both sides of the river (Khalid, 2018; Rehman, 2009). The modifications in the water infrastructure and developments of the Doab Bari Canal (Lahore Canal) running parallelly to the Ravi, re-orientated the city away from the Ravi, towards the newly irrigated and developed landscape. The new landscape grew along the canal in the late nineteenth century, bordering the old and new Lahore (Rehman, 2009). The diversion of water with reservoirs and canals guaranteed a year-long water supply. Altering the pattern of season cultivation along the fertile river banks, as the water levels had decreased (Rehman, 2009). Along with the construction of new sewage system disposing in the Ravi, the water became heavily polluted. With the expansion of the irrigation networks the river diminished physically from the city scape (Khalid, 2018). By time, also in from the collective imaginations of the citizens of Lahore, as the importance of the Lahore Canal grew in importance as a urban artery (Rehman, 2009). By shifting the flow of water that had been the lifeline of the city, the old centre of the city (the Ravi) was pushed to the periphery (Khalid, 2018).



Figure 18: aerial view Mall road 1933. (Source: Aslam, 2016)

Technological transformation

The sequence of interventions radically transform the city in proportion, form and structure (Rehman, 2009). On top of the fragments of the ancient ruins of the city, a drastically new city emerged. The physical changes were apparent in the new technological advancement as roads, railways, canals started to characterize the city landscape along with new (types of buildings) civil stations and bureaucratic frameworks. The integration of the new technological systems industrialized the city and its society in an unprecedented pace, changing all aspects of life, in the way people settles, transportation of people and goods, and growth of economies (Rehman, 2009). Despite the decline of the importance and quality of the Ravi river, the canal system changed the surrounding landscapes of the river delta from barren desert and jungle waste to a productive and fertile fields (Rehman, 2009).

Cultural transformation

With the transformations occurring across Punjab, Lahore had become the centre of the colonial administration. These reforms reshaped Lahore as the city as we know it today. As a result of this, Lahore would have to accommodate new government buildings, institutes, recreational area and new residential areas which would accommodate a new class of inhabitants which would require the expansion of the old city (Rehman, 2009).



Figure 19: Lahore 1837 (source: Punjab Secretariat Library; Rehman, 2009)

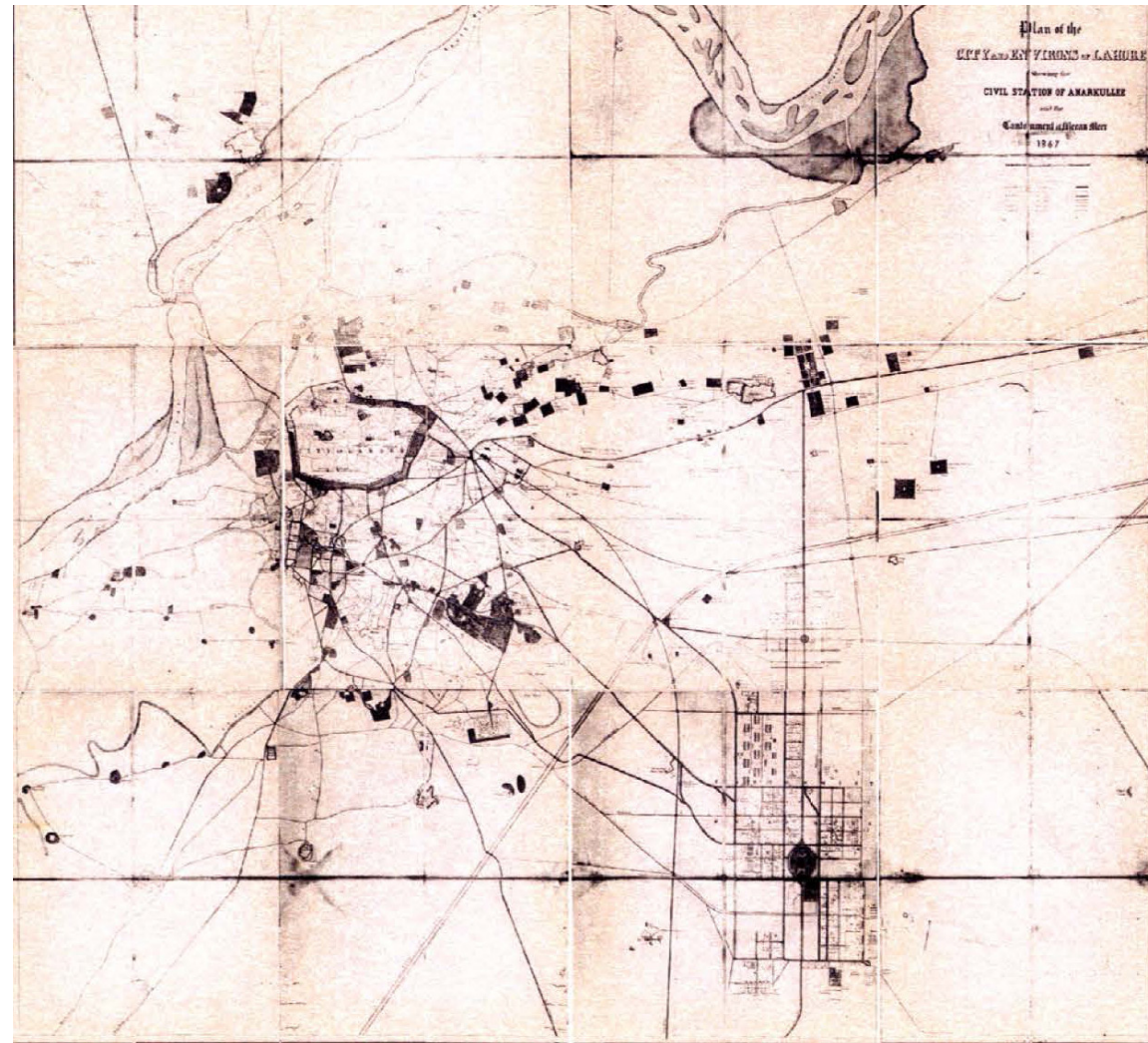


Figure 20: Lahore 1867 (Source: Rehman, 2009)

The British would settle in 8 km southeast from the old city, a new area (Lahore Cantonment) which would house military functions and the new elite. The physical distance and open space in-between would function as a buffer between the new and old city. William Glover (2008) states in his book *Making Lahore modern* that the structure and urban fabric of the old town was considered opaque and impenetrable (Rehman, 2009). The absence of order and rationality rendering in the dense urban fabric cramped packed dwellings, narrow disorderly winding streets, dust, noise and lack of sanitation in the old city made the old city unsuitable/illegible to any efforts of spatial or functional ordering. Seemingly, these characteristics made the British ignore the medieval city in the expansions plans of the city. The planned urbanisation of the Lahore in the 19th and 20th century transformed the city's social and architectural fabric (Latif, 2018). This new city was morphological counterpoint characterized by its gleaming tree lined avenues and picturesque – European - garden estates (Rehman, 2009).

Over time, more and more affluent people from the old city started to migrate to the new city, new inhabitants arriving in the old city from rural areas quickly outnumbered the ones of people leaving (Rehman, 2009). The old havelis left behind in the old quarters, were sub-divided and were habituated by the new migrants. As the old part was becoming denser, the garden suburbs offered a different way of living. Despite the distinctions between two parts, the new city was not a place of segregation nor heterogeneous. Deliberately, certain classes of the native of the South Asian were integrated in the society of new Lahore.

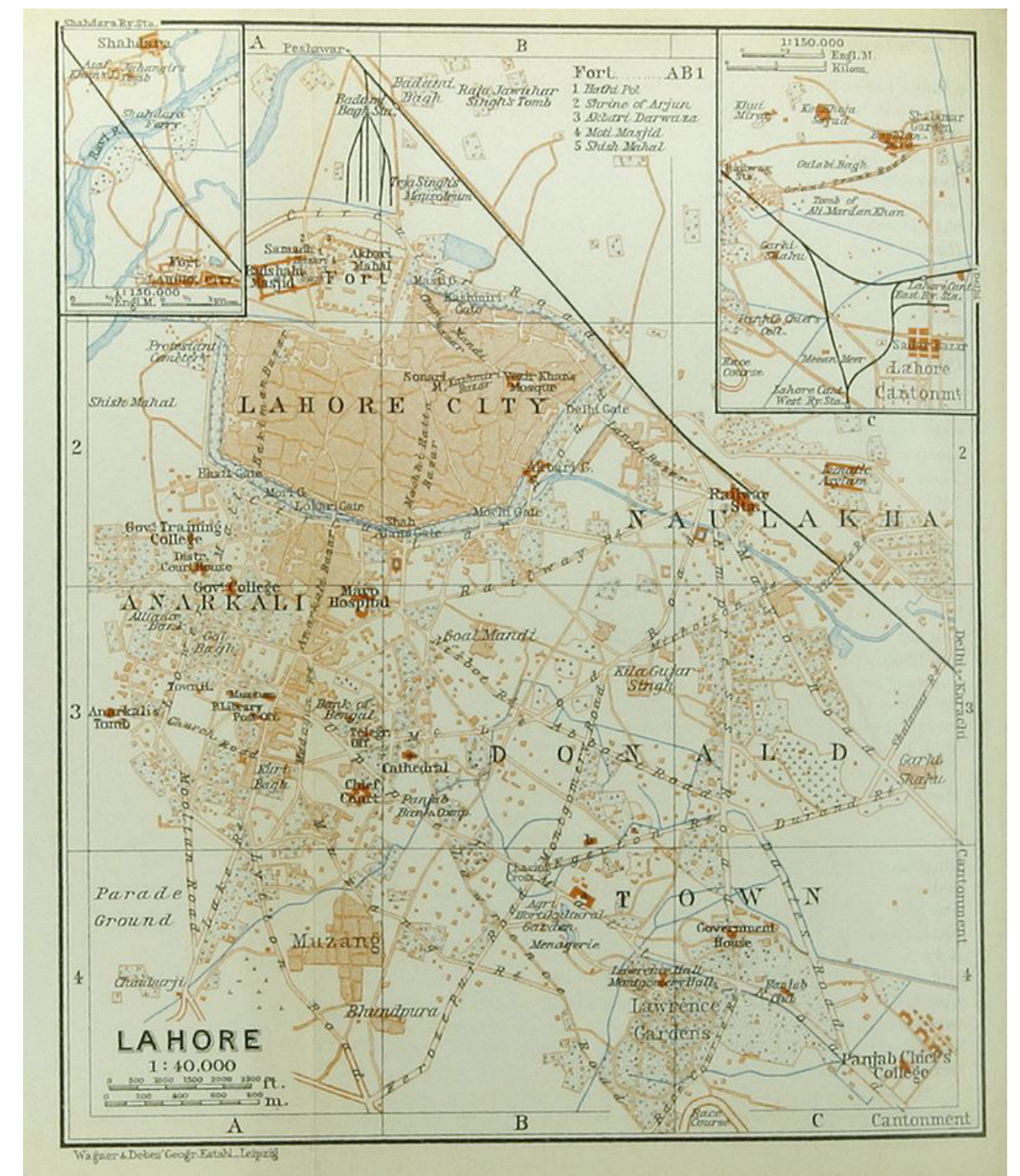


Figure 21: Lahore 1904 (Source: Pinterest.com)

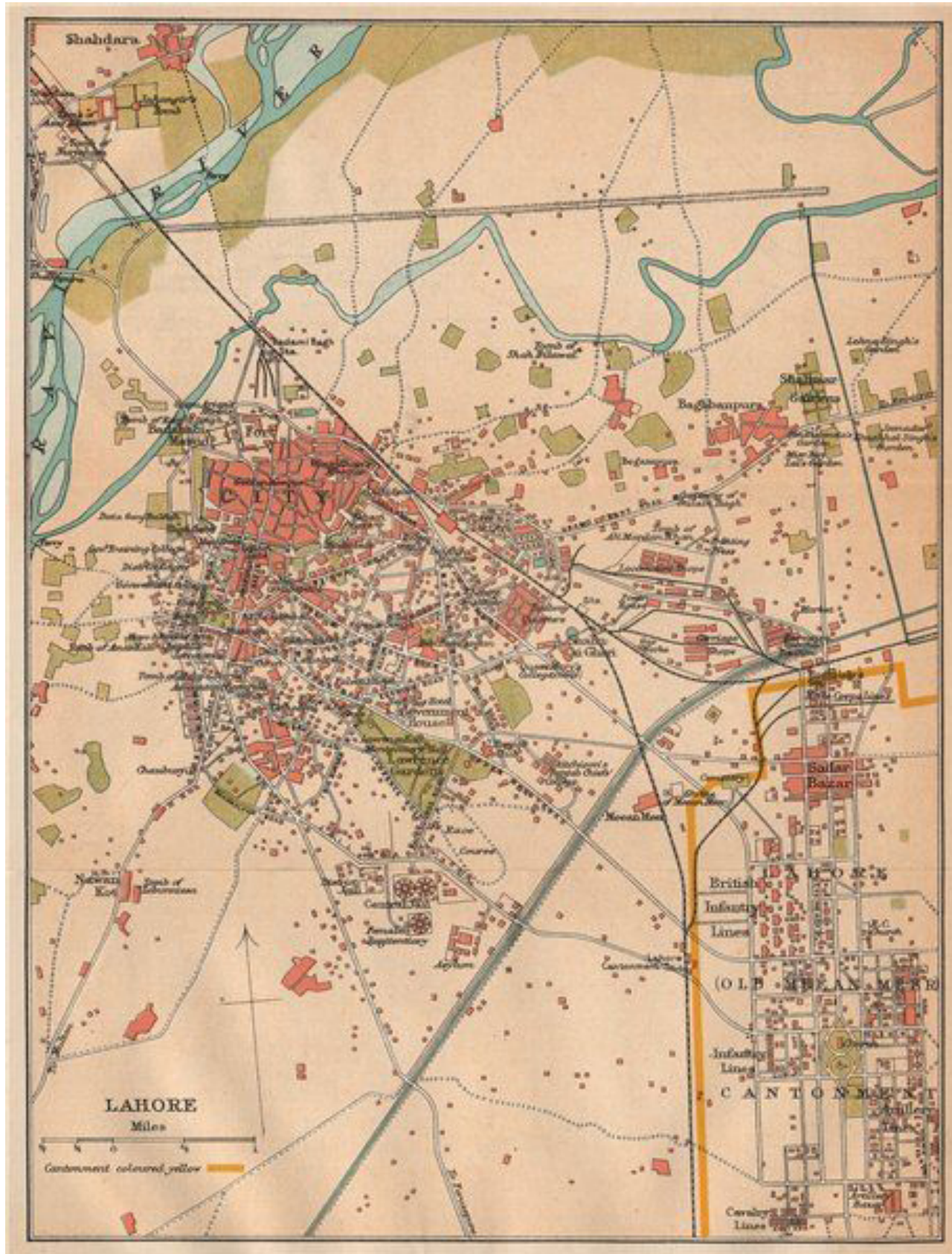


Figure 22: Lahore 1914 (source: oldmapsonline.org)

Shift in gravity/segregation

The two centres – Walled City and Cantonment - of Lahore were linked by the Mall Road, which ran from the Anarkali bazar (South of the Walled city) to the northern part of the Cantonment. Along the Mall road, civil offices arose becoming the heart of the administration and commercial activities. Next to the Canal and the Mall Road, the Lawrence Gardens (today's Bagh-e-Jinnah) were constructed. The Lawrence Gardens are considered as one of the most emblematic project along the canal of the garden city. The existence of these gardens depended on the presence of the irrigation from the Lahore Canal. Glover describes these gardens with its associating buildings as an “island of Englishness”, a racially segregated Anglo enclave, where Lahore’s elite would gather and interact and socially and financially, playing a role in the recreating and business related affairs among the elite (Rehman, 2009).

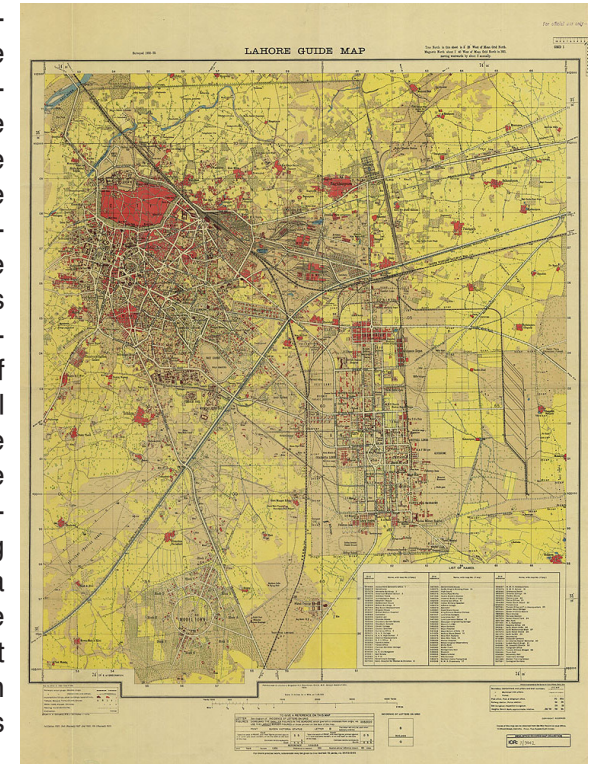


Figure 23: Lahore 1929: (source: oldmapsonline.org)



Figure 24: Old city and Cantonment with the Mall Road in the 21st century (Source: Aslam, 2016)

9. Relation of Lahore with urban water

Translating patterns

Nasr (2001) stated in his literature, that the traditional city resembles an archetypal reality, reflection a reality from the spiritual world above. What is worth mentioning after analysing the history of water in Lahore, are the spiritual characteristics of the Mughal gardens. In terms of design, these gardens were inspired by the verses describing paradise in the holy Quran. Additionally, Various paintings from that era, have depicted gatherings in these gardens, where the presence of music and literary activities as writing and conversations were common.

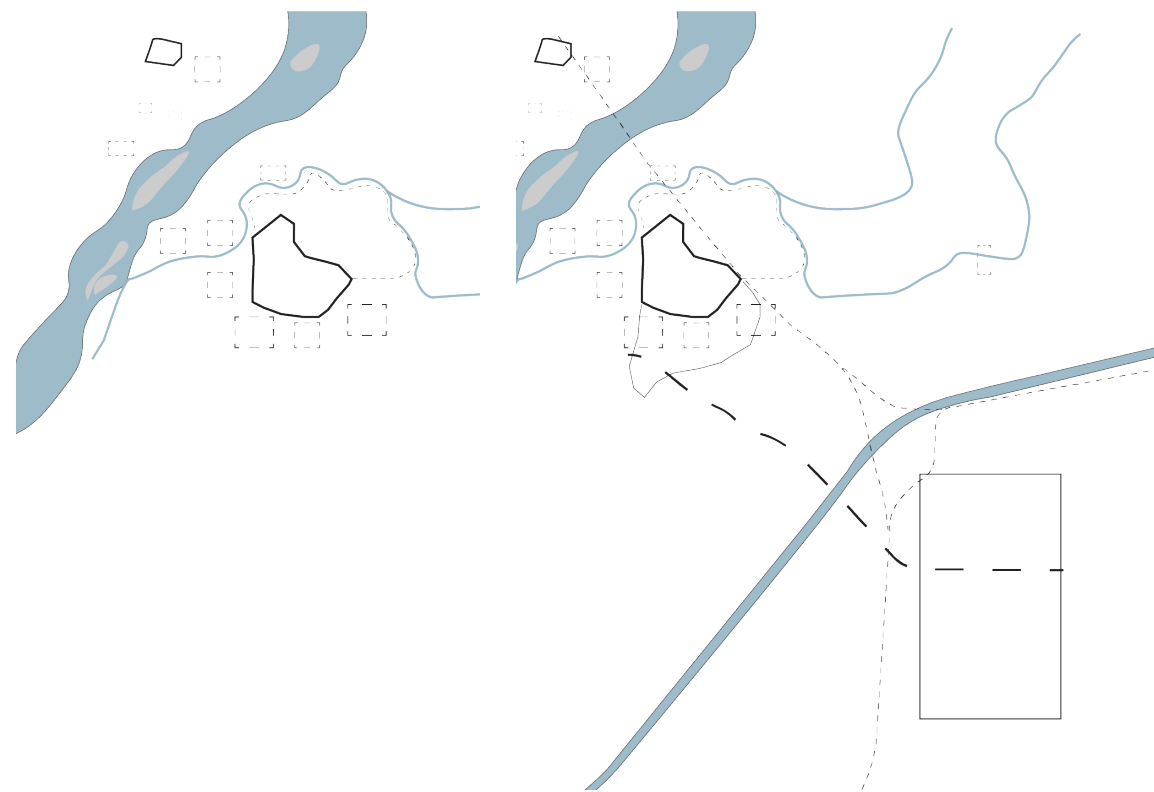


Figure 25: Pre-Colonial Lahore
(Source: own image)

Figure 26: Shifts Towards Canal and Cantonment
(Source: own image)

When looking at the colonial era, a shift is visible towards the Cantonment, contrasting the Walled city in terms of Lifestyle, architecture and morphology that are still visible in Lahore. Conforming to Zeynep Çelik (1999), the former colonial cities witnesses a dual city pattern. She distinguishes the difference in the morphology and architecture of the colonizer and colonized ones, reflecting a contrast between space and power. Lahore is an example of this reflection. The translation of changing patterns in Lahore is worth an exploration. Has traditional city had become a colonial city. Or was the colonial city an addition to the traditional city? This part will be further elaborated in the chapter 11.

With the expansion of the irrigation networks the Ravi diminished physically from the city scape (Khalid, 2018). By time, the Ravi diminished from the collective imaginations as well, as the Lahore Canal grew in importance as a urban artery causing a shift in the centrality and growth in the city (Rehman, 2009; Sultan, 2020). As the city reoriented itself to the canal and this new landscape.

Amplified by the strong urbanisation and infrastructure between the Ravi and the city has distanced itself even further away from the Ravi. Additionally. The riverbanks of the Ravi that once were characterized by shrines, gardens and agricultural land, have become a landfill filled with filth and contaminating toxics wastes from factories nearby.

Canal as public domain

The purpose of the Lahore Canal was irrigating bordering crop fields and the Lawrence Garden. With the expansion and densification along the Canal – serving as central spine in developments - the agricultural lands were replaced by constructions of new road infrastructure and neighbourhoods. With the transformation from an agricultural landscape to an urban landscape, the Canal largely had lost its purpose for irrigation. By time, the lush banks of the canals were discovered by the people as a place for gatherings and recreation (Sultan, 2020). In summers, the kilometres long canal would serve as a public bath, for you men who sought refreshment in the summer heat (Rehman, 2009). The natural landscape had become a cultural landscape, serving as a public domain for the people.

In the recent years, the public domain along the Canal – along with many other green belts in the city – were threatened by the municipal policies and shortcomings. The authorities have permissioned housing schemes to be develop, without providing basic amenities such as sewage system. The untreated domestic is directly discharged in the Canal. Along with the domestic waste, small factories and workshops discharge industrial effluents directly in the canal, making it unsuitable for swimming, irrigation and consumption (Sultan, 2020).

Additionally, the mobility policies in the last decades have merely served cars, even when car users only made up 8% of the commuters (Abubakr, 2016). Protected green spaces and public spaces had to move in order to make room for new interchanges and extra road lanes. Road widenings programs have resulted in increased noise and air pollution that are no longer absorbed by trees (Khan, 2017). The Canal Road along the Canal depicts these issues. Green and lush canal banks that were ones a place op gathering for people have diminished (Abubakr, 2016; Khosa, 2015).

The transformation of the road networks, governors and mayors attempted to beautify and boost the image of the city rather than improving amenities of ordinary citizens (Anwar, 2017). Whereas behind this arteries, small streets remain unpaved with open sewages, living next to toxic streams (Khosa, 2015). 30% of the citizens are still suffering from poor accessibility to safe drinking water and other basic amenities such as electricity, security, healthcare, garbage disposal and deficiency of a proper drainage network. (Khosa, 2015; Najam, 2016).

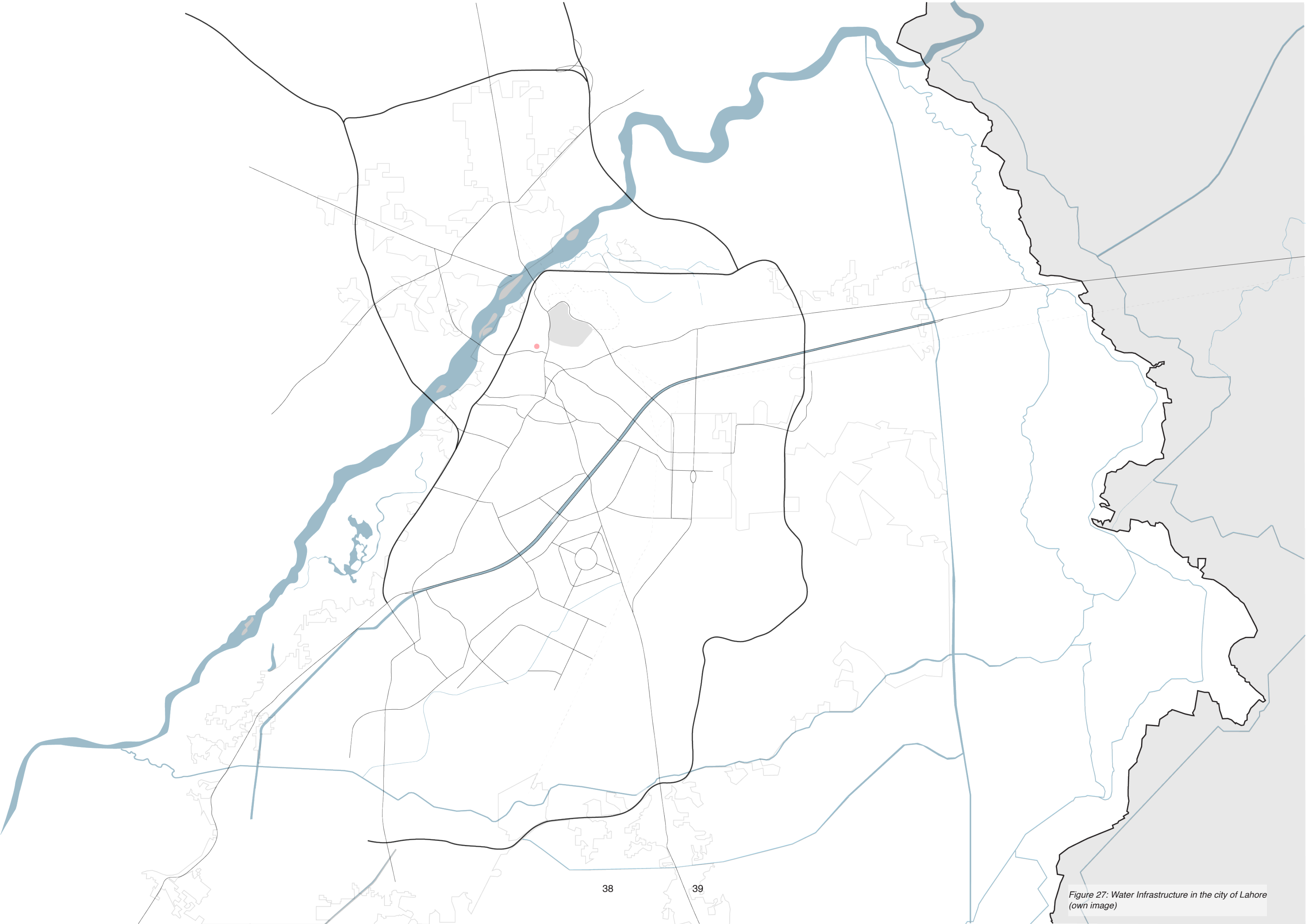


Figure 27: Water Infrastructure in the city of Lahore
(own image)

10. Management and governance

In short term, the urban poor are generally victim. the beautification projects force them to relocate and displace. The wealthier in contrary, responded to the failing urban government by shifting rigidly to independent supply of water and electricity, partly by moving to gated communities (Wescoat, 2007). In long term, these developments are harmful for all people of the city.

The following point emerge from this example and will be elaborated in the next chapter. Namely:

- How the municipality has failed to provide basic amenities to its citizens, resulting in a toxic living environment.
- The antonymous representation of citizen's interests, differentiated by their background an income
- Neglection of nature and its resources

Accessibility of clean water

Lahore is the largest city in Asia that solely relies on groundwater for drink water purposes (Chaudhry & Chaudhry, 2007). The Ravi does not longer contribute as a source for freshwater due to low water levels and toxic pollutions. Additional to the climate change effects, this has further increased the scarcity of qualified surface water. The farmers around Lahore started have relying more on irrigation through tube wells (Ali et al., 2009). With the insufficient municipal supply, people started relying on individual tube well and unsustainable mining of groundwater aquifers to increase accessibility. This solution is not in reach for less fortunated citizens (Chaudhry A. & Chaudhry, 2007). These measurements to increase water accessibility in urban and rural areas have resulted in a decreased water table (Chaudhry & Chaudhry, 2007). From 1960, the water table has decreased from approximately 10 metres to 60 metres in 2016 (Abubakr, 2016).

Yet, the groundwater is not meeting safety standards. Samples of groundwater were detected containing traces of human waste (Abubakr, 2016). The poor water quality has driven people towards bottled water consumption (Altaf, 2007).

Floods

Additional to the issues related to the accessibility of water, floods are an recurring issue Lahore is facing. Causing death and damaging properties during the annual monsoons. These floods are not caused by a particular issue, but rather an accumulation of multiple factors. These factors will be discussed in the next paragraphs.

Climate change is increasing the annual precipitation. The Pakistan Meteorological Department is predicting that climate change will cause even stronger monsoons in the near future due to rising temperatures (Butt, 2019a). Monsoon winds are driven towards high temperatures areas in the hinterland. Concentration of rain clouds in "hotspots". Compared with surrounding areas, the poor urban planning and management resulted in excessive urban heat island effect (Butt, 2019a). The cutting spree across the city proved to be disastrous for the wildlife and environment in the city, resulting in an average increase of two to three degree Celsius (Khan, 2014).

Secondly, with the recent urbanization and sprawl, city planners have paid little to no attention to proper drainage or mitigation for climate control. as mentioned earlier, lush areas and trees were removed for construction or to provide space for the concrete boulevards and signal free corridors (Anwar, 2017). Between 2007-2015, the tree cover has decreased with 72% in Lahore, decreasing the total green coverage to 3% (Abubakr, 2016; Butt, 2019a). The increase of hard surfaces has resulted in a decreased capacity for mitigating climate effects reducing absorption into soil and increasing pollution and direct radiation. This overdevelopment has left little capacity to mitigate the excess rainwater locally. with no capacity to mitigate rainwater groundwater levels do not have to opportunity to recover from excessive use.

Thirdly, the current drainage systems work insufficiently to accommodate the excessive rainwater. made worse by waste and sediment deposits clogging and lowering the capacity of the drainage system even further (Butt, 2019a).

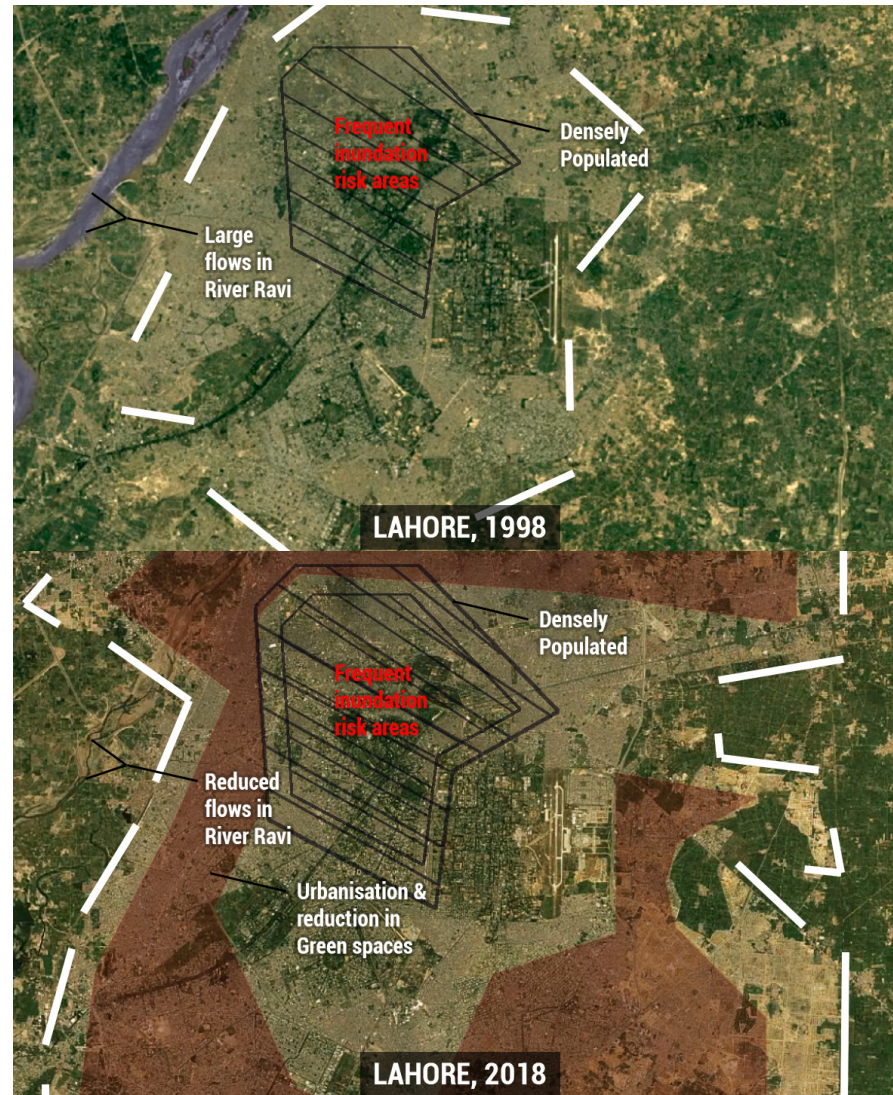


Figure 28: Urbanisation and Flood risks in Lahore (Source: Dawn.com; Butt, 2019a)

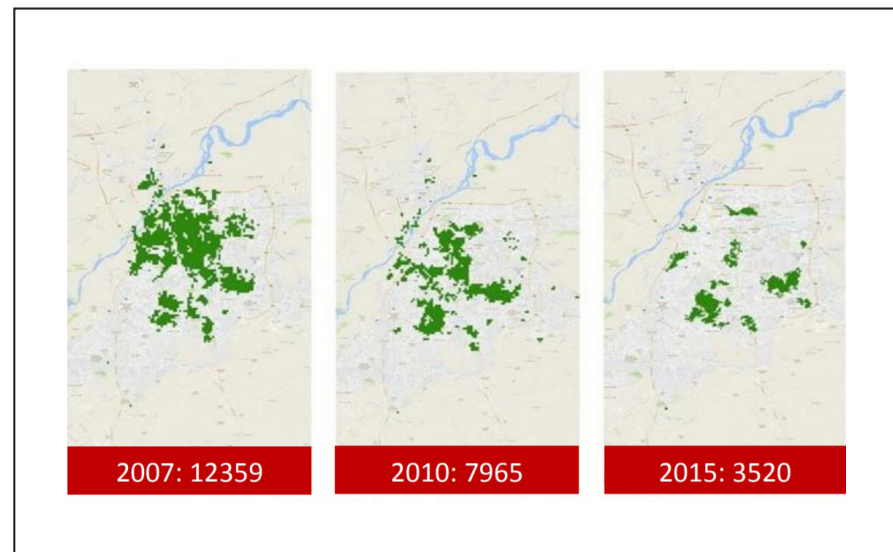


Figure 29: Tree coverage Lahore (Source: Dawn.com; Butt, 2019a)

What is worth mentioning is the fact that the Ravi does not flow over during monsoon. In other words, The Ravi river is not the cause of the annual floods in the city (Butt, 2019a). In a city where water bodies and infrastructure played a crucial role in the developments, Lahore has now lost its connection with its urban water bodies. Losing its connection with its own past that, the management of water that made it possible for Lahore to climatize, cultivate and grow. Allowing Lahore to develop as a city of commerce in the past. The respect for nature and presence is not there anymore.

Local governments and planners are playing a fundamental role in urban planning. so far, we can state that the local government is coming short in meeting people's demands and providing basic amenities. In the survey conducted for this research, 69% of the participants were discontented with the current developments in the city regarding climate change and water. In contrary to long term investments for climate adaptations and public housing, planners and bureaucrats tend to prioritize short term developments with immediate result (Janjua et al., 2010). The next chapter will discuss the organisation of state institutions and local levels, in order to understand why the local government is coming short.

Institutional barriers

The administrations are characterised by a strong top-down working structure in state run institutions (Anwar, 2017). This is a result in the political situations after partition. As mentioned earlier, Pakistan was ruled by militants half of the time since independence. The limitation on freedom and oppressive policies pierced deep through the society and institutions across the country (Hashim, 2013; BBC, 2019). Lacking opportunities to give feedback or to participate for citizens, as all decisions were taken by the rulers. In addition to the rigid working structure and weak governance, the local government bodies are afflicted with limited financial resources, lack of knowledge and incomplete infrastructure (Janjua et al., 2010). The funds that were set aside, were distributed by politicians with influence and authority, rather than needs of people (Dawn.com, 2020).

Researchers have stated that governmental bodies should engage local stakeholders, who are excelled in their specialism, to gain knowledge about the particular subject in order to identify vulnerable threats and possible practical adaptation initiatives (Janjua et al. 2010). This engagement process is vital to unify local actors and giving them opportunities to learn and share, to gain insights for the projected impacts of climate change and possible adaptation strategies (Janjua et al., 2010).

Unfortunately, the current system is failing to implement an effective change in state run institutions (Janjua et al., 2010). The conditions at governmental institutes in Pakistan are far from ideal when it comes to shaping conditions that actively encourage change through organizational learning. The current culture in the local government bodies do not support or value learning and action related to climate change (Janjua et al., 2010). The culture needs to become understanding and supportive in order to adapt. A shift towards an internal environment that allows and encourages learning for various purposes is needed in order to tackle effectively long term issues (Janjua et al., 2010). Nevertheless, bringing the desired will take long time investments and effort. Even though right leaders get elected, they will face the same issues mentioned earlier in this chapter.

11. Genius Loci of Lahore

In chapter History, the timeline of Lahore related to water was addressed and the present translation with urban water. With Nasr's (2001) statement of the traditional city being resemble of an archetypal reality, reflection a reality from the spiritual world above, we can assume that pre-colonial Lahore was a traditional city indeed. Extended than climati-zation and beautification, the concept of the Mughal garden was an exertion reflecting the spiritual world above as described in the Quran. Undoubtedly, we may assume that the spiritual aspects were present in other facets as well.

The colonial era marks a sharp contrast with the preceding past. When looking at the Colonial era, a shift is visible towards the Cantonment, contrasting the Walled city in terms of Lifestyle, architecture and morphology that are still visible in Lahore. Conforming to Zeynep Çelik (1999), the former colonial cities witness a dual city pattern. She distinguishes the difference in the morphology and architecture of the colonizer and colonized ones, reflecting a contrast between space and power. This is the case in Lahore as well. In understanding how these two patterns are co-existing we have to ask us the following questions:

How are the diverting patterns translated and represented in the Lahore of the 21st century?

The layer of modernity that was added by the British in different facets of society, superimposes on the social-political geography. This is still present in the presence of classes, and the way of thinking and living (Aslam, 2016). The English culture and language have penetrated deeply in the culture. This division is reflected in the urban form and in the language the places were named in. From late 19th century, English - the language of the ruling class - was considered as the language of the 'civilized' (Aslam, 2016). This distinction between the old and the new is reflected in the names of places - Old city: Anarkali Bazaar, Akbari Mandi vs Cantonment: Abbott Road, Lawrence Gardens - used. Aside the differences in language the places are named in, these places are comprehensively reflecting a **duality** in morphology, power, status, and the distinguishes of the served versus the unserved. This has not changed ever since.

Regarding the issue of the translation of the diverting patterns, writers and activists are sceptical about the balance between these. In an interview, Kamil Mumtaz Khan – architect and co-founder of Lahore Bachao Tehreek* – stated that:

“Lahore today is the extension of British Lahore, which has nothing to do with the original city, which was not only the centre of the Mughal or Islamic era but also Buddhist, Jain, Sikh, and Hindu architecture for centuries” (Latif, 2018).

Mohammed Maroof Shah - author and columnist- has even stated the concepts as modernity, corporatisation and capitalism do not get along with the traditional concepts (Ilyas, 2017). Aslam (2016) for example, cites Lahore as “The city is a manifestation of different ideologies and cultures which agglomerate and present themselves most prominently in city planning and architecture.” Stating that the neglect of the poor is validated in the urban form, the ones carrying the unspoken narratives (Aslam, 2016).

*Note: more Information regarding Lahore Bachao Tehreek in chapter Strategy and Appendix B

These patterns are translated in the behaviour of people have the strong urge to control space and filter out certain types of people, fragmenting urban spaces. The city has become a maze of security checks, gated passages, and concrete barriers, visible around shopping centres, malls, public institutions (Moffat, 2019). The attempts to control the urban spaces are – even in the Post-War on terror period - justified as security measurements. The segregation associated with space division among citizens resulted to an attitude amidst citizens that “generates a discourse of exclusion” in relation to the old city and the new city. The us vs. them.

So what is Lahore? In order to answer this the following point should be taken into consideration that were mentioned by Norberg-Schultz (1979). Norberg-Schultz (1979) stated that the **urban Genius** is never purely local. It is a place where the local Genius meets the foreign, creating a more complex systems of meanings Genius is never. Lahore carries the spirit of an inclusive city with influences of the Mughals, Persians, Afghans, Turks and Bengals. The city of industrial production. The city of culture and literature. The city with lush avenues. The city of the dense walled city. All these things are reflecting a part of Lahore along the issues mentioned. Though it is not deniable that Lahore is going through an existential crisis. Lahore is predominantly a city of duality, a city of parallels. For some the city of exclusion. This crisis has become a fundamental part of the city (Aslam, 2016). It has impacted the development of the city, reflecting in the policies and constructions, which are only benefitting The duality of different classes and privileges has become the driving force of life. The markets are stockpiling money by “penetrating through one's insecurities of identity” (Aslam, 2016). All of this – considerable illnesses - are part of Lahore's Genius Loci. The aim of the strategy will be to cure Lahore from this illnesses and regain its position of the city of inclusion and coexistence of different groups.

12. Strategy

The following outcomes can be concluded from the research conducted:

- The environmental crisis of Lahore that is a result of the existential crisis Lahore is going through
- The municipality has failed to provide basic amenities to its citizens, having a toxic environment as outcome.
- State run institutions need to make shift towards an internal environment that allows and encourages learning for various purposes is needed in order to tackle effectively long term issues, which is unlikely to happen in short term.
- The urban poor are generally victim and have no voice to raise.

What is needed regarding the climate issues, is climate sensitive planning. Planners have to rethink the concept of urban planning and consider buffering of water, mitigation of heat and the presence of green spaces as an key factor in order to deal with climate issues (Butt, 2019a). regarding the role of local actors in power, affective leadership is needed with vision, that encourages to adapt in creative and innovative ways such as from academic institutions, cultural and artistic groups, religious organisations and public intellectuals, from community to indigenous workers. Without change in organization, adaptation efforts will remain ineffective, the top-down governance and bottom-up feedback, learning, interaction will remain disconnected, continue to work on outdated, rigid and ineffective structures (Janjua et al., 2010).

However, it is unlikely that these changes will be implemented in short term. Changing a planning culture or putting through reforms in state run institutions will take years. Yet, it is naïve to expect from government to solve everything.

The sources addressed relating to the issues in Lahore, have mostly discussed the roll of the local governments and planners. However, the role of citizens is concealed or not considered. The survey conducted for this research, participants were asked what the biggest setback was in solving the current water crisis. 40% of the participants appointed the mismanagement and corruption in state run institutions as the biggest setback. Whereas 50% of the participants appointed the lack of citizen input, participation and awareness as the biggest setback. In finding a suitable strategy to, the roles of citizens will be discussed. This chapter will focusing on suitable strategy on addressing the issues mentioned and translate them to architectural proportions.

Sources have already appointed the lack of awareness among citizens. Mazhar (2019) states that the division between the different demographics of the city is instigated by the lack of communication, creating an atmosphere of uninformed citizens who remain uninformed about the things happening outside their own circles. Additional to the statement of Asim (2016) earlier regarding the unspoken narratives of the urban poor, Altaf (2007) has states that the general public that is affected by the issue of not represented or rarely having a voice to raise. As long as the affective demand from citizens in nonapparent, and the powerful lobby missing, little to no outcome can be expected (Altaf, 2007).

A way to start approaching the existing issues and the *illnesses* of Lahore on a local level, is by creating awareness among citizens about the existing issues. In order to achieve awareness, people have to conduct dialogues with people out of their obstructed circles. At this moment, public spaces are fragmented by limiting accessibility regarding socio-economic backgrounds, that is not allowing to meet people out of their own circles. The first step in overcoming this issue is providing a neutral, common ground for all. This is an effective tool for bridging the gap between citizen and allowing them to interact with people out of their circle. This will enable citizens to become aware of the things happening around them. Aside from this, another affective tool sources have recommended is the mobilization citizens and civil society trough participation. Through citizen effort to participate and the cooperation with groups of people with a standing, credible and technical expertise, people can educate themselves related to the events happening and provisions they can take themselves (Altaf, 2007). This step moves citizens to mobilise in long term in creating a counterbalance to lobby for equal rights and a more sustainable way of planning.

Cooperation of citizens with action groups and local NGO is evident and needed. The Lahore Bachao Tehreek - Movement for saving Lahore – for example, operates as a pressure groups against development projects that are damaging the environment. Apart from protesting and coming out on the streets, They have attempted to take legal actions against the local government for neglections and harming the environment by taking certain matters to the court to address the consequences of diminishing trees in the Lahore (Khan, 2014). Aside from the legal victories in court and their importance, local NGOs are facing lack of financial and technical recourses and support from state and society (Khan et al., 2020). Some activities aside as hosting workshops for citizens to create awareness and improve self-sufficiency to help them to generate more money. This makes it difficult for them to scale up. However, the participation fee restraints people from lower income groups to participate and becoming more aware about certain issues.

*More examples regarding citizen participation in Appendix F.

Water conservation

Regarding the strategy of water, the aspect should be approached from multiple scales. Wescoat (2007) states that the urban water is a vital part of a larger context, and the relationships within the context constitute a shared frame that can lead urban water planning in new creative directions. In terms of architecture, Wescoat (2007) mentions two ways of preserving. Firstly, water conservation is applicable by approaching the water resource, focusing on quality of water and the (re-)use of water. Additionally, conservation of water through experience taking equity, enjoyment and giving water a symbolic meaning for instance.

Regarding aspects mentioned by Wescoat (2007) that can be taken into consideration in this project are:

- a.) Rainwater harvesting
- b.) Water use efficiency
- c.) Energy-conserving water systems
- d.) Grey water re-use
- e.) Green infrastructure
- f.) Conserving water experience

Proposal

The issues mentioned regarding water, planning, heritage, and mobilisation are present in various levels and scales across Lahore. In order to manage these issues, two separate visions will be drafted. The urban vision will discuss the matters of the water issue on urban scale and the connection of the city with its water infrastructure – Ravi and the Canal - and connecting these by constructing a vast network of interlaced canals and green belts, reclaiming public domains that have been snatched away in recent years and re-establish the connection between city and water. Most importantly, the urban vision is meant to serve as an example for rethinking urban planning, including key factors as water buffering, mitigation of heat and presence of greenery. Factors that are crucial in order to deal with climate issues.

City	Neighbourhood	Building
Green infrastructure	Green infrastructure	
Rainwater harvesting	Rainwater harvesting	Rainwater harvesting
Energy-conserving water systems	Energy-conserving water systems	Energy-conserving water systems
	Water use efficiency	Water use efficiency
	Grey water re-use	Grey water re-use
	Conserving water experience	Conserving water experience
Stormwater best-management practices	Stormwater best-management practices	
Ecological treatment of sanitary wastewater	Ecological treatment of sanitary wastewater	

Figure 30: Key elements mentioned by Wescoat (2007) proposed on different scales for the design assignment (Own image).

The architectural vision will on one hand, embed and translate the urban vision on a smaller, human scale. Considering the key factors mentioned earlier. On the other hand, the architectural vision will consider the re-interpretation and adaptation of heritage, healing of the city and shaping the proposed common ground with the key amenities desired to create awareness among citizens, and mobilize them in long term.

Bradlaugh Hall and its surroundings will be utilized as a common neutral ground for people to interact. The presence of a teahouse, theatre and open ground enables interaction in an informal setting. Rather than restoring and bringing the building back to its original shape, the site gives us an opportunity to utilize it as a laboratory for testing various techniques and their suitability regarding context – relating to urban vision - and culture. Relating to people in direct context, the Bradlaugh can function as an extended living room and interaction. Spaces with an appointed functions such as a library, workshop room and workspaces, allow to people to learn actively in a less informal setting.

*More information regarding program in Appendix C.

Financial model

Start-ups and NGOs are a vital part in the process based approach in creating awareness by giving workshop or hosting presentations for people in the city. Additionally, the presence of workspaces leased by start-up companies or NGOs and hosting events will generate a steady income. Though, this might not be sufficient to guarantee smooth operations. Yet, the financial model of the SESC's in Sao Paulo (Brazil) possibly be the model we are looking for. Where a non-profit entity – initiated by the businesses in collaboration with the government whose role is embedded in the Brazilian constitution - collects 1.5% of the payroll taxes from Brazilian companies. This fund redistributed that money to institutions called SESCOs (Social Service of Commerce), supporting well-being, Artistic production, personal autonomy and growth, and interaction, solidarity, and actions that involve technical interaction and cooperation (Rohter, 2012). A similar model would impact Lahore largely, and generate massive funds in a city of 13 million inhabitants. However, such reforms require changes in the attitude from the businesses and certain state or municipal reforms in legislation. At this moment, it is unlikely that these changes are questionable in short terms. Even when the president of the Sao Paulo Chamber of Commerce has stated that the impact of these institutes translates in better-informed and trained workers, increased well-being, which makes them more productive (Rohter, 2012).

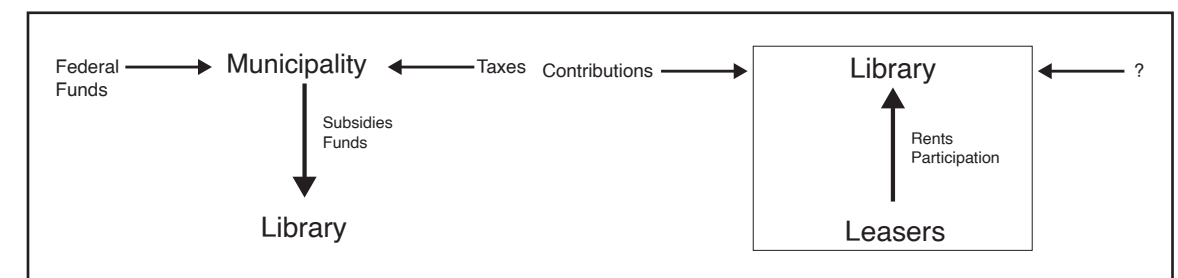


Figure 31: common financial model vs. proposed financial model(Own image).

Re-introducing the garden culture

Considering the history of Lahore, the garden culture of Lahore has played a major role in the way the city was shaped, climatized and utilized for leisure and cultural activities. The earlier gardens in the precolonial and colonial era were centred around the Ravi and later the Canal, and irrigated through well and canals. Yet in both cases, the gardens were characterized by specific design elements and principles.

With its appearance, gardens are a desired by many. Yet, gardens are eco-friendly and practical in mitigating heat and reducing burden on the energy sources. The final proposal is the readaptation of the garden culture in a contemporary context, considering adaption and survival, rethinking the concept of garden and irrigation techniques rather than redesigning. Irrigation through tube well and canals is no longer sustainable. However, rainwater harvesting, grey water re-use could sustain in order to construct new gardens around the city, creating the foundation to make it possible. In terms of design, this is open for different locations and interpretations. Though the proposed green belts and infrastructure and conservation of water experience are considerably part of the proposal.

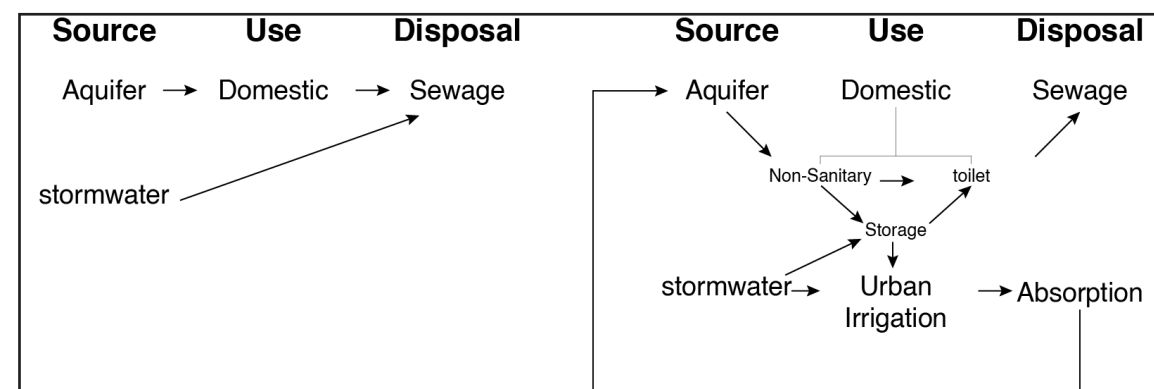


Figure 32: Proposed future water scheme for irrigating (Source: Own image)

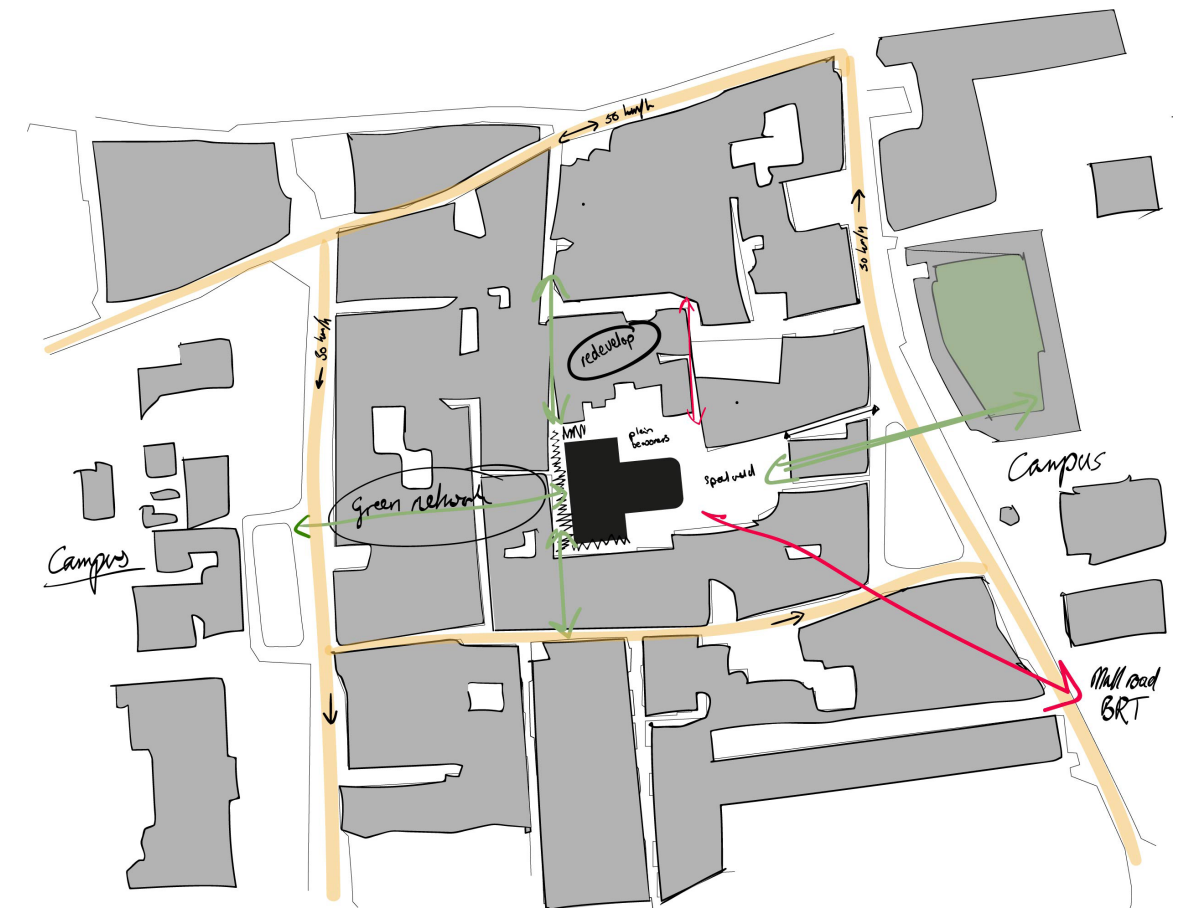


Figure 33: Bradlaugh and its context; proposal to connect the green campuses as part of the larger green belts initiative (Image: own source)

Discussion

Conducting research and collecting information is not hard. But collecting the right information and ordering outcomes properly is. Especially when one cannot know beforehand what he wants or may expect, the discoveries can be overwhelming. For the first time, I could relate myself to those events in the research related to history. Something my roots are related to, the city where my ancestors were born and had lived. The city were part of my ancestors arrived after fleeing Amritsar (Indian Punjab) during partition. At one point, you are thrilled to share all the interesting findings and smallest facts, yet that is not the purpose of this graduation. It is important to stay in the role of a researcher and future in architect, considering the purpose of the assignment. And even when things seem to be uncertain, I believe it is alright for leaving your position as researcher and architect for a moment to achieve new findings and insights. Which is crucial to a certain extend in understanding the city. But one should regain its position afterwards and filter the information profoundly for to keep thing ordered.

Lahore is a city where many things are happening, and a lot of events have occurred in its history. There is a lot to tell about Lahore. Many things have not been mentioned yet. However, a single graduation research is too short to mention all the findings. This research addressed only parts of real importance and analysed profoundly. Elements such as the architecture, culture and role of Mughal gardens need further examined during the research for the design process. I have felt that certain shortcomings and flaws are present in this research. This research was an opportunity to utilize technology around me differently in collecting information differently and use my sources and contacts in new ways. Yet, the cancellation of the field trip to Lahore feels as an missed opportunity.

I have mentioned earlier the changing patterns in the city regarding the pre-colonial and colonial influences and how these currently are translating. I have appointed that the disbalance between these have resulted in a dual pattern that exists simultaneously in all facets of life. Yet, regarding this case, the role of the partition is underexposed. The traumatizing events of partition, left the city with scars and changed the demographics of Lahore dramatically. An additional research is option to analyse what role partition has played in the segregation of society. Addressing the role the partition has played in history and the revolt against the British related to the Bradlaugh Hall will host a memorial in the design, to accommodate the healing process related to the tragedies of the past.

Space and identity may remain intangible and difficult to understand. Different stories and memories are depicting Lahore differently, yet they are true and representing different parts of the truth, of Lahore, of its identity. Genius Loci is related to the spirit of the place and its identity. But Lahore carries a bunch of spirits which are all part of the Genius Loci, creating a complex system meanings. Some parts are harder to define than others. As mentioned before, all aspects should be concretize in order to respect Genius Loci. But what if – in this case one of the – Genius Loci(s) is corrupting the others? An illness harming the people in the city? In that case, those parts should be defined and addressed accordingly. Starting the healing process and work on the recovery of this illness. In this research, the duality has been addressed as a Genius Loci of Lahore as the city of duality, which is an outcome of the translation of the patterns of the pre-colonial and colonial interventions that have corrupted the identity of Lahore till a certain extend. The duality has to be addressed in order to cope with the existential crisis. Somehow, this is part of the ongoing decolonisation process as the duality is caused presence of certain way of behaviour, thinking and ruling that traces back to the colonial era.

Yet, we should not glorify the past. The walled city was characterised for its inclusiveness and harmony, yet it was facing issues related to crowding and sanitation. The longing for nostalgia is - like Sehnsucht - longing for something that is intangible and out of reach. Instead, looking at the past to learn from is what we should do in order to move forward. The reality is, that the water issue is a problem occurring in many parts of the world and this will worsen. Participants of the survey have confirmed that the water issue will be the largest issue they will be facing in five year time

Reflection

A life without passion is like a wine without grapes. It makes things empty, tasteless and colourless. Simply toxic. Passions tend to give us a purpose, a purpose for living, something to go after for. Sometimes, a passion can be given a purpose, in helping us to leave the world in a better state than it was when we entered.

This is how I would like to propose my vision of architecture. As an element that contributes in making the world a better place. As architecture is more than simply constructing buildings and cities. It is how we shape our societies, direct behaviours and the well-beings of people. It is a way of artistic and cultural expression, yet a way of taking care of our planet and resources. If ill-conceived, all the things mentioned can be impacted negatively. This has been the case in recent years in Lahore. For me, architecture is not a solution nor an answer to our problems. Merely, architecture is a tool in approaching these issues. By carefully composing certain elements, we are able to create the right environment to spark certain flows and behaviours.

It has been more than a year now since I started graduating. Somehow, I believe that I have been finally able to express and explain myself properly now. Sometimes it takes a little longer to sort things out or find answers. This graduation wasn't necessarily about completing a task on a checklist. But rather of finding a way of how I would consider myself in the future from the role of a citizen, an activist and an architect. This made me feel that there was more on stake than a simply defining a research question and a solid research plan for graduation. I wasn't necessarily seeking for answers, but seeking for tools, ideas, ways of expression and exploration with uncertain expectations. The outcomes made me confront the complexity of the issue I was dealing with. The water related issues weren't merely an outcome of an environmental crisis, but of multiple issues that are rooted deeper in Lahore. A part of an existential crisis, that is in need of reforms and new implantation through different scales and facets.

In order to deal with the ongoing (post-colonial) existential crisis, I tried addressing the spirit of place (Genius Loci) and how it had evolved over time (Zeitgeist). Yet, a solid graduation plan was still missing. On one hand, this made the journey more enjoyable. Discovering stories and arts related to Lahore triggering my mind and emotions. On the other hand, the wandering made me go lost in the woods. All the information found was interesting and linked to one and another. But it wasn't necessary something we needed. It was simply too much and was something my research tutor had warned me for. The time that was given to me for my retake, was a moment to filter and reorganise the box full of treasures. This was needed to lighten the heavy box in order to carry, even after the retake.

An effective way of processing and framing the information found during my research was through the self-given task of postcard/collage making. Helping me to reinterpret the information and images I had discovered. When looking back, these postcards have unconsciously become a reflection of my vision. A vision where the city is no longer continuing the ongoing narrative of the ruler and ruled one that has been continuing since the colonial rule, nor the Mughal city Lahore once was. Rather it is the reimplementing of the City of Gardens Lahore is often referred as. We cannot go back to the past nor erase our history and its influences. But what we should do is use – or reflect to - our past in order to fix and reshape the future. Reinterpreting the Genius Loci, adapting and counterbalancing it to our Zeitgeist.

Reflecting to this, there are things that I could have done differently. Despite the effectiveness of framing through sketching and postcard/collage making, I could have put more effort in writing in early stages in order to organise and to overcome the issue of having too much information. Difficult to this is my writing style in early stages. The way I write and put things in drafts quickly is helpful to me, but harder for my Research tutor to follow and understand. In an early stage, it takes too much effort and time for me to write flawlessly in the first attempts. This is why I writing wasn't the obvious option for me for communicating and expressing in early stages. Perhaps reconciliation beforehand, would have helped us in finding a right balance that would benefit both of us in expressing, organising and understanding. However, this is not the sole reason for having collected too much information. What could have prevented me from doing this is by choosing a location earlier. From distance, it was hard to get in touch with the place in a smaller scale. No matter what I tried, Lahore seemed to be out of reach. This is perhaps why I kept researching, endlessly increasing the heavy load. Choosing an exact spot is something that would have helped me to work analyse more precisely, saving time and effort.

There is an old proverb: when life gives lemon, make lemonade. The pandemic has impeded me from visiting Lahore. But it has brought me to Bradlaugh Hall, which was an opportunity to zoom in on a specific part, and get a hold on the place. During my design process, sketching was the primary and only source of analysing, brainstorming and framing information. Yet, due to the lack of precise information and Google Street view, the proposals and drafts remained sketchy. For certain moments, I remained in the same loop regarding vagueness and terms of detailing of my drawings.

This was a setback in the design process regarding progression. In contrary to this, there were two key moments that had helped me make progress again in my design process. Firstly, The recommendation from my Design and BT tutors, for constructing a 1:100 model of the building and site, allowing me to mould the building and its surroundings physically in multiple dimensions. Secondly, analytic reviews of references in literature and re-translating them by sketching in order to understand the purposes and foundations. With these new set of insights, I didn't delay in putting things in a digital 3D model, helping me to develop continuously. The digital model had helped me to construct further and experiment more in depth than sketching only. But certainly, I kept drawing and working in the physical model, as supporting elements in my design process. When looking back, this is what I would like to address myself to. To consider multiple tools and scales from early stages throughout the process. And if things tend not to work out at that moment, try to do things differently, by approaching differently or implementing different tools. By exposing ourselves to different tools, we will be able to obtain new insights in our process. Bradlaugh Hall is a colonial building with eclectic features in the façade. Yet the features such as the façade, ornaments, stage that tend to end abruptly. This disparity gives the building an unorthodox appearance for a colonial building. Completed yet unfinished. One could say that my implementations were an attempt to finish the building. Not in a way it was probably supposed back then. But in a way where contemporary standards and architectural language amalgamated the past with the present. A coexistent translation in the use of materials and purpose of the building, in the way I am hoping for the coexistence of Lahore with its past and scars instead of wiping them out. From the interior, the mass of the bricks and the lightness of the wood and glass have become an entity. This is not translated in the exterior where the contrasts are stronger visible, with a thin border in-between.

The complexity of my research is reflected in the layout of my design. There are multiple aspects, programs that are part of composition. I have attempted to implement these features in a simple, elegant and well-considered manner, supporting one another in their physical appearance and the probability of succeeding in their purpose. In the complexity, the intentions are clear, utilizing architecture to create a better world. Not directly in terms of aesthetics, but in terms of programming, the future Bradlaugh Hall – Temple of Dialogue – will serve as a common ground for all citizens, for working, meeting and learning. A place where people from various backgrounds can come together, share and interact, which will lead to better informed citizens. Such (public) buildings are a necessity in order to achieve the goal of resilient societies and cities. In cities, we need more than simple dwellings, roads and basic amenities for survival. From a certain point, people need more than shelter or food only. People will develop and urge to fulfil psychological needs, to have meaningful relationships, to express, learn and having awareness. I am convinced that the self-deliberation is considerably a following step needed in the developments of many countries that have to (yet partly) overcome the deficiencies in their basic needs. It is not one or the other, but a way in becoming self-sustainable. And once having these elements, is what I believe sustainability and resilience is about. In this sense, architecture is merely a tool.

Now all the things defined, it is time to show how I believe things will work out in my proposals. Carefully drafting out the elements and showing how I am expecting them to work out. There might be still some points of discussions, in order to improve certain things rather than (re)defining them. Towards my P5, I am hoping to (re)generate images that will explain all points clear as simple as possible, without losing the touch of the environmental spheres.

Conclusion

What role did water play in the development of Lahore through its history?

Water infrastructure played a major role in the history and construction of Lahore. Mughals initially constructed gardens to cope with the harsh climate by the virtue of irrigation canals, on foundation of the Chahar Bagh principle. The positioning of the walled city with its enclosing suburbs and many gardens around indicated a strong orientation of the Walled City towards the river, embellished with shrines and monuments on both sides of the river.

The British would address series of reforms. With the renovations of the existing networks, – that had been neglected and abandoned - expansions and extensions of canals. The implementation of management through hydraulic engineering would guarantee a constant flow of freshwater, making it possible to construct new gardens an increase of agricultural productivity resulted in a better livelihood the Punjab province. The modifications and developments of the Lahore Canal, re-orientated the city away from the Ravi, towards the newly irrigated and developed landscape.

With the expansion of the irrigation networks the river diminished physically from the cityscape and also in from the collective imaginations of the citizens. as the importance of the Lahore Canal grew in importance as a urban artery. By shifting the flow of water that had been the lifeline of the city, the former centre of the city (Ravi) was pushed to the periphery.

What is the relation between urban water and Lahore?

The city largely expanded along the Canal. With the transformation from an agricultural landscape to an urban landscape, the Canal largely lost its purpose for irrigation. By time, the lush banks of the canals were discovered by the people as a place for gatherings and recreation. The natural landscape had become a cultural landscape, serving as a public domain for the people.

The developments of recent years have decreased protected green areas, trees and public domains. Additionally the infrastructure projects have reduced the connection between the city and water, cutting the city from its water bodies and heritage, regarding the management of water that made it possible for Lahore to climatize, cultivate and grow. This has left no room to mitigate excessive heat and rainwater during monsoons.

What is the Genius Loci of Lahore?

The **urban Genius** is never purely local. It is a place where the local Genius meets the foreign, creating a more complex systems of meanings (Norberg-Schultz, 1979). The **duality**, that is part of the Genius Loci of Lahore, has siphoned in all facets of live. Creating a disbalance in politics, representation of people and accessibility to basic amenities. The segregation associated with space division among citizens has led to a mindset amongst citizens that generates a discourse of exclusion leaving them uninformed. This, the duality and the segregation that comes is considered as an illness and should be addressed accordingly.

What actions have activists proposed in order to create awareness among citizens?

Sources have appointed the lack of awareness among citizens, stating that the division between the different demographics of the city is instigated by the lack of communication, creating an atmosphere of uninformed citizens who remain uninformed about the things happening outside their own circles. As long as the affected general public are not represented and their demands nonapparent, little to no outcome can be expected.

The first step in overcoming this issue is providing a neutral, common ground for all. This is an effective tool for bridging the gap between citizen and allowing them to interact with people out of their circle. This will enable citizens to become aware of the things happening around them. Aside from this, another affective tool sources have recommended is the mobilization citizens and civil society trough participation. Through citizen effort to participate and the cooperation with groups of people with a standing, credible and technical expertise, people can educate themselves related to the events happening and provisions they can take themselves. This step moves citizens to mobilise in long term in creating a counterbalance to lobby for equal rights and a more sustainable way of planning.

How can architecture address and translate the local Genius Loci of Lahore, while addressing the (broken) relationship with water?

The current water crisis is part of a larger existential crisis, where different cultural patterns have resulted in a duality reflecting in all facets of society. In a city where water bodies and infrastructure played a crucial role in the developments.

Providing a common ground that will allow a dialogue and cooperating with experts who have the knowledge will allow people to allow to start a dialogue with people out of their own circle in which will help becoming aware. In terms of architecture, the Bradlaugh will be set up as an laboratory in engaging heritage and testing new ways of sustainability in Lahore. in this process based approach, this will catalyse a movement in mobilisation of citizens and forming a counterforce in the city.

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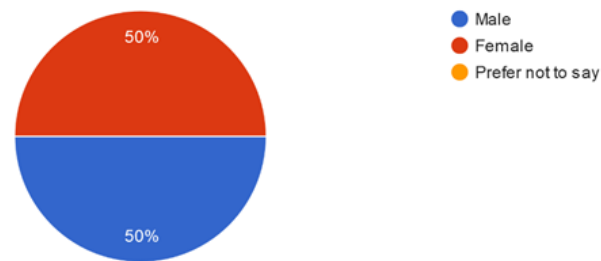
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Appendixes

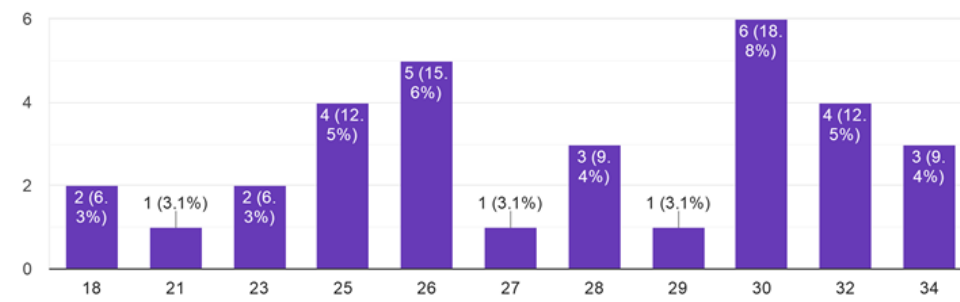
Appendix A: Outcomes of conducted survey

Figures 1-11 (source: Google forms)

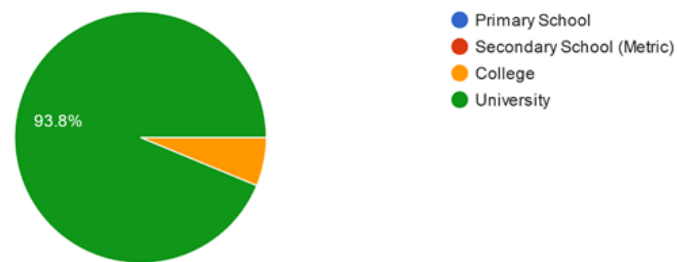
Gender
32 responses



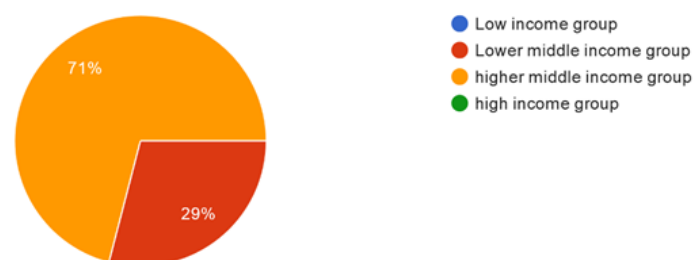
Age
32 responses



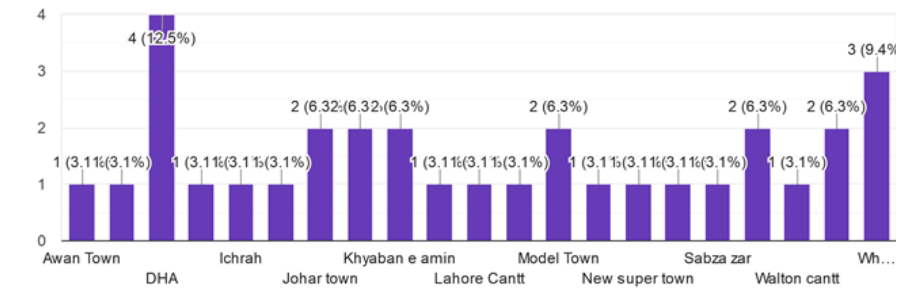
Highest level of education
32 responses



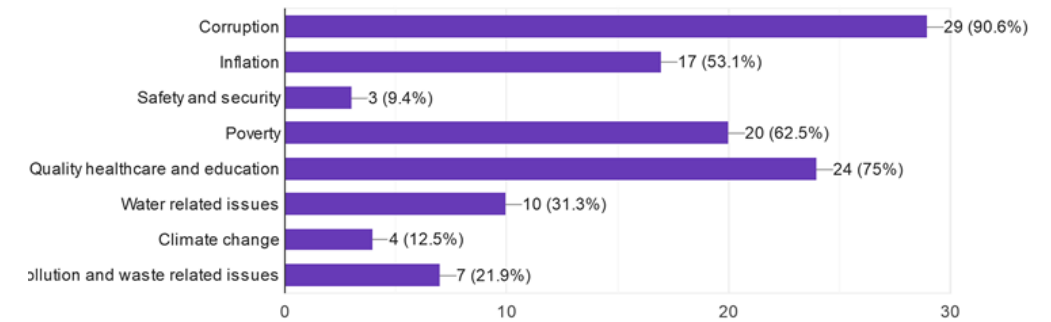
I would identify my household as a
31 responses



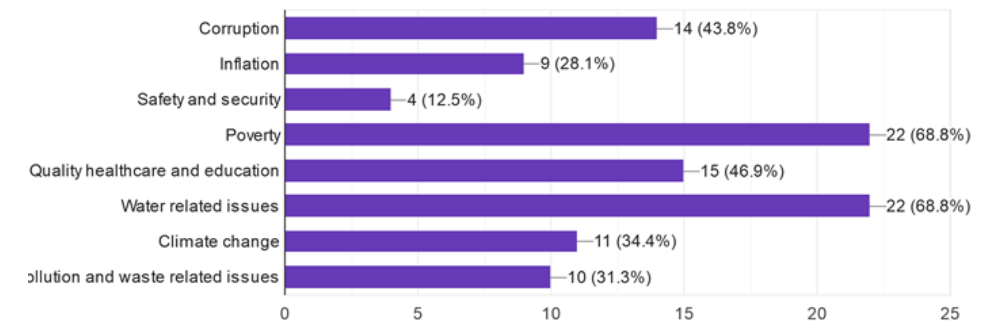
Which neighbourhood are living in?
32 responses



According to you, what are the **three** biggest challenges the country is currently facing?
32 responses

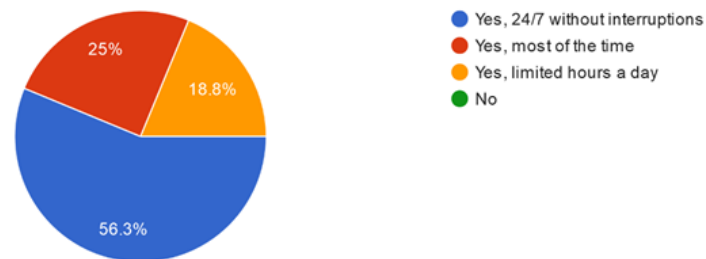


According to you, what are the **three** biggest challenges the country will be facing in five years time?
32 responses

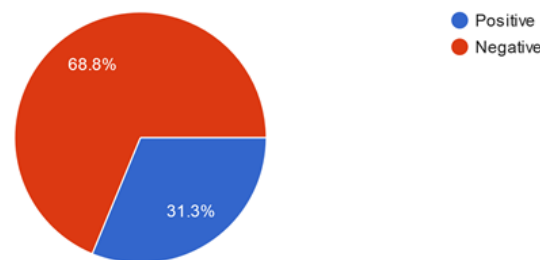


Appendix B: Bradlaugh Hall

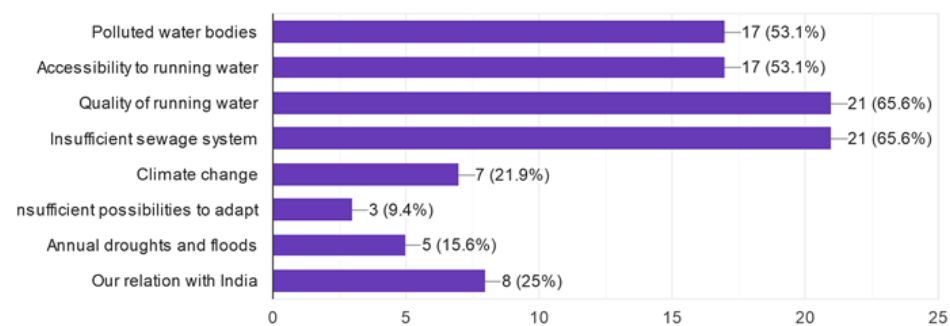
Do you have access to running water?
32 responses



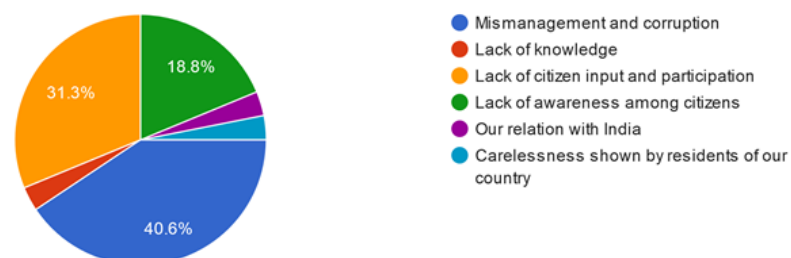
How are you viewing the developments in the city regarding climate change and the water related issues?
32 responses



What are currently the **three** biggest threats related to the current water crisis?
32 responses



According to you, what is currently the largest setback in solving the water crisis?
32 responses



In late 19th century, there were two main halls in Lahore, namely: The Town Hall in the municipality office and the Montgomery Hall in the Lawrence Gardens. Both halls were owned by the government at that time. As a result, these halls could not be used to host political events (Ali, 2015). Sardar Dyal Singh was aware of the need of a suitable public space to hold public events for political purposes. With Rs. 10,000 rupees saved by the Congress Party, construction began in 1900 of the Bradlaugh Hall (Ali, 2015). Even though the building was owned by the Congress party, the building would host other (political) organisations as well (Moffat, 2019). Irrespective to creed, religion, or political ideologies; debates, literary sittings or mushairas (poetic recitations) would fill the hall with spectators. This place would become a hub for freethinkers, politicians, and writers; hosting notable speakers and philosophers of that time such as Muhammad Iqbal and Mian Iftikhar Uddin (Ali, 2015). Along with the political background of the hall, the hall would serve as a cultural forum related to literature, arts and culture, hosting stage dramas and theatrical performances (Ali, 2015).

After the partition, the Congress party relocated to East Punjab (India). In the first decade after partition, the hall housed refugees from Amritsar, and served as a warehouse for iron merchants and as a grain silo (Ali, 2015). After the 1956 floods, the building was not suitable anymore to store grain. In 1957, the Evacuee Trust Property Board handed the building over to the Milli Techniki Idara (National Technical Institute) for a period of 99 years. The MTI repeatedly neglected the building with illegal interventions, land deprivation and exploitation for monetary and personal interests (Ali, 2015). The MTI ceased their operations from this building in late 1990s, renting it out to various persons in the area, such as a public school and tuition centres (Ali, 2015). These operations have been halted by the Evacuee Trust Property Board and the building has been sealed off afterwards. After the Partition, the neighbourhood grew denser, obscuring the view from the main road by the construction of new apartment building (Maffat, 2019). In the northeast corner of the building, a classroom has been occupied by a family. In the shadows of the building, older residents sit together giving them a chance socialise outside in the hot weather (Maffat, 2019). The interior has been neglected and left in terrible state, with traces of cigarette butts and discarded blankets, suggesting the use of the space by rough sleepers and seeking temporary escape (Maffat, 2019).

Appendix C: Program

The issues mentioned and the goal I am opting for should be translated in an architectural artifact (building). This building should contain different functions and elements integrated in one building that will help in catalysing a move towards resilience.

So what type of building could help in order to achieve this goal:

People who know what they are doing and what they're talking about, sharing their knowledge

- researchers?
- entrepreneurs/start-ups?
- activists?

Sources available for the people

- Internet
- Books
- Place to study
- People doing research or working on those topics

Ways to transfer knowledge

- Workshops
- Lectures
- Platforms for discussions

Common ground for expression, interaction, dialogues and debates

- floorspace
- restaurant
- espresso bar/teahouse
- stage

When talking about the functions we need to house in the building, we come quite close to a library/community centre. But we have to rethink the library as we know. the library is more than a hall with books and tables to read and study. Hosting different functions and events where people can come to learn and to teach, share information, having an open dialogue while drinking a good cup of tea.

Usually, libraries are funded by municipalities, who acquire the money through taxes, or funds from the government. This way of operating will leave us with uncertainties, as the government has other priorities at the moment and most probably insufficient funds.

figure 1: traditional way of funding vs a new possible way.

However, by rethinking the concept of a library and restructuring the method of operation, we do not have to rely on funds of the government. A building consisting a library, common space, teahouse, and commercial spaces. The small commercial spaces will host smart companies/start-ups, preferably with the similar interest, such as advocating for the rights of people and for the city. The money collected from the rents of the commercial spaces could help to run the library. In addition to this, the tenants of the commercial spaces could host workshops and lectures for students or people from the neighbourhood, sharing their knowledge and perspectives that people could implement.

Appendix D: Analysis Sant Nagar and Data Gunj Baksh



Figure 1: Morphology (own Image)



Figure 2: Buildings (own Image)



Figure 3: Green spaces (own Image)



Figure 4: Medical centres (own Image)



Figure 5: State Institutions (own Image)



Figure 6: Education (own Image)

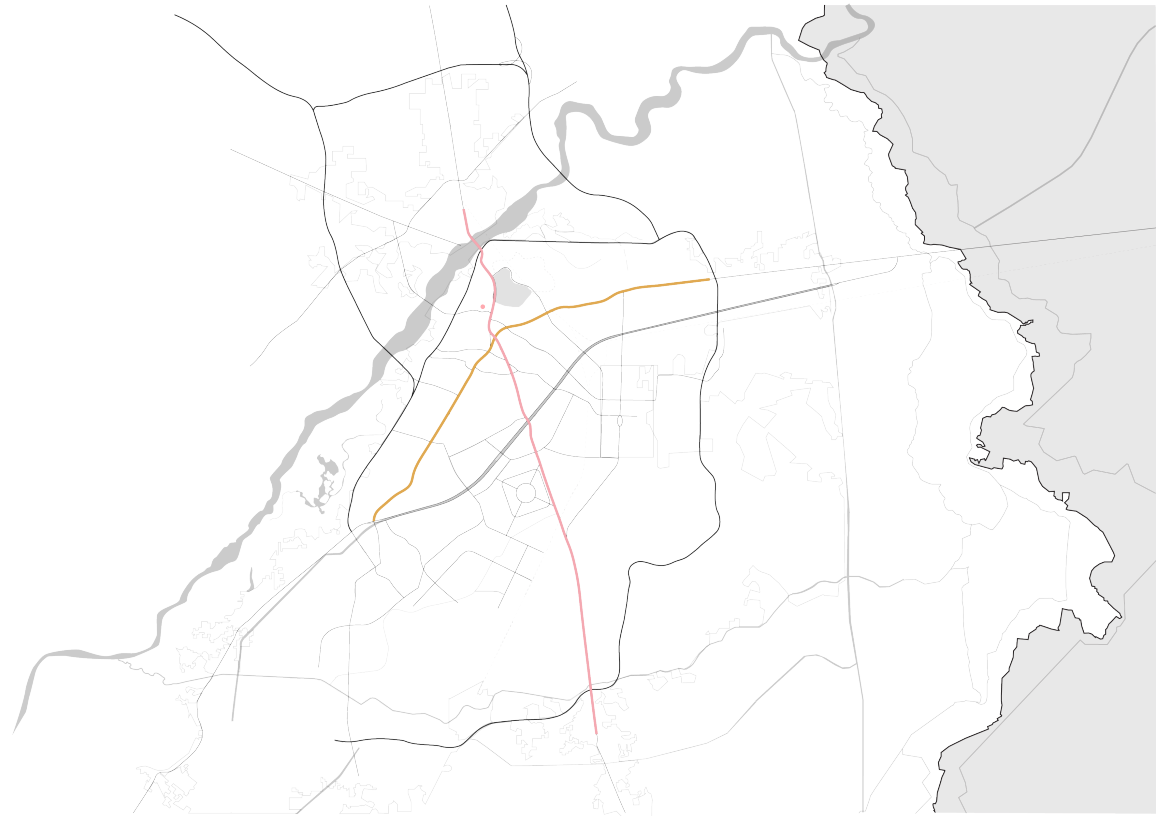


Figure 7: Rapid Transit Public transportation (own Image)

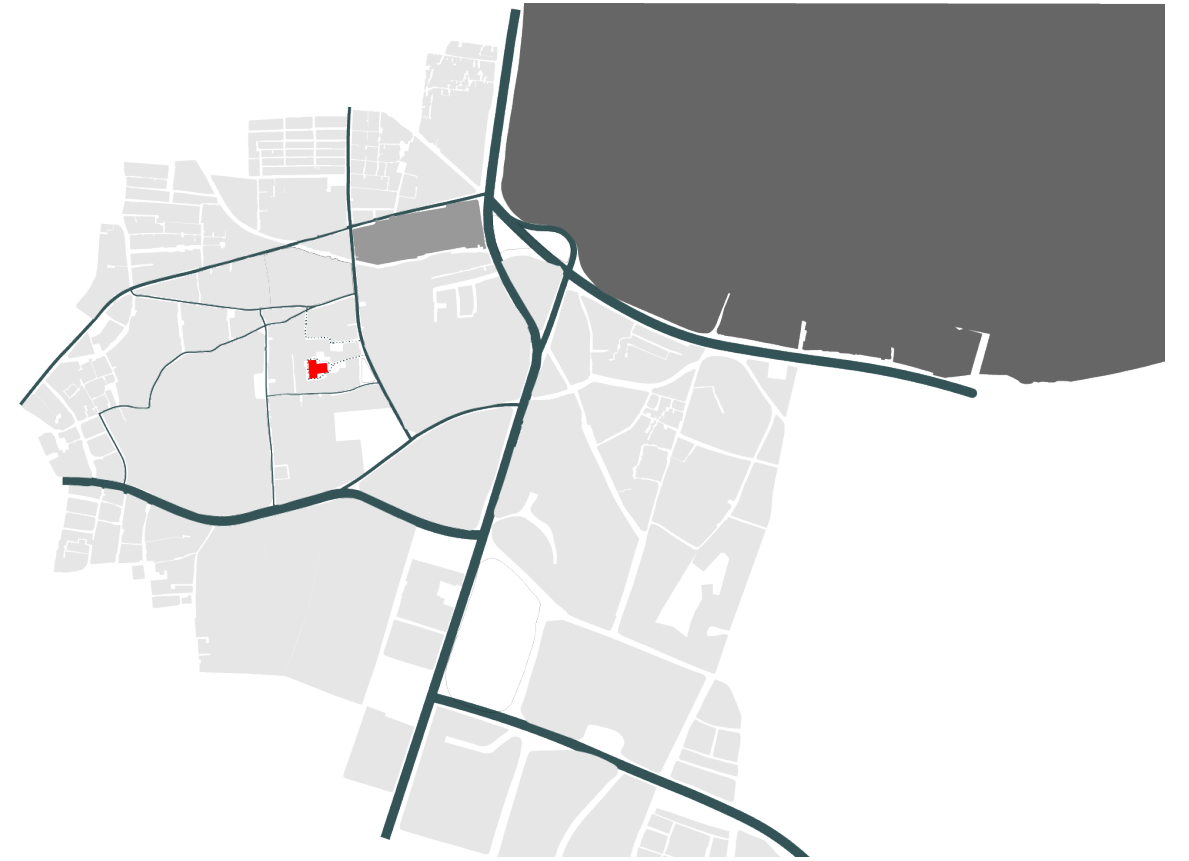


Figure 9: traffic intensity (own Image)

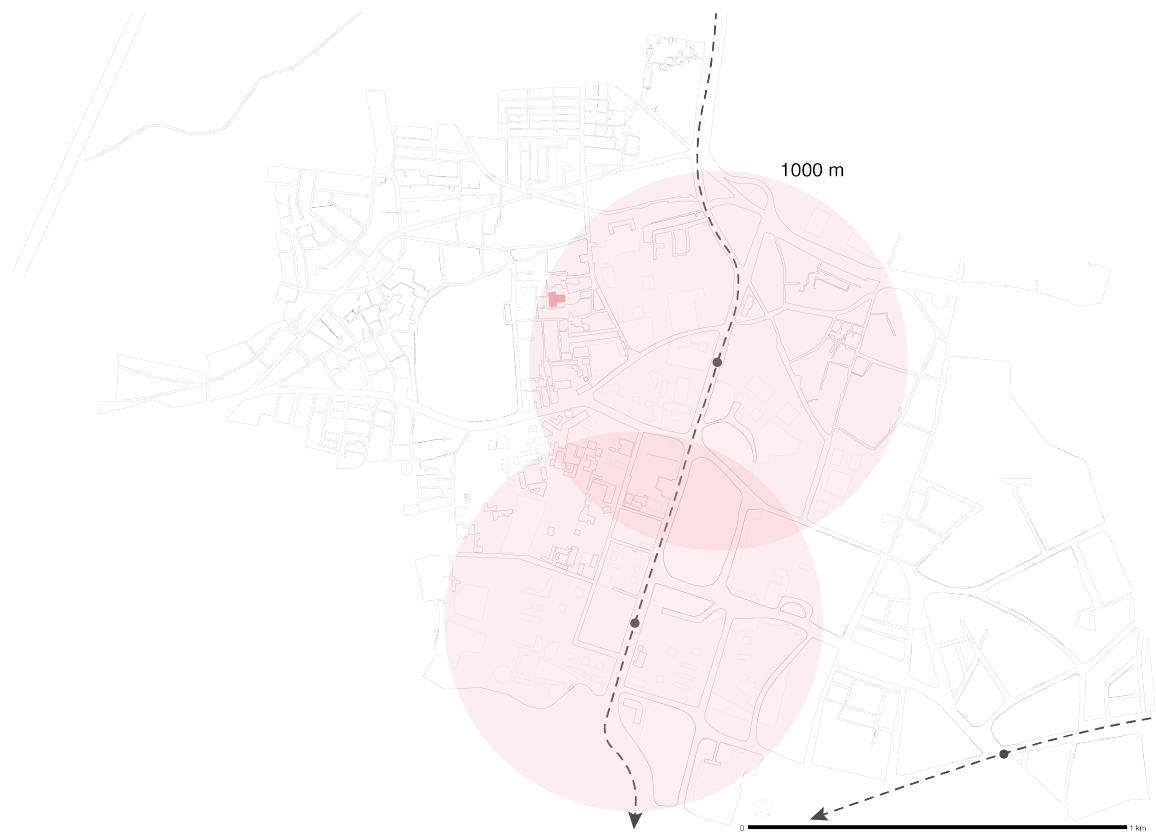


Figure 8: BRT stops (own Image)



Figure 10: Major routes (own Image)

Appendix E: Analysis Context Bradlaugh Hall



Figure 1: Built area (own image)

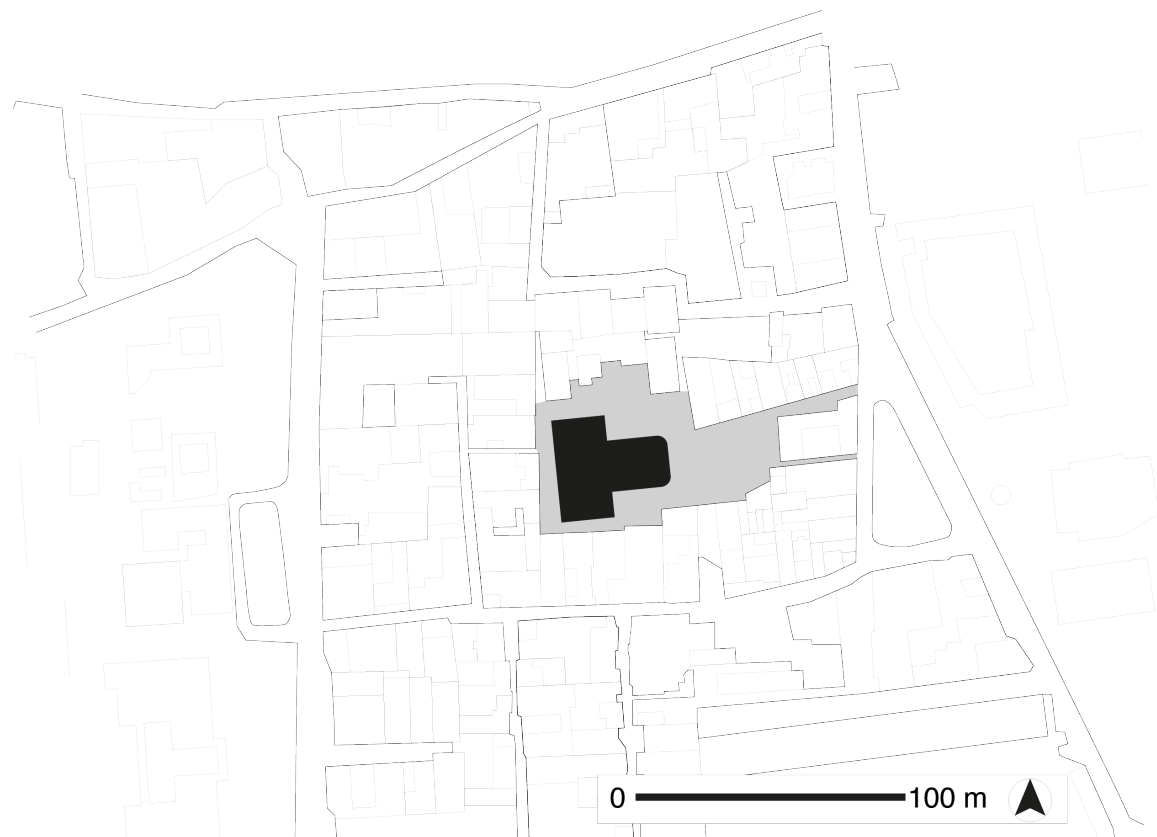


Figure 2: Court (own image)

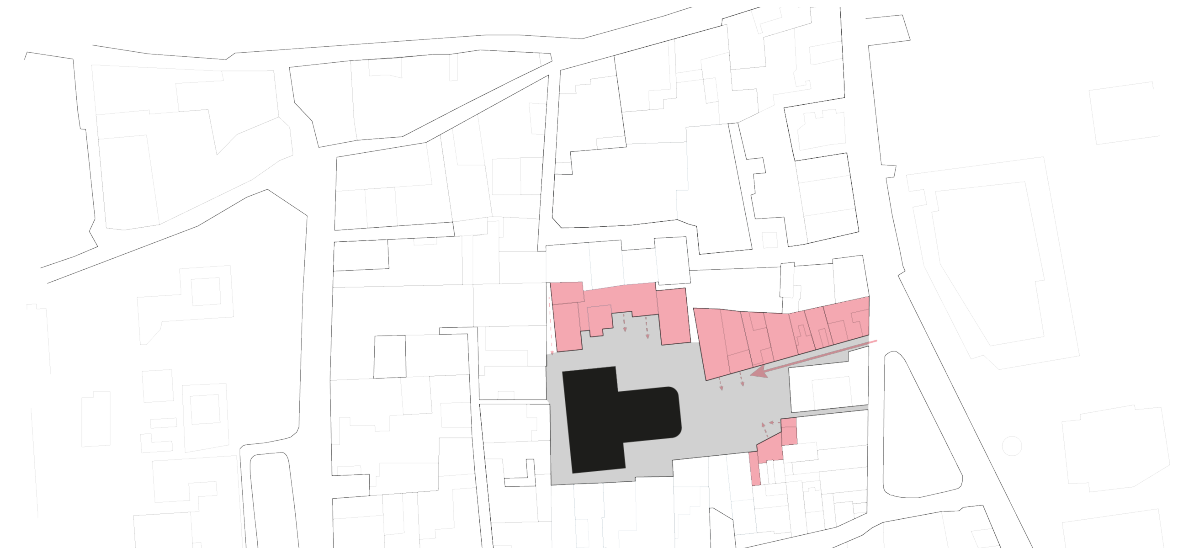


Figure 3: Entrances (own image)



Figure 4: Education (own image)

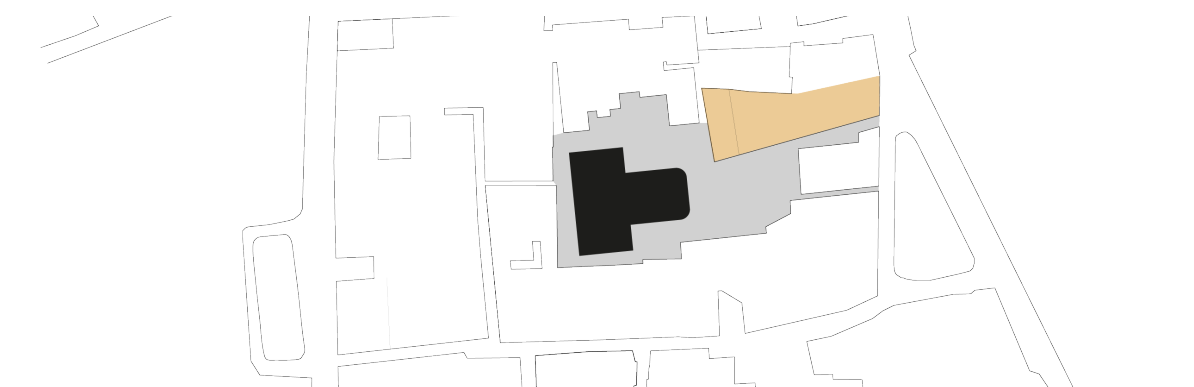


Figure 5: Commercial (own image)

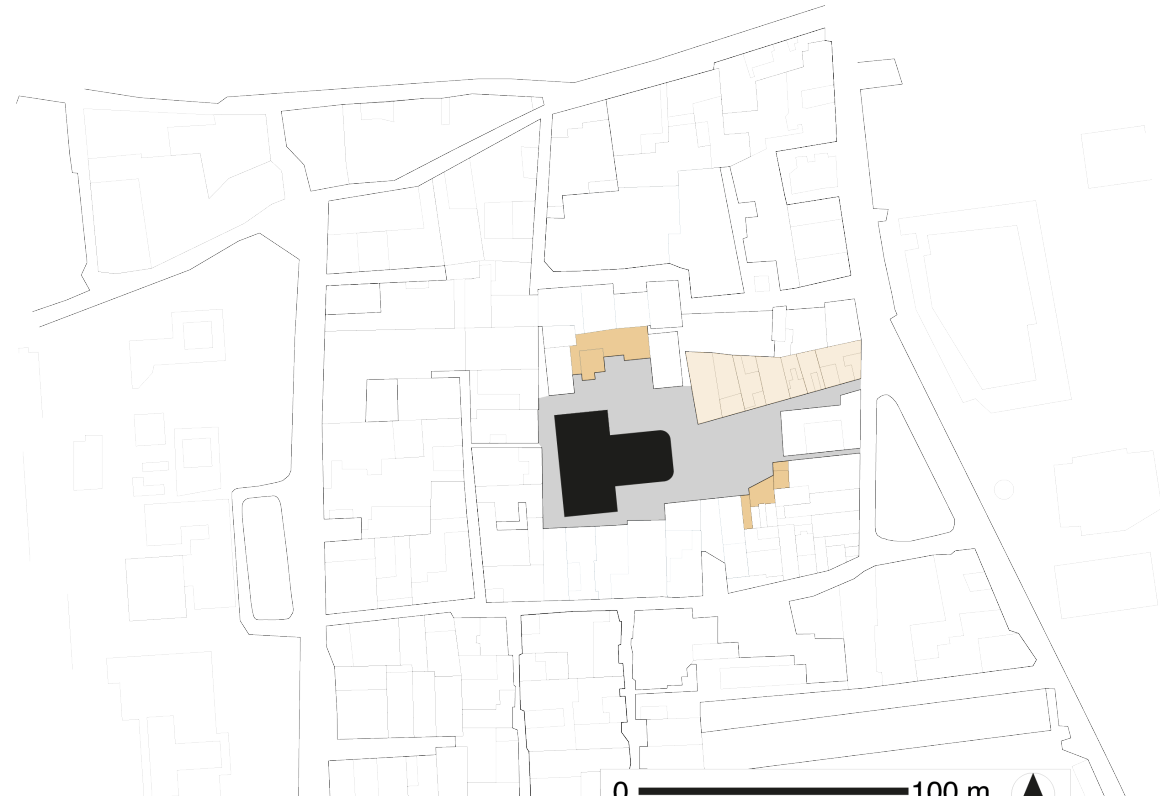


Figure 6: Residential (own image)



Figure 8: Illegal construction on the land of ETPB (own image)



Figure 7: proposed for demolition (own image)



Figure 9: routing (own image)

Appendix F: Examples citizen participation

Pakistan Chowk community

A community building is located at the Pakistan Chowk (square) in the Old Town of Karachi. Till the 1970s, Karachi was famous for its characterizing culture and public spaces. The Pakistan Chowk was used as place for literacy, where people would gather and exchange ideas related to literature in forms of mushairas, bathaks etc. Unfortunately, this declined steadily from that period like elsewhere in Karachi (Anwar, 2020; Mazhar, 2019). After the completion of the first phase of the Pakistan Chowk, the square would serve as a gathering place for thinkers, emerging dialogues for sensitive topics that required a more intimate space. Therefore the idea was envisioned for a space hosting art and cultural activities.

These events resulted in the foundation of the Pakistan Chowk Community centre. This centre is a two-room spaced housed in the historic Sultani Mahal Building which is located at the square. Their goal was to offer them a space for book launches, baithaks, exhibitions and town hall meeting and place facilitating research, in order to bring the residents of the Old Town together.

Important pillars:

-Baithak (The Talking circle), informal setting for people of different backgrounds to meet for tea and discuss events regarding social, domestic, economic and political issues. The aim of the baithak is to start talking about issues in their immediate environment that they are dealing with and to start movements as a results of them.

-Palak Jhapak (film screening and theatre circle): hosting film and television screening, talks, and workshops on various aspects such a screenwriting, editing and acting classes.

-Soch Siyahee (literary space): literary space reserved for conducting workshops and events celebrating literature, writing and poetry. The quiet space allows people to write in silence.

Aim is to bridge spatial and symbolic gaps between different groups and classes.

The restoration of the public chowk was made possible partly by personal donations and partly by the Goethe Institute. Local stakeholders were involved in the restoration and renovation works. The renovation and decoration of the community centre was made possible with a donation of \$5000 from the I Am Karachi (IAK) movement and personal funds from the supervisor. Although the contributions and the significance of the community centre, people have raised concerns for the management and sustain these spaces sustainably in the long term, if there long-term commitment from the public and private sectors or the absence of the local government in engaging and contributing such initiatives (Anwar, 2020).

I am Karachi movement

The movement started as a civil campaign in 2011. The movement transformed from a donor-funded initiative by the USAID into an NGO, focusing the reclamation of public space in Karachi (Anwar, 2020). It started as a response to the growing violence in the city and its public spaces, caused by adverse social and cultural shifts. The IAK movement advocates cultural stimulation, creativity and expression by engaging dialogues and

interaction in public spaces. The focus is on engaging the youth, as this age group is more vulnerable to crime and violence.

One of the initiatives is called the Walls of Peace, spreading messages of peace and harmony through the city and walls in public spaces which were often covered with aggressive political slurs, by repainting them with art and messages celebrating Karachi's heritage and cultural diversity.

Another initiative are the sport programs in the city, where the movement is reviving sport fields in the city for the youth, especially in the underprivileged areas.

The movements relies mainly on funds from the private sector and philanthropic support. Despite the planned budget for maintenance for the completed works, it is difficult for them to maintain and scale up to other underprivileged areas with the limited funding and support from the local government. They have indicated that in the long term, more support and facilitation is needed to maintain a wide-scale and sustainable change.

(Anwar, 2020)

Lahore Bachao Tehreek (Movement of saving Lahore)

Lahore Bachao Tehreek a movement comprising a group of concerned citizens, architects, lawyers and environmentalists (Khan, 2014). Determined to raise awareness, concerning accessibility of human rights to all citizens and condemning unnecessary construction in the city (The newspaper's staff reporter, 2017). Continuing to redirect the process of development, protecting natural and built heritage, in order to preserve the culture, identity and history. (The newspaper's staff reporter, 2017) distressed by the wilful violation of law continues.

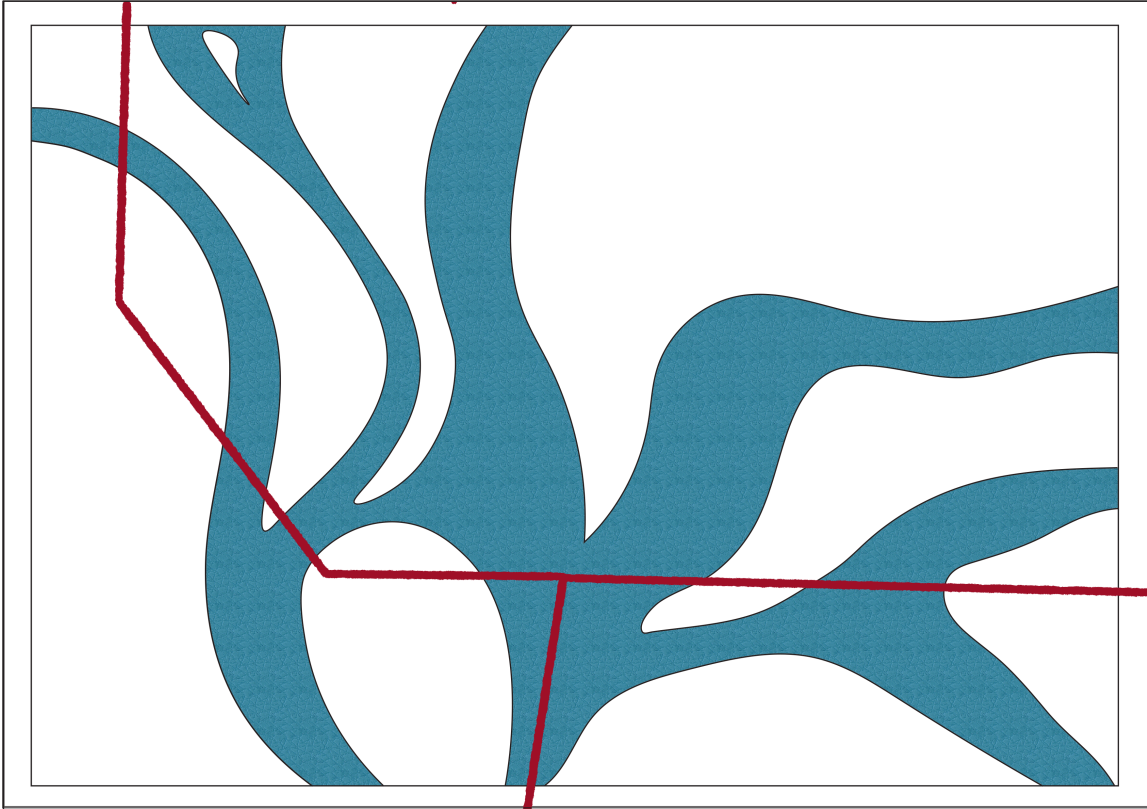
This movement in Lahore operates as a pressure group, consisting activists from different backgrounds, such as concerned citizens, lawyers, environmentalists and architects (Khan, 2014). Their focus is on battling against developments projects that are harming the environment and condemning unnecessary constructions in the city, and raise the issue of access to human rights for all citizens (Khan et al., 2020 & The newspaper's Staff Reporter, 2017). Despite their importance and the work delivered by these activists, They are facing lack of financial and technical recourses and support from state and society (Khan et al., 2020). Some activities aside as hosting workshops for citizens to create awareness and improve self-sufficiency to help them to generate more money. This makes it difficult for them to scale up. However, the participation fee restraints people from lower income groups to participate and becoming more aware about certain issues.

PK Das Associates

<http://www.pkdas.com/pdfs/PK-Das-A-summary-Profile.pdf>

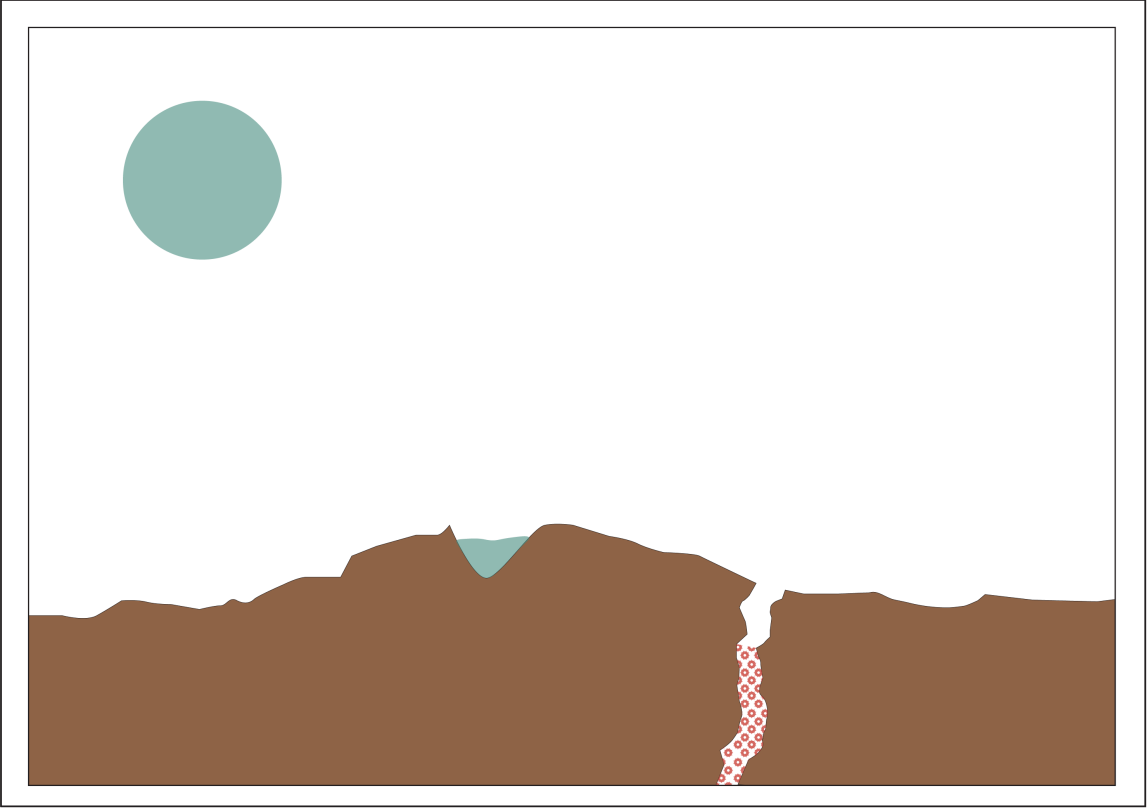
PK Das in an architect-activist based in Mumbai. His priority as an architect is to establish a strong relation between architecture and people and involving them in the planning process. According to Das, shared common spaces comforts, connect them and bring people together. His emphasises strongly on participatory planning, believing that integrating architecture and democracy will bring strong the desired social changes. Examples of his works are the reclamation of the public spaces at the waterfronts in Mumbai and open spaces along watercourses, and engaging in policy framework for public housing. Somehow, they manage to achieve much more. More democratized institutes? More funds? Worked longer on this? Possible because of the social and political climate earlier?

Appendix G: Postcard Collages



Borders through Natural landscapes

We cut through you
deeply and presumptuous



Torn Land

you bled
you're hurt

not abandoned
yet no one took care of you
no one listened



Shards of truth - Genius Loci

even though you seem to be unbreakable
you have shattered a thousand times

I had been looking for you
corners, dark alleys and abandoned paths
where had you been hiding



Journey of despair

when the last tree was cut
the wells of life poisoned
and paths flooded with apathy

we realised we had nothing left
nor anywhere to go



Zindagi ka safar - journey of life

Walk gently

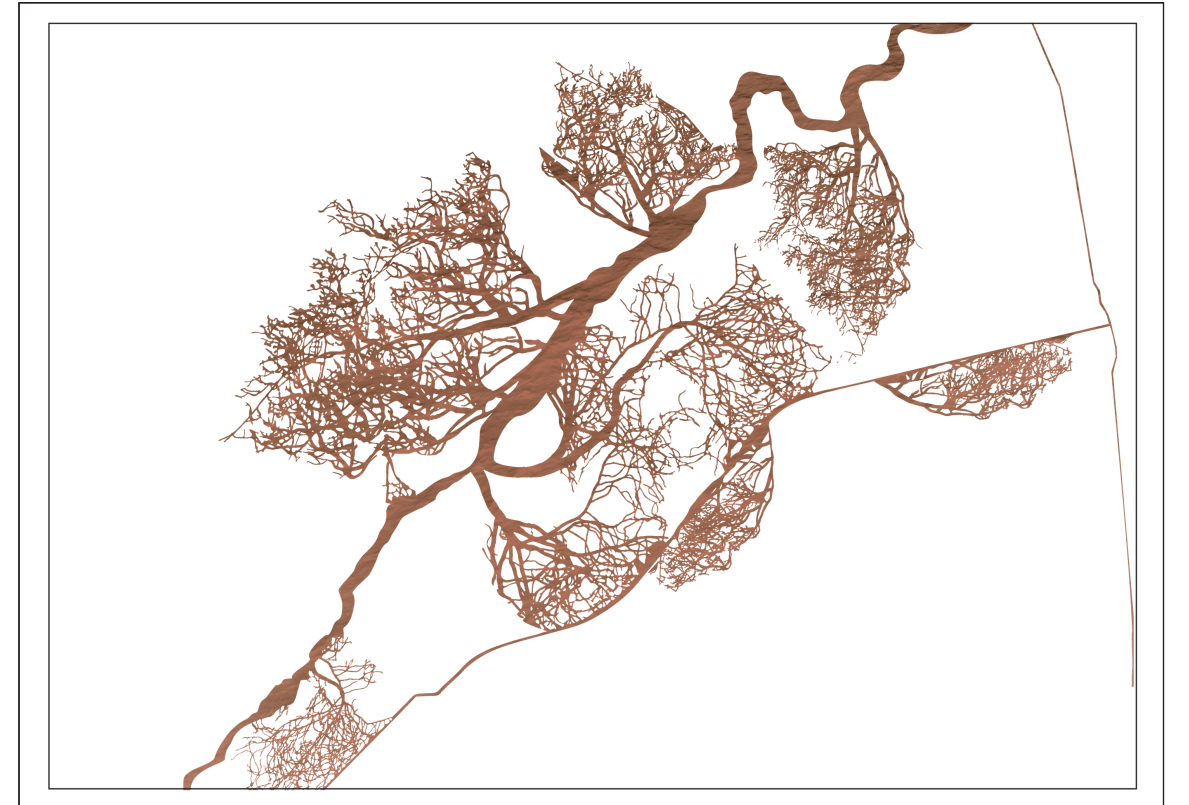
forgotten are the steps our ancestors had taken



Exploring strategies



Exploring Landscapes

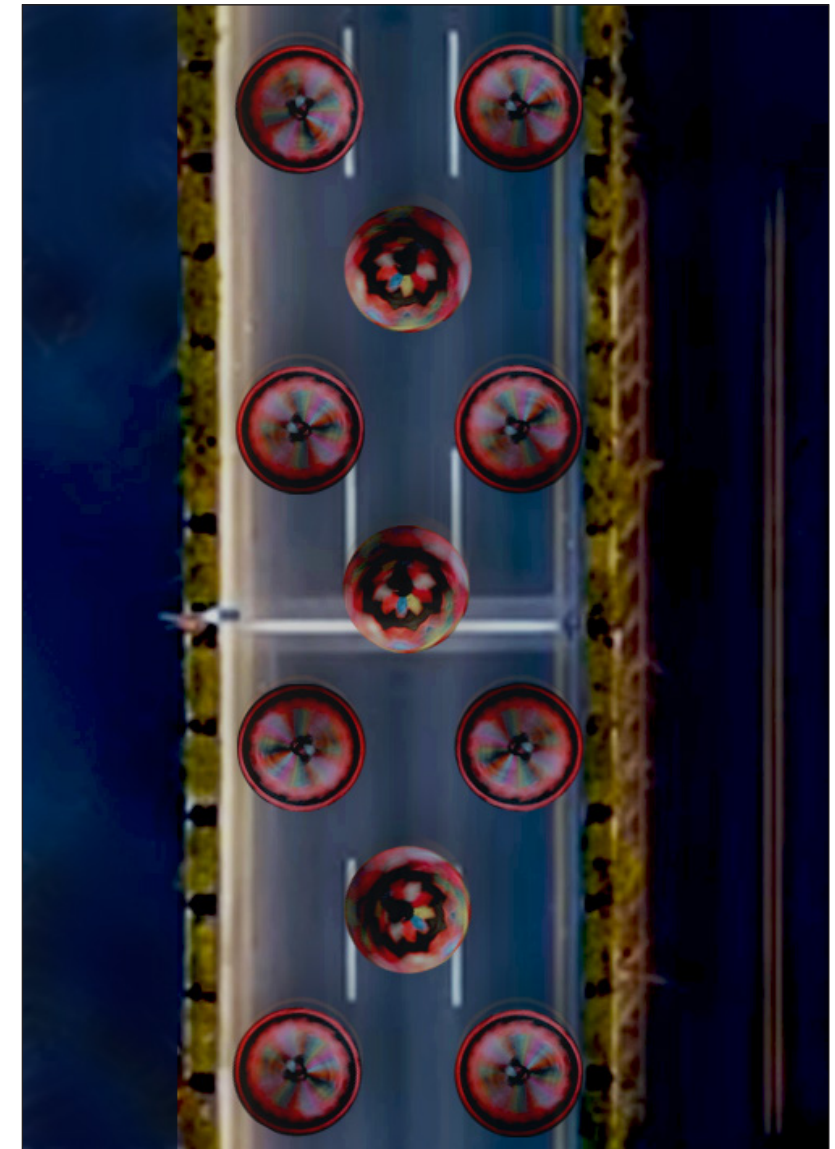


Veins of life



Ways of interpreting

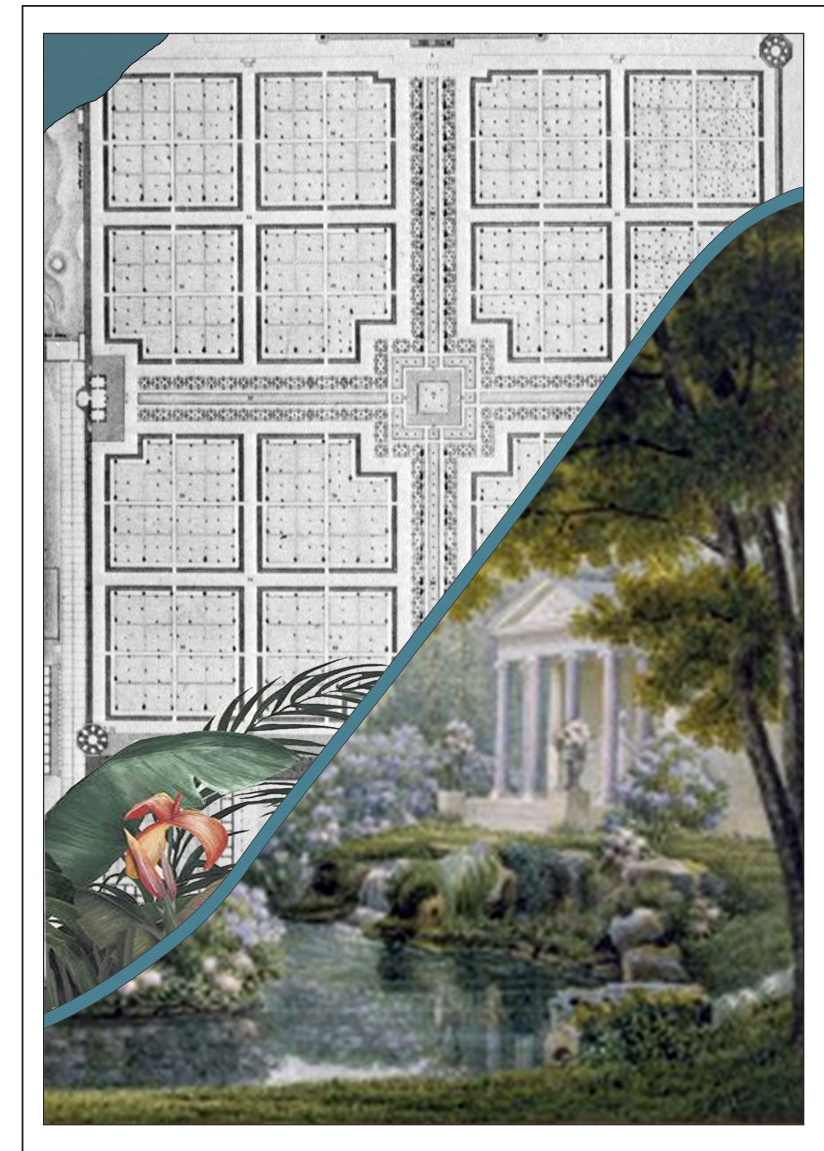
7 sins
7 shakras
7 verses in the opening



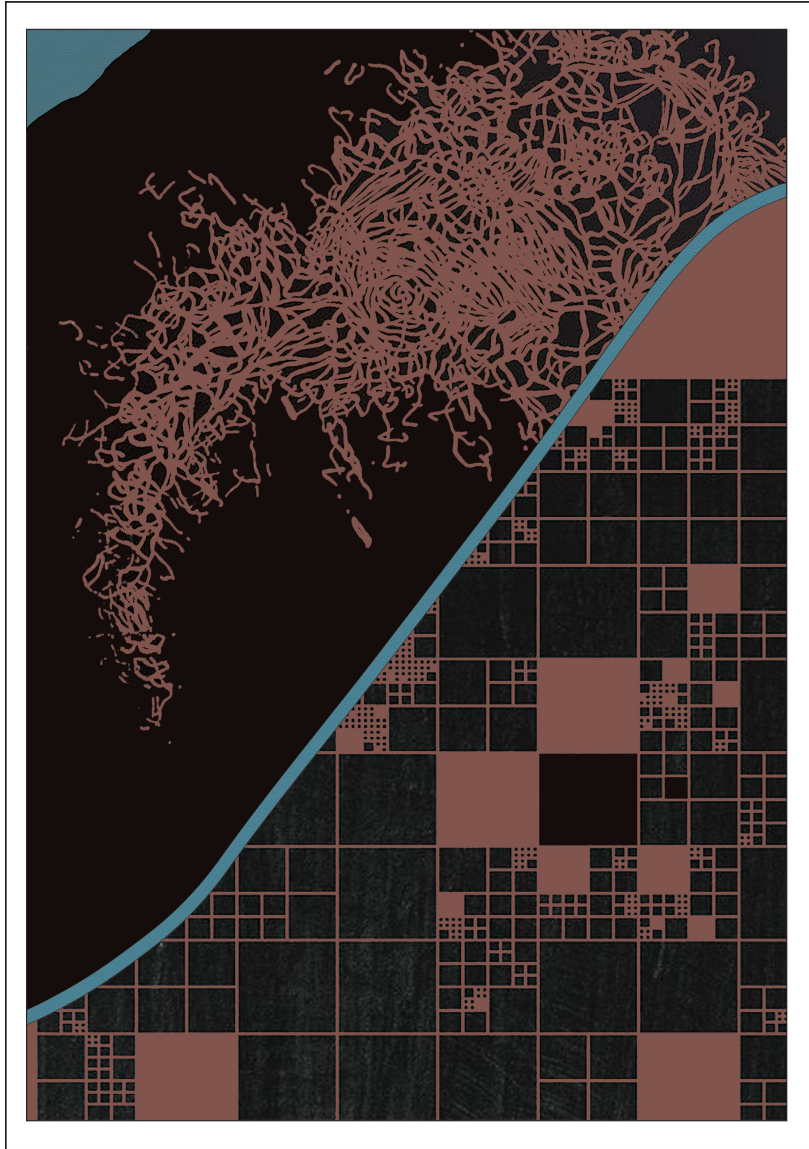
Journey of spectacles



Duality
Spirituality vs. Industrial powerhouse



Duality - Landscaping

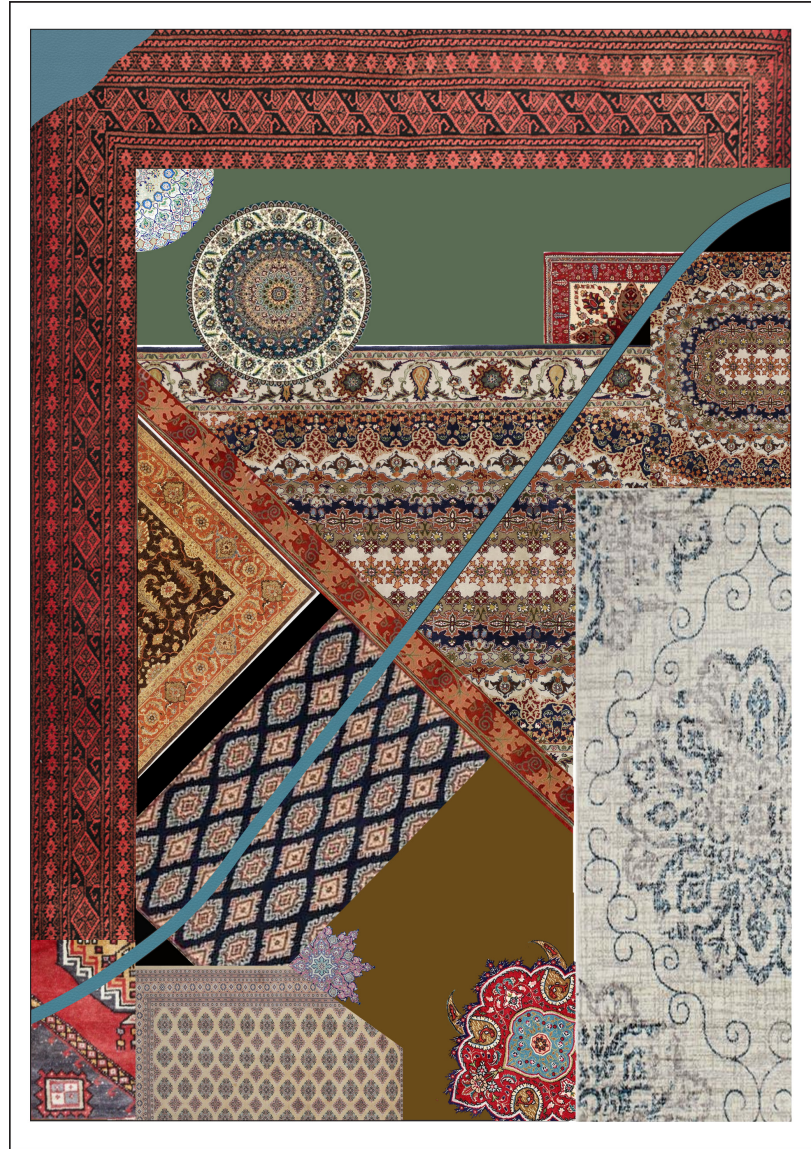


Duality - Morphology



Layers of history

The sky is the limit they said
yet the earth looked more colourful than ever



Rugs of reflection

Here are Indians, there people of Khurasan, here Afghans, there Turanians

You, who despise the shore, rise up and make yourself boundless

- Muhammed Iqbal



City as flowerbed