

Urban Planning of Mohenjo-Daro: A Way forward for Contemporary Sustainable Infrastructure

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Abstract



Modern world is emphasizing on the sustainable infrastructure of urban planning. However, one of the main cities of the Indus valley civilization 'Mohenjo-Daro' was practicing it in ancient times. This research aims to trace the techniques used by the people of Mohenjo-Daro and reframe strategies for modern developmental projects. The methodology includes archival documentation, interviews, and literature of field-related experts. The results show that ancient architecture of Mohenjo-Daro can be revived with innovative ideas. It will contribute to sustainable infrastructure. In conclusion, this paper will discuss the rebirth of old design with new strategies.

Keywords: Urban Planning, Sustainable Infrastructure, Mohenjo-Daro, Indus Valley Civilization

Introduction

The modern world is increasingly emphasizing the importance of sustainable infrastructure in urban planning (Rachmad, 2025). According to Awasthi, addressing the complex challenges facing contemporary societies necessitates a shift toward sustainable infrastructure, encompassing the development of roads, buildings, clean energy systems, and efficient water management (Awasthi et al., 2024).

This raises a compelling question: Can ancient urban settlements offer viable solutions to the challenges of modern urbanization?

In this context, Mohenjo-Daro, one of the principal cities of the Indus Valley Civilization (2500–3000 BC) (Marshall, 1931), emerges as a remarkable example of advanced urban planning with enduring relevance. Its geometric city layout, sophisticated drainage infrastructure, and prioritization of public hygiene reflect a highly functional and sustainable approach. The city, spanning approximately 240 hectares, supported an estimated population of 35,000 to 100,000. Within just eight decades, its planners constructed elevated platforms, systematically organized streets, and implemented an expansive drainage network, a notable achievement for its time (Blumenfeld, 1942).

Although Mohenjo-Daro is widely acknowledged for its advanced urban development, existing literature predominantly highlights its archaeological and historical significance (Kenoyer, 2025). Limited attention has been given to its potential application in informing contemporary sustainable infrastructure practices. There is a notable absence of systematic documentation that connects Mohenjo-Daro's core planning principles such as: grid-based layouts, water management, and sanitation systems, with 21st-century urban development frameworks.

Furthermore, there is a lack of the development of interdisciplinary methods that can integrate the historical urban knowledge and present appropriation in the field of planning. The policy of urban environments in Pakistan rarely follows the approaches of heritage-informed policies, making an urban environment unable to connect with the past planning knowledge and current issues of sustainability. This research seeks to address these gaps by proposing a documentation-driven framework that repositions Mohenjo-Daro as a reference point for building resilient and sustainable cities today by comparing it with Taluka Qasimabad, District Hyderabad, Sindh.

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In order to allow a holistic approach, a five-pronged methodological framework that includes different, but related strategies are used in this study:

- Literature Review
- Comparative Analysis
- Governance Review
- Expert Consultations
- Framework Development

The paper has presented multidisciplinary perspectives through which ancient principles of planning can be applied to modern infrastructure to unite both the historical and the modern in terms of planning the future of the urban resilience.

Literature Review

A brief history of excavation on Mohenjo-Daro

The archaeologist R.D. Banerji who served under the Archaeological Survey of British India discovered Mohenjo-Daro the major urban centers in Indus Valley Civilization in the year 1922. Formal excavations were later carried out in a series of campaigns throughout the 1920s-1960s under the leadership of such archaeologists as Sir John Marshall (1920s), Ernest Mackay (1930s), Sir Mortimer Wheeler (1940s), and George F. Dales (1960s). These discoveries showed the urban sophistication, architecture and material culture of the city and transformed scholarly perceptions of the ancient world in South Asia and transformed its chronology back to the third millennium BCE. These discoveries were popularized, especially in the articles by Marshall in Illustrated London News, which gave Mohenjo-Daro a world status. After independence, the research work has proceeded in regional interpretations, including vernacular publications in Sindhi and the other local tongues.

Grid Plan Alignment



Figure 2 Grid pattern of HR area, Mohenjo-Daro (Excavation plan Marshall, 1993, V. 3; original scale 1:250)

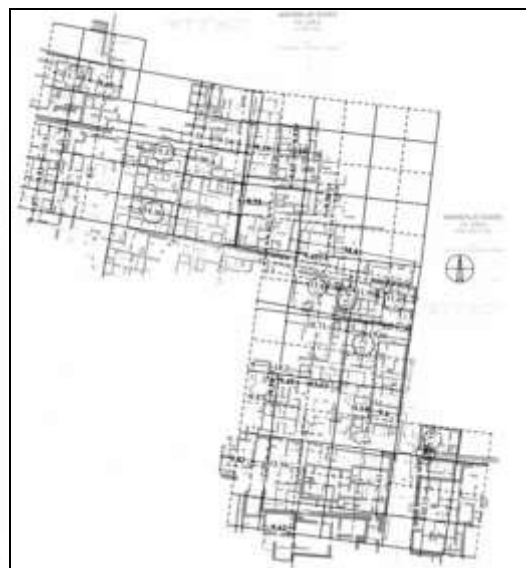


Figure 1 VS area

The grid of Mohenjo-Daro is orthogonal East Street (E-W) crossed at right angles by First that includes the use of a street (N-S) to form regular urban blocks (Kenoyer, 1998). Baked bricks of the best quality pavements crowned to exclude rain water, and a complete covering of the drains. Even in their strategic intervals, there is civic concern to purity (Kaushish & Mittal, 1994). In his excavations, Sir John Marshall gave different names to different regions. The HR neighborhood, featured by two major north-south avenues was marked out as an extremely dense settlement. The main street was named Street 1 located in the eastern side. Moreover, this main street was also connected to the HR area with VS and DK areas (Marshall, 1931).

Although some lanes in Mohenjo-Daro are staggered, the main street running north-south serves as the primary reference axis for measuring urban quarters. As shown in below figures, dimensional analysis shows that most lanes, cluster boundaries, and cul-de-sacs align closely with a 9.6 m grid, with 19.20 m-wide cluster blocks prominent in the DK and VS areas. Even in the HR area,

where four cluster alignments occur, boundaries largely follow this grid, with only slight rotations. The continuity of this reference axis is evident between the HR and VS areas, approximately 90 m apart, and extends along an east–west axis as well (Marshall, 1931).

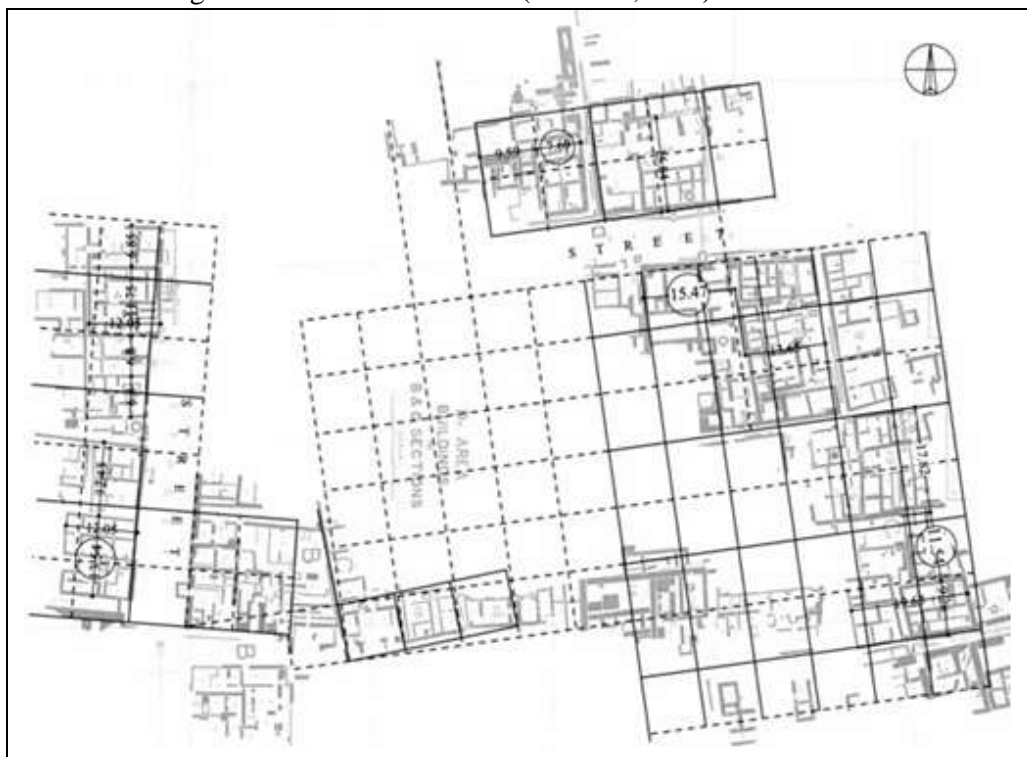


Figure 3 DK area

Water Management and Sanitation

The planners of Mohenjo-Daro used advanced hydro-engineering, such as cylindrically lined brick wells, probably an indigenous Indus invention, built of wedge-shaped bricks. These wells were perfect in standing lateral pressure and were deeper than 20 m and could be constructed through the method known as, the shaft sinking procedure in which cylinders made of bricks were dropped and allowed to sink on their own until they hit the water-bearing terrains. Possession of numerous wells is extraordinary at Mohenjo-Daro since no such wells have been known at pre- or early Harappan sites. There was an estimate of 700 draw wells, 17 m in average catchment radius and an interception of approximately 56 m, which provided connectivity and distribution of water in the city like no city had or had done before. In the citadel zone there were fewer but larger diameter wells, and these probably performed a public or ceremonial role, since they were close to bathing platforms, drains and monumental structures including the Great Bath. Water distribution appears to have been uneven, as some larger structures lacked wells. However, both the citadel and the lower city were equipped with numerous bathing facilities and drainage stations, indicating the presence of a well-developed and comprehensive water management and sanitation system.

The archaeological material and interpretation of the presence of wells as the elements of everyday life and rites lead to the conclusion that the wells were the critical part of the civic infrastructure, such as the utilitarian point in daily life and ritual, and not the defensive building of the Harappans, whose urban water supply system and waste management was rather sophisticated (Jansen, 2011).

Waste Management

About 4,500 years ago a well-developed brick-lined sewerage system extended along unpaved Mohenjo-Daro streets at the level of 50-60 cm below ground surface. Standardized bricks were used to construct the U-shaped drains that measured 17.25cm wide and 15.50cm deep with removable bricks covering them so that they could be cleaned. They were 2 cm/m slope, and were curvy, to minimize friction. Cesspits were located at a confluence of several drains in order to retain solids whilst soak pits and catchment vessels were used in houses that were not near the street drains. Toilets and baths

tended to be on the street side and effluent drained off into public drains by means of chutes or pottery drainpipes (Panhwer, 2022).

It had to be regularly cleaned and a constant supply of water was needed in order to have fewer odors, meaning a serious workforce. The level of domestic waste drains was, however, analyzed to indicate drain water was not used or meant to surround the city domestically, and drains were used by rainwater, which used to soak in the silty soil, and this reason left muddy-looking streets during rainy seasons. Drain size was determined by brick size, not hydraulic efficiency and a drain did not generally exceed 25 cm across; full-sized drains were otherwise roofed with corbelled vaults as in the Great Bath. Utilized later in other cities in the Indus, this network can be seen as one of the most important markers of the Harappan urban planning as it guaranteed hygiene in a congested area (Panhwer, 2022).

Materials and Construction of Mohenjo-Daro

The builders of Mohenjo-Daro (c. 2500 BCE) utilized locally available resources to create a durable and standardized urban fabric, with a clear emphasis on functionality and flood resistance.

Construction Materials

Perhaps the most characteristic building material of Mohenjo-Daro was the baked brick (or burnt brick), which was carefully made with Indus River clay in the ratio of 1:2:4 (thickness: width: length) to ensure standard construction; this brick was fired in a kiln, making them hard, water-resistant and long-lasting - a necessary revolution which allowed buildings to endure periodic floods, unlike those in Mesopotamian cities which used bricks made in the sun, and had to be rebuilt every year. To bind these bricks together, a strong mortar was usually used, commonly consisting of gypsum or clay, when gypsum was preferred to clay on account of its greater strength in buildings of importance, but wood was used as applied to the beams, lintels, and roofing props, and reeds and mat was used in screening, and as a roof underlay (Marshall, 1931).

Construction Techniques

The urban resilience of Mohenjo-Daro was planned through the foundational flood protection wherein the whole city was stilted up on the massive mud-brick platforms to be raised above the flood level of Indus River. These functions confirm the totality of hydraulic management of water through this modeled art of construction in a pool, the Great Bath which is waterproofed by baked bricks laid in the best possible manner on a gypsum mix and covered by a thick layer of natural bitumen. The city also had one of the most highly developed drainage systems of the ancient world, designed hydraulically with a gentle inclination to move the waste water, parts of the system were covered with slabs of stone so that it could be cleaned. Such interest in sanitation of the masses was tied to the home level since almost every household had a bathroom and a latrine plumbed to the primary sewer grid by use of terracotta piping and the prevailing coverage of brick-lined wells to serve up a stabilized source of clean water. The unity in the architecture reflected in the standardization of the bricks and the planned patterns of the street buildings with their internal courtyards also reflects the minimization of the differences across cities and having more unified solutions regarding the durability, the usage of water and the focus on the population means of ensuring public health (Marshall, 1931).

Comparative analysis of Mohenjo-Daro with modern city Qasimabad

In addition to using archival data to achieve the research aim, a comparative study was conducted between the modern city of Qasimabad Taluka, District Hyderabad, and Mohenjo-Daro of the Indus Valley Civilization.

A Brief History of Development of Qasimabad

Qasimabad is situated in Hyderabad, Sindh. The city has rich history and cultural value. Its development started in 1768 by Mian Gulam Shah Kalhoro. Initially, there were few villages and agriculture land, but after partition, it started evolution gradually. At the start of the 21st century, the city became urban center and rapid urbanization happened. In the latter part of the 20th century, the Government of Sindh initiated a series of development projects aimed at modernizing infrastructure and improving residential conditions within the locality. These interventions included the construction of roads, educational institutions, healthcare facilities, and public parks. However, these developments were accompanied by unintended consequences, notably the emergence of peripheral, unplanned informal settlements driven by rapid population growth and rural-to-urban migration. The city's urban infrastructure is blend of grid plan houses, low-rise buildings, business centers, and highly populated

villages. A diverse population is living here peacefully. They are financially challenged families, students, and skilled professionals from all across Sindh. Apart from its high potential for rapid development, Qasimabad is plagued by several urban planning problems that do not allow it to be a fully sustainable and livable society (Memon et al., 2024).

Existing Infrastructure

The current scenario of rapid urbanization of Qasimabad is associated with severe land encroachment on public spaces, which has become an issue of concern in the adverse impact on the urban systems. The distribution of green infrastructure which can be in the form of parks or wetlands significantly harms the water management aspect since the land loses its ability to absorb runoff, worsening flooding of the streets during monsoons. Neglected and littered public spaces contribute to waste management challenges and create sanitation issues, as accumulated debris obstructs drainage systems. Illegal use of impervious building materials also contributes to the increase in flooding as water does not percolate into the ground. Not only does such depreciation of the public spaces lower the level of welfare of the community, but it also creates a dire necessity of a stable urban planning that supports water and sanitation management and sustainable material to construct a more effective city (Abbasi et al., 2020).

Table 1 Comparative analysis between urban planning of Mohenjo-Daro and Modern city Qasimabad

Parameter	Mohenjo-Daro (c. 2500 BCE)	Qasimabad (Present Day)
Primary Water Source	Cylindrical brick-lined wells (approx. 700 across the city)	Piped municipal supply, supplemented by private borewells
Water Distribution	Decentralized network; average catchment radius ~17 m	Centralized network; average household distance to public water points >50 m in some areas
Well/Source Placement	Even distribution in residential and public areas; public access prioritized	Uneven distribution; better access in developed sectors, poor coverage in peripheral areas
Sanitation Infrastructure	Covered brick drains along streets; slope ~2 cm/m; connected to cesspits and soak pits	Combination of underground sewerage, open drains, and septic tanks
Drainage Design	U-shaped brick drains, removable covers for cleaning, self-cleansing gradient	Often unplanned gradients; open drains prone to blockages and stagnation
Rainwater Management	Allowed to seep into ground; no integration with sewerage network	Minimal rainwater harvesting; surface runoff often leads to urban flooding
Maintenance	Regular cleaning and flushing with large workforce	Inconsistent maintenance; waste dumping and silt accumulation common
Public Hygiene Facilities	Bathing platforms, toilets connected to drains or soak pits	Limited public toilets; domestic facilities common but disposal systems often inadequate
Planning Approach	Integrated with urban layout; decentralized, sustainable, and community-oriented	Fragmented and reactive; centralization with ad hoc extensions
Resilience	Adapted to semi-arid climate; durable materials; long-term usability	Vulnerable to supply disruptions, infrastructure decay, and seasonal flooding

The comparison also brings out the fact that the water management and sanitation facilities in the city of Mohenjo-Daro were closely integrated to the overall planning of the city, stressing upon decentralized water supply, long-life span and self-cleaning gradients of drain. The spread out of wells made its usage fair, and the covered brick drain with the cesspits and soak pits significantly reduced contamination and allowed people to have easy access to maintenance. Here again, at Qasimabad, the centrally provided water and the heterogeneous sanitation infrastructure lacks uniformity of coverage, regular maintenance, as well as resistance to clogging and flooding. System efficiency and robustness are compromised by the absence of pre-defined drainage gradients, a small amount of drainage-related rainwater management and haphazard extensions to the network. Mohenjo-Daro lessons, especially decentralized water points, slope-programmed drainage, and regular maintenance, may be used to make Qasimabad, with SDG 6-related urban infrastructure (Clean Water and Sanitation), more sustainable and resilient to climate.

Therefore, to avoid the contemporary chaos in water management, sanitation, and loss of public space, therefore, in cities like Qasimabad, they would need to focus on the ancient urban planning included in cities like Mohenjo-Daro. The Indus Valley civilization presented engineering at its best with its drainage systems, use of water-conserving material and planning the cities with well-organized areas of access and use, later on maintenance-issues of drainage and waste were also solved. Other examples include the global cities of New York and Mexico City, which have been inspired by such historical precedent as having built green infrastructure and porous building materials to absorb rainwater and mitigate flooding. The imitation of these established methods had the potential to help Qasimabad generate sustainable and resilient urban systems with the capacity to manage water resources, wastes, and other public areas.

Experts Consultation

The study adopted a semi-structured interview approach. The broad questions were noted down in the interview guidelines to remind the interviewer about focused areas of the phenomenon. Further, the in-depth questions were put into discussion spontaneously as per interviewer’s realization of further need of explanations. Concerning the ethical considerations, the consent of the participants was ensured before beginning the interview. Furthermore, the participants were informed that the researcher is bound to keep their identities and personal information confidential.

Participants

The source of data collection involved a list of participants as follows; they are architects, urban planners, archaeologists and policy makers; ten of them were male and ten female teachers aged between 28 and 55 years. The participants were selected from Hyderabad, Jamshoro and Sukkur districts. This distribution makes it possible to study urban planning of Mohenjo-Daro and Qasimabad Taluka of Hyderabad in various context; however, the sample is likely to be relatively small, thus restricting generalizability of the findings. The gender distribution in the sample gives an idea about both male and female professional experiences and the variability of districts offers an understanding about regional differences in their experiences and concerns.

Table 2 Demographics of Participants

S.No	Participant Code	Gender	Age	Site	District
01	PI	Male	55	University of Sindh / Archeology	Jamshoro
02	PII	Female	42	Mehran UET / CRP	Jamshoro
03	PIII	Female	40	SABS University / Architecture	Jamshoro
04	PIV	Male	30	Aror University / Architecture	Sukkur
05	PV	Male	48	District administrator / GoS	Hyderabad
06	PVI	Female	29	University of Sindh / Archeology	Jamshoro
07	PVII	Male	35	Local government official / GoS	Qasimabad

Theme

The analysis involved a systematic exploration of patterns of meaning to identify how these patterns could be organized into coherent themes. The findings demonstrate a progression between concrete and descriptive interpretations, reflecting the meanings derived from participants’ lived experiences. In this study, coding was conducted based on the significance of participants’ statements, and the resulting codes were subsequently organized and grouped under the main themes to which they most closely corresponded.

Urban planning of Qasimabad

In this theme, unique features have been classified. These features include participants’ existing knowledge about the town planning of Qasimabad such as, infrastructure, zoning, water management and sanitation etc. Most of the features have adverse impact on urban planning.

Challenges to Infrastructure

In this exploration, the participants explained in depth about the city, and they were not satisfied with the city’s town planning. Most of the participants explain that the city lacks proper planning and adequate infrastructure.

PI: *“The issue is on both aspects of the people, also within the structures of governance. We also found the same situation in Qasimabad during our survey in Latifabad. Individuals place stalls along the roads and this results in congestion and eventual encroachment. Interrogated authorities spoke of various factors due to which this has happened including the effects of COVID-19. Vendors on the other hand indicated that they were not occupying their appointed areas as they had already paid the local government to use the street side. This points out the weakness of governance and people. The question next arises: can this not be re-aligned and a correction effected? This is possible though relocating of vendors, but the question is who will bear the responsibility of implementing these measures. Most of the vendors argue that relocating would mean that they would lose their income base. This means that the problem cannot be blamed on population increase as people must make a living. It is however a system we have perpetuated”.*

Above statement suggests that the governance of the city faces challenges from both sides of population and authorities.

PIII: *“The case of Qasimabad, which was originally supposed to accommodate the increasing population is not properly planned. Some of the principles of urban planning like rational arrangement of the roads, sewerage system and the accommodation leading to residential areas were not applied. Rather, Qasimabad evolved on agricultural land with flat surfaces on which the use of land was sold and buildings started being erected with no regulatory check. Consequently, the settlement exhibits a poorly interconnected street network, with a considerable number of streets terminating in dead-ends, reflecting a lack of cohesive urban planning. As a result, Qasimabad can be characterized by inadequate planning and is affected by significant infrastructural deficiencies.”.*

Zoning of the City

As a researcher who has explored the town planning of the city, I need to define the zoning of the city. One of the participants was quite disappointed about it. She says

PIII: *“In Qasimabad, essentially there is no zoning. With the increase in the level of urbanization, hospitals, schools, and colleges developed without taking into consideration the zoning principles. An analysis of Qasimabad, master plan shows no definite separation of the public spots and residential area. Therefore, despite substantial increments in the population, there is a lack of appropriate usage and allocation measures of the services. In conventional urban planning the individual regions are located to serve a particular role thus promoting a balanced growth and service provision. Such planning is, however, not present in the case of Qasimabad. As an example, the police station is at a distance outside the city thus compromising its efficiency as a zoning element because accessibility to security services is a major consideration in land-use planning. These forms typify the uneven and inefficient usage of land which characterizes the urban fabric of Qasimabad”.*

Water Management of the City

PII: *“The experience in Qasimabad is an indication of failure in infrastructure and resource management. In a recent installation there are pipelines but the supply of water is scarce. This scarcity is not a surprise given the decreasing state of Indus River. Being a resident of Qasimabad; I have found that the water is not provided on a continuous basis. This though may seem inconvenient can also eliminate the tendency of wastage of water when not handled well. Regarding sewerage, it has been established that new lines have been installed although it is not clear as to whether they are being properly used. Currently, the waterlogging on roads has not been as clear to be seen but this can be attributed to the low levels of rainfalls experienced this year as opposed to the improvement of the infrastructure. The test in gearing up will be the arrival of the rainy season when it is come upon how much the system has actually improved. It is good to note however that authorities and residents have become more aware of such issues as people are becoming more questioning and are demanding better services”.*

Waste Management

PII: *“Again management and implementation. We used to have install dry waste and plastic disposals on the campus and we were never able to manage that adequately how do we expect*

this small-scale system to manage in a large population city like Qasimabad. When recycled, it has the potential to generate revenue, be that recycle paper and plastic respectively”.

Urban planning of Mohenjo-Daro

PI: *“The greatest cities of the Indus valley civilizations, including Ganweriwala, Rakhigarhi, Harappa, Mohenjo-Daro, Dholavira and Lothal were all built near rivers. Such a location was a priority due to a number of vital rationales. The rivers played an important role in connecting cities, states, and regions of the civilization, thus enabling their interaction within and outside the structure. Moreover, agriculture was promoted by the fact that there was permanent access to fresh water. As agricultural output rose and there were surpluses of goods that people started exchanging, economic riches were accumulated. Such abundance is reflected in Mohenjo-Daro, whereby the presence of baked bricks was so massive pointing out to an advanced source of materials”.*

“The design of these cities portrays an identical and distinct style. The city was well divided, the areas were clearly defined, and each had a purpose, the areas of government, commerce, and home of rulers, administrators, and elites-this was practically urban zoning. Founded on the citadel mound, the fortification was resembling the modern reified spaces of such local sensitivity as cantonments or walled-in neighborhoods, therein lay the dynastic power of the ruling class. As such fortification walls have existed at Harappa, Kalibangan and Mohenjo-Daro. In addition, the civilization upheld a single unification in weight, measures and production levels such as having consistent door-measurements among other architectural aspects. Quality construction of such structures as in the so called royal house of Mohenjo-Daro portrays sophisticated construction and centralization in planning”.

Water management and sanitation

“They had sanitary waste collection. They were best versed with astronomy. They used to calculate directions, time, rain and weather forecasts, air direction and everything. They were especially wise in reference to that. Their walls are made North-south or west-east. Walls are all perfect, because they were knowledgeable about astronomy. They possessed arithmetic and geometry in computing area of any house you will find perfection. They had well-developed sewerage system. All of this was collected and was covered with mainline and was eventually drained to the Indus river. The system is covered and beautifully designed 5000 years ago. Now when today due to excessive rains the flood comes, Hyderabad, Larkana Sukkur will suffer, but observe in 2022 devastating floods how the waters have been diverted off the Mohenjo-Daro”.

Lessons from Mohenjo-Daro

PVI: *“The layout of Mohenjo-Daro, an urban city that existed more than five millennia ago, is still very relevant today since it gives the best strategies. It is quite interesting to note that it promoted equality in the society. An example of the indicators of a civilized society is its superior drainage system that was a covered and linked network in the city. A practical implementation of this archaic knowledge would be as Mehran University of Engineering and Technology (CRP). The students could be asked to research on the urban planning concepts in Mohenjo-Daro and then redesign it in a planning agreement to the present day urban cities”.*

PI: *“When we adopt and incorporate the methods of Mohenjo-Daro in our modern town planning I am sure we would not be able to encounter and come across any major town problems at least in the coming hundred years. On the one hand, failure to take up the aforementioned effective, long-term approaches would result in many problems in the course of ten years including the failure of sewerage management systems, development of infrastructural shortages among other architectural and planning-related troubles. This has strength and wisdom that are embedded in their systems, to bring a possible solution to the contemporary urban challenges”.*

Integrative Discussion

The comparative study presented, as between Mohenjo-Daro and Qasimabad, is not just the primal wisdom of the city planning but also introduces parallel misfortunes the cities of the modern world are experiencing as far as sustainability is concerned. As was 4500-year-old Mohenjo-Daro that was constructed in an interesting manner, decentralized water distribution, well-designed sanitation networks, and standardized construction techniques. Its grid structure, material strength, and its

community-based resources allocation can be viewed as signs of how the concept of sustainability was incorporated into the city design. In comparison, the unregulated and rapid pace of Qasimabad Communities development illustrates how lack of zoning, bad governance, and multi-level infrastructure policy can limit sustainability and resiliency in the modern world.

A recursive realization of the material evidence as observed in the expert interviews is the centralization of the urban systems in Mohenjo-Daro against the fragmentation of such systems at Qasimabad. As an example, the management of water in Mohenjo-Daro was decentralized and culturally nested to the life of the people in the daily and ritual life but during our field research we found that the infrastructure of water in Qasimabad is basically centralized where people have access to various levels of water provision and it is highly inefficient. The same is true of the Indus Valley drainage system that was built strategically with its gradients and covered drains to make it clean and easy to manage- unlike Qasimabad which has open, clogged drain with little or no maintenance. These contrasts highlight that the architecture of older cities featured resilience and adaptability as basic dimensions of planning, whereas most modern ones can still be accused of being reactive in their approach.

Governance can establish the variability of means of modernization in the past and present. The civic structure that the order in Mohenjo-Daro suggested was a sort of administrative harmony wherein civic structure equated to collective welfare of the society. On the other hand, in Qasimabad, lapses in governance are characterized by the inappropriate application of the zoning laws, haphazard urban growth, and permissiveness to encroachments. The interviews conducted by the experts demonstrate that the stakeholders recognize the weaknesses of governance as the core of the current issues related to the development of the city of Qasimabad highlighting the involvement of both authorities and the people in the maladministration of public space and infrastructure. These results show that sustainability is not only technical but very institutional and behavioral.

The paper further illustrates a gap that exists between heritage and future planning in Pakistan. Although Mohenjo-Daro is well-known amongst the world archaeological circles, its planning insights have not been fully applied in the current practice. Researchers remarked that the use of such historical information in curriculum and policies to plan could fill this gap, which is in line with Sustainable Development Goal 11 (Sustainable Cities and Communities) and SDG 6 (Clean Water and Sanitation). More importantly, Mohenjo-Daro is also a model of equity and societal fairness as it shows a preference of balance in terms of distribution of wells and the location of public facilities a factor that is lacking today in uneven levels of service distribution.

Such holistic exposition proves that the predicaments of Qasimabad and in fact most Global South cities that are fast rapidly developing are not a knowledge problem but it is actually the problem of governance quality, poor planning institutions and inability to adapt existing global strategies and its past legacy. Cities such as Qasimabad can draw lessons from historical precedents like Mohenjo-Daro to address contemporary challenges in developing contexts. By examining resilient planning principles, integrated infrastructure systems, and effective public space utilization, such cities can inform strategies for sustainable and adaptive urban development.

Methodology and Sources

This research synthesizes:

- Excavation Reports (Marshall 1931; Wheeler 1968).
- Comparative Analysis with modern city Qasimabad.
- Qualitative interviews

Conclusion

This study demonstrates that the urban planning principles of Mohenjo-daro remain highly relevant in addressing the sustainability challenges of contemporary cities. The city's grid-based planning, decentralized water systems, advanced drainage infrastructure, and standardized construction techniques provide a holistic model of resilient urban design.

In contrast, the case of Qasimabad highlights the consequences of rapid, unregulated urbanization, including inadequate zoning, inefficient water management, and weak governance structures. The comparison underscores that modern urban challenges are not due to a lack of knowledge, but rather the failure to integrate proven planning principles into present-day systems.

The findings suggest that heritage-informed planning can serve as a practical framework for modern urban development. For instance, decentralized water systems can be applied to improve

water accessibility and reduce pressure on centralized networks; covered drainage systems with proper gradients can mitigate urban flooding; and the use of local, durable materials can enhance climate resilience and reduce environmental impact.

Furthermore, the study emphasizes that sustainable urban development is not solely a technical issue but also a governance challenge. Effective policy implementation, community participation, and enforcement of zoning regulations are essential to achieving long-term sustainability.

Cities can benefit from combining ancient planning principles with modern technologies and policies. This approach can help them become more resilient. It can also promote equity and support the development of more sustainable urban environments.

Limitation and Future Research

- The city planner should adapt some of the concepts of Mohenjo-Daro to the city planning system used in Pakistan, particularly in water management and sanitation and zone policies.
- The policymakers should work on restoring natural water reservoirs as it was successful management in town planning of Mohenjo-Daro.
- The use of local material should be priorities.
- The research would introduce modules on heritage-based, sustainable urban planning into the curriculum of architecture and planning schools to make future professionals trained to work on sustainable and culturally-engaged designs.

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