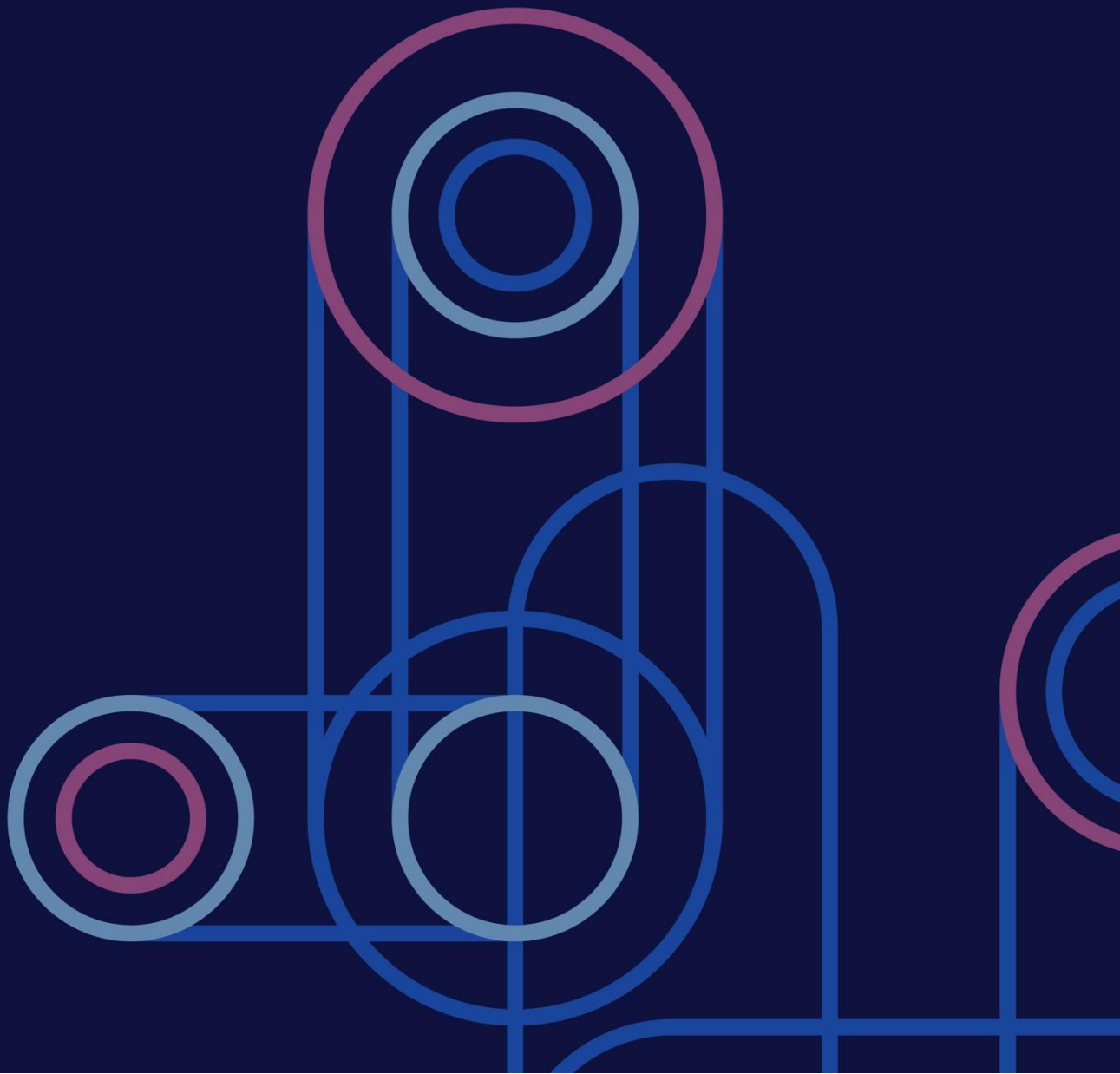
World Health Organization

CASE STUDY

Mud to Mortar, Bangladesh

2026



Basic information	
WHO Region	SEARO
City or Country	Savar, Bangladesh
Timeline	2014 – ongoing
Type of intervention	Infrastructure
Primary level of implementation	Neighbourhood
Primary sectors involved	Housing; sanitation; health; livelihoods
Primary health outcomes or challenges	Diarrhoeal disease; parasitic worm infection; respiratory illness; skin infection; child health and development

Case description

Inadequate housing conditions remain a significant determinant of ill health in many low-income urban and peri-urban settings in Bangladesh, particularly where dirt floors, poor drainage, and indoor air pollution contribute to preventable infectious and respiratory diseases. Dirt floors have been identified as an important transmission pathway for parasitic worm infections and diarrhoeal disease, with downstream impacts on child nutrition, anaemia, and cognitive and physical development. These risks are compounded by damp indoor environments during the monsoon season, which increase exposure to pathogens and contribute to recurrent infectious disease. At the household level, high time demand – particularly on women – can constrain everyday hygiene practices in challenging living conditions, reinforcing exposure risks.

Mud to Mortar is a housing improvement initiative implemented jointly by ARCHIVE Global and Bangladeshi organization ADESH (The Association for Development and Social Help) in Savar, Bangladesh beginning in 2014. It was made possible by partners including Grimshaw Architects, BRAC University, and Housing and Building Research Institute, and by financial support from the Thornton Tomasetti Foundation, International Foundation, UBS Optimus Foundation, ARCHIVE Global Board of Directors, Johnson & Johnson, individual donors through CaringCrowd by Johnson & Johnson, the High Fives Campaign, and other individual donors.

The programme focuses on replacing dirt floors in vulnerable households with low-cost, durable concrete flooring designed to be easily cleaned and maintained. The intervention is paired with community-based training on hygiene and healthy living

Mud to Mortar flooring. Savar, Bangladesh: 2017. © ARCHIVE Global.

practices, linking physical housing improvements with behavioural and knowledge components. Implementation has taken place at neighbourhood scale, targeting households identified as facing elevated health risks related to housing conditions. The programme has been implemented through five sequential phases that combined design, construction, training, and outreach activities, allowing lessons from earlier phases to inform subsequent rounds of work.

The intervention is deliberately low-tech and locally adaptable. Concrete floors are constructed using locally available materials and labour, with ARCHIVE Global training and employing local masons, including women –who are typically underrepresented in this role in local context. This approach supports quality control while also strengthening local capacity, expanding livelihood opportunities, and increasing women's participation within the local construction sector. Floors are designed to last approximately 30 years, reducing the need for recurrent investment and maintenance. The programme has also incorporated public awareness activities, including broader messaging on the relationship between housing conditions and health.

By 2026 Mud to Mortar had supported the construction of 376 concrete floors, reaching approximately 1565 direct beneficiaries. Each floor was constructed at an estimated cost of USD 1.21 per square foot. In parallel, approximately 3150 community members were trained in sanitation, hygiene, and dengue prevention practices, and an estimated 1.2 million people were reached through a public service announcement on housing and health. The programme also trained and employed 42 masons and supported 52 masons-in-training, contributing to skills development and local employment.

Reported health-related outcomes include reductions in diarrhoeal disease, parasitic worm infections, respiratory illness, and skin infections among beneficiary households. As a result of reduced illness frequency, households reported lower recurrent medical expenditures, creating opportunities to redirect limited financial resources toward food, education, and incremental housing improvements. The intervention also reduced the time required for household cleaning and maintenance, with women reported to save up to 20 hours per week, freeing time for other household or economic activities.

Key enabling factors for the programme included the simplicity and affordability of the technical solution, community engagement through training and awareness activities, and the integration of health objectives into a housing-focused intervention. Barriers included the broader structural challenges of poverty and inadequate housing supply, which limit the scale at which household-level interventions can be deployed without sustained financing and policy support. Continued impacts depend on expansion through partnerships with government and development actors and on embedding housing-health linkages within broader urban upgrading and public health strategies.

Strategic Highlight

Mud to Mortar illustrates how strategic, integrative, and participatory action can advance urban health by engaging multiple sectors and systems through a single, well-chosen intervention. By addressing a structural determinant of health – housing quality – action led outside the health sector can contribute directly to health outcomes while aligning with broader social and development objectives. This approach reflects core principles of a strategic approach to urban health, particularly the value of coordinated action across housing, sanitation, livelihoods, and community engagement to address interconnected risks.

The intervention combines a simple infrastructure upgrade with community-based training, linking physical improvements in the built environment with behavioural and knowledge components. This integration strengthens health impacts while supporting local ownership and sustainability. The design also incorporates participation at multiple levels, including household engagement, community training, and local workforce development, reinforcing the role of communities not only as beneficiaries but as active contributors to implementation. Implementing the intervention in defined phases has

also created an experimentation space, enabling adaptation over time as implementation experience, community feedback, and contextual conditions evolved. The success of the initial intervention—replacing mud floors with concrete—also provides a platform for the introduction of additional initiatives as new community priorities are identified, such as supporting women to develop employable trade skills and building community driven initiatives to address dengue.

Through this integrative, adaptive design process, the programme generates a multitude of co-benefits across social, economic, gender, and environmental domains. Health improvements reduce recurrent illness and associated medical costs, easing financial pressures on households. At the same time, training and employment in flooring construction expand local skills and livelihood opportunities, including for women who are typically underrepresented in construction work. Housing improvements that remain functional during the monsoon season increase resilience to flooding, dampness, and climate-sensitive disease risks, while the durability of the floors reduces the need for repeated repairs following extreme weather events. Together, these effects illustrate how a single, context-appropriate intervention can deliver reinforcing benefits across health, economic resilience, gender equity, and climate resilience.

For decision-makers, Mud to Mortar highlights the value of identifying strategic entry points within complex urban systems where coordinated, cross-sectoral action can produce cascading gains. Rather than pursuing isolated sectoral solutions, the case shows how integrating health objectives into housing and livelihoods interventions can yield a broad set of co-benefits, offering lessons for urban contexts facing overlapping health, social, and environmental challenges.

Further Information

- Project: Mud to Mortar
- Local Project Challenge 2020 – Mud to Mortar: a Clean Foundation for a Healthy Future
- Mud to Mortar: a Powerful Project for Healthier Housing in Bangladesh
- ADESH – Health & Education program