



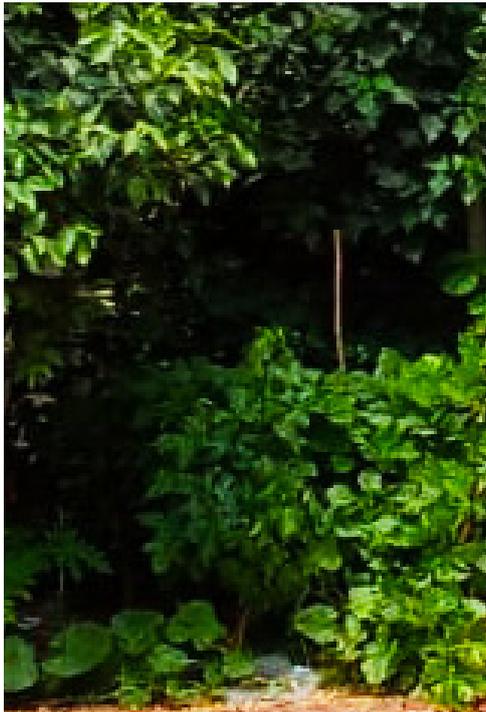
HERITAGE & ECOLOGY-LED CLIMATE-SMART URBANISM



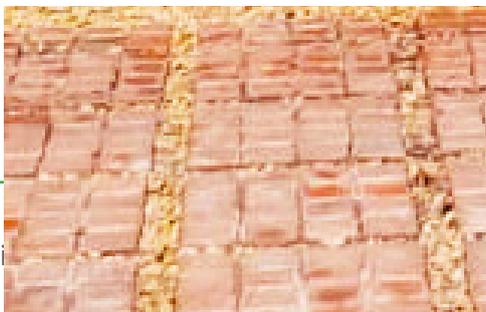
DENSO HALL RAHGUZAR WALKING STREET



Prototype for Urban Regeneration of Karachi's
Historic Core



Yasmeen Lari *SI HI Fukuoka & Jane Drew Prize Laureate*
With
Irshad Ali Sodhar *BA (LSE) PAS*



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About the Authors

Yasmeen Lari is co-founder and CEO of Heritage Foundation of Pakistan. After graduating from Oxford School of Architecture she was elected member of Royal Institute of British Architects in 1969. In 2000 She retired from a successful architectural practice and has since devoted herself to heritage safeguarding and humanitarian architecture. She is best known for the founding of Barefoot Social Architecture (BASA), that promotes social and ecological justice in architecture that is driven by heritage and tradition. She is recipient of numerous awards including Sitara-i-Imtiaz and Hilal-e-Imtiaz from President of Pakistan, international Fukuoka and Jane Drew prizes. Heritage Foundation is recipient of UNESCO Award, Islamic Bank Award and World Habitat Award. She is author and co-author of several books on history and heritage, and is deeply engaged in promoting zero carbon methodologies around the World.

Irshad Ali Sodhar belongs to highly competitive Administrative Service of Pakistan. As a Rhodes Scholar he attended London School of Economics and has held several administrative assignments across Pakistan. His deep interest in heritage and culture has led him to take up projects in Karachi to promote Karachi's heritage and improve the city's environmental conditions.



Map of Market Quarter, 1879

Preface

Irshad Ali Sodhar

Urban planning and management in the metropolises like Karachi with dense population, complex governance challenges has remained a wicked problem all over the world. The issues of rapid urban sprawl, increase in population, unregulated public spaces, and dilapidated civic infrastructure have been seriously aggravated due to climate change and the pandemic. The quest for solutions to these problems has been further complicated. The pressure of meeting the expedient needs of citizens to increase economic activity for decent livelihood and need to make robust city infrastructure come into collision with the need to conserve the heritage in the cities and promote green development.

While there was no proven recipe for the smart solution of all these issues, it was practical to select, design and execute a project at smaller scale to test the viability and sustainability. The Marriott Street situated in old city of Karachi not only characterized all these issues but also offered a treasure of heritage. The transformation project designed by Ms Lari offered us the smart Eco-urban solutions for the myriad of problem alongside opportunity to rejuvenate the historic architecture of the city. It also aimed at reducing the carbon footprint due to use of low carbon materials and establishment of small urban Miyawaki forests.

Despite the promising design of the project, it warranted a concentrated strategy, bold decision and proactive leadership of District Administration South, Government of Sindh to undertake this partnership with Heritage foundation. Though, the success of project initially looked impossible to many, today the Denso Hall Rahguzar offers a pragmatic, feasible and model solution to the question as to 'How we build from here ?' This small street offers solution to multitude of issues in dense urban locality that can be replicated in all the cities of world particularly the developing countries with similar challenges.

We were fairly aware of the magnitude of the resistance of the stakeholders and inter-agency problems for a novel project. Also there was clear understanding that though there have been several projects which fail to achieve sustainability. One key element that was identified was engagement and ownership of the project by the community of residents and vendors located on the street.

This project was uniquely carried out through a partnership of government agencies, civil society organization, local community and corporate sector. It demonstrates how the corporate sector can also contribute in development to fulfill their social responsibility. This is also a stand alone partnership model to follow in order to compliment each others' limitations and collaborate to achieve the results in such challenging settings.

Irshad Ali Sodhar
Karachi, June 2022



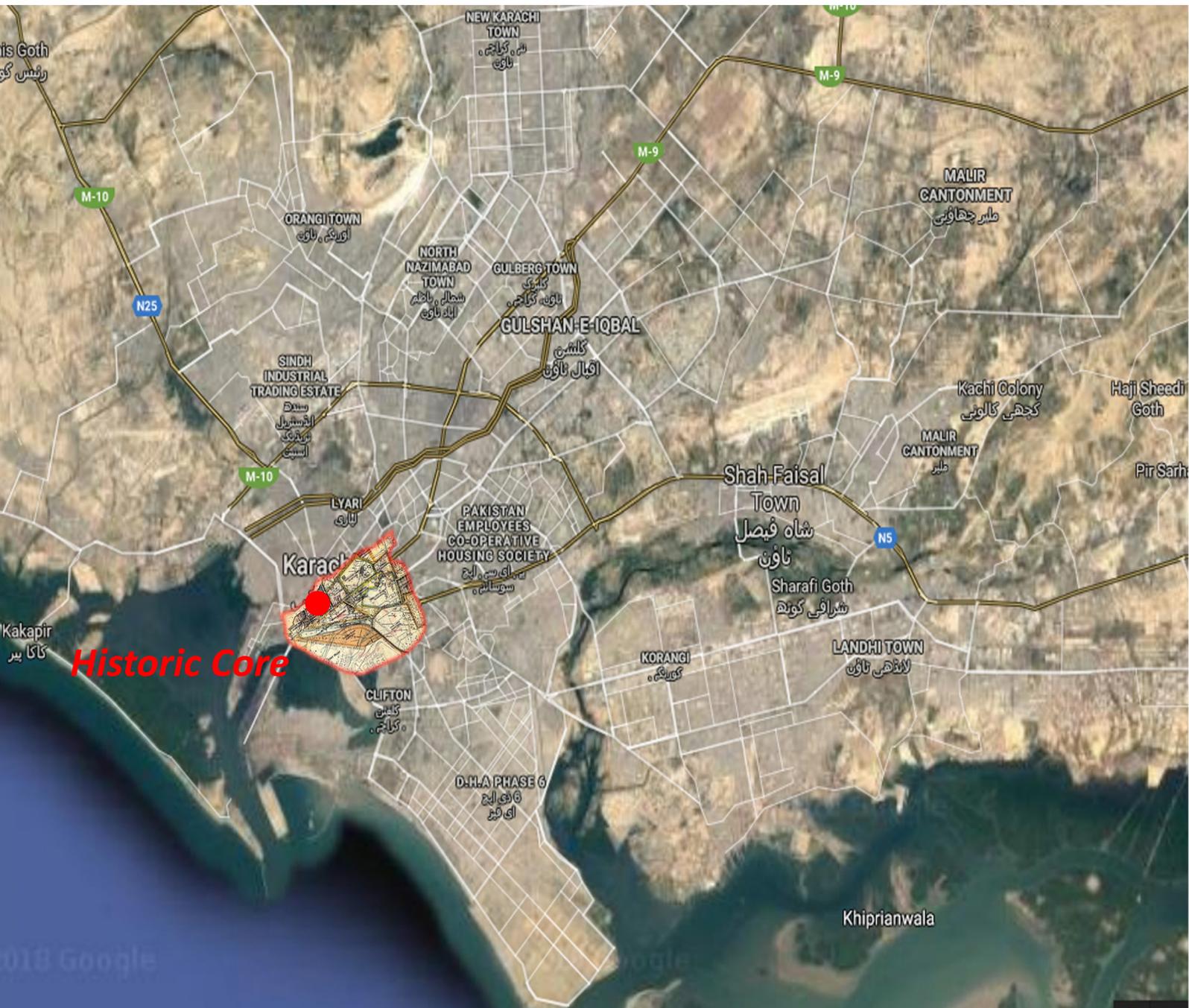
The days of the trams and the camel carts in Karachi.



View of Mai Karachi Baithak with Denso Hall on the right.



The same street before intervention with Denso Hall on the right.



Map of Karachi, 2020. Courtesy KNIP.

Introduction

Karachi, the city once known as the gateway to the world, its historic core presenting Paris of the East, and extolled as a bride among cities, today suffers from the highest degree of urban blight.

As is often said, a crises such as this also presents an opportunity for transformation. Could this highly degraded environment be refashioned for meeting the challenges of climate change and COVID-19 imperatives, one that could lead to the well being of its citizens?

While the city has suffered from a variety of deficiencies ranging from lack of care to apathy to poor governance as well as paucity of investment, the historic core with its remarkable reservoir of heritage that represented a most valuable asset which endowed Karachi with its identity, has tragically suffered from abandonment and neglect, with a large number of historic buildings now near collapse. Due to the dilapidated state of buildings, both old and contemporary, aging infrastructure and lack of interest by successive administrations, today Karachi is suffering from a heightened state of urban decay as if the city is dying.

The historic core is similar to many subcontinental cities where in spite of the rich reservoir of heritage belonging to colonial as well as earlier eras, the neglect from government agencies and absence of rule of law has forced residents to live in highly degraded environments, with overflowing gutters, unregulated vehicular traffic and unchecked vendors, broken streets and a mesh and tangle of wires and horrific electrical installations, suffering from high levels of environmental and noise pollution, and mountains of unpicked garbage that continues to grow with each successive day.

While the entire city suffers from lack of good governance, the historic cores, with their narrow streets, are the worst sufferers. Its lanes and roads are choked with overflowing traffic, vendors and accretions of service providers. Usurping of open spaces, addition of multistory structures, all have created congested, dense environment that is devoid of greenery and plantation that contributes to ever increasing urban heat islands and urban flooding.

There is no accountability. Nobody is responsible but then those who are influential are engaged in acquisitions for personal gain by arrogating urban



elements that contribute to public good. No wonder it is said that Karachi is considered an orphan that has become a lucrative source for those with power and influence.

Looking at rapidly deteriorating environmental conditions, it seems next to impossible to bring about even the slightest of improvement in the downhill spiral of urban degeneration.

But Karachi of yore needs to be recalled which could lead the way to bring about a regeneration of the urban core – a rejuvenation that would be based on ecological considerations, heritage and humanism. It needs introduction of climate smart elements which could at the same time deal with increasing condition of urban heat islands, and urban flooding that is destroying not only heritage assets but also impacting enormous investments by private sector and the state itself.



*M.A. Jinnah Road (Bunder Road).
Early 20th c.*

Turning a blind eye to the present scenario of degradation and blight will not provide a panacea for the growing ills of a hugely populated megalopolis - the more it grows in size and population the worse are the conditions for those trying to live and survive in this city.

However, by labelling Karachi an orphan city does not provide the remedy that is needed. We believe that it is time that its citizens took the matters in their own hands in order to create a regenerated urban core based on principles of heritage and landscape-centred eco-urbanism and climate resilience. Through this stratagem the potential of this resilient city and its dynamic residents can be maximized leading to a humanistic city – an urban environment which is free of pollution, its streets and urban spaces in its highly congested landscape becoming its lungs. And, its heritage is restored to provide a backdrop to activities of diverse communities that acts as a reminder for the city’s remarkable lineage, leading to a source not only

of pride and well being, at the same time fosters improved commerce and cultural tourism opportunities.

The prototype of all that could be implemented can be seen in the concept and execution of Denso Hall Rahguzar – a walking street that harks back to its 19th century origins, uses the street as the key element for recreation, enjoyment and commerce at the same time fosters biodiversity through forests containing flowering and fruit trees where birds can nestle and butterflies flutter and beehive nests begin to emerge.

This is an urban haven which has been possible due to a unique partnership between civil society Heritage Foundation of Pakistan as the funder and implementor, Deputy Commissioner South, on behalf of Karachi administration as coordinator and facilitator for municipal services, and local shop keepers as stakeholders who have developed a sense of ownership for this remarkable Eco-enclave in the most exclusive part of the historic core.

This is a model that can now be replicated by ensuring a heightened awareness among commercial establishments, city administration and civil society social, cultural and environmental impact funding. The Denso Hall Rahguzar Walking Street is presented as a highly viable alternative for rejuvenation and regeneration of the great port city of Karachi.

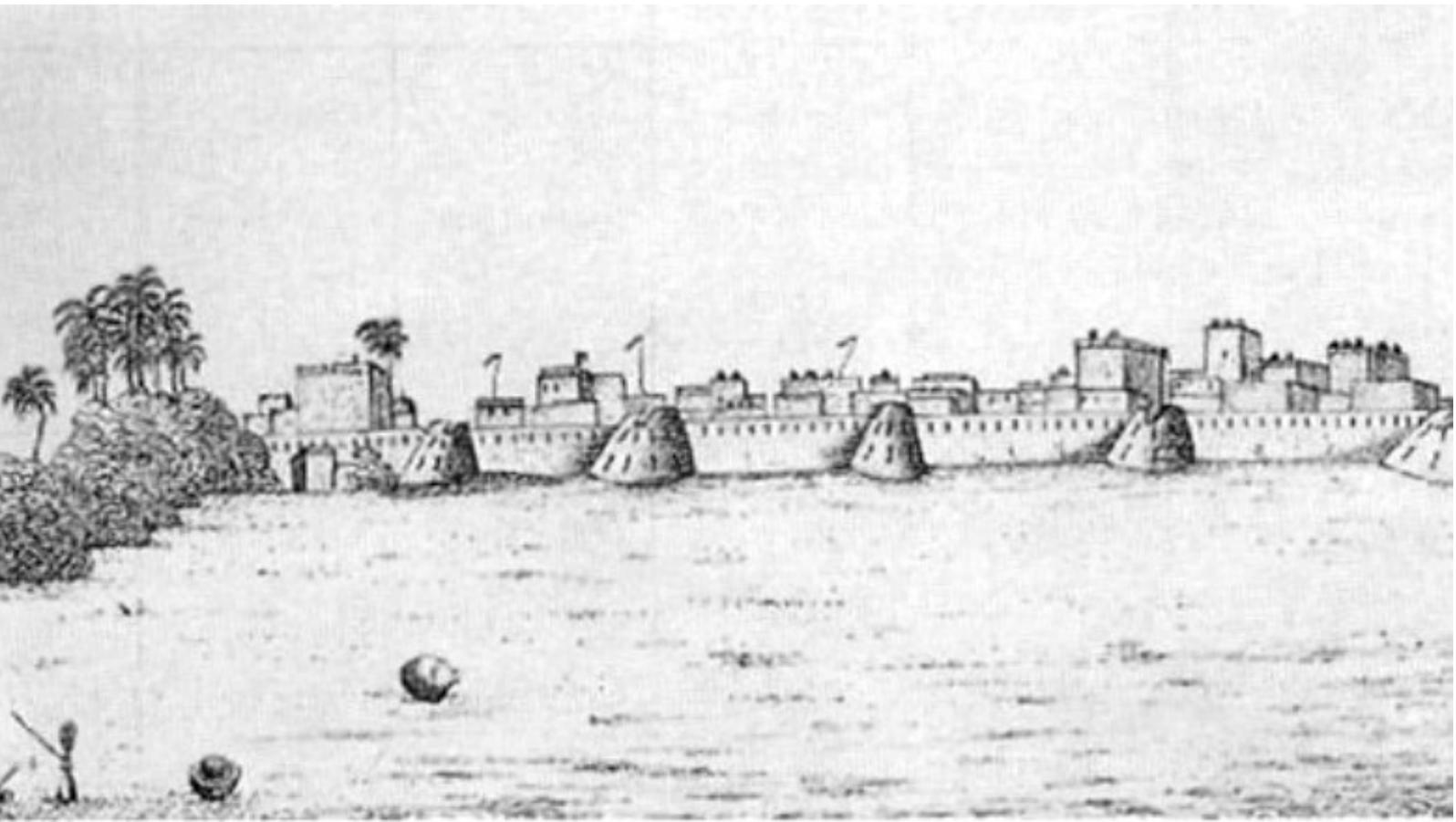


Miss
Sour

View of Marriott Road as it was.



View of Marriott Road today, renamed Denso Hall Rahguzar Walking Street.



A sketch of the old town of Kurrachee, c. 1830s..

Chapter: I

Karachi's Lineage and Its Heritage Reservoir

In 1843 Charles Napier annexed Sindh on behalf of the Kumpany Bahadur, as East India Company was commonly referred to, and Karachi became known as a city created by colonial rulers. Napier had the desire to be remembered by posterity as a conqueror by creating another Krokala in the tradition of Alexander of Macedonia who had left several Krokalas as his armies progressed through different lands making their conquests.

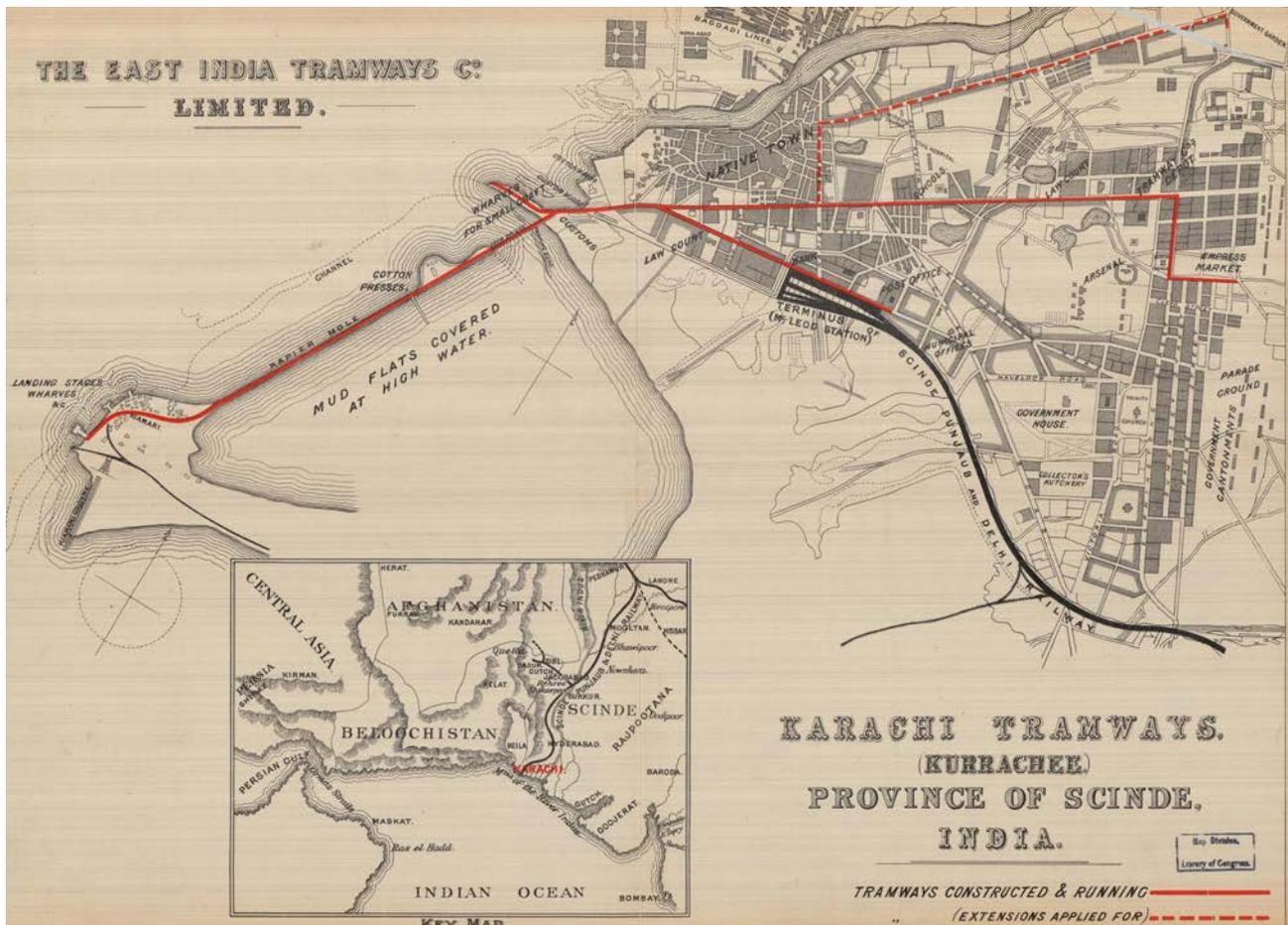
Through the lens of history can be seen Karachi's ancient lineage of Krokala since it was Alexander's admiral Nearchus who is known to have begun the return voyage from the shores of the Arabian Sea near Karachi, while Alexander himself took the land route through Balochistan.

During subsequent centuries, historical accounts mention the settlement by different aliases that it would be known as from time to time. In the 4th c. BC it was Krokala or Krotchey in an Alexandrian map that showed a settlement close to the sea. However, by 8th c. AD when the 17 year old Arab military commander Mohammad Bin Qasim arrived in Sindh, it is Debal we associate with his conquest of Sindh.

In the accounts of 1700s we find that there was Kolachi's Kun or Kalachi jo Ghote, a fishing village named after the fisherman Kolachi or Kalachi. Later in 1773 in the journal of John Porter who arrived during the reign of Mian Sarfraz Kalthora, the settlement was mentioned as Crochey Town. The first mission sent by British merchants to Curachee and Thatta was led by British Agent Nathan Crow during the rule of Mir Sohrab Talpur, when he established the first English factory in the area that is now the Zoological Gardens or Karachi Zoo and was once known as Gandhi Gardens.

Henry Pottinger in his famous journal while recording his visit in 1809 mentioned the ruler Mir Ghulam Ali Talpur and Kurachee Port, while Alexander Burnes, of the Great Game fame, in his mission of 1830 during the reign of Mir Murad Ali Khan Talpur, discusses the Bay of Corachee, which finally became Kurrachee when Napier annexed Sindh as he vanquished the last Talpur ruler, Mir Nasser Khan.

When Napier decided to move Sindh capital from Hyderabad, the chosen seat of governance by the Talpur rulers', Kurrachee became the new capital of



the Raj empire, it had been a fortified but a sleepy hamlet and fishing village. Prophesizing the importance of Karachi as a port, he wistfully declared: “Would that I could come and see you Kurrachee in your grandeur.” By using superior weaponry, at the battlefield of Meanee, Napier defeated the native army led by Mir Sohrab Talpur. As conqueror he immediately took over Hyderabad Fort with its distinctive round tower, where the entire wealth of Talpur rulers had been stored. The Talpurs had been vanquished which many, even among the ruling power, considered to be an unjust war. In 1943, the entire territory of Sindh was ceded to the rule of Kumpany Bahdaur, forcing even Napier to admit “Peccavi” or I have sinned (Sind). And in 1840 writing about the new conquest, Richard Burton, known variously as soldier, writer, orientalist and spy, referred to ‘Kurrachee’ as ‘Young Alexandria of Young Egypt.’

An early map of Karachi showing its various quarters, c. Late 19th c.

Karachi became an important base from which campaigns could be launched to control the frontier borders as part of the Great Game to forestall



View of Merewether Tower, 1889.



Early 20th c. view of M.A. Jinnah Road with Denso Hall on the right.

Russia's advances into Central Asia and beyond. East India Company's forays in Sindh had begun at the time that Lt. Burnes navigated the Indus river on the pretext to carry the special gift of horses to Punjab ruler Ranjeet Sindh in 1831. Later the Company's army was stationed in Karachi in 1839 to mount the First Anglo-Afghan War. Since that time many Parsi and Hindu families in Sindh had begun to align themselves with the company, and thus became the first native communities to become eligible to be favoured by the new rulers.

As the last Mughal Emperor Bahadur Shah Zafar tried unsuccessfully to impede the growing power of East India Company, during First War of Independence in 1857, natives were mercilessly blown from guns across conquered territories. The site, where Empress Market stands today, witnessed the massacre of sepoys being tied to cannons and blown to bits as a punishment to the 'mutineers' and an example to the native population to obey the colonial power.

As Napier had foreseen, soon Karachi port was developed and railway lines were laid linking other parts of the colony. Large quantities were transported from Punjab's canal colonies, making Karachi port the largest exporter of wheat at the turn of the 19th century.

The newly acquired prosperity in the second half of 19th century resulted in rapid development of the city. Karachi began to be adorned by an eclectic array of architectural landmarks and imperial vernacular architecture abounded along major thoroughfares. The affluence brought by trade and commerce, and movement of goods and troops through Karachi brought a great deal of prosperity to native populations as well. We see the rise of local communities who began to adorn the city to establish their mark on the city's urban fabric. While the Raj was building notable imperial edifices for governance purposes and for the use of its ruling white population, as native communities began to acquire wealth, they also began to adorn the city with an array of architectural styles and imagery.

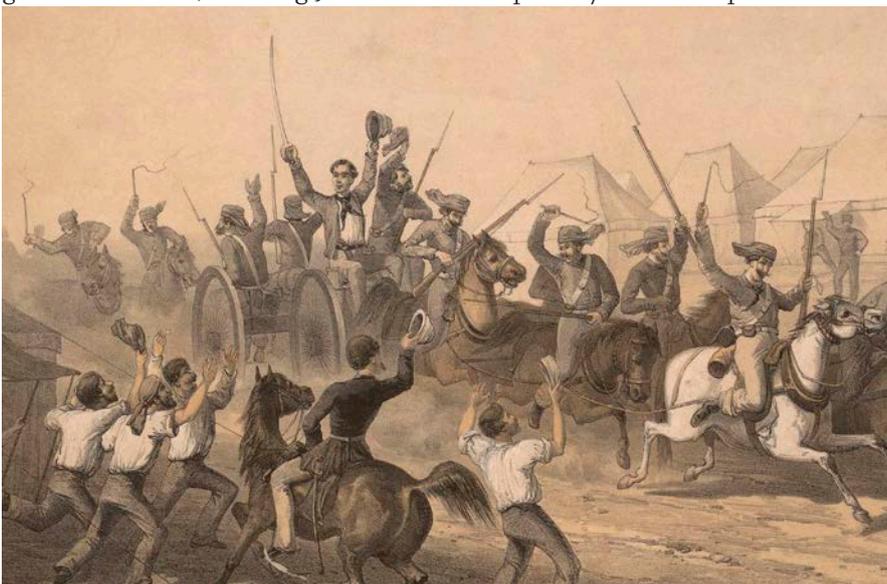
At first it was Parsis who began philanthropic activities building Dar-e-Meher for their own assemblies and Edulji Dinshaw dispensary for philanthropic purposes, the Hindus built educational institutions such as D.J. College, the Christians constructed their churches (St. Patrick's Cathedral) and Goa Portuguese Hall for their club along with St. Josephs Convent School for educating local populace, and finally Muslim philanthropists emerged as generous donors, building Jaffar Faddoo Dispensary and Khaliqdina Hall.



Edulji Dinshaw Dispensary, named after Parsi philanthropist Dinshaw.



Empress Market.



First War of Independence, 1857.



Parsi Dar-e-Meher.

We see the rise of different native communities becoming prosperous due to increasing commerce in the city. It is their contribution that provided Karachi's streets with their special cultural landscape consisting of a host of architectural gems with eclectic facades expressing the pride and wealth of rising class of native merchant princes. As more and more natives became wealthy and their business flourished, the streets closest to the port in the area of the historic core, and other quarters contiguous to it, were the favourite areas for building wonderful arcaded facades.



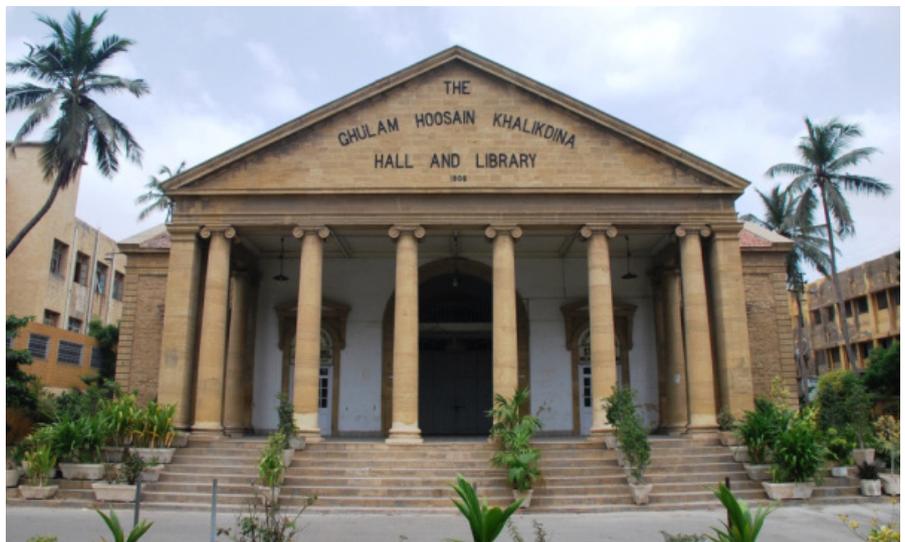
St. Patrick's Cathedral.

For such small scale two- or three-storey stone buildings with striking arcading, balconies and pilasters, I coined the style Imperial vernacular – architectural expression by natives subjugated by a foreign imperial power. Unique to the city of Karachi these edifices express the rise of the natives adorned with a mix of architectural imagery fashioned by the imperial architecture of the rulers and with local motifs that were woven with Classical, Neo Gothic or Anglo-Mughal expressions.

The impressive landmark imperial buildings began also be built - some expressing their might through classical revivalist buildings and others, their Christian zeal expressed with different forms of rich Indo-Gothic or Domestic Gothic arcading. From Late 19th c. and early 20th century, we find buildings adorned with an exuberance of cupolas and domes, such as the Karachi Municipality building, expressing that expressed the paternal phase of the rulers. This architectural expression was designed to pacify



Dayaram Jethmal (D.J.) College, built by Hindu philanthropists.



The Khaliqdina Hall, built by Muslim philanthropist Khaliqdina.

local populations through seemingly local architectural expressions as independence movements began to take root and posed difficulties for the ruling power in governing an empire on which sun never set.

The architectural style being unique to Karachi carries immense value endowing special characteristics to the inner core of the streets of Karachi. While the landmarks, being government owned, will survive, it is the Imperial vernacular architecture that is under threat today. These architectural gems urgently need a concerted effort for their restoration in order to retain the special character that has endowed the city with its identity.

Karachi, with its remarkable attributes as a port city, populated with its diverse communities and endowed with special characteristics, retained a significant position in the country after it was declared capital by Pakistan's founder Mohammad Ali Jinnah. However, once the capital was moved to Islamabad, the city lost its lustre and interest of the ruling power whose attention shifted to the capital in the north.



Sketch of Denso Hall, 1886, the first library and reading room built for the use of native communities.



Elphinstone Street (Zaiun nisa Street), c. 1900s.

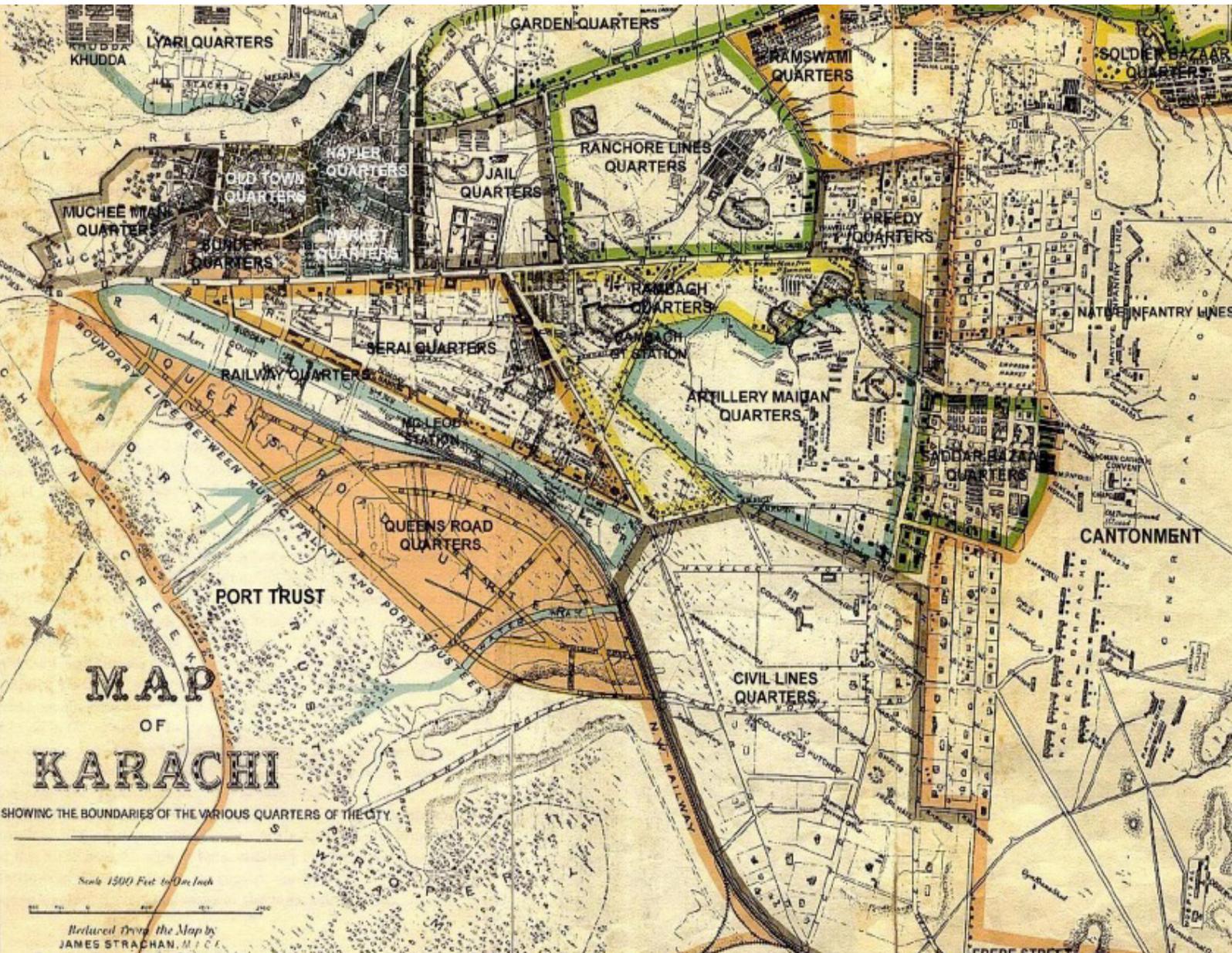


Frere Hall built for 'Whites only' classes

Karachi still remains the financial capital of the country, and provides a home to increasing influx of migrant populations from other parts of the country. However, it urgently needs rescuing by arresting the urban decay, particularly, in Karachi's historic core which needs regeneration, by saving surviving array of historic buildings in the area.



Hindu Gymkhana, 1930.



Map of Quarters of Karachi by James Strachan, 1887. Published in *'The Dual City: Karachi During the Raj'* by Mihail Lari & Yasmeen Lari, OUP 2000.

Chapter: II

Urban Character and Urban Landscape

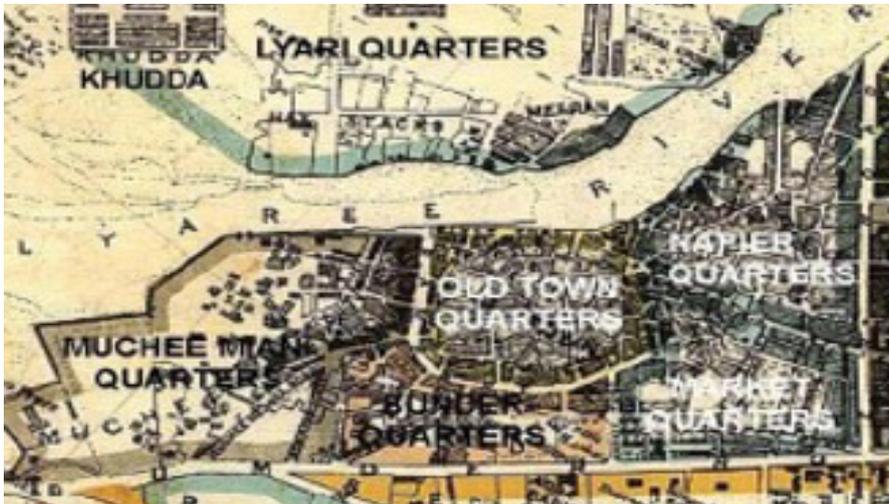
Originally there was only the Old Town, which had been fortified. However, as the Kumpany Bahadur's forces attacked Karachi, and the its flag replaced the Talpur flag on the gateway or the chaura, the fortifications were gradually dismantled. Soon there was nothing left of the original encircling wall, except the name of the road Rampart Row, signifying the boundary at which the fortification walls stood.

The native town was not necessarily the focus of attention of the conquering army, they immediately began building up areas to accommodate their civilian officers and military top brass as well as followers. The road which was labelled straight as an arrow, Bunder Road or Port Road, was laid out to provide easy access from the port in the west to the followers' quarters in the east that had become known as the Saddar Bazaar to provide supplies to the army, and the Civil Lines, the home of white administration, as well as the Cantonment where the British officers lived in quiet splendour, behind which were the Lines or accommodation for the troops.

The vast area between the two enclaves would be gradually filled in. There was a sharp contrast in the morphology of the two sections, one where the native population lived, and the other that was reserved for the use of the privileged white administrators and the army brass.

The old town had very interesting winding streets on the pattern of many medieval towns in the subcontinent; while the new development followed the European tradition of imposition of grid iron planning. By the 1890s several quarters had developed and were thus recorded by James Strahan, the municipality engineer, who became the architect of many landmark buildings, but also prepared a detailed map of various quarters of Karachi.

The Old Town became the centre around which several other areas began to be developed. Analysing the urban character and morphology of the area, it is evident that four quarters sprung up on west, east and north of the Old Town Quarter beyond the confines of Rampart Road. All these quarters have a mix of organic and structured morphology. Thus, it was the Old Town along with the new Napier, Bunder, Machhi Miani and Market Quarters that provided accommodation to growing population of natives. They had begun to arrive from other parts of the colony in search of better opportunities and



James Strachan's map, showing the first five quarters of native town of Karachi.

particularly to seek employment in the port which was developing at a rapid pace. Although there were another 15 quarters that are shown in Strachan's 1890 map; however, these five quarters constitute the historic core of the city as these have been identified as the oldest quarters contiguous to the original Old Town Quarter. The morphology of the historic core encouraged mixed use development as a mix of commerce and residential structures which flourished as the city became more prosperous.

The investment of the colonial government followed the pattern of city governance elsewhere in the colonies. An obvious duality was created in the new capital. Native areas would be entirely neglected, while attention and funds would be lavished on white areas such as the Civil Lines consisting of offices and residences of colonial administrators along with the select city hall Frere Hall, and white man's Sind Club for socializing among themselves, would be located in rambling estates.

In the early days of the conquest, we don't find any significant structures in the native urban core. It was mostly small mercantile and residential structures that dominated the street scape, which I have labelled Imperial Vernacular. As the port flourished, M.A. Jinnah or Bunder Road, as it was then known, began to be adorned on both its sides, utilizing the new found wealth by local merchant princes who had acquired considerable wealth and began their contribution to the city. It was in 1886 that a landmark building, Denso Hall Reading Room and Library, would be built in Market Quarter, exclusively for the use of natives, and later Jaffer Faddoo Dispensary would

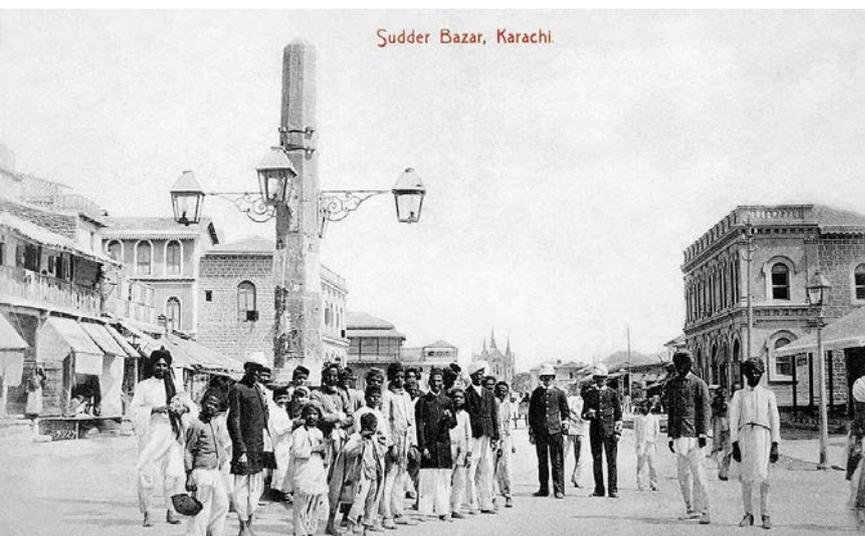
be built by a Muslim philanthropist Jaffer Faddoo.

Expectedly narrow streets of the historic core were soon bustling with commercial activity, and although some grounds were allocated as parks, these spaces were infinitely smaller compared to the sprawling open areas in Civil Lines or other areas designed for the use of the rulers. While the buildings built in Civil Lines and Cantonment consisted of impressive imperial architecture, that were widely spaced, it was the historic core that represented the real Karachi that had been developed by natives. Influenced by the taste promoted by the rulers, these structures largely followed European imagery but also provided a mix of local traditions thus providing a unique architectural blend that gave Karachi its special cultural flavour.

The five quarters constituting the historic core were densely populated and, as mentioned earlier, small-scale double or three storey buildings lined the sides of comparatively narrow streets. Interestingly, even in this extremely congested area, there were several structures that boasted open air courts in the rear where trees and plantation could flourish. Thus, in the Late 1980s,

when Heritage Foundation of Pakistan began to document historic architecture of Karachi, we found that at the time of Independence in 1947, these five quarters carried the largest reservoir of oldest structures and even today the historic core houses a large number of surviving heritage.

This is why the focus of any regeneration efforts must begin with the historic core as this is not only the architectural heart of Karachi but also of its diverse communities who have resided here for over a century and a half.



Assembly of Karachi's communities.



Max Denso Hall
Bunder Road
April 2019
© The Karachi Walla

Karachi's crumbling heritage; destruction by design.

Chapter: III

Present State of Karachi's Historic Area

Even though Karachi has contributed the most revenue for federal and provincial state exchequers, it has become a highly neglected megacropolis.

Until the 1960s and even the 1970s, it boasted several new developments and investment into its infrastructure which made it into a vibrant city drawing an influx of population from all over Pakistan. Refugees from Afghanistan and Bihari population fleeing from East Pakistan that became Bangladesh were all able to find refuge here. Karachi had always been known as the most hospitable of all cities, where all were welcome and all found livelihood opportunities.

As the country's centre of gravity shifted from Karachi, which had been the capital of undivided Pakistan (both East and West Pakistan), to the new capital Islamabad established in 1959, Karachi became sidelined and was relegated to the periphery even though trade and commerce flourished and it remained the largest generator of revenue, and remains so to this day. It is a moot point that the country might have remained undivided if Karachi had remained the capital and Islamabad had not received lavish funding from military rulers of the time.

Later we see rise of a variety of mafias and powerful groups that began to dominate the city, the most damaging of which has been the land mafia. Over time and as local government institutions began to collapse, the governance of the city became more and more lax. Those who became custodians became more interested in erecting visual political symbols such as high rise towers and flyovers, destroying the city's urban character and concretizing and brutalizing its environment. The most tragic outcome was the usurping of urban spaces of the city by unregulated developments and politically motivated permissions in violation of all applicable urban regulations.

Over time Karachi has become an urban nightmare where encroachments abound at pavements and open spaces. Even parks and play grounds are not free of illegally built structures, so much so that the Supreme Court of Pakistan had to issue special orders for removal of encroachments from streets, public spaces, parks and playgrounds.

Tragically, heritage buildings have been among the most ill-fated victims,

where illegal, inappropriate additions abound; each government department and bodies especially tasked with heritage protection failing to perform their assigned duties and shrugging off their responsibility by blaming others for violations.

So many of the beautiful heritage buildings have been allowed to be destroyed and permissions given to multistorey structures in their place. In the last few decades Karachi has been shorn of a large number of heritage treasures and poorly designed concrete structures have been allowed to take their place. Not only a sense of history has been lost, some buildings that brought memory of some remarkable personalities of Karachi such as Haji Abdullah Haroon have been lost, as can be seen in some of the instances shown here from a study carried out regarding lost heritage of Karachi.

This unfortunate disregard to our heritage has also resulted in almost every historic building to be subjected to excessive violations. The extra loadings imposed on a majority of 19th c. fragile heritage structures have made this extraordinary urban heritage treasure even more vulnerable.

Further, indiscriminate additions without concern for safety standards inside heritage buildings have resulted in converting internal spaces into rabbit warrens. The resulting interiors have become so treacherous that in case of fire or any other calamity any escape will be well nigh impossible.

The relevant authorities continue to turn a blind eye, claiming that it is not their jurisdiction to impose regulatory stipulations.

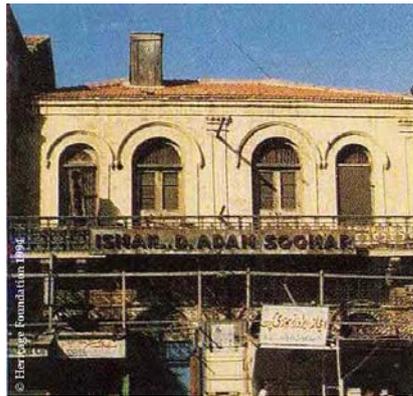
Among other causes, there are two that are the most destructive for the urban fabric of the city. One of them is contributing to the addition of undesirable and inappropriate interventions that, in our view are compromising the integrity of heritage, and are injurious to cultural landscape of the city. The other turning lower density areas into high density enclaves that are exacerbating the degraded environmental conditions in the city. The controversial High Density Board Act 2015 has allowed politically motivated violations of FAR (Floor Area Ratio), by indiscriminate doubling of it from 1:6 to 1:12. Further, by taking the excuse of this unfortunate controversial law, multistorey construction outside Master Plan's high rise zones has been allowed. Another



Facade only surviving.



Abdullah Haroon Trust Building. Heritage on Ghazanfar Ali Road, turned into multistorey.



Ismail D. Adam Soomar building. Heritage on Dr. Daudpota Road, turned into multistorey.



Haji Abu Trust Building. Heritage on Ghazanfar Ali Road, turned into multistorey.



Vanished Heritage: Studies carried out by Consultants Group.

unfortunate occurrence is that legally appointed custodians of Sindh heritage known as Cultural Heritage Advisory Committee, constituted under Sindh Cultural Heritage (Preservation) Act, 1994, which includes several private sector well known personalities, some of whom have been entrenched in the advisory committee ever since the inception of the law, have allowed for this sacrilege under the garb of the 2015 law for construction of 35 storeys within 2- or 3-storey heritage buildings. This action has minimized the importance and integrity of both Grindlays Bank, impacting the landmark Merewether Tower in its vicinity, along with the Katrak Mansion in Civil Lines. Thus, the heritage regulations that the premises of a historic building are as sacrosanct as the structure itself are being violated time and again by those tasked with the custody and welfare of the city's heritage.

In another recent development, an expensive World Bank project ostensibly to create a vast public piazza, deliberately discounted heritage properties located in the vicinity of this old city enclave. The plaza itself is a huge area paved with impervious concrete pavers, and with hardly any plants or sun cover, and is a source of large scale heat emission and excessive urban flooding, and one which has also robbed the area of any vegetation that existed prior to the project. Further, as the project deliberately ignored heritage buildings around it, the new development having contributed to rise in land prices, thus encouraging large scale destruction of historic buildings in the area by vested interest who would like to replace low rise heritage with multistorey towers.

As a result of Yasmeen Lari's petition, under a Supreme Court dispensation, no heritage building can be de-notified or demolished unless a case for this purpose is submitted by Department of Culture, Government of Sindh, and unless demolition is approved by High Court of Sindh. Not being able to carry out their undesirable activity of total demolition of heritage, the land mafia is engaged in surreptitious destruction inside heritage structures, with the expectation that as external walls become unsupported, their collapse will pave the way for building highrise structures. Or, as has been witnessed in some other cases, if only the facade is standing, approval is obtained from authorities to build a multistorey building in the recently vacated space behind heritage facades.



*Demolished from inside.
Waiting for facade to collapse.*



Thus, on the one hand the rich reservoir of Karachi's heritage is facing either willful destruction or its integrity is being compromised through permissions of excessive construction. These permissions which are clearly being given due to pressure from vested interests, are undermining a valuable urban resource which has contributed to maintaining the humanistic environment of the city.

In addition, degradation and urban decay is exacerbated due to lack of maintenance, neglect and lack of financial support for maintenance for the city's urban fabric. Usually urban blight requires wiping out the area and starting again with something new (Justin G. Moore 2015); however, in the case of Karachi's historic core, some of the assets are far too valuable to be removed. This is the reason that a solution is needed which will improve the environment, save cultural heritage of the area to incorporate principles of circular economy, along with implementation of eco or green urbanism to ensure health and well being of its residents.

The factors that have contributed to the present unbearable conditions include smoke-emitting vehicular traffic, unregulated vendor activity, and the worst kind of environmental, visual and audio pollution. The decay is worsened due to broken pavements and over crowded narrow streets with ugly unwieldy electrical installations, for example large PMTs placed indiscriminately on pavements, a number of untidy and unkempt electric poles with a jumble of overhead electrical wires and cables that conceal the beautiful historic facades, many of which have also been mutilated due to the insertion of heavy reinforced concrete beams and lintols.



Calcutta House. Willful demolition.

Being among the oldest parts of the town which has suffered outright neglect in past years, its aging sewerage and water supply lines are no longer serviceable. This is one of the major reasons for waste and rain water overflow in the area, which has subjected the historic core to the worst of urban flooding in the last few years. As there has been no renewal of storm water drainage nor the sewerage system, the seepage from faulty pipes has exacerbated environmental conditions in the locality. Further, the pollution levels are so high that any vegetation that existed at one time has been lost and we see not a speck of greenery in these areas.

Where on the one hand urban decay is omnipresent, surprisingly, there is no shortage of commerce or businesses which operate from there. Since the area is a hub of trade and commerce, once beautiful mansions have been converted from residential accommodation into warehouses changing the land use of the locality from the original mixed-use development to single purpose godowns and storage. This is the reason that instead of a bustling quarter at all hours of the day as it used once to be, it is entirely deserted after shopping hours and on Sundays.

With unregulated motorized vehicular traffic and proliferation of unrestricted entry of vendors, congestion due to delivery of goods at all hours, and pavements crowded with electrical and other accretions, there is hardly any space to walk and for customers to reach the shop fronts. With high levels of environmental and visual pollution, it is no longer an area for enjoyment and leisurely shopping.

Another big curse due to a lack of civic services is excessive garbage that accumulates in all areas of the city, but is particularly glaring in the historic core. Since a sense of ownership and pride is missing, the streets are used as free-for-all dumping ground and accumulation of solid waste, creating mountains of garbage in the historic core.

Although, over many years the city has become extremely vulnerable due to many deficits and shocks that it has suffered; however, climate change has exacerbated difficulties as it has in other parts of the world.

Flooding was common in Karachi because of lack of storm water drainage as well as closure of nullahs or large open drains due to encroachments and willful occupation by powerful segments of society. With changing climatic conditions, urban flooding is now affecting all parts of the city but particularly the old parts and the historic core itself. Measures are urgently required for its mitigation to avoid submerging of buildings in standing water which leads to excessive damage to goods and property. In almost every monsoon season the streets become rivulets where use of boats has become essential for survival. Similarly, urban heat islands is a fact of life. Many lives have been lost in the last few years and measures are urgently needed to remove as much concrete from the city's environment as possible and replaced with



Only beautifully carved brackets of balconies are remaining. All else has been destroyed.

permeable pavers and other measures to mitigate urban heat island affect. A moot point is: can Karachi's citizens survive living under such degraded environments?



Heritage destruction being carried out openly.



An urban nightmare.

Chapter: IV

Cities, Climate Change and COVID-19

Various studies inform us that today 93% of cities are subjected to climate driven hazards that are particularly affecting vulnerable populations residing in urban centres. Hazards such as rainstorms, heat waves, drought and water scarcity, flash/surface floods as well as extreme hot days, are being experienced by Karachi as much as other cities of the World.

We also know that, due to concentration of large populations, cities are a major contributor to global warming and climate change. It is predicted that cities in the Developing World will need to house 80% of population by 2030 (DFID TERI Team Sreeja Nair et al), and are also generator of large scale 'human induced' GHG (Green House Gas) emissions. These emissions, which could be as high as 60-70%, will pose excessive demand for resources, as urban residents continue to be in the frontline as the most endangered populations (UN Habitat 2011).

It is also evident that, in addition to large scale GHG emissions, a majority of cities suffer from environmental degradation, congestion and overcrowding. However, It is the same urban centres that could provide the panacea if developed along climate resilient principles, promoting low carbon development, such as incorporation of renewable energy, energy efficient methodologies, green building procedures and restricting motorized traffic for controlling pollution. Since DRR-compliance and climate resilience are essential for reducing risks, other factors that need attention are improved physical infrastructure consisting of efficient water supply, sewerage and sanitation, power supply as well as, many a time non-existent solid waste management. An inclusive approach which would pay equal attention to informal settlements and squatters is urgently needed to deal with further threats posed by pandemics such as COVID-19, that require a healthy environment for all.

In the light of climate change and pandemic threats, the present city structure in most countries has become untenable. These exigencies are impelling urban planners and thinkers to explore alternative approaches to city development. Thus, as UN Habitat urges governments to begin urban transformations "Towards a More Just, Green and Healthy Future," similarly there is a convergence of views among eco-urbanism believers, who advocate

refashioning existing urban centres in order to incorporate humanistic values and inclusiveness that are driven by ecological considerations. As outlined by SDGs (Sustainable Development Goals), there is an urgency to foster sustainable development and to foster collaborative efforts for dealing with multiple threats being faced by humankind. Also, there is an inordinate need to engage communities as well as non-state and state actors in order to make joint efforts to ameliorate conditions of urban populations, particularly the urban poor.

Among the recommendations is to reshape and rethink on an urgent basis, the reconfiguring of urban morphologies and “promoting the transition to greener, more equitable urban economies” (UN Habitat 2021).

Some reports lament that only 17% cities are taking any action towards climate and pandemic resilience, (Laura M.Lombrana 2021) pointing out that the greatest potential for reducing emissions in cities lies in buildings, transport, energy grids and waste management (Karl 2010). In addition, strategies are needed to move towards sustainable urban development and poverty reduction (Yuen and Kong 2009), along with building resilience against future shocks. Clearly urban designers and built environment professionals carry a significant responsibility if emissions are to be halved by 2030. And clearly, urgency of action for restructuring urban environments cannot be over emphasized as any delay is likely to spell disaster for humankind.



Exponentially growing urban population.

It has been suggested (CPD Bloomberg) that area-wise emission inventories should be maintained to assess whether the target of 1.5 celsius rise is being attained, along with incorporating sustainability within yearly budgeting for following factors:

- Emission reduction
- Renewable energy - at least 70% mix
- Waste management
- Energy efficiency

Urbanist Steffen Lehmann who has carried out research on the emerging model of eco- urbanism is clear that “Cities can and must become the most environmentally-friendly model for inhabiting our earth.” The conclusions are drawn from the realization of the impact of climate change, which obliges us to develop new models for ecological or green urbanism.

It is in this context that Lehman urges designers: “to re-conceptualize existing cities and their systems of infrastructure, to be compact, mixed-use and polycentric cities.” In order to achieve low-or no carbon city, he lists fifteen principles such as “Density and retrofitting of existing districts; use of local and sustainable materials; livability, healthy communities and mixed use programmes as well as emphasis on cultural heritage, identity and sense of place.” These are tenets that can be used gainfully to deal with urban blight that is prevalent in the historic core of Karachi.



Khori Gardens encroachments. No place for pedestrians.

It is because of this compulsion that many countries are engaged in developing vulnerability profiles and studying extent of hazard exposure in cities. Studies such as those for 20 Indian Cities (RAD2013), included state of infrastructure, past natural diseases, flooding, tsunamis, droughts, landslides, cold/heat waves, water scarcity; governance (institutional set ups); socio- economic factors (population, growth rate; sex ratio literacy), slum population; also Inadequate basic services e.g. water supply, sewerage network, solid waste management, storm water drainage systems, transportation, energy and housing, can help in prioritizing actions necessary for restructuring and refashioning urban areas to deal with climate change and COVID-19 imperatives.



Unregulated vehicular traffic.

We need to understand the specific issues of urbanism in Pakistan. We know that in addition to the deficits in conditions listed above, there is excessive use of concrete in buildings as well as pavements and landscape arrangements. This proliferation of impervious, non absorbent and heat emitting concrete is among major causes of urban heat islands. In the case of Karachi, although the breeze from Arabian Sea normally acts as a temperature moderator, the heat in the city at times is so unbearable that in June 2015, 1200 deaths were reported due to extreme heat conditions.

Newspaper reports quoted experts as saying that “the city is like a furnace that captures the heat without letting it escape” (Dawn/The Third Pole, June 25, 2015).

Although each city has to grapple with its own challenges that have compounded urban flooding, the case of Karachi is due to a multitude of issues. We know that in addition to wealthy and influential people building upon nullahs or original water courses, many informal settlements have been built on them, all contributing to the blockage of natural flow of rain water. Other factors contributing to urban flooding consist of aging sewerage and storm water infrastructure that has not been renewed during the past several decades, while in many newer areas either rain water drainage has not been provided or whatever was designed, is choked and is no longer operational. The cause of urban flooding can be directly attributed to politically motivated permissions for indiscriminate highest use of land in the form of highrise buildings, within city centre resulting in inordinate increase of



No place for pedestrians.

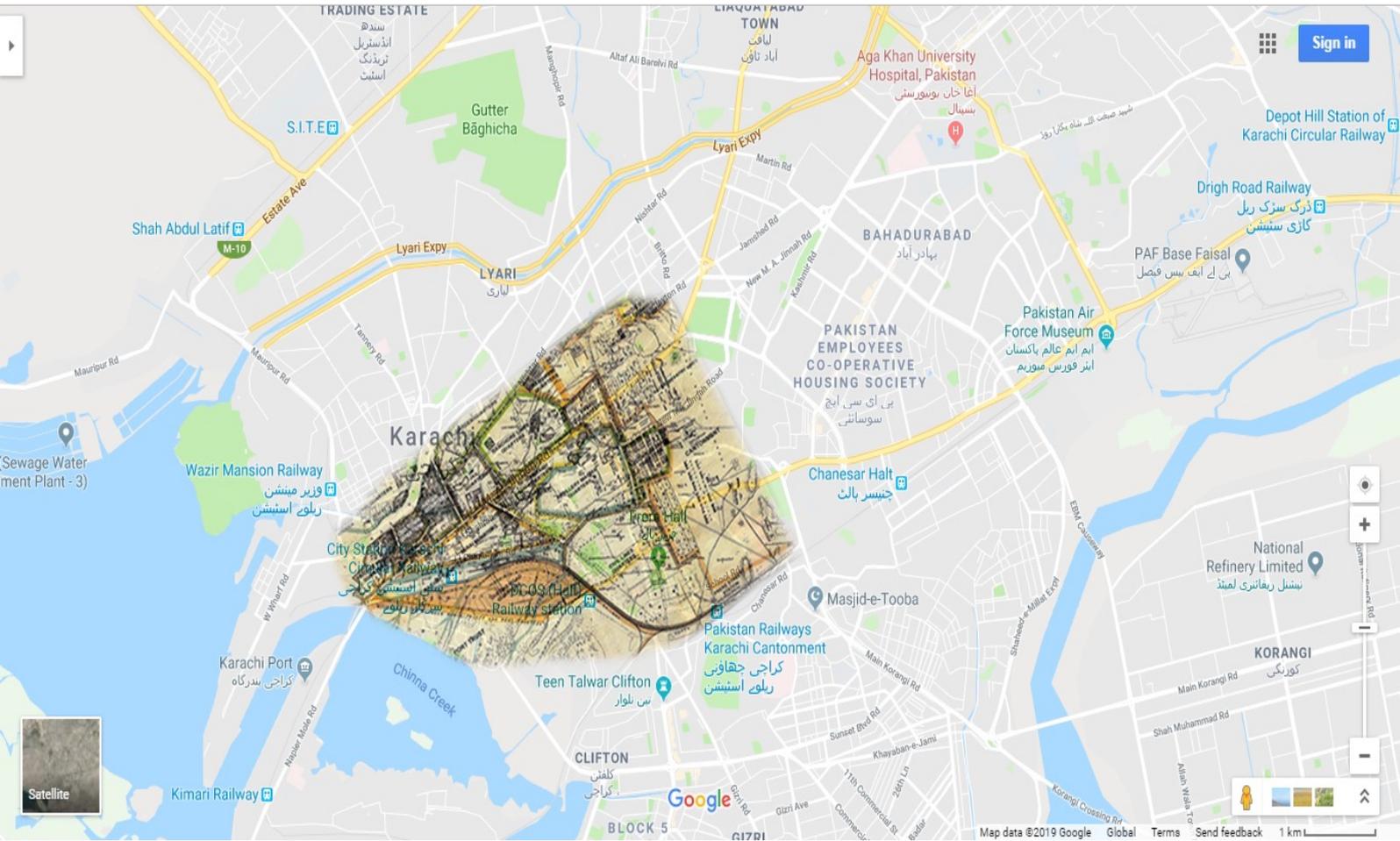
densities in urban centres. In addition to being a cause of extensive GHG emissions, the lack of rainwater conservation arrangements, have resulted in aggravated flood conditions in the city, along with proliferation of informal settlements which the government has entirely ignored, not even providing with basic physical infrastructure, and leaving the communities to suffer the consequences under most trying living conditions.

As mentioned earlier, concretizing of the urban environment and concrete pavements lining the city with impervious pavers, with no possibility of water absorption in the soil, is another major cause of flooding, a phenomenon that has been exacerbated due also to climate change impact in increased frequency and intensity of hazards. Unless water retention techniques are imposed and use of concrete pavements is entirely banned, urban flooding will continue to cause large scale economic losses and disruption, affecting livelihoods of a large urban population.

In view of increasing hazards to city residents, urban design and development in Pakistan need a radical transformation. New directions need to be set by organizations dealing with climate change and urbanization to ensure climate smart, eco urbanism development all over the country.



Unkempt, untidy urban spaces with garbage dumps.



Map of Karachi 2021 with superimposed map of original quarters.

Chapter: V

Restructuring Urban Centres for Green Eco Urbanism

This is a case of how to take up a seemingly hopeless task. While thinking about the issue of the state of Karachi's old town, I had a feeling that through a strategy of climate smart eco urbanism, there was a possibility of beginning the process of regeneration of the historic core through a partnership of different stakeholders.

I knew that the difficulties being faced by a megalopolis such as Karachi were not new or unique. However, because of the complexity of the situation, it required specific strategies to create a humanistic environment for the well being of its residents particularly in the light of prevailing epidemic COVID 19 and requirements for implementing climate resilient strategies.

Clearly majority of the cities in the Developing World suffer from environmental degradation as well as unchecked greenhouse gas emissions. It has been found that carbon emissions could be lowered by nearly 29% in 10 years by creating 'carbon neutral cities' through design of eco urban configurations adopting "low- carbon strategies in key sectors such as buildings, urban planning, sustainable urban transport and infrastructure" (UNECE, 2009).

When embarking on restructuring Karachi's historic core, I thought it was best to create a flagship green eco enclave. Clearly, when we look at a megalopolis such as Karachi, we are at an ecological precipice or "edge of survival." Therefore, focusing on areas suffering from a high degree of urban decay would be essential. It was clear that in order to respond to the challenges posed to urban centres, the regeneration of the city's historic core would have to include measures for mitigating risks, for which climate investments based on DRR and climate adaptation measures would be essential.

Clearly, this would entail fostering low carbon development with low carbon structures, maintaining heritage structures to prevent new constructions, popularizing renewable energy, promoting energy efficiency, establishing green procedures and preventing emissions from motorized vehicles by restricting their use, mending backlog of urban infrastructure and instituting an efficient waste management system. Thus, by restructuring urban segments on climate resilient lines we could hope to keep temperature rise

under 1.5 Celsius required by the global agreement of COP 15. Even as we embarked on the finalization of the concept of eco-enclave, it became clear that dealing with Karachi's inner city challenges would require a concentrated and collaborative effort.

RECLAIMING ENCROACHED URBAN SPACES AND HERITAGE BUILDINGS

Due to callous usurpation of open urban spaces Karachi's urban fabric has become devoid of small corner spaces and areas since portions of streets have been eaten up. The power and influence of the encroachers has continued unchallenged for the past several decades, until Pakistan's superior judiciary took notice of the plague of illegal occupations, where grabbing areas for personal use even within parks and playgrounds had become the norm. The blind eye turned by state agencies towards illegal constructions demonstrates the power wielded by the land mafia. Because of this complicity undesirable densification in highly congested areas continues unabated, due to multistorey towers in place of lowrise heritage notified structures. When at certain times Karachi administration has made an attempt at removal of illegitimate constructions, even they have faced innumerable hurdles on the way.

Under such an unruly and untenable urban disarray, we decided to work out the transformation into landscaped spaces of selected streets that wind through the historic core which would provide the much needed green lungs within extremely dense developments. These would be utilized



After removal of encroachments on the orders of the Supreme Court.



Illegally occupied Empress Market grounds known as Empress Market Gardens.

to present historic cultural landscape of the inner city at the same time allow a clean and healthy environment along with increased biodiversity. Thus, streets would become the most important urban form for not only transformation of the environment but also for the enjoyment and recreational activities of common citizens, including women and children.

REQUIREMENT FOR LOW CARBON BUILDINGS AND LANGUISHING HERITAGE

In the light of many findings, we know that construction activities and poorly designed buildings themselves are a major contributor to worsening urban environments. Undoubtedly then, the immediate focus would have to be on green buildings and to promote energy efficiency in construction. For this purpose the first important element would need to be the cleaning up and preservation of historic buildings in the area.

We know that one way to lower the carbon foot print and pursue circularity principles is to prevent construction of new structures and instead retrofit existing buildings, and, most importantly preserve heritage structures by making them serviceable for contemporary use. These heritage buildings not only create interesting streetscape, they foster pride and identity, endowing special character upon precincts and cities - leading to increased local as well as regional and international tourism.



A heritage building being willfully destroyed.



Surviving facade only of a remarkable heritage building.

Pursuing the safeguarding of heritage has always been my objective and it was clear in my mind that the most essential element of the new eco-enclave would be the large number of 19th century heritage buildings duly restored, that would endow enhanced cultural value to the inner core. By conserving them and opening up the original ventilation system through arcades and inner courtyards, the movement of sea breeze would create improved indoor environmental performance as well as energy efficiency.

Ever since the founding of Heritage Foundation of Pakistan in 1980, our object has always been to prevent demolition of heritage structures as they are the ones that add beauty and humanism to streetscape, as well as pride and ownership to the citizens.

The restored heritage structures and their adaptive reuse would assign greater value to buildings that were once dilapidated, dangerous structures, which, we hoped would prevent their demolition. The added advantage would be that if heritage structures are saved, there would be no further new construction or consequent emission of gases, a high percentage of water will be conserved and waste stream from new construction will be forestalled.

Unfortunately, over the years I have realised that urban heritage safeguarding is beset with difficulties. Perhaps for this reason, nobody has so far



Illegal addition of new construction on heritage structures.

devised a model that could be taken up in a sustainable manner. Although the modalities for maintaining Heritage Urban Landscapes are available through the templates devised by UNESCO, and because of the flexibility of approach they appear doable, however, the interest of government agencies in preserving Karachi's heritage appears to be almost non-existent, and the reason behind the loss of valuable urban heritage which is languishing with no hope of retrieving it in the foreseeable future.

It appears that in provinces that are endowed with Mughal heritage, such as Lahore, considerable progress is being made through government investments. Unfortunately, the same is not the case of most Sindh urban centres, where the urban landscape consists of shared heritage with Britain. Coupled with the fact that hardly any funding for restoration of urban heritage is forthcoming, so far it has not been possible to devise a solution which could help to stabilize and maintain the iconoclastic and diverse architectural expression of these small mercantile structures that line the streets of historic Karachi.

However, a solution to this dilemma must be found. It is our hope that through a collaborative effort, and with support of present owners and occupiers of heritage buildings, utilizing private impact cultural funding, heritage structures could be stabilized and preserved with adaptive reuse effort.



Proliferation of electric poles and cables.

Once heritage buildings and other existing structures have been cleaned up, the next step would be to begin greening of all the buildings lining the street which could be taken up for kitchen gardens and climbing vines in balconies and arcades. Additionally, roof gardens need to be developed for greater cooling of the environment that would all lead to better health and well being of citizens.

DEALING WITH AGEING PHYSICAL INFRASTRUCTURE

In the historic core the sewerage, water supply and storm water systems were laid several decades ago. Today, unhygienic conditions are prevalent with overflowing gutters, and leaking water supply lines. It is not surprising then, that there are constant complaints of blocked drains and overspill on streets, damaging structures in the area which calls for investment into physical infrastructure of the area. Since rain water drainage is non-existent for all intent and purposes, and since blocked storm water drains are unable to carry the monsoon rains, many areas are normally flooded, and more so the quarters in the historic core.

As was the case with sewerage, water and rainwater disposal services, the ageing electrical systems were the cause of constant power outages. In addition, the overland lines with tall unkempt poles along with massive PMTs were not only a sore sight, these were also dangerous, electrical cables and wires being too close to buildings which had been a cause of many accidents, especially during monsoons. The proliferation of electrical cables and wires, jumbled up as they usually are, had resulted also in camouflaging



Unregulated push carts occupying streets.



Urban flooding causing huge economic loss.

the beautiful historic facades into unattractive buildings with untidy appearances. It is for this reason that at the inception a decision was taken that all cables and wires must be taken underground so that street poles and overhead cables would become redundant. Similarly, huge installations such as PMTs, would be removed and reduced size PMTs will be installed at the periphery. Obviously new street lights would be installed which will be designed to be compatible with the concept of the newly configured street. There was much discussion if we could install solar lights; however, the funds at our disposal were insufficient and it was decided that perhaps these could be installed at a later date.

Clearly, any new development would face failure if the physical infrastructure was not renewed. While designing the eco-enclave, coordination with service providers was extremely important. Without this coordination and understanding of each one of them, the long term sustainability could not be assured.

Karachi administration led by DC Irshad Ali Sodhar played an outstanding role in coordinating and securing the cooperation of multiple service providers with varying jurisdictions, that ranged from Karachi Municipal Corporation (KMC), District Municipal Corporation (DMC), Karachi Water and Sewerage Board (KWSB), Karachi Electric (KE), Pakistan Telecommunication Authority (PTA), Pakistan Telephone Corporation Limited (PTCL), and cable operators.

LACK OF WASTE MANAGEMENT

Most of the areas in the city lack regular removal of solid waste. It is accumulated without let in all parts of the city. Where in other sections of the city there may be open spaces where dumping takes place, due to high density and congested nature of the historic core, it continues to pile up on the streets or in leftover urban spaces. Clearly, when there is an inefficient system of garbage collection, the streets are used as dumping ground by all street users, but most of all by shopkeepers, who would transfer their waste on to their street. Since the municipal garbage bins are insufficient, the city continues to suffer from extremely unhygienic conditions. Among the major tasks would have to be the removal of garbage and addition of garbage bins, at the same time it would be essential to foster a sense of civic responsibility among street users.

CHAOS DUE TO UNREGULATED VEHICULAR TRAFFIC

Among the most difficult tasks is to regulate vehicular traffic in the area. While there is a lack of parking arrangements, however, unruly motorized traffic adds congestion and a high degree of environmental pollution. Smoke emitting vehicles are used to deliver goods throughout the day in narrow streets of the historic core, creating traffic bottlenecks and inconvenience to shoppers. Delivery vehicles add to excessive traffic movement at a time when shoppers should be able to shop without hindrance.

At the outset it was clear that as long as motorized vehicles are allowed to enter, selected streets would never be cleared of fumes and pollution. So among the first steps would have to be to prohibit motorized vehicles from entering into the area. Many predicted that that would not be possible as regulating vehicles would not be acceptable to some groups, since these disorderly arrangements are formalized as part of illegal earnings for many. This became evident at the time of implementation and became one of the most contentious points that had to be dealt with in order to achieve our objectives. There were vehement objections to restricting the entry of vehicles, not only delivery trucks but also a vast number of motorbikes, as people were used to arriving at the doorstep of every outlet. However, in order to achieve eco benefits, rationalizing of vehicular movement was an essential component for restructuring the street system.



Lack of solid waste management.

LACK OF PUBLIC WASHROOMS

Most of the city functions without adequate sanitary facilities. While it is difficult for men, it is a hundred times worse for women. In any case as you walk down crowded areas of the inner city, it is clear that all possible measures have been taken to discourage women from these areas. While placement of washrooms in the street would be essential, provision would also have to be made for separate female toilets, in order to create women-friendly urban areas to enable female shoppers to visit even the most congested areas.

As we began to study the area, we found hardly any females frequenting the bazaars, as if they are not part of Karachi's population. Lack of any facilities for women shoppers and a hostile brutalist environment that it had become clearly discouraged females to visit these parts.

In view of absence of females in streets, the civilizing affect that their participation provides has been missing in these streets for scores of years. It is not surprising then, that these streets present a harsh environment, where foul language and loudly spoken cross words are the order of the day.

We felt that under such conditions it was necessary to create an inclusive environment conducive to women's presence and thus encourage civilized and polite behaviour.



A subculture of unregulated activities.

URBAN FLOODING

As in many parts of the world, control of urban flooding is a challenge. Karachi city is particularly vulnerable, because, as mentioned above, there is of lack of investment in physical infrastructure. Where at one time it was due to lack of drainage and choking of water ways, today it is exacerbated due to climate change factors. The historic core is particularly vulnerable and suffers greater damage than many other areas, as all rainwater from main city roads is also diverted to inner roads.

Other causes include failure of natural drainage and insufficient municipal rain water drainage system. However, the flooding is aggravated because of lack of soft ground surfaces for absorbing water. Since almost all ground surfaces are covered either by bituminous road surfaces or sidewalks lined with concrete pavers, there is no possibility of seepage of water into the ground.

Little thought has been given to allowing water to seep through pavements even though studies carried out by Dr. Bruce Fergusson show that pavements “occupy twice the area of buildings. Two-thirds of all the rain that falls on potentially impervious surfaces in urban watersheds is falling on pavement.”

Permeable pavements are considered “structural low impact development materials and green infrastructure system for rainfall runoff control” (John



Monsoon rains leave the city paralyzed.

Sansalone). Increasingly, eco-urbanism requires that rainwater should infiltrate soil, which will “decrease urban heating, replenish groundwater, allow tree roots to breathe, and reduce total runoff, including the magnitude and frequency of flash flooding” (Tar Hun-Dorris 2005).

Additionally, there is little attention paid to rainwater harvesting which results in all the water from building roofs and from other hard surfaces discharging on the streets. With nowhere to drain, since it takes a few days to drain into the sea, stagnant pools of water cause excessive damage to existing structures along with creation of unhygienic conditions, increasing the incidence of diseases such as Malaria and Dengue. If properly designed, the water that now falls into the sea, could be used for replenishing the soil and aquifers.

It would therefore be prudent to take up micro-level remedial tasks such as porous pavements and aquifer wells to be installed in as many urban areas as possible in order to facilitate percolation of a large quantity of water. This may not provide a complete remedy; however, a majority of rain water could be drained into the soil to provide relief. Of course, if such strategies could be taken up on a city-wide scale, it would be possible to effectively deal with urban flooding.



Lack of maintenance is evident.

URBAN HEAT ISLANDS

Over time, many areas of Karachi, during certain months of the year have become subjected to heat island affect. This phenomenon has occurred mainly due to paucity of vegetation and greenery to absorb heat in the atmosphere, but also because of indiscriminate concretizing of the city. Because of a highly degraded urban environment and proliferation of multistorey concrete buildings, along with extensive concrete pavements, the air passages are blocked restricting the cool breeze from the Arabian Sea which traditionally provided cooling for Karachi's environment. In order to create comfortable urban living, In the long term It will become essential to incorporate eco and green regulations in all building byelaws. Above all, it is essential to discontinue the use of high energy consumptive materials such as concrete and steel, which do not allow penetration of water, at the same time constantly emit heat thus warming the environment. It can be seen that reduction and avoidance of concrete and steel would help in reducing urban heat island affect, at the same time reduce carbon emissions in production.



Rescue teams to provide relief.

LACK OF VEGETATION

Because of a highly polluted atmosphere, any trees that once existed have languished without possibility of further growth. Thus, inner streets in the historic core lack greenery and vegetation. As we know trees give off oxygen, an essential component for breathing. Along with the water used in plantation they clean the atmosphere, and also help vastly in



Overflowing sewerage.



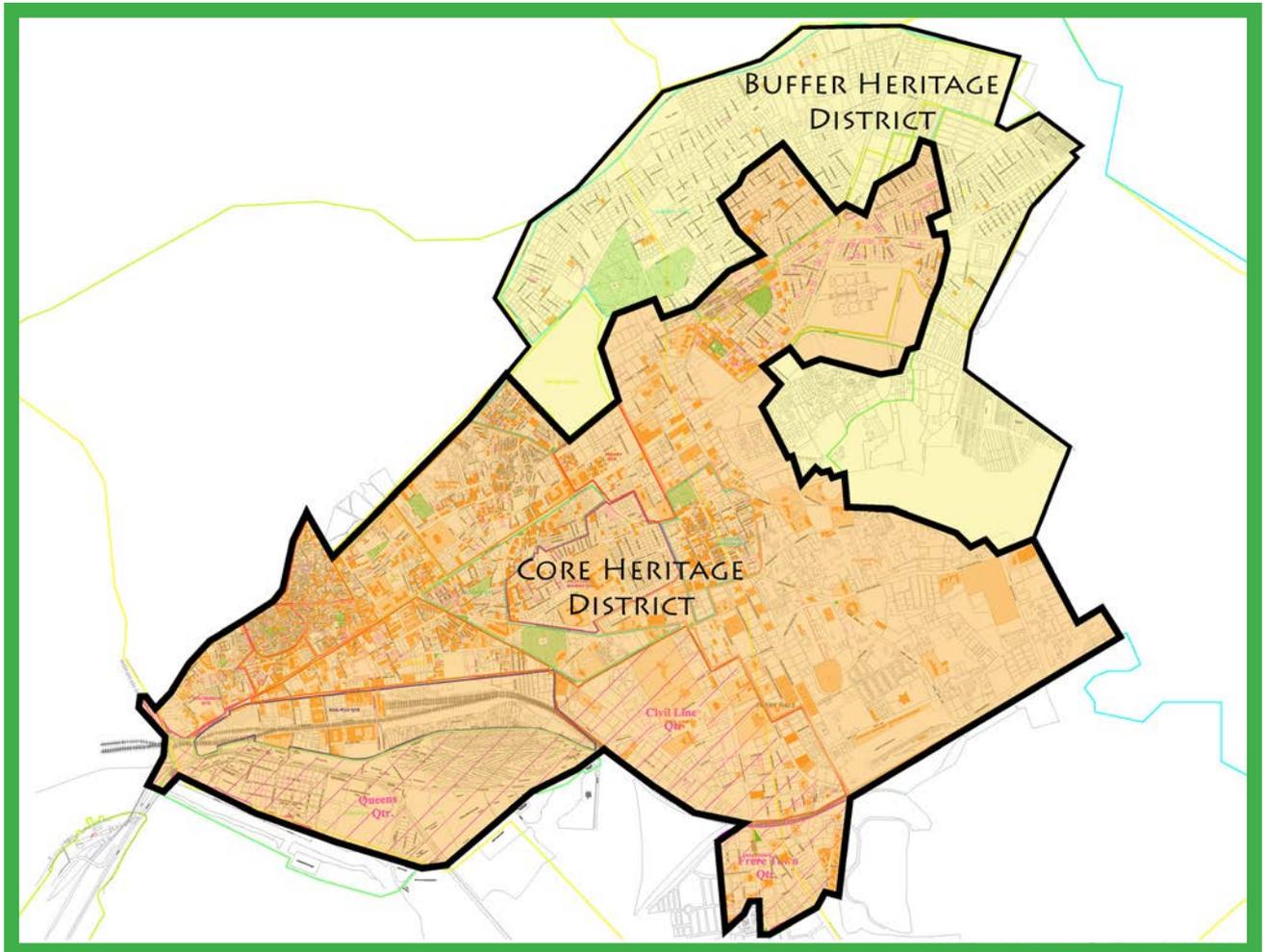
Streets as rivulets.

preventing storm water run off.

For this reason I felt it important to add groves of trees within street systems. The more trees and vegetation can be introduced the healthier the environment would become. As is known, flowering bushes and fruit trees help in attracting birds and butterflies along with a mix of large trees which provide shade, together contributing to improved bio diversity and healthier environment. As we know urban areas are notorious for their hostility to wildlife. Therefore, the more vegetation is introduced the more sustainable the development would become.



Lack of public transport.



Proposal to create Karachi's Heritage District.

Chapter: VI

Concept Development

INCEPTION

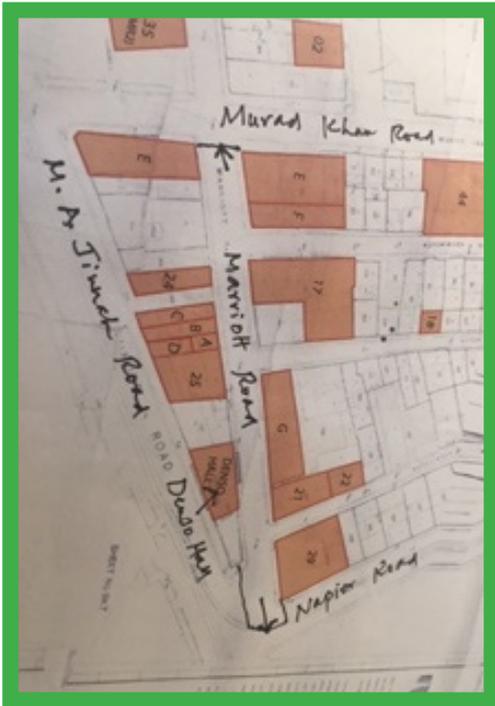
The project was designed as a result of the declaration in 2018 by Hon'ble Supreme Court ordering Sindh Government to bring back the glory of Karachi.

For the last several decades, the city had suffered excessive abuse as if it was a forlorn orphan with no patron saint. The orders of the Hon'ble Supreme Court were a powerful reminder that Karachi's urban decay must be arrested and its regeneration taken up by administrative authorities and citizens alike. The orders required that the encroachments from pavements, urban spaces, parks and amenity places should be removed forthwith. While it was essential to reclaim urban spaces that were originally meant for the benefit and enjoyment of the general public, it was clear that the importance of historic buildings of the city also required reaffirmation.

In a session of Karachi Conference chaired by the Chief Secretary (CS), Government of Sindh, Mumtaz Ali Shah, that had been convened by Irshad Ali Sodhar, Principal Officer to CS, the vision for Karachi's regeneration was presented by Architect Yasmeen Lari as a 21st century megacity steeped in its 19th c. historic past, that would incorporate low-carbon, climate-smart, people-friendly, walkable, green urbanism. Heritage Foundation presentations discussed the proposal to initiate the mission for bringing back the glory of Karachi by celebrating the city's heritage and its diverse communities.

Defining the mission for its rejuvenation and regeneration, she declared the resolve to:

- a. Reclaim Karachi's past characteristics as a port city par excellence as a generator of livelihoods from extensive inland trade and related industries, as a logistics hub for national and international trade, a melting pot of cultures and cosmopolitan atmosphere, a mix of ethnic groups, culture and ideas, promoting tolerance and peace.
- b. Protect and preserve its heritage assets including historic enclaves, old trees and urban spaces - Imperial edifices as well as an eclectic mix of Imperial-Vernacular structures contributed by diverse native communities.



Mapping heritage on Marriott Road.

c. Restore its damaged urban environments by nurturing social and ecological justice such as replacing neglected and aging infrastructure and regenerate its degraded environment.

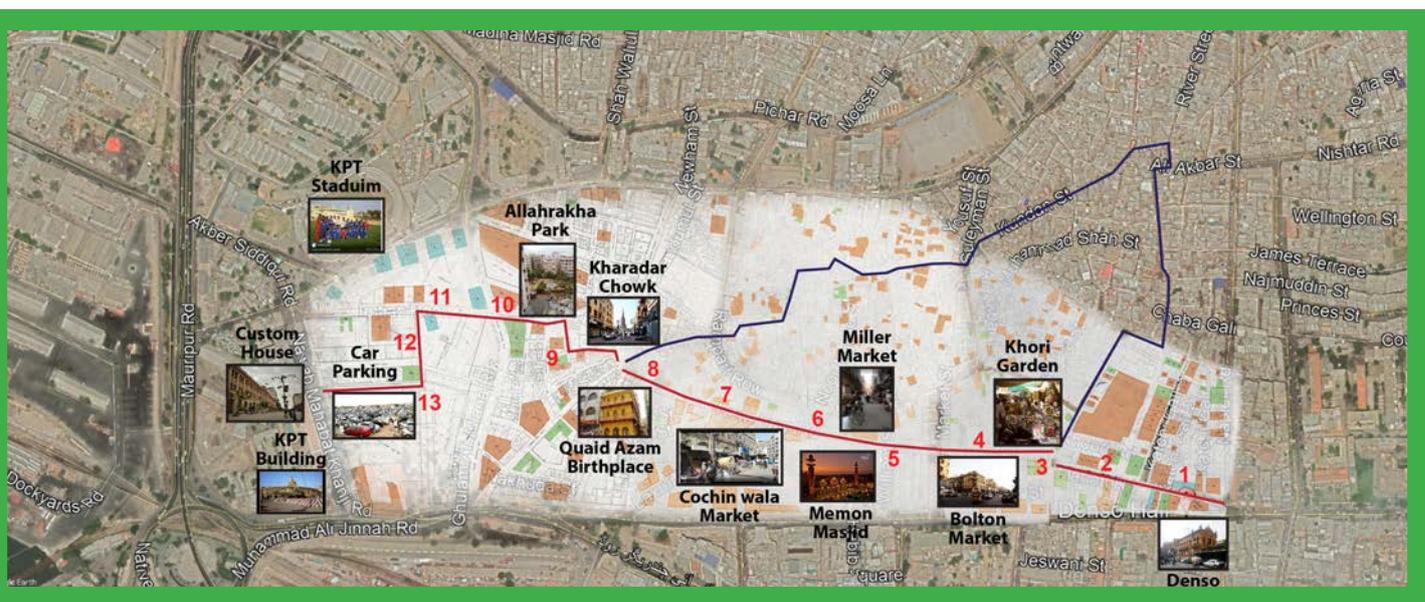
d. Encourage cultural, leisure and commerce activities for the benefit of all, including women and youth; foster pride and enjoyment of restructured streets and urban spaces along with promoting their usage for outdoor recreation with particular emphasis on performing and visual arts activities.

In order to carry out the mission it was reiterated that Karachi's historic built environment and urban historic landscape must be maximized to play a role in healing the city's broken system.

Further, saving notified heritage of the city would need to become the cornerstone of regeneration of the inner city and for arresting urban decay.

This task would include:

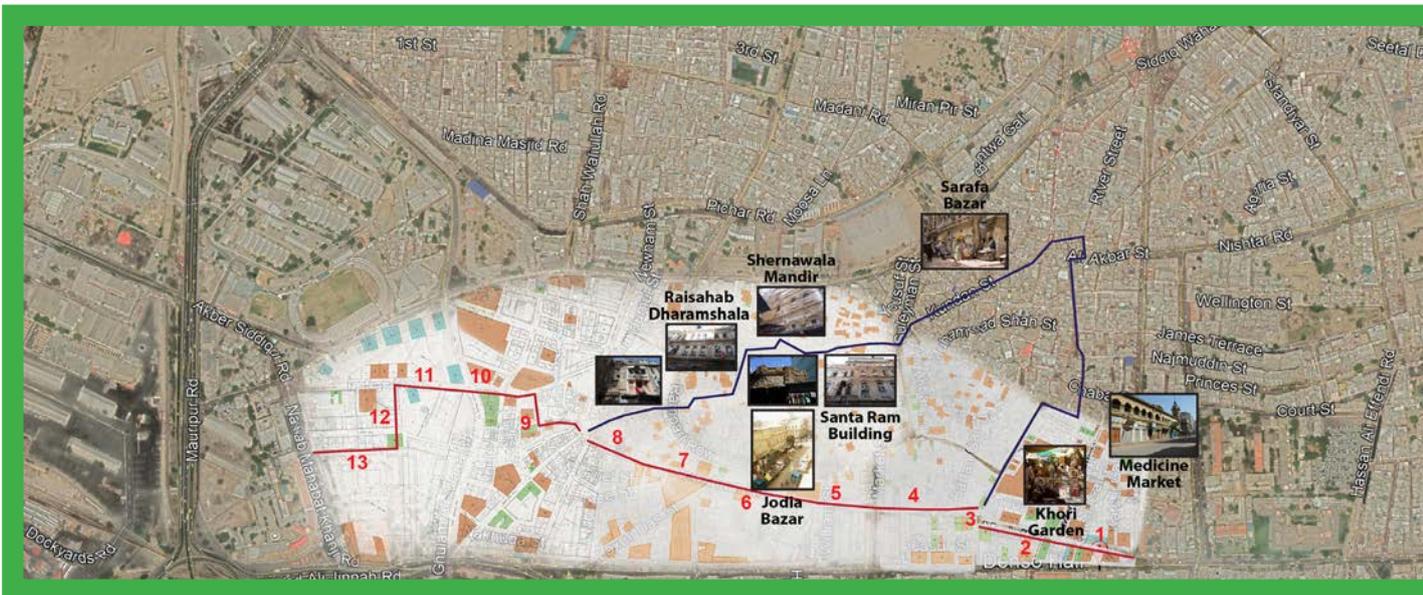
- a. Stabilize and restore notified historic structures; and protect old trees.
- b. Remove encroachments to free all urban spaces, sidewalks and nodes for landscaping and green interventions.
- c. Create pedestrian enclaves in each historic quarter,
- d. Establish a pedestrian trail linking Karachi Port Trust in the West to Empress Market in the East.



Map of five quarters showing notified Red and Blue trails along with heritage mapping.

To be able to saunter along a landscaped pedestrian walk beginning from Karachi Port Trust in the West to Empress Market in the East, spanning two extremes of Colonial Karachi, had been a dream for me for the last forty years. It was our belief that this heritage trail was imperative to develop pride and stake in the city by all who called Karachi their home, regardless of their origin.

Receiving a nod of approval from the authorities for the creation of a heritage route we began to formalize it, and decided to first focus on the historic core of Karachi which had grown as a contiguous addition to the original fortified town labelled Old Town Quarter by the British after the conquest of Sindh. Several quarters had sprung up around the original Old Town that included Market, and Bunder Quarters in the South, Napier on the East and Macchi Miani on the West. All of these quarters reflected the continuity of the original organic morphology of the Old Town combined with gradual adoption of grid iron pattern imposed by Colonial rule. Being among the oldest parts of Karachi, these quarters also carried a large number of historic buildings representing Imperial-Vernacular, expression of a subjugated population fashioning architecture in favourite styles of the rulers, which were built by native communities. As mentioned earlier, in addition to these earliest quarters located in the West to which natives were confined, many other quarters towards east were laid out for colonial



Map of five quarters showing major urban elements along Red and Blue Trails.

ruling junta for its habitation, recreation and governance of the territory. In the white quarters such as the Civil Lines Quarter and the Cantonment, especially designed impressive imperial buildings had been constructed.

For the time being we decided to confine the trails within the five original quarters forming the historic core. The Red Trail, that began from Denso Hall in the East to wind through Market Quarter, Bunder Quarter and Macchi Miani Quarters providing a link to Custom House. The Blue Trail starting from Kharadar Chowk heads north, through the Old Town Quarter and Napier Quarters to connect with River Street.

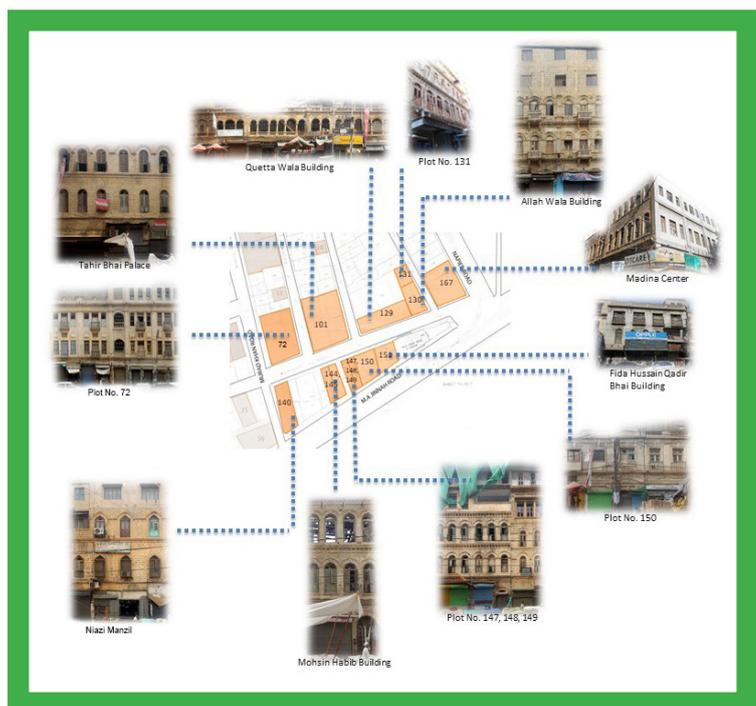
Thus two trails measuring 2 km and 1.5 km were approved, and erstwhile Commissioner Karachi, Iftikhar Ali Shallwani, notified them as historic pedestrian routes.

TOWARDS CULTURAL-ECO URBANISM

From the beginning it was clear that incorporation of remedial measures was essential, which would relate to all our concerns regarding heritage preservation and climate change impact as well as many other shortfalls that existed and had been identified by us as causes of urban blight.

The focus of Heritage Foundation has always been on heritage of the city, which formed the basis of the trails, with the intention to highlight surviving heritage structures. We know that as much as Pakistan is part of the 21st century, it is also custodian of ancient and diverse heritage dating back to many centuries. Pakistan possesses a rich and varied legacy which we know can lead the way for future low impact, ecological led developments.

It is well known that Pakistan is among those nations that are struggling to attain the SDGs



Heritage identified on Marriott Road.

because of high poverty levels and low levels of education and healthcare. It is also 5th highest vulnerable country confronted with recurring disasters as a result of climate change, lying as most of it is on several fault lines and in the path of immense melting glaciers.

In the face of climate change there are several lessons from the past which can be utilized gainfully today to achieve sustainability. On the one hand there is a need to pursue the technologies of today for efficient buildings, on the other in order to deal with energy poverty. the use of energy must be minimized through low ecological architectural configurations for which low impact methodologies need to be utilized. In view of rampant disregard for Karachi's heritage, the preservation of its scores of historic buildings is essential to prevent further carbon pollution which would help to control GHG emissions. It should be remembered that these buildings carry low FAR which provides a humanistic environment. At the same time their human scale, minimum use of mechanical devices for cooling and conversion into walking streets are in consonance with principles of eco urbanism.

As is clear from earlier discussion, urbanism for today needs to be based on humanistic features and ecological considerations. At COP 21 the Paris



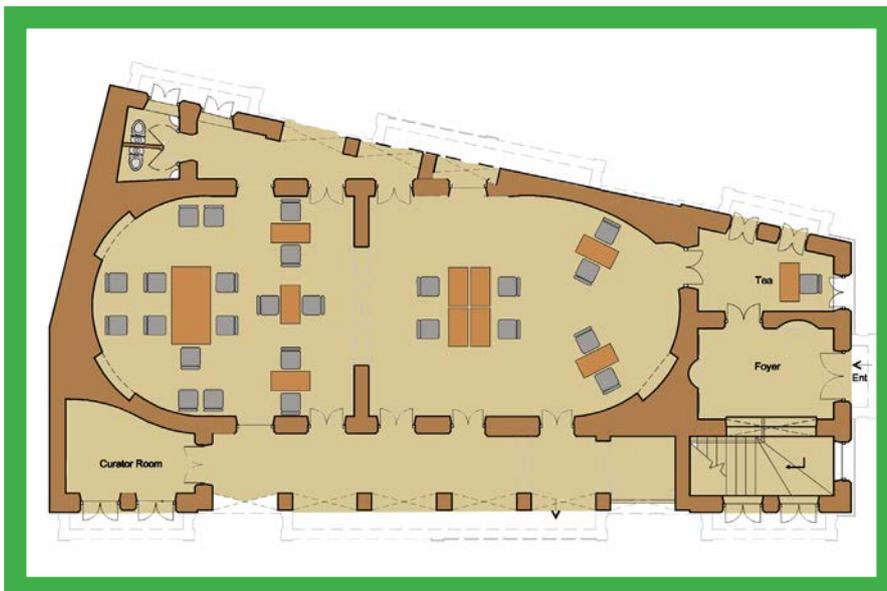
Heritage mapping on Marriott Road and first segments of the Red Trail.

Climate Conference 2015, 196 State parties have committed themselves to reduce global emissions to 1.5 Celsius which has been ratified by COP 26 held in Glasgow in November 2021. This reduction can only be achieved, if in addition to other measures, we lead our cities toward low carbon resilience. It is clear that being responsible for 65-70% of GHG emissions, our urban centres will remain global warming battlegrounds, unless urban professionals devise ways to convert them into eco-cities. It is becoming more and more essential to support those for whom “Traditional Urbanism is equal to Ecological Urbanism.”

Students of cultural traditions are aware that traditional urbanism is a result of local wisdoms, use of sustainable materials and techniques that minimize energy consumption. If we are able to adopt design principles drawn from traditional inner cores they will bring about transformation of our present wasteful urban centres into low carbon eco enclaves leading to suitable alternatives for dealing with both climate change and COVID-21 imperatives.

PROJECT DESIGN

It was decided to embark upon the first segment that consisted of 400 foot long Marriot Road, and one which would incorporate the landmark historic 19th century Denso Hall (1886) which Heritage Foundation has recently restored and has set it up a reading room and Karachi’s digital depository.



Ground Floor Plan of Denso Hall.

Marriot Road, at the rear of historic Denso Hall, renamed Denso Hall Rahguzar Walking Street, would be designed as low-carbon climate-smart landscaped cultural activity area. It would be developed as a vehicle-free street that showcases Karachi's 19th c. heritage. Disallowing use of concrete, the pavements would be designed with natural and permeable terracotta cobbled pavers to avoid heat gain and heat emission. The pavement would allow rainwater to drain from the pathways and buildings into a central green spine helping in watering dense Miyawaki style forests planted with low water consumption trees and soft ground cover – all enabling water seepage into the ground for replenishing the acquiefir. A large area of porous pavements and several acquiefir wells would prevent any ponding or pools of water as they would absorb and facilitate rain water drainage into soil.

These climate smart eco principles would lead to the regeneration of the inner core in order that the city becomes more inclusive and livable. In addition to promoting recreation and cultural activities for its diverse communities including women and youth, it would foster increased commerce along with tourism opportunities for the benefit of all. In 2018, Heritage Foundation had undertaken cleaning of facades of 12 historic buildings located on Marriot Road would now became the first segment of the notified Red trail. This heritage safeguarding activity had been in the tradition of heritage facade cleaning events that were held every Sunday through KaravanKarachi StreetFests where notables joined hands with student volunteers to clean up soiled facades of heritage buildings. The heritage street events were carried out between 2000 and 2005 first in



Front Elevation of Denso Hall.

Karachi, and later in other parts of Pakistan. KaravanKarachi was a voluntary initiative which was driven by a large number of eminent Karachiites hailing from diverse fields. It was organized by Heritage Foundation as part of a widespread effort to build a stake in urban heritage of Karachi particularly, and in other cities in Pakistan generally.

In our view heritage is central to any development. Accordingly, for low carbon urban regeneration we utilized Karachi's reservoir of heritage as a peg around which other climate smart methodologies could be developed.

As detailed above, the concept appears simple enough: create walkways for shoppers and others which would keep any greenery away from historic buildings and allow easy drainage of water away from ancient foundations etc. This resulting soft central belly could accommodate underground infrastructure for ease of service, incorporating forests and plantation, food courts and vendor court etc. All other services such as toilets and any other electric meters etc. would also be accommodated in the central soft belly. It is the central soft belly that would incorporate mitigation measures to deal with urban flooding and urban heat island effect in a highly congested areas of the city.

For us the project appeared entirely doable, albeit challenging. There was much discussion with the administration during an entire year and while



Marriott Road before intervention.

they seemed to be supportive of the project, however, no funding could be allocated. We understood that this was a project which was not likely to attract the eye of those in positions of power. This was not surprising.

We were propagating the use of low carbon terracotta tiles through which water could permeate. It was the largest component of the project but it did not appeal to the well entrenched concrete lobby who had monopoly over all pavements in the city.

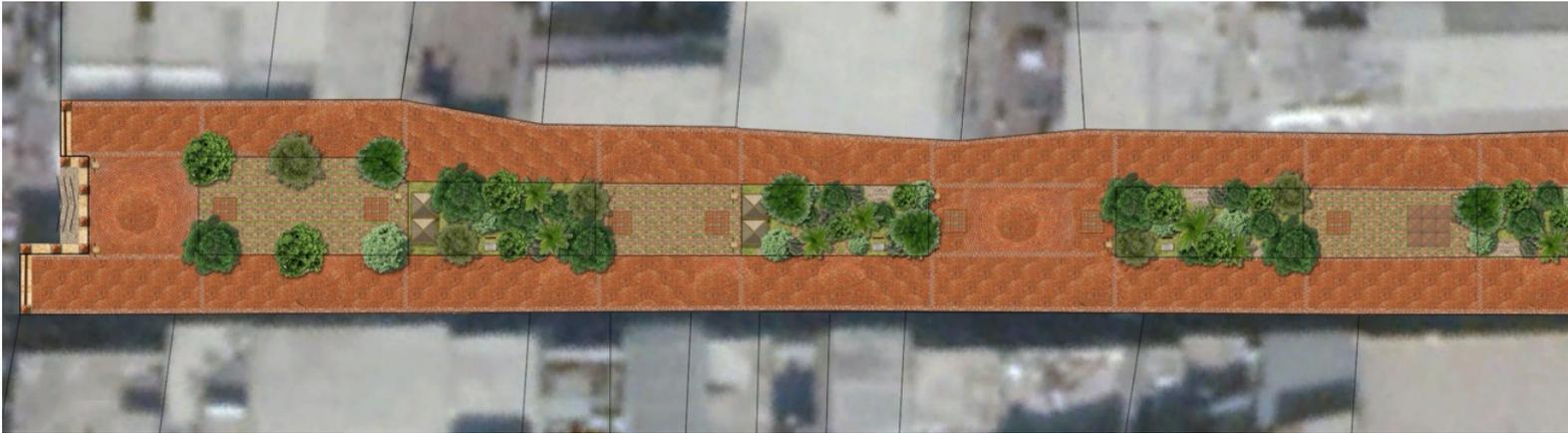
We were planting four forests in the middle of an environmentally impaired locality, and, observing the state of existing stunted trees, it was debatable whether any trees would flourish at all on this street.

Even though there were regular power breakdowns, and a new system that entailed removal of poles and cables seemed attractive, but was replete with impediments and there were a hundred reasons why it was impossible to shift enormous electrical installations.

The sewerage and water supply systems were all so antiquated that it would require a great deal of hard work and some funding, It was not clear if concerned government departments were ready to ameliorate the conditions in the historic town.



Electrical equipment on road.



Marriott Road proposal showing street-scape.



And then there was rubbish and solid waste stacked in the streets that would be impossible to remove, that would leave any new development in the same state of urban disarray as the present one.

There were a host of vendors who could not be shifted as they all had patronage of some agencies and were part of an informal economy that provided a source of livelihood to vendors as well as profit to those taking advantage of unregulated arrangements.

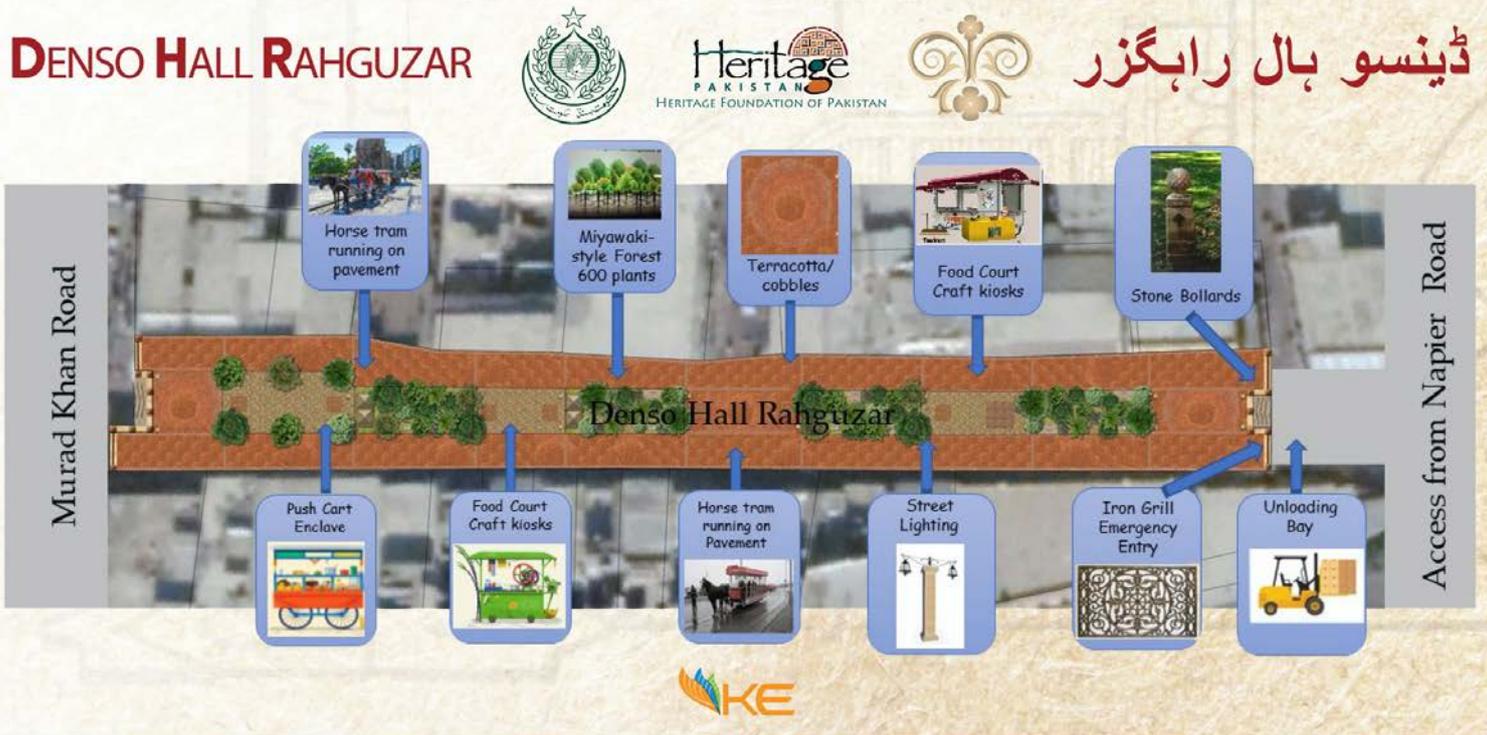
Above all, it was felt that any restriction on vehicular traffic in the area would be entirely unacceptable. Unregulated vehicular traffic had been the norm and the shop keepers on the street were violently against a change in the system.



Taking into consideration the above impediments, the project seemed doomed to failure, particularly in the light of unforeseen challenges that we were sure we would have to encounter. However, as city's environmental conditions seemed to be at the lowest ebb, it was our belief in the strategy for low impact urban regeneration, that eked us on.

There was no funding available from any sources, but then Heritage Foundation had a tradition of beginning with zero funding, only to make a success through grit and determination. We had hoped to raise impact cultural/environmental funding from the private sector; however, in case we were unable to do so, Heritage Foundation decided to begin investing in the project with determination to complete it.





Original Denso Hall Rahguzar Walking Street proposal.



Original Denso Hall Rahguzar Walking Street artist's view

Chapter: VII

Project Implementation

FROM URBAN BLIGHT TO REGENERATION

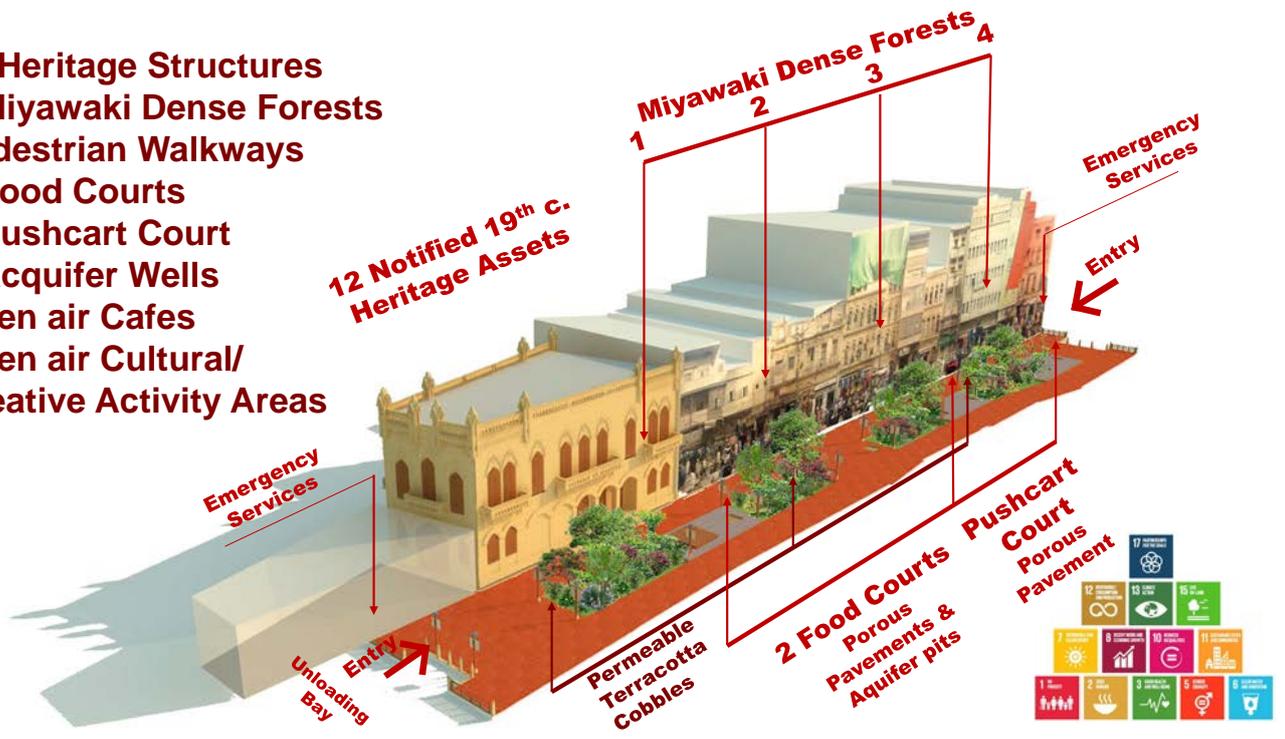
AT A MEAGRE Rs. 4 MILLION PER 100 FEET RUNNING LENGTH (Rs. 1,000/SFT)

DESIGN PRINCIPLES

Denso Hall Rahguzar Walking Street is among the most ambitious projects undertaken to improve environmental conditions in the city. The concept of regeneration to deal with urban blight and its transformation into culture- and heritage-driven, low-carbon climate-smart, eco urban entity, along with application of principles of circular economy, have so far not been incorporated in any project in Pakistan. Interestingly, as we find more awareness regarding climate change impact, design parameters of eco-urbanism and circular economy are equally relevant for mitigating the affect of natural disasters as well as prevalent pandemics.

The tenets defined in this project can lead to restructuring and refashioning urban areas for improved livability of citizens. Sustainability in design and selection of zero carbon materials, minimizing embodied energy and curtailing emissions, as well as preventing destruction of heritage as a strategy for stopping new

- 12 Heritage Structures
- 4 Miyawaki Dense Forests
- Pedestrian Walkways
- 2 Food Courts
- 1 Pushcart Court
- 7 Acquirer Wells
- Open air Cafes
- Open air Cultural/ Creative Activity Areas



Original Denso Hall Rahguzar Walking Street proposal defining eco-urban elements,

constructions, have been the cornerstone of the concept of the Rahguzar Walking Street.

All possible care has been taken to minimize usage of water in production of elements. Components, such as water-less prefab bamboo covers for underground channels, or prefab bamboo panels for construction of toilets as well as earth terracotta pavements, have been designed to achieve sustainable construction as well as norms of circular economy.

As we know, bamboo elements can be re used and recycled once they are no longer required in this location. Consisting of light structures, they require minimum excavation and support systems thus reducing the use of materials such as lime, gravel and sand etc., at the same time they require least excavation and almost zero water usage.

The terracotta tiles use minimum energy for firing and these can be reused if at any time they are removed from the site. The broken pieces can also be ground and reformed into other usable items.



Before intervention. Denso Hall facade marred due to misuse and attachment of electrical equipment,

The use of recycled wood from old disused structures for lamp posts and old cast iron grills for gates, all point towards the importance of re-using building elements that might otherwise contribute to fast growing urban waste-piles in city's dumping grounds.

CHALLENGES

As discussed in earlier chapters, the difficulties were innumerable, and generally an atmosphere of distrust and non-cooperation abounded as in other parts of the city, reflecting the general uncaring attitude towards city development.

APATHY

Apathy and devil-may-care attitude was evident during the early days when we tried to make contact with the vendors who own the shops on Marriott Road.



Before intervention. Marriott Road suffering from urban degradation and urban blight.

It did not endear us, when Heritage Foundation decided to embark on the cleaning of heritage facades on Sundays during the scorching summer months of 2019. This was our attempt to familiarize local communities with their heritage and to garner their support for restricting traffic.

Although we had suspected, but did not fully realize the reality until we began to conduct our Sunday KaravanKarachi events to celebrate the street in which many volunteers and Rotary Club members took part. We found that there was hardly any community in the area with only a handful of families living in side streets. The shops were owned by outsiders, who had gradually converted many of the buildings, especially heritage buildings into storage godowns. It became evident that families who had lived here earlier, had been forced to move away because of unlivable conditions in the area - increased commerce, unregulated vehicular traffic, excessive pollution and an entirely unfriendly atmosphere that bordered on hostility towards women and children. No wonder it was rare to spot women or children on Marriot Road, nor in other streets in close vicinity.

We had decided to place a few bamboo pavilions in the centre of the road, in the hope to encourage sale of craft items, but we were not very successful in this attempt as there seemed to be no local population who could participate. During our heritage cleaning events it was volunteers from other parts of Karachi who joined hands in the Sunday events aimed at improving Karachi's environment.



KaravanKarachi. Volunteers cleaning heritage facades on Marriott Road.



KaravanKarachi heritage volunteers.



KaravanKarachi school band celebrating heritage.



KaravanKarachi heritage facade cleaning event at Marriott Road.

OVERFLOW FROM ANTIQUATED SERVICES

Another disturbing discovery was the messy overflow from choked manholes of the sewerage line in the area. On investigation we found that the entire system had outgrown its life as it transpired that most of the sewerage and storm water lines in the area had been laid in the last century. It was clear that unless new service lines were laid, the area would suffer from overflowing gutters as it had suffered during the past several years.

VISUAL POLLUTION BY KARACHI ELECTRICITY AND CABLE OPERATORS

One of the major visual polluters had been the proliferation of electric wires and cables concealing the beautiful facades of historic structures. In addition to the explosion of cables and wires the street was full of large PMTs and other antiquated equipment that had been placed unthinkingly taking up space on pavements and marring views of historic structures. In addition, as the project required placing all cables underground in trenches, it was important to have a fully coordinated services plan and agreement with all operators and vendors. We realized that these are important services and had to be incorporated in a coordinated plan of services, in a manner that they would be accessible at times of servicing but otherwise be concealed and hidden from view.

PILES OF SOLID WASTE

Although we are used to mountains of garbage in many parts of Karachi; however, as we would begin cleaning up the area for our



Prior to intervention. All pits were filled with garbage.



Prior to intervention. The site presented a disaster zone.

Sunday events, we discovered that shopkeepers were used to off loading all their garbage from their shops on to the street. The KMC janitorial staff deputed by Commissioner’s office would have to continue to clean up in order to clear the street for our KaravanKarachi events on Sunday mornings. We knew that unless we were able to persuade the shopkeepers to join in the crusade for cleanliness, whatever efforts would be made for transformation will result in failure, returning the road to its original disheveled and messy state.

FLOODING AND TRASH FILLED TRENCHES

Many other hurdles appeared as we began the project in late February 2020, the most disturbing was the onset of COVID-19. The official lockdowns, beginning in the third week of March, forced us to stop work. This happened just as the excavations were completed. These consisted of 4 feet deep pits to replace 10,000 cft of original soil with new special organic earth for four forests, along with removal of 6,000 cft of soil from 3 feet deep trenches excavated for underground services. When the work was stopped, the site consisted of huge gaping voids, which we could not fill in once lockdown was declared in the entire province. In subsequent months, as we all groaned under the burden of the pandemic the site suffered from excessive flooding as well as collection of mountains of garbage that had accumulated in the excavated area. The conditions continued to be aggravated with the site presenting a battlefield scenario.

The difficulties appeared to be insurmountable and it was a moot point whether we will be able to overcome the challenges that appeared even more overwhelming than at the start of the project.

ISSUES OF SHOPKEEPERS

In the beginning, the shop owners were entirely uncooperative. They did not wish deliveries to be restricted. Although many had earlier complained



Prior to intervention. Overflowing sewerage.

that their customers could not reach their outlets because, due to regulated vehicular movement and parking arrangements, the large number of hawkers stalls and parking of vehicles had been allowed to block the street in a haphazard manner. This is a well known phenomenon in most parts of the city which I believe is due to informal system of payments to regulating agencies. Thus, coupled with unfettered delivery of goods at all hours of the day had reduced the walking area to a bare minimum. In spite of all the difficulties encountered by them, the shopkeepers expressed their displeasure for the changes that were being brought about – until much later when on completion their sales began to pick up.

FUNDING

In view of non-availability of government funding for taking up projects to improve the city’s environmental conditions, coupled with

insurmountable challenges that the urban site presented, the Denso Hall Rahguzar Walking Street could only be accomplished as a result of a unique partnership mechanism that emerged.

Heritage Foundation of Pakistan developed the concept and provided funding of 15 million rupees to complete all civil works, including permeable pavements, bamboo covers over trenches, plantation and greenery etc.

Deputy Commissioner (South) Karachi joined hands and mustered support from Karachi Electric, cable operators, water and sewerage board and other line departments to carry out their tasks. These were the usual responsibilities of civic delivery agencies, but had been largely absent in Karachi’s inner core.

The third important partner were the shop owners, who joined late but became extremely valuable as community stakeholders, especially as they began



Urban flooding after monsoons.

to invest in improving their own facades and cleaning up interiors of their shops.

This 3-way partnership has been so effective that once the stoppage of rains provided the much required relief, the project could be ready for soft opening within 6 months. As the monsoon season ended, the work was taken up in November 2020, and we were ready for a public event by early April 2021 when we had got intimation that in view of the various positive aspects of the project, the Chief Justice of the Supreme Court of Pakistan would be pleased to perform the soft opening of the Rahguzar. As we made all the preparations to receive the Hon'ble Chief Justice, due to a lockdown the visit had to be postponed. The site teams continued with the objective of completing the project. It took another couple of months and the Rahguzar was brought to completion.



Coordination being chaired by DC Irshad Ali Sodhar.

An interesting aspect of the project is the extreme care with which the work was taken up in segments in order that any stoppage or closure of the bazaar would be avoided. – Thus, the shops were not closed even for a day because of the works carried out in the street. Of course the shoppers were inconvenienced, but the bazaar continued to



Cooperative effort for heritage buildings.



Voluntary clearing of blocked arcade.



Coordination meetings with shopkeepers and other stakeholders.

function as late night work and division of entire work into sections, helped in minimizing any disruption. With the completion of the project and as the benefits began to be clear, a sense of ownership among all stake holders has come about, an unusual occurrence in a city that is considered an orphan.

PROJECT STRUCTURE

After the successful implementation of this complex project, we believe a model has been evolved that could be utilized by all those who would like to participate in improving living conditions in a complexity ridden, fast growing urban centre.

We felt it was best to lay down a narrative of the development of the project in order to make clear the step-by-step transformation that could be achieved by all those who are interested in the transformation of their environment.

As mentioned earlier, the three partners consist of the following:
a. Heritage Foundation of Pakistan, a civil society organization striving for heritage driven social and ecological justice led by Architect Yasmeen Lari.



Loose structure of the project for implementation.

- b. DC South Karachi office, with the blessing of Commissioner Karachi, providing facilitation, overall coordination and trouble shooting with a host of service providers and relevant government agencies. The initiative was led by Irshad Ali Sodhar, an outstanding officer who displayed unusual commitment to regeneration of Karachi.
- c. Shop keepers as stakeholders who developed pride and ownership in the project and began to invest in their own establishments particularly heritage as well as maintenance of the area.

ROLE OF HERITAGE FOUNDATION OF PAKISTAN

Heritage Foundation developed heritage- and culture-driven, climate smart eco urbanism concept, trained a workforce for the production of low carbon products and construction, including women who diligently fabricated low carbon terracotta pavers.

The Foundation provided investment to implement all civil works. The investment is in the form of sustainable social/ environmental / cultural impact funding. Being mission driven, we believed it would have a greater impact than the usual CSR (Corporate Social Responsibility) funding, which is mostly driven by commercial interests. I felt compelled to create a climate resilient environment which is mindful of climate change and COVID 19 imperatives and one which would provide a healthy environment for all without



First laying of terracotta tiles - the pattern that created a favorable mindset among shopkeepers.

distinction of creed, race or gender. I wished to create a cultural and ecological oasis which citizens, including women and children, from all walks of life could enjoy, and one which would be free of the urban blight that the inner historic core of the city is suffering from.

To actualize my dream, Heritage Foundation of Pakistan teams prepared all the concept drawings after which detailed working drawings, along with a detailed strategy for implementation were finalized. While the teams held extensive meetings with consultants to incorporate electrical, water and sewerage requirements, at the same time it was important to carry out coordination with all service agencies to ensure that their requirements were met when all services were placed in underground trenches. The long tradition of meticulous execution and attention to detail, that I had imposed while running Lari Associates, my architecture and urban design practice, was maintained.

The result was a coordinated effort while we developed necessary drawings, as well as provision of oversight and supervision during implementation of the entire project by the Foundation's Field Team.



Production of terracotta cobbles by former beggars especially women trained in the ancient craft at ZC3, Makli.

As the work proceeded in Karachi, simultaneously the production of terracotta tiles was taken up at Makli. A host of artisans, including a large number of women were mobilized and provided further training at Zero carbon Cultural Centre (ZC3) established at the foothills of Makli World Heritage. These artisans belonged to beggar communities living in the vicinity of the necropolis and had been provided training in the craft of kashi or glazed tiles and terracotta during 2019 training programme devised for green skills and crafts. These artisans began diligently to produce terracotta cobbles that were designed to be utilized in the rahguzar. Although they had made these products previously also, but Karachi pavements required both greater thickness and strength to withstand the aggressive foot fall that we knew we would encounter in the urban centre. Various batches were periodically sent to the materials laboratory to be checked for quality and consistency. The results were reassuring as the test results showed the strength achieved between 3000 PSI and 3250 PSI which favoured well when compared with the strength of concrete pavers.



Bamboo covers for cable trenches.

Some other artisans were tasked with producing bamboo products which included 1600 sq ft of bamboo covers for trenches and prefabricated panels for wash rooms. The prefabricated items of bamboo and terracotta tiles helped in the production separately of all items. These items were needed in completing various activities as both the field work and workshop productions could be taken up at the same time.

The interesting aspect of the exercise was that in high technology and industrialized productions we rely on machines to deliver, while in this project, the timing was worked out so that even though the production was all hand-crafted, it was synchronized with the field work and hand crafted terracotta and bamboo items were available as and when these were needed in the field. The theory that hand production cannot keep up with the pace of work should be revisited



Work of tile production at Zero Carbon Campus at Makli.

as we have shown that the pace can be handled by prefabricating products made by hand as long as enough trained workforce is available.



No water prefab bamboo covers.

The production of the clay cobbles was labour intensive and quite laborious in order to get the best handcrafted products. At ZC3 artisans began to carry out the production of the paving in order to produce 150,000 pieces for the entire paving of the rahguzar.

The effort in the process of screening and kneading the clay, from making the moulds and placing dough into the mould, emptying the moulds, placing the raw tiles in stacks for drying in the sun, then rubbing and cleaning them to perfection, is to be seen to be believed. After the raw tiles are ready, the careful double firing of each and every tile was taken up in traditional kilns some of which were specially built at the Zero Carbon Campus at Makli, along with those that had been utilized for the production of kashi tiles for the restoration of the tomb of Sultan Ibrahim that we had completed a couple of years earlier.

The laying of these beautiful hand crafted pavers in a unique pattern on the pavement, along with incorporation of specially designed large circular tiles carrying various historic landmarks of Karachi, are proving to be a source of great interest for visitors and local residents alike.



Another view of engagement at Makli.

Thus, through application of a holistic model and in order to provide culturally-driven social and ecological justice, a unique, inclusive environment has been created for the benefit of all. Because of its inclusive nature incorporated through a conscious design effort, the entire enclave has been transformed from once male-only preserve, into a place which is also freely frequented by women and children.

ROLE OF KARACHI ADMINISTRATION

For implementation of the project, the partnership with Karachi Administration led by Deputy Commissioner (South Karachi) Irshad Ali Sodhar, came into play. This partnership was essential as without the engagement of government agencies and coordination with multiple institutions, it would not be possible for civil society organizations to make headway in an urban environment which is ridden with complex issues.

DC Irshad Ali Sodhar took decisive action on many occasions, and ensured that the project could be kept going even during the time of monsoon rains and extraordinary flooding and excessive amount of solid waste that were hindering site works. Because of his leadership, that went beyond official duties, he issued prompt reminders and periodic reproaches, because of which various agencies were obligated to carry out their responsibility. Because of his interest, they were persuaded to provide full cooperation to each other and to the Foundation’s coordination and implementation team.

DC Irshad arranged for Karachi Electric, Karachi Sewerage and Water Board, cable operators and other services and lines departments to invest in the improvement of infrastructure including the placement



KE cranes removing electrical installations and cables.



Site work proceeding at night to minimize disruption.



Original conditions at Marriott Road.



Trenches filled with garbage and flooding from surrounding streets.

of all services in the trenches provided in the design for this purpose. This was crucial for the success of the project. Without the interest of the administration and his personal interest, it would not have been possible to bring all service departments to sit at the same table and above all to develop a spirit of cooperation among those who are normally at loggerheads with each other. The concept of placing all services in a designated underground trench was alien to those who are used to working independently and digging up roads whenever any fault in the system appears. In the services trenches that were designed, locations were specified to each service provider within the trench and each one was compelled to conform to agreed locations.

Karachi Electric made their contribution by investing into the project by first dismantling their above ground infrastructure. This was a complicated process, as there were many installations which needed to be removed, some in the form of tall poles with overhead cables and wires, many jumbled up with the cable operators equipment and other paraphernalia. There were also huge PMTs which had disfigured many a beautiful heritage building, including the facade of the historic Denso Hall. These had to be removed by using enormous cranes.

All electric cables had to be renewed, which was just as well because of the constant breakdowns in the old system. All these cables would have to be laid anew in the above mentioned underground trenches built along the length of the street by the Foundation. Karachi Electric being a large, rather unwieldy organization, there were changes and delays, which would be controlled due to the vigilance of DC Irshad which brought instructions from the management to expedite the operations.



Jumble of cables concealing heritage facades.

The removal of unsightly and jumbled up cables would finally reveal the remarkable facades of all historic buildings, which had been hidden from sight for the last several decades. The laying of electric cables in underground trenches was a feat that had seemed well nigh impossible at one time.

Karachi Water and Sewerage Board (KWSB) that is blamed for many of the ills associated with physical infrastructure of the city as well

as creation of drought-like conditions due to poorly functioning water supply system and the scarcity of water in the city itself, also was brought on board. KWSB did participate but mostly due to coordinating efforts and persuasive powers of Deputy Commissioner. They finally agreed to replace the aging manholes that had been among major causes of overflowing sewerage on the street, along with laying of a new sewerage line.



New manholes by Sewerage Board.

This was essential because leaking pipes and overflowing manholes would destroy the beautiful terracotta paving and would create unhygienic conditions on the street.

Another service vendor was PTCL who were also required to place all their cables underground, and their work had to be coordinated with Karachi Electric, as all cables had to be placed in a common trench that had been especially built.



Debris being removed by Waste Management.

DMC (DISTRICT MUNICIPAL CORPORATION)

On instruction of DC Irshad, DMC's cooperation was secured who helped in removal of all garbage and debris from time to time.



Encroachments being removed.

This agency is responsible for keeping the city clean in its jurisdiction, however, many a time, they are not able to keep up with the waste that is generated. We would however acknowledge that their role, led by Kamran, has been exemplary.



Conditions at site while work was in progress.



Discussion with stakeholders on the street.



Bamboo public toilet completely covered with climbing vines.

ROLE OF AC (ASSISTANT COMMISSIONER), ARAMBAGH

Among the most important aspect has been the removal of encroachments. Working under the DC, and taking courage in the light of the Hon'ble Supreme Court orders to remove encroachments and illegal construction from public spaces, the role of ACs (Assistant Commissioner) who were with the project at different times, many illegal constructions that had existed for years, were removed.

For this purpose DC Sodhar mobilized the ACs office and we were fortunate to have efficient Assistant Commissioners, among whom the names of Michell Naeem and Matahir Wattoo stand out. It is because of these young officers under the guidance of the DC that most encroachments and illegal constructions have been removed from the street as well as from roofs of historic buildings.

ROLE OF SHOP OWNERS AS COMMUNITY STAKEHOLDERS

Thirdly, the shop Owners as stakeholders have come on board and are continuing to play a vital role in the maintenance and upkeep of the area. Not surprisingly, this support is growing as more and more shop owners are now enjoying the benefits of regulated traffic and hawkers resulting in growing numbers of shoppers and visitors. While they had all rallied to invest in improvement of their shop front shutters by removing them from facades and setting them back for better viewing, as the time is passing, there is a growing interest in seeing that the area is kept clean and that the trees and plantation flourish.



New terracotta pavement.

Those who have to spend long hours in the street, along with shoppers and visitors, are enjoying the benefits of clean air and pollution-free environment. Many have commented that during all the time they have spent in the street in their working life, for the first time they are able to breathe fresh air. Some have brought flowering plants, and are enjoying the increased bio diversity as birds begin to fly and chirp and butterflies float around, or as a beehive nest is located. The cleaning of the street has become exemplary due to the

cooperation in curtailing garbage and increased use of bamboo trash bins that the Foundation has placed on the street. There is some effort at also regulating shoppers to desist from throwing wrappers and other waste material on the street. Among other major aspects in regulating activities has been the control of vehicular traffic as well as the clearing of hawkers and vehicles that used to occupy the two entry points, thus making deliveries of goods and entry of shoppers more convenient.

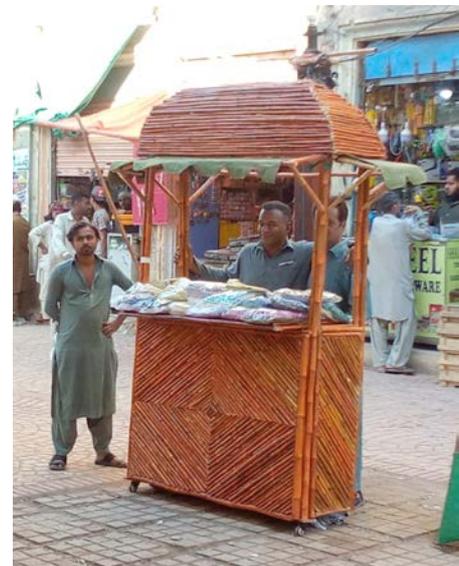
It is gratifying that gradually a mechanism for control is emerging. It is a difficult proposition because, as mentioned earlier, there is an informal sub-culture of collusion which unauthorizedly allows the occupation of public land by push carts and vehicle parking. As it is deep-rooted, and also accrues benefit for personal gain, it is difficult to change the culture, but gradually there is a distinct improvement at least within the boundaries of the rahguzar

To deal with push carts, many of the old vendors who had been squatting for the last few decades, have been accommodated in the Kiosk Court that had been designed for this purpose in the rahguzar.

It is of course important that all strata of society are able to benefit from the rahguzar. It is my belief that push cart vendors have an equal right to serve the city as they are able to provide comparatively



View towards Kiosk Court accommodating push cart vendors.



New bamboo kiosks.



New entry from Murad Khan Road in collaboration with shopkeepers.



New Miyawaki style forests.



Feroz Afaq building. Heritage rehabilitation through partnership - HF's Pro-bono Heritage Advisory and work by owners.

inexpensive products and their inclusion provides income generating activities for growing population of the urban poor.

At the same time it is important that push cart assemblies are organized and confined to specially designed spaces allocated for hawkers. This would be a vast improvement on the present unregulated activity which encourages illegal occupation of public spaces. In the case of the rahguzar they have been contained in a designated area designed for that purpose and they now use specially designed bamboo push carts which present an orderly view.

Similarly, in the rahguzar, all food stalls are confined to the food court which has become extremely popular. Since the rahguzar presents a clean environment, and the food stalls have to observe our laid down terms for cleanliness and hygienic conditions for their occupancy, a clean and healthy environment for eating has been created.

These attempts show that there is a possibility of improving the city's environment if we are able to provide designed elements which can be beneficial for all citizens.

REHABILITATION OF HISTORIC BUILDINGS.

At the beginning of the project, I was fully aware that the backdrop of urban blight and apathy towards the urban environment are ills that are difficult to counter. The worsening environmental condition are exacerbated by the unfortunate culture of land grabbing developed by vested interest which continues to utilize all means to destroy heritage buildings in order to build multistorey 'plazas'. For this reason, I knew that any attempt at heritage led urban regeneration was likely to face a host of hurdles and opposition.

However, as we have seen various positive aspects of the project emerged during the process of implementation, there is growing support from the general public and importantly, participation of shopkeepers and traders in the area has substantially increased, allowing me to build upon these successes.

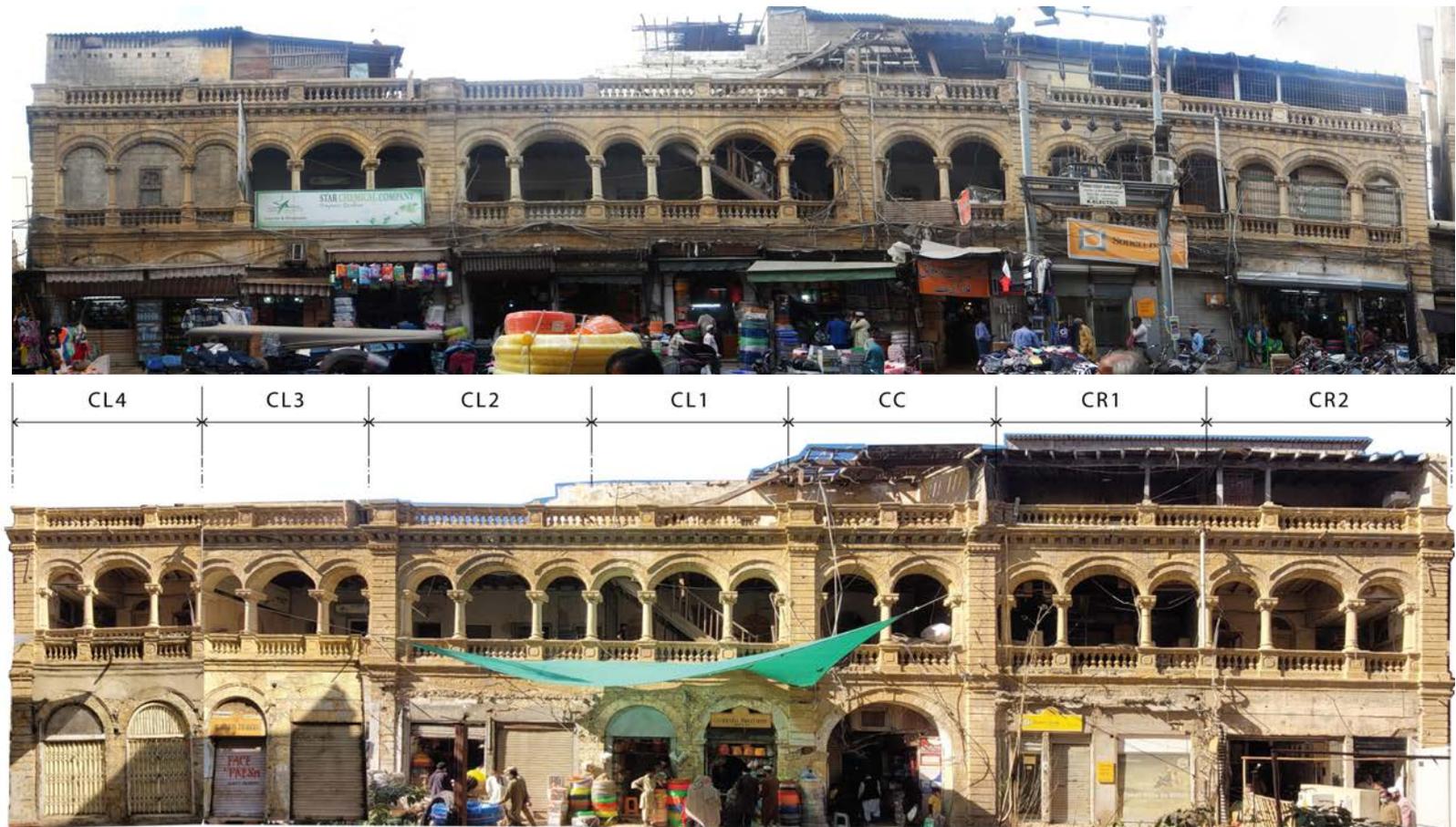
The support and help in beginning to restore and stabilize heritage has come from unexpected sources – first the shop owners themselves began to contact us to inform us of the derelict state of their buildings which were endangering their lives. We are fortunate that each heritage building has a multiplicity of owners. Where the owners of upper floors would like to demolish and rebuild, the shop owners would like to continue to stay knowing well that once they vacate the shops, they may not be able to assume the ownership, and that there is likely to be considerable loss of business due to the closure of the outlet while a new building is being built. They found a workable Good Samaritan solution at their doorstep with the Foundation and its dedicated teams. Since our mission is to save historic structures and we believe in providing whatever assistance is needed to be provided freely, we now find many occupants and owners of heritage buildings contacting us.



Fazal Mansion being taken up for restoration.

Our first partner was the owners of shops of Fazal Mansion. There were many attempts in the past by the owners of first and second floor levels to destroy upper floors of the historic structure. However, following our long tested methodology, after carrying out various studies, the Foundation's team developed 'as-built' drawings along with condition surveys. Here the input by our honorary engineering consultant Engr. Mushtaq Dawood is always valuable who carry out special studies regarding the stability or otherwise of various structural elements. On the basis of these studies, remedial measures were worked out for implementation. Having carried out many projects which were conserved according to international guidelines we are aware of the care needed for these delicate and fragile structures and the need to ensure that there are no missteps which might either damage the historic asset or compromise the integrity and character of the structure.

Because of the highly damaged condition of Fazal Mansion, there was a need to work out specific strategy to stabilize the structure in order



(Above) Before intervention: Quettawala Building.

(Below) After cleaning and removal of encroachments. Quettawala Building.

to prolong its life. Among the first steps was to protect the building from rain water and other hazards, thus making the ground floor safe for the shop owners who had the greatest stake.

After the completion of the flooring on the exposed first floor and as the first monsoon rains hit Karachi, the confidence of the shop owners was doubled since not a raindrop entered the interior of their shops.

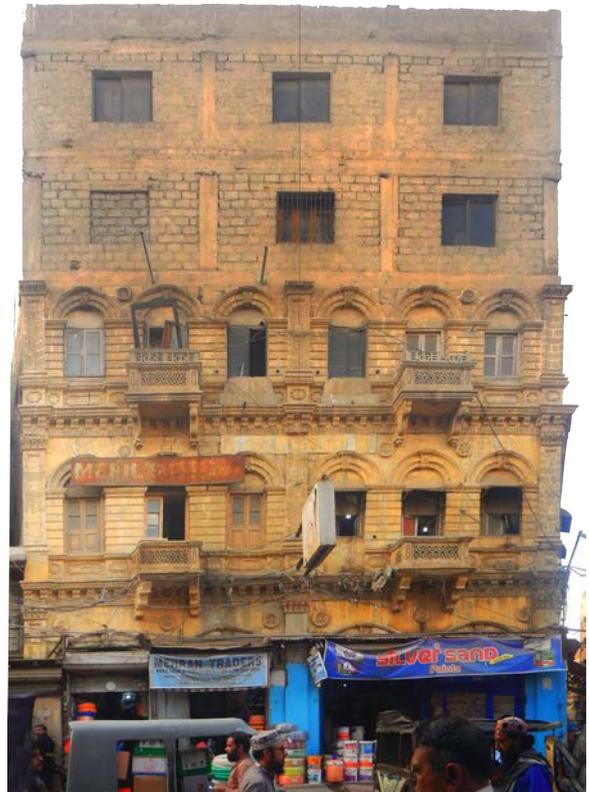
Another important step was to remove the later constructions which were inflicting unnecessary loading on the fragile structure. The removal of cement concrete block walls and other concrete elements helped us to proceed with restoring other parts of the first floor and also the second floor slab. To our surprise we found some original walls on the first floor which were built using traditional lohkatt construction. Since our implementation team had become familiar

with this technique during our humanitarian work in Sindh, they were able to restore these easily.

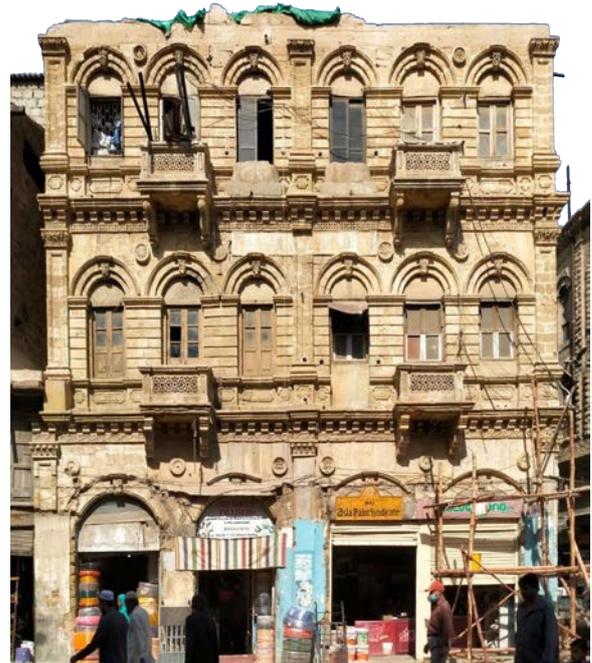
The most fragile element was the severely damaged wooden staircase. The restoration team found many pieces and balusters strewn at many places. These were all collected thus making it possible to utilize most of these pieces to make the staircase useable. The work has been taken up at an even pace, and a large portion of the building has been stabilized upto the first floor. While Heritage Foundation is providing materials, the owners are paying the wages of the artisans directly to them, thus sharing the cost of cleaning and stabilization.

Another enlightened female shop owner under our technical guidance and provision of trained artisans, is cleaning up and restoring the façade herself. All the investment into stabilizing and restoration work has been done by her organization. As the beautiful historic stone is cleaned after removal of cement plaster, and the woodwork cleared of innumerable coats of paint, the original impressive façade has gradually been revealed.

An unlikely gift to save heritage structures arrived in the form of a Supreme Court order to immediately demolish 3 illegal stories built on top of the Allahwala historic structure which is at the corner of rahguzar and a main thoroughfare Katchi Street 1. In coordination with DC's office we had been trying hard to get the relevant agencies to take action and demolish as on studying the documents it was found that there was a clear violation when upper stories were built. The Supreme Court on seeing a picture of the historic building in late 2021 passed the order for demolition. All relevant departments sprung to action and within



Allawala Building, before removal of illegal floors, third floor was set back.



Allawala Building. After removal.

a few weeks the entire 3 stories had been dismantled. The ACs office was diligent in imposing the Foundation's SOPs for demolition. This helped in careful removal of reinforced concrete columns and beams and dismantling of cement concrete masonry, without inflicting damage on the three lower stories of the historic structure.

The owners of Allahwala building and the renters of adjacent Quetta wala building, both in a highly dilapidated state, are now working with us as partners to stabilize these buildings and restore their facades to their original condition.

Additionally, the action as a result of Hon'ble Supreme Court order has paved the way for the administration to help in removal of many illegal constructions within or on top of historic structures in the area.

This is welcome development has come about in the last few months, which is helping to strength our partnership for the restoration and rehabilitation of historic buildings. I firmly believe that the only way we will be able to save our enormous and extraordinary cultural heritage if we are able to develop stake and pride of local communities in their preservation. Once we can prolong the life of these valuable historic assets we know that these are the resource that provides identity and pride in our urban centres.

It is my belief that we should save our heritage ourselves without relying on external funding as these are our family heirlooms which have been passed on to us as custodians with the responsibility to pass this legacy to the next generation.

The experience of the rahguzar amply demonstrates that people are interested in saving their heritage if they are able to get timely technical guidance regarding nature and scope of interventions along with use of appropriate materials and availability of trained artisans. The establishment of the Heritage Advisory Cell by Heritage Foundation in this area that is providing honorary technical guidance has proved to be extremely valuable. It is helping to instill confidence and motivation for various stakeholders to come forward and begin restoration and stabilization of their historic structures under their care.



It is our belief that the entire city can be transformed if pockets of ownership could be developed in segments in the metropolis, gradually all such sections coming together for the entire city to be regenerated, at the same time prevent destruction of cultural heritage of this dynamic city.

Quettawala building in the background of Forest 1.

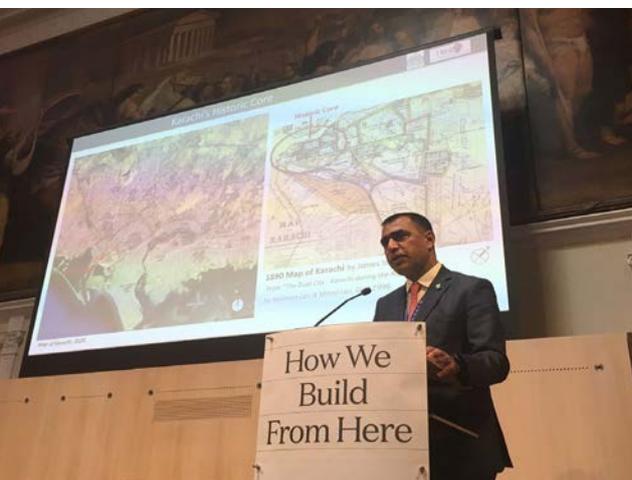
CONCLUSION

The experience of the last months has clearly shown that partnerships are the key to saving our heritage as well as the regeneration of the historic core which may be suffering from the worst of urban blight. Additionally, we need now to develop partnerships for climate investments so that in addition to making it into a cultural metropolis, Karachi could also become a climate resilient city which would provide a healthy and safe environment for its citizens. We are confident that this important culturally conscious-



View of Quettawala building from Mai Karachi Baithak assembly area.

climate resilient strategy will result in improved health, greater revenues, flourishing commerce and cultural tourism.



D.C. Irshad Ali Sodhar presenting the Rahguzar at INTBAU World Congress at Royal Society of Arts, London in March '22.

INVESTMENT

It is worthwhile to note that the entire effort for this heritage and ecology led eco enclave Karachi has been achieved through an investment of Rs. 4 million per 100 rft of the entire rahguzar or Rs. 1,000 per sq ft, with additional cost of 3 million per 100 rft of entire services, including the removal of huge unwieldy installations and placement of all services in below ground trenches. Above all this city segment is rid of the urban blight and instead an oasis of inclusiveness, sanity and humanism has emerged for the benefit of general public that is designed to counteract challenges posed by climate change and pandemics such as COVID-19.



Aerial view of Rahguzar Chowk and Forest 1 & 2.

Chapter: VIII

Ownership and Pride:

HERITAGE, ECOLOGY AND PEOPLE CENTRED HUMANISM

One question that has been upper most in my mind – why should the inner core suffer from a high level of degradation that we witness today. And why could we not design environments for the enjoyment of its citizens instead of giving priority to vehicles. We know that cities are for people and not motorized traffic.

Because of my work with disadvantaged communities, I had understood the value of good design in the life of even the most disadvantaged. If they were able to access good design whether from external sources and humanitarian workers or from within their own creativity and highly developed sense of vernacular design, it clearly had a great impact on their lives in motivating them to aim for a better quality of life. And we can witness it even today in the way they live, particularly women, for whom motifs and design has been a way of life from their infancy.

Since I had not experienced village life when I was growing up, and even later during the time I practiced architecture, I had not understood this inner strength that was beholden to design in the lives of those who live on the margins. As a philistine urbanite, who had grown up with the belief that if you were educated, you were a fountain of knowledge and cultural bluster and those who were non-literate had no familiarity of cultural traditions.

I was proved wrong every time I encountered a new community where women had suffered from a disaster and lived in a state of deprivation and displacement. In spite of adversity, they carried rich traditions of crafts,

design and patterns within them, which had been endowed to them by their mothers and their mothers before them. This has been a long unbroken tradition of which they were so proud – whether it was the beadwork ornaments of women of earthquake affected north, or the rilli and ajrak of women of the south who had suffered flood waters devastation, they would continue to express their creativity with whatever little was left of the materials they owned. But what really opened my eyes was the use of the design and patterns tradition in the thousands of mud buildings and other earth structures that I



Guests offering prayers after planting saplings in Forest 1.

designed for housewives who had suffered from floods. A French magazine called our earthen stoves designer chulahs, or boutique stoves, where each one is unique because of the extraordinary decoration it was ornamented with by the housewife herself.

In addition to excellence of design, which I believe must be sine qua non of any project, the other important aspects of any such development would be to showcase heritage assets for inculcating pride which would contribute also to incorporation of eco urbanism attributes. These three aspects became the cornerstone of the design of the Rahguzar, while the overriding factor was the zero-carbon nature of the entire project which meant zero use of concrete and steel in all works and promotion of carbon-negative materials such as earth, lime and bamboo and other natural materials in construction.

While the design aspects are needed to be a unifying force in all elements, the British Period heritage, once restored, would hark back to 19th c. Karachi, adding the flavour of historic Karachi, which I know is increasingly being lost or is compromised. Of course, saving heritage means that GHG (Green House Gas) emissions, caused by any new construction would also be prevented. By utilizing surviving heritage for adaptive reuse, many aspects of circular economy would be achieved.

The rahguzar was meant to serve the shops that were lined along the road and needed the pavements to serve them. These pavements were designed on the periphery, while the soft central belly, consisting of forests and various courts, became the spine which would allow all services to be accommodated, such as electric and Wi-Fi cables, sewerage and water supply lines etc. The central belly, as an indulgent urban element, was used for incorporating elements for mitigating climate change impacts such as urban flooding and urban heat islands. This I knew would be effective especially if I created permeable, absorbent surfaces rather than paved areas, even as I used permeable pavers.

As it happened, we were able to implement the entire concept according to my first sketch developed in 2019, for the first of twelve segments of the Red Trail. This segment consists of 400' long 40' wide street known as Marriott Road.



Porous terracotta pavement and deep well with gravel for replenishing the aquifer, to prevent urban floods.

For many years I had been fascinated by the great Japanese horticulturist Miyawaki and his concept of creating forests in all places. We had carried out trials as community forests in many villages in Pakistan's Sindh province in 2018 and had found them to be extremely successful in achieving fast growth, sometimes even in areas with high degree of salinity. The methodology has found many disciples in India and Pakistan who are promoting the concept as urban forests, such as the well known Shahzad Qureshi. However, the lesson that we have learnt by installing Miyawaki forests in the middle of the street, is that to get most benefit of this plantation, it would be best to plant them as part of revitalization of streets to convert them into cool, green activity areas. The 600 tree strong forests clean the air, they provide refreshing green foliage for passersby as well as cooling of air even in intense heat, they also provide biodiversity in a highly congested area of the city for the delight of the visitors.

To achieve rapid growth in Miyawaki forests, it was important to replace the existing earth with especially made soil with a mix of organic materials for 3-4 feet depth. While it was easy to provide such a mix in a rural setting since cow dung and bagasse, straw or rice husk were easily available, we would face difficulty to procure such materials in an urban setting. To my

surprise, as we explored, we found that it was equally easy to procure organic materials for the required mix of compost and all ingredients were available at reasonable cost close to our site.

I had imagined that there would be difficulties in achieving expected growth of trees, especially in an area suffering from congestion and pollution with where buildings on both sides cutting off the sunlight. But here too we were in for a surprise. Trees in the four forests became instrumental in cleaning the air, they grew rapidly, many rising soon to a height of 6 feet or more, attracting birds and after flowering plants were planted, even butterflies. At the same time the forest played a major role in absorbing rain water and is a major element, along with porous pavements and aquifer wells, that has prevented urban flooding.



Terracotta pavements and trees for healthier environment.

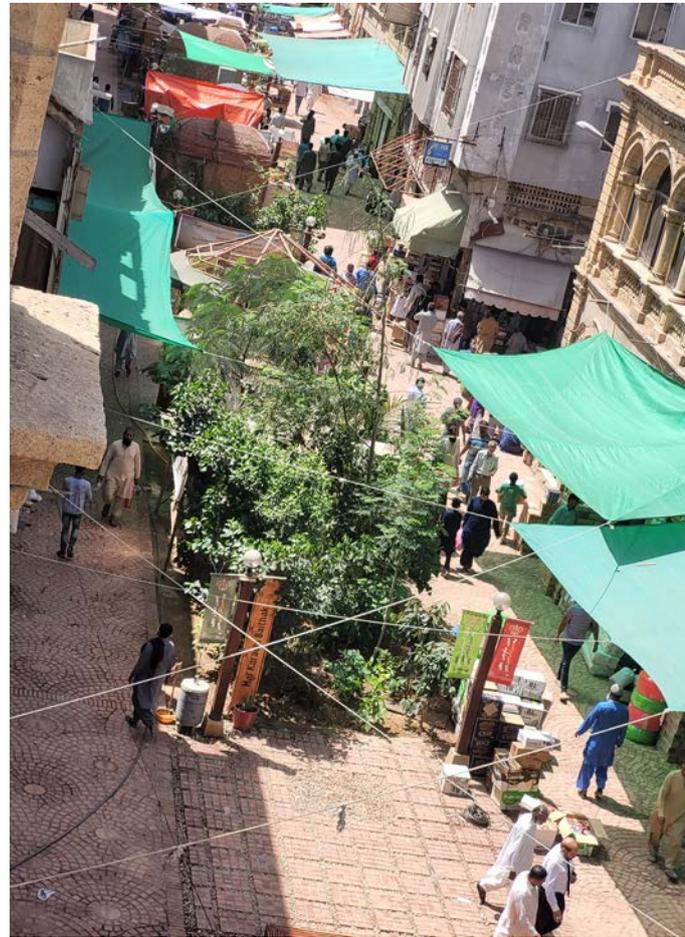
Although all elements for the project had been carefully thought about and each one was important as part of the entire whole, however, the one that would provide a special character to the walking street was the design and choice of pavers. This paving had to be permeable and needed to be zero/low carbon for it to conform to environmental requirements.

This provided us the opportunity to link the urban rahguzar with the humanitarian work that we had been carrying out at Makli at the ZC# (Zero Carbon Cultural Centre), where former beggars had been trained in the ancient craft of *kashi* (glazed ceramic tiles) and terracotta. This would be a remarkable outlook where we could create a link between urban and rural areas and also make urban population aware of the importance of craft in our lives, that at the same time provides rural populations with livelihood along with pride.

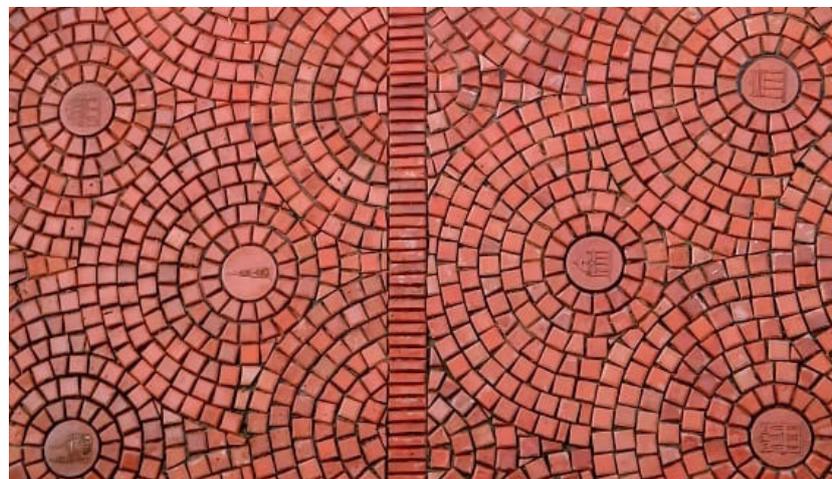
Terracotta has long been known to be an environmentally friendly product. Its least use of water and energy results in a product far superior to cement concrete pavers. It is a natural sustainable material that can last a lifetime or can be recycled into another product. The beautiful terracotta paver connects us not only to earth of this land, it also provides a link to our past through an ancient craft, as well as the fabricators who put their heart into handcrafting it.

Other attributes show that terracotta products are sustainable and recyclable, along with other factors of energy saving and durability. They are not only corrosion resistant; they withstand acidity in the air; they retract sound waves and reduce noise pollution; at the same time, they withstand stress and are resistant to both fire and water.

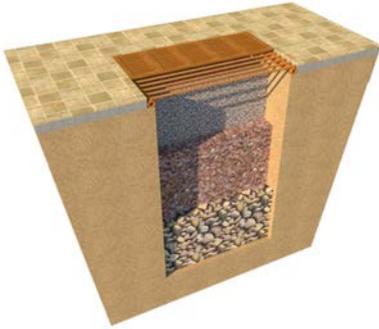
We have seen how easy it is to clean the surface just with water. We normally also use organic *reetha*



The Rahguzar at mid day, provides cool environment.



Terracotta paving provides cooling.



Seven deep wells replenish the aquifer and prevent urban flooding.

(soap nut) soap which does not harm plants when water is drained into the forest area. They help in keeping the environment quite cool. Since they are permeable, they can become damp and cool the air when the water evaporates.

Other elements that have helped to deal with urban flooding are seven aquifer wells distributed along the central spine, along with porous pavements especially designed with a combination of terracotta tile squares and porous aggregate sections that have helped enormously in draining the flood waters from all sides of the rahguzar and rahguzar itself.

The forests are interspersed with paved courts, one carries a bamboo stage on one end. Labeled as *Mai Karachi Baithak*, it is used for assemblies and discussions which, in addition to the audience, are watched by passersby shoppers. Other courts include the food court with food vendors in order to confine all food services into one area. The kiosk court is dedicated to street vendors, and accommodates push cart vendors who are a necessary part of informal economy and need also to be accommodated. The Rahguzar chowk is designed to be a lively place where demonstration or teaching of varied skills could be carried out.



Porous terracotta pavements in Mai Karachi baithak.

The street has been created as a cultural activity area and, on Sundays it is intended to be used as a showcase for cultural festivals and other cultural activities. In view of my positive experience with *Karavan-Karachi* which was always held as a street festival, I felt it important to inject cultural and creative activities into an area that is driven by high commerce, and largely a cultural desert.

Among the reasons of the success of the eco enclave is the removal of all electric and other cables as well

as enormous, unsightly installations through a neat mechanism of running all cables in trenches that run on the periphery of the soft belly. The trenches are covered with bamboo prefabricated covers, which have been fabricated with zero water consumption. All the physical infrastructure of water supply as well as sewerage lines is run in the central soft belly, thus avoiding the running of most services under the pavement for ease of service.

Two sets of toilets are placed within the central soft belly and close to forests. These toilet chambers are also zero carbon bamboo structures using hardly any water.

SAVING OUR HERITAGE

There is no doubt regarding the historic value of the area which dates back to mid-19th century and developed just a handful of years after the annexation of Sindh by British forces. For the last several decades I have wondered why could there not be a way to save existing heritage buildings, use them as the anchor or cornerstone of development and reorganize the urban environment for the good of the people?

Initial research conducted by us had shown a large number of surviving heritage buildings lining the original Marriott Road. For me these were among the most important assets around which the entire concept of eco urbanism could be developed.

It is a matter of surprise that the powers that be are not interested in saving our heritage assets from destruction. It seems that almost everybody in any position of power in one way or another supports the mafia that is bent upon destroying the city's historic assets to replace them with multistorey construction. We know that in a megalopolis such as Karachi, which today boasts a population of at least 22 million, the inner-city land



Aerial view of the Rahguzar..



Discussion with university students on how to prevent corruption.



Qawwali at the Rahguzar.

values have risen to unprecedented levels, and it seems that all those who can, are bent upon taking as much advantage as possible from this city, without a care for ethics or values that once governed our lives.

None of the city godfathers who have represented different ideologies at different times, paid much attention to using existing historic resources as the focus of urban development and to bring pride to a rainbow city that has many

occupiers but no custodians. Many countries in the world have introduced a host of civilizing elements to improve their urban environments. In most cases a common factor is the importance given to historic assets, however meagre they might be, as focus of development, which provide distinctiveness to the urban centre and pride to its citizens.

PUBLICATIONS ON KARACHI'S HERITAGE & KARAVANKARACHI

During early 2000s, my heritage guidebook for Karachi was published, which was based on the coffee table book *The Dual City: Karachi During the Raj* coauthored by my son Mihail and myself and published by Oxford University Press in 1996. Because the guidebook consisted of short narratives, more people seem to have read it than the big well researched coffee table book published just four years previously. Through the guidebook and realization regarding the wealth of Karachi's heritage,

a couple of young persons, Fariya Zaeem a graphic designer and Mohsin Saeed, a journalist, arrived at my doorstep. They were keen to find ways to celebrate Karachi even though it had been wracked by many blasts and seemingly uncontrolled militancy during the 1990s.

The discussion among us soon grew into a caravan of eminent Karachiites wishing to celebrate the city, centred around its heritage. *KaravanKarachi* was born and the entirely voluntary effort by scores of eminent creative people resulted in mobilization of



Street breakfast on Sunday.

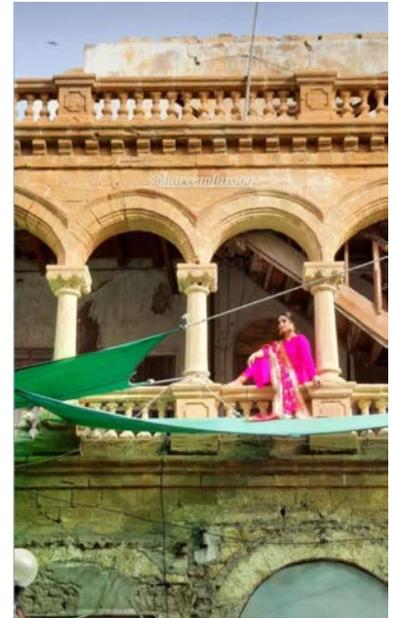
multiple number of schools, both public and private, across the city. Along with participation of schools, Sunday events brought together a host of people from all walks of life to gather in front of a heritage building to hold assemblies - heritage streetfests as I named them. These weekly street festivals consisted of discussions and performances regarding the rich heritage of Karachi with music and songs and dancing by school children, open air painting workshops and street theatre at city's roundabouts. A big citizens' roll was developed with signatures from ordinary people along with dignitaries who graced the occasions, such as governor and ministers of Sindh government, eminent intellectuals and artists who would address audiences regarding the value of cultural heritage of the city.

Every Sunday we held these assemblies devoted to creative and cultural activities – all on the street so that it was open and inclusive. There was no restriction, citizens from the aged to young toddlers could be found with no discrimination of race, creed or gender and the only public cultural events of its kind where the city and its cultural attributes were celebrated in streets of Karachi.

We held these festivals for three years in Karachi and also took the celebrations of heritage to many other heritage sites –World Heritage site of Lahore Fort and monastery in Taxila, the palaces of Bhawalpur and the historic Gor Khattree at Peshawar, transforming KaravanKarachi into KaravanPakistan. Everywhere we were met with enormous enthusiasm where even young children would come up and talk with pride of the heritage asset they discovered in their vicinity.

DREAM OF KARACHI'S TRANSFORMATION

That was the dream of transformation that I had in mind when I designed the Red and Blue Trails in the historic core of Karachi. I wanted to create streets that would become cultural streets where we could celebrate the heritage of each of the



A model posing in a historic arcade.



Watching 'Do Good' messages at the Rahguzar.



Police band playing at the Rahguzar.

diverse communities that called Karachi home, where there could be music and dance, singing and theatre along with storytelling and children's activities, where on Sundays there could be women's bazaars with handcrafted items and products by entrepreneurial women. Where we could discuss issues related to ecology and climate, heritage and good governance, dealing with injustices both eco injustice when the elite chooses to ignore the use of materials that will not emit carbon or the lady who is trying to persuade women of downtrodden communities to acquire digital and financial literacy. Walking streets where workshops could be conducted to curtail waste by composting kitchen waste and sorting and recycling all other kinds of waste; where food security could be promoted by housewives growing vegetables and cooking responsibly, where more women would be encouraged to sell from hawker stalls to supplement their income as well as those who are sole breadwinners in their family. Where all heritage buildings are saved and restored and where the attempts by powerful lobbies to build multistorey structures in inner city are thwarted.



Recycled wood electrical posts

Thus, I see the potential of the rahguzar to motivate all visitors to become enthused with the same vision to transform each area into livable enclaves and my dream is to re-appropriate all public spaces and heritage buildings that are being illegally utilized for personal benefit and to convert them into cultural and recreational activity areas for women, children and youth. Although at the time I had dreamed up this project, there was no sign of COVID 19 and the world was entirely unaware of the destructive consequences of the pandemic. But today, another reason for public spaces, such as the rahguzar, are sorely needed in order to provide healthy environments for the enjoyment of common citizens.

The pandemic has taught us that COVID-19 makes no distinction between those who wear and carry designer objects between the eighth person who is forced to go hungry every night - each one is equally vulnerable and each one needs exactly the same healthy conditions to survive.

The cities need to provide an environment that will promote an acceptable quality of life for everybody. We can no longer relegate some to poverty ridden chaotic slums next door to posh localities of the elite, unless each one is provided equally livable environments.

CELEBRATING CULTURE, HERITAGE AND COMMUNITIES OF KARACHI

The rahguzar was designed to celebrate the culture and heritage of diverse communities that inhabit Karachi and I dream to devote each Sunday to a different community to display their arts and crafts, the dresses they wear and the cuisine they enjoy accompanied with their special music and dance of their original home towns. I see them as ethnic festivals that will introduce the richness and cultural attributes of each community to others living in the same city, but today they are fearful of each other.

The street would thus become the promoter of diversity and teach the value of different cultures that co-exist in this uniquely endowed metropolis. I dream of presentations that will familiarize all of us with each other and so the fear of violence and hostility that lurks in our minds can no longer threaten the positive value of a dynamic, rainbow city such as Karachi.



Training in building zero carbon structures at the Rahguzar Chowk.

During the time that we held Karachi Heritage Street fests and other celebrations in early 2000s in Karachi, it has been good to see more and more emphasis on heritage and culture in many forums and discussions.

UNESCO which has always placed great store on culture has developed several documents on these themes. In all cases heritage plays an important role whether it is historic urban landscapes, culture for Sustainable cities or Creative Cities network, the emphasis on using culture as a driver of economic development, poverty alleviation, and sustainable environments is emphasized. We know that transformation of urban environments based on doctrines that are underpinned by culture, are equally important for businesses and institutions along with provision of equitable opportunities for common citizens and even for dealing with COVID-19. Many cities have flourished by spotlighting culture, and there is no reason why Karachi cannot be developed by focusing on cultural activities and creation of urban

environments that would safeguard both tangible and intangible cultural attributes.

We know that by showcasing and promoting intangible heritage of Karachi's diverse communities along with tangible heritage will lead to pride and stake in the built environment as a means of identify and distinctive character of the city.

The rahguzar has demonstrated that we can create livable environments for all. And, it is possible to create stake and pride in our built environment by developing partnerships through well designed enclaves which resonate with people.

Thus, Denso Hall Rahguzar Walking Street aka Zero Carbon Street is having its impact in transforming mindsets when the residents have begun to question why the entire historic core cannot be regenerated following the tenets of this rahguzar.



Aerial view of the Rahguzar..