
Hassan Fathy Revisited: Postwar Discourses on Science, Development, and Vernacular Architecture

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Hassan Fathy Revisited

Postwar Discourses on Science, Development, and Vernacular Architecture

This article investigates an important, yet unexplored aspect of Hassan Fathy's work, namely his 1957–1961 collaboration with the prolific international firm, Doxiadis Associates. Focusing on Fathy's proposals for mass housing in Iraq and Pakistan, the article examines how the Egyptian architect recast his famous 1945 project of New Gournā in a new perspective, to calibrate his social and formal sensibilities according to Doxiadis's scientific and developmentalist ethos. The goal is to demonstrate that Fathy's thought was complexly intertwined with larger mid-twentieth century architectural debates on culture and modernity, and as such, it transcended any essentialist discourses of identity that often appropriated his notion of vernacular architecture.

Hassan Fathy's prototype for mass housing in Egypt attracted international attention when his book *Architecture for the Poor* was published in the United States in 1973—almost three decades after the project's construction.¹ The book, which initially appeared in 1969 under the title *Gournā, A Tale of Two Villages*, described the Egyptian architect's 1945 experiment to rehouse the inhabitants of Gournā, a village in Upper Egypt near Luxor. Funded by the Egyptian monarchy, the project proposed the collaboration of the architect with local craftsmen and the buildings' users, in order to revive premodern traditions of building with handmade, sun-dried mud bricks, and to provide an alternative to mass-produced, reinforced concrete housing projects. Fathy envisioned a new village of mud brick houses in quaint streets and squares that would become a prototype for economical and sanitary housing sensitive to rural lifestyles (Figure 1). Even though it aspired to revive peasants' pride, regenerate the Egyptian countryside, and provide the foundation for national reform, the project was interrupted before completion in 1948, and for years the Gourni refused to transfer to their new homes.

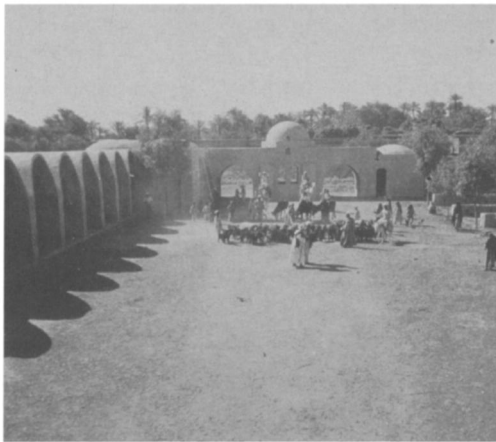
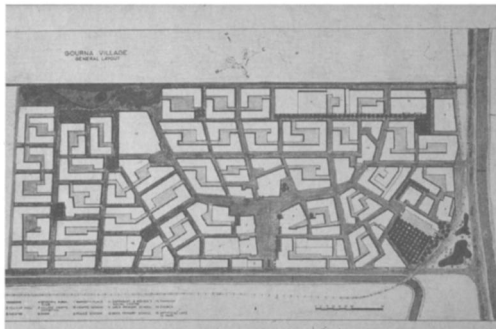
In his book, the French-educated architect presented New Gournā's failure as a sign of an

uncomprehending society, and many of his proponents would later repeat the same explanation, blaming antagonisms between locals and the bureaucratic establishment.² In all fairness, many reasons for New Gournā's failure went well beyond the architect's control and had to do with government miscalculations and land use inequalities.³ Nonetheless, the architect never recognized the paternalism of his claim to restore aesthetic qualities that the locals were incapable of appreciating and the hubris of his assumption that the villagers would willingly relinquish their own homes for a planned village.⁴ Fathy also ignored the ironies behind his homogenizing view of "Egyptian" building traditions that combined formal precedents and building techniques from diverse cultural provinces of Egypt—from the capital Cairo to the Nubian village of Gharb Aswan. Specifically, Fathy's key strategy to organize the house around a courtyard drew on spatial conceptions from Cairene residential architecture and had a very different reception among the rural population of Gournā, four hundred miles south of the Egyptian capital.⁵ Not only were courtyards rare in residences in Upper Egypt (they were seen as a luxury in an area where agricultural land was at a premium), they were associated with more utilitarian functions, as

places for work, washing, and raising animals—quite distinct from the secluded and serene outdoor places Fathy envisioned.⁶ Furthermore, Fathy's choice to roof the houses with mud brick domes, which drew on Nubian habits of building, proved just as unsettling for the local population, which associated domes with sacred spaces of mosques and mausolea.⁷

Rejected by the locals it was meant to benefit, New Gournā was given new life when Fathy's 1973 book appealed to an international audience as a refreshing alternative to high modernism and the faceless housing projects that were springing up around the world in its name. As the mindset of modernization came under increasing scrutiny for its universalizing assumptions and dehumanizing effects, mainstream architectural culture itself began to reconsider the status of nonwestern others, as a fresh source of wisdom. In this context, Fathy's ideas gained an altogether new appeal, and New Gournā became an icon of the timeless wisdom of age-old building traditions.⁸ The book's spectacular reception identified it as a pioneer in safeguarding local traditions and in reviving interest in indigenous building materials, and Fathy eventually received international recognitions, including the Aga Khan Award for Architecture and

1. New Gournā, master plan and photo of built parts (1945 and 1968). (Courtesy Hassan Fathy Archive and Papademos Archive.)



the International Union of Architects Gold Medal, and the status of an honorary fellow of the American Institute of Architects.⁹ Fathy effectively joined the ranks of Bernard Rudofsky and Paul Oliver, who celebrated indigenous, anonymous (what Rudofsky named “vernacular”) architecture; Victor Olgay and Ian McHarg, who advocated the adoption of architecture to local climate and natural energy sources; and John C. Turner, who advocated self-help housing as the key to the emancipation of the world’s poor.¹⁰ A few reviews expressed uneasiness with Fathy’s nostalgic tone in the book (Moshe Safdie, for instance, criticized Fathy’s romantic

insistence on a central village well that denied the basic convenience of running water) but they still hailed New Gournā as a “superb example” of “indigenous vernacular architecture.”¹¹ More recent reassessments in light of current debates credit *Architecture for the Poor* as being among the best “development handbooks of the 20th Century,” side by side with *Silent Spring* and *The Life and Death of American Cities*; others celebrate Fathy’s work as an exemplar of “sustainable architecture.”¹²

The legacy of Fathy’s book extends well beyond debates on building materials, self-help, and sustainability. By combining a powerful denunciation of Western Modernism with an intense valorization of cultural particularity, *Architecture for the Poor* also represented a broader rejection of colonialism.¹³ Fathy’s anticolonial spirit has often been appropriated by essentialist discourses of identity that chose to interpret the mud brick courtyard houses of New Gournā as timeless repositories of an Egyptian tradition, an Arab identity, or even Islamic symbolism.¹⁴ Fathy’s own rhetoric in the 1970s and 1980s reinforced these interpretations by framing his preferred forms and typologies in terms of notions of Arabism and Islamism.¹⁵ A younger generation of architects in the Middle East that claim Fathy as an inspiration (see, e.g., the work of Rami El Dehan, Abdul Wahed El Wakil, Rasem Badran, Omar El Farouk) pursue neotraditionalist strategies that often assume ethnic, cultural, or religious identities to be unified and coherent.¹⁶ Meanwhile, in the international scene, Fathy’s New Gournā has often been embraced as an early version of postmodernist historicism.¹⁷

Because Fathy’s work has been predominantly framed as a pioneering denunciation of modernism, many other intricacies of his thought have been obscured. To grasp the complexities of his career, however, it is important to recognize that, from the time Fathy launched his housing experiments in the 1940s to the time he gained inter-

national recognition in the 1970s, his thought traced a complex trajectory, defining a nuanced response to culture and modernity that cannot be explained away by essentialist identity politics or historicizing agendas. Most influential in shaping Fathy’s ideas was the four-year period between 1957 and 1961, during which he joined Doxiadis Associates, an international architectural and planning firm launching development projects around the globe. Operating in the midst of a development group, Fathy recast his social concerns in a global perspective, calibrating his formal sensibilities and design preferences according to Doxiadis Associates’ plans for mass housing.

This article examines this largely unexplored four-year period in Fathy’s earlier career, when he attempted to negotiate, rather than reject, the profession’s post World War II alignments with modernization and development discourses. This period in Fathy’s life, when he aligned himself with the technocratic and supranational preoccupations of a development firm, may appear paradoxical (and this is perhaps why current scholarship on Fathy overlooks this chapter of his life); yet, it is also crucial to grasping the complexity of his views on modern architecture. Because as he assumed the persona of a housing expert, Fathy agonized intensely about his region’s rapid cultural transformations that resulted from decolonization and accompanying agendas of nation building and modernization. In the process, the Egyptian architect designed numerous variations of housing that reflected an increasing, if ambivalent, fascination with scientific rationality, a selective consideration of local knowledge systems, and an intensified global awareness that led him to contemplate the supranational significance of his experiment in New Gournā. To revisit this chapter of Fathy’s life is not simply to shed light on a relatively unknown aspect of his work. Rather, it is to demonstrate how his notion of vernacular architecture, far from being antimodern or essentialist, attempted to actively

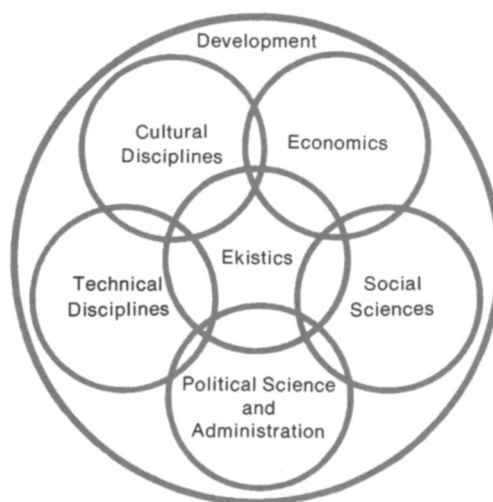
engage with mid-twentieth century debates about science, technology, regionalism, and postcolonial development.

Fathy and Doxiadis

Fathy joined Doxiadis Associates in 1957 after being recruited by the firm's founder, architect and planner Constantinos A. Doxiadis (1913–1975).¹⁸ Fathy welcomed the move to Greece since his career in Egypt seemed precarious at the time. The 1952 revolt that overthrew the Egyptian monarchy and established Gamal Abdel Nasser's socialist regime led Fathy—a member of the landowning class with royal affiliations—to choose what many members of his circle called a self-imposed exile.¹⁹ When he joined the firm, Doxiadis Associates was making its first steps as an international consultant on development. Doxiadis Associates' practice was premised on "Ekistics," a term coined by the firm's founder himself (derived from the Greek word "oikos," meaning "home") to signify "the science of human settlements." Much like Fathy's approach that sprung from wartime building resource shortage and postwar demands for social reform in Egypt, Doxiadis's vision also emerged from the circumstances of his immediate locale, namely, the pressing needs for postwar reconstruction and rehabilitation in Greece. Doxiadis initially conceived of Ekistics in the mid-forties, when he managed reconstruction efforts as a government official and later as the coordinator of the Marshall Plan in Greece, although by the mid-1950s he cast Ekistics in a global perspective.

Ekistics aspired to prescribe a comprehensive solution to the postwar demands for housing and social development. Influenced by postwar architectural debates in Europe and the United States that rejected artistic self-expression and reconceptualized architecture as an efficient container of human needs, Ekistics emphasized links with the social sciences, behaviorism, and operations research in an attempt to systematize the design process. Ekistics was particularly ambitious in its

2. Doxiadis's diagram, "Ekistics and Development," illustrating Ekistics' multidisciplinary ethos (1968).



comprehensive claims, striving to encompass economic, social, physiological, and psychological considerations, by forging alignments with multiple disciplines (Figure 2). Ekistics' promise to address nonfunctionalist and extra-technological concerns was accompanied by the pledge to fine-tune its interventions according to local sociocultural preferences, to guard against the homogenizing effects of Western Modernism.²⁰

Both because it assumed an apolitical globalism, and because it favored a more cultured conception of the human subject, the approach of Doxiadis' firm was palatable to Fathy—just as it was also palatable to postcolonial governments that solicited Doxiadis Associates to coordinate their plans for national reform. (By the first five years of its practice, Doxiadis Associates opened branches in Addis Ababa, Baghdad, Beirut, and Washington, DC). Fathy may have also felt an affinity with Doxiadis himself, who turned to international clients only after he saw his own reconstruction efforts at home rejected by an uncomprehending society.

When Fathy joined Doxiadis Associates, the firm had already secured a commission from Iraq to prepare a five-year plan for the entire country to control growth, provide housing and community facilities, create new village settlements in former desert areas, provide water supply and sanitary conveniences, and train local workers—all in the name of national development on a "rational economic basis."²¹ The Egyptian architect was asked to focus on housing, and his first major task was to design new villages for Greater Mussayib, south of Baghdad, where 3,000–5,000 households would settle on newly irrigated and drained land. Fathy was expected to collaborate with a multidisciplinary team, and to contribute the skills he demonstrated in New Gournā, to "organize the latent architectural and artistic forces existing in a locale."²² The Greater Mussayib project was to serve as a pilot for future rural housing projects that would be part of a national housing program—perceived to be key for a young nation trying to establish itself to the outside world, and nurture pride among its citizens. This was, in effect, Fathy's second chance to align his architectural vision with a national program for rural reconstruction—this time outside the confines of his own country.

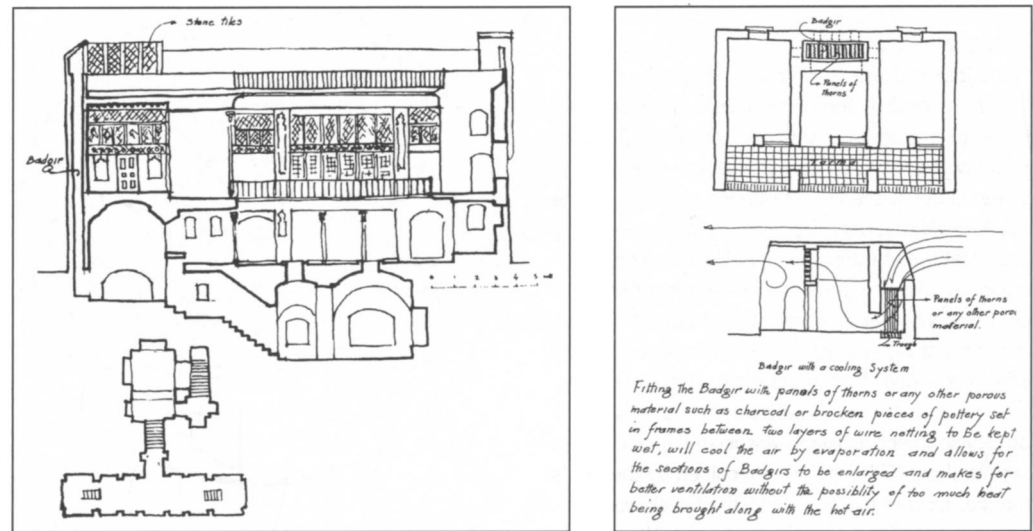
Combining Ekistics' requirement for an exhaustive analysis of local resources and social conditions with his own fascination with local architectural heritage, Fathy toured Iraqi villages and archaeological sites, in search of those "constants both in the methods of construction and architectural forms and solutions, which survived or could be rendered valid anew."²³ The veteran architect was looking for concrete design clues from the past that could give the new housing project (and the new nation) its character. This search was as selective as Fathy's earlier search in Egypt, and it quickly focused on mud brick construction methods in the regions of Hilla, Kerbala, and Najaf.²⁴ In a report he submitted to Doxiadis Associates after his tour, Fathy went to great lengths to describe brick-making procedures, analyze the labor and

equipment involved, and enumerate techniques for increasing material durability and construction efficiency.²⁵ Assimilating Ekistics' analytical strategies, this report was much more meticulous than any of Fathy's earlier studies in Egypt.²⁶

With similar diligence, Fathy analyzed the badgir (wind-catcher) as another architectural solution handed down from the region's past that could be adopted anew for Doxiadis Associates' mass housing tasks. He explained how the badgir provided natural ventilation in basements commonly used in hot summer days and devised improvements for it, namely, to enlarge the opening and force the increased volume of outside air, though a porous material that would act as a cooling device, in order to improve air circulation in the basement (Figure 3). Fathy then instructed the Doxiadis Associates research center in Baghdad to test and measure the efficiency of the badgir, as well as that of mud brick construction, "under the light of scientific observation." He called on Doxiadis Associates to "synchronize [construction] to ensure maximum efficiency."²⁷ Having perhaps recognized that his New Gournia project had failed to anticipate the complications of large-scale production, Fathy was now prepared to embrace Ekistics' objectified construction processes.

If Fathy's written account aspired to Doxiadis Associates' comprehensive claims and scientific detachment, his photographs revealed the architect's own aesthetic sensibilities and eye for tectonic detail. The photographs that accompanied his report did more than illustrate a variety of brick laying patterns and mud brick buildings; they captured the spatial character of brick surfaces, the structural qualities of vaulted and domed buildings, and the play of light and shade in courtyards and other semienclosed spaces. Fathy was hunting for continuities with the past to grasp what he called "the national and local spirit." Paradoxically, his visual references were not confined to national (or any ethnic/religious) boundaries; instead, he incorporated examples from Egypt, as well as San-

3. Fathy's studies of the Badgir and his proposed improvement. Fathy explained that the traditional badgir had a small outlet that limited airflow; he suggested the enlargement of the badgir and the inclusion of devices to cool the increased quantities of hot air (1957). (Courtesy Hassan Fathy Archive.)



torini and Corfu, islands Fathy visited during his stay in Greece.²⁸ Just as he did in New Gournia, where he abstracted forms and typologies from diverse cultural provinces, Fathy now searched across the larger bioclimatic region of the Eastern Mediterranean in order to assert the timeless validity of mud brick domes and courtyards.

The tactile quality of Fathy's visual survey was at odds with the dryness of his report, which adopted the standard tone of Doxiadis Associates' classificatory analyses. Fathy's design proposal for Greater Mussayib similarly reflected a tension between Ekistics' commitment to the rationalization of the design and his own aesthetic preoccupations. On the one hand, the sketch of a "village layout" lined up houses on a modular orthogonal grid in a way that fully abided by Doxiadis Associates' requirements for uniformity and standardization, recalling nothing of New Gournia's master plan (Figure 4).²⁹ On the other hand, Fathy's

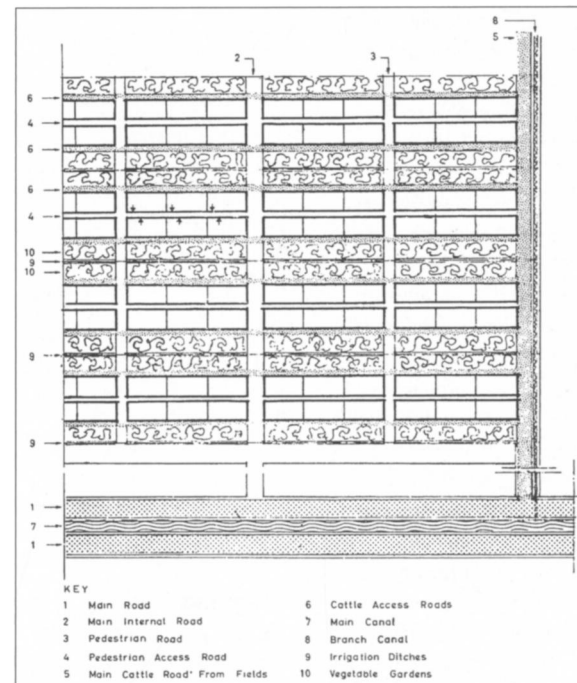
design of individual dwellings, to which Fathy devoted most of his attention, focused on the formal articulation of plans and elevations, construction details, and cooling devices (Figure 5).

Fathy basically reapplied the housing typology he inaugurated in New Gournia by organizing each dwelling around a courtyard surrounded by household activity services, a guest room and a family room, with bedrooms upstairs. This time, however, he justified his design choices in terms of Ekistics' principles, which he had learned only recently. He presented the mud brick thick wall and cooling devices as elements with both economic and cultural benefits: they were efficient thermal regulators that bypassed the need for imported technologies—which Doxiadis Associates also aimed to moderate. Similarly, Fathy spoke of the courtyard as a source of natural illumination, ventilation, as well as serenity and privacy for the kind

of family life the locals wanted.³⁰ Effectively, Fathy brought forward the New Gournā type mud brick courtyard house as an embodiment of Ekistics' abstract requirements for "economic efficiency," "social satisfaction," "aesthetic fulfillment," and "psychological satisfaction" of the locals.

Because it projected a concrete image onto Ekistics' abstract requirements for resource conservation and cultural sensitivity, Fathy's typology of the courtyard house was welcomed, and so was his attempt to credit local knowledge systems with a scientific wisdom. Doxiadis too had an interest in empirical design methods derived from a locale, and this was evident, first and foremost, in his studies of ancient Greek cities, which had begun with his doctoral studies in Germany and continued with his firm's long research on ancient cities.³¹ Despite the common ground he shared with Doxiadis, however, Fathy's commitment to the craftsmanship of design, detail, and tectonics remained at odds with the development firm's preference for generalization, repetition, and mass production, which viewed design as a unidirectional process that moved "from the national conception to the detail," putting the individual dwelling at the very bottom of a hierarchical process.³² As one might expect, Fathy was criticized for overemphasizing the details of individual units because such an approach, Doxiadis warned, could not lead to "solutions in a very big number." Scribbling notes all over the margins of Fathy's report, the firm's founder indicated his anxiety to see Fathy translate his piecemeal design into model villages and house types. In an internal memo, Doxiadis began firmly: "I beg Professor Fathy," he urged, to remember that the firm was not simply faced with the task of designing a village or two but "types" of villages and buildings "which can be repeated many times." Even as he attempted to mold Fathy's approach according to Ekistics, Doxiadis at some point conceded that the firm's usual focus on the master plan "can easily overlook the indispensable details of a master's work." By the end of the report, Doxiadis

4. Doxiadis Associates' plan of a typical village for Greater Mussayib. Titled "variation with individual vegetable gardens," it is based on Fathy's sketch of a "village layout" (1958). (Courtesy C.A. Doxiadis Archive.)



tempered his criticism of Fathy and concluded that the firm should "combine the two views in order to achieve a really national conception in the spirit of Ekistics."³³

The final report on Mussayib, produced by Doxiadis Associates and published in *Ekistics*, was a product of these deliberations between Fathy and Doxiadis. Several of Fathy's observations about the locale were adopted, and general guidelines regarding housing design and zoning drew on Fathy's own report. For example, the rule that each house include a courtyard and a loggia between the two main rooms; the requirement that each guest room be adjacent to the entrance; and the suggestion that each house have a separate animal's courtyard all came straight out of Fathy's proposals.³⁴

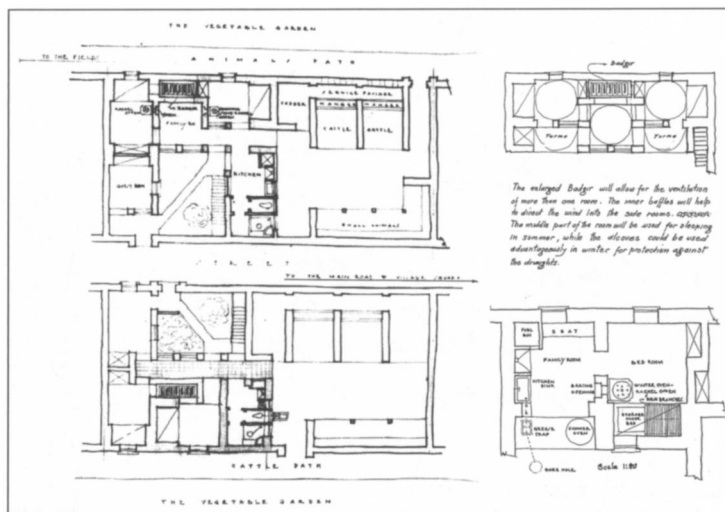
In abstracting Fathy's plans into generalized rules for Mussayib, Doxiadis Associates' report compartmentalized the Egyptian architect's design into elements that could be used in mass production. Courtyards, wind-catchers, domes, and loggias were useful to the extent that they prevented the inhibitive impacts of imported technologies and irrelevant spatial vocabularies. This compartmentalization was in tune with Doxiadis's notion that however important local knowledge systems were, the Ekistics expert had to maintain "enough distance," so as not to lose sight of the "demands of efficiency."³⁵ Fathy himself knew all about maintaining such a distance, for the sake of his aesthetic preferences: His New Gournā interpretation of Nubian architecture stripped the latter of its colorful decorations and

avored an abstract, often white, quintessentially modern aesthetic.³⁶

This quasi-independence from locally inspired forms and methods suited Fathy as well and Doxiadis. Such local knowledge would be used to the extent it would not become an obstacle to the reform envisioned; ultimately, the Ekistics expert was to judge which aspects of it were worth keeping. This vanguardist position, however, was advanced only with respect to economic or formal criteria; other habits of thought, reflected, for example, in local politics and social stereotypes, were not scrutinized in terms of *their* inhibitive impacts. Specifically, Fathy's reinterpretations of courtyard houses accepted, even reinforced a handed-down social habit of women confined in secluded spaces, and left intact any questions about the politics of domestic space.³⁷ Similarly, Fathy's odd description of public fountains as venues for young girls' "husband-catching expeditions" failed to question an array of social and gender stereotypes.³⁸ In an effort, perhaps, to distance itself from such unmistakable social biases, Doxiadis Associates' report on Mussayib rephrased Fathy's suggestions in more abstract terms—arguing, for example, that water supply had to be so located "as to promote the development of a community spirit."³⁹

Doxiadis Associates also published some of Fathy's plans for farmers' housing, except they refrained from reprinting Fathy's detailed studies of interior layouts and cooling devices that accompanied his report. The firm also published Fathy's elevations and sections, but stripped them of detailing, as though any design craftsmanship threatened Doxiadis Associates' claims to objectivity—see, for example, window and door treatment on the elevations (Figures 6a versus 6b). After calibrating Fathy's schemes according to the requirements for standardization, the firm listed his design for farmers' housing as "House Type QR9," to neatly fit Fathy's input into the mass production logic.

5. Fathy's original plan for farmers' housing, including interior arrangements and studies on the badgir (1957). (Courtesy Hassan Fathy Archive.)



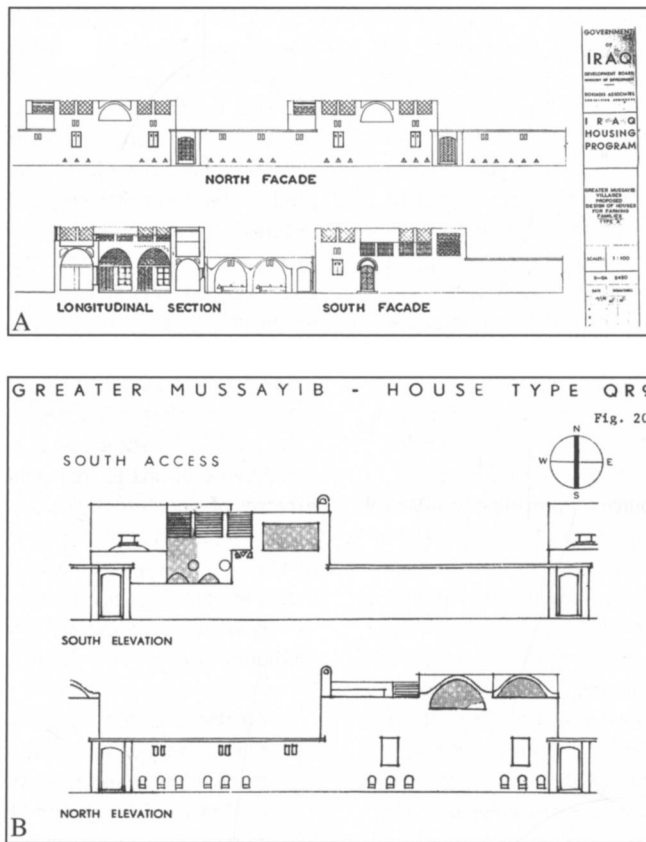
Aligning "Tradition" with Scientific Rationality

The experience in Mussayib showed Fathy that his formal preferences would have a greater success among his colleagues if he recalibrated them with respect to objective and quantifiable criteria. His next assignment was to work with a team of civil engineers and architects to develop general guidelines for housing in hot climates that would be used in projects in Iraq, as well as Pakistan, where Doxiadis Associates had just secured new commissions. The team began with an exhaustive analysis of sun movements and prevailing winds at different regions of Iraq and Pakistan, at all times of the year, to determine the optimal orientation of buildings and the most effective configurations of facades. No doubt with Fathy's influence, the team examined what they called "traditional empirical solutions" to measure how they responded to various climatic realities. The conclusion, sloppily and sweepingly as it was made in the team's report, was that "old houses constructed according to tradi-

tion" already offer "solutions" to the problem of heat protection, solutions which are far better than those of "the international [architecture] which . . . was conceived for different climatic conditions."⁴⁰ In other words, what the team promoted as "local traditions" referred to handed-down knowledge systems about design and building that were also championed as a resource for overcoming the pitfalls of mainstream Modernism.

Fathy's argument was clever. In casting tradition as a body of local knowledge tested over generations through "countless experiments and accidents," he presented it as inherently scientific—displaying an empiricist understanding of science, an understanding that had always informed modernist appreciations of the vernacular.⁴¹ At the same time, Fathy recognized a value in Ekistics' rationalist approach, to the extent that it could systematize the scientific soundness of "traditions" he selected to advance. Ekistics, he argued, could guard against the "misapplication" of traditional solutions and also improve upon them. This side of

6. 6a and 6b. Fathy's original Elevations and Sections for farmers' housing versus Doxiadis Associates' elevations for "House Type QR9" based on Fathy's scheme (1957 and 1958). (Courtesy Hassan Fathy Archive and C.A. Doxiadis Archive.)



Fathy's argument was best articulated in lectures he gave on "Climate and Architecture," at the Athens Center of Ekistics:

If, in any traditional way of building, one element is changed, that change may well be enough to destroy the whole validity of the building as an answer to the climatic problem . . . [For example] if matting screens are replaced by corrugated iron or some other solid wall, then, though the building may seem more substantial, it will be impossibly hot and stuffy

. . . Of course, if we are prepared to wait for many hundreds of years, until the new ideas have been assimilated and their incorporation tested by trial and error, then we shall see good and effective traditional architecture again.⁴²

Contemporary builders could not wait for hundreds of years for a building method to be refined empirically. Housing shortages, Fathy said echoing Doxiadis's alarmist rhetoric about a global housing crisis, were so great that they depended on

scientific theorization to speed up the process of understanding the fragile principles of tradition. This is where Ekistics' rationalist approach came in to extract "lessons" from local building vocabularies and techniques that could be "directly applied to design."⁴³

It is important to note that Fathy's reference to "tradition" as a resource requiring value and respect was in direct opposition to the derogatory use of the term advanced by modernization theory. A mode of social scientific thought that lived its heyday in the 1950s and 1960s providing the theoretical premise for many development interventions directed at the postcolonial world, modernization theory was based on a constructed opposition between "modern" and "traditional" societies, assuming the later to be distinct from progressive change. Modernization theory assumed the existence of a singular linear pattern of development that would be defined through transformations in technology, military and bureaucratic institutions, and the political and social structure, to acculturate the nonwestern world according to western values and standards. It was a reductionist model of development that oversimplified the processes of decolonization and industrialization in the newly independent states of Africa and Asia, and although it was discredited by the 1970s, it had, before then, shaped many American aid and development agencies' policies.⁴⁴ Many of its tenets can be also detected in many architectural and planning interventions of the 1950s and 1960s, including those of Doxiadis Associates, which indirectly absorbed some of the same notions of a unidirectional socioeconomic progress.⁴⁵

Fathy's references to tradition actually reframed its knowledge systems as compatible with Ekistics' aspirations to rationalize the design process while embracing nonfunctionalist and extra-technological concerns. This is why Fathy, along with his team, made an exhaustive analysis of climatic data and architectural precedents to outline a list of generic guidelines, such as "use thick walls

and roof" (to increase their thermal capacity), "throw shade on the walls and roof" (so that they do not emit heat to the interior), "provide small apertures to the windward side and large apertures to the leeward side, opening to semienclosed spaces" (to draw the maximum amount of air inside through suction created by subpressure), and "select a suitable arrangement of rooms so that the air may reach all alike" (to maximize cooling by ventilation). In their generic form, the recommendations were an exemplar of Doxiadis Associates' preoccupations with neutrality and comprehensiveness; but they also confirmed the validity of Fathy's preferred housing typology, namely an introverted house with thick (mud brick) walls, that opened up to a semienclosed, and cooler space (courtyard).⁴⁶ When Fathy applied the team's recommendations to an experimental design project, he once again produced a house built with walls with high thermal capacity, and with a courtyard and loggia on the leeward side, to create suction for air movement (Figure 7).

Working with a team or alone, Fathy provided Doxiadis Associates with more analyses of heat radiation processes, the thermal capacity of materials, and "human comfort" and "human efficiency" criteria.⁴⁷ In their zealous focus on quantifiable criteria, the produced charts and tables made no differentiation between rural and urban conditions, or between the social particularities of Iraq versus Pakistan, but they offered Doxiadis Associates an unprecedented opportunity to grasp a quantifiable geo-climatic justification of what Fathy wanted to call "traditional empirical solutions."⁴⁸ The cultural sensitivity of "traditional architecture" ironically boiled down to its efficient response to local climate and materials.

Not entirely! In his lectures, where Fathy assumed more the role of a pedagogue than a design consultant, he had a different tone than in his reports. He repeatedly reminded his audience that local building vocabularies also fulfill the other side of Ekistics' goals, namely psychological satis-

faction and aesthetic fulfillment. Echoing the comprehensive scope of Ekistics' analytical models (which claimed to account for the "totality of human needs"), Fathy made a general claim that traditional vocabularies respond to the totality of the local "environment."⁴⁹ Fathy defined this environment as being constituted by "visible" elements, such as work patterns, transportation patterns, climate, vegetation, and landscape, versus "invisible" elements, such as history, belief systems, and psychological needs.⁵⁰ This categorization corresponded more or less to Ekistics' classification of factors that shape human settlements, which included economic and technical as well as cultural and emotional factors.

Between his research for Doxiadis Associates and his lectures at the Athens Center of Ekistics, Fathy gave a double meaning to the vernacular. It was a knowledge resource for providing economical and thermally comfortable shelter, and it also had psychological and emotional value. This distinction is familiar; it basically extended the logic though which Fathy (as well as Doxiadis) conceptualized nature. Nature was either analyzed as a resource (climatic temperatures, wind factors, and sun-angles) that would be used to control the micro-climate of the dwelling; or it was described as a source of psychological fulfillment. Conceptualized in a similar way, vernacular architecture, like the land, the climate, and the sun, was more or less cast as a category of the "natural," separate from the processes of history and change. Such a view of the vernacular may explain Fathy's ahistorical recombination of disparate formal vocabularies. But it also has larger implications. Because, although Fathy might be frightened to know it, the view of local cultural expression as homogeneous, timeless, and ahistorical fits quite neatly within the belief system of the postwar development discourse and in particular Modernization Theory mentioned earlier.⁵¹ No matter how Fathy valorized local knowledge systems, his tendency to decontextualize them as timeless traditions ended up essen-

tializing them just as much as advocates of modernization did.

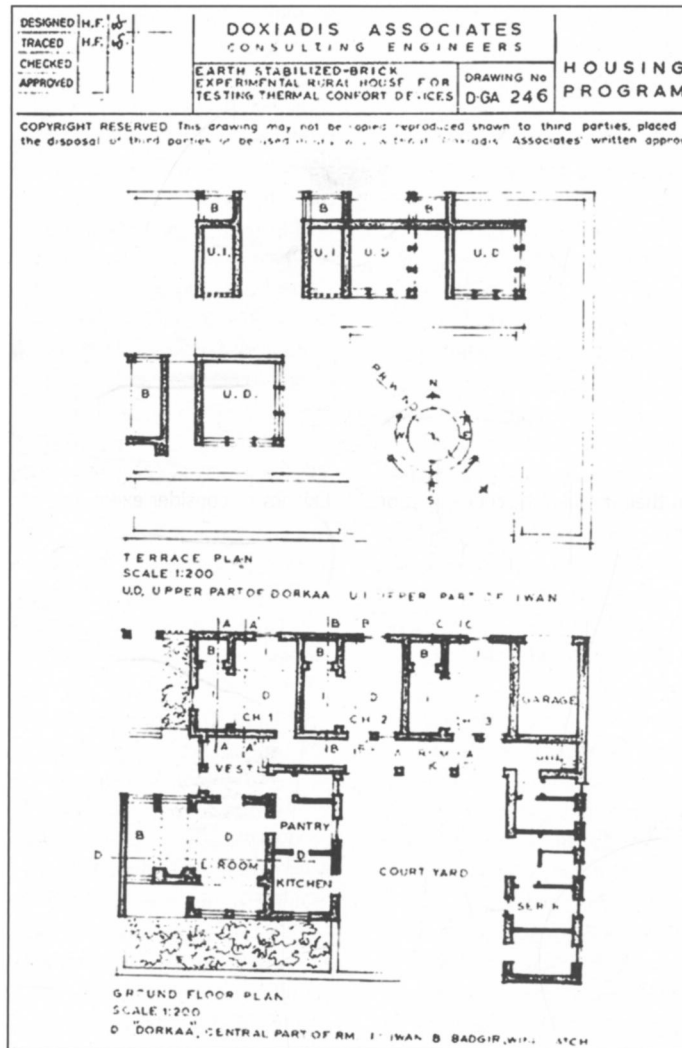
For all its essentializing implications, Fathy's attempt to credit local knowledge systems with a scientific merit succeeded to the extent that it attracted the attention of Doxiadis, who began to speak about the contemporary relevance of tradition as one of his favorite themes—even if he used the term as sweepingly as Fathy did. In a lecture to the American Institute of Planners in 1959, for example, Doxiadis cited the wisdom of courtyard houses and the overall social structure observed in local villages in Iraq. When he lectured at the Royal Institute for British Architects in 1960, where he mentioned his friend "Professor Hassan Fathy of Egypt" by name, Doxiadis asserted that there is a "link" between tradition on the one hand and Ekistics' efforts to free architecture from the excesses of signature design on the other: "The more we try to clarify our ideas and reach the most basic and essential forms, the more we find ourselves reaching back toward tradition."⁵²

Tyrwhitt would resound Fathy's logic more methodically a few years later:

An ekistic approach to the criteria for designing the human habitat starts by searching for relationships which have made habitats successful in the past and that seem to be appropriate in an urbanizing milieu. At the present day, when dwelling must be built much faster and in much larger numbers than ever before, these relationships need to be spelled out so that they can influence the rationalization of traditional methods as well as industrialized building systems.⁵³

Doxiadis and Tyrwhitt embraced, in other words, a belief that traditional forms could increase the social relevance of architecture. However, Doxiadis and most members of his firm accepted this notion in more abstract terms than Fathy. When Doxiadis Associates proposed housing projects for

7. Fathy's experimental rural house. For the purposes of this experiment, each room had a wind-catcher fitted with different designs of air cooling arrangement so as to determine the most effective one (1958). (Courtesy Hassan Fathy Archive.)



West Baghdad and Islamabad, they altered Fathy's "experimental" houses, almost beyond recognition, by pushing the courtyards of dwellings to the side of the house, or even to the "back" to save space and maximize the repetition of housing modules on the

rectilinear plan. Unlike the courtyard houses Fathy conceived in New Gournā and advanced in Mussayib, Doxiadis Associates' courtyard houses for Baghdad had mostly flat roofs and were made of concrete, since efficiency of construction remained the top priority.⁵⁴

Recasting Tradition in Opposition to Rationalism

Fathy's attempt to reconcile his own fascination with local knowledge systems and Ekistics' rationalist preoccupations reached a turning point when he engaged with Doxiadis's most ambitious project of all, the "City of the Future," which began in the summer of 1960. The fascinating details of this project cannot be discussed here, except to point out that its ultimate task was to prescribe a comprehensive plan for the orderly transformation of the global physical environment. The ambition to structure a single interconnected global city that would control the dehumanizing impact of urbanization and advance the postwar dream of international cooperation was certainly palatable to Fathy; so was Doxiadis's resolve to place physical design and planning at the center of global socioeconomic reform. But while Fathy agreed with the project's moral urgency, he questioned Doxiadis's assumption that the nonindustrialized third world should eventually "adopt the present pattern of Euro-American economy"—an assumption, of course, that was not only Doxiadis's but was also rather prevalent among development circles of the time.⁵⁵ Doxiadis's global vision assumed that urban industrialization would spread around the globe, and countries and regions would adopt the rules of a global marketplace. Fathy was uneasy about the homogenizing effects of such a socioeconomic megastucture and at that point began to question Doxiadis's optimistic globalism.

Instrumental to Fathy's change of heart was his participation in a conference in Egypt, "The Metropolis in the Arab World," in December 1960, along with many members of his firm. Sponsored by Gamal Abdel Nasser's nationalist government, the conference aimed to highlight urban and social problems specific to the Arab World. Fathy's presentation focused on his village experiment in Gournā, but this time, the Egyptian architect made an interpretive leap, to argue that the intangible qualities of the courtyard house had a peculiarly

"Arab" significance. Titling his paper, "Planning and Building in the Arab Tradition," Fathy appealed to his audience by highlighting the particularity and homogeneity of an Arab tradition, and while he still recognized that the introverted courtyard had a transcultural validity since it was a common architectural element in many cultures all along the Mediterranean Seaboard, he contended that "to the Arab" it has an altogether different meaning. "To the Arab," Fathy maintained, "the courtyard is more than a space that controls temperature" and "more than an architectural device for privacy and protection. It is, like the dome, part of a microcosm that parallels the order of the Universe itself."⁵⁶ Furthermore, Fathy no longer emphasized the importance of climatic and economic criteria; instead, he spoke of the courtyard's "peace," "holiness," and "magic"—intangible qualities that do not have quantifiable "substance," he argued, but can only be grasped through "feeling" and "intuition."⁵⁷ His false apology, "I am embarrassed to talk this way to those planners to whom architecture has become engineering and to whom progress and modernity mean only westernization," was not only a sweeping criticism of technocratic planning but it also hinted to his disillusionment with Doxiadis' own partiality to quantifiable criteria and western design norms.⁵⁸

It is significant that even as he capitalized on the particularity of "Arab cosmology" and the "Arab feeling for man-made space," Fathy used the terms "Arab," "Muslim," and "man of the desert" as interchangeable.⁵⁹ His argument that "the sky is for the Moslem Arab at once the home of the holy and the most soothing face of Nature" was followed by the conclusion that "in desert countries men try to bring down the . . . sky" into their own dwellings.⁶⁰ Fathy's conflation of ethnic identity with religious meaning and geo-climatic realities captured his ambivalence about an exclusive culture-specific interpretation of the courtyard house and his formal preferences in general. His main goal at that point was not, I would argue, to essentialize the courtyard house as an ethnic symbol, but rather to hold it up as

an exemplar of the complexity of architectural design that could not be reduced to causal hypotheses and quantifiable analyses.

In a series of papers he subsequently submitted to the City of the Future team, Fathy acted as a spokesman for not only Egypt or the Arab world but also for the "old" or "ancient" ways of building. Like he had started to do in the conference on the Arab metropolis, Fathy shifted the focus of his arguments, to refer less to economic/climatic criteria for building, and more to symbolic, intangible, transcendental qualities, such as "the rhythm of the Universe" and "the cosmic order."⁶¹ Ekistics experts were now urged to reconsider "the wisdom of the pharaoh," learn from the insights of Hindu Temple Builders, and embrace "the metaphysical knowledge of the ancients"—all of which Fathy presented more or less in opposition to "western technology," "development," and their mechanistic conception of science.⁶² Drifting to the rhetoric of holism and symbolism that alienated most if not all in his firm, Fathy tried to draw attention to those aspects of architectural design that could not be grasped by even the most exhaustive "synthesis of sciences." His assertion that architecture is an "act of creation" that had to combine "knowledge" with "intuition," his warning that "architecture is not engineering," and his caution that "it is only too easy for bad architecture to upset the best town plan": all these statements were a call to the Ekistics group to recognize the irreducibility of architectural design to managerial tasks.⁶³

To demonstrate how architectural form, in its detail and specificity, was key to providing the better building environment that Ekistics' plans aspired to create, Fathy once again suggested the example of the courtyard house, describing how the well-defined boundaries, careful proportions, and tectonic detail of its exterior space (the courtyard) "internalizes the outside" in a very particular way that was radically different, he contended, from the play of inside and outside in modernist houses with glass walls (that Fathy could not help but dismiss as "confusing").⁶⁴ Apart from the sweeping dismissal of modernist

sensibilities (which foreshadowed his later rhetoric), Fathy's argument presented the courtyard as an example of the complexity of design factors. In other reports, Fathy underscored the importance of texture, proportion, geometry, and craftsmanship more generally, to underline the impossibility of subsuming design with scientific reductionism, and to emphasize the autonomy of the architectural profession itself.⁶⁵ Phenomenological experiences of space, texture, and light were by now much more important than Ekistics' categories of psychological satisfaction.⁶⁶ Unlike Doxiadis, who was eager to transport the architectural profession into the realm of managerial organization because he found it too self-indulgent, Fathy believed that architecture could be reformed from within, by rethinking its relationship to the vernacular.

Through his emphasis on spatial, tectonic, and sensual qualities, Fathy was urging Doxiadis and Ekistics to consider expanding architecture's social and environmental responsibility without dissolving its disciplinary specificity. In this sense, Fathy anticipated the debates on the autonomy of form that characterized architectural theory in the 1970s.⁶⁷ This search was already implied in Fathy's proposals for Mussayib and all his later experiments. If he stubbornly insisted on a particular typology, it was not necessarily because he saw courtyard houses or mud bricks as symbols of an essential past but because he was searching for a more sensual approach to the grand order Doxiadis Associates was attempting to install. This was perhaps Fathy's greatest contribution to the Ekistics group. Even though he did not cultivate a long-term relationship with Ekistics (he fell out of touch with most of the group after his return to Egypt), Fathy has to be credited at least partly for the architectural qualities of Doxiadis's courtyard houses—which, despite their standardization, have been acknowledged (by the more moderate of Doxiadis's critics) as an "exception" to the rule that "[his] architecture is not up to the standard of his planning."⁶⁸

It should be said, however, that, for all its rhetorical power, Fathy's valorization of traditional

knowledge systems in the name of cultural sensitivity or environmental efficiency did not go far in challenging the conceptual framework of Ekistics' managerial preoccupations and the values and assumptions of the development discourse. Initially, Fathy may have analyzed local techniques more methodically than other Doxiadis Associates members, but he still defined the locale in terms of its resources or in terms of his own eclectic adoption of formal vocabularies. Toward the end of his collaboration with Doxiadis, he may have rejected Ekistics' faith in scientific rationality, but even then, Fathy did not really confront Ekistics' developmentalist ethos; instead, he shifted the debate elsewhere. Rather than investigate the more complex relationships Ekistics could develop with local knowledge systems, Fathy slipped all too precipitously into a rhetoric of holism that altogether alienated the rest of the group.

Conclusions

Fathy's four-year collaboration with Doxiadis's multidisciplinary group brought him face to face with key concepts of science, international development, and modernization that were shaping post-World War II architectural culture. The opportunities that Fathy and Doxiadis's debates could open up were lost in 1961, when Fathy returned to Egypt, after he was urged to do so by Gamal Abdel Nasser himself.⁶⁹ Starting a new practice in his home country, Fathy moved away from Ekistics' conceptual framework, to redefine his life-long interest in local empirical solutions in terms of a polemical valorization of an Egyptian/Arab cultural identity that was at the time palatable to Nasser's revolutionary government and its pan-Arabist ideology. As his practice flourished, Fathy continued to propose more variations of the courtyard house that experimented with different building materials, scales, and even, a different clientele—most notably, Egypt's urban elite—but he and his followers reified the courtyard house as a repository of tradition, defined in nationalist

terms as "Arab" or "Egyptian," or in religious terms as "Muslim."⁷⁰ Even then, however, Fathy drew on Ekistics' scientific claims, interdisciplinary outlook, and supranational aspirations, when these would validate his arguments. This is evident not only in *Architecture for the Poor* but also in Fathy's project in Abiquiu, New Mexico (1981–1986), where he taught the principles of mud brick construction across the Atlantic; and in his 1986 book *Natural Energy and Vernacular Architecture*—his most ambitious attempt to justify a diverse variety of local knowledge systems.⁷¹ These late works show that Ekistics' strategies for reconceptualizing modernism, if not Ekistics' developmentalist assumptions, had a lasting legacy in Fathy's long career.

Notes

- Hassan Fathy, *Architecture for the Poor* (Chicago: The University of Chicago Press, 1973).
- Fathy's colleagues and supporters recount many sociopolitical reasons for the work's interruption, including the locals' defiance, and some of the actions of the Department of Antiquities, which was in charge of the project (Author's interviews with Abdelhalim Abdelhalim and Nawal Hassan, 1999). Also, see J.M. Richards, "Gourna: A Lesson in Basic Architecture," *The Architectural Review* CXLVII, no. 876 (February 1970): 109–118; "Art and Survival Fashioned in Bricks of Mud," *Middle East Times* IV (March 1986): 12–13; James Steele, *An Architecture for People: The Complete Works of Hassan Fathy* (London: Thames and Hudson, 1997); and William Polk, "Gropius and Fathy Remembered," *Architectural Design* 74, no. 6 (November/December 2004): 38–45.
- For a historical analysis of the sociopolitical context for the project, and the government role in provoking the locals' resentment, see Timothy Mitchell, *Rule of Experts: Egypt, Techno-politics, Modernity* (Berkeley: University of California Press, 2002), pp. 184–95.
- For a critical discussion of Fathy's paternalistic views toward the "ignorant" peasants see Mitchell, *Rule of Experts*, p. 185. Also, for another recent critique of Fathy that points to his cosmopolitan assumptions, see Nezar Alsayyad, "From Vernacularism to Globalism," *Traditional Dwellings and Settlements Review* 7 (1995): 13–24.
- For more on Fathy's adoption of Cairene (specifically Mamluk and Ottoman) forms, see Nasser Rabbat, "Hassan Fathy and the Identity Debate," in Gilane Tawadros and Sarah Campbell, eds., *Fault Lines: Contemporary African Art and Shifting Landscapes* (London: Institute of International Visual Art, 2003), pp. 196–203.
- For this reason, the houses were remodeled by their later users several years later, when the village began to be inhabited. For a description of the alterations later users made in order to make dwellings more acceptable to them, see Fekri Hassan and Christine Plimpton, "New Gourna: Vernacular Remodeling of Architectural Space," *Traditional Dwellings and Settlements Working Papers Series* XVI 49–77 (1989): 50–77.
- "New Gourna: Vernacular Remodeling," pp. 65–66. See also Mitchell, *Rule of Experts*, pp. 193–94.
- Fathy began his book with a criticism of the contemporary state of architecture, and the majority of book reviews resounded similar ideas. See, for example, Moshe Saftie, "Joy in Mudville," *New York Review of Books* (December 11, 1975): 233; and Colin Ward, "For the Fellah with Nothing," *Royal Institute of British Architects Journal* 81 (February 1974): 35.
- Among the numerous sympathetic reviews of Fathy's book: Colin Ward, "For the Fellah With Nothing," *RIBA J* (February 1974): 35–36; William Mares, "An Architect Whose Clients Are Peasants," *The Christian Science Monitor* (September 5, 1974): 7; Felicia Clark, "Appropriate Invention," *Architectural Record* 168 (January 1980): 186–87 and 195; Robert Marquis, "Egypt's Prophet of Appropriate Technology," *AIA Journal* 69 (December 1980): 38–39; "UIA's Gold Medal Awarded to Hassan Fathy," *Architecture* 74 (January 1985): 25–26.
- Paul Oliver, ed., *Shelter, Sign and Symbol* (London: Barrie and Jenkins, 1975); Bernard Rudofsky, *Architecture Without Architects* (New York: Doubleday, 1964); Ian Mc Harg, *Design With Nature* (New York: Natural History Press, 1969); Victor Olgay, *Design With Climate: Bioclimatic Approach to Architectural Regionalism* (Princeton, NJ: Princeton UP, 1963); John F.C. Turner, *Housing by People: Towards Autonomy in Building Environments* (London: Marion Boyars Publishers, 1976); John F.C. Turner and Robert Fichter, eds., *Freedom to Build* (New York: Macmillan, 1972); William Margin and John C. Turner, "Benavides and the Barriada Movement," in Paul Oliver, ed., *Shelter and Society* (New York: F.A. Praeger, 1969).
- Moshe Saftie, "Joy in Mudville," *New York Review of Books* (December 11, 1975): 233; Also, M.H. Shaheen, "Hassan Fathy Architecture for the Poor," *International Journal for Middle East Studies* 6, no. 4 (October 1975): pp. 511–14.
- "Appropriate Invention," p. 186. James Steele, *Sustainable Architecture, Principles, Paradigms, and Case Studies* (New York: McGraw Hill, 1997).
- Many recent reflections on Fathy recognize this anticolonial spirit. Diane Chirardo is among those who connected Fathy's anticolonial stance with his critique of modernism. In her book, *Architecture after Modernism*, which identified Fathy's book as one of the four "most serious assaults on the Modern Movement" (the other three being Venturi's *Complexity and Contradiction*, Rossi's *Architecture and the City*, and Jacobs' *The Life and Death of Great American Cities*), Chirardo also argued that Fathy's book signaled "a pervasive resistance to Western Modernism and an often contentious confrontation with the colonial legacies in many nonwestern countries." Diane Chirardo, *Architecture After Modernism* (London: Thames and Hudson, 1996), p. 13.
- Fathy, "L'Illustre Architecte Egyptien," *Le Monde Islamique* (February 1971): 1, 11; Jerry Jobbins, "Architect for the Arabs," *Near East Business* (March 1980): 7–10; I. Serageldin and El-Sadek, eds., *The Arab City: Proceedings of a Symposium Held in Medina, Saudi Arabia in 1983* (Arlington, VA: Arab Urban Development Institute, 1992).
- See, for example, Hassan Fathy, "Planning and Building in the Arab Tradition," in Monroe Berger, ed., *The New Metropolis and the Arab World* (New York: Octagon Books, 1974), pp. 210–29;

- Hassan Fathy, "Constancy, Transposition and Change in the Arab City," in Carl Brown, ed., *Madina to Metropolis* (Princeton, NJ: Darwin Press, 1973), pp. 319–34. In reflecting on the changing interpretations of Fathy's work, Nasser Rabbat has recently argued that they parallel "the changing ideology of Egypt from 1920s and 1930s Egyptianism, to Nasserist pan-Arabism in the 1960s, to Islamism in the 1980s." "Hassan Fathy and the Identity Debate," p. 202. More on the changing interpretations of Fathy's work will be presented later in this paper.
16. For a description of these works, see James Steele, "The New Traditionalists," *Mimar* 40 (September 1991): 40–47; Saleem Shahed, "Adbel Wahed El Wakil, Interpreter of a Living Tradition," *Arts and the Islamic World* 1, no. 4 (Winter 1983–1984): 56–64; and Michele Vicat, *Between Tradition and Modernity: Eight Egyptian Architects* (Cairo: American University of Cairo, 1992).
17. See, for example, references to Fathy in Charles Jencks, *The Language of Post-Modern Architecture* (New York: Rizzoli, 1984), p. 94; and Charles Jencks and Karl Kropf, *Theories and Manifestoes of Contemporary Architecture* (New York: Academy Editions, 1997), pp. 170–71.
18. Doxiadis invited Fathy to Greece in 1956 to work in his firm as a consultant. Letter from Doxiadis (September 14, 1956).
19. Author's interviews with Nawal Hassan and Shahira Mehrez, 1999.
20. See, for example, Constantinos Doxiadis, *Architecture in Transition* (New York: Hutchinson of London, 1963); and Constantinos Doxiadis, "Ekistics, The Key to Housing in Developing Areas," in *Report to the International Council for Building Research Studies and Documentation* (Rotterdam, the Netherlands: The Council, 1959).
21. Doxiadis Associates, "Iraq Housing Program," *Doxiadis Associates Newsletter* September 5, 1959. Also, Doxiadis Associates, *The Housing Program of Iraq* (Baghdad: Government of Iraq, Ministry of Development, 1959).
22. Editorial in *Ekistics* (May 1960): 335.
23. Hassan Fathy, "A Report on Housing for Greater Mussayib," Doxiadis Associates Documents R-QA, October 10, 1957, pp. 1–47; quotation on 1.
24. "A Report on Housing for Greater Mussayib," pp. 1–47.
25. See Fathy's report, "Experiments on Mud Bricks," Doxiadis Associates Documents R-GA, April 13, 1957.
26. The most extensive study of mud brick construction that Fathy had produced up to that point was his 1952 report to the Egyptian authorities: Hassan Fathy, *Report on Egyptian Village Housing, Building Materials, and Methods of Construction to Administrator, Technical Cooperation Administration, Department of State* (Cambridge, MA: Arthur Little, 1952).
27. "A Report on Housing for Greater Mussayib," pp. 14, 16.
28. *Ibid.*, quotation on 1; images from Greece are included in the section titled, "Choice of Building Materials and Methods of Construction" (no pages).
29. Hassan Fathy's sketch in "A Report on Housing for Greater Mussayib," p. 13.
30. *Ibid.*, p. 19.
31. Constantinos Doxiadis, *Raumordnung im Griechischen Städtebau* (Heidelberg: Kurt Vowinkel, 1937); and Doxiadis, "The Ancient Greek City and the City of the Present," *Architektoniki* 108 (July–August 1964): pp. 46–59.
32. Doxiadis, "Plans for Village in Mussayib by Professor Fathy," Internal Doxiadis Associates Memo, July 21, 1958, pp. 1–2; quotation on 1.
33. *Ibid.*, quotation on 1.
34. Doxiadis Associates, "A Regional Development Program for Greater Mussayib, Iraq, 1958," *Ekistics* 6, no. 36 (October 1958): 149–86; the requirement of the courtyard on 169; Fathy's drawings on 180.
35. Doxiadis, "Pakistan Diary 20," 1954. See also "A Regional Development Program for Greater Mussayib, Iraq, 1958," p. 169, paragraph 38.
36. For Fathy's dismissal of the "peasant manner" of Nubian decorations, see *L'Architecture D' Aujourd'hui* (February 1978): 43–84, quotation on 84. Note that even the initial photographs of New Gourna (taken by Alexandrine Dimitris Papademos under the direction of Fathy) highlighted this modern aesthetic. See Panayiota Pyla, "Photographing Tradition: Papademos' Work in Egypt" [in Greek], *Kathimerini* (October 14, 2001): 13–15.
37. For an extensive analysis of the gender biases in Fathy's courtyard houses, see Asia Chowdhury, "The Persistent Metaphor: Gender in the Representations of the Cairene House by Edward W. Lane and Hassan Fathy," MIT Masters Thesis, June 1993.
38. Fathy describes the significance of courtyards and public fountains to women in *Architecture For the Poor*, pp. 56–59, 99–101; quotation on 100.
39. "A Regional Development Program for Greater Mussayib, Iraq, 1958"; quotation on 168, paragraph 37e.
40. Fathy, Deimezis, Kyriou, and Marinos, "Thermal Comfort," Doxiadis Associates Documents R-GA 108, April 15, 1958, pp. 1–17; quotation on 1.
41. Fathy, "Climate and Architecture, Course Outline, 1959–60," pp. 5–6, quotation on 5.
42. *Ibid.*
43. "Thermal Comfort," quotation on 1.
44. For a recent critique of Modernization Theory and its legacy, see Nils Gilman, *Mandarins of the Future* (Baltimore, MD: Johns Hopkins University Press, 2003), which presents a much more detailed analysis of this theory than the space of this paper allows.
45. For a discussion of some of the connections between Doxiadis and Modernization Theory, see Panayiota Pyla, "Global Visions, Local Knowledge, and the Design of Model Communities: The Centrality of the Postcolonial World in the Historiography of Modernism," *Proceedings of the Association of Collegiate Schools of Architecture Conference* (Washington, DC: ACSA, 2003), pp. 253–58.
46. "Thermal Comfort," pp. 1–17.
47. Fathy, untitled 5-page "Draft" with tables on "Mental fatigue scale," "Thermal comfort sensation scales" etc. Also: Fathy, untitled 2-page memorandum regarding the "psychological aspects of life in a warm climate;" quotation on 1.
48. His reports listed the various possible microclimatic conditions around buildings—e.g., air temperatures at different times of the day, at different parts of Iraq. See, for example, Fathy and Marinos, "Applications of Ideas on Thermal Comfort," May 2, 1958, pp. 1–6; and Fathy, "Heat Protection," Doxiadis Associates Documents R-GAH 305, April 19, 1958, pp. 1–5.
49. For an example of Ekistics' comprehensive models, see Jaqueline Tyrwhitt, "The Ekistic Grid," *Architectural Association Journal* 87 (September–October 1965): 10–15.
50. Fathy, "Course Outline, Climate and Architecture (1959–60)."
51. Seeing indigenous communities as part of nature and distinct from civilization is not peculiar to modernization theory; it is a central theme in many nature–culture divisions. See William Cronon, ed., *Uncommon Ground* (New York: W.W. Norton, 1996).
52. Doxiadis, "Architecture in Evolution," *Royal Institute of British Architects Journal* 67 (September–October 1960): 3–22; quotation on 20.
53. Jaqueline Tyrwhitt, ed., *The Ekistic Approach: Human Identity in Ecu-menopolis*, A Series of Readings for the Second Year Architecture Students, Harvard University (Cambridge, MA: Harvard University GSD, 1969), p. 14.
54. For a description of Doxiadis Associates' final houses in Baghdad, see Pyla, "Global Visions, Local Knowledge, and the Design of Model Communities," pp. 253–58.
55. Fathy, "The Dwelling Within the Urban Settlement," COF Documents, August 1961, p. 7.
56. Fathy, "Planning and Building in the Arab Tradition," p. 218.
57. *Ibid.*, quotation on 219.
58. *Ibid.*
59. *Ibid.*, p. 216.
60. *Ibid.*, pp. 217–18. "Because the sky is for the Moslem Arab at once the home of the holy and the most soothing face of Nature, he naturally wants to bring it into his own dwelling . . . in desert countries men try to bring down the serenity and holiness of the sky into the house, and at the same time to shut out the desert with its blinding, suffocating sand and inhospitable demons. The means of doing this is the courtyard . . ."
61. Fathy, "Aesthetics in the COF," COF Documents, p. 9, 2.
62. Fathy, "The City of the Future," COF Documents, July 17, 1961, pp. 2, 10; Fathy, "COF—Contribution to the Final Report," COF Documents, July 17, 1961.
63. Fathy, "Aesthetics in the COF," p. 8; Fathy, "Exchange of Views on the Research Project," COF Documents, October 12, 1960, p. 2.
64. Fathy, "The Dwelling Within the Urban Settlement," p. 16. "... very different from the confusing of inside and outside that is often aimed by architects today when they make walls of glass or include trees and ponds in the living room . . ."
65. Fathy, "Aesthetics in the COF." This is also where Fathy's view differed from Rudofsky's who praised the vernacular to advocate the deprofessionalization of architecture.
66. Fathy, "Aesthetics in the COF." Also, David Simon, "Heidegger's Notion of Dwelling and One Concrete Interpretation as Indicated by Hassan Fathy's Architecture for the Poor," *Geoscience and Man* 24 (April 1984): 43–53.
67. Most notable perhaps in initiating these debates are Aldo Rossi's *The Architecture of the City* (1966) and Robert Venturi's *Complexity and Contradiction in Architecture* (1966).
68. Ezra Ehrenhrantz and Ogden Tanner, "The Remarkable Dr. Doxiadis," *Architectural Forum* 114, no. 5 (May 1961): 112–16.
69. Fathy met Nasser himself at the conference on the Arab Metropolis and began to contemplate his return. [Author's Interview with Nawal Hassan]
70. Examples of houses for the urban elite include Fouad Riad (1967), Mehrez Apartment (1967), and Mit Rehan (1982). Regarding Fathy's nationalist and religious interpretations, see also endnote 15 above.
71. Fathy, *Natural Energy and Vernacular Architecture: Principles and Examples with Reference to Hot Arid Climates* (Chicago: The University of Chicago Press, 1986).