

An integral way of thinking

Post-War
Reconstruction
in Yemen





Reconstructing destroyed historic buildings is extremely challenging – especially when you set out to rebuild them using the original construction materials and methods.



The Republic of Yemen in the south of the Arabian Peninsula is one of the most unstable nations in the world. Various groups have been fighting for power in the country since 2013. The conflict, which remains unresolved, is described by the children's charity UNICEF as the greatest humanitarian crisis in the world. 80 percent of Yemen's population of 30 million are dependent on

humanitarian aid, according to UNICEF. Much of the country has been destroyed in the fighting, including many buildings of religious significance. Thus, in addition to losing their families, jobs, and homes, many people in Yemen have lost their spiritual bases. Rebuilding religious landmarks during raging war seems risky at best. Salma Samar Damluji dares to do it anyway.



The Iraqi-British architect graduated from the Architectural Association School of Architecture (AA) and The Royal College of Art in London. She was a senior tutor at the AA, a research fellow, and a tutor at the Royal College of Art (1987-1994). In 2008 Salma Samar Damluji and colleagues in Yemen established the Daw'an Mud Brick Architecture Foundation in Hadramaut, where she has been working on earth construction and postwar reconstruction projects. She has curated several exhibitions of her work in London, Paris, and Madrid. Salma Samar Damluji has been professor of the Binladin Chair for Architecture in the Islamic World at the American University in Beirut since 2013.

How did you become involved in Yemen?

Salma Samar Damluji: I've had a connection to Yemen for many years. I first became aware of the country's extraordinary architecture in the 1970s through P.P. Pasolini's film "Il Fiore Delle Mille E Una Notte." During my studies in the UK, I got involved with mud brick architecture through the Egyptian architect Hassan Fathy, with whom I was able to work in 1976 and again in 1984. Ever since then, I wanted to visit Yemen and learn all about this architecture. I had that opportunity in 1982 when I worked with





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the UN Economic Commission for Western Asia’s Human Settlement department, and I have remained involved in the country ever since. I seem to be the only female architect practicing there.

How did that lead to your postwar reconstruction project?

I established the Daw’an Mud Brick Architecture Foundation in Hadramaut, Yemen in 2007. We were restoring and reconstructing a complex of 12 buildings for a heritage hotel at Masna’at Daw’an until war broke out. In this conflict, landmarks and cultural edifices including historic forts and mosques were destroyed in major cities like Aden, Taiz, and Sana’a, the capital. It broke my

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heart to see the destruction, so I applied to the British Council’s Cultural Protection Fund for support for our reconstruction project in Hadramaut. The Prince Claus Fund in the Netherlands also stepped in to coordinate and support us as a partner and

sponsor. My engagement in the project is both a professional and an emotional one.

As part of the reconstruction project, which has since been completed, the architect and her team focused on five Sufi shrines and two mosques in the Hadramaut Governorate. The two domes of Al Habib Hamad bin Saleh in the coastal town of al Shihr were destroyed in 2015. The original buildings date to around 1400. The Shaklanza Mosque in the same town remained an important landmark even after its destruction, and it was included in the project at the residents’ request. The Isma’il Mosque and domes are also located in al Shihr. The domes, which are over 100 years old, were partially





destroyed in 2016. In Mukalla, the capital of the Hadramaut Governorate, the project team worked on the Shaykh Ya'qub dome, which was blown up and leveled in 2015. The largest and oldest cemetery in Mukalla grew around this 12th century landmark.

The objective was to restore the buildings to their original condition using traditional Yemeni construction materials and methods. The war in Yemen was, and still is, raging. Fortunately, however, this was not so extreme in Hadramaut, where the architect was able to enter and leave the country indirectly via Say'un International Airport, which has remained open. At the start of the project, it was necessary to get the local people on board since there was great fear of reprisal against cooperating with foreign agencies or

defying the forces responsible for the original destruction.

How did you manage to overcome these barriers?

We showed the people that the workforce for our project should come from within their own ranks and that we aren't just going

to build something and then leave. We are going to collaborate with the community and builders and train them in their own traditional construction techniques that have been lost. I've been in the country for decades now, and everyone there knows who I am, so it wasn't hard to appeal to them and get their support. After all, we were contributing to their own spiritual culture and sense of meaning. It was really that simple. After that, volunteers came in droves, including female architects. We had not planned on accommodating large numbers to train, but they worked with us and the master builders trained them. The difficulty was that we were under a lot of time pressure, because of the timeline attached to the funding and the project deadline. The situation was further complicated because the infrastruc-

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ture had been war-damaged and then the Covid-19 pandemic set in.

You chose religious buildings for your project. Did that make it complicated or even dangerous?

Not at all. These are cultural and spiritual buildings. We received support and worked in collaboration with the office of the governor of Hadramaut, and that is significant. We returned these buildings to the urban landscape and community. As important places of social interaction, they constitute a spiritual reference in local life.

So it was important to involve the community in this project.

Of course - the buildings are a part of their lives! And part of what I do, and what I enjoy, is to engage with the local people, talk with their elders, over tea, coffee, or sharing a meal. Culture and architecture are inextricably interrelated.

The project team had to answer a fundamental question at the outset: What did the buildings to be restored look like before they were destroyed? Architectural plans didn't exist, so the architects had to reconstruct the buildings from photographs, historical documents, the existing remains, and

written information from the communities. "We were archaeologists and architectural investigators," says Salma Samar Damluji. The team then prepared architectural drawings to facilitate the construction and structural



engineering of the buildings. The community and keepers provided support by watching, engaging, and assisting when needed.

Master builders and craftspeople from the region played a central role in the reconstruction planning and execution. They brought the knowledge and skills needed to reconstruct the structures using traditional building methods and materials - a nod to the cultural heritage of the region, but also an important measure in terms of the sustainability of the architecture. After all, what had lasted hundreds of years before being destroyed will last hundreds of years again using the same construction techniques. In restoring the buildings, nothing foreign was introduced, and no additional footprint was created, except when an expansion was necessary or infrastructure needed upgrading.

Are there still many of these master builders around?

I am very worried about losing them. As architects, we don't build things by hand anymore. But they still do. The more they vanish, the more contractors tend to adopt industrial construction methods. The consequent loss of the tradition and discipline of earth building leads to the loss of architectural heritage, sustainable qualities, and



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culture. In Yemen, there are no construction companies that employ master builders anymore. The old generation of master builders is dying out. Some of them are still building with mudbrick, shale, and stone. But the introduction of concrete in the 1990s led contractors to adopt cheaper, quicker, and thus more competitive options. You can't speed up the building process when you use

mudbrick and stone. True master builders even make their own bricks on site!

Two of the traditional construction techniques you used are nurah and saruj. What are they?

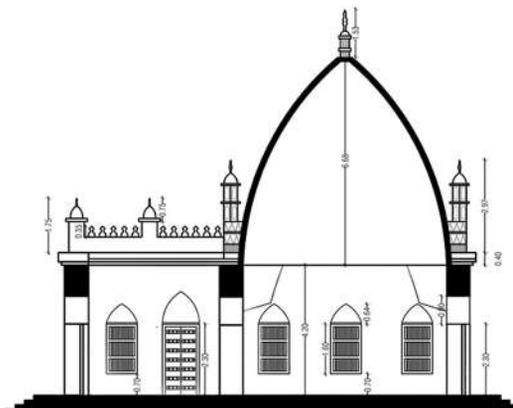
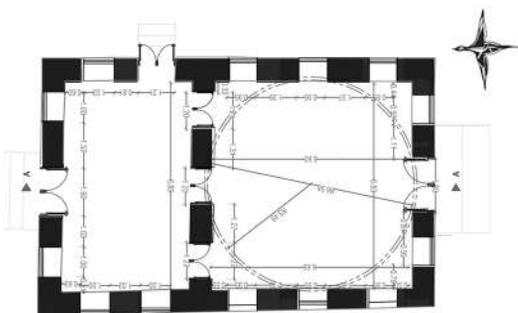
Nurah is a very effective way to seal the mudbrick and stone walls on the inside and the outside. Correctly applied, nurah almost looks like marble. It's a thick glossy paste made of fired lime and is used as a plaster to render the walls in several courses that protect the buildings against water, which is the main threat for mudbrick walls. Up to four layers of nurah made in different consistencies and formulas are applied in

courses of mudbrick plaster. Saruj is an ancient type of water-resistant or damp-proof coating. It's made of crushed baked clay bricks mixed with different percentages of sand and lime, resulting in a very durable and hard material. Local master builders helped us work out the exact method of making and processing it, and we used it on all the reconstructed domes and buildings.

What are the architectural advantages of traditional earthen construction?

The very thick walls and the low conductivity of mud as a material make the interior of buildings very cool during the day, eliminating the need for a mechanical cooling system. At the same time, the walls absorb heat during the day to transmit warmth to the building interior at night. In summer, the difference between inside and outside can be up to 7 or 8 degrees.

Mud, clay, lime, and sand are available locally and did not have to be transported over long distances to the construction sites. Mud bricks, mortar, and all other necessary building materials were either produced on site or procured from the immediate vicinity of the sites. Where parts of the original buildings still stood, structural integrity was first restored by using wooden wall ties and





shoring up existing walls with round stone pillars. Since religious buildings in Yemen are minimally decorated, there was no need for elaborate ornamental restoration. Nor was a blessing necessary after the work was completed, as the architect says: "Religious buildings are consecrated by their use, after which time they are no longer entered with street shoes."

Nearly all the stone needed for the reconstruction of the buildings, which took around six months, was salvaged from the rubble - an approach that is as sustainable as it is poetic: The new emerges from the remains of the old, like phoenix rising from the ash-

es. This sustainable principle can easily be replicated. "This is how building has always been done in this region," says the architect, "Break down and reassemble. You don't waste anything. Why should you?"

Is there a sustainable construction movement happening in Yemen?

There is no widespread awareness of sustainable construction in Yemen or a significant movement in that direction. The problem is that certification labels are being promoted that can actually substitute for genuine sustainability. I call that a corrupt view of sustainability. Sustainability is not a theoretical concept or an added feature

for enhancing business. It's a holistic way of designing and building, a system that involves participation and thinking. It's integral to the balance between the natural and built environments. Sustainability will always remain an integral part of Yemeni earthen architecture - even if Yemenis don't refer to it as such.

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