

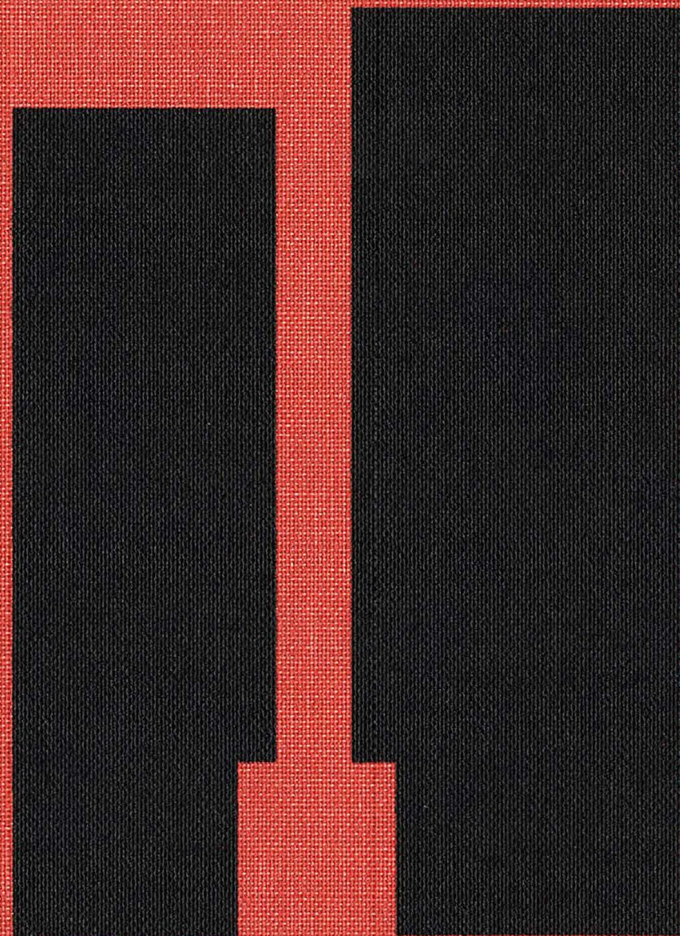
Home to 20 million people and still growing, Greater Cairo mirrors the global phenomenon of unplanned urban growth. Approximately 60 percent of the population of Africa's biggest city lives in so-called informal housing, typically five-to-ten-story concrete-and-brick-infill structures built without permits in the desert or on former agricultural land. *Housing Cairo: The Informal Response* illuminates the architecture of informality and its mechanisms of production through a series of theoretical essays and architectural design proposals.

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HOUSING CAIRO



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Fig. 1: Early informal construction in Bulaq (1980s)

A NEW VERNACULAR Typology, Construction, and Aesthetics

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The social cohesion, familial ties, and close relationships between the inhabitants of informal settlements give rise to a clustered low-rise, high-density housing form similar, in many aspects, to the traditional old city and village housing forms.

Hisham Amr Bahgat, *Housing Generation in the Informal Sector in Egypt* (Ann Arbor, Michigan: University Microfilms International, 1986), 192.

Informal housing production in Greater Cairo has developed into a self-produced, self-sufficient, and socially efficient new form of vernacular architecture. The informal buildings combine brick-and-concrete construction, rational typology, and morphological elements with multiple references. Investigating various architectures, from traditional dwellings in Cairo and in the surrounding countryside to buildings influenced by designs from the West and the Persian Gulf, one can outline the pedigree of their designs. Brick-and-concrete high-rise buildings have replaced traditional one-story, thick-walled solid constructions; new typologies, building methods, and aesthetics now characterize the architecture of informality.

The concept of "informal" is generally attributed to the economic anthropologist Keith Hart, who defines activities outside the framework of official institutions as the "informal economy."¹ He coined the term to define self-employment and casual labor in developing countries. Later, it evolved to describe today's slum areas and self-built constructions. Informal housing in Egypt refers to illegal constructions that violate zoning laws or building codes, a response to the government's failure to satisfy the housing needs of low-income Egyptians. In Arabic, these areas are referred to as *'ashwa'yyat*, meaning "disorganized", and by extension "unplanned." Informal housing areas first emerged in Egypt during the 1950s, due to economic and societal difficulties.² The phenomenon increased throughout the 1980s and 1990s, stimulating uncontrolled urbanization. Cairo's informal settlements have spread horizontally across four main categories of land: privately owned agricultural land, state-owned desert land, cemeteries, and core parts of historic Cairo (in the form of unregulated or illegal verticalization of existing buildings). The prevalent form of informality is the illegal conversion of agricultural land to residential use, in violation of land-use laws.⁴ While rural migration has brought to urban life village values that are influential to these communities,⁵ the architecture of informal

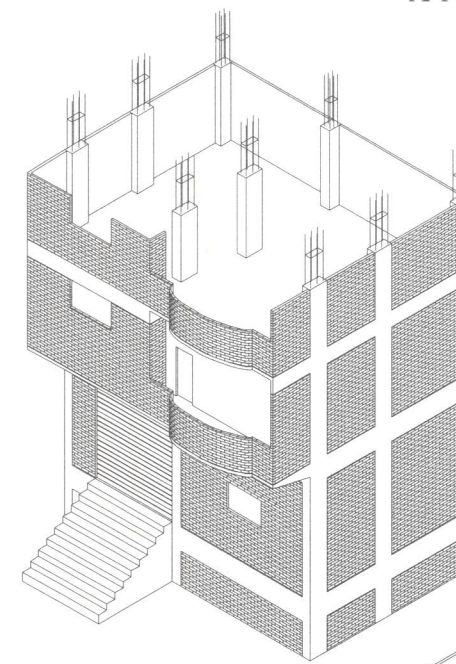
housing does not appear to originate in the Egyptian rural style. Brick-and-concrete buildings characterized by new materials and building methods have replaced the traditional thick-walled constructions. To a great extent, the style of the informal buildings appears to derive from formal constructions in Egypt or imported models.

The Typology of Informal Buildings

Plots are usually small, ranging from eighty to 150 square meters (a *qirat*). Buildings occupy the entire plot, with one facade facing the street and three blind, without setbacks. Recesses, notches, and shafts along the facades and in the interiors of the buildings were developed to provide natural ventilation and illuminate dark rooms. The shaft is a typological element found both in the old city and in nineteenth century Downtown Cairo, for light and ventilation purposes.

The researcher Hisham Bahgat identifies three basic housing types: the single-family dwelling of one or two stories (in Arabic, *bayt*), the multi-family residential building of three to six stories (*aimara*), and the tenement building, a form of collective affordable housing for low-income families (*rab'a*). This last type is a combination of diverse housing units grouped around a common passageway.⁶ Tracing the history of the collective phenomenon, David Sims also proposes a classification of informal buildings into three categories: the "village," the "classical informal," and the "tower." The first type, first observed in the 1950s and 1960s, mimics the vernacular countryside house. The second type, which emerged in the 1970s, is characterized by brick-and-concrete construction and is currently the dominant typology. The third type appeared recently (in the mid-1990s), with speculative one-off towers mainly on the fringes of Cairo.⁷ This classification takes evolving construction methods as its criteria. The village style and the classical informal respectively correspond to the *bayt* and *aimara* types. The typological evolution observed develops from the individual house to the recent "tower," from a village type to an urban dwelling. In the 1970s, single-house types evolved into multi-story apartment buildings through vertical expansion. A typical building's footprint varies from 75 to 125 square meters, with one or two small apartments per floor. The tower, which can be interpreted as the new *aimara*, has a larger footprint: 250 to 450 square meters, with larger apartments and more units per floor.⁸ Heights can reach fifteen floors.

Construction of Informal Buildings



The single-family house type (*bayt*) is the most frequent "first stage" families' opt to build in the road to incremental development. Its popularity and economic viability resulted in the horizontal expansion of informal settlements in the early and mid-1970s.

The multifamily building type (*aimara*) is an extension of the individual house type responding to the rising urban demand for dense and diverse land uses.

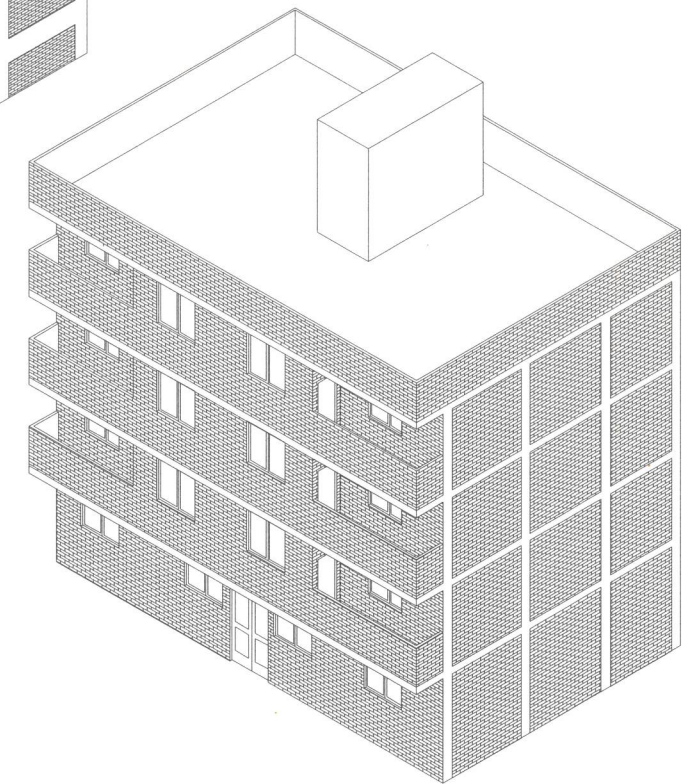


Fig. 2: The single-family house type (*bayt*)
Fig. 3: The multifamily building type (*aimara*)

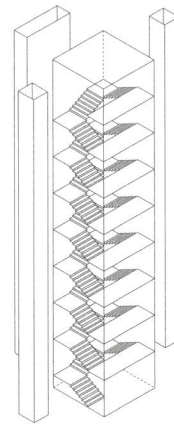
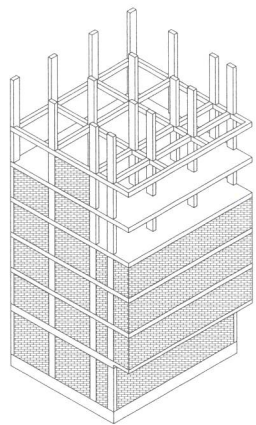
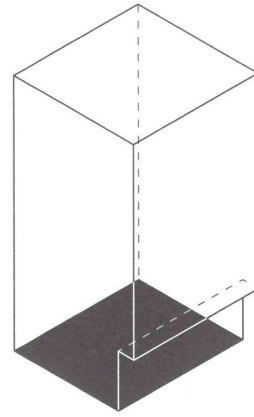
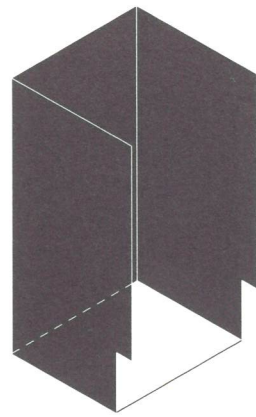


Fig. 4: Three blind facades and one street facade
 Fig. 5: Entire plot occupation, after deducting space for the street.
 Fig. 6: Concrete structure with brick infill
 Fig. 7: Ventilation shafts and single staircase

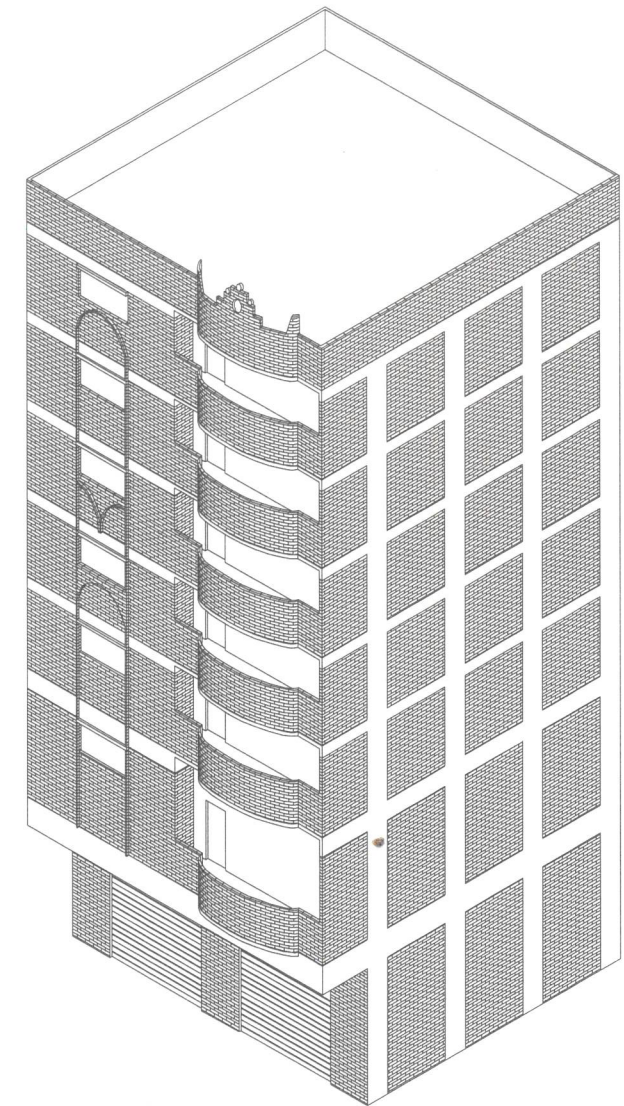


Fig. 8: The "tower" type is a one-off, large construction, unseen before the mid-1990s.



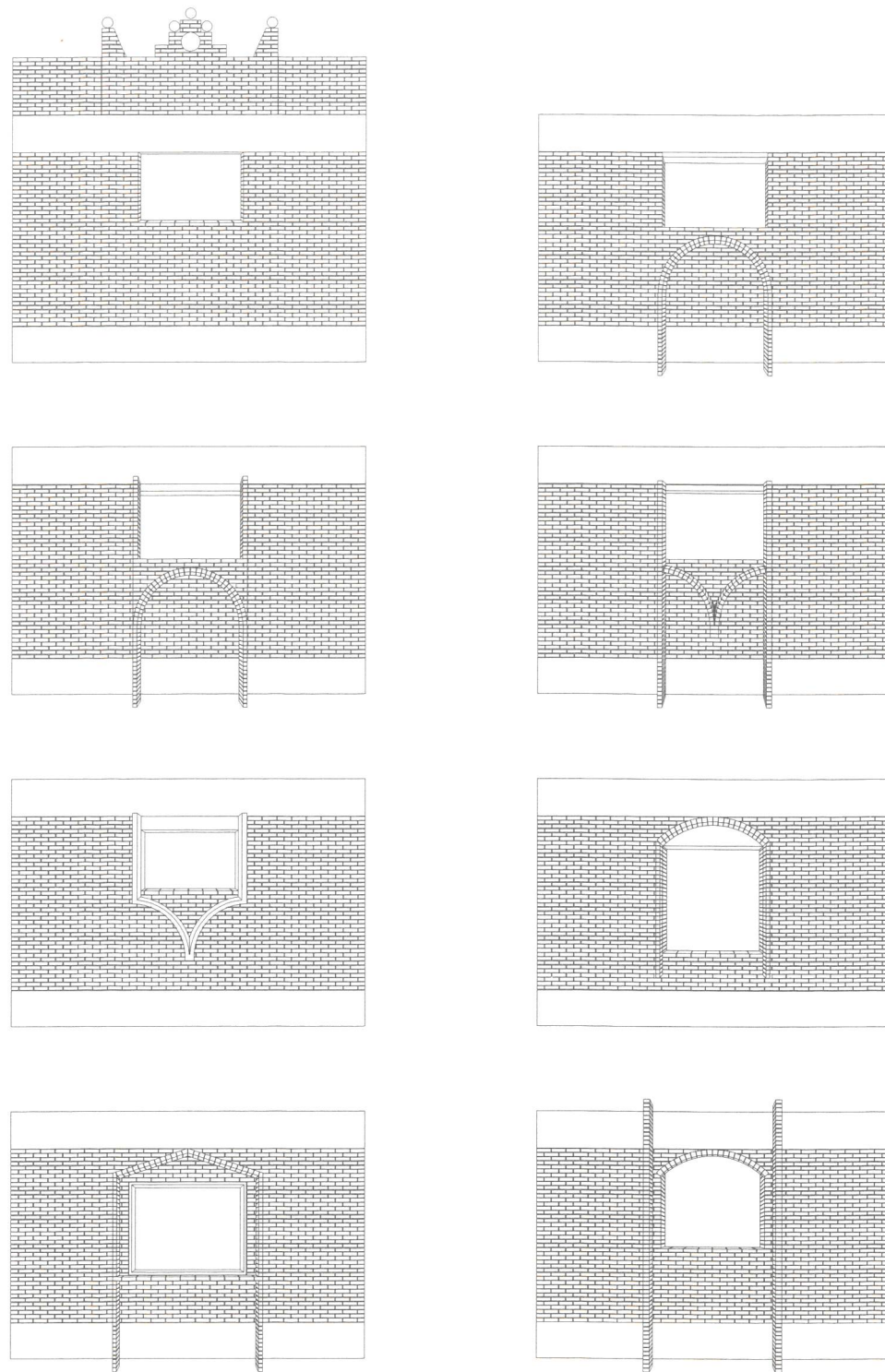


Fig. 11: Decorative elements of openings

Mud bricks, the most traditional and widely available building material in Egypt, are typically used for the construction of a *bayt*, along with various types of stone, sugar cane, and reeds. The structure is built of concrete with reinforced skeleton-type construction in the foundation, columns, beams, and roof slabs. For the taller buildings (*aimara*), reinforced concrete is the basic structural component.⁹ Beginning with one floor with a simple concrete grid, the structure is left open on the roof for further extension when the family (or its income) grows. Lately, larger investments have allowed the construction of large structures in one stage (the “tower”).

For the construction of a simple building, the owner-builder recruits *fa-wa'lia* (unskilled day-laborers) with traditionally acquired skills. For bigger structures, which required more advanced skills, a contractor may be hired.¹⁰ New construction knowledge originates in Europe and the Gulf States. The government also support learning centers and technical schools to educate construction workers to meet the demands of the private and public sector. Skilled workers returning from the Gulf States often started small-scale construction enterprises in informal neighborhoods.¹¹ Gradually, the use of concrete and brick percolated into informal housing construction methods.

Concrete construction was introduced to Egypt in the 1930s by foreign civil engineering firms undertaking public works.¹² Nowadays, the reinforced concrete frame—usually a four-by-four-meter grid system—with brick or concrete-block infill is prevalent for all informal housing types. Wall-bearing structures were formally brought to the Egyptian construction industry in 1995. Bricks are widely used, though the Egyptian government officially banned the use of mud bricks from Nile silt for environmental reasons.¹³ Debora Mackenzie, in her 1985 article “Egypt’s Great Brick Crisis,” claimed that “in 1980 the government asked the scientists to start looking into alternatives to red bricks ... when bricks began to run short, to import large brick factories from Europe, chiefly France.”¹⁴ At present, no silica or semi-silica refractory bricks are officially produced in Egypt, but large quantities are imported.¹⁵

The Aesthetics of Informal Buildings

The facades of the informal buildings present diverse openings, morphological elements, and ornamentation. Balconies, verandas, recesses, notches, and shafts along the facades characterize the distinctive image of the informal buildings. Characteristic facades are unfinished and red brick remains exposed. Interior walls are plastered and vividly colored. Ground fronts and verandas have roughcast or stone surfaces. At first glance, the facades of typical informal buildings appear unornamented. On closer observation, lintels, gables, cornices, balustrades, arched window bays, round balconies, and ornamental columns can be detected. These decorative elements mimic the facades of formal buildings. The craftsmen and their clients decide how to decorate the interior spaces and the facades, drawing inspiration from buildings in the city, villas in gated communities, or traditional rural houses. Ornamentation represents added value, especially for speculative buildings. The facades of the towers are plastered, brightly painted, and lavishly decorated, and there is “a strong demand from certain segments of the lower and middle classes for substantial housing units that are well-located within the city.”¹⁶

The new building types are an urban adaptation of the widespread brick-and-concrete construction tailored to the climatic, aesthetic, functional, and social needs of low-income Egyptians. There has been a typological evolution from the single-family house to the multi-story residential building. In parallel, the construction of informal buildings has evolved from the “village” type to the “classical informal” and “tower” type. Traditional construction skills have been enriched with imported building techniques from Europe and the Gulf States.¹⁷ Decoration of the buildings is a reflection of the users’ sensitivity and the skills of the craftsmen. These elements compose a new vernacular architecture at the immediate periphery of Cairo—vernacular because it is not produced by academically schooled architects, and relies on the taste and design skills of a community.

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- 5 Ibid., 143.
- 6 Ibid., 205.
- 7 Sims, David. *Understanding Cairo: The Logic of a City Out of Control*. Cairo: The American University in Cairo, 2011. 99-105.

- 8 Sims, *Understanding Cairo*. 105.
- 9 Bahgat, *Housing Generation*. 179-184.
- 10 Ibid., 186-187.
- 11 Ibid., 187.
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- 16 Sims, *Understanding Cairo*. 105.
- 17 See “Snapshots of Construction”, p.88