

READING URBAN FORMS IN HISTORIC CAIRO: A DIACHRONIC TYPOLOGICAL APPROACH INTERPRETING THE RAB ‘A AL-TAB- BĀNA AND RELATED RESIDENTIAL FORMS ACROSS THE *LONGUE DURÉE*

MANLIO MICHIELETTO
GERMAN UNIVERSITY IN CAIRO

ABSTRACT

Historic Cairo presents a multilayered urban fabric shaped by successive processes of addition, adaptation and reuse. This paper offers a diachronic, multi-scalar reading of its residential forms through five key typologies: the Rab ‘a (row house), represented by the case study of Rab ‘a al-Tabbāna; the wikāla (caravanserai); the Ottoman courtyard house; the Ottoman block house; and the early twentieth-century apartment block. Drawing on typological–processual analysis and archival studies of the Ra ‘a tradition, the paper examines how these types articulate the relationships among territorial conditions, commercial axes, and fine-grained urban tissues, emphasising the long-term persistence of specific architectural features and metropolitan patterns that define Cairo’s *longue durée* urban identity.

Communication: Manlio Michieletto E-mail: michieletto.manlio@guc.edu.eg
FORMA CIVITATIS: International journal of urban and territorial morphological studies
(IJUTMS), Vol. 5, N. 1, 2025. ISSN print: 2748–2812. ISSN online: 2748–3134.
ISBN 978 3 933713 74 2. www.formacivitatiss.com.

Introduction

Reading urban form requires viewing the city as a palimpsest shaped by long-term processes of construction, transformation, and re-signification. Urban structures evolve through successive layers that add new functions to earlier spatial logics, creating complex landscapes where permanence and change coexist. Historic Cairo epitomises this condition. Located between the Nile floodplain and the Muqāṭṭam escarpment, the city has expanded and adapted over the past millennium, maintaining notable continuity of typological forms within its dense fabric. This paper contributes to the broader theme of interpreting urban forms by analysing Cairo's residential and mixed-use typologies through a diachronic, multi-scalar perspective rooted in urban morphology. Central to this study is the Rab'a, a distinctive form of collective row housing. The Rab'a al-Tabbāna, chosen here as the primary case study, offers one of the clearest surviving examples of this building type. Its organisation, development phases, and its relationship to the surrounding urban fabric closely match the characteristics identified in historical analyses of Rab'as, illustrating that the type constituted a stable yet adaptable housing model between the fifteenth and nineteenth centuries. Alongside the Rab'a, four other typologies are mentioned: the wikāla (caravanserai), the Ottoman courtyard house, the Ottoman block house, and the early twentieth-century apartment block. Each reflects a distinct

Figure 1. Plan of the Rab'a al-Tabbāna showing the elongated plot structure, the alignment of shops and storage spaces along the street frontage, and the arrangement of upper-level duplex and triplex units accessed via embedded staircases.



response to Cairo's territorial conditions, socio-economic structures, and climatic constraints. When analysed collectively, these typologies reveal how the city has addressed demographic growth, commercial expansion, and waves of administrative reform through processes of incremental densification, typological adaptation, and spatial continuity. The narrative progresses from the territorial setting to the urban structure of axes and nodes, then to the detailed tissues of plots and blocks, and finally to the internal logic of buildings. This approach enables interpretation of residential forms not as isolated architectural objects but as material outcomes of deeper spatial structures and historical processes that define Cairo's *longue durée* urban identity.

Methodology

This study adopts a methodological approach rooted in principles of urban morphology, combining diachronic analysis, typological–processual interpretation, and a multi-scalar reading of Historic Cairo. The aim is to understand how residential and mixed-use types – particularly the Rabʿa al-Tabbāna – have contributed to the formation, transformation, and endurance of the urban fabric over time. This approach builds on established morphological traditions, tissue formation, and town-plan analysis. The research begins with a diachronic investigation of Cairo's spatial development, utilising historical maps, cadastral surveys, *waqf* documents, and architectural drawings. The analysis of Ottoman-era Rabʿas provides a foundational framework for situating Rabʿa al-Tabbāna within a broader historical *continuum*, offering reconstructions of plan types, vertical arrangements, and functional programmes. Additional insights from studies of Mamluk and Ottoman residential compounds enhance this understanding of organisational patterns, circulation systems, and construction techniques. The analysis progresses across four interconnected spatial scales. The territorial scale – the Nile–desert threshold – defines the city's longitudinal orientation and influences the distribution of typologies. The urban scale includes primary commercial axes, religious-institutional clusters, and infrastructural transformations that structure Cairo's internal hierarchy. At the tissue scale, plot systems, block patterns, and micro-street networks are examined to demonstrate how residential and mixed-use clusters have developed through subdivision, amalgamation, and incremental densification. Lastly, the building scale concentrates on the internal composition of typologies, with particular emphasis on the Rabʿa al-Tabbāna as a representative

example of vertically layered collective housing. The method synthesises visual, textual, and morphological evidence. Plans, elevations, and sections – especially those related to Rab‘a al-Tabbāna – are compared with field observations and historical documentation. Features such as the repeated vertical stacking of duplex units, the use of embedded stair towers, and the organisation of circulation corridors (*majāz*) are verified through architectural drawings and prior scholarship. The triangulation of archival material, morphological analysis, and spatial reading enables a comprehensive interpretation of how typologies endure, adapt, and influence the broader urban fabric.

Territorial Scale: The Nile–Desert Threshold and the Spatial Foundations of Historic Cairo

Historic Cairo, defined by its spatial boundaries, has influenced settlement patterns since the early Islamic foundation of Fustāt and has continued to guide the city’s expansion for more than a millennium. The elongated corridor formed between the fertile alluvial plains and the rising desert plateau established the city’s fundamental north–south orientation. This territorial logic remains evident in its street networks, commercial routes, and the distribution of residential types (Hanna 1998). The location of Cairo’s historic core – slightly elevated above the floodplain – offered both protection from seasonal flooding and strategic access to river trade. As a result, the city’s early growth followed the Nile’s course, developing linearly rather than spreading laterally towards the desert edge. This longitudinal growth pattern shaped the development of the medieval city and influenced the placement of key residential and mixed-use areas during both the Mamluk and Ottoman periods. The Rab‘a typology developed mainly along commercial streets adjacent to the river and main trading routes. These areas supported mixed-use functions, where proximity to markets, artisans, and principal circulation routes was vital. The Rab‘a al-Tabbāna exemplifies this spatial logic: located in the Al-Darb al-Ahmar district, it sits at the intersection between the central commercial corridor and dense interior neighbourhoods, a position well-suited to a typology dependent on both economic activity and concentrated habitation. Other typologies also show strong links with territorial conditions. The *wikāla*, functioning as a caravanserai and trading depot, clustered near routes connecting Nile landing points with inland commercial districts (Al-Ghazzi 1986). The Ottoman courtyard house, by contrast, was situated in more sheltered interior areas, where privacy, climate regulation, and kin-based cluster-

ing were of utmost importance. In the nineteenth and early twentieth centuries, administrative reforms and infrastructural interventions – such as the opening of new boulevards extending towards the desert – facilitated the development of the Ottoman blockhouse and, later, the apartment block. Collectively, these patterns reveal that the territorial matrix of the Nile–desert interface has remained a key factor in shaping Cairo’s urban form. Studying the city at this level demonstrates how long-term environmental structures and infrastructural frameworks have influenced the localisation, development, and resilience of its main typologies.

Urban Scale: Axes, Commercial Networks, and the Position of the Rab‘a

At the urban scale, Historic Cairo is organised around a hierarchical network of commercial, religious, and administrative axes that regulate movement and establish spatial and functional zones within the medieval city. The most prominent of these is the north–south commercial spine—stretching from Bāb al-Futūḥ to Bāb Zuweila—centred along al-Mu‘izz li-Dīn Allāh Street. This axis, with its branching souqs and institutional complexes, has historically served as the main route for trade, pilgrimage, and civic life (AlSayyad 2011). Its central position explains the clustering of mixed-use buildings, commercial facilities, and high-density residential structures along its length. The Rab‘a typology was

Figure 2. Elevations of the Rab‘a al-Tabbāna demonstrating the vertical stacking of residential units, original state (below) and actual state (above).



developed directly in relation to this urban framework and situated along or near major commercial arteries. Rab‘as formed the “residential-commercial interface” of Ottoman Cairo (Raymond 1980). Their elongated façades, ground-floor shops, and upper-level residential units made them ideally suited for locations where living and working were closely integrated. The rhythmic bays, narrow vertical circulation shafts, and stacked apartments visible along the street elevation of Rab‘a al-Tabbāna illustrate this consistent alignment between typological form and urban function. The position of Rab‘a al-Tabbāna—embedded within the Al-Darb al-Ahmar district—demonstrates this logic. Situated between the central commercial spine and dense inner residential quarters, it occupies a high-accessibility zone while remaining close to artisan activities and neighbourhood services. Such an interstitial position reflects the broader principles of mixed-use urbanism that characterised Cairo during the Mamluk and Ottoman periods, in which commercial activity gradually decreased as streets narrowed and became residential alleys. Other typologies show similarly structured relationships with Cairo’s street hierarchy. The *wikāla* – serving as a caravanserai and trading depot – tended to cluster near significant commercial corridors and gateways, reinforcing its role in regional and international trade (Dabaç 2012). The Ottoman courtyard house, by contrast, was usually located within more private interior neighbourhoods, accessible through narrower, semi-public alleys that prioritised enclosure and climate control. Meanwhile, the Ottoman block house and early apartment block appeared along wider boulevards introduced during nineteenth- and early twentieth-century infrastructural reforms, responding to changing mobility patterns and new administrative priorities (El Kerdany 2001). Through this multi-typological analysis, the urban scale of Historic Cairo emerges as a system of organised intensities, where the distribution of building types closely corresponds to the hierarchy and function of the street network. The placement and form of Rab‘a al-Tabbāna within this framework reaffirm its role as a mediating element between commerce and residence, embodying a long-standing urban logic in which mixed-use buildings support the vibrancy and continuity of Cairo’s historic fabric core.

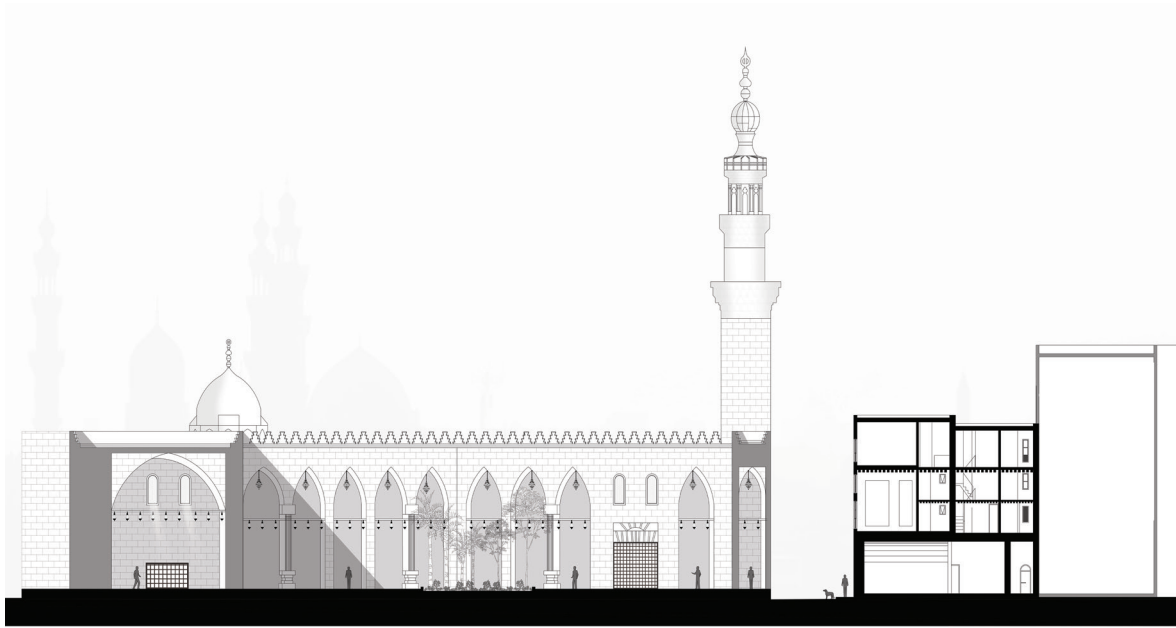
Tissue Scale: Plot Structure, Block Formation and the Internal Logic of Dense Urban Fabrics

At the tissue level, Historic Cairo is characterised by a fine-grained network of narrow streets, irregular block formations, and multi-layered plot structures shaped by long-term

processes of subdivision, accretion, and adaptive reuse. This level most clearly reveals the material processes through which typologies embed themselves within the built fabric and respond to changing social and economic pressures. Cairo's historic districts display remarkable consistency in plot boundaries and block geometries, aligning with broader morphological patterns seen in traditional Islamic and Mediterranean cities. Within this complex urban matrix, the Rab'a al-Tabbāna stands out as a clear example of how a mixed-use residential building navigates the constraints and opportunities of dense tissue (Bianca 2000). Its elongated plot, aligned along a secondary yet commercially active street, exemplifies the parcel geometries typical of Rab'as – narrow frontages maximising commercial exposure while extending deep into the block. This plot layout reflects long-established principles of urban growth in Cairo, where street-facing lots gradually deepen and multiply through cycles of subdivision and vertical intensification. The plan of Rab'a al-Tabbāna demonstrates these morphological principles. A row of ground-floor workshops and storage spaces fronts the street, while staircases embedded within the building's thickness provide independent access to upper-level units. This arrangement matches the typical organisation of Rab'as documented across numerous Ottoman-era examples. As in many historic Cairene neighbourhoods, the Rab'a underwent periodic modifications, with new units added, existing ones subdivided, or commercial spaces reconfigured in response to shifting economic and demographic demands. This capacity for evolution helps explain the persistence of the Rab'a type over several centuries despite changes in household structures, commercial rhythms, and urban regulations. Rab'a al-Tabbāna thus exemplifies the adaptive mechanisms that characterise Cairo's historic tissue: flexible plot structures, mixed-use deep parcels, vertical intensification, and a continuity of spatial rhythms that connect contemporary urban conditions to their medieval and early modern origins. These relational patterns shed light on why the Rab'a remains a legible and enduring element within the city's dense urban fabric, demonstrating the close relationship between typological form and the tissue's long-term logic.

Building Scale: Architectural Organisation and Vertical Accretion in the Rab'a al-Tabbāna

At the building level, the Rab'a al-Tabbāna reveals the architectural logic and typological resilience that define Cairo's tradition of collective residential structures. The Rab'a is distinguished by its vertical stacking of domestic units, integration



of commercial spaces at ground level, and carefully organised circulation systems. Its architectural composition—illustrated in the surviving elevations and sections—reflects a consistent spatial strategy, adapted to dense commercial environments, where upward expansion was preferred over lateral spread (Zakariya 2000). The core of the Rab‘a typology lies in its system of vertically arranged apartments. Like many Ottoman-era examples, Rab‘a al-Tabbāna organises its dwellings as duplex or triplex units, each accessed independently via staircases embedded within the building’s structural thickness. This approach maximises rentable surface area, preserves family autonomy within a collective framework, and aligns with the broader principles of incremental vertical densification characteristic of historic Cairo (Raymond 1993). The double-height *riwāq*—a signature element of Rab‘a domestic architecture—appears clearly in the sections, serving as both a principal reception room and a climatic device that facilitates cross-ventilation and daylighting (Hanna 1984). The internal organisation of circulation reflects a hierarchical logic designed for intensive use without compromising privacy. The circulation model directly contrasts with that of the introverted Ottoman courtyard house, where movement is organised horizontally around a central open space (Aran 2003). In the Rab‘a, the dominance of vertical circulation demonstrates a spatial economy suited to commercial districts characterised by deep plots and limited lateral expansion. The façade of Rab‘a al-Tabbāna exemplifies the typology’s extroverted and commercially responsive nature. Repetitive bays with large window openings orient the building towards the street, reflecting

Figure 3. Section of the Rab‘a al-Tabbāna demonstrating the double-height riwāq and the incremental accretion of upper floors over successive construction phases.

its integration into the urban marketplace. Traditional elements such as *mashrabiyya* screens, shuttered windows, and projecting timber balconies reinforce its vernacular identity, connecting it to broader Cairene architectural traditions documented by Fathy and others (Ragette 2003). Climatically, the stacked configuration creates shaded zones at street level while enabling upper floors to benefit from increased exposure to prevailing winds – anticipating environmental strategies later formalised in modern Cairene apartment blocks (Sims 2012). Structurally, Rab‘a al-Tabbāna employs load-bearing masonry walls, timber floors, and limited stone elements in stair construction, consistent with late Mamluk and Ottoman domestic buildings (Behrens-Abouseif 1992). This construction system facilitated the building’s capacity for vertical accretion. Over time, additional floors were added, window openings altered, and internal subdivisions introduced to meet shifting socio-economic demands. These cumulative transformations align with typological-processual interpretations of how buildings evolve within persistent urban frameworks. Rab‘a al-Tabbāna, with its multilayered

Figure 4. Exterior view of the Rab‘a al-Tabbāna in the Al-Darb al-Ahmar district, illustrating the rhythmic street façade, commercial ground floor.





Figure 5. Exterior view of the Rab'a al-Tabbāna in the Al-Darb al-Ahmar district, illustrating the last three units still standing.

construction history, stands as a material record of this adaptive process. Its enduring typological structure—verticality, mixed-use integration, and circulation clarity—has enabled it to remain recognisable across centuries of urban change, illustrating the capacity of Cairo's historic typologies to combine stability with transformation.

Conclusions

This paper explores the urban morphology of Historic Cairo through a diachronic, multi-scalar approach that highlights the influence of residential and mixed-use typologies in shaping the city's long-term spatial identity. By examining five key building types – the Rab'a, the wikāla, the Ottoman courtyard house, the Ottoman block house, and the early twentieth-century apartment block—the study shows how Cairo's urban fabric has evolved through processes of accretion, adaptation, and reinterpretation rather than rupture or erasure. This perspective aligns with broader morphological theories that emphasise the persistence of spatial structures and the development of typologies within stable territorial and tissue frameworks. Central to this analysis, the Rab'a al-Tabbāna emerges as a particularly instructive example. Its architectural form, vertical organisation, and integration with the surrounding tissue exemplify the traits that define the Rab'a typology across several centuries. The building demonstrates both typological stability – through

its durable spatial framework, distributive systems, and mixed-use logic—and ongoing transformation, as shown by its layered construction phases, evolving occupancy patterns, and adaptive capacity. Its survival in the densely populated commercial–residential district of Al-Darb al-Ahmar district highlights the lasting relevance of collective housing forms at the intersection of economic activity and domestic life. The comparison with other typologies reinforces a set of morphological principles that remain consistent throughout Cairo’s *longue durée*. The *wikāla* illustrates the city’s historical integration into regional trade networks; the Ottoman courtyard house demonstrates the persistence of introverted domestic organisation; the Ottoman block house and the apartment block reflect modern administrative and infrastructural shifts while still responding to long-standing urban logics. Across these examples, the continuity of plot systems, street hierarchies, and tissue structures provides the fundamental framework that allows typological transformation without compromising urban coherence. Understanding these patterns is vital for current conservation and urban renewal efforts. The city’s historic typologies reveal how mixed-use integration, vertical densification, climatic adaptation, and socio-spatial flexibility have contributed to the resilience of Cairo’s built environment. Future interventions should therefore engage with the inherited logics of the urban fabric rather than oppose them, recognising the city as a layered and evolving organism shaped by accumulated spatial practices. By analysing Historic Cairo through its typological sequences and morphological structures, this study adds to broader debates on urban evolution. It offers insights into how architectural forms—such as the *Rab‘a al-Tabbāna*—can inform sustainable and culturally grounded approaches to the future of historic cities.

References

- Abou-Lughod, J. (1971) *Cairo: 1001 Years of the City Victorious*. Princeton: Princeton University Press.
- Al-Ghazzi, H. (1986) 'The khan and wikala in Cairo', *Annales Islamologiques*, 22, pp. 165–186.
- AlSayyad, N. (2011) *Cairo: Histories of a City*. Cambridge, MA: Harvard University Press.
- Aran, I. (2003) 'The Ottoman house reconsidered', *Journal of the Society of Architectural Historians*, 62(3), pp. 315–337.
- Behrens-Abouseif, D. (1992) *Islamic Architecture in Cairo: An Introduction*. Leiden: Brill.
- Bianca, S. (2000) *Urban Form in the Arab World: Past and Present*. London: Thames & Hudson.
- Dabaç, N. (2012) 'Urban caravanserais in Cairo', *Muqarnas*, 29, pp. 199–224.
- El Kerdany, D. (2001) 'Modern housing in Cairo 1882–1967', *Cairo Papers in Social Science*, 24(3), pp. 1–45.
- Hanna, N. (1984) 'The administration of waqf properties in Egypt', *Journal of the Economic and Social History of the Orient*, 27(3), pp. 306–322.
- Hanna, N. (1998) *Making Big Money in 1600: The Life and Times of Isma'il Abu Taqiyya, Egyptian Merchant*. Syracuse: Syracuse University Press.
- Ragette, F. (2003) *Traditional Domestic Architecture of the Arab Region*. Sharjah: American University of Sharjah Press.
- Raymond, A. (1980) 'The Rab': A type of collective housing in Cairo during the Ottoman period', *Annales Islamologiques*, 16, pp. 55–72.
- Raymond, A. (1993) *Le Caire*. Paris: Fayard.
- Sims, D. (2012) *Understanding Cairo: The Logic of a City Out of Control*. Cairo: American University in Cairo Press.
- Zakariya, A. (2000) *Al-Rab'at al-'Uthmaniyya fi al-Qāhira*. Cairo: General Egyptian Book Organisation.