Considered the largest mudbrick building in the world, the Kathiri Sultan’s Palace dominates Seyoun, the regional capital of Wadi Hadhramaut. The building currently houses the Museum of the Hadhramaut and the regional offices of Yemen’s Department of Antiquities.
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tirling the edge of the Empty Quarter, sheer cliffs of sandstone and limestone rise 1,000 feet above the valley floor of Yemen’s Wadi Hadhramaut, flanking a series of settlements that lie along an ancient road. Three of these cities—Shibam, Seyoun, and Tarim—are renown throughout the Arab world for their exotic and sophisticated architecture, executed entirely of mudbrick.

In antiquity, the Hadhramaut Valley, 100 miles inland from the Indian Ocean, served as an important thoroughfare for the spice route, which stretched from Arabia to Europe. To this day, land in the valley floor is used for cultivation; settlements are constructed high on the escarpments. In addition to providing a modicum of defense—until recently, tribal warfare was prevalent in the valley—the structures are protected from flash floods, which race through the valley during the fall monsoon season.

Built atop an ancient tell, the walled city of Shibam has been called the “Manhattan of the desert” because of its densely packed mudbrick tower houses, some ten stories high. Though Shibam is rich in history, the town we see today dates primarily to the early sixteenth century. A UNESCO World Heritage City, Shibam is the best known of the mudbrick cities.

The city of Seyoun, the regional capital of the Valley, is dominated by the Kathiri sultan’s palace, an enormous, seven-story edifice, quite

THE MUDBRICK MARVELS OF WADI HADHRAMAUT

Castles in the Sand

THE MUDBRICK MARVELS
OF WADI HADHRAMAUT
possibly the largest mudbrick building in the world. The palace, which now houses the Museum of the Hadhramaut and the offices of the Department of Antiquities, is one of the few in Seyoun to have survived in its original form. Although older neighborhoods in the city are still intact, Seyoun is the most compromised in terms of the introduction of concrete structures, with nearly 1,000 such buildings constructed in the valley since 1992. Among the city’s newer buildings, however, are some interesting examples of contemporary architecture such as the regional airport, built in the 1960s using hybrid technology. Here, concrete beams and columns were infilled with traditional mudbrick construction and decoration.

Tarim, which serves as the religious center of the valley, is the least known of the Hadrami cities. Its most impressive building is a 50-meter-tall, unreinforced mudbrick minaret. The city boasts a number of palaces that were built between the 1870s and 1930s by merchant families who made their wealth abroad. The palaces exhibit an unusual interpretation of foreign styles—Baroque, Rococo, Neoclassicism, Mogul, and Early Modernism. This cross-cultural fertilization is all the more interesting because the basic typology of plan and spatial relationships suited to the local climate and culture remains in the design of these buildings. In addition to the structures themselves, Tarim is famed for its highly developed lime craftsmanship, applied to mudbrick buildings as waterproofing and decoration.

Despite its uniqueness, Tarim has historically been overlooked by international agencies funding heritage conservation in favor of the better known cities of Shibam and Seyoun. In 1972, under a Marxist regime, the palaces were expropriated and reused as public housing and schools. In the decades that followed, little maintenance was performed to these buildings. With the unification of Yemen in 1992, the palaces began to be returned to their rightful owners. However, as many of the original families who owned the palaces now live abroad, a number of the palaces have yet to be reclaimed. With a construction material as ephemeral as mudbrick, lack of maintenance can quickly translate into substantial deterioration.

Because of their architectural value and neglected state, the mudbrick palaces of Tarim were included on the World Monuments Fund’s 1998, 2000, and 2002 lists of the 100 Most Endangered Sites. In 1999, a study, generously funded by the Samuel H. Kress Foundation, was undertaken to assess the condition of 27 historic buildings and determine the feasibility of their restoration.

Of these, four of the buildings are deteriorated beyond repair. The house of Abd Al-Rahman bin Sheykh Al-Kaf has severe structural damage and has been abandoned because the multiple heirs cannot come to agreement about repairing it. One building, the Qasr Al-Quba, has been adaptively reused as a hotel, and another, Al-Ranad, the former Kathiri sultan’s palace in Tarim, is now used as a police station. The Asmarah and the Haddad are undergoing restoration funded by their owners. The Aydid continues to function as a school and is in good repair.

Some of the buildings were never abandoned. Al-Tawahi and the Khamiran are two examples of houses that were continuously occupied
The Hadhrami method of mudbrick construction has changed little over the millennia. Soil is mixed with straw and water, and patted into a wooden frame. Once filled, the frame is lifted up and placed adjacent to the newly poured bricks, and filled again. The bricks are left to dry in the sun for a week. Thousands of bricks will be needed for a family home.

Construction proceeds with the laying of a stone foundation, approximately one meter high. Mudbricks are set in a running bond with mud mortar, joints made roughly the same thickness as the mudbricks. As the walls rise, they are plastered with mud. Wood is used for lintels and joists. The height and size of rooms within a building are dictated by the length of the wood available, so often decorative wood columns are installed as intermediate supports. Floors and roofs are constructed of mud. Highly ornate wood doors and windows grace the exterior.

As construction is undertaken only during the winter, it may take several years to build a multistoried house. Once a building is completed, the most vulnerable areas—roofs, setback terraces, and parapets—are plastered in lime. If the owners are wealthy, the whole of the exterior will be lime-plastered and decorated with designs executed in oil-based paint. Interiors receive a combination of lime-washed mud plaster and lime plaster. The living spaces, corridors, and bathrooms typically receive a wainscot of malas, a labor-intensive, burnished lime plaster. Kitchens are finished in mud plaster because of the use of open fires, and are generally located partially outdoors.

Lime plaster is made in an age-old way. Limestone is collected from a dry river bed, stacked in a honeycomb fashion within a mudbrick kiln, and burned for 24 hours. Once it has cooled, the calcined limestone is cleaned, weighed, and placed on a slaking bed. Water is poured over the calcined limestone, causing it to crumble. The slaked lime is then placed in vats of water, where it is trampled by workers wearing protective boots. Lime beaters line the paved road and spend eight hours a day beating the lumps to make a lime putty.
by their owners and well-maintained as a result. On the other hand, some of the most interesting palaces are in a precarious state of maintenance, but with timely intervention could survive. The feasibility study identified four of these which will form the core of the approach to revitalizing Tarim’s historic center.

The plan for saving the Tarimi palaces rests on the establishment of a documentation training program that will bring together graduate students from Columbia University’s historic preservation program and art history department, alongside architecture students from the University of Mukallah in Yemen. Through examination of the architecture departments’ curriculum at both the universities of Sana’a and Mukallah, it became apparent that there is no emphasis on historic preservation. This is a serious flaw for a country rich in cultural patrimony and possessing some of the most intact ensembles of Arabic architecture in the Middle East. Through documentation of the Tarimi palaces, local architecture students will be exposed to the importance of their cultural heritage. At the same time, pilot restoration and adaptive reuse of some of the buildings will demonstrate the efficacy of recycling these structures while engaging the town in a dialogue of recognition for the local craftsmen and heritage management for cultural tourism.

To date, two structures have been selected for preliminary intervention. The Ishshah, which was originally the palace of Umar bin Sheykh Al-Kaf, is in fair-to-poor condition with substantial moisture-related damage. The surviving interior contains some of the best examples of malas, a decorative form of burnished lime plaster. Markedly Indo-European in style, the mansion currently functions as a house museum. This is the only private home open to the public in the Hadhramaut Valley. The leasee recently acquired a long-term lease for the entire house and plans to open the remaining portions to the public. The condition of the building is still salvageable, however, in 1999, a bathroom wing was lost, and the traditional kitchen is in imminent danger of collapse.

Across the street is another Indo-European-style palace, Al-Munaysurah, one of the bin Yahyah family mansions. One of the earliest surviving palaces, it dates to 1757. It is in good-to-fair condition, but has extensive termite damage and shows some signs of settlement. Al-Munaysurah is an occupied, two-family home. The absentee owners, however, have agreed to enter into a long-term lease with a Sana’ani tourism company to provide an upscale bed and breakfast inn for Tarim. The interiors are highly ornate and lend themselves to this type of adaptive reuse.

Funding is being sought from several sources to pay for the restoration of these two buildings, but is by no means secured. The Dutch Technical Aid program has been approached for both buildings, whereas the Ishshah is under consideration for a Rolex Award, as well as funding from Canada Nexen, who, with gas concerns in the region, is considering donating funds for the upgrade of the three regional museums, including the Museum of the Hadhramaut and the Mukallah Museum. For the documentation training program, funds have already been secured from the Samuel H. Kress Foundation and the American Institute for Yemeni Studies.

Once work has been completed on the Ishshah and Al-Munaysurah, two more buildings have been identified for restoration and adaptive reuse. The Dar al Salam is being considered for reuse as the Center for Mudbrick Architecture and is in good-to-fair condition. Its impressive early-Modernist facade with rounded balconies is quite unusual. Another Indo-European palace, the Hamtut, is under review for reuse as the home of the Manuscript Library, a rare resource for which Tarim is well known. The Hamtut is in fair-to-poor condition, although spectacular interiors still survive.

All four buildings selected for the initial pilot restoration are in close proximity to each other and many of the remaining palaces. It is hoped that by instigating restoration, the government will pursue a policy of establishing a historic district, and the remaining palace owners will be galvanized into saving their traditional family homes.

—Pamela Jerome