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THE PIGEON HOUSES ON THE PICTURE WALL OF LAHORE FORT: A LIVING SANCTUARY

Khurram Amer,* Zain Zulfiqar, Madeeha Altaf,*****

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* Lecturer, School of Architecture, The University of Lahore.
khurram.amer1@gmail.com
ORCID: 0009-0007-0048-434X

** Assistant Professor, School of Architecture, The University of Lahore.
zain.zulfiqar@arch.uol.edu.pk
ORCID: 0000-0001-9550-8015

** Assistant Professor, School of Architecture, The University of Lahore.
madeeha.altaf@arch.uol.edu.pk
ORCID: 0009-0004-3912-0429

ABSTRACT

The Picture wall of Lahore Fort; a UNESCO World Heritage site, has the world's largest glazed tile mosaic work spanning 1450 feet. The tile mosaics depict hunting scenes, social events, and scenes from everyday life in the courts of Mughal Emperors. The monument also features avian micro-architecture; more than two hundred miniature structures and cubby holes that host a large population of pigeons. No official historical record makes a mention of their existence except a reference to them as miniature balcony windows or loopholes for weaponry by Jean Phillippe Vogel, superintendent for the Archaeological Survey of India. After critically analyzing historical data, on-site observations, and surveys, the study attempts to bring to light the purpose of these structures as pigeon houses, their significance, and their role on the picture wall of Lahore Fort. The methodology adopted for the paper included a study of similar historical trends, patterns, and philosophies to identify the structures' purpose and raise awareness regarding their role as a living avian sanctuary. The research contributes to the discourse regarding the application of concepts of ecological awareness in traditional architectural practice. The study will also aid in conservation efforts toward the retention of the picture wall as a living sanctuary for the local avian population.

Keywords: Avian Micro-Architecture, Ecological awareness, Lahore Fort, Mughal Architecture, Pigeon Houses, Picture Wall.

INTRODUCTION

The city of Lahore, Pakistan is home to a few UNESCO World Heritage sites (Sarwar and Hafeez, 2024) and was once the capital of the Mughal Empire (Mubin, et al, 2013). On the northern edge of the Lahore Fort lies the world's largest tile mosaic work of art (Figure 1) which was also the reason for the inscription of the Lahore Fort as a UNESCO World Heritage site in the year 1984. The Picture wall of Lahore Fort is a 1450 feet long and 50 feet high apron wall with a richly decorated *Kashikari*[1] work and elaborate natural motifs depicting 16th-century life at the Mughal court (Arif and Essa, 2017). However, it has been overlooked throughout history until recent conservation works taken up by the Aga Khan Trust for Culture (AKTC). There is little to no mention of it in historical accounts even by the Mughal chroniclers and travelers who witnessed the fortress in its days of glory. The wall comprises glazed tile mosaics (Figure 2) and the first person to highlight the beauty and significance of this wall was British officer T.H. Thornton, who served in various

[1] Glazed tile mosaic.

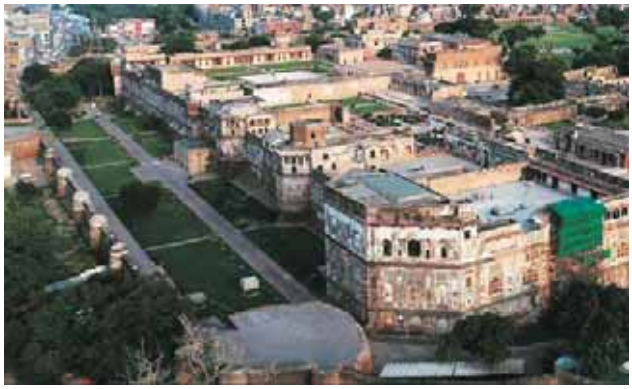

Figure-1: An Ariel view of the Lahore Fort, Lahore, Pakistan. A UNESCO world heritage site with the picture wall on the left.
Source: Agha khan Trust for Culture, 2019

capacities in Lahore after the annexation of Punjab in 1849. He published a guidebook titled "Lahore" in 1860 which brought the picture wall to public attention. Thornton discussed the wall under different categories such as "Colored designs on the palace front", Historical interest of the designs" and "Origin of the art called Kasha" (Arif and Essa, 2017). Nevertheless, he makes no mention of the micro-avian architecture on the picture wall. The only detailed account of the tile mosaics of the picture wall and its pigeon houses was by the superintendent of Punjab for the archaeological survey of India (1901-1914), a Dutch professor of Sanskrit and epigraphist Jeane Philippe Vogel. He wrote that the imperial palace of Lahore outshines all buildings by the princely magnitude of its colour and decoration. He went into great detail about the origins of the art form of glazing of the tiles and the imagery they depicted. However, the pigeon houses were unable to capture his interest as much, Vogel described them as miniature balcony windows in his documentation.

"In the middle of the lower recesses, we notice projecting miniature balcony windows *Bukharcha*[2] which add grace and variety to the decorated surface (Plate IV, a-d). They are continued along the whole length of the palace wall but have suffered a great deal. The upper recesses are all pierced in the centre with arched openings perhaps meant for loopholes" (Vogel, 1920) (Figure 3).

Another account of these structures in a book; History of Mughal Architecture (volume III) describes these structures as decorative miniature *Jharokhas*[3] with no other purpose than to provide relief to the otherwise flat facade of the wall

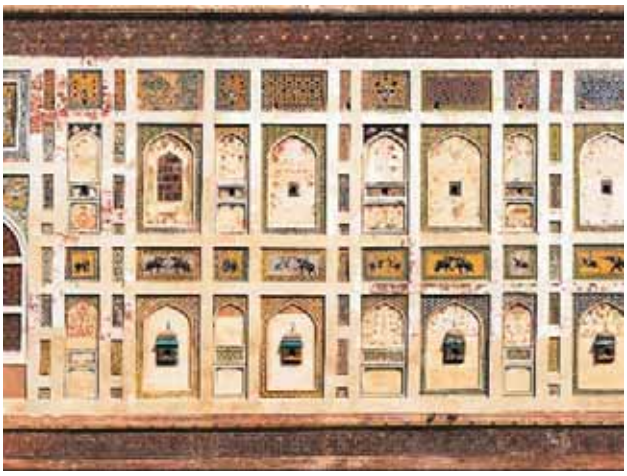

Figure-2: An image of the conserved picture wall at Lahore Fort showing tile mosaics and miniature structures.
Source: Agha khan Trust for Culture, 2019

Figure-3: An image of the conserved picture wall at Lahore.
Source: Author

(Nath, 1933). Many in their voyages to the palace wrote a great deal about the paintings and other works of architecture but this component of the picture wall has been overlooked. After recent conservation works, a report issued by the Aga Khan Trust for Culture (AKTC) has used the term pigeon houses for these structures (Aga Khan Trust for Culture, 2019). This paper aims to highlight the role of these structures as pigeon houses on the world's largest mural wall and attempt to understand their role in the Mughal cosmos.

Location of the Pigeon Houses

The picture wall is located on the northern end of the citadel (Figure 4), which once ran parallel to the River Ravi (Kapuria and Kumar, 2022). The pigeon houses run along the entire length of the fortress wall and face outwards towards the open lands that were once covered with forests (Figure 5).

[2] Balcony window

[3] A bay window projected from the facade of a building in India Architecture.

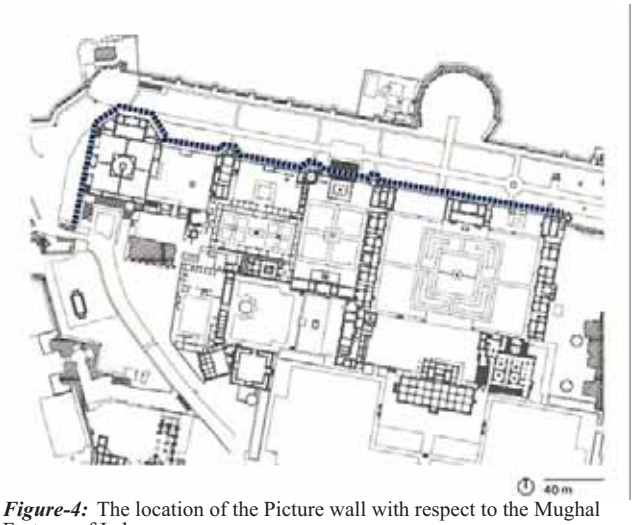

Figure-4: The location of the Picture wall with respect to the Mughal Fortress of Lahore.
Source: Jodidio, 2019

Figure-5: An image of the picture wall in its existing state with a pavement where the river used to be.
Source: Author

Timeline of Construction

Based on the timeline of construction the structures represent two architectural periods. In the case of the pigeon houses found on the picture wall, the building and extension of the wall under different benefactors and different periods enabled innovation in this regard as well. The area of the picture wall ascribable to Jahangir (1605-1627) spans between the first tower on the eastern end of the northern wall to the limits of the Kala Burj, while Shah Jahan's (1628-1658) segment starts at this point and culminates at the Hathi pol towards the end of the western wall (Figure 6).

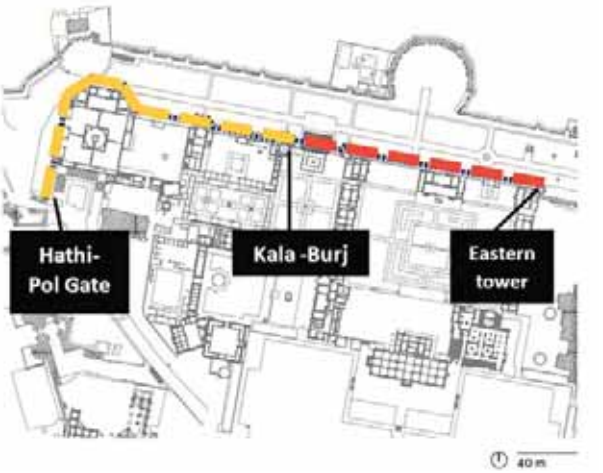

Figure-6: A map of Lahore fort showing the picture wall marked on the top most edge. The line marked red indicates the part of the wall constructed during Emperor Jahangir's reign while the yellow line represents the extension of the wall during Emperor Shah-Jahan's reign.
Source: Jodidio, 2019

Significance of Birds in Religious Context

Considering the possibility of the structures on the picture wall having been built to provide shelter for birds represents a materialization of the religious beliefs of their makers i.e., the Mughals. Several cultures view birds as the closest creatures to God and attribute a divine meaning because of their ability to fly freely and defy gravity (Erman, 2014). In a long-standing tradition, birds have been symbolized as souls both human and divine specifically in storytelling, spirituality Islamic poetry**.** The symbolic significance of the birds as representations of the soul is best presented in the most famous and beloved work of Persian Sufi poetry;

Farid-ud-Din Attar's "The Conference of the Birds". In this context, providing shelter for birds can be viewed as a crystallization of ideas surrounding ecological awareness and a culture of living together with nature. An idea that has its roots in the Islamic concept of "Tawheed", re-affirming man's status as the Vicegerent of God on earth and his custodial duties regarding all His creation (Cinar and Yirmibesoglu, 2019).

Micro-Architecture in a Regional Context

The Mughals developed a symbolic and metaphorical "multilingualism" to reach large audiences and establish themselves as the ideal and universal kings. They did this by drawing inspiration from a variety of available sources (Koch, 2019). A link may be established between the avian micro-architecture in practice in pre-Mughal times and its

Figure-7: Aedicule from the Pantheon; drawing by Giuliano da Sangallo.
Source: Nesselrath, 2015

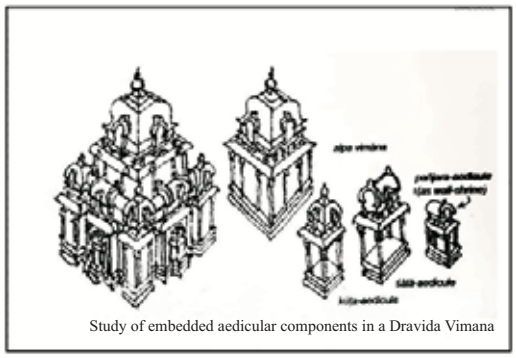

Figure-8: Aedicule in Indian temple showing various modules used in the development of the overall larger whole of the temple building.

Figure-9: An aedicule niche carved into the wall in Akbar's palace at Fatehpur Sikri, India.
Source: Johnsson, 2014

adoption and use by the Mughals in their buildings, particularly in this case on the picture wall. The external form chosen for these miniature structures may be traced back to an element called an *Aedicule*[4]. A wide range of such structural forms can be observed from the Gandhara civilization with links to both the Hellenistic West (Figure 7), Roman architecture, and peninsular India (Hardy, 2019). Used as an integral part of Indian temple architecture (Figure 8), aediculea appeared as niches in the wall. The rhythmic and repetitive positioning of this element with scalar gradation on the exterior makes up the entire temple facade. In other words, the smaller aediculea are miniature replicas of the larger whole. This architectural feature can be observed in niches for deities and other objects within the Mughal palatial buildings. Emperor Akbar also used it in his presidential palace in the Capital city of the empire; Fatehpur Sikri, India (Figure 9).

Historical Precedence of the Phenomenon

A historical analysis considering similar practices in other parts of the world helped develop a better understanding of the purpose of these avian micro-architectural structures. The earliest examples can be taken from the pigeon towers of Isfahan that were meant to house wild pigeons. The use of Avian architecture then evolved into its current form under Ottoman rule and the Sultanate period in the Asian sub-continent, where miniature structures like the ones on the picture wall started to appear on the buildings. They were a part of the facades of public buildings, palaces, and mosques in Ottoman Turkey and shrine complexes and mosque facades in the Asian sub-continent.

Pigeon Towers of Isfahan, Iran

Iran was an important point of reference, especially since the time of exile of Humayun the second Mughal emperor between the years 1543 A.D – 1545 A.D. This was an essential element in the Mughal syncretistic venture and influenced the arts, architecture, and literature (Koch, 2010). One such influence was the culture of building structures for birdkeeping. Built using vernacular techniques of construction and design, the farmers built pigeon towers in the villages of Isfahan to attract Persian wild pigeons whose dung they harvested each year to fertilize melon fields. The erection of these towers gives an insight into the altruistic relationship between the people and their avian friends and the natural tendency of man to develop symbiotic relationships with other species. The birds are given shelter and the freedom to come and go at their own will (Gemaiey, 2016).

Examples from Ottoman Turkey

The Ottoman Turks understood flora and fauna to be an important element that made up and enhanced the quality of public places as well as palatial buildings. They experimented with making shelters for the local birds on building facades. These first shelters were in the shape of cavities, however, at the beginning of the 16th century they began to take on new forms that protruded from structures (Figure 10) (Cinar and Yirmibesoglu, 2019). This architectural feature gained a special place in the Ottoman Mosque architecture, not only did they enable birds to have shelter but they were also a way to avoid birds making their nest elsewhere and ending up damaging the structure of the

[4] A niche in the wall intended for the statue of a deity in Greek and Roman temples.

Figure-10: A pigeon houses on the Ayazma Mosque, Uskudar Istanbul, Turkey.
Source: Cangul, 2017

Figure-11: Pigeon house on a building from the Ottoman Era, Turkey.
Source: Cangul, 2017

Figure-12: A pigeon house on the Salimiye Mosque, Turkey.
Source: Cangul, 2017

Figure-13: Pigeon house on the shrine of Tahir Khan Nahar's tomb, Uch, Punjab, Pakistan
Source: Ali 2021b

Figure-14: Projecting pigeon houses on the fa*c*ade of the tomb near Khalid Waleed Mausoleum complex, Khanewal, Punjab, Pakistan.
Source: Ali 2021a

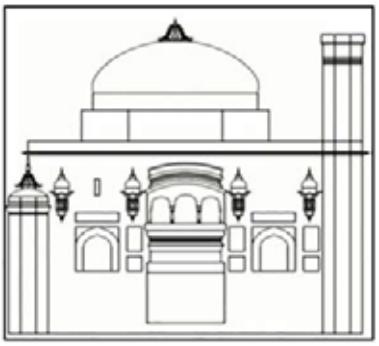

Figure-15: Western elevation of Mosque Trinda Madho Khan featuring pigeon houses.
Source: Abdul Rehman, 2016

Figure-16: Pigeon houses featured on the top band featured on the facade of the tomb of Sakhi Yahya Nawab, 1618 A.D. located in the city of Multan
Source: Ahmed, 2011

Figure-17: A picture of the tomb of Bibi Jaiwindi in Uch Sharif, showing pigeon houses on the top band of the facade
Source: Ali, 2016

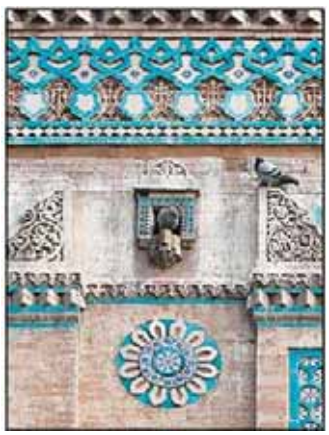

Figure-18: Pigeon house featured on the facade of the the tomb of Shah-rukn-e-alam, Multan.
Source: Ali, 2019

building due to droppings. The idea also had religious connotations, it was expected that providing shelter for birds would earn people good deeds. The making of miniature architectural structures projecting out of buildings can be attributed to the Ottoman Turks with structures dating back to the foundation (1299 – 1451) and classical periods (1451-1703) of the Ottoman Empire (Figure 11,12). The first avian-micro architecture that appeared on Sivas's crucial Kavus Darissifa (hospital) was built by the Anatolian Seljuks in the 13th century BC as shelters for birds. Installing shelters for birds on buildings and decorating them was seen in the classical Ottoman architecture of the 16th century. The designs of these smaller structures assume the form of the larger building they are a part of, and in some cases were miniature replicas that were built in styles conforming to the spirit of the building (Erman, 2014).

Examples from the Asian Sub-Continent

Instances where the local birds were provided shelter by providing miniature structures such as pigeon houses built onto the facades of buildings can be found in the architecture of the Sultanate period in the provinces of Punjab and Sindh. In the historic city of Uch in southern Punjab, projecting structures can be found on the tomb of Tahir Khan Nahar, in Sitpur, Punjab. Constructed in the 1530s, the tomb contains numerous pigeon holes which were intended as residences for pigeons (Figure 13). Another tomb in the Khanewal region of the province of Punjab (Figure 14) shows projecting structures serving the same purpose. This practice can also be observed in other parts of the nearby areas, one example being Trinda Madho Khan Mosque located in a village in southern Punjab. Rehman (2016), noticed the presence of pigeon holes as prominent and integral features on two sides of the mosque facade (Figure 15). Their use as ornaments on the facade can be seen in the Janpur mosque in the same region, here again, the structure takes a very primitive form of cavities in the walls. The facade is split into three sections vertically, the uppermost section has niches for birds, while the lower section has blind arches set within rectangular panels finished with blue glazed tiles (Rehman, 2016).

Pigeon houses installed on shrines can also be seen in the city of Multan in the province of Punjab. The mausoleum of Sakhi Yahya Nawab (Figure 16) 1560 A.D – 1618 A.D a Sufi saint features these structures near the top band of the shrine building. The tomb of Bibi Jaiwindi in the historic city of Uch showcases pigeon houses on its turrets (Figure 17). Similar projecting structures occupied by birds can be seen in the tomb of Shah Rukn-e-Alam built in the Tughlaq style of architecture (Figure 18) on each corner of the octagonal story (Qureshi, 2014). The people who come to visit provide food and water to the birds living at these shrines became a cultural norm for earning good deeds and continues to this day.

The Mughals crossed paths with and were influenced by the shrine culture when the second Mughal Emperor Akbar became a disciple of Saint Muinuddin Chisti, founder of the Chishtiya Sufi order in India. He later gained the status of *Pir*[5] which helped in projecting the 'spiritual' aspect of his Kingship. By deciding matters and presiding over the *Dargah*[6] he symbolised the appropriation of the spiritual powers of the saint. These saints were revered by Muslims and Hindus alike, therefore having close affiliations with them made the kingships acceptable to a wider range of audience (Khan, 2018). An affection for the saints that was passed down the generations culminated in the relationship between his great-grandson Dara Shikoh – the eldest son of Emperor Shahjahan, and his Patron saint Mian Mir of the Qadriya order (Latif and Mushtaq, 2013). Pigeons are a common sight on the shrines of these saints (Figure 16-18), these birds are seen as pure divine souls and are therefore respected and honoured. Perhaps visuals of the same birds residing in the Mughal Fort would make the people revere the Mughals as pious living saints, and their residences as divine and respectful as the shrines.

RESEARCH METHODOLOGY

A thorough historical analysis of the phenomenon through cultural, religious, and political lenses helped develop the framework, which aided in determining the function of structures. The first step of the study included an analysis of similar historical trends, patterns, philosophies, and designs. Influences from the surrounding areas and around the world were studied to identify the possible origins of such structures and to understand their role. Data was collected through in-person observations, documentation, and photographic surveys of the picture wall of Lahore Fort. The data collected during the first step was analyzed against data collected through websites and published books, archives, academic journals, and autobiographies of the Mughal emperors to find historical references to the phenomenon.

[5] Spiritual Teacher

[6] A shrine or a tomb built over the grave of a revered religious figure.

ANALYSIS

The Solomonic Model of Kingship

The ability of a king to rule over all creatures was a way of ensuring and displaying the Solomonic divine providence for kingship. The animal world became an extension of the court's jurisdiction based on the model of the legendary rule of King Solomon, who was known for his just power over all creatures as even the Qur'an testifies. The idea that a ruler who brings peace to the world is a just ruler informed the eulogies of many Muslim kings, they tried to imitate this through the expression of the metaphor of pacified animals (Koch, 2010). In the translation of the biography of the Mughal Emperor Humayun (Qanun-i-Humayun) by the court historian Khvandamir (ca 1475-1535), (Prashad, Baini, 1940) states;

"*Under the protection and shelter of his justice, deer sleep carelessly in the lap of panthers, and fish fearlessly take rest near crocodiles; pigeons become friends of falcons and sparrows chirp fearlessly in front of eagles".* (Prasnad, 194D, Pg. 55)

Mughal Emperors Jahangir and Shah Jahan followed the artistic program of their grandfather Emperor Humayun who depicted the king as a Solomonic model affirming their stations as rulers of the natural world (Hickey, 2020). The image of Orpheus as a pacifier of animals in the form of a pietra dura tablet set into the wall behind the throne of the Emperor in the Delhi fort has been used to re-affirm the model of the ideal king, the keeper of world peace and pacifier of animals. They cleverly made use of these visuals to represent an emperor intertwined with the natural world to try to proclaim the legitimacy of the throne through diverse sources of power (Hickey, 2020). The theme of pacified animals under the control of the Emperor can also be observed through the use of pigeons trained to carry messages. In Tuzk-I-Jahangiri (Memoirs of Jahangir), Emperor Jahangir talks about instructing pigeon fanciers termed "Ishq-baz" to train their pigeons to carry messages (Rogers, 2015).

Avians in the Mughal Court

The Mughal emperors held a great amount of interest in the natural world. They were aware of the flora and fauna that enlivened their landscapes, this may be partly because of their Mongol descent. It is possible that by weaving themselves into the natural world they were trying to maintain a connection with their roots by symbolically presenting images of an empire that had grown out of and blended into the local context (Hickey, 2020). Emperor Jahangir was a naturalist who took every opportunity to satisfy his love of nature and his curiosity by engaging with the non-human subjects of his empire (Rogers, 2015). From acquiring exotic animals to conducting experiments with his royal pets the king mentions all in his autobiography. Similarly, the Avians were an important part of the Mughal court, their presence in the Mughal cosmos took many forms. The constant presence of birds in Mughal art, poetry, memoirs, hunting expeditions, and court aviaries represent conscious extensions of the Emperor himself. The Mughals surrounded themselves with birds of every kind. Their dominion over the bird world was majorly manifested through aviaries kept in pleasure gardens. Emperors and their courtiers frequented these enclosures kept up by eunuchs. They served as venues for education, entertainment, and supervised animal interactions. The birds in these gardens were housed there for an extended period, not for conservation or rehabilitation, but rather to entertain the courtiers (Hickey, 2020). The garden of Pari Mahal in Kashmir had a multistory building built for housing carrier pigeons for communication between the Royal fort and the different locations within the vicinity (Moynihan, 1979).

The Practice of Bird Keeping in the Mughal Lineage

From the very beginning of the empire, the culture of bird keeping was a noble hobby, one that in a particular incident took the life of the father of the first Mughal Emperor Babur. Abu'l Fazl the court biographer and *Vizier*[7] states in his book Akbarnama (Biography of Mughal Emperor Akbar) that "training pigeons caused great joy and the demise of Babur's father, Umar Sheikh Mirza, who died after a pigeon house collapsed on him". His love for pigeons passed on to his descendants, into Akbar's widely-professed love for the birds (Ibn-Mubarak, Beveridge, 1907). Blochmann & Heinrich, (1873) in Ain-e-Akbari (The Constitution of Akbar) state that the tumbling and flight of pigeons amused Emperor Akbar, the second Mughal Emperor, as it brought to mind the euphoria and transport of fervent dervishes. An account written by Topsfield, (2013) recalls the deep relationship between the birds and their keepers. He states that among the 20,000 pigeons that Akbar kept his favourite was a well-trained, bluish-grey pigeon named Mohana.

[7] A high official in the court.

Figure-19: Tile mosaic work showing two birds mid-flight on the picture wall.
Source: Vogel, 1920

Figure-20: Tile mosaic work found on the picture wall showing a mystical creature known as the Simurgh.
Source: Vogel, 1920

Avian Art in the Mughal Court

The arts produced in the courts during the 16th and 17th centuries constantly featured birds. They were used as motifs that made Mughals a part of the long-standing tradition of storytelling. This intricate relationship between the Mughals and their avian subjects reveals a Mughal conception of the empire, one with fluid boundaries between the animal kingdom and their own (Hickey, 2020). Keeping in mind this context the picture wall would appear to be a befitting place for these pigeon houses to be built. Due to its location, it was essentially a means of broadcasting the royal narrative of divine kingship. Tile mosaic Figures of both real (Figure 19) and imaginal (Figure 20) birds engaged in different activities can also be seen featured on the Picture wall alongside the pigeon houses. The winged creatures on the picture wall manifest the fantasy of flight and a wish to forge connections with the heavens. Further study into the subject helped develop a clear understanding of the role of the avians in the Mughal cosmos.

Ecological Awareness and Providing Sanctuary (Hima)

Hima in Arabic means "a protected place", essentially to provide a living sanctuary to the animals or plants of a specific region (Ibrahim et al., 2013). Examples of the Mughals practising such concepts of having reserved or protected lands can be found in the area of Shah-dara on the outskirts of the city of Lahore, and the city of Sheikhupura having the famous Hiran Minar monumental complex built by Emperor Jahangir. The use of avian micro-architecture on the building facades for providing safe shelters can be seen as an application of the same concept in a different form. Gruber, (2021) states that the birdhouses built during the Ottoman Era may have served as architectural atonement for the trees that humans had cut and cleared at a time of urban development. This hypothesis does not fit into the case of structures found on the picture wall of Lahore Fort. In the time of the Mughal Empire, the River Ravi ran next to the Fort with forests beyond its shores, this makes it difficult to justify the theory of the birds having to leave the forests and live on these built structures. However, the other explanation can be sought from the theory by (Erin, et. al., 2019) which states that feral pigeons prefer urban environments to natural ones where access to food sources is easy. They have adapted to living among human populations over thousands of years. Hence it may be stated that the pigeon houses of the picture wall were meant to provide a living sanctuary for these specific birds' i.e. pigeons.

Documentation of Miniature Structures on the Picture Wall

The projecting structures on the picture wall take different forms according to the design palette of the emperor who ordered their construction. They can be categorized into three types based on architectural styles and internal layout. The court historian Lahori gives an insight into the keen interest Emperor Shah-Jahan had in the architecture of his palaces by stating that the Emperor paid much attention to the planning and construction of buildings and liked to

Figure-21: Type A structure as documented by Vogel (1920).
Source: Vogel, 1920

Figure-22: Cut-brick arches showing details of the arch
Source: Author

Figure-23: Type A structure in damaged conditions on-site
Source: Author

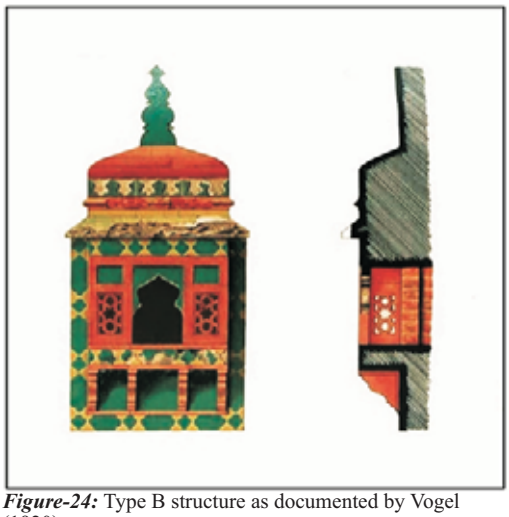

Figure-24: Type B structure as documented by Vogel (1920).
Source: Vogel, 1920

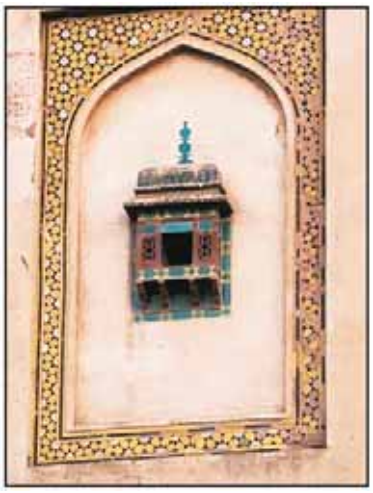

Figure-25: Restored Type B structure as found on site.
Source: Author

Figure-26: A picture showing the cut-brick fretwork.
Source: Author

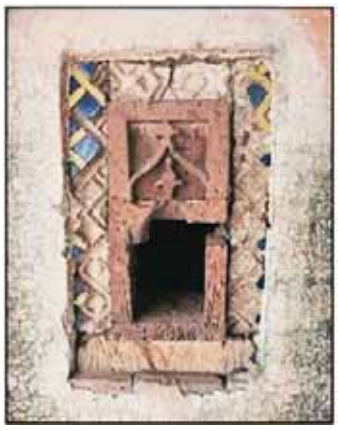

Figure-27: Type 03 structure as found on site
Source: Author

Figure-28: Type 03 structure with a square front opening as found on the wall.
Source: Author

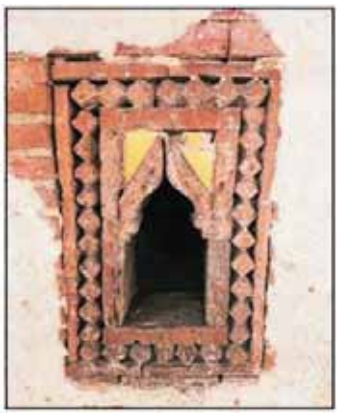

Figure-29: Type 03 structure with a different external design.
Source: Author

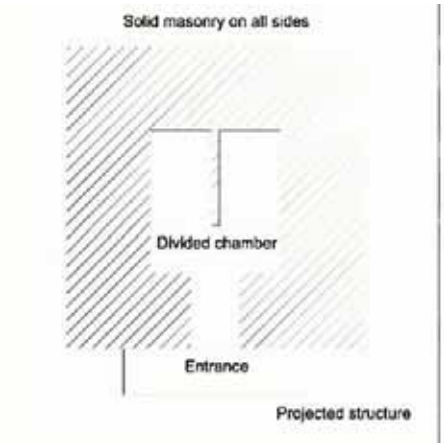

Figure-30: The typical internal layout of a miniature projecting structure on the picture wall.
Source: Author

Figure-31: The damaged structure with three chambers.
Source: Author

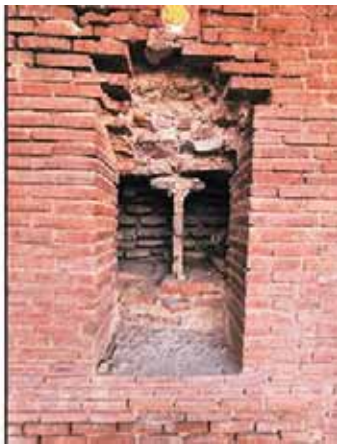

Figure-32: Damaged front structure revealing the internal chambers.
Source: Author

design most of the buildings himself (Necipoglu, 2018).

Classification of Structures:

Based on their designs, the structures found on the picture wall can be classified into the following three categories.

Type-A Structure

The structures being classified here as type-A (Figure 21) can be assumed to be the oldest ones considering their architectural vocabulary and the position on the wall. They are located on the left-most side of the northern wall and below the sleeping chambers of Emperor Jahangir bearing the architectural elements from his style and his father's i.e. the Akbari style of architecture, with domes covered with geometric designs of glazed tiles with a 2-dimensional floral motif as the pinnacle. The semi-octagonal miniature portico features three arched openings and miniature versions of columns, the likes of which were used in the eastern and western *Dalans*8 and other prominent structures such as the Deewan-e-Am or the Hall of Common Audience in the Lahore fort itself. These are designed as lookout points carved out of cut-brick with intricate borders resting on a corbelled octagonal star base (Figure 22-23). Other features include glazed tile work on facades of the pigeon houses. The style of the pigeon house and the craftsmanship that went into making these miniature versions of life-sized structures is a testament to the dedication put into materializing the emperor's vision. Currently, there are no type-A pigeon houses that are completely intact and not more than three structures can be identified in this category. The pigeon houses remaining have damaged front facades with exposed cut-brick construction, intact corbelled bases and semi-intact domes showing remnants of blue tile work.

Type-B structure

The type of structure classified as type-B (Figure 24) is based on a style that seems to be more to the liking of the Mughal Emperor Shah Jahan; the emperor who is credited with continuing the construction of the picture wall after his father Emperor Jahangir. The exact timeline of construction though is not clear, it has been discussed by (Vogel, 1920) in his Journal when he documented the structures in 1905, "The tile decoration was commenced in Jahangir's reign on that portion of the wall which corresponds to the quadrangle bearing his name. In the early years of Shah Jahan's reign. When the art had attained greater perfection. It was continued, first on the Shah Burj, and then on the Adjoining curtain wall; and it reached its zenith and completion on the splendidly decorated Elephant Gate".

These projections seem to conform to the typical style of the balcony windows added to palace rooms. The rectangular form of the projection and crown is an architectural style developed during Shah Jahan's reign. It can be observed here that the matter of the design of these pigeon houses was something important enough to be taken up as an opportunity to leave a signature of sorts for the emperors of the time. The overall form (Figure 25) is rectangular with a crown having a two-dimensional pinnacle on top, eaves projecting out over a central arched opening while the sides of the entrance arch are decorated with geometric designs.

[8] A verandah or open hall for reception of visitors.

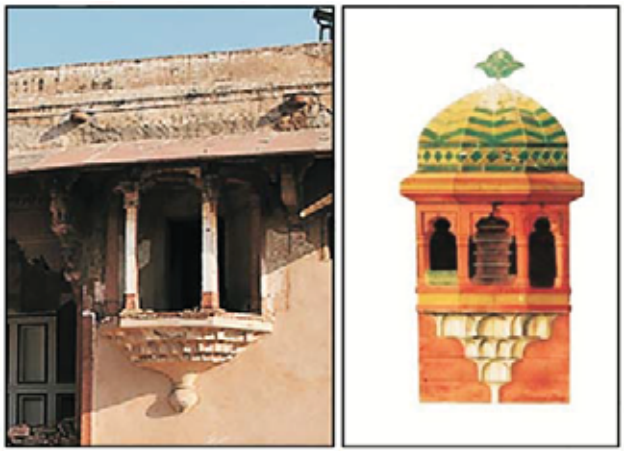

Figure-33: a) A picture of a building belonging to Emperor Akbar's era with an Akbari style Jharokha (balcony window).
Source: Ali, 2012a
b)An image of a miniature structure as documented by Vogel (1920) located on the picture wall.
Source: Vogel, 1920

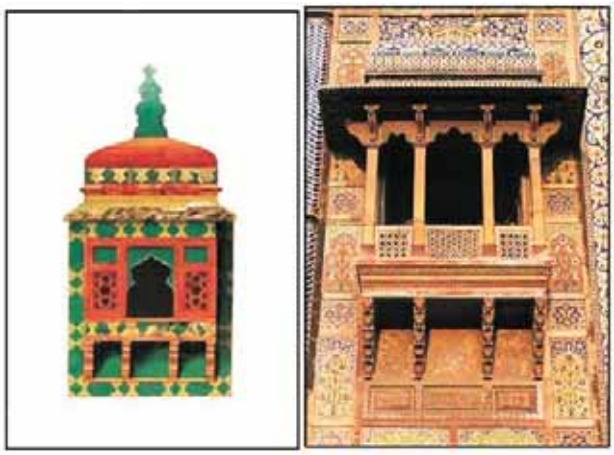

Figure-34: a) An image of a miniature structure as documented by Vogel (1920) located on the picture wall.
Source: Vogel, 1920
b)A picture of a Jharoka window on the entrance portal to the Wazir Khan Mosque, Lahore.
Source: Ali, 2012a

The fretwork built using cut brick perhaps keeping in mind the hot summers of Lahore ensures proper ventilation while the structure is supported with corbelled brackets at the bottom (Figure 26). Majority of the structures found on the picture wall belong to this type. The intact structures show exposed brick-cut structure and fretwork while the façade exhibit blue and yellow tile mosaic work.

Type-C Structure

The third type of structure classified as type-C (Figure 27) goes back to the very basics of the concept of providing a domicile for the birds as seen in the 13th century. This is a cubby hole in the wall (Figure 28) with an arched opening decorated with tile mosaics. Vogel makes a mention of these in his Journal in the following manner: The upper recesses are all pierced in the centre with arched openings perhaps meant for loopholes. He tried to identify these as meant for some sort of military use from inside the wall but no trace of any access can be found from behind these holes indicating they were only accessible from the outside. These holes can be found on the wall's highest bands, making them even harder to access (Figure 3). This type can be divided into further types based on the location on the wall and the external design around the opening (Figure 29).

Dimensions and Internal Layout

While the outer form of the pigeon houses may vary the internal layout is almost the same, a square layout with partitions inside (Figure 30). Some of the pigeon houses contain two and in the larger ones three chambers that are separated by a brick wall (Figure 31-32). The chambers are 1 foot 5 inches x 1 foot 6 inches with a 5-inch wide opening.

Architectural Design of the Structures

The pigeon houses found on the picture wall are more than just a shelter, they are witness to the artistic and technical expertise of the Mughals and the use of architecture as a tool to disseminate their ideologies. The structures built in the reign of the Mughal Emperor Jahangir feature the architectural language of his preference and that of his predecessor i.e. his father Emperor Akbar. The pigeon house design consists of recessed niches within the brick wall with cut brick facades as semi-octagonal projection, the dome on top, and the corbelled circular base for support on the bottom conforms to the official architectural language of the period. This can be observed in the life-size Jharokhas (Figure 33-a) in an Akbari period structure still standing in the northeast corner of Jahangir's quadrangle in the Lahore fort. The pigeon houses corresponding to this architectural language can be found on parts of the wall (Figure 33-b) running right below the buildings built by Emperors Akbar and Jahangir. The ones built later on during the period of the Mughal Emperor Shah Jahan stand witness to his refined tastes in tile mosaics and a more colourful facade. A rectangular projection with a rectangular roof and a tile mosaic two-dimensional pinnacle is a testament to the language preferred by Shah Jahan in his architectural endeavours (Figure 34-a). An example of this type of structure being used in a life-sized form can be observed on the facade of the Wazir Khan mosque in the walled city of Lahore

Figure-35: An image of the Jharokha Darshan at the hall of common audience at Lahore fort, Lahore, Pakistan.
Source: Ali, 2012b

Figure-36: Image of pigeon residing in one of the restored structures on the Picture wall .
Source: Author

(Figure 34-b). The method of construction also differs from their Turkish counterparts in the way that the Ottomans carved out the projecting structure from one single piece of stone, here these structures have been broken down into components.

The design of these miniature structures bears a striking resemblance to an element of the Mughal architectural vocabulary, a Jharokha. Zulfiqar, (2018) defines the Jharokha as a type of overhanging oriel window supported by brackets or corbelling typically used in Mughal and Rajasthan architecture. During the time of the Mughal Emperor Akbar, The Jharokha for viewing the king known as Jharokha *Darshan*[9] (Figure 35) was popularized. Emperors Jahangir and Shah-Jahan introduced it in their public audience halls allowing them to engage with the public (Figure 7). The appearance of the semi-divine king at the Jharokha for his people made the balcony windows a somewhat sacred spot (Koch, 2019). It is perhaps this similarity in external form that caused the misidentification of these structures as miniature balcony windows by Vogel in his documentation of the picture wall (Figure 36).

The Mughal architects and artists had no issue appropriating ideas from Central Asia, Persia, the Near East, India, and Europe if it suited their needs (Kach, 2010). In the matter of designing the external form of the pigeon house, choosing an existing design element from the local context and the derivation or recapitulation of its role and use seem to have been given careful consideration. The use of the aedicular form carries with it the associated symbolic significance of it being a place for deities or objects of importance. Similarly as discussed earlier, the fact that pigeon houses also resemble the form of Jharokha Darshan, where the Emperor's throne was placed, based on the realization of the Solomonic throne highlights the symbolic significance associated with the Jharokha. The absorption of these two elements into the design for these structures with all their symbolic significance seems to be a conscious choice rather than an accidental one, chosen to emphasize the role and stature that was awarded to these avian royal subjects. The internal layout of the pigeon houses has segregations that seem to have been intended for multiple occupancy. Each of these structures on the picture wall is a testament to the refined understanding and wisdom of the architects and designers, and the

[9] A balcony for the king to engage with his audience.

Figure-37: Picture giving an idea of scale of the pigeon house and its openings.
Source: Author

Figure-38: Picture showing the inside of one of the pigeon houses .
Source: Author

craftsmanship that went into choosing a particular design for them. This remarkable amount of sensitivity to the understanding of the use of the space by the birds attests to the thought that went into making these structures habitable and perhaps is the reason that even after 400 years they are still in use by the residents for whom they were designed.

Discussions

The Lahore Fort in the City of Lahore, Pakistan, is home to a unique feature that has not been observed in any other Royal monuments of the Mughal period in the region: the picture wall. The largest tile mosaic wall in the world, it might also be considered a host to architectural experimentation for realizing religious ideals in material form.

Miniature Structures as Pigeon Houses

The idea of miniature structures found on the picture wall having been built as pigeon houses can be based on the following discussion. The use of these structures as "miniature windows" as Vogel, (1920) suggested may be dismissed based on the following evidence. The authors observed that there were no openings on the other side of the wall nor were there any signs of openings closed later at any point.

Hence the authors conclude that these structures could not have served the purpose of fenestration or loopholes as Vogel suggested. On the other hand, if we consider the possibility of them being pigeon houses, the following is an argument that can be made in favour of this idea. Cinar and Yirmibesoglu, (2019) state that for a structure to be a well-functioning pigeon house, it needs to consist of three elements: invisibility, inaccessibility, and impenetrability. The miniature structures on the picture wall achieve all three goals to create a safe and livable environment. Their location on the northern wall of the Lahore Fort makes them invisible to the entire city. The wall marks the end of the Fort and the city which is why the tile mosaics of the picture wall were rarely seen or known by anyone in the city. Vogel, (1920) mentions this in his journal saying that people who have lived in Lahore for a long time were unaware of their existence. The location combined with the height at which these structures were placed makes them inaccessible considering the entire northern wall was the residential quarters of the royals, especially the women's quarters.

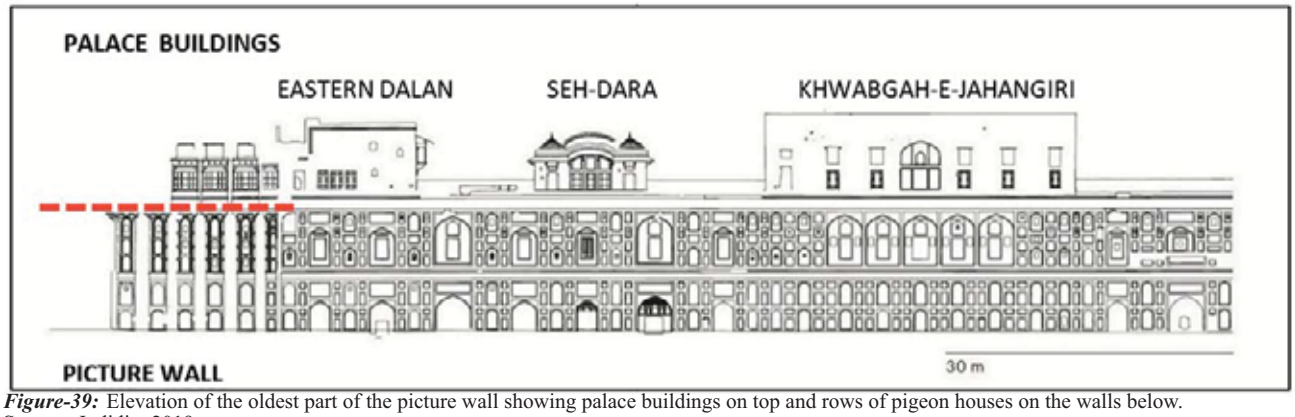

Figure-39: Elevation of the oldest part of the picture wall showing palace buildings on top and rows of pigeon houses on the walls below.
Source: Jodidio, 2019

Therefore, it is safe to assume that no one from the ordinary public had access to these parts of the citadel without permission. The design of the structures made the third objective possible, the openings or the entrance points for all the designed structures were made small enough (in most cases 5 inches in width – (Figure 37) to house small birds). The openings were not big enough and blocked on most sides by stone screens for predatory birds providing the smaller birds with a safe place to dwell and raise their young (Figure 38).

The Picture Wall as a Sanctuary

The modern world may claim ecological awareness and responsibility or sensitivity towards the environment as a modern thought, its roots go back hundreds of years and these structures may be taken as a testament to it. It is noteworthy that the pigeon houses found on the picture wall did not serve any functional purpose for the residents of the palace, instead, it appears that the idea for the structures on the picture wall stems from a selfless intention and sympathy, providing shelter to the creatures of God and not seeking anything in return. In the previously mentioned cases an existing habitat is marked and placed under protection as a sanctuary, but to design and build it as a part of the largest mural wall in the world is a unique architectural endeavour.

Placement of the Pigeon Houses

Based on the research, the placement of these miniature structures in this specific location might have provided a two-fold advantage. First, it might have provided a good opportunity for broadcasting the royal narrative of divine rule based on the Solomonic model of kingship and secondly, it must have offered a safe location for the bird abodes that were out of range from predators. The choice of placement of the pigeon houses on the picture wall of the citadel seems not just symbolic but a literal representation of the animal's gaining protection under the watchful eye of the emperor as these structures are positioned right under the building known as "khwabgah-e-Jahangiri (The sleeping chamber of Emperor Jahangir) (Figure 39).

Restoration of the Pigeon Houses:

As a part of the ongoing restoration works on the picture wall of the Lahore fort, the pigeon houses have been restored to their original form using Vogel's documentation as no other documented record of these structures exists. The exposed holes and partially damaged pigeon houses have been restored by The AGA Khan Trust for Culture. The materials used in their restoration are similar to those used for the original construction (Figures 40 and 41). The decision to keep the structures functional helped revive the role of the Picture Wall as a living sanctuary. The restored structures have been re-occupied by the local pigeon population enabling the picture wall to continue to serve one of its intended purposes.

Conclusions and Recommendations

The Mughals were masters of using the architectural craft to create narratives, they took cues from regional and cultural practices to create a unique architectural expression. This research has attempted to unfold the possible reasons behind the making of a unique architectural endeavour that has its roots in the religious and cultural context. A result of the absorption of ideas based on the long-standing traditions of developing altruistic relationships with the local fauna. The Picture wall of Lahore Fort is the only one-of-its-kind having examples of avian-micro architecture found on a Mughal monument in the city of Lahore. The wall serves as a 1450 feet long living sanctuary for the local avian population with

Figure-40: Image showing a prototype for restoration of the pigeon houses developed by AKTC for the Picture wall .
Source: Author

Figure-41: Image showing a restored type 3 pigeon house.
Source: Author

pigeon houses built into it. The evidence discussed in this article suggests that due to the lack of research done on the subject, the projecting structures had long been seen as miniature balcony windows and loopholes or as just a part of the aesthetic scheme of the picture wall by the previous scholarship. This article has aimed to present a multidimensional point of view for looking at the monumental project as having layers of sublime and at times obvious meanings. The pigeon houses add layers of meanings to the purpose of the picture wall as a medium to broadcast subtle narratives to its viewers. The pigeon houses are in a sense three-dimensional living paintings alongside their two-dimensional tile mosaic counterparts on the wall. Perhaps these structures on the Picture Wall of Lahore Fort were seen as an opportunity to use birds as architectural ornaments that live and breathe. The choice of location, the placement of the structures, and a deep understanding of the needs of the avian friends of the court are the reasons the sanctuary is habitable to this day. What makes it different from other examples of birdkeeping is that there is no concept of possession, the birds were free to come and go as they will and are free to do so even today. Their mesmerizing beauty, melodious sounds, and the one thing man has forever longed to achieve; flight, makes them essential components for getting a step closer to representing the visions of the emperor's divine dominion on earth. The picture wall continues to serve its role as a living sanctuary housing hundreds of birds despite being located next to Iqbal Park, one of the largest parks in Lahore. It serves as an exemplary display of ecological sensitivity and inclusion into the practice of designing our built environments to date and in the future.

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