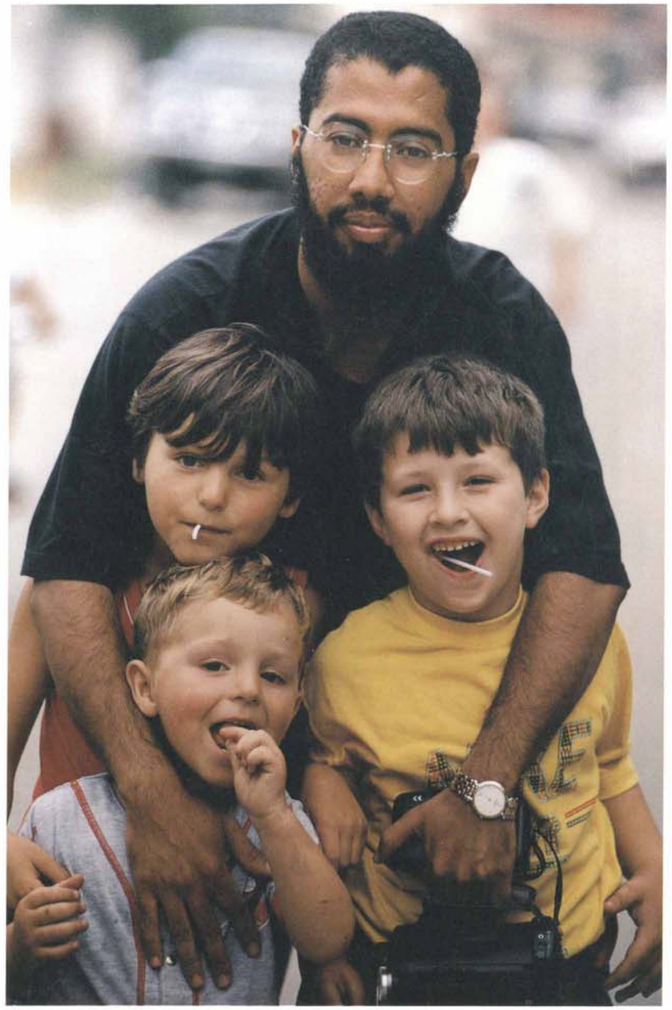

ARAMCO WORLD

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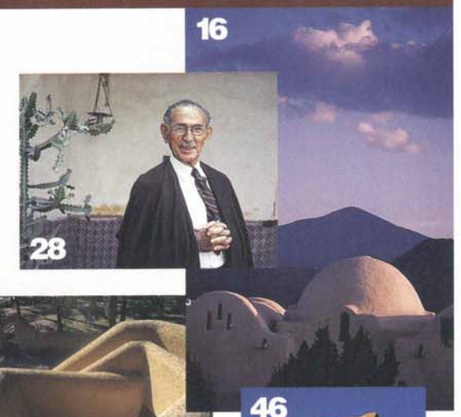

COVER:
Fathy's gouache renderings of some of his architectural designs, exhibited in 1937, have a dreamy serenity that may come from their use of multiple, flattened perspectives, a technique also found in ancient Egyptian wall paintings. Fathy painted such watercolors—this one of a house designed for the Abd al-Razik family—as he moved away from the modernist and Art Deco style of his earlier work toward more indigenous forms and details. Photograph by Chant Avedissian/AKTC.

OPPOSITE:
Craftsmen from the Najd to the Nile to the Rio Grande know that it takes simple materials and sophisticated techniques to make good mud bricks. The proportion of straw to earth, the period of "fermentation," and the shape of the bricks themselves are all important factors. Photograph courtesy of Al-Turath.

BACK COVER:
A Saudi relief worker befriends a group of Kosovar children who have returned to their home village. Photograph by Thorne Anderson.

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UNSUNG HEROES

UNSUNG HEROES

HELPING THE KOSOVARS RETURN

SOURCE: UNHCR

WRITTEN BY HUSSEIN SAUD QUSTI

ADDITIONAL REPORTING BY DELINDA C. HANLEY AND ARTHUR CLARK

PHOTOGRAPHED BY THORNE ANDERSON

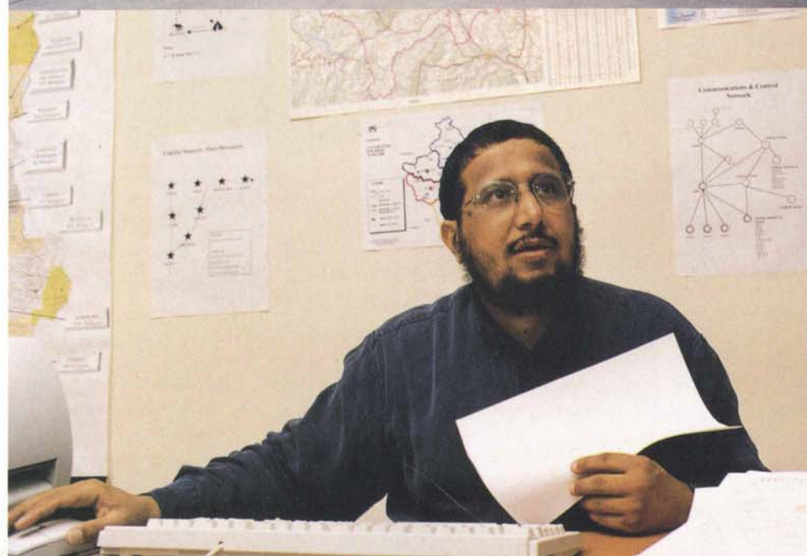
Last December, two cargo transports of the Royal Saudi Air Force touched down in Tirana, the capital of Albania, carrying 45 tons of blankets, clothes, food and medical supplies. It was the first shipment of relief aid from any country to refugees fleeing the Yugoslav province of Kosovo.

Over the next six months, as their numbers swelled to nearly a million people and created Europe's worst refugee crisis since World War II, half of the new refugees followed a similar westward path toward asylum in Albania, where the refugees had ethnic ties. There, an estimated 134,000—more than a quarter of the total—found shelter, food, clothing, medical care and, by late June, repatriation assistance from aid agencies based in Saudi Arabia, Kuwait, the United Arab Emirates and five other Arab countries, which together mounted the war's most successful relief operations.

"We were proud to be the first country to send aid," said Saleh Abdul Latif Sijantan, chargé d'affaires at the embassy of Saudi Arabia in Tirana. Like many aid workers, from diplomats to doctors and truck drivers, Sijantan put in 16-hour days—sometimes more—through the peak of the crisis in April, May and June of this year.

There had been some preparation: In May 1998, fighting between Kosovo Liberation Army forces and Serb paramilitary groups began to force the first significant numbers of refugees into Albania, and that month the United Nations assigned the care of 1500 of them to the Islamic Coordination Council (ICC), which oversaw the work of the 20 Islamic relief groups operat-

Right: *Wael al-Dijani, director in Tirana of the Saudi Joint Committee for the Relief of Kosovars (SJC), discusses the group's plans to transfer the center of relief operations from Tirana to Kosovo.* ***Right, center:*** *The 50-bed field hospital from Saudi Arabia arrived in Tirana in four containers designed to fit snugly aboard military cargo aircraft.* ***Lower right:*** *Saudi government statistician Abdullah al-Burithem served as logistics manager for the SJC. At the peak of operations in May, his office coordinated receiving, storage and distribution to 24 camps, 35 medical clinics, one field hospital and numerous food-aid distribution points.* ***Below:*** *A UAE Air Force Super Puma helicopter takes off near Kukës. The Emirates lengthened the airport runway in that provincial capital and set up a camp that housed as many as 10,000 refugees.*



Previous spread, top right: *SJC volunteer Ahmed al-Naqib bids farewell to lollipopped children in a Priština neighborhood during a needs-assessment tour of the Kosovo capital in early July.* ***Lower right:*** *A Kosovar woman who cannot remember the name of the village she fled is comforted by an Albanian nursing intern at a field hospital in Kukës, northern Albania.* ***Lower left:*** *Kosovar contract laborers unload the first shipment of relief supplies into a warehouse rented by the SJC in Prizren, southern Kosovo.* ***Top left:*** *At Tirana's Rinas Airport, Royal Saudi Air Force Lt. Col. Meaid al-Ghamdi supervises incoming cargo flights from Saudi Arabia—70 in three months—including daily arrivals between April 23 and early June. Looking on are UAE Air Force officers.*

CENTER LEFT: JOMARIE FECCI; CENTER RIGHT: HUSSEIN SAUD QUSTI

Below: *At the SJC's Tirana warehouse, Saifeldin Saadallah Mohammed labels a relief truck while supervisor Salih al-Gamdy looks on.* ***Right:*** *Albanian day laborers shoulder 40-kilo bags of rice into the SJC warehouse. The sudden arrival in Albania of some 750,000 Kosovo refugees and more than 150 international relief organizations was generally a boon to local workers, who suffer one of the highest unemployment rates in Europe.* ***Opposite, top:*** *Donated food, and provisions purchased with an outpouring of cash donations, filled the SJC warehouse in Tirana.*

Opposite, center: *With a quickly assembled staff of Albanian, Kosovar and Saudi medical professionals, the Saudi field hospital in Tirana treated some 4000 patients over six weeks. The most common ailments were those caused by exposure to cold, damp weather and unsanitary conditions during the refugees' flight into Albania.* ***Opposite, lower:*** *Many roads in Albania, particularly in the rugged north and east, cling to mountainsides and are poorly suited to the the rapid delivery of large volumes of supplies.*

Operated by the Royal Saudi Air Force and funded by the Saudi Red Crescent Society, the 46-day "air relief bridge" ferried nearly 2000 tons of supplies from Jiddah and Riyadh to Tirana.

ing in the country. According to ICC director Muhammad al-Wael, that early experience benefited all the organizations later on. "It wasn't an easy task," he says. Despite the anarchic situation in the region, he assesses the overall coordination effort to date as "90 percent successful."

Yet it was after the NATO bombing of Yugoslavia began on March 24 of this year that chaotic waves of Kosovars flooded across the Albanian and Macedonian borders during several traumatic weeks. Though officials and citizens of those host countries proved generous, they could care for only a fraction of the refugees. The 19 NATO-member countries, the humanitarian agencies of the United Nations and some 150 non-governmental organizations (NGO's) from around the world scrambled to bring them some relief.

In Riyadh on April 14, a royal order established the Saudi Joint Committee for the Relief of Kosovars (SJC), composed of five organizations with pre-existing offices in Tirana. The SJC was charged with coordinating the aid-gathering and aid-distribution efforts of each organization and the rest of the country. The response "reached record figures" and "by the grace of God, was beyond our wildest dreams," says Abdul Rahman al-Suwailem, chairman of the SJC and director of the Saudi Red Crescent Society (SRCS). Over three months, government and private sources donated more than $45.5 million in cash, services and supplies, and an appeal for several dozen medical volunteers yielded more than 130 applications.

This was an overwhelmingly "emotional response," al-Suwailem explains, to the sight of "our Muslim brothers who were being forced out of their country and their homes."

Even before the SJC was established, however, in the first week of April, the SRCS filled the first of what became daily C-130 Hercules relief flights to Tirana. Operated by the Royal Saudi Air Force and funded by the SRCS, the 46-day-long "air relief bridge" ferried 1944 tons of relief from Jiddah and Riyadh to Tirana. (As this article went to press, flights continued several times a week, mostly to Priština, the capital of Kosovo.)

By mid-May, this aid had blossomed into 24 Saudi-supported refugee camps housing 19,350 refugees. Another 35,200 refugees were supported in Albanian host homes with UN-standard, 20-kilogram (44-lb) family food baskets of rice, beans, macaroni, milk, cooking oil and canned

Left: *Bread, stacked like cordwood, is unloaded into plastic buckets for distribution in a refugee camp. When bakeries near the camps could not keep pace with demand, new ones were hastily built.* ***Below:*** *Refugees tap a bladder of drinking water in a refugee camp. Together with food, bedding, shelter and clothing, access to clean water was a high priority for all relief groups: One Saudi camp could only be supplied by laying 17 kilometer (10½ mi) of pipe.* ***Opposite, top:*** *An Albanian worker wields plasterer's tools to help the SJC remodel a building in Tirana that will offer semi-permanent housing for refugees unable to return to Kosovo. Here, as in all the camp housing it built, the SJC constructed partitioned quarters to give privacy to the men and women of each family.* ***Opposite, center:*** *An Albanian workman congratulates his supervisor, Saifeldin Saadallah Mohammed (right), on the Saudi's progress in learning Albanian as the two work together at the SJC warehouse in Tirana.* ***Opposite, lower:*** *Within days of the withdrawal of Serb forces from Kosovo in mid-June, many of the refugee camps were almost entirely deserted. These tents are rolled up for shipment into Kosovo, where they will be used again as emergency shelter.*

JOMARIE FECGI (2)

vegetables. Eleven Saudi-sponsored health centers and 35 smaller clinics were open throughout the country and, in Tirana, a 50-bed field hospital treated nearly 4000 patients over six weeks. Now, the refugees have largely returned to Kosovo, and the SJC plans to make that hospital a permanent donation to Albania.

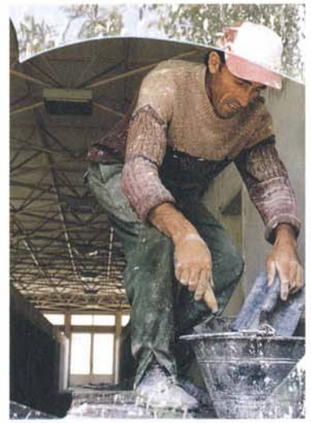
At its peak in May, the Saudi relief operation employed 385 people, mostly Kosovo refugees and Albanians, as translators, typists, cooks, cleaners, drivers, porters, mechanics, welders, carpenters and even doctors and nurses. "Hiring them to work was one way we helped them to regain their lost dignity," said Wael al-Dijani, director of the SJC in Tirana. In addition, some 260 tons of supplies were purchased locally, saving on transport costs and boosting the local economy. (In contrast, all NATO-sponsored relief was imported.)

According to the Albanian government and the United Nations High Commission for Refugees (UNHCR), the SJC was "the largest NGO in Albania," says al-Dijani.

The efforts of others from the Arab world were similarly generous and energetic. One of the most visible relief efforts was that of the United Arab Emirates (UAE). In the first days of April, private fundraising efforts there took only a week to fill a 38-ton, Russian-built Ilyushin cargo aircraft and get it to Tirana. Led by the UAE Red Crescent Society, the nation channeled its relief mostly to the remote, isolated northern region near the city of Kukës, which saw 100,000 refugees arrive in the two weeks following the beginning of the NATO air assaults. Working around the clock, relief workers and refugees built a tent camp that within 10 days accommodated 10,000 people. In the weeks that followed, that camp's responsiveness to refugee needs earned it a sterling reputation among Kosovars and aid workers alike.

To get aid up to Kukës, the UAE also lengthened and modernized—in a matter of days—a World War II-era airstrip. It was quickly put to use by arriving relief flights from many nations, and from it the UAE went on to operate a continuous helicopter airshuttle service that linked Kukës to Tirana, saving countless aid workers, and journalists, a grueling 18-hour round trip by road.

Aid flowed from Kuwait, too, where 10 organizations united in the Kuwaiti Joint Relief Committee (KJRC) and distributed some $15 million worth of relief supplies, the results of a nationwide donation drive. The KJRC took responsibility for the welfare of some 7000 refugees in eight camps, and put together 120,000 UN-standard food baskets that were delivered to 40,000 refugees



Actually getting the refugees to shelter, and putting food, blankets, diapers and clothing into their hands, was frustrating, grueling and occasionally dangerous for all the donors.

Ahmed al-Naqib, a Makkah school headmaster who volunteered for relief work in Kosovo during his vacation, makes a special effort to pay attention to children. "We must love children," he says. "The Prophet Muhammad taught this. We can help them. We can teach them. But first, we must love them." Later, when his team reached the village of Dacane, he and others broke from their survey work to help an elderly couple fight a fire in their home, ***below.***

In Sharjah, UAE, Mansour Saleem, Pakistani manager of a garment company, collected **15,000 ready-made garments** worth $45,000 and a truckload of food. All was transported to Albania by the UAE Red Crescent Society.

At Saudi Aramco, some 500 Dhahran School students held a **five-kilometer walkathon that raised $13,000.** In addition, Saudi and expatriate residents of the Eastern Province filled eight 12.5-meter (40') trucks with donated goods, which were airshipped to Tirana by the SJC.

Ten young women in Jiddah, aged 15 to 23, "decided that feeling sorry for the people of Kosovo was just not enough," and formed **a group that raised $113,000**, which was donated to refugees through the World Assembly of Muslim Youth.

GLIMPSES OF GENEROSITY

THOUGH CHANNELED THROUGH MANY DIFFERENT ORGANIZATIONS, THE ARAB COUNTRIES' OUTPOURING OF RELIEF FOR KOSOVO REFUGEES WAS TO A LARGE EXTENT THE RESULT OF INDIVIDUAL INITIATIVES. HERE IS A HANDFUL OF EXAMPLES.

In Riyadh, the Hammad Medical Services company **donated 10 tons of infant-care supplies valued at $1.8 million.**

In Kuwait, **a single telethon netted $7 million.**

Eighth-grader Juliet Armour **collected $375** by going door-to-door to her neighbors in a campaign sponsored by the American International School in Riyadh. The campaign filled two trucks and two vans and raised $3750 in cash, all of which was donated to the IIRO.

Muhammad Bilal Bawa, imam of a mosque in Bury, England, supervised the collection of **10,000 coats and pairs of trousers** that were flown to Tirana as part of a 40-ton load of food and clothing by Muslim Aid, a foundation established in England by the late King Faisal of Saudi Arabia.

At Zayed University for Women in Abu Dhabi, students raised $94,000 in a single fundraiser.

who were living in the homes of Albanian host families. Like the SJC camps, KJRC camps offered three meals a day and medical care, and the camp staff was hired from among the refugee population.

Other Arab contributions came from Palestinians, who assembled a 12-member Palestine Red Crescent medical team whose members spoke a total of six languages. They arrived from Gaza and Cairo on April 27 aboard Palestinian Airlines' first-ever flight to land on European soil. Qatar, one of the least populous Arab countries, had donated 137 tons of aid, sent in a medical team, taken responsibility for 1500 refugees and prepared 10,000 food baskets—all by early May. In the Mullet refugee camp on the outskirts of Tirana, Tunisia donated a field hospital which treated nearly 2500 people, and kept it supplied. Egypt sent 15 planeloads of supplies that were distributed by the International Committee of the Red Cross. A nationwide donation campaign was also held in Sudan, which chartered an aircraft to fly its donations to Tirana, where the Khartoum-based Munadhamat al-Da'wah al-Islamiyah set up two refugee camps that housed 700 refugees.

As impressive as these numbers are, actually getting the refugees to shelter, providing them with clean water and sanitary facilities, and putting food, blankets, diapers and clothing into their hands was frustrating, grueling and occasionally dangerous for all the donors.

Bureaucracy posed one obstacle. An SJC order of Jeeps was delayed at the Turkish border for three weeks. The first Royal Saudi Air Force relief flights had difficulty obtaining rights to enter Tirana's NATO-controlled airspace. In setting up the field hospital, says Sijantan, "I had to run around the country for a whole 10 days just to find a suitable place." Then, he explains, the Albanian government stipulated that the hospital had to be made operational within 12 days of its arrival in the form of four custom-outfitted air-cargo containers, despite hard rains that made welding difficult.

But throughout Albania, Europe's poorest country, the greatest problems were infrastructure problems: Roads, electricity, water lines, sewers and telephone services barely met local needs, and the refugees had bloated the country's population by 15 percent virtually overnight. A camp at Tirana administered by Al-Waqf Al-Islami, a member of the SJC, required 17 kilometers

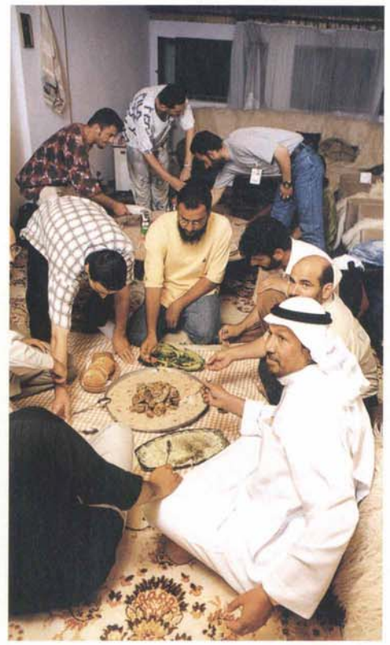
Above: *Like many other relief organizations, the SJC deployed teams to Kosovo in late June to undertake a province-wide assessment of how it could best assist in reconstruction. The Prizren team passed through the village of Landovica, where the ruined mosque is one of the many whose reconstruction may be paid for by a Saudi fund of $22.5 million, earmarked for mosques, schools and orphan care.* ***Right:*** *SJC representative Abdul-Fatah Sindy, MD, tours the main hospital in Priština. "There is an urgent need for everything," he says. "The problem is*

whom we should talk to to coordinate the donations. All this conflict still hasn't settled, and everything is changing every day." ***Left:*** *In Prizren, members of the Berisha family discuss their needs with SJC team members, who have already helped them with food and blankets. The Berishas are among some 240 families in the southern Kosovo city who lost their homes. "My house is burned. I own nothing," says Musli Berisha (center). "This aid is more than necessary."*

(10½ mi) of hastily laid pipe to connect to the nearest water main. Two other camps required drilling seven water wells. Using the narrow and often unpaved roads, even camps relatively near Tirana could take up to four hours to reach, and those in the north required nine.

Procuring the local building materials needed to set up some of the camps was a great effort, too, as aid donors and Albanian businessmen and contractors all struggled to find lumber, roofing sheets, pipe, doors, concrete block, cement, earth-moving equipment and other supplies. Demand for trucks to ferry building and relief material to the refugee sites drove the price for transport of a 10-ton shipment from Tirana as high as $800 for a 160-kilometer (100-mi) journey. In response to shortages and uneven flows of vital materials, coordination among the Saudi, other Arab and international organizations made it commonplace for one group or camp to borrow supplies, vehicles, fuel and even large sums of cash from one another to ward off the direst needs.

Not all "refugee camps" were tent camps. In many cases, quick conversion of existing large buildings was more practical, though hardly easy. Simply identifying and gaining permission to use certain buildings—mostly long-abandoned Communist-era apartments or commercial or industrial structures—was only the first step in a process of near-total renovation and adaptation. In this effort, the SJC and other Arab donors made it a point to provide each



Arab-world relief efforts also bore fruit in an unexpected way, as the Saudi, UAE, Kuwaiti and other Arab donors' reputation for generosity and even-handedness spread.

Above left: *Children in Prizren welcome the SJC team.* ***Above:*** *Albanian and Arab members of the Prizren survey team gather for a Saudi-style meal in the SJC's new office, which doubles as living quarters. "We don't waste time making friends," says Ahmed al-Naqib (foreground). "Right away we become brothers and share everything."* ***Left:*** *In a similar spirit, neighbors of the Berisha family pooled their resources to make* fli, *a traditional Albanian dish.* ***Far left:*** *On July 1, the first day the UN designated as safe for the return of Kosovar refugees from Albania, Selim and Dudie Ukshini were among several hundred who returned aboard 30 SJC-chartered buses. Each family on board was supplied with a box of basic foodstuffs designed to last a week. "We got all kinds of good things from the Arabs," Selim says. "They gave us all the things we needed most."*

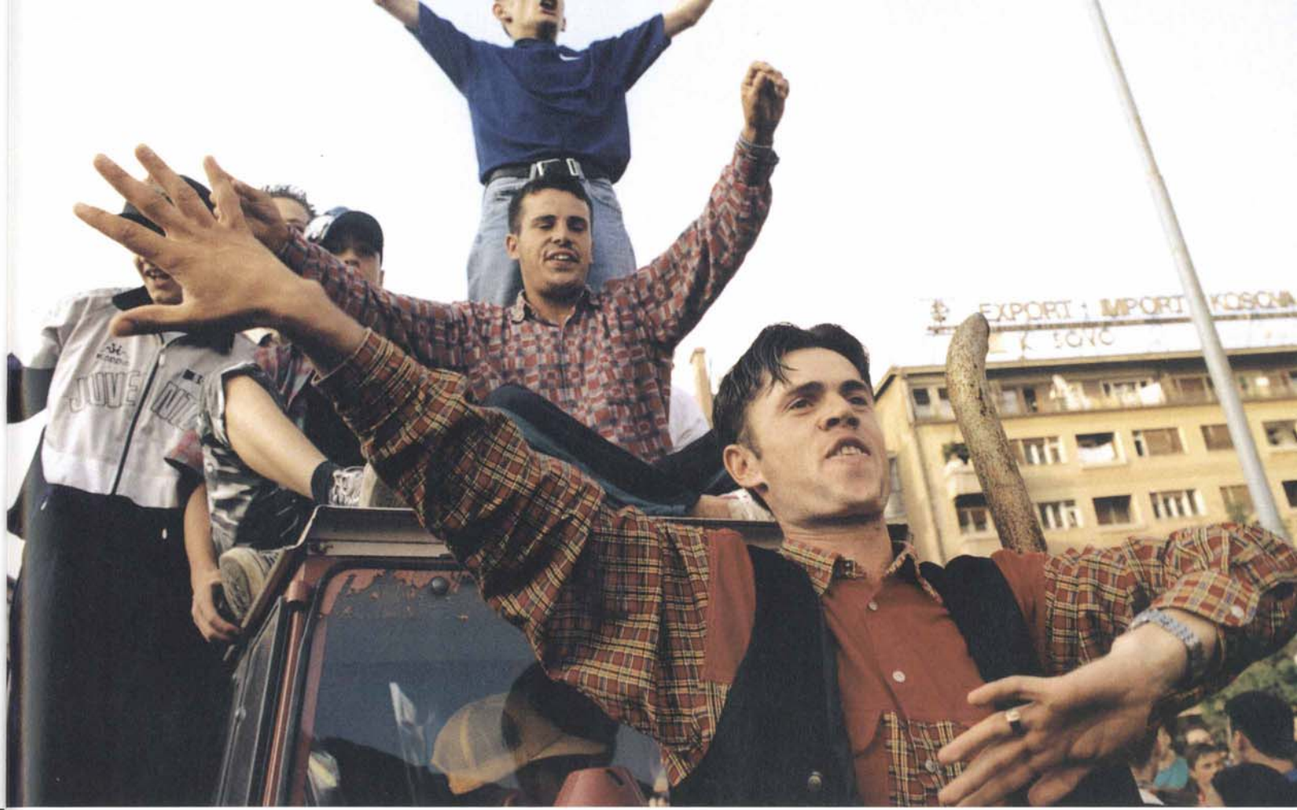
Joining in an international effort that NATO estimates will cost more than $31 billion, Arab-world and Islamic agencies are moving from relief to reconstruction, still working effectively and with little publicity.

***Below:** As this SJC-chartered bus crossed the border into Kosovo, the children on board cheered and sang songs that had circulated throughout the refugee camps. One was called "Innocence": "Tears spring from blood, and blood springs from tears. There the baby's taken, but the fort remains unshaken." **Opposite:** On July 2 in Priština, young men began driving cars around the Grand Hotel Priština, honking, whistling and cheering, starting what became an all-out, city-wide parade and street festival.*

family the dignity of partitioned quarters. "This took up at least half the cost," says Saleh al-Zibany, director of the International Islamic Relief Organization (IIRO).

The Saudi Joint Committee's al-Dijani credits the major international agencies, especially UNHCR, the United Nations Children's Fund, the International Red Cross and the World Food Program, with "complete coordination" that allowed all donors "not only to ascertain the refugees' whereabouts, but also to get rations and relief where it was meant to be going. Meetings were held with them on a daily basis." Like the other groups, the SJC deployed "scouts" to find the numbers and locations of arriving refugee groups, and together the organizations would set about working with Albanian authorities to bring them together.

The Arab-world relief efforts also bore fruit in an unexpected way, as the Saudi, UAE, Kuwaiti and other Arab donors' reputation for generosity and even-handedness spread. Ibrahim Abdul Hameed, director of Al-Waqf Al-Islami, learned to make sure that, whenever supplies were distributed, the Saudis on the team wore their national dress, the *thawb* (robe) and *ghutra* (head scarf). This paid off, for al-Dajani notes that "whenever a Saudi entered a camp wearing his Arab dress, groups of children would start screaming *'al-salamu 'alaykum!'* ["peace be upon you," the common Muslim greeting in Arabic] and follow him around as if he were handing out candy."

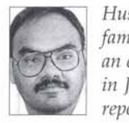


Following the June 9 peace agreement and the Serb withdrawal from Kosovo, the relief operation began to transform itself into one of repatriation and reconstruction. While hundreds of thousands of refugees returned within days on their own—some camps were ghost towns even before July 1, which the UN had designated the first "safe return" day—the SJC helped hundreds of others by hiring 30 buses to ferry people back to their towns and villages in Kosovo, many of which were seriously damaged. The SJC quickly reorganized its workers to begin passing out food parcels at key border points, and a medical team began taking over the resupply, refurbishing and initial administration of the main hospital in the southern Kosovo city of Prizren. Within the first week of July, SJC food aid in the area around that city had reached 1500 people and tents had been distributed to many who had found their houses uninhabitable. A Saudi-sponsored fund of more than $22.5 million was tapped to help rebuild mosques and schools and provide care for orphans throughout Kosovo. The World Assembly of Muslim Youth (WAMY), an SJC member, organized a program by which individual sponsors can support a Kosovar child by a contribution of $80 per month.

Kuwait's KJRC also quickly followed the NATO forces that swept north to verify the Serb withdrawal. "We were the first Muslim organization to enter Kosovo and set up an office in Priština," says Ibrahim Makky, who directed KJRC operations in Tirana. "We are planning to give each Kosovo farmer his choice of one cow or three goats. Later, he'll give us the first calf or kid, which we'll donate to another family." The agency has also offered to replace medical equipment in Priština's main hospital.

"Our fundamental mission will involve resettlement and rebuilding," says SJC chairman Abdul Rahman al-Suwailem.

NATO has estimated that if there is no further destruction, reconstruction in Kosovo will take several years and will cost more than $31 billion. To do their part, the Arab-world NGOs, staff and volunteers are still there, working effectively and with little publicity, staying on for the same simple reason they came: The Kosovars, says al-Zibany of the IIRO, "are Muslims, and we must help them out." ⊕



Hussein Saud Qusti, MD, is a family-practice physician and an editor at the Saudi Gazette *in Jiddah. This was his second reporting tour to Albania.*

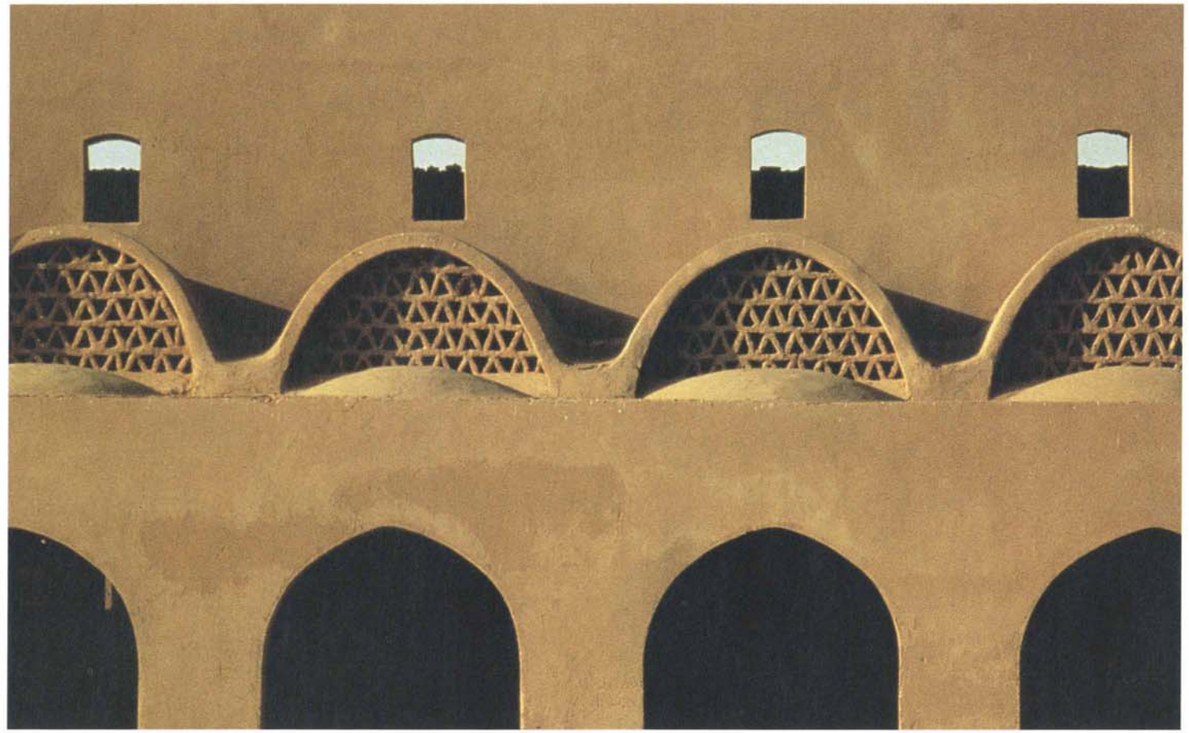
Thorne Anderson teaches photojournalism at the American University in Bulgaria.

Delinda C. Hanley is news editor at The Washington Report on Middle East Affairs. *Arthur Clark is a staff writer for Saudi Aramco in Dhahran.*

Elegant Solutions

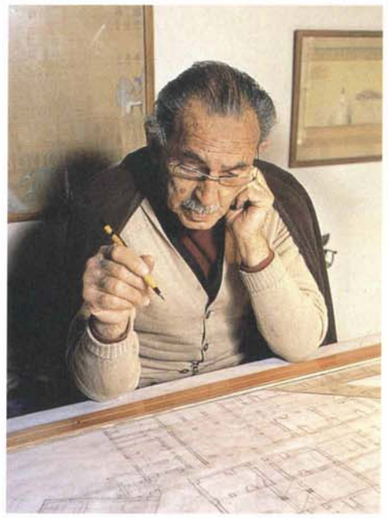
"Architecture emerges from the dream and this is why, in villages built by their inhabitants, no two houses are alike.... It is the architect's job to make his village as charming as possible."

—Hassan Fathy



Written by Simone Swan

Hassan Fathy's gouaches courtesy of the Aga Khan Trust for Culture



It was during a dinner party in 1972 that I heard my host announce the completion of a film on "the greatest architect of the century, Hassan Fathy."

All I could think was, "Hassan who?" Yet I was then director of the philanthropic Menil Foundation in Houston, which was active in art and architecture, and I considered myself well-acquainted with the leaders of contemporary architecture.

"Hassan F-a-t-h-y," he spelled out, "from Cairo. He's designed and built superb villas of adobe and stone, but mainly he's grappled head-on with housing the poor. And he has proposed elegant solutions! His central concern is rural low-cost housing; he organizes residents to build cooperatively."

Inspired and curious, the next day I read Fathy's seminal book, *Construire avec le peuple* (*Building With the People*). The book is Fathy's detailed account of his experience in planning and building, with its 7000 residents, the village of New Gourna on the west bank of the Nile, opposite Luxor, in the late 1940's, under the auspices of the Egyptian government.

This reading changed my life. My experience with architects had been substantial, including work on commissions with Charles Moore and Louis I. Kahn. Yet in reading Fathy, I realized that I had never before encountered an architect who not only designed superb spaces, but who was also committed to the "800 million peasants—one-third of the population of the earth—now doomed to premature death because of their inadequate housing."

I learned that when Fathy organized the construction of New Gourna in 1947, government-financed low-income housing in Egypt had almost always cost at least $1200 a unit, and nobody seemed to have given a thought to the high cost of skilled labor that made up so much of this amount. Even today, $1200 a unit is more than most nations are willing or able to pay for such housing. As Fathy proved for New Gourna—and as he also demonstrated in 1967 at Bariz, in Egypt's Western Desert—he could keep the cost down to $500 a unit, including kitchens and latrines, by building cooperatively with the owners. Fathy's accounts for such housing are exhaustively documented, down to the price of straw per mud-brick dome—exactly nine cents.

When *Architecture for the Poor* came out in English—the revised title was not Fathy's choice, but that of the publisher, the University of Chicago Press—it was soon thereafter translated into Spanish, Portuguese and Japanese. Since then, visionary developers throughout the arid regions of the less-industrialized world have looked to Fathy's ideas and example. Fathy presaged much of the "appropriate technology" movement that now is a standard element of grassroots development philosophy around the world.

TOP: CHANT AVEDISSIAN / AGA KHAN TRUST FOR CULTURE; LEFT: CHRISTOPHER LITTLE / AGA KHAN TRUST FOR CULTURE

CHRISTOPHER LITTLE / AGA KHAN TRUST FOR CULTURE; PREVIOUS SPREAD: JOHN FEENEY

Three years passed before I was to meet Fathy. In the meantime, several Middle Eastern scholars encouraged me to help disseminate his work and philosophy in the United States. In particular, Yusuf Ibish, then professor of Islamic civilization at the American University in Beirut, hoped that more of Fathy's writings might be published; Father Youakim Moubarac of Louvain and Paris urged me to make this inspiring Muslim better known through the ecumenical programs of the Rothko Chapel in Houston.

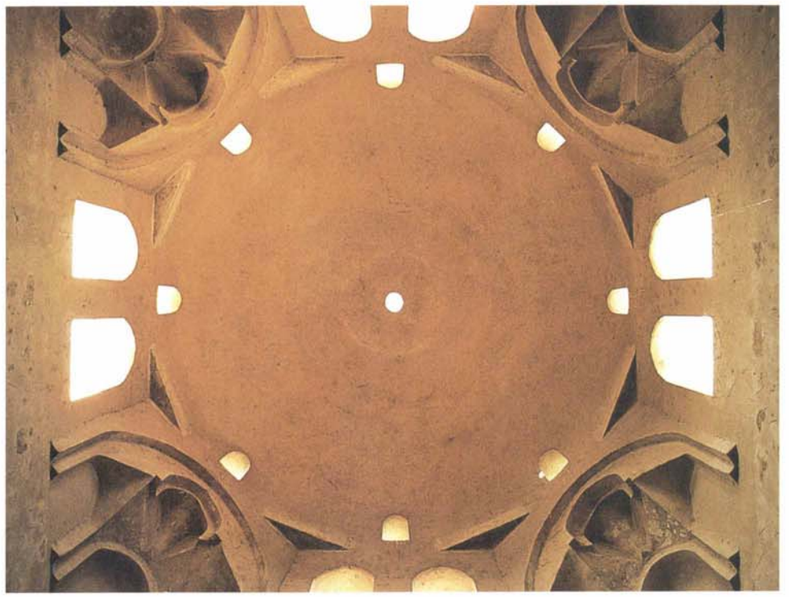
In late 1975, I wrote to Hassan Fathy in Cairo requesting permission to document his work. His reply, addressed to "Ms. Swan," came more promptly than I expected, and his use of that title, then new, cued me to his contemporary awareness. In his letter, he warmly offered to show me his work and country.

He met me at the airport. He was 76 then, dapper and compact. When my hat fell to the floor, he swooped it up with an agility that amazed me. That made an impression. In the car we immediately spoke of shared ideals, and by the time we reached the city each of us knew where the other stood, with mutual appreciation.

I set to work reading his voluminous papers, questioning him and assisting in his work sessions with a younger architect. They were designing a tourist complex in Giza with hotels, restaurants, parks, craft markets, gardens, a mosque and—at my suggestion—an ecumenical chapel. I helped him with a translation of his only play, *Mushrabiya*, from Arabic: He conveyed the sense of the lines to me in English and French and I helped him write what felt true.

There was never anything pompous about him. He had the charm of a cultured, well-read gentleman, a polymath who could always turn a thought with humor. He was intimidating only when refusing to suffer flattering fools and the venally ambitious. He loved the company of the young, especially students and former students, with whom we would dine on squab in the narrow market streets of Old Cairo.

He was more formal when he received visitors at tea time, which he did nearly every day—diplomats, industrialists, scientists, historians, social workers, theologians, artists, and of course architects and builders from many countries. They usually came unannounced, because of Cairo's lack of telephones at the time. They would listen as this scholar, sage and raconteur held forth on his visions of symbiosis between architecture and climate, the theological principles embodied in mosque design, and building with the poor. I marveled at how his thinking complemented that of other visionaries of these years: E. F. Schumacher (*Small is Beautiful: Economics as if People Mattered*, 1973) and Paulo Freire (*Pedagogy of the Oppressed*, 1974) come first to mind.

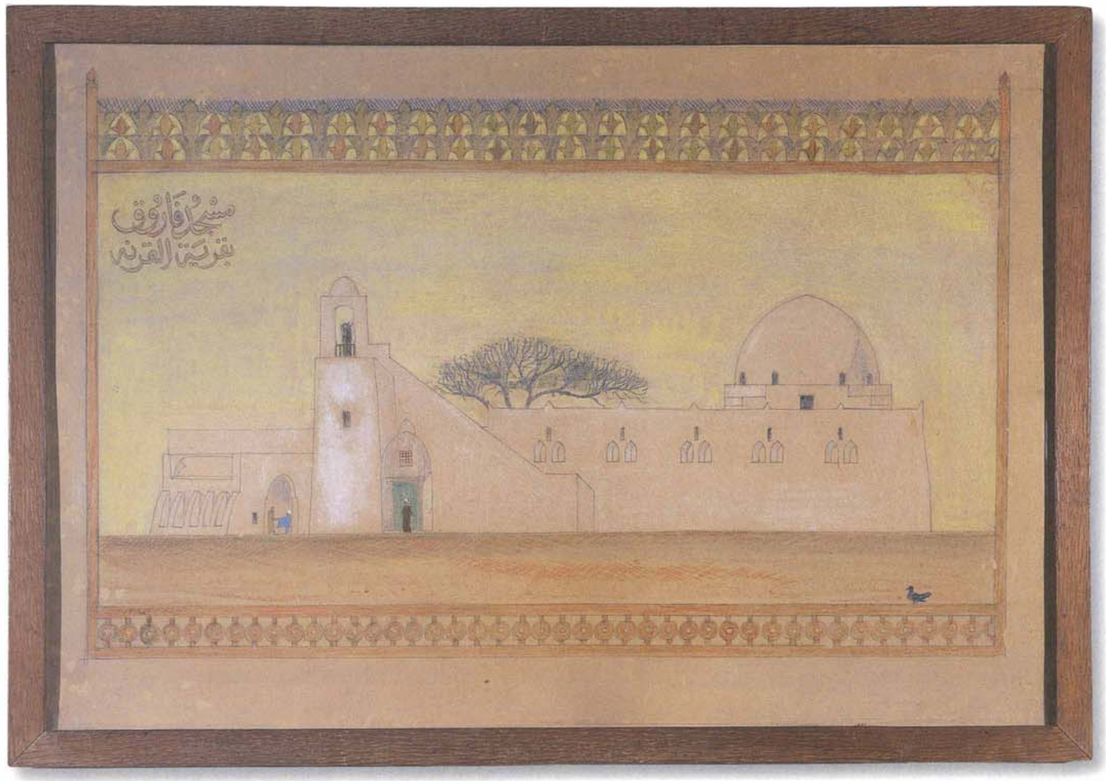


"I suddenly felt terribly responsible. We had been content to live in ignorance of the peasant's sickening misery. I decided I must do something."

We explored his own house at Sidi Kreir, which he had built in 1971 outside Alexandria on a lonely stretch of beach. This was a *palazzino*, a playful gem of a mini-palace set amid the low dunes. A diminutive front courtyard led to a small, well-proportioned foyer and living room, the latter flanked by *iwans*—recessed, curtained alcoves used as sitting rooms by day and sleeping rooms by night. Later he showed me New Gourna, which by then was in a distressing state of disrepair, a casualty of the government's faulty assumption that villagers would be willing to change not only their location but also their livelihoods. (See "Fame and Fiasco in New Gourna," page 20.) Back in Cairo, we toured the villas he had built of stone for several friends.

By this time in the mid-1970's, his peers in art, architecture and scholarship usually paid him affectionate, often devoted, homage, but government officials—the ones who held the purse strings for public housing, the field in which he longed to work far more than he ever did—remained skeptical and even hostile. Their behavior reinforced Fathy's hardest lesson: His commitment to the poor made him an outsider in Egypt, one who was regarded as a threat to vested interests in industrial building materials, banking, real estate and large-scale contracting. Except for commissions from his friends and admirers of means, his career became almost as notable for the obstacles he encountered as it was for built work, perhaps to an extent unmatched by any other architect of his stature.

Above: *The interior of the dome of New Gourna's mosque (1947), showing the transition from a square to an octagonal to a circular shape. New Gourna was the first, largest and best-known of Fathy's village construction projects.* ***Opposite, top:*** *Built 20 years later, the rhythmic arches of this loggia in the market at Bariz are based on Fathy's careful study of the indigenous towns of Egypt's Western Desert.* ***Opposite, lower:*** *Fathy at work on plans. His career was as notable for the obstacles his designs encountered as for the global impact of his writings.* ***Previous spread:*** *Fathy described the view of the 14th-century Mosque of Sultan Hassan from the roof of his house as "a skyscape, not a landscape," in which "every detail has a meaning."*



Fame and Fiasco in New Gourna

New Gourna, once the jewel among Fathy's built works, is today in disrepair and largely abandoned. It is nevertheless a constant source of inspiration and an object of study for architects, planners, historians and humanists from all over the world.

The deterioration of this extraordinarily beautiful pilot project, commissioned by the government of Egypt, began shortly after its construction. The government had neglected to take into account the psychology of what was, in effect, a forced relocation. The 7000 villagers of Gourna had for centuries made their livings by looting the pharaonic tombs beneath the village, and the decision to relocate them to a new village a few miles distant, made in the 1940's by the antiquities and housing authorities, was aimed at saving Egypt's patrimony by encouraging the villagers to become farmers.

It was quickly apparent that this created a problem that architecture, however sensitive or attractive, could not solve. The Gourna residents had expertise and knowledge of the market in tomb-robbing, but none in agriculture. They found farming less attractive and less lucrative than their previous profession. So no sooner was New Gourna built—school, mosque, marketplace and even a theater, in addition to dwellings—than the families' breadwinners began returning to Old Gourna to continue the trade they knew. New Gourna was soon abandoned.

Today there are occasional rumors of a patron who might restore New Gourna to its original condition, but they have all dissipated without results. New Gourna stands as a magnificent object of architecture and as a rare example of conscientious planning for low-cost housing. It is referred to in classrooms throughout the world, and the political and social lessons to be drawn from its demise are no less instructive.

—Simone Swan

To his friends and followers, Fathy was always known as Hassan Bey, a name that used the Ottoman term of rank with his given name to indicate respect and warmth simultaneously. He was born in Alexandria in 1900 to a family of artists and scientists, the son of a noted jurist and a Circassian mother, whom he was fond of quoting. He graduated with degrees in engineering and architecture from the University of Cairo in 1926, and he went on to teach there from 1930 to 1946.

With his degree fresh in hand, out on his first job, he had a life-changing experience. He was assigned to build a school in a remote farming area of the Delta. On reaching the village, he was revolted by its ugliness, by the poverty of its residents, and by "the hopeless resignation of these peasants to their condition." Fathy was overwhelmed by how unnecessary their misery appeared to be, and then shaken more deeply still to realize that the land on which they were living belonged to his father. (As a boy, his family had never taken him to the country, preferring instead to acquaint him with Europe.)

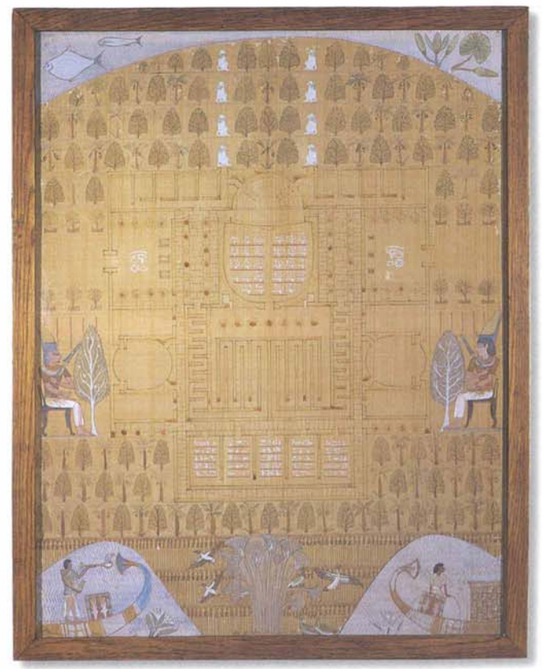
In *Architecture for the Poor,* Fathy wrote, "I suddenly felt terribly responsible. Nothing had been done out of consideration for the human beings who spent their lives there; we had been content to live in ignorance of the peasant's sickening misery. I decided I must do something." Thus began his quest for a means of rebuilding communities that would allow people to live with self-respect despite their exclusion from the consumer economy. He never turned away from this goal, and the economically dispossessed were to be Fathy's constant preoccupation.

As Fathy realized that people who possess no cash can hardly become an architect's clients in the usual sense, and that they cannot be simply integrated on command into a cash economy, he set to work devising techniques of producing low-cost, energy-efficient houses. Using concrete, so much in vogue in Egypt at that time, was out of the question: It required skilled labor, expensive equipment, and industrial materials produced abroad, all of which put it well out of reach of the budget of the Egyptian peasant (*fellah*). Worse, in hot climates concrete traps and holds high temperatures unbearably, exactly the opposite of traditional earthen interiors, which remain cool during the day and release warmth at night. (See *Aramco World*, May/June 1995.)

Fathy's solution was to turn to sun-dried bricks made of mud and reinforced with straw: adobe. He engaged the advice of structural engineers and soil-mechanics specialists to ascertain the maximum strength and durability of adobe under different conditions. After this research, in the early 1940's, he began to design dwellings that demonstrated an unprecedented degree of harmony with the natural environment, climate and local culture, and the spiritual tradition of Islam. With inspiration from the very soil of Egypt, he aimed to help the poor build for themselves.

Yet roofing remained a problem. In rural Egypt, the *fellahin* could afford neither wood nor corrugated galvanized metal for roofs, nor could they even buy the wood needed to make forms to shape vaulted adobe roofs. Fathy's early attempts at building adobe vaulting without wooden forms—the only economically sensible solution—resulted in a series of discouraging collapses. This was particularly maddening because it was clear from his visits to Upper Egypt that just such form-less vaulting had been used for millennia to build ordinary houses, tombs and even royal buildings, such as the granaries of the first-century-BC Ramesseum, one of the great monuments of Thebes.

Fathy feared that the secret had been lost, but in 1941, in the Nubian village of



Top: *Fathy first traveled to Upper Egypt in 1941, where houses such as this led him to remark, "I knew that I had found what I had come for." From then on, Nubian motifs and construction techniques informed his career.* ***Above:*** *A plan for New Gourna, rendered in gouache, incorporates pharaonic images: Hathor, goddess of fertility, as a cow, and Osiris, god of regeneration, as a sycamore tree (center).* ***Opposite:*** *Gouache and photograph of the mosque at New Gourna.*

BASTIN EVRARD; OPPOSITE: WILLIAM H. ROCKETT

Top: *The Nasr House (1945), exhibits two major elements of Fathy's design vocabulary: A central, domed* qa'a, *or reception and living room (interior shown* ***above****), and* mashrabiyyah, *turned latticework window screens. At the time, Fathy encountered little sympathy for these and other gestures that today are credited with preserving and popularizing aspects of Egypt's traditional architecture.*

Abu al-Riche, he found village masons building catenary vaults of mud brick that could measure two stories high, up to three meters (10½') wide and of any desired length, without forms. (See "How to Build A Nubian Vault," page 24.) The technique, he was exhilarated to learn, was simple enough to teach to any willing person.

Henceforth, adobe became Fathy's technological passion, and he remained loyal to it not only because of its durability over millennia—some adobe structures in Egypt are more than 3000 years old—but also because of its thermal properties: In many desert climates it maintains comfortable temperatures within a range of three to four degrees centigrade (5–7°F) over a 24-hour cycle. Furthermore, it is plentiful: Approximately one-third of the world's people already live in houses made of earth. Finally, the flexibility of a material for which right angles and straight lines are not always essential nourishes architectural creativity. Under Fathy's control, adobe led to simple, captivating beauty.

Yet it was to take Fathy nearly a decade to land his first housing commission for the disenfranchised. Over that time several proposals met with scant interest at the ministries of housing and health in Cairo, which appeared to be more interested in the "modern" connotations of multistory concrete apartment blocks than in the traditionalism Fathy offered. Finally, in 1946, came the New Gourna commission.

The first thing Fathy did away with was the contractor. Then, a social worker joined him in interviewing each family about its aspirations and its needs in house design. "No two persons are alike," he wrote, "not even identical twins, because they will differ in their dreams. Architecture emerges from the dream and this is why, in villages built by their inhabitants, no two houses are alike.... It is the architect's job to make his village as charming as possible. If the architect is to offer any excuse for his arrogance in dictating what his fellow men shall live in, that excuse must be that he can surround them with beauty. It would be grossly discourteous of an architect whose imagination has been enriched amid the loveliness of Siena or Verona, or the cathedral close of Wells, to scamp his work and fob his clients off with something less than the most beautiful architecture he can create."

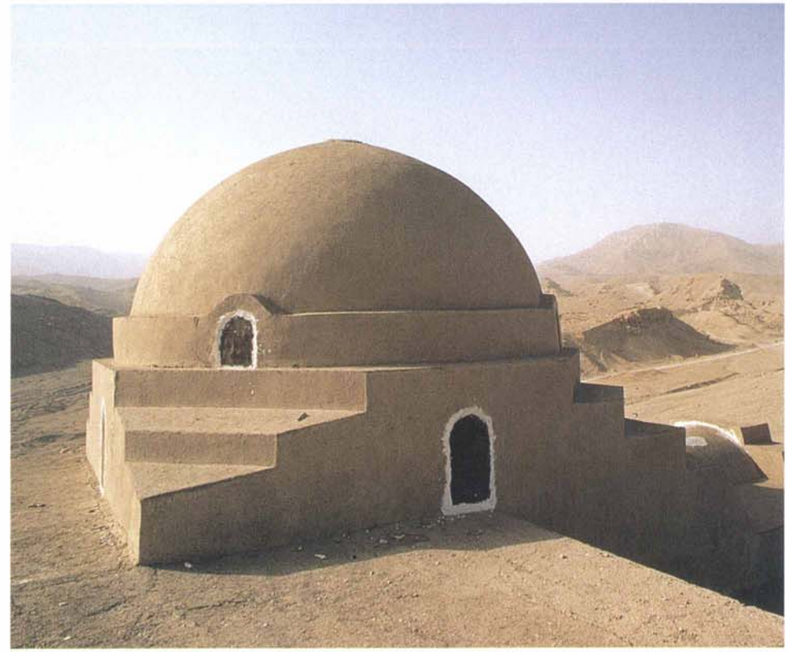
And so it was that participatory planning, mixed with the need for public service structures, determined the plan of the village of New Gourna and the design of each house. "My irregular plan made for variety in design, constant visual interest and precluded the building of those boring ranks of identical dwellings that are often considered all that the poor deserve."

Besides using adobe to enhance thermal comfort, Fathy also experimented in New Gourna with the revival and modern adaptation of three time-tested vernacular architectural elements that also affect perceived temperature—the courtyard and its breezy *claustra*, or pierced wall; the *mashrabiyyah*, a carved wooden window screen; and the *malqaf*, or windcatch. These architectural gestures showed his respect for the culture he shared with the *fellahin*, but they were also "appropriate technologies" that had disappeared from fashion in Egypt because, despite the nationalism of the era, the country had kept its technological gaze fixed firmly on the industrialized West. These architectural elements bestow uniquely Egyptian and Arab qualities where they are used, although they were (and often still are) considered by many to be pejoratively indigenous and "backward," a sign of poverty or of an irrevocably bygone era.

In traditional desert architecture from the Maghrib to Central Asia, the most efficient air conditioner available is the inner courtyard. It traps cool night air and releases it gradually during the day to adjoining rooms through built-in claustra, an effect that complements the thermal properties of mud brick. Trees, shrubs and other plantings, both in the courtyard and, to the extent possible, immediately outside the house, help clean the air and afford a measure of protection from the dust-laden desert winds—or the fumes of trafficked streets. In almost all of Fathy's designs, the courtyard was literally a central feature. He experimented almost endlessly with its variations, yet he never lost sight of its thermal as well as its social and esthetic functions. To Fathy, the development of the courtyard house was even a metaphysical response by desert-dwellers to their surroundings:

"The desert has formed the Arabs' habits and outlook, it has shaped their culture," he wrote. "To the desert they owe their simplicity, their hospitality and their bent for mathematics and astronomy. Because the experience of the desert can be so bitter, because the surface of the earth and the landscape are for the Arabs a cruel enemy, burning, glaring, and barren, they find no comfort in opening the house to nature at ground level. The kindly aspect of nature for the Arabs is the sky, pure, clean, promising coolness and life-giving water in its clouds. It is no wonder that for the desert-dweller the sky becomes the home of God."

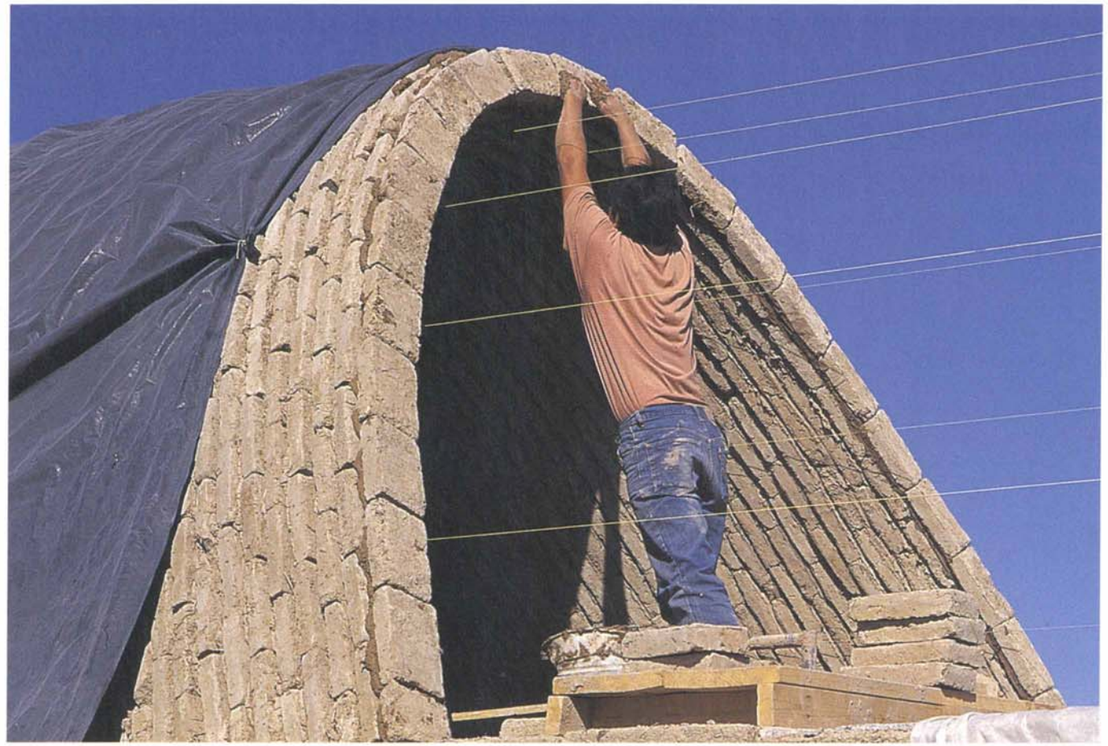
"With the adoption of a settled life, the Arabs began to apply architectural metaphors in their cosmology, so that the sky became a dome supported by four columns. This notion gave a symbolic value to the house, considered to be a microcosm of the universe, and the metaphor was



"With the adoption of a settled life, the Arabs began to apply architectural metaphors in their cosmology, so that the sky became a dome supported by four columns. This notion gave a symbolic value to the house, considered to be a microcosm of the universe."

Top: *The Stoppelaere House (1950), designed for an archeologist, integrated domes, courtyards, an office and residential rooms along a ridge in Luxor.* ***Above:*** *Mit Rehan (1981) was built of limestone. With the completion of the Aswan High Dam in 1970, the Nile ceased its annual flood-borne regeneration of Nile Valley topsoil and, to conserve it, the government of Egypt banned the manufacture of mud bricks.*

TOP: CHRISTOPHER LITTLE / AGA KHAN TRUST FOR CULTURE; RIGHT AND OPPOSITE: CHANT AVEDISSIAN / AGA KHAN TRUST FOR CULTURE



How to Build a Nubian Vault

This is not a construction guide. Please consult an experienced adobe mason before attempting to build a vault. —*The Editors*

Build the front and back walls of the room to be vaulted 60 percent higher than the side walls. From the inside top edge of each side wall, hang across the width of the room a chain whose length is 1.67 (1⅔) times the width to be vaulted. The chain's arc is by definition a catenary curve. Trace this curve onto a wooden or cardboard template, and cut the template along that line. Invert the template and set it against either the front or back wall, with the template's base points at the inside top corners of the ends of the side walls. Use mud mortar to trace the template's form onto the wall: This will be the shape of the vault. Do the same on the opposite wall. Set up leveling strings between the two tracings.

Mortar the first mud brick with its long dimension vertical, leaning against the base of the wall at an angle. As the second course, lay half a brick and a whole brick. (To split and trim bricks, Nubian masons use only an adze, whose sharp, curved blade is set at a right angle to the handle. It is used with a hammer-like motion.) The third course will be two bricks, the fourth two and a half, and so on. Each partial course leans toward the wall and ends when it touches the wall. After five partial courses are laid, the sixth should be the first one to complete the catenary arch and set the angle by which all subsequent courses lean toward the wall. When using properly mixed mud mortar and bricks scored on the mortared surfaces, this leaning angle is sufficient to hold each course in place. In laying the courses, do not mortar the ends of bricks of the same course; rather, let the interior corners of the bricks touch and place chips of dried mud or small stones between the exterior corners.

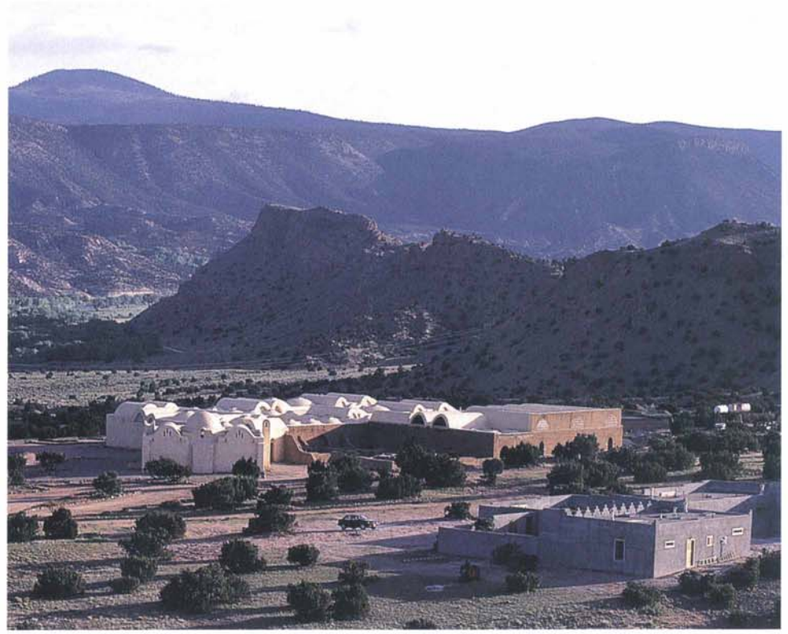
TOP: MARTINE JULIEN; LOWER: CHANT AVEDISSIAN / AGA KHAN TRUST FOR CULTURE

TOP: WILLIAM TRACY; LOWER: CHANT AVEDISSIAN / AGA KHAN TRUST FOR CULTURE

extended further to the eight sides of the octagon that supports, on squinches, a dome symbolizing the sky. These eight sides were held to represent the eight archangels holding up the holy and the most soothing face of nature. The Arabs naturally want to bring it into their own dwelling. The means of doing this is the courtyard. It becomes the owner's private piece of the sky."

The *mashrabiyyah* is an artful lattice of lathe-turned dowels that intersect at carved wooden spheres (or, on occasion, other shapes). It is used as a window covering from Morocco to Pakistan (see *Aramco World*, July/August 1974, July/August 1993). The *mashrabiyyah* allows air to circulate through the house while maintaining privacy for its occupants, and in regions of intense sunlight it is the most effective of window shades because the curved, often polished surfaces do not block light: Rather, they diffuse it into the interior with the splendid subtlety of radial reflection. Over the centuries, building *mashrabiyyah* became a highly developed craft, as woodworkers produced panels several meters high that nonetheless seem as delicate as lace. Fathy followed the traditional form of the *mashrabiyyah*, in which the apertures at eye level are narrow, to reduce glare, and the ones higher up, where sightlines do not compromise privacy, are larger. In colonial times the *mashrabiyyah* lost favor, but now—thanks in part to the efforts of Fathy—it is enjoying a revival, and not only in the Middle East. Antoine Predock, the New Mexico architect, has adapted it into his work; in Paris, Jean Nouvel transformed the idea of *mashrabiyyah* into steel for the Institut du Monde Arabe's electrically operated façade. (See *Aramco World*, January/February 1989.)

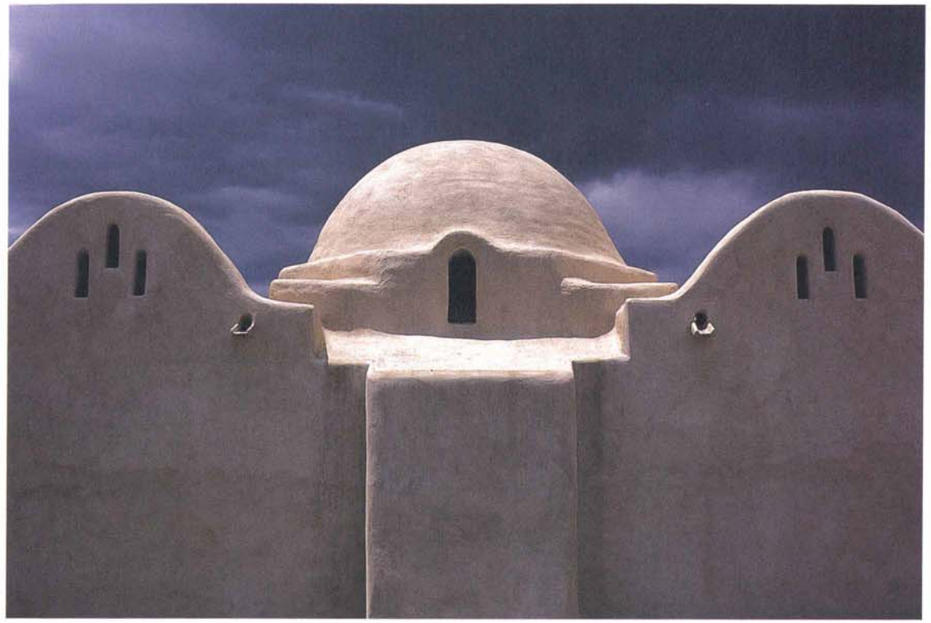
The *malqaf*, or windcatch, originally developed in Persia, is another millennia-old popular cooling device that fell into disuse in the Middle East when European housing design gained popularity. Fathy's most famous use of the *malqaf* was in Bariz, the second entire town he designed. The *malqaf* is a shaft rising above a building, open to face the prevailing wind. Functioning as the opposite of a chimney, it catches and channels the wind down into the cool, lower reaches of the interior, often across a pool of water and occasionally also over wet fabrics or screens, both of which further decrease the air temperature by evaporation. When clients could afford it, Fathy often made such water an esthetic element by installing fountains centered in an octagonal configuration, as in classical Arab houses, that often echoed the eight-sided support of a dome overhead.



The English word *adobe* comes from the Spanish assimilation of *al-tub*, Arabic for sun-dried bricks of mud. This derives in turn from the ancient Egyptian word for mud. The size of the mold used today in most parts of the world to make adobe bricks dates to at least 1450 BC, when the young pharaoh-architect Queen Hatshepsut was depicted on frescoes molding with her own hands the bricks for each corner of her funerary temple at Deir el-Bahari, near old Gourna. The proportions used then are so perfectly adapted to the function of the bricks that they remain largely unchanged today in Egypt, the Indus Valley, Pakistan and China, and from Sudan south to Zimbabwe. In the eighth century, the adobe mold traveled to Andalusia with the Arabs. From there, the Spanish *conquistadores* carried it to Mexico, where the native people of the deserts quickly adopted it.

In 1980, Fathy noted that in the *pueblos* of New Mexico, bricks still measure 33 by 15 by 10 centimeters (13"x6"x4")—almost exactly the proportions of the bricks at the Temple of Hatshepsut. When he made this observation, Fathy was engaged in his only North American commission, the community of Dar al-Islam in the remote mountain site of Abiquiu, New Mexico, where his clients were US-born Muslims. (See *Aramco World*, May/June 1988.) The first structure to rise was a mosque, constructed by the community members themselves under the tutelage of Nubian master masons Mohamed Abdul

Above: *The mosque and school at Dar al-Islam, built in 1981 on the high New Mexican plateau at Abiquiu, was Fathy's last village project and his only buildings in the United States. Building codes required that the mud brick be covered with concrete plaster, which increased the weight and cost of construction and largely blocked the planned inclusion of individual homes.* ***Below:*** *The Sami House (1978), built south of Giza, also employed limestone rather than mud brick.*



The mosque at Dar al-Islam in Abiquiu remains the community's signature architectural form. Note the large scuppers and spouts that allow rainwater to drain from the roof.

Jalil Moussa and the 85-year-old Ala Eddin Mustafa, both of whom had worked on many of Fathy's buildings. Though Fathy engaged himself in nearly a dozen projects afterwards—mostly individual houses and one hospital—Dar al-Islam was his last village-sized commission. Although today it is the only one that is even partly inhabited, the plans for individual adobe homes had to be scuttled early on, for local building codes had not been written with such construction techniques in mind, and their advocates were unable to secure the changes required.

In 1985 Fathy was awarded the first Chairman's Award of the Aga Khan Award for Architecture. He was 85, and it was only then that he began to receive the international recognition, the speaking engagements, and the other awards that his work and his principles had so long deserved.

On November 30, 1989 Fathy died in Cairo, in the 17th-century Mamluk house where he had lived for decades. It was his refuge and inspiration to the end, standing in a modest quarter at the foot of the eight-domed Ottoman citadel and overlooking the massive splendor of the Sultan Hassan Mosque, which Fathy regarded as the apotheosis of Islamic design in Egypt. Yet the neighborhood was (and is to this day) heavily populated by squatters, and so, even across the street from his door, he found daily reminders of the need for sensible, sensitive, sustainable housing solutions.

Patronage for Fathy's architecture for the poor never materialized to any significant degree, and his deepest hopes went largely unfulfilled in what at first seems to be a lifetime marked by setbacks. Yet Fathy remained ever an optimist, an idealist and a fervent believer in the essential goodness and the ultimate perfectibility of the human being. "Straight is the line of duty, and curved the path of beauty" are words Fathy would often mutter while drafting—words that he came to understand well in the full course of his life and work. In a 1961 paper, "Religion and the City of the Future," he saw clearly the unity of matter and spirit:

"As knowledge spreads among people, as the dogmatic certainties of 19th-century materialism lose substance, as matter itself grows more elusive under the physicist's examination, so humanity comes to a new understanding of the truths of religion. As education raises the general level of knowledge, so this understanding will become common property, and the illumination of the ancient sages becomes part of everyone's consciousness. With this knowledge, all natural phenomena and all works of humankind will be seen as a unity, as part of the holy totality of all things. Then the distinction between the sacred building, the church or temple, and the secular buildings of the city will cease to have any meaning. The whole city will become the temple, designed and built with the same reverence as the cathedrals of the past."

In the spring following Fathy's death, with the help of Brent Porter of the Pratt Institute, I organized a memorial celebration at New York's Cathedral of St. John the Divine. An overflowing crowd of people from nearly every faith saw slides showing his built work, heard a *surah* from the Qur'an recited, and listened to numerous messages, including ones from architect Charles Moore, consumer and health advocate Ralph Nader and Britain's Prince Charles. Afterward, I took my leave with reluctance, and walked out into a world in which Fathy's memory would—and this was my personal resolution—be a source not only of continued inspiration, but of action.

Today there are two centers in France inspired by Fathy. Both work with owner-builders in West Africa and the Middle East: CRATerre (Centre de Recherche en Architectures de Terre) of Grenoble and the Development Workshop of Lauzerte have helped introduce the Nubian technique of mud-brick dome and vault construction among villagers in Mali, Niger and Iran. In Egypt, Fathy's ideas can be found in the work of architects, planners and cultural developers in numerous institutions. In the United States, I have spent much of the past decade among architects, architectural conservationists and soil engineers dedicated to continuing his work in the desert climates of the Americas. Since 1994, my resolution to carry on Fathy's work has led me to form the Swan Group in the border cities of Presidio, Texas and Ojinaga, Chihuahua. (See page 46.)

As our global population continues to rise, the number of people without dignified, healthy, safe housing has soared far beyond what it was 30 years ago when Fathy wrote *Architecture for the Poor*. Fathy's designs, ideas, principles and character promise to grow only more relevant with time.

Simone Swan is director of the Swan Group, based in Presidio, Texas.

"Straight is the line of duty, and curved is the path of beauty."

—Hassan Fathy, 1900-1989

WILLIAM TRACY; OPPOSITE: CHRISTOPHER LITTLE / AGA KHAN TRUST FOR CULTURE

Building for the 800 Million

An Interview with Hassan Fathy

Photographed by F.R. Gouverneur

Aramco World *writer and photographer John Feeney interviewed Hassan Fathy at the architect's Cairo home, Bayt al-Fann ("House of Art"), in February 1981. Fathy was 80 years old.*

Aramco World (AW): *Can you mention the recent awards you have received?*

Hassan Fathy (HF): First was this award of the Right Livelihood Foundation, where the people are willing to come back to the human scale and the human rhythm of life; their ideas seem to correspond with my ideas about architecture. The other is the Aga Khan Award for Islamic Architecture. The third is the Balzan Prize. These three awards all came at almost the same time.

AW: *Does this mean that you are more influential in the architectural world now?*

HF: I hope so, because when we talk about architecture we have to think about two sides of the problem: the architect and the client. And the client I am interested in is represented by the statistic used some 20 years ago by the United Nations, which reported that there were 800 million among the people of the Third World doomed to die prematurely because of the bad conditions of their housing. This is the client the architect ought to serve, but architects are not interested in these poor. It's like the barefoot doctors in China: They need barefoot architects too.

To my mind, the less expensive the house, the more art you have to put into it. You cannot oversimplify and design one house for a million people and then, simply by putting three zeros or six zeros after it, turn it into a million houses. The house has to be built for its owner. When an architect builds for a rich man, he does all he can do to satisfy the specific or special requirements of his client, but when we architects deal with large numbers we don't care. We design one house and put three zeros beside and it becomes a thousand. If you say we have too many houses to build to be able to deal with them each individually, well, you have to anyway. If you cannot, if they surpass your capacity to design, then you are in the wrong profession. It's as though a doctor were to operate on a thousand people in two hours: He'd kill them all.

To my mind, the way to evaluate any project lies in asking the question, "Is it for man, or is it for something else?" If it is for man, we can discuss it; we have this psycho-bio-physiological man, and we can see the project's impact on him. But if it is for anything else, if it is for politics or economics, then you can do what you like, but don't talk about man, because then we have discarded man.

AW: *Would you like to talk a little bit about design concepts in Islamic Cairo—the narrow streets and the courtyards?*

The client I am interested in is represented by the statistic which reported that there were 800 million among the people of the Third World doomed to die prematurely because of the bad conditions of their housing. This is the client the architect ought to serve, but architects are not interested in these poor. It's like the barefoot doctors in China: They need barefoot architects too.

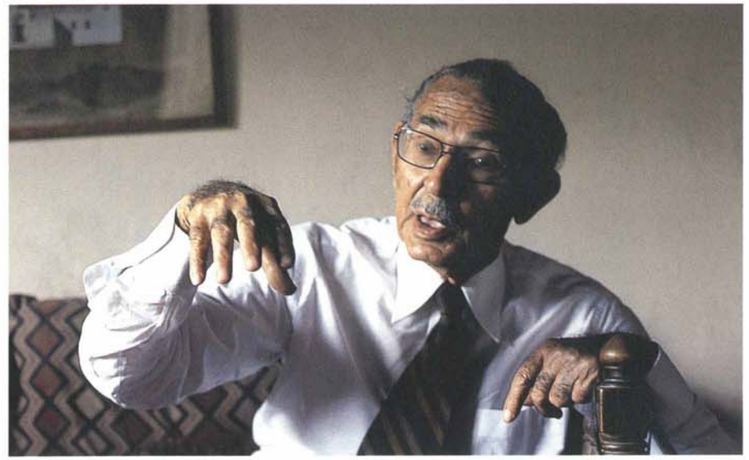
HF: What we can call Islamic architecture usually refers to architecture of the hot, dry regions. People who live where the environment is very hostile—heat and glare and sandstorms—have to turn their backs to the outside. So do their houses, which open onto the courtyard and are built on narrow streets.

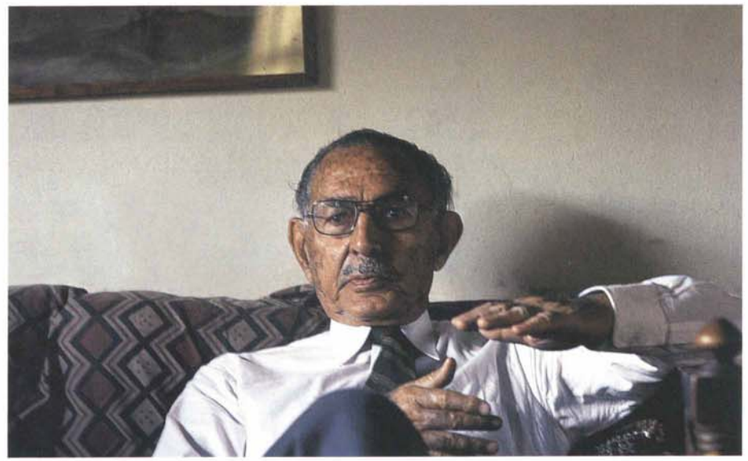
If you take measurements of air temperature you can compare the two kinds of housing, the one with the courtyard and the other opening outward into the street. The courtyard house is much cooler and nicer. And if you calculate the area of the courtyards plus the area of the narrow, shady streets and compare it to the area of the large avenues that you have in "modern" design, you find that these designs are not modern, they are backward. You will find that many thousands of kilocalories are economized if you have the right solution, which [in this climate] is the meandering narrow streets with the larger areas given to the courtyards.

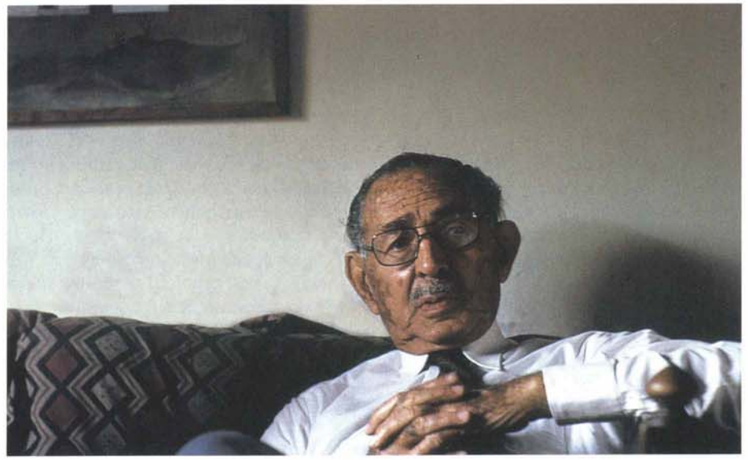
AW: *Could you say a bit about your own house and what you look out onto?*

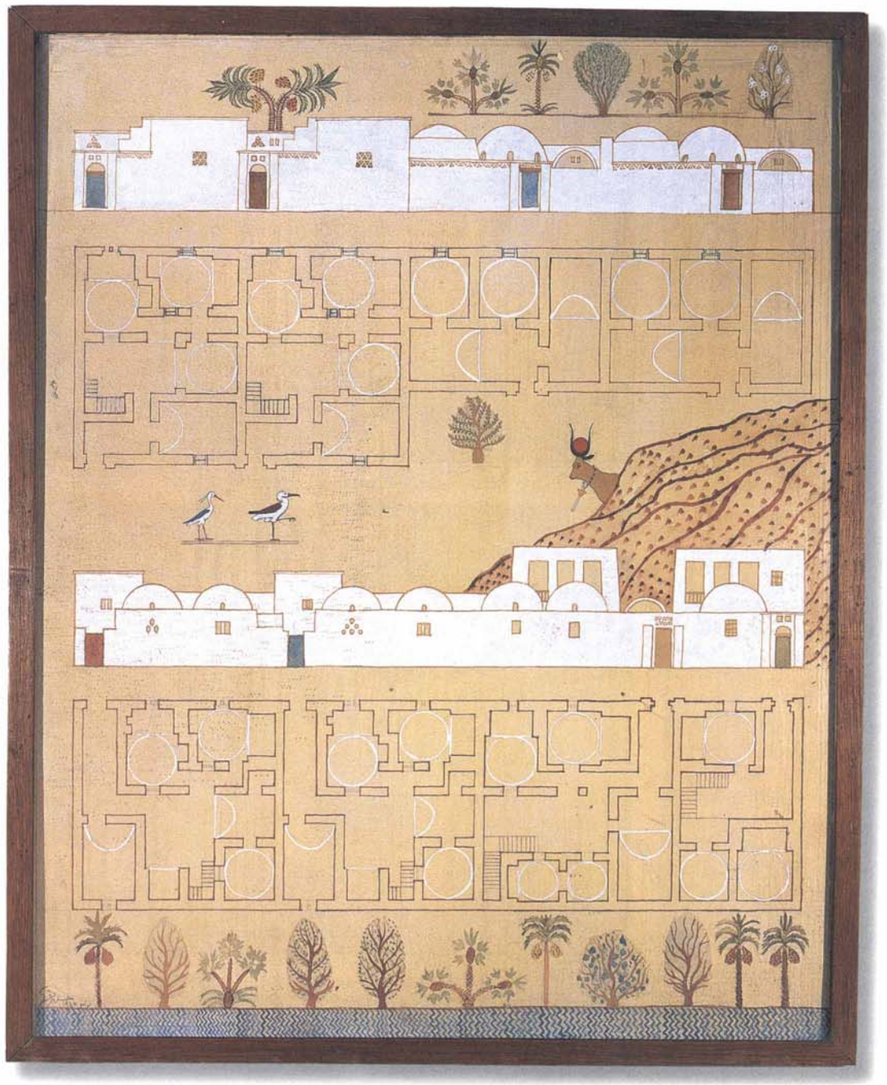
HF: Here is a small bit of Cairo which has been left. I'm surrounded by five mosques and naturally, thanks be to God, they were not demolished like the rest. Here I am living in a skyscape, not a landscape. Because of the technique that's been invested in them and the delicacy of their structures, the minarets around you make you think, and the air makes you feel, that technology has been subjected 100 percent to artistic expression. Every detail has a meaning. They are not made haphazardly or just by the whim of one individual artist or architect: This architecture is a communal art. So I think it is a great privilege to live here, in this environment, and I thank God that I could find this part of the world to build in.

As far as internal architecture, I feel very comfortable not only from the physical point of view but from the psychological and aesthetic points of view as well. Because, you know, the eye doesn't see more than one point at a time, and it sends the experience to the brain one point after the other. And when you hear music, you hear one note after the other, and you send the experience to the brain and it is in









your brain that you make the melody. So I continue by exposing the lines and experience of the image that I see, point after point, and sending it to the brain, and you make the image in your brain, like music. In the case of the image, this is done very quickly, and we think it is instantaneous, but no, it is one point after another—and then you have introduced rhythm. So when I am in this house and I see the lines, the intersection of the planes of the walls and the roof with the crown, the floor, the length and height and width of the room, and this and that, the eye goes harmoniously, harmonically.

AW: *So architecture is akin to music?*

HF: It is akin to music, it is frozen music. It is true especially if you apply what I've been telling you about the rhythm and harmonics, which you have in vision just as in hearing. If the lines go on harmoniously from one measurement to another, then it is like the wave lengths of a string making the fifth, the third, or the octave. So you have these harmonics in architecture as you do in music, only you have to transpose.

AW: *Now that your influence and your thoughts are going around the world, are they being taken up by other architects and builders? Or by young architects, perhaps?*

HF: The young architects are keen but they have no chance, because they have to have projects to work on and the projects are mostly carried out by

Usually man beautifies whatever he does with his own hands, so the product of his work has an aesthetic element. This is culture. But when we mechanize production, and construction, this reduces the human contribution, the participation of man in the building, and it also deprives the person who looks at the building of a source of culture—construction, invention and creation.

governments, and my way is not recognized by governments. The government architects are heads of departments, are a generation of professionals and employees, bureaucrats. To make this system work you have to have it recognized by the governments, by universities.

AW: *As a result of your many journeys to North America, for talks and conferences, have some of the architects or some of the organizations who've attended taken up the thought and the philosophy you espouse?*

HF: Yes, in Abiquiu [New Mexico]. This experiment proved to be useful because the people were very responsive. The demonstration we carried out there, building a small mosque with vaults and domes, all in mud brick with no centering, interested everybody. But the engineer of the municipality said, "We cannot give you permission because we don't know the calculations and this kind of structure is not known here." But thank the Lord, I had had this done earlier by our professor of structures, who calculated the stresses and forces of the vaults and domes in adobe. And we gave the municipal engineers a copy of these calculations, and they approved because they found out that it was secure. Because when soil mechanics tells you that the brick can take up to, say, 20 kilograms per square centimeter in compression, and the structural engineer calculating the vaults and domes tells you that it is actually subjected to one kilogram per square centimeter compression, then you have a very large safety factor, and the thing is secure and can last forever. The point is, to make this work we have to subject it to modern science, to the knowledge that we have from modern science.

AW: *Could you give us some thoughts on the influence of buildings on the soul? You mentioned once how you can walk along the street and be influenced by the buildings that the eye encompasses.*

HF: Usually man beautifies whatever he does with his own hands, so the product of his work has an aesthetic element. This is culture. But when we mechanize production, and construction, this reduces the human contribution, the participation of man in the building, and it also deprives the person who looks at the building of a source of culture—construction, invention and creation. Also, there is another thing, about encounters. There is a certain communication among all the members of a family that could not exist if the rooms of their house were put in a row, along a corridor, like in a hotel. This happens also with the city, the street and among people when you walk, when you come out of your house. In the past, your street was humanly designed and alive with people. There used to be children playing, they had a street culture, you would have puppet shows, or games. This has been eased out by the car, and streets have become boulevards. This has to be considered: the effect of the downtown plan on man, especially on children.

You can see this by examining a design of a street and watching the people going out to wherever they are going. The average adult can stand comfortably in a space of half a square meter. In a subway rush, however, he may be reduced to a quarter meter [square] or even less. Walking briskly at about five kilometers per hour, he needs three-quarters of a square meter, a reasonable and safe allowance on a crowded sidewalk. But in a car, he needs a road space of approximately 18 square meters just to stand still in a traffic jam. For driving at an average speed of 55 kilometers per hour, to move with reasonable safety, he would need approximately 55 square meters of roadway, and twice that much to feel relaxed as well as safe. Driving on a 100-kilometer-per-hour expressway he needs twice as much again, that is to say, 220 square meters. If we add up the areas of [modern, 55-kph] roads, and compare them to the area of [traditional walking] streets and squares, there is 75 times the space required!

Another thing is that you don't have encounters with the other people driving in your car. If you are in Venice or Cairo or Istanbul and you go to the market, you talk to the people who surround you. Now you have the supermarket. You come in your car, you have no time, you choose whatever you like, you put it in a shopping cart, you pay and go out. There are no encounters, no contacts. If you go to Khan el-Khalili and you don't bargain, the man won't sell to you, because bargaining is part of his life. After sitting all day waiting for clients, he offers you tea and coffee and talks to you, and he wants you to bargain. The simplification of contact leads to the isolation of man, more and more.

John Feeney, filmmaker, photographer and writer, has lived in Cairo for more than 30 years and has contributed extensively to Aramco World *for most of that time.*

Al-'Udhaibat

BUILDING ON THE PAST

Written by
William Facey

Photographed by
Hamed al-Abdeli
and Salih al-Azzaz

The farmhouse at al-'Udhaibat was dilapidated when Prince Sultan acquired it in 1986. Its reconstruction has been carefully documented to extend knowledge of traditional Najdi building technology, from thermal principles to techniques of brick-making and roofing, ***opposite:*** *Craftsmen tie the stripped midribs of date-palm fronds across ceiling joists of* athl *(tamarisk); on top of these, plaited palm-leaf mats will be laid, and a layer of loose palm fronds. Then comes a layer of adobe bricks, which will in turn be covered by a smoothed layer of mud mortar.*

Hassan Fathy's career was notable not only for his commitment to the poor, but also for the imaginative, environmentally and culturally sensitive houses he built for wealthy clients. So he would perhaps find it unsurprising that adobe should be taken up in Saudi Arabia by Prince Sultan ibn Salman ibn 'Abd al-'Aziz Al Sa'ud, honorary chairman of the Saudi 'Umran Society, a group of architects in the kingdom.

In using adobe to rebuild a farmhouse estate called al-'Udhaibat on the northwestern outskirts of Riyadh, Prince Sultan has constructed more than a residence: Al-'Udhaibat is a proposition in a cultural dialogue exploring both the role of vernacular style in contemporary architecture and the viability of adobe as a material suited to the needs of modern living—a dialogue with which Fathy would have found himself entirely in sympathy. "Al-'Udhaibat should be thought of not as a final destination," says Prince Sultan, but rather as "a practical guide for the next generation of Saudi builders."

By staying true to traditional materials and yet adapting and updating them—much as Fathy did—al-'Udhaibat demonstrates that tradition and modernity can be integrated gracefully. In this sense, the house is a bit like Prince Sultan himself, now in his mid-40's. As a grandson of 'Abd al-'Aziz, the first king of Saudi Arabia, he is rooted in the soil of central Arabia's Najd region, and in the history of the Al Sa'ud, the family that has ruled the region from its capital near al-'Udhaibat since the 18th century. (See *Aramco World*, January/February 1999). Yet Prince Sultan is also an accomplished F-16 fighter pilot—he still keeps his ratings current—and in 1985, he was part of the seven-member crew of the US space shuttle *Discovery*, becoming both the first Arab and the first Muslim astronaut. (See *Aramco World*, January/February 1986.)

"Tradition must be thought of as dynamic," he says. "It is the accumulation of past experiences, social beliefs and technology, and no society can develop without understanding it." However, he adds, "our present generation in Saudi Arabia lacks a fixed point of reference in its own heritage."

Not long ago I was describing al-'Udhaibat to a young man accustomed to the desert conditions of the Arabian Peninsula. I explained that the house had electricity and plumbing but that, so that it could be put through it paces as a naturally ventilated house, it did not have air-conditioning. "Ah," came the predictable reply, "then it cannot be a modern house!"

Embedded in his response is an assumption, widely prevalent throughout the arid regions of the developing world, that by definition a modern house is sealed off from the outside and dependent upon mechanical means to regulate interior temperatures. This idea originated largely in Europe and the Americas, where cooling needs are far less than in desert regions, and while it may have appropriate applications there, it is fundamentally at odds with the historic tradition of vernacular building from Morocco to Central Asia.

At al-'Udhaibat, says Prince Sultan, "we have aimed to build a bridge across a divide, a period of time during which our native architecture fell into complete disuse. That time of neglect, from the 1950's to the 1980's, was also the period of greatest economic growth in the Kingdom of Saudi Arabia, and it was as a direct result of that unprecedented boom that modern building methods were introduced in our towns and cities. During the boom we rushed, without pausing for careful study, to adopt the prevailing international schools of architecture, with their differing directions and conflicting ideologies, and attempted to impose their thinking on our society."

Al-'Udhaibat demonstrates that if you reduce your expectations of comfort a little, well-planned, passively (non-mechanically) cooled house can suffice. Indeed its exterior requires periodic maintenance more frequently than a house made of concrete or structural clay tile, but the methods are simple, inexpensive, and require less attention that many people in northern climes give to the maintenance of lawns and gardens.

For Prince Sultan, the decision to build such a house seemed

By staying true to traditional materials and adapting and updating them, al-'Udhaibat demonstrates that tradition and modernity can be gracefully integrated.

Tradition Is Modernity's Future

An Interview with HRH Prince Sultan ibn Salman ibn 'Abd al-'Aziz

Prince Sultan ibn Salman ibn 'Abd al-'Aziz spoke with Aramco World *assistant editor Dick Doughty on April 6, 1999 at al-'Udhaibat.*

Aramco World (**AW**): *I read in your book* [Back to Earth] *that building in mud brick is often regarded as "backward" in Saudi Arabia. Do people come right out and say that? How do you address this attitude when you run up against it?*

*Prince Sultan (**P.S.**)*: Oh yes, they do come right out and say it, especially the older people who have lived in mud houses. They keep telling me, "Look, we don't want to go back to living in mud houses." In fact, though, the mud houses they lived in were not built well enough: They were *bad* mud houses, and that experience stayed with the people. Also, you have to understand we're not promoting building with mud. We are promoting traditional architecture, which implies that we go out and improve local materials and make them adaptable to changing conditions and changing times.

AW: *How did you come to this point? You're the royal patron of the national architects' society, but much of your career has been in aviation. You were an astronaut, and generally you have a reputation as a technophile. Now you are promoting mud-brick construction.*

P.S.: This farm used to belong to King Faisal, and when I bought it, this house was already here. It was dilapidated, and I had never had the experience of living in a mud house—many in my generation have never had that experience. So I had all these ideas about tearing down this house and building a new one in place of it. I wanted it to be all glass, because the scenery is so beautiful here, and what could be more beautiful to look at than the palms and the wadi? Then I discussed this with Abdel Wahed [El-Wakil] and he said, "Let's take a trip." We visited the Alhambra in Granada, the towns of Sicily, and Venice, and as we traveled he explained many things to me, including why the best architects always framed the view: Because if you don't see it, you'll miss it, you'll start taking it for granted. He helped me understand what traditional architecture is all about—not design and form alone but the interactions and relationships between the building and the soul—not just your eye.

On those trips I realized that I found the most happiness in the old, pre-

to go against the grain of a society that had come to look derisively upon the material cultural of its pre-industrial era. But the reward is apparent at once, because for eight months of the year, al-'Udhaibat's natural ventilation and thermal inertia—by which thick walls absorb sunlight during the day, keeping the house cool, and radiate that heat at night, keeping it warm—provide perfectly satisfactory living conditions. The added boon is one that David Pearson, author of *The Natural House Book* (Fireside, 1989) describes as "spaces where heat, humidity, air flows, color, scent, sound, materials and green plants combine to create a 'living climate.'"

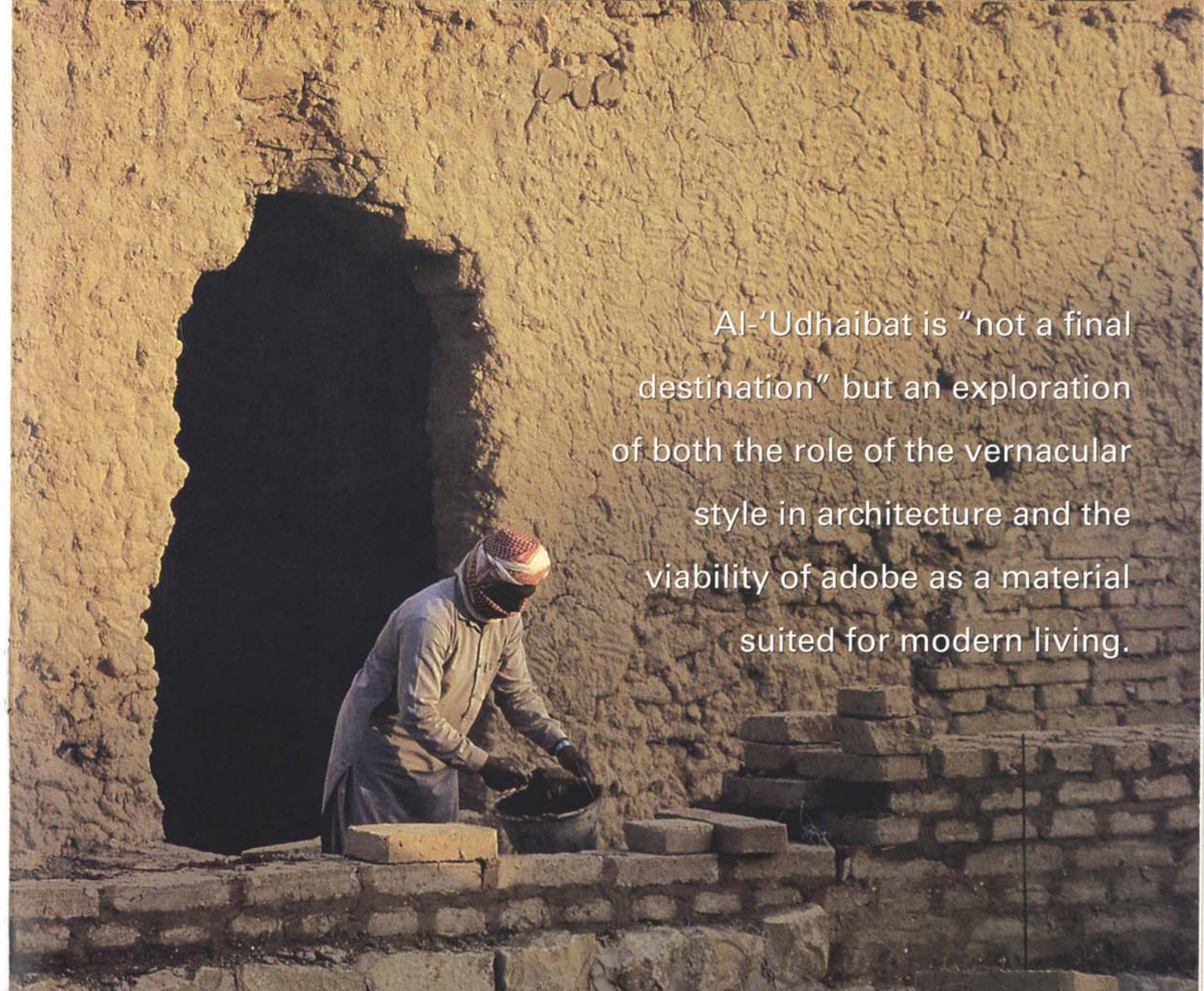
Al-'Udhaibat easily charms visitors with its gentle interplays among mass, textures, colors, light and shadow along with breezes and temperature. Like all traditional Najdi houses, it has smooth exterior walls of undecorated adobe plaster that belie a colorful interior. Plank doors and shutters are painted using traditional pattern designs (see *Aramco World*, January/February 1999); intricate frescoes in carved gypsum plaster (*juss*) decorate walls and bright, handcrafted cushions and rugs furnish the courtyard and interiors with patterns based on deep reds that complement the ochre plaster walls.

At the entrance, the division between the public and the private realm is firm, which is traditional in Najd. A massive, intricately decorated door swings open toward the blank wall of the reception foyer, in the traditional "bent entrance" that obstructs views into the interior. The long, high-ceilinged main men's reception room, the *diwaniyyah*, is adjacent to this entrance, and can be entered without viewing the family quarters. It has the highest ceiling of all the seven rooms in the single-story house, and a row of white columns marches down its center.

Inside, all rooms open off the eight-by-nine-meter (25x29') courtyard, whose three-meter (10') deep claustra shade it on three sides, and whose main feature is a central green area presided over by a grapefruit tree. The courtyard provides privacy and what Fathy referred to as the homeowner's "own piece of sky."

The story of the al-'Udhaibat project began in 1986 when Prince Sultan acquired what was then a half-collapsed mud-brick farmhouse on the 50-hectare (124-acre) estate. It

Prince Sultan and master builder Abdullah ibn Hamid discuss the design of one of the house's locally crafted doors, each of which carries a unique decorative pattern. Ibn Hamid, as he is known, is one of few traditional master builders still practicing in Najd. When the old bricks of the farmhouse proved structurally unsound, he and a team of builders worked with Prince Sultan and architects to rebuild most of the walls, ***opposite.*** *This effort made the house habitable by 1996,* ***inset, opposite.***



Al-'Udhaibat is "not a final destination" but an exploration of both the role of the vernacular style in architecture and the viability of adobe as a material suited for modern living.

served towns and villages of Europe, Spain and the Middle East. I began to ask, "Why do I feel good in this environment, and not as good in an artificial, 'modern' environment?" I realized through the reading—it was then that I began to read Hassan Fathy and many others, such as Frank Lloyd Wright and Ruskin—that it wasn't just because these buildings were old, but that they were built on a human scale and according to principles that made them comfortable and beautiful. This is why, when we visit a new town, one of the first things many of us do is put down in the old part of the town.

AW: *That's often true for us Westerners, too. There is something that feels comfortable and attractive in those places, but a lot of us would have difficulty describing it.*

P.S.: That's because that's a missing part of your life—and in Saudi Arabia, of our lives, too.

When we decided to rebuild this house, our philosophy was to do gap-bridging between the past and the present. We saw that mud architecture had stopped developing in Saudi Arabia. So we faced many questions, like "Should we add electricity? Should we have plumbing?" Sometimes we talked about not putting in lights, just putting in candles or something. And then I realized that if we did that, it would just be a retro thing, it would just make a museum. We decided to continue the evolutionary process. But even the bathrooms are made simply and inexpensively, using local stone and local modern fixtures, because we wanted everyone in Saudi Arabia to be able to duplicate this. I thought about importing some beautiful stuff from Mexico, from Morocco, or doing something in mosaic, but I stopped short because that would have made it difficult to imitate.

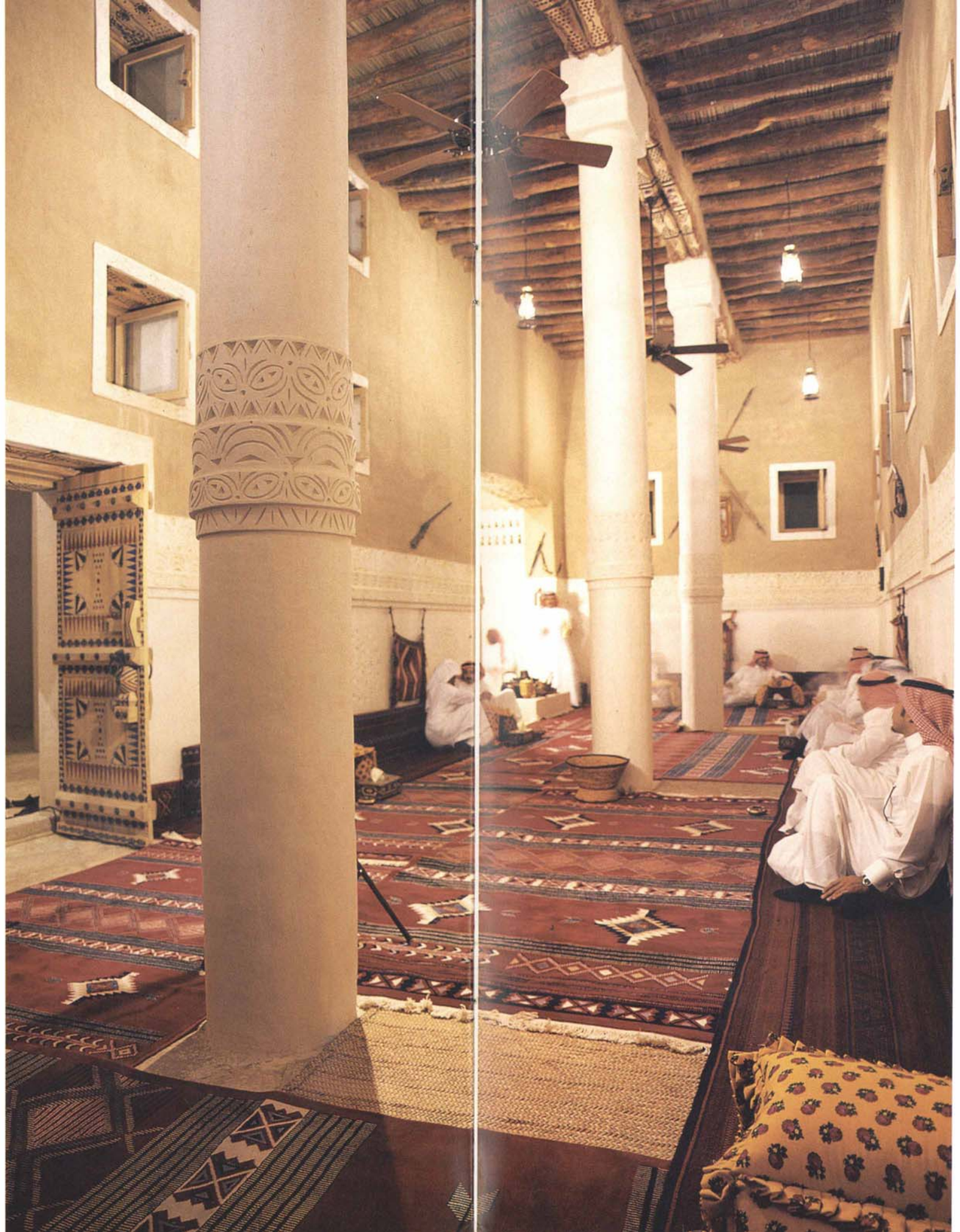
That is another aspect of this project: developing the local economy and saving our traditional crafts. The cushions you are sitting on were made by 40 families through a benevolent organization in northern Saudi Arabia, in al-Jawf. Imagine this on a national scale! Imagine if our crafts were brought up to a first-class level again. This requires interest and patronage: People have to regain respect for these crafts. You see many of them here in this house. So what we're doing is really bigger than just a building, bigger than just architecture.

AW: *So which is more costly, a set of these handwoven floor-cushion covers or an upholstered couch from a Riyadh furniture dealer?*

P.S.: No comparison—it would have to be the couch. But I'm not calling for people to go back and live the way they did in the past, or sit the way they did in the past. In fact, I'm calling for people to live the way they live today, and sit the way they sit today, but, in doing that, to aid the national economy, aid a lot of these skilled craft families, these organizations, pick up on our roots. So you see, my enthusiasm is not purely for architecture: It's enthusiasm for what architecture does to human beings and what architecture does to society.

AW: *I've been told that you've begun to cut down on the number of visitors to this house recently because you and your family have been spending a lot more time here yourselves.*

P.S.: Now that the book is out and people can learn about [the house] from that source, I want to make this more of a family place. My family loves it here. You know you have succeeded in traditional architecture when you go away and you miss being in the building—and that is what happens to us. The next step is to see if we can build something else, maybe a shopping mall or something that actually can be a modern public building, where technology plays an important part. And I want to do it



was one of a cluster of centuries-old farms in Wadi Hanifah that had been owned by Prince Sultan's uncle, the late King Faisal, from 1928 until his death in 1975. Located some 15 kilometers (9 mi) from al-Turaif, the settlement from which the Al Sa'ud began its rule in 1824, al-'Udhaibat had been uninhabited for a decade. The date plantation on the southern part had been abandoned, and in the larger northern part, building contractors had freely excavated valuable soil and used the remainder as a materials dump.

While setting his mind to restoring the house, Prince Sultan realized that the project would only be meaningful if the palm groves, the old well and the rest of the land were restored, too. This reclamation, now largely complete, has added to the house not only aesthetically but also thermally: The palms filter windborne dust and cool the sand-heated breezes by up to eight degrees Centigrade (14°F.).

Although the first plan for the house was to build up the crumbling adobe walls, it turned out that adobe masonry had become so uncommon—in a region where a generation ago it was universal—that no builder remained who could handle the task. It was at this point that the legacy of Hassan Fathy began to influence al-'Udhaibat.

Architect Abdel Wahed El-Wakil, Fathy's leading protégé who had designed more than a dozen mosques and houses in the kingdom, was a friend and mentor to Prince Sultan. He encouraged the prince to seek a way to restore or rebuild using traditional principles, and introduced him to the writings and work of Hassan Fathy. It was El-Wakil, too, who pointed out to Prince Sultan that, in 1975 and under the patronage of King Faisal, Fathy had actually constructed a prototype house, now destroyed, for a village that was never built almost within sight of al-'Udhaibat. With El-Wakil's advice, Prince Sultan went on to enlist the talents of Saleh Lamei, an Egyptian conservation architect and Aga Khan Award winner whose career had also been deeply influenced by Fathy.

The attempt to restore the house that followed exposed the problems that attend all restorations of adobe buildings: How much of the original material can be kept when it is known to degrade structurally if left unmaintained, and when termites have been permitted to do their worst with the mud-reinforcing straw and the structural ceiling and roof timbers?

The building quickly gave its own answer. Half-way through restoration, when the walls and most of the new roof was in place, the wall of the highest room, the *diwaniyyah*, collapsed. Work halted immediately. It was then the Prince Sultan decided to rebuild rather than restore. Although the siting and the basic floor plan of the original house would be maintained, this key decision allowed a 75-percent increase in wall thickness, from 45 to 75 centimeters (17.5" to 29"). This made the building more thermally efficient and gave it the overall feeling of solidity that is one of its attractive qualities today.

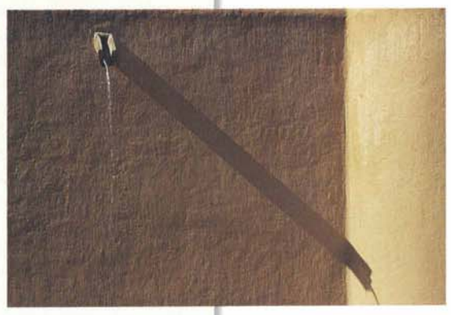
Under Lamei, the project began to take on a scientific aspect as he subjected the various traditional mud mixes of clay, silt

The two-story diwaniyyah, *or reception hall, is built in traditional Najdi style: A central row of columns adapts to the difficulty of finding* athl *joists large enough to both span about 3.5 meters (11½') and bear the weight of the mud-brick roof. Gypsum carving* (juss), *executed by Ibn Hamid, decorates the column shafts and forms a frieze a third of the way up the walls. Palm mats and flat-woven rugs cover the floor; a painted door leads to an arcade around the central courtyard. The doorway at the end of the room gives on the* wijar, *or coffee hearth.*

with mud brick. I want to raise mud buildings to a different level, to bring back respect to mud buildings, because people who were much better than us, including our Prophet and many great men and women of our nation, all lived in mud buildings. They produced great wisdom in mud buildings.

AW: *Who do you see picking up on these ideas?*

P.S.: To talk about that, we have to move from talking about mud buildings to talking about traditional architecture in general. That term doesn't just mean "old"—it never meant "old." Traditional architecture always meant that fantastic wealth of knowledge that has accumulated over time, and which continues accumulating unless people stop dealing with it and interacting with it. (In that case the tradition goes stagnant.) What we want to do is to develop our tradition, to make it more modern than what is today called "modern architecture." Modern architecture, to me, doesn't mean abstract buildings, it doesn't mean crazy structures. It means human-scale buildings, buildings that are respectful of their environment, of energy consumption, respectful of maintenance issues—buildings that are accessible to the community.



In Saudi Arabia, I truly believe, we are at a turning point. The younger generations are beginning to look back and say, "We are proud of our traditions, and these traditions don't mean we are backward or primitive." Many friends have expressed that attitude when they visited here. They say to me, "We go all around the world trying to find beautiful things to bring to our country, and yet all this beauty is right here to begin with!"

In the immediate area of Riyadh, the Ar-Riyadh Development Authority has been busy—you see the National Museum and the surrounding area. In the past, we only wanted the buildings to *look* the way they used to look. Now we've passed on to something more: wanting buildings also to have the same meanings, the same effects, to embody the same principles and have the same feeling inside as the traditional buildings. To do this, for the past couple of years there have been people working to rewrite the national building code and the national town-planning code to respect traditional architecture and town planning.

AW: *That was one of Hassan Fathy's great obstacles.*

P.S.: Yes, but I want to talk about him later, because you asked me about examples. We're also working with the universities. You know we found little information at the schools and universities, especially at King Saud University, on traditional local architecture. There has been no course in traditional architecture there—not one! This was a shock, because a university that is not entrenched in its own local tradition cannot be a modern school of architecture. So we proposed to the university to make traditional architecture the umbrella for the study of everything else—the history of architecture, Roman, Greek, modern, New Modernism. Students would have to study it all, of course, but the umbrella, the context, would be the study of our traditional architecture, because that will serve our local community best in our own way in the future.

Last year there was a big conference in Riyadh, the first time that every professor and every dean of every school of architecture and construction in Saudi Arabia assembled under one roof. I spoke to them, and I stressed and straw to chemical and mechanical analyses. One of the last traditional Najdi master-builders, Abdullah bin Hamid, was hired to lead construction, and an internationally experienced Turkish engineer was made project manager. Together they tried various proportions of materials and methods of mixing them, and they varied the "fermentation" period—the length of time the mud mix stands before being formed into bricks. To their surprise, they found that of all the variables, fermentation was most significant: While local builders traditionally allowed the mix to sit for a day, they found that three weeks' standing resulted in a noticeably harder mud brick, one that had more than double the compression-strength of the best of the old adobe bricks on the site. The team also tested carefully the beams and rafters, made of unmilled *athl*, or tamarisk wood (*Tamarix aphylla*), the most common tree of the Najdi oases after the date palm. The stoutest trunks, they found, could safely span up to five meters (16').

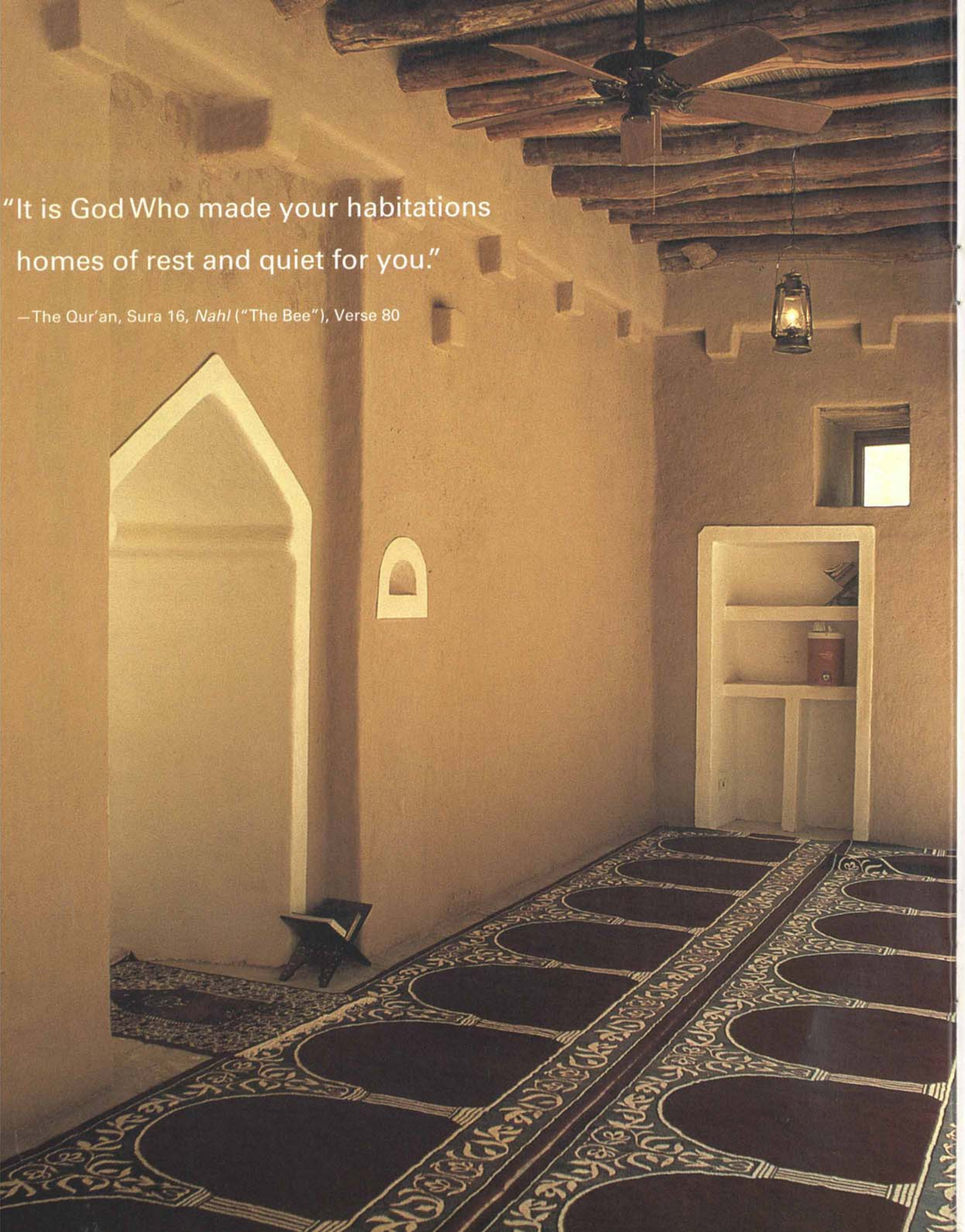
Although the accent at al-'Udhaibat is on using traditional materials where they can be shown to do the job, improvements were made. For example, to fend off termites—often the nemesis of older Najdi buildings—both the straw in the mud mix and the roof rafters were treated chemically. Yet in making such changes Prince Sultan insisted that they not alter the fundamental link with tradition. "No solutions were allowed beyond what the original building materials permit, and nothing structural is hidden from view which does not accord with the basic principles of this type of building," he says.

As with materials, so with aerodynamics: As centuries of desert-dwellers have known, courtyard houses have good natural ventilation properties so long as they are carefully proportioned. The courtyard acts a sink for the cold night air, distributing it into the rooms in the early morning. As the sun strikes the floor, the courtyard acts as a chimney for the rising hot air, which pulls cooler air through the rooms from the surrounding palm groves. Prince Sultan decided that if his courtyard house was to be properly tested, air-conditioning should be avoided, even though in the Najdi summer, where temperatures frequently top 50 degrees Centigrade (122°F.), putting one's head outdoors can feel akin to opening an oven.

Two years on, the reality of that summer heat has led to the introduction of two modest, portable air-cooling units during the hottest days. These compensate for the one drawback of the high-thermal-mass mud house: The thick walls, while protecting the interiors from the heat by day, do so by absorbing heat, and in practice they have remained uncomfortably hot during the night. This has been true for centuries in Najd, where people frequently slept on the roof during the summer, but this is one area where tradition and the needs of modern living no longer easily meet.

Above: *Water-spouts fashioned of* athl *timbers protrude at regular intervals, allowing the flat roof to shed winter rains without eroding the adobe walls.* ***Opposite:*** *A* mastabah, *or built-in bench, on the southern side of the courtyard.*

For eight months of the year, al-'Udhaibat's natural ventilation and thermal inertia provide perfectly satisfactory living conditions.



that we could really teach those students differently. I said that what we're doing now is graduating draftsmen, copyists. We need to go into our own architecture, dig deeper into it, be the ones to carry the flag, carry it forward, make it more modern, make it even more advanced. And then we gave a big dinner for the participants here in this house, in this room. I tell you, I've never seen those people happier. Seventy percent of them had doubted what I was saying—I had heard it from some of them plenty of times, that we were wasting our time talking about such things. But when they came here, it was as if they had been struck by lightning. And I said to them, "Which one of you can today point out to me a new house in Saudi Arabia that is more beautiful, more harmonious than this building?" And there was no one to argue about it.

AW: *What has come of this since?*

P.S.: Some of the colleges have begun to adopt some of the programs that were recommended at the conference. Basically, we proposed that the goal of every university should be producing an architecture that is unique to us, appropriate to us. Orient your program toward traditional architecture and that will open the door for you to be modern schools of architecture, to become fully modern.

Specifically, we proposed, one, that they extend research to local materials, developing them, making them cheaper, making buildings less maintenance-intensive and also paying attention to the effects of buildings on our society, the social effects of town planning in relation to crime, disease and so on. Then, second, the universities should also create a national database of traditional architecture. One day we will have that on the Internet. If you want to know why we have triangle-shaped vents in Najdi buildings or why you have something else in Jiddah, you will have available a complete, extensive encyclopedia of local, traditional architecture in Saudi Arabia. And this would aid not only us, it would aid internationally.

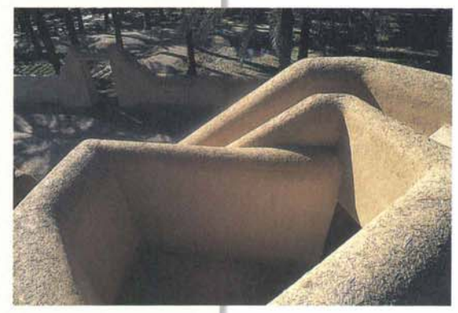
Then the third proposal is that the universities require at least three months of work on a construction site from each student before he could graduate. It's beyond me how you can send an architect out to torture the contractor and the worker when the architect has never been on a site, never actually worked on a site. Yet this is what happens now. And the site should not be just any building site, but a traditional building site, where the student can work with local craftsmen to learn not just the techniques, but also the ethics of these simple and humble people. I speak from experience, because I've spent a couple of years working on this house, and I have learned from the local builders, especially [al-'Udhaibat lead mason] Ibn Hamid, and the craftworkers, and thoroughly enjoyed their comments and dedication and their focus on their work, which I couldn't find anywhere else. I think kids just coming out of university and about to charge through the offices of some contractor should have had that same humbling experience. They would have respect not just for the workers but also for the materials they work with, respect for temperature changes, respect for some degree of aesthetics.

AW.: *How realistic do you think these proposals are?*

P.S.: I know they sound far-fetched, like dreams, but you can't say I'm a backward-looking person. I've been around technology all my life; I love it. I

Parapet and stairway walls intertwine like arms atop al-'Udhaibat's mosque. A high straw content in the finishing plaster increases its resistance to water erosion and gives it unique texture as well. Nonetheless, it must be reapplied annually. ***Opposite:*** *The mosque was an integral part of the plan of the original farmhouse, and it became the first part of the estate to be rebuilt entirely. Its keel arches, severely plain* mihrab, *or prayer niche, and unroofed courtyard reflect the simplicity considered appropriate in a Najdi mosque.*

One aspect of the house that has far exceeded expectations, however, is the coating of straw and mud that overlies the structural bricks. Late winter in Najd is notorious for hail and torrential rains, and the thick mud roof has thrown off storm water flawlessly. One especially dramatic downpour in 1996 wrought havoc with many concrete buildings throughout Riyadh, yet the house at al-'Udhaibat was virtually unscathed.



It is perhaps ironic that Fathy's housing-project prototype, built so close to al-'Udhaibat, was unknown to Prince Sultan until the philosophical direction of al-'Udhaibat was set. Thus, though it would be wrong to claim for al-'Udhaibat a direct lineage from Fathy, there is a no less meaningful lineage of the mind. Through his students El-Wakil and Lamei, Fathy has deeply influenced al-'Udhaibat and all it represents. The concerns for the preservation of traditional craft skills and the sustainability of a structure's relationship with its natural environment are among the enduring themes of Fathy's work.

Al-'Udhaibat is continually monitored for thermal properties, and adjustments and experiments are continuous. Prince Sultan and his family use the house privately with increasing frequency and, perhaps most significantly, it has become the Prince's preferred place for entertaining guests from Saudi Arabia and abroad, who almost invariably depart enchanted by the simple beauty of the house. With that experience comes a gentle but unforgettable challenge to dominant assumptions about architecture.

"When my six-year-old son asked me, 'Why are you doing all this?'" says Prince Sultan, "I replied, 'I'm doing it for you, and for a generation that needs its heritage to maintain its balance.'"

Al-'Udhaibat, built from the soil from which sprang modern Saudi Arabia, appears well on its way to a landmark role in Saudi culture.

William Facey is the author of Back to Earth: Adobe Building in Saudi Arabia *(Al-Turath/St. Martin's Press, 1997,* ISBN *1-900404-13-3) as well as four other books on the history of Saudi Arabia. He is a director of the London Centre of Arab Studies.*

fly the most modern airplanes, I spend a lot of time on my computer. I read about new developments every day. I'm not a romantic person, and I'm not naïve. But I do feel, and I really believe, that something has to happen to change the way people approach the future, otherwise we'll develop in a way that is uncontrollable. The word "futuristic" has always connoted things that are fantastic and incomprehensible, but to me "futuristic" implies a very deliberate, clear effort to improve life in the future. There has to be deeper thought given to the future as being shaped and guided by principles.

AW: *You told me earlier that you wanted architects to become more aware of choices in their relationship to society. What are your thoughts about this? What is the difference between the architect's role in Saudi Arabia today and that role before this century?*

P.S.: Well, a lot of Saudi architects—I won't say all of them—have become businessmen. As businessmen, they want you, the customer to be happy. So they are immersed, most of all, in what the building looks like. Often, in spite of the architect's good intentions, that building becomes, essentially, a failure, because the look has no connection with what the building should be doing in the first place. But an architect working traditionally is different. I worked with [Abdel Wahed] El-Wakil for four years on a house and I didn't ever exactly know what my house would look like when it was finished. I was frustrated with him for years, until I realized what he was trying to do: He was working from the inside out.

I'm not the most knowledgeable person in the world, but I have managed to read a few books with a critical eye, and I think sometimes that I understand the issues more clearly than an architect who has the load of his schooling, his many years of research, and all that kind of wealth, to defend. There's nothing wrong with a person being excellent, and his work being recognized as his, as the work of that individual—but there is a lot wrong with the work being directed toward promoting the individual himself.

This has never been our tradition. In the history of this country, individuals act to serve the community. People pray together in the mosque as a community; people open their houses and exhibit hospitality to the community, and so on. I told the people [at the conference] a story I found about a master builder in Makkah—it might be a bit exaggerated, but it is really a metaphor. Every day this respected man, this craftsman who was designing and building buildings, who had high rank in Makkah, would go to the mosque for each of the prayers, and he would pray in the back, although in Islam it is preferable to pray in the front, if you can. He would pray almost in the last row, and when he was finished, he would quickly run out of the mosque and go back to his home or back to his work, almost covering his face to avoid being recognized and praised. He wanted only the reward from God for work well done. The building wasn't his, in his mind, it was the community's. And when he built it he was careful not to be recognized for it, because he did it so well he wanted the community to enjoy it, for it to become the community's building. That attitude is what we have lost, and I don't think we'll ever get it back.

AW: *Can you extend this thought to bring in Hassan Fathy?*

P.S.: I'm going to criticize him first, asking why Hassan Fathy only became important on the national scale, in his own country, in Egypt, after his death. Hassan Fathy came to Dir'iyyah, you know, [in the early 1970's]. King Faisal brought him, he loved it and, according to El-Wakil, Hassan Fathy's wish was to build something in Dir'iyyah. But he came at the wrong time: He came when the concrete was flowing. King Faisal wanted him to do rural architecture, to build houses for all the people. And Fathy recommended using mud-brick architecture. That was discarded as being against the times, and people soon began to build with cement.

I think Hassan Fathy's biggest...not mistake, but his biggest disadvantage was that he started with the poor people, among the *fellaheen,* at the village in Gourna, and wanted to do more for the farmers and the country people. Now how many people do you know who decide to build a house and tell you, "I'm going to go out and find me a poor person so I can duplicate his house to build mine"? People don't do that. People usually follow the higher echelon, copying or imitating from the top down, not from the bottom up.

Yet Hassan Fathy's influence is lasting because his books and his work have such incredible depth. I have given away so many copies of his book [*Architecture for the Poor*]. It certainly influenced a paper I gave once called "Riyadh, the Human City." I explained why I think Riyadh could now—should now—become a *human* city, instead of just continuing to be a vibrant government center and an industrial city. So you live in the city, but then what? Can you really, mechanically, go to work every day at seven o'clock in the morning, drive your car back home at night, and go to bed? You can do that perhaps for six months, but when do you begin really enjoying life?

AW: *Do you think these thoughts are relatively new within Saudi society?*

P.S.: You know they are not new, but now they are being said and they are being heard. People have traveled, they've seen the world; we have a new generation that is beginning to wonder why modern Saudi Arabia is the way it is, and are saying, "Let's have a life, let's relax, let's have a city that is beautiful and that is good to live in." And therefore we have the National Museum effort, and the old Riyadh airport that is now going to become a park. Now Dir'iyyah will be restored to its original luster—though parts of it will be left destroyed, because that's part of our heritage too—and it will not be just a stagnant restored city, but one where you can find culture, museums, schools and institutions.

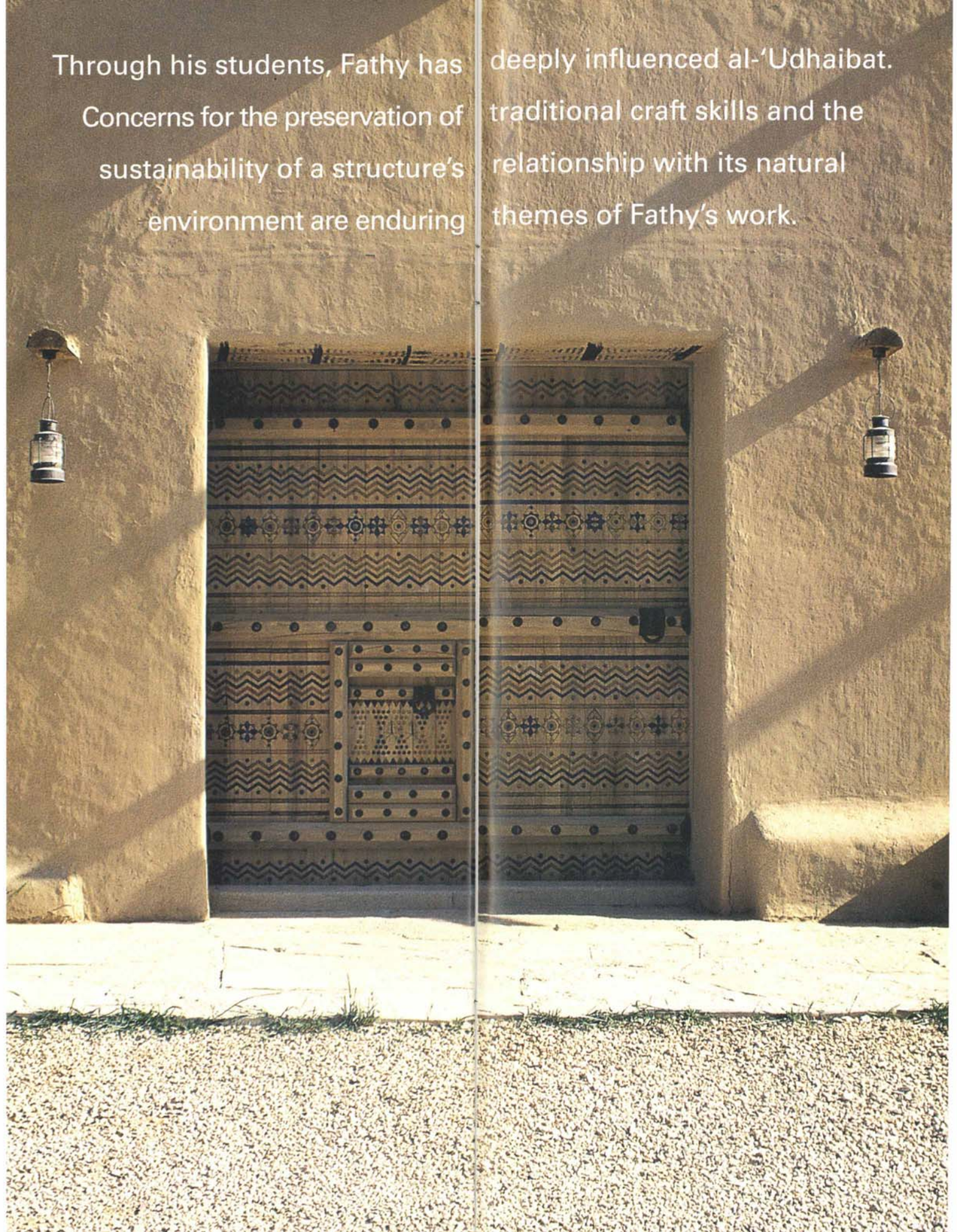
Hassan Fathy is a traditional architect. I keep telling people that traditional architecture is not old architecture. It is not retro. But the minute I stop saying it people revert to understanding traditional to mean "old." So I'm beginning to call it "human architecture" instead.

AW: *If that is "human architecture," is all the rest "inhuman"? That seems problematic.*

P.S.: Well, it is, because you can't really define what is not traditional or human. You'll never drag me to point out a few buildings and say, "That is not human architecture," because all architecture has human aspects, human values. But by "human" I mean an architecture that satisfies the human soul, that interacts with the human being, that reflects a human initiative. It doesn't have to be mud architecture. I am not defending mud architecture—I'm actually the first person to explore its faults systematically. That is why we are documenting this building in every way. We document its faults, in hopes that we can improve the materials.

When our population exploded [after World War II], the need for housing was very acute. With free land, free loans, it was a rush to live in a dignified way. Now we can reflect on that time. Every country has to go through its own experience. We're still growing fast—more than 60 percent of Riyadh's population is under 20 years old—and the need is staggering. I want to promote something sustainable, something that's modern in the full sense of our traditions, an architecture that looks to the future in a sane way. I think that's something that every human being in Saudi Arabia wants in their heart.

Through his students, Fathy has deeply influenced al-'Udhaibat. Concerns for the preservation of traditional craft skills and the sustainability of a structure's relationship with its natural environment are enduring themes of Fathy's work.



The main entrance to the house reflects tradition in proportion, decoration and its incorporation of a postern, or inset, gate.

From the NILE to the RIO GRANDE

Written and Photographed by Dick Doughty

When Daniel Camacho bought a diminutive plot of land in the town of Ojinaga, Chihuahua, along the US-Mexico border, in 1994, he had never heard of Hassan Fathy. Like others in town, he did daily battle against a local unemployment rate just shy of 50 percent, working when he could as a field hand or laborer and at odd jobs. He figured it would take a few years to save enough cash to build the walls of a two- or three-room home made of cinder blocks. Later, he hoped, he would find a way to buy *vigas* (unmilled timber rafters) to hold up a roof of corrugated metal.

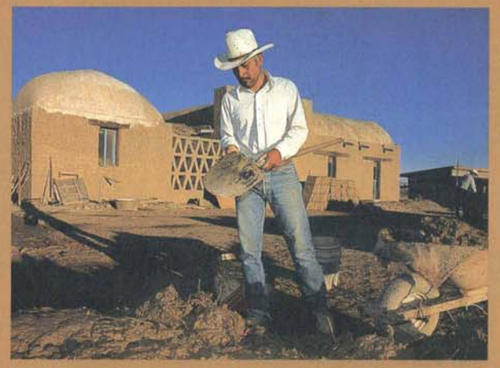
One evening late that year, there was a neighborhood meeting at which a woman from "the other side"—the United States—showed pictures of adobe houses. She claimed they could be more comfortable, more spacious and yet less expensive than the cinder-block-and-sheet-metal houses ubiquitous in the poor sections of Ojinaga. She also claimed that the adobe homes might not need expensive air conditioning, even through the fierce Chihuahan summer.

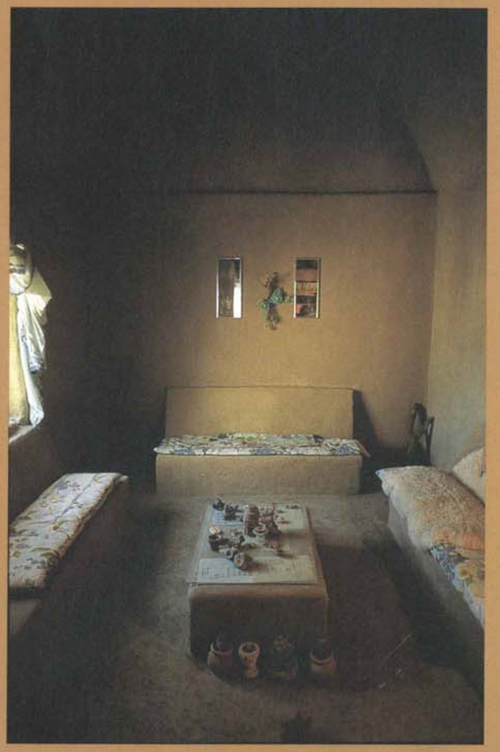
Camacho was intrigued. Adobe was nothing new to him, of course: It had lent architecture in northern Mexico and the southwestern US a distinctive look for nearly 500 years—until the cinder block came along in the 1950's tagged as a "modern material." But what made these adobe houses different from what he had seen was their catenary-vaulted ceilings that used no wood, and didn't even require wooden forms to construct. Although it had never appeared in the western hemisphere, Camacho learned, the design, and the technique of building it, were more than 3000 years old. They came from Egypt, having been revived recently by Hassan Fathy.

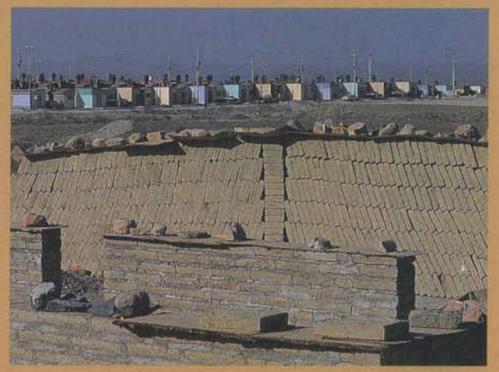
Afterward, Camacho approached the presenter and told her, "I have some land. I need a house, but I don't have a steady job. If you'll give me the materials, I'll help build the house. Then you'll have a prototype, and you can have people visit it whenever you want."

In November 1995, after building for eight months under the tutelage of a local adobe mason, Maria Jesus Jimenez, Camacho moved into his new house. Since then, he's hosted dozens of visitors from around the town and, indeed, the world. Neighbors and housing administrators from both the US and Mexico, as well as architects, professors and reporters, have come to see the house. The four-room home's plan is T-shaped, and two walled courtyards complete a rectangular compound.

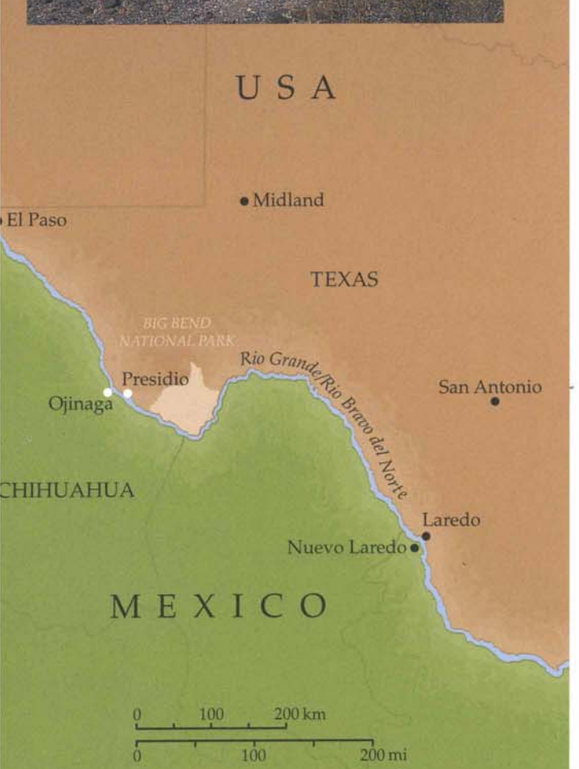
Inside, on a hot May afternoon, it is comfortable. It smells of earth. Camacho says he doesn't have an air conditioner, because the heavy walls and ceiling absorb heat in the daytime and radiate it at night, moderating indoor temperatures, much like a small cave. (See *Aramco World*, May/June 1995.) Although the kitchen measures only a bit

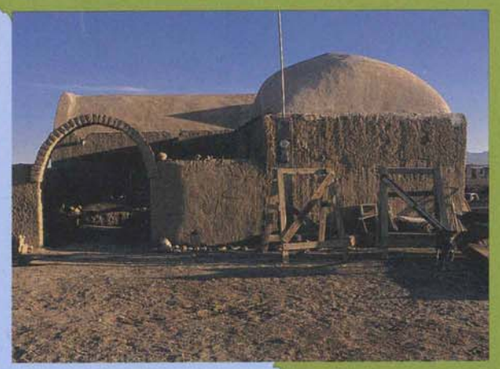






Top and opposite: *After Daniel Camacho made the adobe bricks with which he built his own house in 1995, he became one of a handful of cottage-industry manufacturers in Ojinaga.* ***Center:*** *In his vaulted living room, three couches and a coffee table are built in.* ***Right:*** *Camacho's bricks await buyers. Though the houses in the background are both less spacious and more expensive, they remain more popular because they can be purchased with generously subsidized loans from the Mexican government.*





more than three by three meters (10x10'), its domed adobe ceiling not only increases the sensation of space, but gracefully transforms the room into a simple shrine to the rituals of food. His vaulted living room, though narrower than a railroad car, is also deceptively spacious. Its three cushion-covered sofas, coffee table and bookshelves are all built in, made of the same plastered adobe as the walls. They all make the room appear hewn from stone.

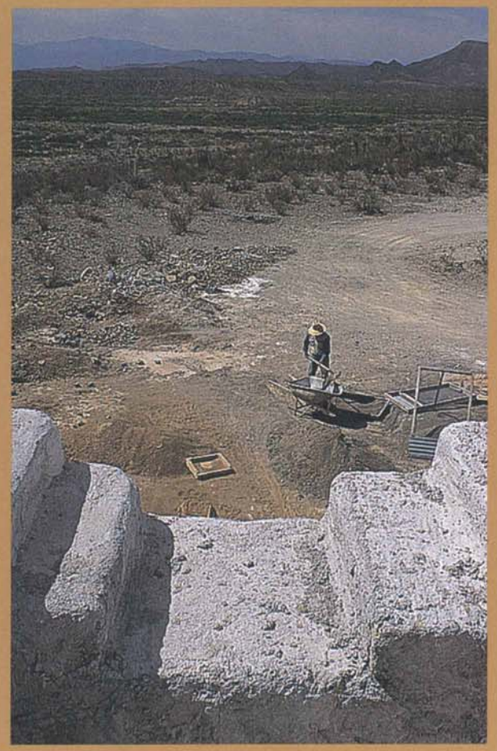
Only a few hundred meters away lies an assembly-line row of government-sponsored cinder-block homes, sobering reminders of how innovative Camacho's house really is. Each is half the size of his 50 square meters (550 sq ft), but cost roughly three times the $5000 that Camacho's did. However, the buyers of these homes benefited from government-backed, low-interest credit, something not generally available. Without such arrangements, lending rates in Mexico can run to 48 percent, and it is this that has so far prevented some 50 families who have expressed interest in Camacho's design from building.

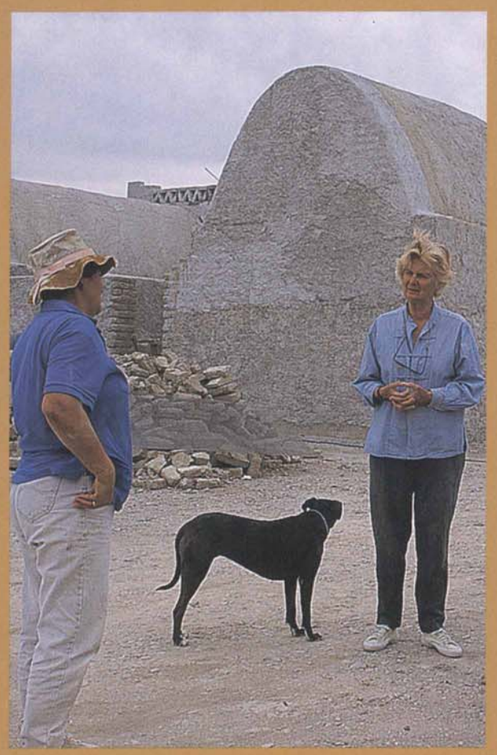
From one of his built-in shelves, Camacho pulls a dusty, worn photocopy of *Arquitectura para los Pobres*, the Spanish-language edition of Hassan Fathy's 1969 *Architecture for the Poor*. "This book is something very important," Camacho says in a gentle voice. "Our population keeps growing and growing. We have to look for a solution, and it has to be something right here in front of us, in the natural resources that the poor can afford. I've read it all. I respect Hassan Fathy very much."

Camacho heats water to make instant coffee. Mud is embedded in the deep creases of his hands, and here in the desert the sweat dries before it can shimmer on his lithe neck and chest. He has spent the day spreading shovelfuls of dry earth and mixing it with water and straw. The mixture will sit until morning, when he'll add more water to it and, from that mud, form bricks. Since finishing his own house, Camacho has become one of several adobe-brick makers in Ojinaga. He employs two other men—when he has orders—and though they can each mold up to 200 bricks in a day, they sell only about 4000 to 5000 in an average month. He makes two sizes of brick, a large one for walls and a smaller one for roofs. The difference, he explains, is that lighter bricks are needed to form the vaults and domes. The proportions of the bricks he makes are similar to those used in ancient Egypt and in much of the Middle East, the same proportions introduced to the New World by the Spanish, who had learned to work with adobe during the centuries of Arab rule in al-Andalus.

Outside, he pours water onto the piles of earth and beats straw into the viscous mixture with his bare feet—about three bales per 1000 bricks, he says. The straw will reinforce the adobe internally, much as steel bars do when set within concrete. Tomorrow, one of his workers will help him mold the mixture by hand. He'll use one of two wooden forms, either the one that forms three wall bricks at a time, or the one that forms six roof bricks. They'll pour the mixture from a wheelbarrow into the mold and smooth it by hand; then they'll lift the mold away and rinse it for the next set of bricks. After two days the bricks will be propped up on one side to dry more evenly, and after four they will be stacked to await a buyer. A good

Above: *Simone Swan's Texas-side house uses four Nubian-style catenary vaults in an H-shaped plan. The crossbar of the H has a flat observatory roof supported by unmilled timber rafters. Right of the house is a vaulted solar power-house and storage shed; to the left is a domed guest room.* ***Left:*** *Camacho's house is entered through an arched gate and a small yard. Directly behind the gate is the vaulted living room. The domed kitchen is on the right: The dome's irregularity is similar to what Fathy often found in vernacular Nubian architecture.* ***Opposite:*** *One of the two bedrooms in Swan's house.*





adobe maker, Camacho points out, is one whose bricks consistently carry the optimum proportion of mud and straw.

As Camacho treads straw and mud, he can look north across the Rio Bravo—called the Rio Grande in the US—to what from his distance appears as no more than a smudge on a scrubby hill. This is the region's second Fathy-style home. Camacho supplied 18,000 bricks for it, and the mason who taught him, Maria Jesusita Jimenez, is working there now. The home's owner and resident is Simone Swan, whose presentation to Camacho's neighborhood group was an early program of the Swan Group, dedicated to introducing both Fathy's philosophy and—as applicable—his techniques to the Rio Grande/Rio Bravo valley. A self-taught architect and lifelong student of the arts, Swan spent three years in Cairo as an assistant and student of Fathy's. (See page 16.)

She recalls it was in 1990, during the memorial celebration for Fathy that she organized in New York, that she "came to a conclusion of significance." She thought of the awards Fathy had received and the countless articles, books and seminars his life's work had spawned. "But who, I wondered, was carrying out his most vital wish, the very task of helping the poor of this world to be housed decently? No one was doing the work! I resolved then, quite simply, to continue it myself. I was aching to do hands-on building, and to realize materially the learning I had acquired."

But where to carry out such a mission? For Swan, raised in the US and central Africa, educated in Europe, a former director of the Menil Foundation in Houston and a long-time resident of New York, it could have been anywhere—and that was part of her dilemma. The next fall she took a vacation to Big Bend National Park in Texas. En route through Presidio, Swan caught sight of the historic adobe Fort Leaton being restored on the outskirts of town. "I was just dying to get my hands on adobe," she says, and the next spring, she found herself volunteering on the project.

"Of course, once I was there I talked about Hassan Fathy this and Hassan Fathy that, and pretty soon they asked me to do a demonstration of the vaulting I kept talking about. We invited several local masons, and one was a woman who kept very quiet but I could see that she was just watching, very intelligently, less skeptically than the others." She was Maria Jesus Jimenez, a soft-spoken mother of three who says she finds "great contentment" in masonry. Later, while Swan taught her all she could, Jimenez helped introduce Swan to the community. Together they formed the Swan Group to serve the broad, binational valley, where the parched rattlesnake mountains and the hardscrabble population both bear a remarkable resemblance to those of Upper Egypt.

On an early summer afternoon, with the thermometer pushing 41 degrees centigrade (106°F.), Swan's kitchen is pleasantly warm. Above, a vaulted ceiling traces the catenary arch that peaks at 4.4 meters (14½'), giving the three- by eight-meter (10' x 25') room the feel of an old Middle Eastern market. But this ceiling is disconcerting to an eye accustomed to the plumb verticality of Roman and Gothic vaults: The parallel courses of bricks, which Swan has left unplastered to reveal the technique in use, list off plumb like a less-than-full shelf of books leaned casually against a bookend. The effect imparts a sense of motion that belies its own physics, as if the thrust and weight of the vault is not straight down into the walls—as it truly is—but rather along the length of the room toward the rear wall, like a string of dominoes frozen in mid-fall. On the other side of the H-shaped house, the vaults over her bedroom and the guest room are much the same. Yet all of them, like their countless millennium-old archetypes in Nubia, will likely long outlive the masons who raised them.

Building catenary vaults is "something you get a feel for," says master builder Mauro Rodriguez, who joined Jimenez in the task. "Each vault goes up just a little different, each course is a little different, and that's okay so long as it stays even over the full length. Even each adobe [brick] can be a little different, too. Have you ever looked at a wasp's nest?" he asks. "They build their nests just the way we make these vaults. I think that's where [the Nubians] must have first learned this."

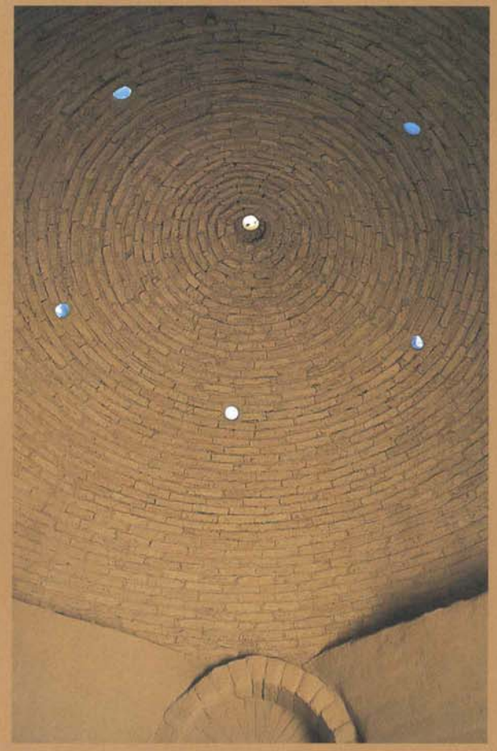
Swan is building her home, which she coolly calls "Prototype Two," some 15 kilometers (10 mi) outside Presidio on a rolling, cactus-strewn mesa of 175 hectares (430 acres) that she hopes, someday, to develop with more homes built on Fathy's principles. But her sights are set first on local low-income adobe housing. As her crew labors on her house, she labors in her office opposite the kitchen, sketching plans, sending reports, soliciting testimonials from engineers and seeking contact with micro-credit lenders and philanthropic foundations. Over the past year, she has worked to convince the Rural Housing Agency (RHA) of the US Department of Agriculture to give the Nubian vault a federal stamp of approval, and this bureaucratic feat promises to allow Presidio residents to receive low-interest mortgages to build all-adobe homes. With further assistance from a development bank, there are now three houses in the planning stage, and a clinic.

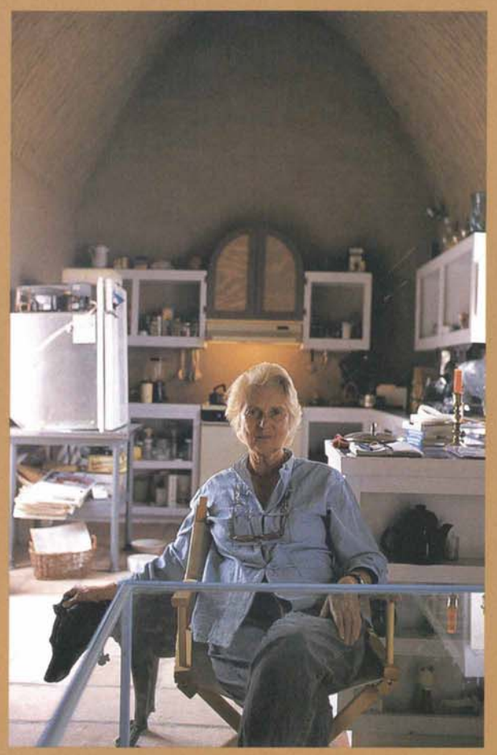
"Not many engineers have studied adobe," says Demetrio Jimenez, director of the non-profit Greater El Paso Housing Development Corporation, who has helped Swan navigate the channels of the RHA. "Even fewer have heard of Hassan Fathy or these parabolic vaults." And low-income people, he explains, can't get government-backed loans without an engineer's approval of the house design. "When that engineer signs off, he has some big liabilities if anything goes wrong. They don't sign on something they don't know," he explains. "But from my experience along the border, there's a lot of families building their own homes anyway; that's just the way people do it here." Swan's ideas thus "lend themselves excellently" to existing local practices.

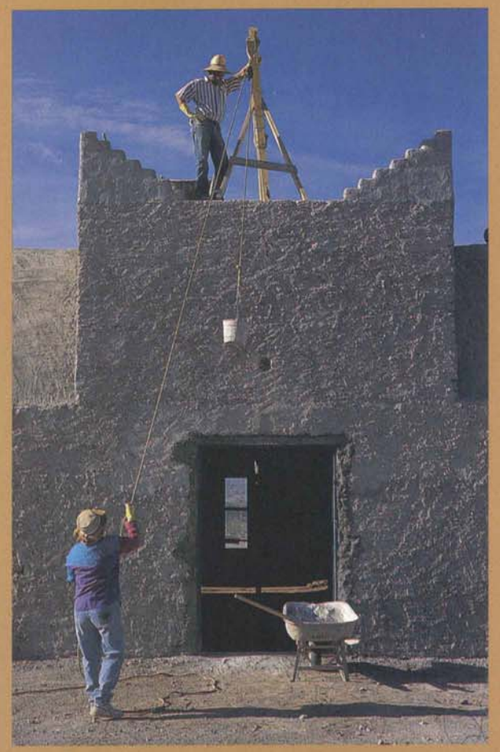
Swan's own house is now finished, although her artist's touch and commitment to locally produced materials put it about a year behind her original schedule. She added a freestanding, square guest room with an elegant dome, and a utility shed to house the batteries that power the home, recharged daily by a freestanding photovoltaic array. Recently she has spent more time than expected receiving reporters and photographers: the *Houston Chronicle*, *Texas Architect*, *Preservation* and *Texas Co-op Power* have all produced features on her work, which has given her a much-needed publicity boost.

"Now I know I ought to dress up and go to some foundations to see if there isn't someone who can extend micro-credit to people, underwrite an efficient office, help organize teams of owner-builders and so on," she says, "but I just haven't had the time. I'm just one person here. I don't have a staff. But now that the house is finished and we have prototypes on both sides, I can really concentrate on the low-income aspect, which of course is the heart of all this."

Top: *Desert scrub stretches toward a rugged horizon from Swan's house, where Mauro Rodriguez mixes finishing plaster.* ***Bottom:*** *Swan and mason Maria Jesus Jimenez talk over the day's progress. Jimenez hopes to build her own adobe home nearby on the same principles as Camacho's and Swan's.* ***Opposite, top:*** *The dome of Swan's guest room is perforated and illuminated by recycled glass bottle-bottoms. Throughout the construction, she has obtained her materials locally.* ***Opposite, lower:*** *"I'm just one person here," says Swan, photographed in her kitchen. "I don't have a staff. But now that the house is finished and we have prototypes on both sides, I can really concentrate on the low-income aspect, which of course is the heart of all this."*







Top: *The railing atop the center section of Swan's house, which contains the library and reception room, rims the flat roof, which also serves as a panoramic deck.* ***Middle:*** *Hoisting lime-and-sand plaster to finish the roof, which must withstand hard winter rains.* ***Bottom:*** *Mud, muscle and the simplest of tools are the elements of low-cost adobe construction.* ***Opposite:*** *Builder Mauro Rodriguez wheels mortar between Swan's house and the guest room. Though the Texas-Chihuahua desert is more verdant than that of Upper Egypt, the two river valleys have much in common climatically, and both are surrounded by dry mountains.*

Swan may be working alone, but she has built up a reliable corps of local supporters, partly because, when she arrived, local interest in adobe was already rising.

"It's booming," says former Presidio High School principal Teddy Purcell, who lent office space to Swan before her house was habitable. He hoped to add an adobe masonry curriculum to his school's vocational offerings. "She's a great resource and nobody else does those vaults," he says of Swan.

"We just have to unite the poor and marginal people—that's me, too, you know—show them the houses, and then maybe we could make some kind of cooperative," muses Karl Downing, who owns one of the town's few tourism-oriented businesses. "I'd love to see lots of adobe here. It would be great for tourism and it would be pretty."

City Manager Michael Kovaks points out that in the construction industry, Swan faces "a skepticism that she's helping move toward acceptance. Some of the brick-and-wood building guys, of course they're skeptical, but then you get them out to see her place and they're sold. But anything new [in low-income housing] takes forever because it's public money and the taxpayers want something that will last. And I know by now that whenever someone says something like that when Simone's around, she'll pull out some picture of [an adobe] building in Egypt and say 'Look! This one lasted 3000 years!' So I think it will work in the long run, but it will take time to be accepted."

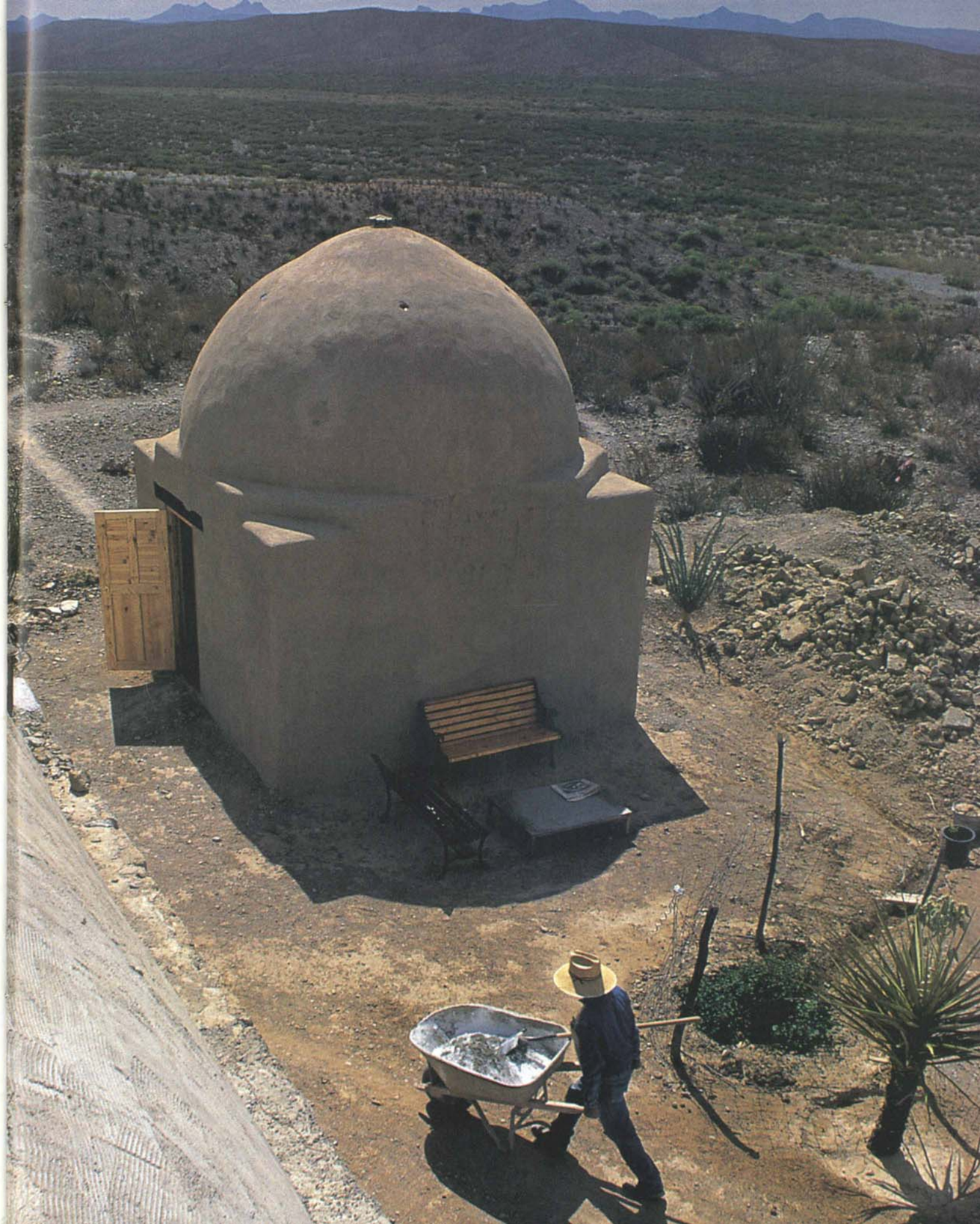
Meanwhile, Jimenez and her crew are up on Swan's roof applying the first of two coats of lime-and-sand plaster that will protect the adobe from rain. Although progress is slow, Swan takes some comfort in recalling the official resistance Fathy faced so consistently for a half century.

"If he could be here right now," she says, "I'd ask him first, 'Hassan Bey, do you find this architecture that I have built to be truly harmonious with the culture, with the environment and the climate?' Now, is it?" she asks, pausing to look about with a self-critical eye. "I hope he would agree. I really hope he would."

But as for community-building and her role as a "barefoot architect," Swan says, "I know what he would say about that! He would say, 'Simone, you've already created a community link with your mason, plasterer and helper, with Daniel [Camacho] and many others. It takes time for the rest to come. To be authentic, to have real change, it takes a lot of time.'"

And over on the other side of the river, as he beats earth, water and straw each morning with his feet, Daniel Camacho is learning the same lesson.

Dick Doughty once spent much of a year carrying bricks and mixing mortar for a West Virginia chimney mason. He is now assistant editor of Aramco World.



Hassan Fathy's research and principles, his publications and built projects—though they dated back to the 1940's—became known to western architects only in 1969, and it cannot be said that they have been fully absorbed, let alone widely embraced, even now, a generation later. The "modern movement" in the West, which aimed to use new architectural materials and technology to improve the life of the ordinary city-dweller, had foundered on aggressive stylistic innovation and an arrogant disregard of the past; Fathy showed how social needs could be met using familiar, vernacular styles, materials and techniques, and with the participation of the "consumer." Though he worked in the Egyptian context, his principles have a much wider potential application—yet throughout the world there is little building being done in his spirit.

In an effort to understand the nature of Hassan Fathy's influence on present-day architecture, and the reasons why that influence finds so little expression, a conference was convened last May at the University of Texas at Austin. It was sponsored

THE LEGACY OF HASSAN FATHY

PHOTOGRAPHED BY RON BAKER

by the university's Center for Middle Eastern Studies, School of Architecture, and Department of Middle Eastern Languages and Cultures, and by *Aramco World*, and it brought together Abdel Wahed El-Wakil, professor of architecture at the Prince of Wales's Institute of Architecture and Fathy's foremost student; Hasan-Uddin Khan, visiting professor of architecture at the Massachusetts Institute of Technology and former editor of *Mimar* magazine; and James Steele, author of several books on Fathy and professor of architecture at the University of Southern California in San Diego. Joining the discussion were Akel Kahera, professor at the University of Texas and convenor of the conference; Simone Swan, director of the Swan Group and practitioner of Fathy's principles; Andrew Voorney, associate dean of the UT School of Architecture; Michael Moquin, editor of *Adobe Journal*; Timothy J. Driscoll of the International Union of Bricklayers and Allied Craftworkers; Sami Saleh Nawar, director of the Jiddah Historical Preservation Department; and *Aramco World* editor Robert Arndt and assistant editor Dick Doughty. What follows is excerpted from the primary speakers' informal presentations and the subsequent general discussion.

JAMES STEELE

Fathy as a Precursor of Sustainability

I suggest that Fathy is the earliest, clearest example of a sustainability-oriented architect we can find. He took Cairo as his text, particularly the medieval part of the city, the one-square-kilometer area that was actually founded in 969 by the Fatimid sultan al-Mu'izz. The area is very rich, very dynamic, and very difficult to understand. It is a cacophony of sound and life. Within that area, he began to look at how an architecture might be developed that would reflect his national background and roots. At the [17th-century] Bayt Suhaymi, he discovered how convection kept the house cool: The private, family courtyard on one side of the *takhtabush* screen was planted, and the formal, public courtyard on the other side was paved. The resulting temperature differential created a flow of air from the cool, planted courtyard into the hotter paved courtyard, and the room above the courtyard that benefited most from this airflow was wonderfully cool, even on the hottest days. This construction is testimony to the traditional understanding of natural forces, and Fathy began to appreciate that and to incorporate that into his ideas.

He began to observe this kind of phenomena and to research them. Nobody had done this to the extent he did when he was young. He began to understand that the courtyard itself is one of the primal forms in the Middle East.

He began to understand that traditionally the choice of building materials was based on the environmental forces in the building rather than the pursuit of a decorative effect. For example, the decorated wooden cupola inside the *qa'a*, the central airshaft in a house, at the top, was put there to help the air rush up faster. All our sophisticated research about solar chimneys—such as that going on now, for example, at the University of Arizona—is really in many ways simply trying to recover traditional knowledge of the *qa'as*. Fathy looked at *mashrabiyyah* screens and found that they were not only decorative and good at soaking up the glare from the sun, but also that they had hydrometric properties, for the wood soaks up humidity, too. This sort of relationship between environmental aspects and the traditional elements in the houses he began to incorporate into a language.

The use of materials is key to the idea of sustainability today, specifically the use of local materials, directly from the area, and telluric materials, which are in a primary relationship with the earth—wood, stone, mud brick and so on.

It wasn't all perfect though, as there were some misreadings of context. For example, the idea of the dome, which he thought was very much symbolic of the past and could be used in the house and in the buildings that he built, was often seen by others with a negative connotation, as it had traditionally been used for a tomb or a mausoleum in this area.

I've always thought that the importance of Fathy is not necessarily the exact examples, but rather the attitude that he instills in us, a way of inquiry, of critical review.

JAMES STEELE

But it was a very courageous act for him to take mud brick and build with it, to go back into the millennia and look to something that was really essential to the Egyptian countryside. He developed a language based on natural materials, natural ventilation and natural systems. If I can just say so, with great trepidation, I think Abdel Wahed el-Wakil is the true successor of Hassan Fathy, because he took the mud-brick architecture and brought it into a more pragmatic realm, using fired brick instead of mud brick, which is more acceptable to more clients and also performs environmentally the same way, if not better in certain aspects.

Fathy lived what he taught. He used these ideas in his own house in Sidi Krier, near Alexandria, and also in the Mamluk house that he bought in Cairo in 1933. He was not above practicing what he preached.

The current trend of sustainability began in the 1970's, when Earth Day 1970 marked the beginning of an awareness of environment-friendly architecture. As you recall, Fathy's *Architecture for the Poor* was actually first published in French in 1966, and it was brought out in English in 1973 by the University of Chicago Press. So he was, in a sense, vaulted into international recognition by the rising interest in ecological issues. Ian McHarg wrote *Design With Nature* in 1966, about the same time, and he was one of the first people to popularize the idea of ecological zones, or ecoregions—but Fathy had been there long before him, saying that each building should respond to its microclimate, to its ecological region and its own kind of context.

I should distinguish between ecological and sustainable architecture. They overlap some, but I would argue that the difference is that ecological architecture is concerned with materials and effects of methods, while sustainability deals with that as well as the community and social issues. It deals with understanding culture and understanding that architecture need not be beautiful to be effective. It's hard to get students, faculty, and schools of architecture to buy into this, because schools of architecture typically want students to design beautiful buildings. But I believe that the situation today, 10 years after Hassan Fathy's death, desperately calls for his ideas and a realization of what he stood for.

In Los Angeles, where I come from, there is a project being built now called Playa Vista. It is one

of the largest areas of urban development in the world today, considered sustainable development because it combines the ideas of mixed-use, low car traffic, high pedestrian use, green areas and clustering to create open areas. Well, I hate to say it, but it sounds a lot like [Fathy's vision] at New Bariz Village to me. Hassan Fathy was there 25 years ago, but Playa Vista is being heralded as the model of the sustainable American community of the future. Every sustainable principle you can mention or want to talk about, Fathy wrote about, thought about, built, gave us living examples of. That is why his work is important.

HASAN-UDDIN KHAN

Inventing Tradition and the Paradox of Continuity

I'd like to take a historical view. We start in the period from the 1940's to the 1960's, when the project of modernity and modern architecture, which had been developing since the 1920's, reached the developing world. We, in what was then named the Third World, were coming out of colonization and into independence and beginning a search for new national identities, aspiring to be part of a modern community of emerging nations. There was a great deal of poverty in our countries, with people coming into the cities in unprecedented migrations. There were new symbols of modernity from the West, with new buildings in the international style, and new materials, such as concrete and steel. The race for modern development was in full swing.

Fathy, on the other hand, was producing an alternative model for us. He was drawing from two strands: the vernacular and the historical. The vernacular meant the contemporary indigenous, and the historical was that which belonged to the local or regional cultural roots. Most of the great political leaders of that time, Gandhi and others, were similarly looking at their precolonial local history and drawing from it. In Egypt, you looked back to the pharaonic or the Mamluk. In India you looked back to the Mughal or the Hindu. In order to understand Fathy and his impact, and to assess the significance of his great successes and failures, this is important.

HASAN-UDDIN KHAN

I feel that the words I am going to say now are perhaps less adulatory, but I also realize that Fathy is a great enough, fine enough and big enough figure to withstand this more critical look at his life and work. I believe he deserves that from us.

I'd like to start with Fathy and people. I think Fathy had, in some ways, a romanticized view of "the people." Don't forget, he was trained in westernized institutions and came from a well-off family. He went into the villages with a kind of paternalistic relationship with the people and with Egypt. He was brought up in that post-colonial moment, and he was thus looking for a new Egypt. He was a man of Egypt, but he was also very much a man of the world. He had a romantic view of what the village is, and what architecture there means.

New Gourna needs to be talked about in this sense. We can see in this project that Fathy was interested in the vernacular and in history. He brought together traditions of Upper Egypt, [architectural] proportions from the pharaonic system of measures, and a different kind of technology to help the government settle a population in a village near Luxor. I have suggested that this is an amalgamation of traditional sets of models; that's why I call it an "instant vernacular," because he begins to produce what is basically a reconstituted idea of what village life is like, or should be like. It is an amalgam of different traditions that do not belong entirely to one place.

Fathy wasn't alone in what he was doing, in Egypt or elsewhere. At the same time and in the same milieu as Fathy, there is also Ramses Wissa Wassif, who used the same social ideas as Fathy and created a village that is still today training kids—orphans—and others in the art of weaving tapestries as a means of giving them an economic basis for a community. There is an architect in India called Laurie Baker, an Englishman with Indian citizenship, who has worked with vernacular, lower-income and indigenous building materials in southern India with amazing impact for 50 years, though he is not very well known. Jorge Anzorema has worked with building for the poor in Japan, and there are others elsewhere.

Remember that four years after Fathy's *Architecture for the Poor* came out in English, Robert Venturi published *Complexity and Contradiction in Architecture*, other architects were bringing out books about the death of modernism, and we had the beginnings of the post-modern movement. This broad questioning of modernism was in some ways more active in the developing world, and Fathy fits into that moment of questioning.

He is a reminder to us that there is more to architecture than economics, that what is valuable is looking at our own places and at who we are. I think those lessons, along with involving people in the ritual of building, and embracing a way of being in community, are things we should carry with us. He is amazingly important for those reasons.

Then there is what I would call the first generation of Fathy disciples—the generation of the 1960's and 70's. There were a whole lot of us from the Third World who were unsatisfied with what modernism had to offer, as we saw an economic misfit between what was going on with the modernists in Europe and what might be applied to our countries. Fathy came to London and spent a week or so talking to students. He gathered a bunch of us, and we went to Cairo to do climatic study measurements at the Bayt Suhaymi. The group later became the Development Workshop, which is still working today around the world.

Fathy tried to relate processes of building to culture, place, and milieu, but what happens as time goes on is that gradually there is a kind of deterioration, as forms and symbols begin to be used with less and less discrimination and less understanding of the process that brought them about or their meanings to society. Two things happened in the 1970's and 80's with Fathy's vernacular model. First, it began to be equated with *the* vernacular, though it is rather a coming together of a set of different traditions of the place. The second thing that happens is that this amalgamation—the instant vernacular—begins to be associated with Islam and with Islamic architecture. This is very interesting, because indeed it becomes the prime model for the contemporary Islamic architecture of the Middle East. Domes and vaults become associated with Islam and are used to differentiate structures associated with Islam from other contemporary buildings.

This reached a kind of apotheosis in the 1980's, when Fathy, for the only time in his career, built in America; this was the Dar al-Islam project. It was a community set up as an Islamic community, partly funded by individuals from Saudi Arabia, and its architecture has been appropriated from the vernacular into the Islamic. There is an equation, in terms of the poetic ideals of the spirituality of the desert, of this location in New Mexico with the Middle East. But the climate in New Mexico is quite different. The winters are really cold, so the building performs in a very different way from the way it would have done in the Middle East. The adobe cracks. It's quite beautiful as a piece, but it doesn't actually do what the vernacular of that place would suggest it should do. It is rather an image of the vernacular, and an image of Islam.

Now, in the 1990's, what is happening is a third phase. The second generation of architects, all these young Egyptians who had some contact with Fathy during the course of his career, are now suddenly being taken over by the international tourism industry. Since about 1989, large companies have been forming in Egypt, and it is essentially Fathy's stylistic model, that "instant vernacular," that they are choosing for their holiday hotels. These are not business hotels downtown, but the ones tourists go to in order to experience the place, and which say, with their forms, "This is what Egypt is about"—or at least, "This is an environment that we tourism promoters like, as an image of our country and ourselves, and want foreign visitors to experience." Tony Mallor, a developer working in the country, said, "The business of reinventing style by replicating a piece of the past is an essential dilemma of architects working to be authentic." The question that I would raise is this: Was even Fathy being "authentic"? What it even means is highly questionable. To be authentic in terms of a location, any location, has become quite a problem for architects. But I would argue that this third phase, this "Disneyfication," represents a deterioration and a denaturing of the signs and symbols that Fathy used and intended. I don't want to emphasize this too much, but the process is occurring, and it needs to be talked about in reference to the continuity of Fathy's ideas and his heritage.

SIMONE SWAN

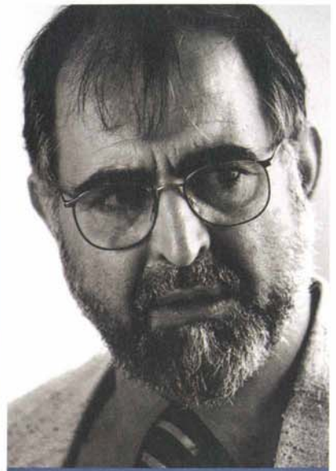
I would like to end by saying that he did influence a whole generation of architects, including myself, and my life would have been different without him. Even though I might talk critically about his work today, he did make me look at my own culture and my own place in a way no one else did. To me, his strength is not his architecture: I think New Gourna is a heroic failure. Much of his architecture has moved, ironically, from what it was supposed to be, an architecture for the poor, to architecture that is built and used by other groups of people who are by no means badly off. He is a reminder to us that there is more to architecture than economics, that what is valuable is looking at our own places and at who we are. I think those lessons, along with involving people in the ritual of building, and embracing a way of being in community, are things we should carry with us. He is amazingly important for those reasons. But we need to look at him with our eyes open.

ABDEL WAHED EL-WAKIL

The Vital Aspects of Hassan Fathy's Work

I have a technique for evaluating things and ideas. I believe that the only ways to see what you have done—I used to paint and sculpt—is either to step back and get some distance, or to turn the thing upside down so that you look at it differently. So I go to antiquarian bookshops to buy and read books that present ideas before they have become very sophisticated, intellectual and, in a way, arrogant, that date from when people were more simple in their thinking. Hassan Fathy's

Fathy saw architecture as a choreography of movement: going upstairs, coming down, looking out from a loggia. It was not just a matter of building materials, of mud brick or whatever, it was a way of looking at life.



ABDEL WAHED EL-WAKIL

ideas are not new! Neither are our problems. If you read pharaonic texts and stories, they make you think that it is happening today.

Architecture and its forms arise from the whole revealed doctrine of a culture and religion. They do not emerge like a wild plant in the forest; they are crafted. I suggested to the Prince of Wales, when he wanted to found an architecture school, that he needs to create a new subject—the science of forms. We don't understand them. We talk about forms, play with forms, and we are, as we say, formalistic, but we don't understand them. The science of forms is the study of how they emerge and fill our environment.

In pharaonic architecture, the forms all came from a specific religion and culture that has since been lost. In Egypt there are Muslims, Copts and—until the revolution—a Jewish community. These three cultures lived together and they had the same architecture. You never heard a house described as "Coptic" or "Islamic." The architecture belonged to a unified community. A difference between our age and earlier ages is that, until the 15th century, people seemed to live better with their differences. In our age, you might ask how this was possible? I believe it was possible because they lived in a universe that was primarily spiritual, and that primacy has been largely or entirely destroyed today. It has been destroyed because our whole point of view has changed. Before, people lived according to a vertical axis: Man was related to heaven and to God. Then Darwin came along and tipped that axis horizontal, and it became a time axis.

This came about with a very important change of attitude. Today many people try to find something that they feel has been lost. And it has been, because once you have this different perspective, you can no longer see things holistically. You only have this horizontal view. And this is the view that predominates in schools of architecture. It is why Fathy was so hated. Because on this horizontal line, time suddenly becomes important, and there comes the idea of "progress," and the notion that anybody behind a certain point on the timeline is "religious" or "traditional" and therefore not "progressive," whereas anyone beyond that point is "avant-garde" or "futuristic." This division between the past and the future has led us astray. Architecture and space are intimately related to our ideas. When you say up and down, front and back, left and right, it is significant, it is qualitative, there are values connoted in all these terms. Going forward is progressive. All of these ideas are reflected in our speech.

I see Fathy as a person who looked beyond the time. What is important is not what is "Islamic" or "authentic" or who is rich or who is poor. The problem is that today you want to create an environment, and there are two environments in this world: the natural world created by God, and the man-created environment. The man-created environment is the footprint of culture. You can make of it either a hell or a paradise. Which do our cities with their high-rises resemble?

One day when I was first teaching, I came back to my professors and told them I had discovered Hassan Fathy. After that it was as though I had to wear a bullet-proof vest. They did everything to discourage me, to isolate me, but I knew what I had found. What inspired me about Hassan Fathy was this: I had a dream that one should always have an internal space inside oneself, and that this space needs to be reflected in architecture. I saw this in pictures of Japanese houses and in movies that showed Moroccan houses. But I never saw these in my country; I did not know that these houses existed in Egypt. And then Fathy introduced me to what was to me a miracle—the courtyard house. At the time it was something unbelievable. At the time, the whole environment of Cairo was influenced by colonialism, it was an extroverted architecture. Where did this model originate? With Palladio! In the English "gentleman's villa." This pavilion, basically, that looked out with four arches into nature, was brought into the city, into Cairo. Before that there were no individual plots of land, there were just buildings stuck together, and the life was inside—in the courtyard. This was a treasure-house of ideas to me. Coming out of the university and teaching there without knowing these things gave me a culture shock. How could I not have known this architecture?

In a building, materials are one issue. But there is also the architecture, the design, the composition of the building. All these things came from the elements and components of an architecture that has no tension—everything is in repose. Everything follows nature. The parabolic arch and the catenary are the forms of nature. Any object that you throw in the air will come down in the trajectory of this arch. Yet very few architects know the equation of this curve. The catenary was used in pharaonic times not just as a structural element but also as a constructional element, by tilting it and thus making it possible to build vaults without wooden forms. But the principle of the catenary never appeared in Western history books until the 18th century and the schools of engineering. This is the importance of understanding that science is universal and timeless—it is only technology that is particular. Technology is the way you do something to solve a problem, the way you overcome limitations. Fathy said that an artist without limitations cannot create his art. When you have limitations, the mind is so creative that it begins to absorb these problems and from the intricacy of the solutions come the expressions that we call architecture. Fathy saw architecture as a choreography of movement: going upstairs, coming down, looking out from a loggia. It was not just a matter of building materials, of mud brick or whatever, it was a way of looking at life. So you can't say this is Islamic or not. The pointed arch is not a form, or a style. It is first and foremost a structure, a structural arch that hides the catenary that solves a problem.

The fatal blow to traditional architecture was the destruction of the traditional craftsman, the mason. He was the one that kept tradition going. When you lose the craftsman, I believe, you lose architecture. When I nominated my mason for [a prestigious architecture award], they sent me—the snobs—a message saying, "We didn't create this award for masons." "Well, I replied, whom did you make it for? For MIT professors only?" It is through these craftsmen that the architecture of the Third World can flourish. It is not by importing steel from England.

DISCUSSION

Dick Doughty (DD): We heard a lot about sustainability early on this morning. Can we define it, and how would our definition differ from Fathy's?

James Steele (JS): Sustainability is really the first institutionally driven movement about the environment, in the sense that it was backed by the United Nations and the World Bank as a way of solving the "growth–no-growth" dilemma of the late 60's and early 70's. It's the sincere desire to come to terms with the need to grow, but to do it in a way that satisfies environmental issues. The definition that came out of the Rio Conference on the environment was that sustainability means meeting the needs of today without sacrificing the ability of future generations to meet their own needs. For the World Bank and the United Nations, the question then became how to define needs. Are the needs of a family in Bangladesh the same as the needs of a family in Brooklyn? No, because in western societies we use about 20 times the resources of the family in Bangladesh. So issues of equity arise.

The architects calling themselves the New Urbanists are the first group in the last 30 or 40 years to actually produce a manifesto, and they've adopted the idea of sustainability as a driving force. What are the relevant principles? I've written some down, not necessarily in order of importance: Use of local materials to save on the energy of importing materials. The recognition that there is embodied energy in material, basically that energy that was needed to create it. The idea of studying traditional architecture, not for its quaintness or style or form but for the lessons it has to teach us related to the environment. The idea of acting locally but thinking globally—that is, that every move we make in architecture relates to another culture and another economy. All these have been adopted as principles by the New Urbanists, but also, I have to say, by more and more municipal planners around the United States. Sustainability is a force that's not going away, and Fathy was at the forefront of it.

Abdel Wahed El-Wakil (AWW): Since, as you say, the people who use the most energy in the world are in the United States, then the country that's really having the sustainability problem now is the United States. There are computer models that have shown that high-rise buildings do not save space but in fact devour more space in a city. People have misconceptions, and when you talk of advocating low-rise construction they ask you, "How will you solve the population crisis with that?" The misconception is that the high-rise solves the problem of the city. It does not: It solves the problem of the land speculator. So when you talk of sustainability, you have to ask what elements are essential to it.

Student: Shouldn't education have something to do with exploring these questions, in instilling a sense of consciousness about what you're building?

AWW: Yes, education is very important.

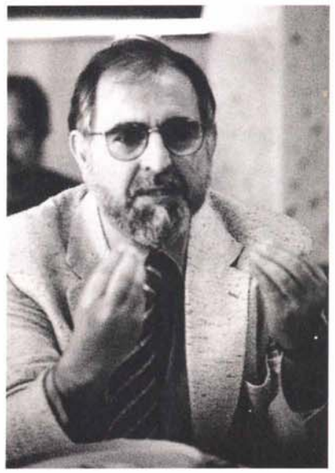
JS: There's a lot of lip service given to this now in universities, but there's very little action. If you go around to the architectural studios, it's business as usual. The focus is on "object build-

DIANE WATTS

Sustainability is really the first institutionally driven movement about the environment. It's the sincere desire to come to terms with the need to grow, but to do it in a way that satisfies environmental issues. Sustainability is a force that's not going away, and Fathy was at the forefront of it.

ings," buildings as objects consisting of forms, rather than as social entities.

Andrew Vernooy (AV): Architecture can't situate itself outside the technological hegemony. I think what's most interesting about Hassan Fathy's work is that he approaches it from a critical point of view. He's not trying to solve these problems with hypertechnical means, he's trying to situate the answer to the problems within the culture in which the problems exist. I've always thought that the importance of Fathy is not necessarily the exact examples, but rather the attitude that he instills in us, a way of inquiry, of critical review. Remember that Fathy also didn't just stick to mud and stone. He looked at concrete structures and many other materials. We always associate him with this kind of wonderful vernacular, but his range of inquiry was much wider.



Michael Moquin (MM): I'm a craftsman, and I also happen to be editor of *Adobe Journal*. The craftsmen are often left out of this discussion.

DD: What's your relationship with architects?

MM: It's almost adversarial. We excerpted some of your writing, James, about Hassan Fathy, in one of our early issues, and I was struck by the need to bridge the gap between the builders and the architects. There's a huge chasm between them. A couple hundred years ago, builder and architect were the same person, and now it's very specialized and different.

Robert Arndt (RA): But wasn't Hassan Fathy the first one to separate the builder from the architect, by his mere presence? The Nubian masters whom he was imitating, or following or learning from, were both architect and builder. So the first level of abstraction from the authentic comes with Fathy himself, when he, as an architect, said, "Okay, we're going to bring this back."

AWW: No, [the separation] was already there. What Hassan Fathy did was to say to the government, "Instead of doing those horrible housing schemes for the poor, why don't you work with the architecture that they are doing already, and use your architects to improve it?" Technology was important to Fathy, and it is important today, but in relation to facts, not hype. Fathy used adobe bricks, he used stone, and so did I. But these days I use fired red bricks because the cost of firing is nothing compared to cost of mud bricks. Mud bricks are more expensive because of transportation and manual-labor costs, even among poor people. I am using red bricks because they are cheaper than mud bricks, and faster to handle.

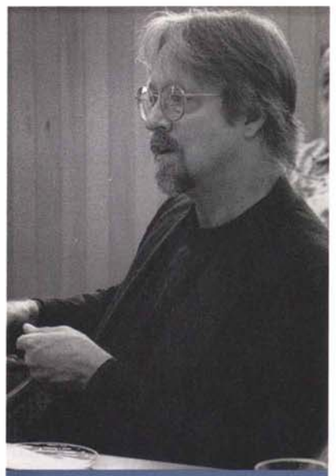
MM: I think that one of the big problems with using traditional materials and traditional techniques is that today's engineers and code writers have locked themselves into current construction technology. They aren't looking at the tradition and why traditional methods worked within the tradition. I've faced that problem many, many times here in the US, bringing brick makers from Mexico or working with adobe. There is finally an adobe code in New Mexico, but you have to use stabilized adobe. That's because the people who write these regulations don't understand how adobe works. Try to build a house out of unstabilized adobe [as used in traditional construction] just about anywhere in this country and they'll laugh you out of the building-permit office.

DD: Is this a matter of vested interests, habit or what?

MM: Well, there is some of that. I was commissioned to do a vault of wood-fired brick. I brought it over, the engineer saw it, and the project was killed because it's a "weak" brick. It was more than structurally adequate, but it just wasn't what he was used to.

DD: Are there places in this country where there is a more progressive attitude toward these things?

MM: You have to have a ranch of your own somewhere. There's an old saying in Mexico that for a good house, you need good shoes and a good hat—that is, a good foundation and a good roof. I can take you to jungle areas where it rains all the time, and there's unstabilized adobe that's been there for three hundred years—but try to get that message through the building-permit offices here.



ANDREW VERNOOY

I think the problem we have in this country is trying to find something that is, indeed, authentic. What would be sustainable yet also authentic in the United States? I don't think there's an architect who can answer that question today.

DIANE WATTS (2)

Traditionally you would get your family or your community together every two or three years to re-apply the plaster as a group project. Now that we're kind of a non–extended-family society, we just don't think that way any more.

MICHAEL MOQUIN

RA: I believe there has been some success in getting building codes adjusted for straw-bale buildings. Some of those have been built here in central Texas, haven't they?

MM: Well, that's kind of separate. The pressure of that group right now is incredibly strong compared to that for adobe.

RA: So it's a political success?

MM: And it's a common enthusiasm.

RA: So why is there no such political momentum in favor of adobe?

MM: Its momentum was in the 70's and early 80's, and by the mid-80's it had pretty much fizzled out.

Hasan Uddin-Khan (HK): Why do you think that is?

AWW: Fashion, fashion.

MM: I think there was so much problem with the code people. Even though we have the most enlightened adobe code in New Mexico, it's still very restrictive. You can't use a natural mud plaster with unstabilized brick, which will work fine but implies periodic maintenance. It's a cultural thing: Traditionally you would get your family or your community together every two or three years to re-apply the plaster as a group project. Now that we're kind of a non–extended-family society, we just don't think that way any more.

JS: I think that's another reason why [Fathy's project at] Abiquiu has been questioned. It was a lifestyle difference. If you listen to the lectures that Hassan Fathy gave at the opening of Dar al-Islam, he was talking about adobe but the people who were asking questions were saying, "Well, we think it's too cold here for adobe, and we don't know if we can maintain the buildings." This self-build, hands-on maintenance approach does not really work in America.

AWW: It's more than this. Hassan Fathy is not just introducing a construction material. He was introducing a style and even a quality of life that we are losing. When I went and saw the Amish people I was stunned: I think if Hassan Fathy had gone there he would have found his hometown in America.

RA: So aren't we saying that if you take a building out of its culture it's not going to work?

DD: What about these so-called New Urbanist projects and the neo-traditional town planning projects? There's one in Houston that just started up and the plots were sold almost instantly. That implies people feel that such projects could meet social and environmental needs, could be something more sustainable.

AV: Well, you have to look at *who* bought them. It's not really meeting a social need. It's meeting a need for people who want to make their life structure an object of desire. And what kinds of materials will these buildings be built with? I think they're pretty conventional. It raises the question not only of forms and materials, but also the nature of authenticity. I think this is the problem we have in this country, trying to find something that is, indeed, authentic. What's selling is some *image* of authenticity. I think what's interesting about Fathy's work is that he was somehow able to find a compromise between being original, on the one hand, and, on the other, appropriating and synthesizing. He was able to do things that were original, but to do them in ways that were embedded within the culture. What would be sustainable yet also authentic in the United States? I don't think there's an architect who can answer that question today.

JS: On the issue of authenticity, Fathy said that tradition is the social analogue of personal habit. I think that's true. What traditions are today are whatever people do. And those traditions change. Fathy also said that traditions that can be retained are valuable, while the ones that can't be retained should be discarded. To answer Hasan-Uddin Khan's question about whether Fathy was authentic or not, I've written down some interesting transitions: Roman architecture followed Greek architecture—the Romans copied it, but they also reinvented and evolved it. Ottoman architecture followed Christian architecture. Hellenistic architecture followed Greek architecture. Renaissance architecture followed Roman architecture. Frank Lloyd Wright was influenced by Japan. Who is authentic? We find ourselves throughout the history of architecture borrowing, adapting, evolving—

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that's what the human species does.

AWW: I'll tell you who is authentic: those who follow tradition. And tradition is related to place more than it is to time. If it is related to time, a building becomes stylistic. But if it is related to place, it is timeless. One of the best compliments I ever received came at an exhibition, when one of the students there asked, "Who is the architect of this building?" "Abdel Wahed El-Wakil," he was told, and he had never heard of me, so he asked, "What century did he live in?"

AV: The avant-garde, up until the 19th century, was almost always a return to time-tested principles, a search for tradition. It's only after the 19th century that the avant-garde became this sort of pushing beyond.

DD: In that case, modernism is an aberration. Is it going to go back to that search in the coming years? Are we going to be looking back, someday, at modernism as a little historical anomaly in an otherwise relatively consistent process of building on tradition?

AV: Without crisis, I doubt it will change. It's part of the positivist, historicist myth about the world, that indeed things progress and get better and better—it's part of what Marcuse called "the veil of technology."

AWW: There is this so-called modern idea that every moment in time is just one step along a line, but nature works in cycles, not along an endless line.

JS: This issue of craft, and of divorcing craftsmanship from architecture, is an important issue. I think that divorce happened somewhere around the Bauhaus. To return to your question of a while ago, Rob, it wasn't Fathy who stood back and said, "I'm not going to work with craftsmen." He actually saw himself as an advisor, as Abdel Wahed said: The architect brings the knowledge, the craftsperson brings the skill. He wasn't trying to divorce himself from craftsmanship; he was trying to revive and protect the crafts in a new era that was trying to efface them.

Timothy Driscoll (TD): Since you bring up crafts, I'd like to talk for a moment. My organization is the International Union of Bricklayers and Allied Craftworkers. We represent bricklayers and stonemasons in the US and Canada. About eight years ago we attempted to come up with a program to address the relationship between architecture and crafts, and we now have a two-week summer camp where architectural students in their fourth and fifth years meet with our third- and fourth-year apprentices to try and walk in each other's shoes.

DD: What kinds of results have you seen?

TD: Well, as most of you know, in your first three or four years of practice after architecture school you're not really given much latitude, so in terms of them going to work for some high-profile architectural firm and doing something innovative that can be traced to us—we're not quite there yet. But we've had several architects come to work for an industry organization, which we're very happy about.

DD: Is your program unique?

TD: We're not aware of other craft unions doing this.

AWW: But a lot of young people do not want to follow this path of craftsmanship. That is part of the problem.

DD: I'd like to talk a bit about Fathy's commitment to humanity in general. He cites in *Architecture for the Poor* a statistic of some billion people who are condemned to die sooner than they otherwise would due to problems that come along with bad housing. In the 10 years since Fathy's death, that number has only increased. Are there people today whose work either builds upon or parallels Fathy's, who offer any glimmer of hope that this statistic might change?

Audience member: I'm not really sure what becomes of all the architects who are churned out by architecture schools. How many of them really end up being involved in housing, let alone low-cost housing?

AWW: Exactly. They are supposed to do the dream projects, the artist's studio, the villa and so on. You have to reevaluate. I didn't stop at what I learned from Hassan Fathy. I've developed techniques in construction, I've looked at different types of energy. The point is not to worship the legacy of Hassan Fathy, it is rather to see how his thinking came about and what he tried to achieve. His problems started with the Second World War, when there was a shortage of materials in Egypt. So he sat down with his brothers, who were engineers, to help him, to solve such problems as how to roof a building, because that's the greatest cost. But it's not just materials, it's a man who is a visionary, a reformer, one who is saying, "What can I do for my community and its people? What can I do to help in my capacity as an educated man?" People don't ask these questions much, at least architects don't. It's not part of the training at all.

DD: What can any of you say about specific projects, people, or things that are being done today that further Fathy's architectural legacies and dreams? How much impact are they having?

JS: I think there's been an evolution over the last 50 years in terms of housing in general. If you look at the examples of government-sponsored housing, in Asia and India and so on, right after the colonial experience, you have tower blocks. This was seen as the solution to housing the poor, especially in Singapore and Hong Kong. But that solution brought with it infrastructure and maintenance problems that the governments found difficult to solve. That led to a second stage, the "self-help" stage, of which Fathy is the major paradigm. The idea is that if you give people the means and the material and the financial help, then they can do it for themselves. But that proved problematic too, as many people found it a bit offensive to be required to do it themselves, or to do it in the way that the donor agency or other authority required. They lost dignity.

Now there's a third stage, dating perhaps from the late 60's to the 70's, which turns on empowerment, where people don't get the pieces handed to them, but get legal and financial encouragement. An example of that would be the Grameen Bank, and now other microcredit organizations. But this empowerment drives architects who are in the conventional mode crazy, because it marginalizes them. In a sense Fathy bridged this gap too, because he saw giving people the means to do what they want to do as the first step toward helping them, and the architect he saw merely as the advisor, as Abdel Wahed said. But that role remains a marginal one.

HK: I think it's true that architects are being marginalized in this process, because the decisions are becoming economic ones. The decisions at higher levels are being done on a structural basis, in terms of whether it's lending, legislation or community mobilization, all of which has to do with ethical issues and your role not as an architect, but as a member of the community. But there are groups working with communities. Take Laurie Baker, who decided that what is needed is very cheap housing that people had to build for themselves—and he builds in brick, by the way, in an area of south India which doesn't have much wood, in Trivandrum. He manages to cut the cost of building to something like 20 percent of what a normal government building costs. He has produced a whole series of buildings, starting with individual houses for particular people who are very poor. Then he started building institutional buildings, and training the local population—again, as with Fathy, a very important part of it. The difference, though, is that his ideas and his training have been taken up generally, and you see his work being reproduced by local builders and local people all over the state.

DD: Why didn't this happen to Fathy?

HK: Well, I would say that Baker's buildings meet some image of modernity that the people had in mind. Fathy's buildings, at the time, actually went in the opposite direction.

DD: Are there other people or projects you can think of?

HK: The architects of the Development Workshop who were working in Iran before the revolution went into the villages, worked with the villagers. These architects actually learned how to build vaults with Fathy, took their technology across to Iran and taught it to the local masons in a setting where the conditions were suitable for adapting the ideas well. There's a fair number of schools built there, and there were four or five villages that were actually built after the Development Workshop left. But once their patronage in the country was gone the program died out.

Audience member: I want to ask Mr. Driscoll what else his organization is doing.

TD: Our union, in conjunction with 19 others across the globe, formed the International Construction Institute, whose goal is the betterment of construction workers throughout the world. An adjunct of the ICI is the Hassan Fathy Institute for Construction Workers. We simply appropriated the name, but we find it quite fitting because his principles are guiding us. The aspect of Hassan Fathy that appeals most to us, quite logically, is the role of the craftsman and how he fits into the building process. We are following up on the Istanbul Statement from the 1994 Human Settlements Conference, a best-practices document from the craftsperson's point of view. The Hassan Fathy Institute is now helping, mostly through in-kind contributions, to provide craft training for workers overseas, so far in Egypt, El Salvador and Poland.

LOWER: DIANE WATTS

Fathy tried to relate processes of building to culture, place and milieu, but as time goes on there is a gradual deterioration as forms and symbols are used with less and less discrimination and less understanding of what they are about.

Events & Exhibitions

The Ardabil Carpet, one of a pair of large medallion-design Persian carpets dated 1539–1540 and signed by a certain Maqsud of Kashan, is a touchstone of Middle Eastern textile history, one of the museum's most important works, and an extremely beautiful object. **Los Angeles** County Museum of Art, through August 10.

Topkapı at Versailles: *Treasures of the Ottoman Court* uses art objects from Topkapı Palace to evoke 17th- and 18th- century life at the Ottoman court, and to guide visitors on an imaginary tour through the various sections of the Palace. Catalogue. Château de **Versailles [France],** through August 15.

Courts and Countryside: *Islamic Painting of the Fourteenth to the Seventeenth Century* focuses on the seasonal migrations of the Iranian rulers, and the paintings depict elegant, portable structures and other adaptations to this reflection of ancient pastoral nomadic pattern. Sackler Museum, **Cambridge (MA)**, through August 22.

Oil Patch Dreams: *Images of the Petroleum Industry in American Art.* Sixty works by such notable artists as Norman Rockwell, Andy Warhol and Thomas Hart Benton capture the impact of oil on the 20th century. **Austin [Texas]** Museum of Art, through August 22; **Wichita Falls [Texas]** Museum and Art Center, September 4 through November 16.

Revealing the Holy Land: *The Photographic Exploration of Palestine* displays 90 photographs from the late 19th century by some of the best-known artists of 19th-century travel photography and one of the least-known, Sgt. James McDonald of the British Royal Engineers. Most images are from the collection of Jane and Michael G. Wilson. Catalogue $30. Dahesh Museum, **New York**, through August 28.

Ancient Gold: *The Wealth of the Thracians, Treasures from the Republic of Bulgaria.* More than 200 gold and silver artifacts illuminate the social structure, rituals and contacts of these loosely organized but powerful tribes and their contacts with other civilizations, such as the Greeks. **Detroit** Institute of Arts, through August 29.

Egypt: Between the Sun and the Crescent Moon presents 78 textile pieces—most never before exhibited—which tie us to pharaonic, Roman, Byzantine, Arab and Ottoman Egypt, worlds which have in many ways influenced how we live, what we believe and what we produce today.

In the summer of 1799, a fragment of a black basalt tablet inscribed in three different scripts—ancient Greek, hieroglyphic, and demotic, a cursive form of ancient Egyptian—was found along the Rosetta branch of the Nile, east of Alexandria, by a French engineer. After Napoleon's surrender of Egypt to the British in 1801, what became known as the Rosetta Stone was brought to London; yet it was largely the work of a French linguist, François Champollion, that in 1822 succeeded in using the Greek text to decipher the other two inscriptions and make it possible to read hieroglyphic texts. Since then, the stone has stood as a symbol of the decipherment of cryptic ancient scripts. **Cracking Codes:** The Rosetta Stone and Decipherment *marks the bicentenary of the stone's discovery with an updated, multi-section exhibit covering the variety of the world's writing systems and accounts of other, more recent, decipherments, as well as the history of the stone itself and a guide to reading hieroglyphs. British Museum,* **London**, *through January 2000. Information: www.british-museum.ac.uk.*

Whether locally manufactured or imported, these textiles shed light on humans' relations with their environment and on the cultures they created. Caixa d'Estalvis, **Manresa**, Spain, August through October.

Images from a Changing World: *Kalighat Paintings of Calcutta* captures the hybrid, culturally vibrant school that arose in Calcutta in the 19th and early 20th century. **Los Angeles** County Museum of Art, through August 30.

Bahrain: *The Civilization of the Two Seas* presents 4500 years of the varied history of this past and present center of international trade in the Arabian Gulf. As the bronze-age commercial link among the civilizations of the Indus, Oman and Mesopotamia, Bahrain was the home of the rich and sophisticated Dilmun civilization (2500–1800 BC) and enjoyed another, less well-known florescence at the intersection of Hellenic and Parthian culture (300 BC–600) as Tylos. Sites from that period have yielded carved stelai, glass from as far away as Egypt, and jewelry of gold, precious stones and the famous Gulf pearls. This is the first major Bahrain exhibition outside the country. Institut du Monde Arabe, **Paris**, through August 31.

Treasures from the Royal Tombs of Ur presents more than 250 extraordinary objects revealing traditions of royal life and death—jewelry, a comb, musical instruments, games, furniture, seals and vessels of gold, silver and alabaster—found in the intact tomb of a woman named Puabi who died between 2600 and 2500 BC, a high point of Sumerian culture. **Dallas** Museum of Art, through September 5; Sackler Gallery, **Washington, D.C.**, October 17 through January 17.

Asia-Pacific Triennial of Contemporary Art: *Beyond the Future* exhibits work by 75 artists from 20 countries and regions in media including photography, video, CD-ROM, Internet, painting, sculpture, textiles and ceramics, installation and performance. Catalogue. Queensland Art Gallery, **South Brisbane, Australia**, from September 6 through January 26. Information: www.apt3.net.

The Riddle of the Pyramid and the Sphinx: *Recent Discoveries* is a lecture by Dr. Zahi Hawass, director general of the Giza Pyramid and Saqqara. Tickets $10. **Virginia** Museum of Fine Arts, **Richmond**, 7:00 p.m., September 10. Information: http://dit1.state.va.us/vmfa/index.html.

The Nature of Islamic Ornament, Part IV: *Figural Representation* uses some 25 objects in various media from the museum's collections to examine the incorrect perception that figural representation was never permitted to appear in Islamic art. Metropolitan Museum of Art, **New York**, mid-September through early January.

Egyptian Art in the Age of the Pyramids. This major exhibition spans the third through the sixth dynasties, the first truly great era of Egyptian art. Some 200 works, from reliefs and unpainted limestone heads to furniture and monumental sculpture, have been assembled from museums in the US and six European countries. Metropolitan Museum of Art, **New York**, from September 16 through January 9.

Marbling: *An Age-Old Technique in Modern Art* presents Turkish papermarbling techniques as used in the contemporary art of Nedim Sönmez, whose landscapes, flowerscapes and calligraphic works call on marbling for its spontaneity, unrepeatability and inexhaustible variety. Tropenmuseum, **Amsterdam**, through September 19.

An Arabian Cultural Mosaic: *Calligraphy, Music, Dance.* 2–5 p.m. Information: 847-543-2560. College of Lake County **Performing Arts Center**, Grayslake, Illinois, September 26.

Royal Persian Paintings: *The Qajar Epoch,* 1785-1925 shows more than 100 works, from miniature manuscript illuminations to monumental wall paintings. Catalogue. Brunei Gallery, SOAS, University of **London**, through September 30.

Enter the Kingdom: *Searching the Mystery of Al Baha, Saudi Arabia* displays sketches with personal notes, watercolors and local craftworks compiled as an educational exhibit by artist Carol Koutnik during a sojourn in the Sarawat mountains in the southwest of the country. **Rockport [Texas]** Center for the Arts, October 2 through November 13.

Facing West: *Jews of Central Asia and the Caucasus* explores the little-known world of the Jewish communities of the Caucasus and largely Muslim Central Asia, displaying more than 200 objects including costumes, jewelry and photographs. Jewish Museum, **New York**, through October 17.

Secret Pleasures: *Treasures From the Textile Museum and Private Collections* is the museum's 22nd annual rug convention, featuring thematic presentations by scholars and collectors, illustrated by the textiles themselves rather than by slides. Cost: $285. Information: 202-667-0441 ext. 35.

BRITISH MUSEUM

Textile Museum, **Washington, D.C.**, October 22–24.

Antique Treasures: *Masterpieces of the Miho Museum, Otsu* (near Kyoto) displays, for the first time in Europe, 60 objects that represent the pinnacles of artistic achievement of the Egyptian, Bactrian and Achaemenian cultures. Information: fax +43-1-523-2770. Kunsthistorisches Museum, **Vienna**, through October 31.

The World of Islam presents some 100 photographs of the Islamic world from Morocco to China. Open-Air Bible Museum, **Nijmegen, Netherlands**, through October 31.

Jerusalem displays artifacts and lithographs by David Roberts. Catalogue. Sixth-grade lesson plans regarding Saudi Arabia are also available. Information: 816-697-2526 or 817-346-1535. Nance Museum, **Lone Jack, Missouri**, through October.

Shahnama is the first exhibition to look at the historical figures who were made legendary by the great Persian epic, the *Shahnama,* composed in 1010 by the poet Firdawsi. Coins, paintings, metalwork and ceramics are on display. Sackler Gallery, **Washington, D.C.**, through November 5.

Henning Larsen: *The Architect's Studio.* One of the most important architects of his generation, Dane Henning Larsen's works include the Foreign Ministry building in Riyadh. The exhibition focuses on his formal concepts and his working processes. Louisiana Museum of Modern Art, **Humlebæk, Denmark**, November 12 through February 27.

Pharaohs of the Sun: *Akhenaten, Nefertiti, and Tutankhamen* focuses on the cultural flowering of the Amarna period—a brief two decades in the mid-14th century BC—that centered on the revolutionary pharaoh Akhenaten, sometimes called the first monotheist. His capital, Amarna, was a city of 20,000 to 30,000 people; with his wife, Nefertiti, he engineered a wholesale reorganization of Egyptian religion, art and politics. The exhibition presents more than 300 objects from 37 museums and private lenders. Museum of Fine Arts, **Boston**, November 14 through February 6; **Los Angeles** County Museum of Art, March 19 through June 4.

"Only the Best": *Masterpieces of the Calouste Gulbenkian Museum, Lisbon* demonstrates the extraordinary range and quality of the collection assembled in the first half of this century by Istanbul-born oil magnate Gulbenkian, including spectacular Islamic ceramics and glass, Egyptian sculpture, Armenian illuminated manuscripts and Persian and Turkish textiles—as well as extraordinary European and Asian pieces. Catalogue. Metropolitan Museum of Art, **New York**, November 16 through February 27.

Splendors of Ancient Egypt: *Egyptian Art from the Collection of the Pelizaeus-Museum* is an enormous, landmark exhibition of more than 200 pieces, each carefully labeled, explained and arranged both chronologically and topically amid architectural replicas. Catalogue $14.95. **Virginia** Museum of Fine Arts, **Richmond**, through November 28.

The Three Graces: *Music, Painting and Poetry in the Art of India.* Paintings from various courts throughout India and dating from the 16th to the 19th century depict personifications of various ragas (musical modes and melodies), musical themes and social situations, and serve as an introduction to the long heritage and importance of music in South Asia. **Los Angeles** County Museum of Art, through December 6.

A Dream of Eternity introduces the rites and beliefs of ancient Egypt through the sculpture, jewels and vases of the Schlumberger Collection. Musée Archéologique, **Strasbourg**, through December 31.

Live Like the Banyan Tree: *Images of the Indian American Experience* features still photography by David Wells and a documentary film by Uma Magal as it explores the ways that coming to America has affected the lives and outlooks of Asian Indian immigrants of various religions. Balch Institute for Ethnic Studies, **Philadelphia**, through December 31.

Teaching World History and Geography 2000 is a conference that will offer strategies to help teachers at all levels build more comprehensive curricula while avoiding "factual overload" through well-designed thematic and regional approaches. Information: www.dla.utexas.edu/world2000, or fax 512-475-7222. Hyatt Regency on Town Lake, **Austin, Texas**, February 11–12.

Ancient Cyprus: *A Selection of Pottery and Sculpture* examines cultural and artistic influences that converged in Cyprus from the Bronze Age through to Roman and Byzantine times. Royal Ontario Museum, **Toronto**, continuing indefinitely.

Arts of the Islamic World uses 55 works from the ninth to the 19th centuries to survey the scope and principal characteristics of this global artistic tradition. Freer Gallery, **Washington, D.C.**, continuing indefinitely.

West Asia and North Africa Wing is filled with newly renovated displays featuring nine walk-through traditional home settings and a teahouse with a traditional storyteller at one end and interactive television screens at the other. Other displays range from furniture arrangements and manuscripts to jewelry, musical instruments and henna hand designs. Tropenmuseum, **Amsterdam**, permanent.

The Saudi Aramco Exhibit, which relates the heritage of Arab-Islamic scientists and scholars of the past to today's petroleum exploration, production and transportation technology, is being extensively renovated and updated. Reopening in September. **Dhahran, Saudi Arabia.**

Information is correct at press time, but please reconfirm dates and times before traveling. Readers are welcome to submit information for possible inclusion in this listing.

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PRINTING AWARD: *Aramco World* has won a gold award for printing quality from the trade association Printing Industries of the Gulf Coast. Printer Wetmore & Company submitted the November/December 1998 issue.

"SAMPHIRE: FROM SEA TO SHINING SEED"
The seawater-irrigated plant whose first, experimental crop in Saudi Arabia was described in the November/December 1994 issue of *Aramco World* is now available commercially in the United States. For information, visit www.seafire.com. For a 1998 *Scientific American* article on the plant and its potential, go to www.sciam.com/1998/0898issue/0898glenn.html.

"BOOKS FOR A NEW WORLD": Many readers have asked us how to get in touch with the publishers of children's books mentioned in our article in the January/February 1998 issue of Aramco World. A list of addresses and phone and fax numbers appears below.

Iqra' Book Center
2751 West Devon Avenue
Chicago, Illinois 60659
P: 773-274-2665 or 800-521-4272

Iqra' Charitable Trust
24 Culross Street
London W1Y 3HE, United Kingdom
P: 44-171-491-1572, F: 44-171-493-7899

Amica International
844 Industry Drive, Bldg. 20
Seattle, Washington 98188
P: 206-575-2740, F: 206-575-2832

Islamic Book Service
2622 E. Main Street
Plainfield, Indiana 46168
P: 317-839-8150, F: 317-839-2511

Al-Meezan International
125 Vincent Drive
Bolingbrook, Illinois 60440
P: 708-759-4981, F: 708-759-4981

Kazi Publications
3023 W. Belmont Avenue
Chicago, Illinois 60618
P: 773-267-7001, F: 773-267-7002

Hoopoe Books
13 Rashdan Street, Dokki
Cairo 12311, Egypt
P: 20-2-354-1534, F: 20-2-347-3323

Hood Hood Books
5 Rosetti Studios, Flood Street
London SW3 5TE,
United Kingdom
E-mail: info@hoodhood.com
Website: www.hoodhood.com

Islamic Foundation
Markfield Conference Center
Ratby Lane
Markfield, Leicester LE67 9RN
United Kingdom
P: 44-1530-249-230, F: 44-1530-244-946

Ta-Ha Publishers Limited
1 Wynne Road, London SW9 0BB
United Kingdom
P: 44-171-737-7266, F: 44-171-737-7267

Sound Vision
843 W. Van Buren, Suite 411
Chicago, Illinois 60607
P: 312-226-0205

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CHANGE OF ADDRESS notices should be sent to the addresses above.

BACK ISSUES of *Aramco World,* where in print, are available without charge. Virtually no issues published before 1970 remain in print. Refer to indexes to determine which issues you require; please do not request more than 20 individual issues at a time. We can also provide bulk quantities of specific in-print back issues for use by classes, travel groups, museums and others. Write to Special Requests, *Aramco World,* Box 2106, Houston, Texas 77252-2106, USA.

INDEXES: *Aramco World* publishes a cumulative index approximately every five years as a supplement to the magazine, and an annual index for the previous year appears in each January/February issue. The most recent cumulative index covers issues through 1994. Current index sets are available from Special Requests, *Aramco World,* Box 2106, Houston, Texas 77252-2106, USA.

BINDERS specially made to hold 12 issues of *Aramco World* are available at $35 a pair (including US shipping and handling) from AWAIR, 2137 Rose Street, Berkeley, California 94709. California orders must add sales tax; foreign orders must add $10 per pair. Make checks payable to "Binders" and allow eight weeks for delivery.

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