



Urban Planning and Architectural Organization of the Harappan Civilization through Analysis of Houses, Public Buildings and Industrial Establishments

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ABSTRACT

This research paper looks into urban planning and architectural organization of the Harappan civilization through the analysis of their houses, public buildings and industrial establishments. Standardized building technique, spatial zoning, drainage systems and crafts sectors are some of the aspects stressed on in this analysis. The examination of granaries, dockyards, workshops and workers quarters sheds light into the central administrative system and the socio-economic organization of the Harappans.

Aim of the Research Paper

- To examine the urban planning system of the Harappan Civilization through the study of residential, public, and industrial architecture.
- To analyses the structural features and spatial organization of houses, public buildings, and industrial complexes.
- To understand the socio-economic structure of Harappan society through domestic architecture and housing patterns.

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- To assess the role of public buildings such as granaries, dockyards, and workshops in the administrative and economic system.
- To trace continuity and change in architectural planning from the Early to the Mature Harappan phases.
- To provide a contextual framework for comparing Harappan urban planning with other early urban civilizations.

Methodological Aspects:

- The study employs a descriptive and analytical approach based on archaeological evidence to examine Harappan houses, public buildings, and industrial complexes.
- A comparative analysis of major Harappan sites is used to identify patterns of urban planning, standardization, and regional variation.
- Architectural and spatial data are interpreted through an interdisciplinary framework combining archaeology, history, and socio-economic analysis.

Theme Elaboration

The Harappan Civilization's urban settlements had an organized and segregated layout where different sectors like the citadel and the lower town existed in the city. Within these sectors, planned building blocks were also observed. Various types of housing units of different designs, sizes, and purposes existed in these blocks, depending on the social status and functions of the people living there. The citadel mainly consisted of grand or elite housing structures, which included residences and administrative buildings belonging to the ruling class, while the lower town provided shelter to common citizens. Besides the housing units, there were various economic facilities like warehouse, dockyard, and bead manufacturing centers existing at some sites, which show how closely linked urban housing was with business in those days.

General Layout

Harappans exhibited extraordinary expertise in civil engineering and urban planning, and they made their cities following a grid plan that seems similar to modern urban planning. Houses were mostly built on both sides of streets or alleys. However, the entrance of the houses opened on the alley side, probably to maintain privacy and avoid overcrowding. A common Harappan house included two to five rooms along with a kitchen, bathroom, verandah, and courtyard. Some houses had latrines or privies in them.

Ordinary homes were constructed by mud or sunbaked bricks, and sometimes baked bricks and stones were used for more prominent buildings. More elaborate and larger houses were meant for wealthy citizens, whereas the poorer section resided in humble abodes or in dwellings built in pit form.

Excavations in the DK Area of Mohenjo-Daro have revealed a well-protected and architecturally sophisticated house consisting of four rooms arranged around a central courtyard. The main doorway, measuring approximately 4 feet 10 inches in width, opened into a lane. A staircase, about 3 feet 9 inches wide, suggests that the structure was double-storied. One large room was subdivided by an internal wall that was not interlocked with the main walls, indicating a later modification. The discovery of five basin-like depressions on the floor—constructed with wedge-shaped bricks arranged in a circular pattern—suggests the placement of large storage jars. This structure has been interpreted either as a large family residence or as a space associated with refreshment or storage. A hearth located in the south-eastern corner of the courtyard indicates that cooking activities were conducted in the open area.

Another house situated on the First Street featured a doorway 3 feet 6 inches wide opening onto a well-laid paved floor protected by a wainscot on three sides. Near the entrance, an aperture connected to a soak pit in the main street formed part of an efficient drainage system. One of the rooms measured approximately 16 feet 9 inches by 15 feet 2 inches and contained a centrally placed circular depression lined with wedge-shaped bricks. An open pit near the north-eastern corner was connected to a covered drain, highlighting the emphasis on water management.

A tall structure in the DK Area, reused during a later phase, was constructed with a pavement of burnt bricks of standardized dimensions. The absence of direct inter-room communication suggests that this building was not residential in nature and was more likely used as a storage facility. A well-preserved room located in the south-western corner of a large courtyard measured about 11 feet 10 inches by 7 feet 9 inches and was accessed through a narrow doorway from an adjoining room. The presence of doorways opening both into the building and onto the lane indicates that the well associated with this structure served both private and public purposes.

At Daimabad, houses were primarily constructed of mud walls, resulting in poorer preservation. One such house measured 4 meters by 2.6 meters, with walls approximately 30 centimetres thick. A circular hearth of about 50 centimetres in diameter points to the presence of a kitchen, while an open space to the south and a reddish-brown mud-plastered floor suggest functional domestic planning. The room, built with mud bricks measuring $32 \times 16 \times 8$ inches, appears to have been used mainly for sleeping. Another modest house at Daimabad, measuring 6.3 meters north–south and 6 meters east–west, exhibited a simple plan and inferior

construction quality. Wastewater was discharged through a private drain into a large jar placed along the street wall, implying rudimentary sanitation arrangements. The nature of construction suggests that the occupants belonged to an artisan or lower socio-economic group.

At Chanhudaro, a house bounded by lanes on its eastern and southern sides was accessed through a southern entrance measuring approximately 3 feet 7.5 inches wide. One room measured about 7 feet 11 inches by 5 feet 6 inches, with walls constructed of mud bricks laid in the English bond technique and preserved up to a height of over 4 feet. Internal partition walls not bonded with the main walls again indicate later alterations. A small room located south of the verandah functioned as a kitchen. Another house at Chanhudaro, entered from the west, consisted of a room measuring 6 feet 10 inches by 5 feet 5 inches, built with mud bricks of varying sizes. The presence of a courtyard and the simplicity of construction suggest its use as an ordinary sleeping space.

At Lothal, a mud-brick house near Street 1 comprised a large verandah, two rooms, and a spacious hall. The discovery of burnt-brick fire altars indicates ritual or fire-worship activities in one room, while another served as a dwelling area. A bathing platform paved with mud bricks and connected to a public drain through an aperture reflects the integration of domestic architecture with civic sanitation. Another structure at Lothal, located south of Lane 3, was built on a raised mud-brick platform approximately 2 feet 6 inches high, serving as its plinth. The house measured 12 by 8 feet internally, with walls nearly 1 foot 10 inches thick. Subsequent phases saw internal partitioning and the addition of rooms. A circular mud enclosure plastered internally functioned as a base for a storage jar. Evidence of fire altars and ritual jars containing holy water suggests that parts of this house were used for religious purposes, possibly by a priest (Purohita), while other rooms served residential functions.

A simple mud-brick house in Block E, oriented along the north-west to south-east axis, consisted of three rooms and a verandah. Measuring approximately 28 by 48 feet, with average room dimensions of 8 by 8 feet and wall thickness of about 2 feet 3 inches, this structure was likely occupied by common residents. Another ordinary family house at Lothal was constructed on a 2 feet 6 inches high platform and consisted of three rooms. A notable feature was the use of ovoid terracotta balls and cakes in the flooring, compacted and plastered with mud, sometimes supplemented by potsherds to form a rudimentary concrete layer. The presence of post-holes suggests that the roof was supported by wooden posts in addition to mud-brick walls. Storage jars found in two rooms indicate the accumulation of surplus food grains, implying that the occupants were likely agricultural producers.

A substantial mud-brick residence was unearthed in Block E at Lothal, measuring approximately 56 feet east–west and 42 feet north–south. The structure was strategically enclosed by Street 8 to the north, Street 5 to the east, and Street 7 to the south, indicating its integration within the planned urban grid. The largest chamber of the house, measuring 36×26 feet, was accessed from Street 8 through a doorway five feet wide. A storage jar discovered on the mud-brick floor points to provisions for household storage. Adjacent to the northern wall, a brick-paved platform appears to have functioned as a bathing area, while a soakage jar embedded in Street 8 was employed to collect wastewater discharged from the house.

Notably, an ovoid mud-brick enclosure was constructed on a raised portion of the floor, measuring approximately 6 feet 6 inches along its longer axis and 4 feet along the shorter axis. The low enclosure wall, composed of mud bricks that had turned red due to prolonged exposure to heat, strongly suggests its use as a fire altar. This feature is indicative of ritualistic fire worship practiced by the occupants. The presence of five rooms within the house implies residence by a large joint family, for whom ritual observances formed an integral part of domestic life.

At Balu, excavations revealed a large multi-roomed house, one corner room of which measured 4.12×2.70 meters. The walls, built with five courses of sizable mud bricks ($72 \times 36 \times 12$ cm), were notably thick, measuring about 80 cm, signifying durability and permanence. The house was organized around an open courtyard, with access provided through a room located in the north-west. The presence of a well-built (pucca) drainage system reflects an awareness of sanitation and water management. At Kunal the early Harappan people lived in round pit but during Harappan phase they started to live in the houses which were constructed on ground. The people lived in square and rectangular houses. One or two rooms, kitchen, bathing platforms were there in most of the houses. The mud bricks, $13 \times 26 \times 39$; $11 \times 22 \times 33$; $9 \times 18 \times 26$; $11 \times 22 \times 44$; cms, were used in the construction of their houses.

Further evidence from Balu includes two- and three-roomed houses. In one such structure, walls were aligned in a north-west to east–west orientation, and the floor consisted of compacted mud lumps and broken bricks. Constructed with mud bricks measuring $36 \times 18 \times 9$ cm, this house yielded carbonized remains of wheat and barley near one wall, suggesting that its occupants were agriculturists engaged in grain production and storage. Another structure at Balu, preserved only partially with two standing walls, featured a stone-paved floor incorporating a stone quern. The reddish discoloration of the floor surface points to exposure to intense heat, likely caused by the placement of ovens or tandoors. Similar-sized mud bricks ($36 \times 18 \times 9$ cm) were employed in its construction, reinforcing uniformity in building materials.

In yet another house at Balu, clear evidence of fire-related activity was documented. An elliptical fireplace measuring approximately 169 cm in length and 96 cm in width was fashioned using baked and unbaked clay. The recovery of carbonized wheat, barley, and charred animal bones around the hearth suggests ritual or ceremonial activities rather than routine cooking. The floor, paved with stone querns and broken mud bricks, and the presence of six courses of mud-brick walls further emphasize the functional and symbolic importance of fire within domestic contexts.

At Farmana in Rohtak district, Haryana, a two-room mud-brick house was excavated. One room measured 4.35×4.35 meters, with walls averaging 62 cm in thickness, and featured a mud-brick paved floor. An adjoining smaller chamber, measuring 1×2.35 meters, was likely used as a storage room. Cooking activities appear to have been conducted in the courtyard. The bricks used in construction measured $30 \times 15 \times 7.5$ cm.

A significant residential complex was also discovered at Farmana, comprising as many as 21 structural units. The rooms varied considerably in size, ranging from small chambers measuring 2.55×1.35 meters to large halls measuring 13.60×7.40 meters. Wall thicknesses ranged between 34 cm and 80 cm, reflecting functional differentiation within the complex. Mud bricks of sizes $40 \times 20 \times 10$ cm and $34 \times 17 \times 8.5$ cm were commonly used. Some rooms contained central dwelling pits, while others had mud-brick paved floors. Hearth remains in several rooms indicate designated cooking areas. This complex bears close resemblance to the architectural layout observed at Bhagwanpura in Kurukshetra district.

At Harappa, a well-preserved house from Mound F measured approximately 55 feet 4 inches north–south and 29 feet 3 inches east–west. The structure consisted of two rooms and a courtyard. One large room, entered through a narrow doorway 3 feet 3 inches wide, opened onto a courtyard measuring 22 feet 9 inches by 20 feet 6 inches, accessed from Lane 3 via a 4-foot-wide passage. The walls, about 1 foot 10 inches thick, were built of burnt bricks laid in mud mortar. Another spacious room at the northern end measured 23 feet 2 inches by 16 feet 4 inches. This house is generally interpreted as the dwelling of workmen.

House I at Mound F represents a well-planned upper-class residence, carefully designed to segregate female quarters from other domestic spaces. A well, measuring 2 feet 9 inches in diameter, was located in the south-eastern corner and was accessible to both household members and neighbours. Rooms numbered 9 and 11 appear to have served as guest chambers, while others were reserved for family use. Two rooms designated for female occupants measured 16 feet 8 inches by 12 feet and 12 feet by 8 feet 8 inches respectively. The central courtyard extended to a length of 43 feet 9 inches, underscoring the spatial emphasis on privacy and gendered domestic organization.

At Kunal, excavations conducted by J.S. Khatri and M. Acharya revealed distinct phases of habitation. During the Early Harappan period, inhabitants resided in circular, semi-subterranean pits lined with finely moulded mud bricks. Three such pits, with outer diameters of 2.92 m, 2.75 m, and 2.64 m respectively, were documented. These structures, approximately 1.12 m deep with mud floors, belong to the pre-Harappan phase. Brick sizes varied ($11 \times 24 \times 39$ cm; $10 \times 22 \times 37$ cm; $11 \times 23 \times 39$ cm), and construction employed the English bond technique with mud mortar.

In the Mature Harappan phase, habitation patterns shifted markedly from pit dwellings to ground-level square and rectangular houses. These structures typically included rooms, kitchens, and bathing platforms, built with standardized bricks laid in ratios of 1:2:3 and 1:2:4 (e.g., $12 \times 26 \times 39$ cm; $11 \times 22 \times 33$ cm; $9 \times 18 \times 36$ cm; $11 \times 22 \times 44$ cm). Both brick types were used concurrently by Sothi and Kot Diji cultural groups. Although modest in scale during the early stages, domestic architecture became more elaborate over time, accompanied by the development of external drainage systems.

At Banawali, evidence of systematically planned housing was recorded. Mud-brick houses typically comprised multiple rooms, kitchens, bathrooms, and courtyards, and were aligned along streets and lanes. One room featured a raised wash basin connected to a drain for wastewater disposal. Alcoves embedded within thick walls emerged as a distinctive architectural feature. Several houses contained fire altars, indicating ritual practices. Sun-dried bricks of various dimensions were used, broadly classified into smaller bricks ($24 \times 12 \times 6$ cm to $32 \times 16 \times 8$ cm) for residential construction and larger bricks ($40 \times 20 \times 10$ cm to $50 \times 25 \times 12.5$ cm) for defensive structures.

One exceptionally well-planned house at Banawali measured 52×46 meters and comprised eleven structural units arranged around a large open courtyard. The complex included a sitting area, bedrooms, a kitchen, a toilet, and a designated worship room, reflecting advanced spatial planning and multifunctional domestic organization.

At Kalibangan, houses were aligned along streets and lanes in both mounds of the settlement. A typical house consisted of a central courtyard with three to four rooms opening into it. Large entrances allowed the passage of bullock carts into courtyards, where rectangular troughs and large half-jars were used for feeding cattle. Roofing materials included wooden rafters, bamboo, and reeds, while floors were sometimes paved with tiles featuring intersecting circular designs. Fire altars were found in several houses, underscoring the ritual importance of fire. Construction employed English bond masonry with mud mortar, though underground street drains were notably absent.

Finally, at Surkotada, a house complex exposed west of the citadel abutted the main rampart and opened onto a lane. Isolated from adjacent structures on its northern and southern sides, the complex featured walls constructed of three to four courses of dressed stone masonry, averaging 60–70 cm in thickness. The architectural placement and masonry style indicate a structurally significant and possibly defensive or administrative residential unit. There were total 9 rooms in this house. Dressed stones and mud-bricks were laid in mud mortar. This is an example of a big house, perhaps it was used by some special authority. The houses in the citadel area were built over the platform and they were bigger in size than the houses in the residential area.

Commercial Complex

The geographical setting of the Indus Valley was highly conducive to agricultural production and surplus generation, which in turn formed the economic foundation of Harappan urbanism. In Sindh, agriculture relied largely on the fertile silt deposited by the seasonal monsoonal flooding of the Indus River. Mohenjodaro, situated in this region, lay within what is traditionally considered a rice-producing zone. In contrast, the regions corresponding to present-day Haryana, Punjab, and Rajasthan benefited from the Saraswati River system and its tributaries, which provided natural irrigation facilities. Owing to these favourable ecological conditions, the Harappan Civilization flourished in what may be described as the granary or breadbasket zone of north-western India.

Archaeobotanical and archaeological evidence confirms the cultivation of rice, wheat, barley, and cotton by the Harappans. Such evidence has been recovered from several major sites, including Harappa, Dholavira, Mohenjodaro, Lothal, Chanhudaro, Banawali, and Kalibangan. The existence of agricultural surplus necessitated organized storage facilities, and accordingly, structural remains interpreted as warehouses or granaries have been identified at Harappa, Mohenjodaro, and Lothal.

At Harappa, a massive granary was discovered on Mound F, strategically located near the ancient course of the Ravi River. The structure was divided into two distinct blocks; eastern and western—each comprising six rectangular units. Every unit measured approximately 51 feet 9 inches in length and 17 feet 6 inches in width and was separated by corridors that ensured adequate air circulation. The corridors between the units measured about 5 feet 6 inches in width, while a wide passage of nearly 24 feet separated the two blocks, facilitating vehicular movement for the transportation and storage of grain. Approximately 270 meters south of the granary, eighteen circular brick-built pounding platforms were uncovered. Each platform, about 3 meters in diameter, consisted of bricks laid on edge, with a central hollow designed to hold a wooden mortar for processing cereals.

At Mohenjodaro, the granary was located in the western sector of the citadel mound and covered an area of approximately 45 meters east–west and 22.5 meters north–south, rising to a height of about 1.5 meters. It was subdivided into twenty-seven rectangular or square blocks arranged in three rows of nine. While block sizes varied across rows, uniformity was maintained within each row. Narrow passages between the blocks facilitated ventilation, helping to protect stored grain in wooden superstructures from moisture. A loading platform to the north of the granary enabled the efficient handling of bullock carts during loading and unloading operations.

At Lothal, a large warehouse or granary was identified in Block C. The structure stood on a massive mud-brick platform measuring approximately 160×135 feet. This platform were twelve square bases, each measuring 12 feet on a side and about 3 feet high, arranged in three rows of four. Peripheral platforms on the southern and eastern sides were intentionally kept lower to function as earthen ramps, allowing easy access from the dockyard to the east and the agricultural fields to the south. The intersecting passages between the bases, each about 4 feet wide and originally paved with burnt bricks, facilitated ventilation and the movement of labourers. The proximity of this warehouse to the dockyard highlights its role in maritime trade, with surplus grain likely exported through sea routes.

Archaeological evidence further indicates that the Harappans maintained extensive trade networks with contemporary civilizations through both land and sea routes. The dockyards at Lothal and Goha provide strong testimony to maritime commerce. The dock at Lothal was originally connected to the sea through a natural channel. However, due to silting and changes in river courses during later phases, this connection was disrupted. To restore maritime access, authorities and merchant guilds appear to have financed the excavation of a canal—identified as the Bhogavo—to reconnect the dock with the sea. The dock, constructed to the east of the city, featured a massive mud-brick platform along its western bank, approximately 800 feet long and 64–72 feet wide, designed to facilitate the handling of cargo. Warehouses in Block B, located west of the dock, and were used for storing surplus goods meant for export. Although the original inlet was on the northern side, a later eastern inlet connected the dock to the canal, enabling the resumption of trade. Terracotta models of boats recovered from the habitation area further attest to the Harappans' advanced knowledge of boat-building and navigation.

In the Lower Town of Lothal, a large residential structure identified as a merchant's house was excavated. The house measured approximately 47 feet in length and 23.5 feet in width and consisted of two wings. The western wing comprised a verandah and three rooms, while the eastern wing included an additional verandah and two rooms. Behind the verandah were two large and two medium-sized rooms, while four

smaller rooms were located at the rear. Room sizes varied, with large rooms measuring about 8×9 feet, medium rooms 10×5 feet, and smaller rooms approximately 6 feet square. The verandah extended to about 40 feet in length. A soakage jar embedded in the street, with its rim lined in burnt bricks, served wastewater disposal. Access to the house was provided by a mud-brick step, and the entire structure was raised on a platform to protect it from flooding. The discovery of ceramics of foreign origin and other trade-related materials suggests that the occupant was likely a merchant or trader.

Another mud-brick house at Lothal, comprising a verandah and multiple rooms, was separated from a neighbouring structure by a narrow passage. One of these houses yielded broken pottery, two stone grinders, and a large shell, indicating its use as a place of worship. The walls, measuring about 43 cm in thickness, were constructed independently without interlocking, suggesting phased construction.

A medium-sized house measuring approximately 17×20 feet and consisting of four rooms was also excavated at Lothal. Built on a 2-foot-high mud-brick platform, the house had a main wall nearly 3 feet thick. Room sizes ranged from about 10×8.5 feet to 11×4 feet. A large accumulation of shells found in one of the front rooms, along with unfinished bangles and rejected shell cores, indicates that the house functioned as a workshop for shell ornament production.

Within the acropolis area, an important structure associated with industrial activity was identified. This house comprised three rooms, one of which contained a dyeing installation. Two jars were set at different levels on a small burnt-brick pavement measuring approximately 2×2 feet. Overflow from the larger jar was channelled into a smaller jar through a covered drain, reflecting careful planning for liquid management. This dye-house measured about 19 feet 6 inches by 21 feet and was constructed using both burnt and mud bricks, suggesting its use by lapidary artisans.

Another structure in the acropolis served a similar purpose. It consisted of a room measuring 10×7.5 feet and a verandah measuring 16×6 feet. Artefacts such as a sandstone saddle quern, a bulbous jar, and a large red-ware jar embedded in a burnt-brick pavement—possibly functioning as a dyeing vat—were recovered. Two jars containing fragments of elephant tusk further indicate craft activity, likely related to ivory working or ornament production.

A further mud-brick house in the acropolis featured a long verandah measuring 26 feet by 5 feet 3 inches along the street wall. The western room measured 24×15 feet, while the central room measured 12 feet 6 inches by 14 feet. A mud-brick fire altar in the central room points to ritual fire worship. Additionally, two dye-vat jars discovered in one of the rooms suggest that part of the house was used by dyers. A noteworthy

feature of this structure was the provision of a privy, formed by embedding a jar in a burnt-brick pavement and sealing it with stone. The bricks used in the dye-vats were plastered with lime, indicating technological sophistication and concern for durability.

Industrial Complex

A large and well-planned industrial structure was discovered in Block F at Lothal, representing one of the finest examples of organized craft production in the Harappan Civilization. The complex was centred around a rectangular courtyard enclosed by a mud-brick wall and surrounded by a double row of rooms on the northern and eastern sides. The entire structure comprised eleven rooms arranged around the central working area, which was accessed through a covered passage from the north-west. Externally, the courtyard measured approximately 38.5×23.5 feet and contained a raised mud-brick platform.

Two large jars embedded within this platform yielded crucial evidence for industrial activity: one contained nearly 600 finished carnelian beads, while the other held unfinished specimens. The surrounding rooms, varying in internal dimensions (such as 20×13 feet, 15×9 feet, and 10×6 feet), appear to have served as workshops, storage areas, and residential quarters for artisans. The careful spatial organization of workspaces, passages, storage facilities, and living quarters indicates a high level of architectural planning consistent with factory-like production. Archaeological finds—including agate and carnelian pebbles, finished beads, rejected cores, flakes, a flanged drill, and a kiln used for heating agate—clearly identify this structure as a bead-manufacturing centre. The scale of production suggests that Lothal was a major hub for bead manufacture, supplying ornaments to other Harappan settlements.

A bead kiln located near the factory further underscores the industrial character of the site. The kiln had an internal diameter of approximately 4 feet 2 inches, with a stokehole axis measuring about 8 feet 8 inches. The interconnected flues in the upper chamber facilitated uniform heat distribution, while fuel was introduced through the lower chamber. Heating softened agate pebbles, making them easier to shape and drill, thereby playing a vital role in bead production.

Evidence of metallurgical activity has also been recorded at Lothal. A mud-brick house on Street 1, measuring about 17×24 feet, consisted of two rooms and contained a furnace measuring roughly 2 feet 6 inches by 2 feet. The furnace was lined with burnt bricks placed vertically, and copper tools recovered from the site indicate that the building functioned as a coppersmith's workshop. An unusual architectural feature was the staggered alignment of walls leading to the furnace room, possibly intended to regulate airflow or restrict access. A niche built into the outer wall facing the street likely served as a lamp holder. Copper used

in this workshop was probably sourced from the Khetri mines of Rajasthan, and finished goods were distributed across different regions through trade networks.

At Chanhudaro, another important centre of bead manufacture, a small but carefully constructed room measuring approximately 9 feet 2 inches by 7 feet was excavated near the street. The room was entered from the east through a doorway 3 feet 3 inches wide, while a second, wider doorway on the opposite side had been sealed. Beneath this blocked entrance, a small aperture drained wastewater into a jar placed in the street. Along the north-western side of the room, a series of narrow flues were discovered, covered by a brick pavement that supported low partition walls. Although these features resemble a hammam-like heating arrangement, the absence of ash, furnaces, or evidence of high temperatures suggests only moderate heat usage. The presence of finished and unfinished beads strongly supports the interpretation of this structure as a bead factory. Chanhudaro thus emerges as a specialized craft centre whose products were widely distributed across the Harappan world. +A nearby room measuring 8 feet 9 inches by 7 feet 3 inches, located within a simple house and connected to both the street and an internal courtyard, was likely associated with the bead factory and may have belonged to its owner or overseer.

Workers' Quarters

At Mohenjo-Daro, a group of modest yet carefully constructed rooms has been identified as either storerooms or servants' quarters, possibly attached to a major administrative or elite structure. The uniform thickness of the walls and the precision of construction suggest official or state-controlled usage. Doorways ranged from about 2 feet 11 inches to 3 feet 5 inches in width, and mud bricks of standardized sizes were employed. One room contained a small bin, likely used for waste disposal and periodically cleaned by designated workers. Another room featured a staircase with well-defined treads, indicating that the building was double-storied. The proximity of these rooms to a palace-like structure and their layout resemble modern arrangements in which guards' rooms and servants' quarters are placed near elite residences.

At Harappa, distinct workmen's quarters were discovered to the north of the citadel. These quarters were arranged in two parallel east-west rows, separated by a narrow lane. Each unit consisted of a small courtyard at the front and a room at the rear, with entrances set at an oblique angle to ensure privacy. The entire complex was enclosed by a compound wall built of mud bricks, reflecting planned residential accommodation for labourers associated with major construction or administrative activities. Additional modest houses at Harappa were built on raised mud platforms and typically consisted of two rooms and a courtyard. These simple dwellings, accessed directly from lanes, were constructed entirely of mud bricks and were likely occupied by common people or workers.

Exclusive Buildings

While Harappan settlements shared common features such as grid-pattern streets, standardized drains, and uniform housing, certain cities possessed exclusive or monumental structures that served specialized functions and symbolized urban sophistication. These included warehouses, dockyards, assembly halls, the Great Bath, and other distinctive public buildings.

(i) Mart (Marketplace)

Marketplaces or marts functioned as designated areas for the exchange of surplus goods produced by artisans and farmers, including pottery, bangles, and jewellery, tools, and food grains. Archaeological evidence of such commercial spaces has been identified at Mohenjodaro, Banawali, and Lothal. At Mohenjodaro, brick-built platforms approximately 4 feet 6 inches wide were found along First Street; their thin outer walls suggest that they functioned as display benches for goods rather than enclosed shops. Similarly, Street 1 in the Lower Town at Lothal, flanked by commercial houses, appears to have served as a market street. Comparable platforms at Banawali further support the existence of organized market areas within Harappan cities.

(ii) House of Pilgrims

A remarkable rectangular structure was uncovered in the G area of Mohenjo-daro, measuring approximately 216 feet in width and 76 feet in length. The building was accessed through a broad doorway nearly 15 feet wide, opening onto a narrow lane. Its scale and layout distinguish it from ordinary residential buildings. Although Sir John Marshall and E.J.H. Mackay initially considered the possibility of a temple, the absence of cult objects or shrines weakens this interpretation. A. Ghosh and A. Khan instead proposed that the structure functioned as a hostel or rest house for pilgrims, travellers, priests, or students. It may have served as a centre for instruction or temporary residence, reflecting the social and institutional complexity of Harappan urban life.

References

Agrawal, D.P. (2007), *The Indus Civilization an Interdisciplinary Perspective*, Aryan Books International, New Delhi.

Allchin, Bridget and F.R. Allchin. (1982), *The Rise of Civilization in India Pakistan*, Cambridge University press, Cambridge.

Bhan, Suraj (1976), *Transformation of Harappa culture in Haryana*. In *Archaeological congress and seminar 1972* (Ed) Udai Vir Singh: Kurukshetra University Kurukshetra.

Bisht R.S.(1987), *Further Excavation at Banawali 1983-84* in B.M. Pandey and B.D. Chattopadhaya (eds), *Archaeology of History*.

Bisht R.S. (1984) *Structural Remains at Banawali*, In S.P. Gupta and B.B. Lal, in *Frontiers of Indus civilization*.

Chakrabarti, D.K. (1995), *The Archaeology of Ancient India cities*, Oxford, New Delhi.

Joshi, J.P. (1990), *Excavation at Surkotada 1971-72 and Exploration in Kutch*, New Delhi.

M. Acharya (2008), *Kunal Excavations*, Deptt. Of Archaeology & Museum Haryana

Mackay E.I.H. (1998), *further excavation at Mohenjodaro*, A.S.I., New Delhi.

Mackay E.J.H. (1976), *Excavation at Chanhudaro*. Bharatiya Publishing House, Varanasi.

Marshal, John. (1931), *Mohenjodaro and Indus civilization*, vol. 3, Arthur Probsthain, London.

Rao, S.R. (1979), *Lothal and Harappan Port town 1955-62*, vol. 1, A.S.I., New Delhi.

Shukla, S.P. (1997), *Form of the Harappan civilization as Revealed from the Excavation at Balu, Haryana*.

S.A. Sali (1986), *Diamabad (1978-79)*, *Archaeological Survey of India*.

M.S. Vats (1974), *Excavation at Harappa*, *Archaeological Survey of India*.

Lal B.B. (1997), *The Earliest civilization of South Asia*. Aryan Books International, New Delhi.

Lal B.B. and Joshi J.P. (2003) *Excavations at Kalibangan*, *Archaeological Survey of India*.

Joshi J.P. (2008), *Harappan Architecture and Civil Engineering*, Rupa & Co.

Rao S.R.(1991) *Dawn and Devolution of Indus Civilization*, Aditya Prakashan, New Delhi.

Vasant Shinde, T. Osada, A Uesugi and Manmohan Kuma (2008), *A Report on Excavation at Farmana 2007-08*, *Linguistic, Archaeology and The Human Past*, occasional paper 6, Indus project Kyoto, japan.

Vats, M.S. (1940), Excavation at Harappa, vol.2, Government of India, Delhi.

¹ E.J.H. Mackay E.I.H (1998), further excavation at Mohenjodaro, p. 103.

¹ Ibid, p. 63.

¹ John Marshal (1931), Mohenjodaro and Indus civilization, vol. 3, p. 77.

¹ Ibid, p. 55.

¹ S.A. Sali (1986), Diamabad (1978-79), p. 88.

¹ Ibid, p. 89.

¹ E.J.H. Mackay (1976), Excavation at Chanhudaro, p. 42.

¹ Ibid, p. 44.

¹ S.R. Rao, (1979), Lothal and Harappan Port town 1955-62, vol. 1 p. 105.

¹ Ibid, p. 116.

¹ S.R. Rao, (1979), Lothal and Harappan Port town 1955-62, vol. 1 p. 90.

¹ S.P. Shukla (1997), Form of the Harappan civilization as Revealed from the Excavation at Balu, Haryana, p. 10.

¹ M. Acharya (2008), Kunal Excavations (New light on the origin of Harappan Civilization), p. 10

¹ Arun Kesarwani (2002), Excavation at Balu, p. 18.

¹ Ibid, p. 23.

¹ S.P. Shukla (1997), op.cit, p. 9.

¹ Vasant Shinde, T. Osada, A Uesugi and Manmohan Kuma (2008), A Report on Excavation at Farmana 2007-08, Linguistic, Archaeology and The Human Past, occasional paper 6, p.29.

¹ Ibid, p. 35.

¹ M.S. Vats (1940), Excavation at Harappa, p. 63.

¹ Ibid, p. 131.

- ¹ M. Acharya (2008), Kunal Excavations, p. 8.
- ¹ D.P. Agrawal (2007), The Indus Civilization an Interdisciplinary Perspective. P. 88.
- ¹ M. Acharya (2008), op. cit, p. 10.
- ¹ R.S. Bisht (1987), Further Excavation at Banawali 1983-84 in B.M. Pandey and B.D. Chattopadhyaya (eds), Archaeology of History, p. 146.
- ¹ R.S. Bisht (1984) Structural Remains at Banawali, In S.P. Gupta and B.B. Lal, in Frontiers of Indus civilization, p. 95.
- ¹ J.P. Joshi (2008), op. cit, p. 105.
- ¹ B.B. Lal and J.P. Joshi (2003) Excavations at Kalibangan, p. 53.
- ¹ J.P. Joshi (2008), op. cit, p.107.
- ¹ B.B. Lal (1997) op. cit, p.46
- ¹ M.S. Vats (1974), Excavation at Harappa, p. 19.
- ¹ J.P. Joshi (2008), Harappan Architecture and Civil Engineering, p. 109.
- ¹ B.B. Lal (1997) op. cit, p.114.
- ¹ Ibid, p.108.
- ¹ S.R. Rao (1979), op. cit, p. 126.
- ¹ Ibid, p. 132.
- ¹ S.R. Rao (1979), op. cot, p. 91.
- ¹ Ibid, p. 94.
- ¹ S.R. Rao. (1973), op. cit, p. 96.
- ¹ Ibid, p. 98.
- ¹ S.R. Rao. (1973), op. cit, p. 108.
- ¹ S.R. Rao. (1973), op. cit, p. 111.

¹ S.R. Rao. (1973), op. cit, p. 118.

¹ S.R. Rao. (1973), op. cit, p. 120.

¹ Ibid, p.95.

¹ E.J.H. Mackay (1976) op. cit, p.42.

¹ E.J.H. Mackay (1976) op. cit, p.69.

¹ B.B. Lal (1997), The Earliest civilization of South Asia, p. 112.

¹ S.R. Rao (1991) Dawn and Devolution of Indus Civilization, p. 43.

¹ E.J.H. Macky (1998), op. cit, p.28.

¹ S.R. Rao (1979), op. cit, p. 55.

¹ E.J.H. Mackay (1998) op. cit, p.42.