

SMALL SCALE BIG CHANGE

New Architectures
of Social Engagement

MoMA

BUILDING ON SOCIETY

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Architecture can be a powerful instrument to affect social change. On a small scale, a well-designed school can positively influence individual learning and help children to identify themselves as parts of a larger community. On a larger scale, urban planning that offers not only the basic requirements of housing, transportation, and commerce but also parks, public squares, and cultural facilities can increase the quality of life for all inhabitants, bolster civic pride, and have a positive impact on a city's economy. But successful architecture—that which transcends the barest requirements to create a place of usefulness and beauty—is far from reaching all segments of global society, including large parts of the population that do not even have housing that meets basic needs. According to the United Nations, roughly one billion of the world's population of some 6.75 billion people live in extreme poverty, with an income of less than \$150 per year and limited access to clean water, education, and health care.¹ The ongoing challenges faced by these segments of the population are occasionally brought to the world's attention, highlighted by catastrophic events such as the tsunami that hit Southeast Asia in 2004 and the earthquakes that devastated Sichuan province in China in 2008 and Haiti in early 2010. In addition to the obvious human tragedy wrought by such disasters, there is also the immediate toll on the built environment—homes, schools, hospitals, even entire neighborhoods and villages destroyed or rendered unusable. In many cases, poor construction,

or buildings that were not adjusted to local hazards, can be the cause of even more destruction. Lack of access to adequate housing and infrastructure is not, of course, limited to developing countries. By most measures, inequality in the distribution of income and wealth in the developed world continues to grow, leading to vast disparities in the living conditions of large segments of society.

Faced with such challenges in our built environment, questions inevitably arise regarding the role of the architect at the beginning of the twenty-first century: is it enough to simply be a service provider who works solely to fulfill commissions for clients who can afford such services? What proportion of the world's population is good architecture reaching today? How can architects use their training for the greater good? Worldwide, a large number of organizations are engaged in building shelters for victims of emergencies and war zones, while others are building schools, clinics, and orphanages in areas of need. But most of these initiatives are focused on the functional requirements of such structures. Architecture that is carefully designed, responds to cultural nuance, adds aesthetic value, and facilitates new or better communication within a community, is by necessity rarely a priority for these programs.

The recent global economic crisis—which arguably began with the crash of the U.S. housing market—has heightened the perception that architecture of the past few decades has placed itself too much in the service of economic and political interests and has had too little regard for social concerns. With the rapid proliferation of high-end architecture in fast-growing economies around the globe and the powerful reshaping of cities such as Dubai, architects began to be seen more and more through the lens of celebrity.

Combating poverty, hunger, inadequate medical care, politically and economically motivated migration, lack of education, and inhumane

living conditions, especially on a large scale, undoubtedly requires action at the political level. Yet architects are, in increasing numbers, using their knowledge and skills to offer well-designed solutions to localized problems. *Small Scale, Big Change: New Architectures of Social Engagement* presents eleven projects that, taken together, offer a redefining of the architect's role in and responsibility to society. These undertakings, developed independently of each other in nine countries on five continents, aim to provide lasting solutions to specific needs. They are not intended to solve large, systemic problems by applying preconceived political theories or utopian concepts. Instead, each has identified a specific need and set out to meet it, whether in conjunction with a local nongovernmental organization or a larger city initiative. The active participation of the community lends these endeavors additional value. Each project is the result of a dialogue in which the architect cedes parts of his or her authority to others, marking an important departure from the modernist ideal of the architect as a mastermind who designs everything from teapots to entire metropolises. By reevaluating the role they play, these architects are signaling their conviction that good design is not a privilege of the few and powerful. Just as the notion of microcredit, developed by Bangladeshi economist Muhammad Yunus in the 1970s, has emerged as one important way to provide the poorest of citizens a chance to succeed, the practitioners and projects highlighted here demonstrate that in architecture, too, smaller endeavors can have great consequences.

Materiality

Just as it is vital to understand the needs of a given community before designing a building, it is also important to understand what building materials and techniques are viable for a given area. This is especially true in smaller towns

and villages in developing countries, where there is often a lack of heavy machinery and energy for construction on an industrial level. In such places, building with materials such as concrete, steel, and glass makes far less sense than turning to more traditional modes. Building with earth, for example, is one of mankind's oldest construction methods, and it includes various methods from rammed earth to mud bricks.² This tradition, which dates back to the first settlements in Mesopotamia, has roots that reach into the early decades of the twentieth century, not only in developing countries but also in Europe and the United States. In the 1930s, for example, the U.S. government supported a small program that was devoted to rammed-earth building in Gardendale, Alabama, and it successfully built seven houses, which are still standing.³ The idea of building with earth was even embraced by masters of modernist architecture such as Frank Lloyd Wright and Le Corbusier, both of whom experimented in the 1940s with rammed-earth walls and compressed-earth blocks in plans for affordable-housing projects.⁴ Despite such examples, however, over the course of the twentieth century this technique has for the most part been stigmatized as backward or primitive.

For her *METI-Handmade School* in Rudrapur, Bangladesh (pp. 23–32), architect Anna Heringer employed molded-earth, or cob, building as the primary technique.⁵ When she began her proposal for the school, Heringer, who had spent several extended periods of time in the village, knew that she wanted to utilize cob—a mixture of mud, straw, and water long used throughout the region. Rather than being formed into bricks and dried, cob walls are shaped by hand in layers, lending the final structure a sculptural effect. Though she was consciously reintroducing a traditional technology, Heringer also improved on the technique by placing her molded walls on concrete

foundations, altering the mixture of materials to make it more durable, and building a roof structure out of bamboo that also creates a full second floor of usable space.

Heringer learned about the advantages of rammed-earth building in a class taught by Martin Rauch at the University for Arts and Industrial Design in Linz, Austria. Rauch has been specializing in earth building for more than twenty years. He has also spent time in Africa as a development aid worker, which has helped him to understand the challenges of working in remote areas. In 1984 he won the first prize in a competition for low-cost housing models in Africa, for which he developed an improved technology for building with clay. Since the 1990s, he has been building projects around the world using various earth-building technologies. Heringer, hoping to draw on this depth of knowledge, asked Rauch if he would travel to Rudrapur to consult on the right mixture of materials and precise building methods for her project.

Heringer's school as well as the projects that have followed—village housing and a vocational school for electrical training—have made a significant impact on the village of Rudrapur and beyond by arousing new interest in the use of local, easily sourced materials. In March 2009 Heringer and Rauch, along with the Housing and Building Research Institute of Bangladesh, were invited to present a workshop on modern earthen structures and sustainable architecture in the country's capital, Dhaka. The popular course, organized by the Institute of Architects Bangladesh, introduced more than seventy prominent architects, engineers, and students to technical and structural innovations in earth-building, a vital step in rekindling interest in this time-honored and ecologically sound building tradition.

Diébédo Francis Kéré is another architect who has focused on using materials and developing building strategies that are related to local

craftsmanship and traditions. His primary school in Gando, Burkina Faso (pp. 33–42)—Kéré's home village—is constructed of sun-dried mud bricks, the very material used in and around the village for virtually all building needs. Kéré's design, however, introduced improvements to the traditional bricks used throughout the country, including using a man-powered machine to compress the bricks more than usual, and, like Heringer, slightly altering their content to make them more stable and resistant to rain. Kéré's approach also presents an opportunity for local workers and craftsmen, who learned new skills during the building of the school, including the making of the compressed bricks and how to lay foundations, which they can apply to future projects. The transfer of information, however, flows in two directions. Kéré, who teaches at the Technical University in Berlin, has since 2005 regularly brought his students to Gando for site visits and workshops. These architects-in-training learn firsthand how complex the development and realization of building projects in such a rural and remote setting can be.

Of course these and other such initiatives are not the first to apply ancient building techniques in contemporary ways. One of the most influential modern practitioners of this approach was Egyptian architect Hassan Fathy. By the 1940s, Fathy was arguing against the use of industrial materials such as steel and concrete as well as the use of heavy machinery, instead advocating more traditional means of building. Fathy was instrumental in bringing public attention to the importance of using mud bricks and other earth-building techniques as inexpensive solutions to the housing shortage in rural Egypt.

Fathy's most renowned project was the village of New Gourná, a complex commissioned by the Egyptian government that was to include housing, markets, schools, and more (fig. 1). The new quarters were to house the seven thousand residents of Gourná who the



1 Hassan Fathy. New Gournia Village. New Gournia, Egypt. 1948. Theater, exterior facade

government planned to relocate after it was discovered that members of the community had been looting the ancient pharaonic tombs of Luxor, above which their village was located.⁶ Fathy saw his design for New Gournia, which was built between 1945 and 1947, as a chance to develop a new paradigm for rural development. He rigorously studied the traditional housing typology of the area and worked with villagers to understand their specific needs. He recognized that the project would only succeed with the participation of the future users in the planning and construction. And, as always, his design eschewed highly industrialized building technologies, instead utilizing mud bricks and reintroducing the Nubian vault technique, a method for vaulting spaces without the use of timber. With his book on New Gournia, published in 1973 in English as *Architecture for the Poor: An Experiment in Rural Egypt*, he gained a wider audience, and was recognized as a forerunner of ecological and social planning.

Activist Simone Swan became enthusiastic about the social impact of the use of adobe after reading Fathy's book and following a personal encounter with him in 1976. She proceeded to work in his archive in Egypt, and traveled with him as a volunteer when he was invited

to build the Dar al Islam mosque in Abiquiú, New Mexico. After studying architectural history and researching traditional uses of adobe, in 1994 she founded the Adobe Alliance, a nonprofit organization based in the border region of western Texas, an area with an extremely high poverty rate. One of the group's main objectives is to aid communities in learning to utilize cooperative building techniques. The alliance,



2 Taller de Arquitectura - Mauricio Rocha. School of Plastic Arts. Oaxaca, Mexico. 2007-08

which advocates the social and political aspects of earth architecture, tries to influence local building codes, which often limit the use of adobe. It also aims to educate people in how to work with traditional materials, and its biannual adobe workshops receive worldwide attention.⁷ Camacho Residence, built by the alliance in 1995 in the Mexican state of Chihuahua, has served as a model of the organization's mission, both for its use of mud bricks and the extreme low cost of its erection (\$5,000) and because the owner himself became an expert in mud-brick building during the construction process.⁸

Today, numerous initiatives employing such technologies can be found worldwide. The Oaxaca School of Plastic Arts in Mexico (fig. 2), designed by Taller de Arquitectura - Mauricio Rocha, which uses rammed earth for large parts of its construction, successfully merges the needs of a contemporary university setting with the benefits of traditional building. Constructed largely from material excavated during the building of this and other on-campus structures, the rammed-earth walls not only create surface interest but also help to regulate interior temperatures. In Europe, Martin Rauch, the earth-building expert discussed above, has used the technique to build everything from residences to chapels.⁹ He has provided a highly regarded model with his own house in the village of Schlins, in the Austrian region of Vorarlberg (fig. 3). Examples such as this, which demonstrate that rammed-earth building is also relevant for climates with high precipitation and extreme winter temperatures, help to broaden the appreciation for the technique from the associations of dirt and poverty to a highly sustainable and adaptable technology.¹⁰

Creating Places of Social Identity

Underprivileged segments of society generally have no political say in the planning and building of infrastructure and community spaces.