Modskool is the name for the modular design of a low-cost school that was built in a few days and could be dismantled within a few hours to help protect it from floods and regular evictions faced by the farmers along the river Yamuna in Delhi.

The Rebuilding & Relocation of the School

Every year, parts of Indian cities disappear as informal settlements built informally by the poorer citizens continue to be evicted. After a school called 'Van Phool' (Hindi for wild flower) for around 200 children in a farming community on the floodplains of the river Yamuna was demolished due to the ‘illegal’ status of the settlement, the community approached the studio to help them rebuild by designing a temporary school that could be dismantled before the bulldozers could arrive again on ground to demolish it. The transient nature of the school was also required due to the occurrence of floods every few years as the farmers live on the floodplains.

Learning from the vernacular building practices of the community and through several consultations with the school staff over 2016, the structure was designed to be erected easily, and dismantled quickly when required. The school was built hands-on in less than 3 weeks in the summer of 2017 by the students, school staff and parents from the village along with the help of around 50 volunteers from outside the village who heard about it on social media.

After providing a secure and creative educational space for around 200 students for a year, the school had to be finally dismantled due to land ownership issues and relocated further south of the city for the children of farmers at a new location in 2018, with the help of the NGO The Child Trust. The school now stands as ‘Samagra Shiksha Kendra’ (Hindi for Holistic Learning Centre) providing education to over 100 students in the Kulesra village south of Delhi.
The school has been built by learning from and using natural, sustainable and locally available materials that the farmers have been using to build their homes - such as bamboo, reused wood and dried grass. A dismantlable frame in mild steel sections and removable brick flooring further helped in achieving durability while meeting the critical criteria of being temporary. The structure is completely off grid and designed to facilitate natural ventilation and ample daylight.

The school at its first location was built hands-on by the local community and volunteers from outside, learning from existing building practices of the community. For example, the volunteers were taught bamboo cutting, splitting and weaving by a local farmer. At the second location, the local craftsmen were hired for rebuilding the school - for the carpentry, bamboo weaving and the traditional 'charpai' (Hindi for traditional woven bed) weaving. The charpai weave made of natural fibres is traditionally reserved for cots but by using it in the doors and windows of the school, it gave the school a warm and unique look by showcasing the traditional weaving technique.

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The structure has been designed as a steel frame bolted in a way that it could be erected easily, and dismantled quickly when required. The frame used readily available steel sections to create a durable structure. The infill walls, doors and windows were made out of low-cost and locally available materials such as bamboo, reused wood and dried grass. Most of the work was hand-done and off-grid, while for welding, a diesel generator set was hired to provide electricity for a few days.

The school at the first location used local building materials from around it such as bamboo and dried grass. And, at its second location, the school was rebuilt using the local craft of ‘charpai’ common in the area, hand-made from the weave of cotton, natural fibres and date leaves. Not only was this approach the most affordable and employed local skills, it has also helped create a sense of ownership and pride within the community when they saw their building materials and processes adopted in creating a sustainable school for their children.

Construction details were devised keeping frugality in mind. Multiple doors and windows were provided to create an open and playful space, to ensure that the kids don’t feel confined to the four walls of the classroom and feel connected to the greenery of the fields outside. The doors and windows were designed to be pivoted instead of hinged, to save on material cost for frames.
RIGHT TO THE CITY

The design approach of the school also mirrors the teaching ideology which focuses on holistic and sustainable education. Its multiple pivoting doors and windows help in creating an open learning environment for the children close to nature, built in materials they can find all around them.

The current peri-urban location of the school at the junction of urban and rural is also the junction between modern building practices using concrete and steel on one hand and traditional building practices using natural materials such as bamboo, wood and grass on the other. How can the school respond to these two conflicting but merging realities was an important thing to consider in its design. The students of Yamuna Khadar, however, are now without their school and their families face an imminent eviction due to their ‘illegal’ status. As per the Yamuna Riverfront Development Plan, biodiversity parks are to be created where their farms lie today. As the India government attempts to follow the global trend of building ‘smart’ cities, the interdisciplinary design team attempts to raise questions through its continued advocacy efforts – is it smart to remove farms to build parks? Is there no space for farmers at the heart of the city?

The finished school [at second site] using the charpai weave technique has helped create a sense of ownership and pride within the community while its design approach mirrors the teaching approach which focuses on holistic and sustainable education.

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