The Translation of Tradition: A Comparative Dialectic

JAMES STEELE

The rapidity of environmental degradation and the recent popularity of the concept of sustainability have made clear how successful traditional societies have been in coexisting with nature. Architects, in responding to this rising awareness, are searching for models of the reinterpretation of tradition, seeking examples and guidelines. Three practitioners who anticipated the need for a reexamination of vernacular principles may be seen to offer such examples, and their methods are now of great interest to others. Abdel Wahed El-Wakil of Egypt, Rasem Badran of Jordan, and Ricardo Legorreta of Mexico have each sought valid ways to translate their cultural heritages into architectural forms. The work of these three architects is here presented as offering strategies of intentional derivation, rational historicism, and elemental minimalism, respectively. The work reveals the diverse ways in which the complex problem of reinterpretation may be approached by architects dedicated to this search, and the different results that may emerge.

In recent years, as a result of its position as a theme of several major international conferences, the doctrine of sustainability has risen rapidly in the world’s attention. One reason for its popularity has been its ability to span the previously treacherous divide between development and environmental protection. The doctrine of sustainability has had a major impact on those involved in designing human settlements, and it has highlighted the successes of traditional societies in striking a balance between human activities and nature. Architects have been particularly affected by the new doctrine, and in their present effort to develop models of sustainable communities, they have begun searching for examples of practitioners who have been able to bridge the gap between the modern world and traditional building practices. They have rediscovered the existence of alternative approaches to design that have paralleled the more dominant discourse on modernism, and that have...
sought to build on knowledge inherent in particular national building traditions. Such efforts have, among others, included the work of architects Hassan Fathy in Egypt and Luis Barragan in Mexico.

This paper looks at the work of several of the most visible disciples of these two important figures, representing two branches of the broader genealogy of tradition-based design. Using examples of the work of Abdel Wahed El-Wakil, Rasem Badran, and Ricardo Legorreta, it tries to identify some of the difficulties inherent in finding new paradigms, undertaking a translation of tradition, and resolving problems involved in adopting appropriate methods of environmental responsiveness at a time of increased dependence on climatic controls. The selection of architects has been prompted by personal knowledge of the architects chosen, a desire for hemispherical balance, and the dearth of published material on their work that reflects popular prejudice in the media marketplace.

THE EMERGENCE OF “SUSTAINABILITY,” AND ITS IMPLICATIONS FOR ARCHITECTURE

The relatively rapid proliferation of the doctrine of sustainability, which now extends beyond architecture into regional, national and international planning and policy, has been a singularly conference-driven phenomenon. The rise of the doctrine can in part be traced to the United Nations World Commission on Environment and Development (popularly known as the Brundtland Commission), which defined the concept in the early 1990s. Following the initiatives of the Club of Rome and the Brandt Commission, the Brundtland Commission recognized sustainability as comprising “those paths of social, economic and political progress that meet the needs of the present without compromising the ability of future generations to meet their own needs.”

In spite of problems that have since become apparent in defining such terms as “progress” and “needs,” this vision has drawn great attention. Not the least of the reasons why has been its ability to offer a solution to the growth/no-growth dilemma that prevailed for two and a half decades before the Brundtland Commission report. The notion of sustainability has offered a compelling and workable middle ground between previously entrenched positions. By holding out the possibility that environmental protection and economic development could be compatible, even complementary, objectives, sustainability is now seen by many as a welcome alternative to such questions as the limits to growth, which once seemed so intractable.

The members of the Brundtland Commission were primarily political figures, not environmentalists. As such, they were determined to combine ecological and development issues, and thereby bring environmental policy into the political arena. Their report was given additional impetus at the “Earth Summit” held at Serrado Mar, near Rio de Janeiro, Brazil, in 1992. This conference, also sponsored by the United Nations Commission on Environment and Development, was organized by Maurice Strong, who stated categorically that the event would carry on the work of the Brundtland Commission, further explore the feasibility of sustainable development, and move environmental concerns into the realm of economic policy. Strong was able to orchestrate the signing of a global “Environmental Bill of Rights.” He was also able to distill the notion of sustainability, placing additional emphasis on development in keeping with his political and business background.

One effect of the high level at which the concept of sustainability has emerged has been that it has effectively, but paradoxically, focused attention on points of synergism between traditional building strategies and the perpetuation of natural environments. The link between sustainability and the design of human settlements became explicit at the Rio conference. Among the six main sections of its voluminous proceedings (entitled Agenda 21, after the century in which the recommendations were intended to be implemented) was a chapter called “The Management of Human Settlements.” This chapter now serves as a rudimentary framework for that movement in design which some have referred to as “sustainable,” “ecological,” or “green” architecture. The Agenda 21 chapter recommends specific initiatives to address such problems as damage to fragile ecological zones, depletion of finite natural resources, and use of building materials which are harmful to human health. These include practices such as using local materials and studying indigenous sources, providing incentives to promote traditional building techniques based on regional resources and self-help strategies, regulating construction to encourage energy-efficient design, discouraging construction in ecologically inappropriate areas, using labor-intensive rather than energy-intensive construction techniques, restructuring credit institutions to enfranchise the poor, recycling and reusing building materials, decentralizing the construction industry, and promoting appropriate technologies.

The Brundtland Commission created the basis for this linkage between the concept of sustainability and traditional societies. Its report stated that “These communities are the repositories of vast accumulations of traditional knowledge and experience that links humanity with its ancient origins. Their disappearance is a loss for the larger society, which could learn a great deal from their skills in sustainability managing very complex ecological systems.” But the link was confirmed by the Rio Conference, which resulted in the following statement of principles from Agenda 21:

Indigenous people and their communities represent a significant percentage of the global population. They have developed over many generations a holistic traditional scientific knowledge of their lands, natural resources and environment... In view of the inter-relationship between the natural environment and its sustainable development and the cultural, social, economic and physical well-being of indigenous people,
national and international efforts to implement environmentally sound and sustainable development should recognize, accommodate, promote and strengthen the role of indigenous people and their communities.

Momentum behind the concept of sustainability and its link to the study and emulation of aspects of traditional societies received an additional push when a United Nations proclamation named 1993 the "International Year of the World's Indigenous Peoples," and when the World Bank organized a conference in support of this designation. Among other topics, the conference focused on the application of traditional knowledge to land use planning and environmental protection, and it examined ways in which traditional societies have prefigured the general principles of the sustainability doctrine. The conference drew on the burgeoning number of Indigenous Knowledge Resource Centers worldwide for speakers and panelists. Its proceedings concluded that "there is no contradiction between the preservation of traditional knowledge and development. To the contrary, traditional knowledge can be seen as a 'tool' or an 'instrument' to promote cultural sensitivity or appropriate forms of development."

ALTERNATIVE ROLE-MODELS REVEAL AN ALTERNATIVE ARCHITECTURAL HISTORY

Media fallout from the extensive institutional initiative described above, combined with the shift from an industrial to a service economy, which has brought architects and urban planners from the developed world face to face with unfamiliar cultures, has intensified interest in finding new paradigms. There is now a heightened realization among design professionals that their knowledge about sustainability, indigenous societies, and the threads that bind them is limited. This has led to increased awareness of, and curiosity about, the methods used by those who have been able to bridge this gap in the past and arrive at successful translations of tradition.

It is a tricky business at best to find new role models among the few contemporary architects trying to make a meaningful contribution to the critical interpretation of the past while also extending commentary on appropriate energy systems. The effort requires nothing less than a revisionist approach to the history of architecture in the last century. The goal of such a revision must be to bring the genealogies of several nationalistic insurgencies launched against the cultural homogeneity of the International Style into high relief. Such a comprehensive revisionist history has yet to be attempted. But it might begin with the Arts and Crafts movement and the work of Charles Rennie Mackintosh.

Mackintosh's work marks the point at which the impetus of Celtic Revivalism was diverted, to be replaced by the increasingly abstract historical metaphors of Peter Behrens and the subsequent distancing from the past that Behrens fostered.

In retrospect, Mackintosh was not a precursor of the Modern Movement at all — as its propagandizing protagonists Nicholas Pevsner and Thomas Howarth insist. Rather, he was a persistent and perceptive translator of Scottish vernacular expression, as recorded in his voluminous sketches of farmhouses, churches and castles. But an alternative architectural history, as described above, would also need to include the Catalonian agenda of Gaudi and Jujol (which has been lionized by modernists as structural expressionism); the historicism of Dimitris Pikionis, and his search for a Greek national style following his dissatisfaction with functionalism; and similar attempts at defining a national architectural idiom, such as those of Sedad Hakki Eldem in Turkey, Hassan Fathy in Egypt, Correa and Doshi in India, and Barragan in Mexico — to name the most obvious. These architects have all produced several generations of disciples. However, only a small number of these practitioners have ever been able to garner the international recognition accorded their counterparts who have followed more conventional philosophies, variously referred to as direct, positive or negative mutations of modernism.

Of particular concern to this paper is the work of disciples of Fathy and Barragan. In his search for an indigenous style, Fathy used medieval Cairo as a textbook. He was particularly struck by the recurrence of typologies in historical buildings. For example, he traced the qa'a (which roughly translates as a semi-public reception hall) from its beginning as a set of T-shaped iwans flanking an open central courtyard in desert palaces such as Ukaidar in Iraq, to a similar space in the residences of Al-Fustat, and to a final covered configuration in Cairo. Fathy noted several other formal and spatial configurations that typified the medieval city. Among these were the magaz (indirect entry), sarm (central court), maqam (raised north-facing loggia), takhtaboon (breezeway between courtyards), and molof (wind catcher). And Fathy attempted to adapt such traditional building elements to contemporary projects using an ancient Nubian structural system (FIG. 1). Since Fathy's death, two of his most prominent advocates have been Abdel Wahed El-Wakil and Rasem Badran. These architects have also concentrated on the use of typologies, with El-Wakil generally adopting and exporting them regardless of context, and Badran universalizing their application and attempting to find local examples in particular cultural milieux.

Barragan, for his part, was as much a poet as an architect. But, like Fathy, his method was to search for long-standing characteristics of local culture. In his case, he claimed to draw these from pre-Columbian sources. The disciple of Barragan whose work is studied here, Ricardo Legorreta, has followed his mentor's attempts to translate basic environmental and cultural characteristics. But he has diverged from Barragan in terms of personal interpretations.

INTENTIONAL DERIVATION: THE WORK OF ABD EL WAHED EL-WAKIL

In one of his first private projects, a summer residence for Esmat Ahmed Halawa in Agamy, Egypt, completed in 1975, Abdel Wahed El-Wakil revealed the strength of his ties to
Fathy. Not only did the residence depend on typologies Fathy had already codified, but El-Wakil tied himself to the same dome-and-vault structural system used by Fathy to the extent that he employed Fathy’s chief mason, Aladdin Moustafa, as the contractor. Organized around a central sahn, the Halawa House is divided between a semi-public zone, with its magaz and qa’a, at the northern end of a rectangular site, and a family area at the opposite end, segregated for privacy (FIG. 2). The house was premiated for an Aga Khan Award in 1980, giving the work of El-Wakil its first exposure in the international press.

At about the time the Halawa House was under construction, El-Wakil also designed the much smaller Hamdy House in Giza, which continued themes from the Halawa House at a smaller scale. In this project El-Wakil employed a proportion system to achieve the most efficient use of the small area and give the house a sense of spaciousness and order. The result was a plan roughly one-third open and two-thirds closed. The proportion system used a continuously doubling spiral generated from the center of a fountain in the open courtyard, creating a number of increasingly larger squares in the process. In this way the design resulted in a logical progression of spaces evolving out of water, the symbol of the beginning of life. Only the slightest hint of this progression is apparent from outside the house, however — in wall heights that vary from the lower enclosure around the courtyard, to the slightly higher wall at the entry gate, to the highest wall around the qa’a, the central interior space. And at no time is the wall low enough so people outside may see in. In fact, the character of the interior is suggested only by the exterior form, location and size of mashrabiyya screens covering the limited number of windows. In this way El-Wakil was able to maintain the same sense of privacy achieved by segregation at Agamy, where more space was available.

One important element of the design by El-Wakil for the Hamdy House is the dichotomy between inside and outside, accentuated by the presence of a walled courtyard. At the point between inside and outside, between the entrance gateway and the door leading to the interior, is placed a transitional space, set apart as a cool, shaded place to sit. This space
Jeddah, which was a walled city until the early 1940s. El-Wakil has described this residence as follows:

ward opening being larger than the leeward for maximum natural metaphor of hospitality in the house. After the continuous banquettes facing the exterior along three walls in a and south to take maximum advantage of light and views along a horizontal axis, with its long elevations to the north

architect's attempt to translate the singular condition of many purposes — which is one secret of its economy. Unlike other exercises in efficiency, however, the Hamdy House uplifts the spirit, showing that modest means need not result in physically and psychologically limiting architecture. Following these initial projects in Egypt, El-Wakil sought expanded opportunity across the Red Sea at the height of the oil boom. The Suliaman Palace was the architect's first com-

mision in Saudi Arabia. It revealed a continuity with his earlier work in Egypt, particularly in the typologies used and in the architect's attempt to translate the singular condition of Jeddah, which was a walled city until the early 1940s. El-Wakil has described this residence as follows:

In the Suliaman Palace I wished to make explicit a philosophy of design of the traditional Arab house. Any architecture that serves society is dynamic and prone to change. The challenge is to maintain continuity within change by referring to constants and reinterpreting them in a new context. The palace is located in new Jeddah, in a reclaimed desert area to the north of the older city, where plots are isolated by wide avenues, and it differs from the earlier houses in the city in that it is on an individual plot. 9

As an expression of these conditions, the palace extends along a horizontal axis, with its long elevations to the north and south to take maximum advantage of light and views toward the Red Sea (FIG.3). The sequence of spaces along this axis begins with a small courtyard, acting as a magaz and leading into the house. A large maglis on one side of this court has continuous banquettes facing the exterior along three walls in a manner typical of the traditional male reception room of the region. The maglis is organized as a qa'a, and it provides the highest volume in the long elevation, completing an important metaphor of hospitality in the house. After the qa'a, there is a subtle shift in zoning toward an inner sanctum, reserved for close friends, which is marked by a change in level and scale. The change of level is repeated in an even more exaggerated way between the semi-private zone and the private family area at the end of the linear sequence. The overall result is a tripartite division of public, semi-public, and private compartments. In this way, El-Wakil has reinterpreted in a horizontal sequence the divisions of the traditional Jeddah house, where these functions are stacked vertically.

In terms of environmental responsiveness, the Suliaman Palace continued Fathy's precedent of using natural systems, which made Fathy one of the first contemporary "sustainable" architects. In particular, living areas in the palace were related to open courtyards containing vegetation and water to generate a naturally controlled micro-climate. And to minimize the impact of direct solar radiation, the openings to rooms were properly oriented and screened with shading devices. Furthermore, the palace's courtyards were shaded by high walls, trees and pergolas, and iwan was used as outdoor living spaces with maximum shade and ventilation. And, as was noted in reference to the Hamdy House, prevailing wind patterns were harnessed for cross ventilation — with a malakf feeding cool sea air into the qa'a (which has a wooden lantern at the top to allow hot air to escape, similar to those in the houses of medieval Cairo). Finally, the palace's thick, perforated terra-cotta-brick bearing walls create considerable thermal mass, modifying the extreme diurnal temperature swings by producing a "flywheel" effect between internal and external temperature changes.

The Suliaman Palace brought the work of El-Wakil to the attention of Jeddah Mayor El-Farsi, who asked that the architect build a series of mosques along the city's Corniche. The first was the Island Mosque. Next came the Corniche Mosque, built as a part of the mayor's beautification plan for the city (FIG.4). This project was based on a Mamluk prototype from Cairo, which had a similar composition and a large entrance iwan.10 However, the most environmentally and formally innovative of this group of mosques was Al-Ruwais, which occupies a high knoll and commands one's attention as one approaches from downtown (FIG.5). From the north the mosque is also a dominant landmark in spite of its scale, because its backdrop is the Jeddah waterfront and the city's growing commercial center.

The necessity of natural ventilation had to be vigorously addressed in all three of El-Wakil's Jeddah mosques, both to keep costs down and receive approval from the municipality. This requirement resulted in an eloquent formal expression in Al-Ruwais. Its rhythmic double series of catenary vaults, stacked so as to receive a maximum amount of sea breeze, were derived from the market hall at New Bariz designed by Hassan Fathy five years earlier. Behind the vaults the main dome above the mihrab was incorporated with smaller domes on each side to create an extremely effective system of air circulation, as well as a simple, but memorable, massing of forms. The gradual transition achieved in this banked composition of vaults
and domes was further extended by two shallow domes above the symmetrical entrances to the prayer hall.

El-Wakil used a specially designed thin clay-tile brick to construct the catenary vaults of Al-Ruwais that allowed compressive forces to be transferred and yet maintain an elegant, curved profile. To accentuate the linearity of these vaults, which deliberately echo the waves of the Red Sea nearby, buttresses were used to frame the front elevation and the minaret. Finally, to assure the unhindered flow of natural ventilation from the sea while providing a measure of privacy from the road, the mosque was placed on a high base and provided with open brick screens that fill the spans of three of the five main arches on its front elevation. In a subtle way these screens help define the prayer space, and yet they do not detract from the harmonic horizontality of the total composition. A similar set of screens provides privacy on either side of the mihrab, separating the interior from the walled-in ablution area.

The public-relations success of the Jeddah Al-Farsi mosques (which brought El-Wakil a second Aga Khan award for the Corniche entry) opened the door for larger projects in the Kingdom. Among these was the King Saud Mosque, which is one of El-Wakil’s most controversial adaptations (FIG. 6). The main debate with regard to this building concerns the main entrance on its south, which is a direct copy of the entrance to the Sultan Hassan Mosque in Cairo (the cardinal distribution of the building’s four iwans was also based on this precedent). El-Wakil has argued that, unlike the modernist emphasis on original creativity and individuality, tradition involves borrowing and improvising on existing forms. For this reason, and because of his belief in the need to rediscover lost construction techniques (such as those used in making the geotectically complex muquarnas, or stalactite moldings, above the Sultan Hassan door), and so restore links in the chain of tectonic knowledge missing since the industrial revolution, he feels completely justified in such derivation. In this attitude, El-Wakil has extended himself beyond the Fathy vocabulary — although the structural aspects of that vocabulary remain evident in the King Saud Mosque, especially in the huge brick dome built in the Nubian method, without centering. The dome also uses tellurian material of high thermal mass, obviating the need for energy-intensive steel.

A similar degree of derivation was evident in El-Wakil’s last project in the Kingdom, the Al Miqat Mosque, which used the Ibn Tulun Mosque in Cairo as a model (FIG. 7). Al Miqat was intended as the gateway to Madinah Al Munawarah. It was, however, conceived as more than a space-planning solution to the programmatic challenge of providing prayer space for 5,000 wor-

FIGURE 3. Sulaiman Palace, Jeddah: plan, section and elevation. (Courtesy of A. W. El-Wakil.)
The most basic of these concepts, and the one that is of first importance in the design of the Al Miqat Mosque, involves use of the central courtyard in conjunction with surrounding hypostyle galleries. This practice had its roots at the beginning of Islam, since the first mosque, which evolved as an extension of the house of the Prophet, was organized inside a protective wall. In the first mosque, galleries consisting of palm trunks with shading provided by fronds were eventually added to accommodate the growing number of worshippers, and these galleries were directly attached to the exterior wall, leaving an open court in the center. Rather than simply representing a spatial remnant or the perpetuation of a domestic convention incidentally appropriated for religious use, this first mosque courtyard also served the higher purpose of providing physically and symbolically sanctified space. As El-Wakil, himself, has said about the arrangement of Al Miqat:

*This variation typifies the early mosques in Islam and is conceived by defining a plot of land through the erection...*
of an outside wall and establishing a shaded area along the qibla wall facing the direction of Makkah. This gesture of defining space and consecrating it to the name of God and to his worship is the basis upon which space is converted from the profane to the sacred.”

As one of the clearest and most dignified examples of the central courtyard mosque, the Ibn Tulun complex in Cairo embodies many of the principles that were amplified at Al Miqat, and which served as its main source of inspiration. A large open site at the time of its construction allowed the Ibn Tulun Mosque to be aligned orthogonally within a ziyadah (surrounding precinct), and yet still conform to the direction of Makkah al Mukkaramah. But access requirements to and from the main highway passing Al Miqat dictated that its ziyadah, which contains public facilities on its northwestern edge and ablutionaries on both its southeastern and southwestern sides, needed to parallel this road.

The second basic concept from Islam evident in the design of Al Miqat involves the revitalization of sacred geometries. Here it emerges from the transformation of an original prototype and its commemoration at a smaller scale through a series of rotating squares. As a form, the square is nondirectional, with four sides that represent the cardinal points, and the earth as the platform from which — as Fathy has said: “The movement of the sun and moon and stars in their unequal course is re-enacted, with their meeting and reconciliation giving fresh promise of one more coincidence.” When repeatedly rotated inside one another in a series of closed and open spaces, as they are at Al Miqat, sequentially diminishing squares strongly imply infinity. The last deflection toward the qibla direction, which serves to close the series, places the symbolism in context. In the design of Al Miqat the minaret (which is not shown in the earlier version of the project illustrated in Figure 9) provides the vertical marker that reinforces this intention. Based on the spiral at Samarra, this minaret is a geometrical tour-de-force, beginning not with a square, as at Ibn Tulun, but with a triangle. Gradually, this triangular base diminishes in size as it rises, until it resolves itself as a cylinder. As the architectural expression of human aspiration toward the divine, the minaret today has often been reduced to serving as a general signpost for the mosque. But at Al Miqat El-Wakil managed to recapture the original intention of this important religious symbol, once again demonstrating the countless creative possibilities that exist within the confines of tradition.

One delightful consequence of El-Wakil’s approach to the design of the Al Miqat Mosque is a lush garden of palm trees that separates the mosque from the service perimeter, creating an environmentally friendly micro-climate that stands in dramatic contrast to the barrenness of the hills nearby. Such sensitivity to surroundings extends beyond the perimeter wall into utilitarian areas such as the parking lots, which are located out of necessity to either side of the complex. By using loose, light-colored gravel rather than black asphalt, El-Wakil managed to lower the albedo level in these areas, considerably reducing the ambient temperature around the building.

In its final form the Al Miqat Mosque measures 77 meters
square. It sits inside a 1,000-square-meter courtyard and provides praying space for 5,000 worshippers. It is constructed of load-bearing brick, with a series of arcaded rows organized in consecutive bays spaced 6 meters apart. Massive piers support arches that hold up a barrel-vaulted roof with a height at each apex of 16 meters from ground level. Aside from its thermal advantages and relatively low cost, the construction system used for the mosque also proved efficient in a wider sense, since it allowed the complex to forgo the use of such energy-intensive materials as steel and concrete, which would have had to have been imported from abroad. The system also eliminated the need for costly wooden centering and framework, thus reducing the use of an increasingly rare natural resource.

Taken in chronological overview, the Halawa and Hamdy Houses, the Sulaiman Palace, and the Al-Farsi, King Saud, and Al-Miqat Mosques show El-Wakil’s approach in form and detail to both secular residential and sacred architecture. The approach may generally be described as intentionally derivative, providing a deliberate twist on the stigma placed on that trait by modernists. El-Wakil has argued that intentional derivation is actually the basis for all notable architecture in traditional societies. El-Wakil has also continued to elaborate on the formal language evolved by his mentor, Fathy. But he has transferred this language to a more durable and publicly acceptable material. (At the height of his activity in Saudi Arabia, a factory produced clay brick almost exclusively for his buildings.) Less a purist than Fathy, he seems more cognizant of pragmatic issues and techniques — including the use of computers as a design tool. Since his approach of uncovering past techniques involves a thorough knowledge of geometry, his pragmatism has helped him considerably. He characterizes his role as that of a transmitter, or one who is rediscovering the way in which craftsmanship was implemented in the past. This, he claims, is the positive function of derivation.

Finally, while he is frequently criticized as being acontextual and anti-urban, it should be noted that the examples typically cited in making this charge are the Jeddah mosques, which were always intended to be functional sculpture. Many equally compelling instances exist of El-Wakil’s ability to blend his work into existing architectural fields. Nevertheless, his design ability, regardless of its sources, is unquestioned. It is his reliance on preexisting prototypes that has made his work controversial. This is frequently focused on the continuing development of an established theme such as the Ibn Tulun/Al Miqat model, or the reinterpretation of a traditional model, such as that of the Jeddah house in the case of Sulaiman Palace.

THE HEURISTIC TYPOLLOGIES AND RATIONAL HISTORICISM OF RASEM BADRAN

In comparison to El-Wakil, Jordanian architect Rasem Badran presents a completely different approach to the reinterpretation of a traditional language. While he may now pub-

licly decline to be considered a disciple of Fathy, his goal has been to carve out a similar role as a moderator and translator of tradition in his region and culture. Unlike El-Wakil, Badran has used many of the most well-known cities in the Arab world as his field of study to develop what may be characterized as a method of rational historicism. He has specifically studied the environmental and social differences in these cities and the way such variations have been expressed in formal arrangements. Badran has described his direction as follows:

The solutions for any architectural problem are bound to a set of interconnected factors related to socio-cultural, environmental, and morphological-technological issues. As for my role as an architect in activating these factors, I see it as giving value to human needs through emphasizing the character of place, its architectural and morphological patterns, and giving meaning to the built environment to truly relate it to its inhabitants. This balanced interrelationship and correlation between socio-cultural and morphological patterns is the inclusive whole that differentiates Islamic civilization, while the intellectual role of the architect’s involvement is reflected in the ability to explore the hidden links of these perspectives. By this, I try to shed light on an epistemological framework of knowledge related to a certain architectural act which has been generated from mental images still open to further reinterpretation. By discerning the essence of an architectural object, I avoid the trivial historicity and literal copying from the past, producing semiological images of contemporary architectural expressions. In my search for the originality and identity of a certain culture without copying its historical images, I keep a distance from personal style, egoism and self-centered individualism of today’s world.8

One recent project that reveals these more general concerns, as well as his method of making them manifest, involved Badran in an analytical study of the urban characteristics of Sana’a, Yemen, and the similarities and differences between its architectural features and those of other cities such as Cairo, Qairawan and Baghdad. The study indicated to Badran that the center, usually consisting of the mosque (al masjid al-jami‘) and the city’s commercial and functional activities, is one of the constant features of Arab-Islamic cities. However, Badran found that the urban formation of Sana’a was a bit different from that of other cities. In Sana’a’s residences are grouped vertically around gardens (bustans), which form the public spaces in the neighborhoods and provide places where people can interact (FIG.8). In the other cities Badran studied the residential neighborhoods were spread horizontally, dominated by the internal courtyard, the private space for each house.

In Sana’a, Badran also analyzed the elements of the private residence, finding that the vertical expression of the residential cell resulted from the needs of a nomadic agricultural society
and the special topography of the region, where agricultural land is scarce. He also found the house had evolved in relationship to light and ventilation, with openings of various sizes cleverly used to cut glare, yet allow diffused light to enter and encourage air movement.

Badran has noted that despite the social differentiation among the people of a given neighborhood, the ornamental quality of openings in the Yemeni house acts as a social leveler. While the party walls used in these dwelling structures emphasize simplicity and modesty of appearance, reflecting social coherence, the elaboration of interiors allows an individual owner to show his social and economic status. This becomes particularly evident in the degree of articulation in the openings of the mafraj, the highest room in the house. This feature is equivalent to the internal courtyard of the traditional Arab house, where a similar interest in ornament is evident. Badran’s typological studies, carried out largely with a sketchbook and a pen, describe a distinct methodology in the ornamental and architectural elements of the openings:

The system of openings in a typical Yemeni house is based on the fundamental phenomena which dictated vertical growth. The ground floor was used for entry and for storage; therefore, its openings are small and few. The upper floors have openings which differ according to the size of the family living in the house. The upper floor (the mafraj) is used to complete the form of the house and for viewing the outside; therefore, its openings are articulated in a way to represent the status of the owner.

Moving on in hierarchical progression, Badran next studied the formal aspects of the residential neighborhoods in Sana'a (FIG. 9). At this level he noted the fortress-like formations and the importance of water in locating buildings. Badran categorized urban typologies and their morphological patterns, studying the bustan (agricultural allotment), al-jami (mosque), suq (shopping area) samsara (specialized commercial center), and aniyar (well) — in addition to gates, walls, streets, alleys and intersections. From these investigations he arrived at a set of general planning principles. These included the linear
organization of vertical residential units, orientation toward light and natural ventilation, grouping of dwellings around *bustans*, and a system of openings related to environmental and symbolic aspects. He then applied these principles to the design of a new site, dimensioning the design to approximate the scale of a traditional neighborhood. In this project, he located public activities such as shops close to the street, while he located the high towers of the residential complex at the private end of the site around a *bustan*. The mosque and its associated activities were located between the public and private parts of the complex to serve as a socio-cultural link.

Badran has taken the similar approach of researching typologies and patterns in his work in Riyadh. Here his design for the Justice Palace (or *Qasr Al Hokm*) and the Jamea Mosque maintains an important relation to the old city of Riyadh and occupies a strategic position in the urban fabric.

The first issue for Badran in this design was to reestablish the cultural and traditional center through studies of interrelated elements and the potential of using these elements as prototypes for new cities. In this regard, he noted the historical relationship between the Jamea Mosque and the ruler's residence, surrounding cultural and educational activities, and public and commercial buildings like the *suq* and the *khan*. The new mosque replaced the old *Qasr al-Hokm Mosque*, which itself had been built on the ruins of the King Abdulaziz Mosque. The new structure needed to serve some 14,000 worshippers, as well as another 6,000 visitors in an outdoor courtyard. The complex also included commercial facilities, schools, *imami* residences, and quasi-governmental services. Badran explained his initial approach to the project (for which he won an Aga Khan award in the 1995 cycle) as follows:

*We relied heavily on our experience with the Bagdad State Mosque project in this design. We formed a geometric network using a series of post-and-lintel arcades that run parallel to the qibla. This system is used in many local traditional mosques, including al-Diriyya. Using an arcade system adds human scale in a large mosque and breaks the space into smaller areas, convenient for human gathering, a lesson we also learned in*
Badran's planning strategies reflected the importance of connections used to establish what Badran has called "a balance between the rational, the physical, and the spiritual aspects in the city." In the Justice Palace, these strategies were used to replicate the morphology of the old city of Riyadh. Traditional elements and vocabulary, such as walls, gates, and towers were also used in the design, so that the complex was strongly related to the scale and character of the original city, rather than being isolated — as are many similar institutions today. In fact, the boundary wall of the palace resembles the walls of many cities in the Arab world, and it interacts positively with the urban setting by referring abstractly to such features of old Riyadh as defense walls, gates, royal entrances, formal gateways, and public entrances. Administrative buildings cluster behind the wall, and these are backed by the palace itself, with towers that resemble Al-Musmaq, the nearby fort that King Abdulaziz al-Saud captured when he first set out to unify the Kingdom. The result of these effects is that the entire Qasr Al Hokm complex is articulated on three levels: plain walls resembling those of old Riyadh; massing resembles a traditional residential area; and a focal point echoes Al-Musmaq. As in the past, the mosque is as an equally important component, joined to other functions rather than being left on its own, as is generally the case in cities throughout the Middle East today.

To establish continuity with the past in people's minds, Badran adopted a resonant semiotic system at Qasr al-Holan which is selectively localized. But in several other, more recent projects, such as his Embassy for the United Arab Emirates in Amman (Fig. 10), and the Secretariat Organization of Islamic Capitals and Cities (Fig. 11), that system has become more universal. In these later projects Badran has attempted to invoke pan-Islamic references that would align with his expanding vision of the potential of his architecture to reflect unity within diversity.

As the range of issues presented in Rasem Badran’s projects indicates, his interests are significantly different than those of El-Wakil — particularly in terms of his concern for urban typologies. And his method of inquiry is heuristic, rather than derivative: i.e., it is generated through direct, recorded observation focusing on universal typologies and the slight variations that occur in them due to differing conditions. An example of this difference is graphically presented in a study Badran was commissioned to perform of winning projects in the 1989 cycle by the Aga Khan Award. Here he compared El-Wakil’s individual, sculptural approach in the Corniche mosque to Pharaonic monumentality, which he contrasted with the contextual integration typically found in Arab cities.

Badran’s method allows him to formulate progressions of examples based on consistent, generic similarities. While he is concerned with restoration of craftsmanship, this is not his primary focus, because he seeks to perpetuate types rather than techniques and forms. If the forms that result are similar to those used in the past, the synthesis is coincidental rather than intentional, based on local evolution of a certain type. Such an extensive process of investigation tends to give Badran’s work an aspect of authenticity, eliciting a positive response especially from students.

Badran’s goal is ultimately to search for constants of the kind Aldo Rossi has categorized in his Architecture of the City as “persistence.” And in this effort he distinguishes carefully between the permanent and the transitory. In his exploration of a religious and cultural tradition that embodies both great unity and diversity, Badran has concentrated on finding the common denominator beneath difference, rather than perpetuating particular national historical symbols. Through extensive graphic analysis, he has shown that these individual forms usually derive from environmental and economic factors. In spite of his rationalistic approach, Badran’s architecture remains a perceptive, rather than rigidly objective, examination of the world. As a result, he has revealed the seemingly infinite possibilities for creative expression possible within the framework of tradition.

A SCION OF THE BARRAGAN BRANCH:
THE ELEMENTAL MINIMALISM
OF RICARDO LEGORRETA

In the Western hemisphere, Ricardo Legorreta has been one of the most influential proponents of traditional architecture. Like El-Wakil, he has also been guided by a mentor, in his case the poet/architect Luis Barragan. Although Legorreta’s work is frequently compared to that of Barragan, Legorreta is quick to note there are significant distinctions between them on account of personal interpretations of basic environmental and cultural characteristics related to the heritage of Mexico.

Barragan was almost completely unknown outside of Mexico until Legorreta helped organize an exhibition of his work at the Museum of Modern Art in New York City. The attention generated by this show was directly responsible for the award of the Pritzker Prize to Barragan in 1980. In his acceptance speech, rather than addressing more predictable and mundane aspects of function, Barragan spoke of architecture as “a sublime act of poetic imagination,” comprised of “beauty, inspiration, magic, serenity, silence, intimacy, and amazement.” However, Barragan did not characterize himself as a traditional architect, and this position is instructive in understanding Legorreta’s approach as well. According to Legoreta:

*We should try to produce with modern architecture the same attraction that is found in the surfaces, spaces, and volumes of pre-Columbian architecture as well as colonial and popular architecture, but it has to be done...*
with a contemporary expression. Obviously, we cannot repeat these forms exactly, but we can analyze the essence of these elements, so that, without copying the same gardens, patios, and plazas, we can transmit to people the experiences of centuries which may make their lives a bit more pleasurable. It is exactly what modern cities lack the most." 

Legorreta has carried over Barragan’s predilection for surface, volume and color, as well as for water, which is central to the historical memory of Mexico, since Mexico City was an island city at the time of the arrival of Cortez. Legorreta notes that these elements are basic to the vernacular architecture of the country, and that they have always been used by people of limited economic means. In this regard, he claims his work is more indebted for inspiration to the spirit of Mexican tradition than to Barragan.

Walls reflect our Mexican history. The pre-Hispanic wall — strong, ancient, stark and sometimes colorless — conveys the dignity of its makers and the magnificence of that civilization. The colonial wall has a different spirituality, not Spanish or Indian, but mestizo, the blend of two races and religions. The mystery, fantasy and sensibility of the Indians is married to the confidence and aggressive religiosity of Spain. Sometimes the wall rises to protest outside influences and the forces which repress Mexicans. With walls, our great muralists depicted both the sources of our pain and our struggle and hope for freedom. When other cultures influence Mexico, the wall almost disappears, as though it is embarrassed and has gone to hide. Under French influence in the last century, and American influence today, the wall does not shout — it hides and cries. Yet always there is a constant, humble, discreet wall that does not die but serves the true Mexican, the glorious vernacular wall, a source of unlimited inspiration, strong, sweet and romantic, full of color — decidedly Mexican."

Legorreta began his career by working for Jose Villagran, an architect who pursued a decidedly modernist direction. But
Legorreta left this office in 1960, because even though he respected Villagran, he was unable to reconcile the work he was doing there with his love of his country and its rich architectural heritage. In the same year he was stricken with a serious illness, an event that reinforced this time as a significant turning point in his life. Soon after his recovery, Legorreta was commissioned to design the Automex plant, which is completely Mexican owned.

Automex was intended to be a homage to and a support for the Mexican who fights to obtain a means to work with dignity. . . . Automex [was] like a rebellion against the discipline and the domination of the international world over my country that I love so much.\textsuperscript{13}

The startling, massive simplicity of the Automex factory, with its long, low horizontal walls punctured only by two tall, truncated cones housing an auditorium and cistern, provided a radical departure when it was completed in 1964 from the typical glass and steel-frame buildings that then prevailed in Mexico, and it touched a nationalistic chord. Soon afterwards, the Banco Nacional de Mexico commissioned Legorreta to design a hotel on a site near Chapultepec Park, asking that it be open in time for the 1968 Olympic Games. The resulting Hotel Camino Real featured sun-dried-brick bearing walls, and was organized around internal courts filled with water and gardens—a sensitive approach to the hot, arid climate (FIG.12). This sensitivity, realized in a local material that was manufactured using a non-energy-intensive appropriate technology and installed by local, semi-skilled labor, places Legorreta’s work firmly within the framework of the sustainability doctrine outlined in Agenda 21.

Even more indicative of Legorreta’s integration of architecture and environment was his design for the Camino Real chain’s hotel in Ixtapa in 1981. The architect refused the site originally proposed by the client, but found another on a steep slope closer to a more confined beach. Here, his building benefited from a better orientation, view, and connection to the land. Stepping dramatically
down the slope in descending terraces, the substantial, monochromatic building, which breaks at an angle in the middle to more closely adapt to the curve of the slope, seems a part of the land — as if it had always been there. The exterior is dark beige, blending easily with the dense tree cover around it. But more intense colors are used on the wide, plain surfaces of the interior and on the walls dividing the terraces of each room, recalling the bright hues of the flowers that grow in its internal courtyards. All extraneous detail has been eliminated from the complex, allowing it to convey the powerful, elemental image of being at one with nature. Moreover, sensitive orientation and wide openings ensure that natural ventilation provides adequate cooling for all spaces, while the massiveness of the walls and deep overhangs ensures protection from the sun.

Legorreta’s approach is clearly more intuitive than heuristic, and it seems to discourage graphic exploration. In fact, drawings of his projects are typically as minimal as the architecture itself, being indicative rather than exploratory. In comparison to El-Wakil and Badran, Legorreta is a reductivist who has sought the elemental substance of his country’s vernacular architecture. Consequently, he does not rely heavily on documentation, but on personally directing contractors. In this method, extempore changes take place during the building process, as they typically did in the past.

ROLE MODELS IN REINTERPRETATION, OR CLOSET MODERNISTS?

The three architects whose work is discussed here present differing attitudes toward the translation of traditional architecture. Despite the debates which surround them, each of their approaches may be considered equally valid. While some may justifiably argue that a popular architecture, stemming from a particular culture, may represent the only real reinterpretation of tradition, the work of these architects points the way for those faced with the task of interpreting tradition and respecting the environment. Each architect uses techniques that lie within the framework of sustainability. And these techniques reveal the alliance between this popular concept and traditional environmental strategies.

There is, however, one basic issue, which has only been touched on briefly here, which provides a subtext to the arguments above. A full discussion of it lies outside the scope of this paper, but the issue is germane enough that it can be introduced here for closure. The idea concerns what might best be termed modern influence. Mohammed Al-Asad, one of the few critics to address how modernism may apply to architects attempting reinterpretations of tradition, has pinpointed the problem thus:

The question is to what extent we are to treat such architects within the general framework of Western architectural history and criticism, and to what extent they represent the beginnings of the formation of... a new field of inquiry, one which may require significant modifications to the manner in which the study of modern architecture has been approached.4

Fathy, El-Wakil, Badran, Barragan and Legorreta were each educated in a colonial and post-colonial setting, and they were all initially enamored of modernist doctrine. But when J.M. Richards mentioned in the Aga Khan monograph on Fathy that his friend might be classified as a modernist because of his ostensible functionalism, formalism, structuralism, and adherence to the truthful expression of materials, his suggestion outraged many of Fathy’s inner circle. And yet some of those who have been most vocal in expressing this outrage, such as El-Wakil, have themselves been similarly classified — as has Badran for his overt rationalism, reliance on modular grids, and prefabricated construction systems. One can only conclude that in the context in which these architects have operated and continue to operate, “modernism” remains an anagram for much more than style. It may be that the severed chain of tradition lamented by El-Wakil cannot be mended by anyone, regardless of talent, vision, sensitivity, or purity of intention.
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