

Post Primary School in Kon Khen

Embassy of Switzerland, Swiss Cooperation Office Myanmar

Swiss Agency for Development
and Cooperation SDC

The construction of the pilot school in Shan (South) puts the Safe and Child-friendly School Construction Guidelines into praxis and serves as an improved standard for future school designs in Myanmar



With the support of the Swiss Agency for Development and Cooperation (SDC), the Department of Basic Education (DBE) of the Ministry of Education (MoE) launched the Safe and Child-Friendly School Construction Guidelines (SCSCG) in October 2018. In 2020 the DBE and SDC agreed to a 3 year joint programme in order to ensure that the guidelines were rolled out nationwide. Part of the agreement was to construct various pilot projects in different regions and to put the guidelines into built praxis. The improved school design in Kon Khen village and the lessons learned is documented and will lead to new prototypes of standard school designs, acting as a reference for future school constructions in Myanmar's regions.

Objectives

- To serve as a showcase for future Myanmar school designs following the SCSCG
- To address the lessons learnt for new prototypes of standard school designs
- Experiment with the enhancement of both local construction materials and upmarket construction technologies.

SCHOOL BUILDING

- Two Storey Steel Structure
 - 140 x 31 ft (43 x 9.5 m)
 - 7 classrooms, 1 head master/mistress room and 1 teachers room
- One Storey Library and Kindergarten
 - 60 x 30 ft (18.2 x 9.1 m)
 - 1 Library room and 1 Kindergarten room

BENEFICIARIES (2021)

- 142 students (max 300)
- 9 teachers
- Coverage 3 villages
- Teachers and Parents Association

STAKEHOLDERS

- Department of Basic Education
- SCSCG Taskforce
- Shan State Education Department
- Myanmar Engineer Society (MES)
- Association of Myanmar Architects (AMA)
- Kon Khen School Committee (CBO)

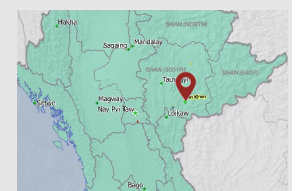
WASH FACILITY

- 6 units toilet (2 for boys, 2 for girls, 2 for teachers), 1 urinal for boys and 1 unit accessible toilet
- 3 steel wash basins with 2 taps each
- 1 steel trestle overhead tank and tube well with pump, 6 "Life Straw Community" filters for drinking water

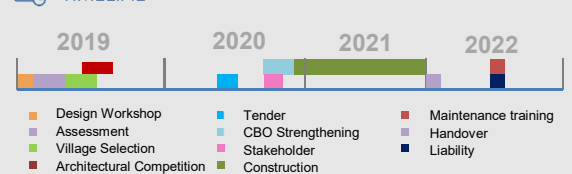
BUDGET

- 537,100,000 MMK (279,627 CHF)
- funded by Switzerland

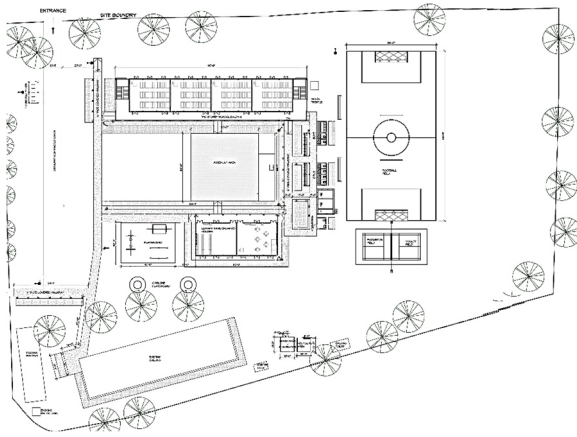
LOCATION



TIMELINE



School Layout Plan



Architectural Competition and Design

The school design in Kon Khen is the result of an architectural competition held in 2019 and hosted by the Association of Myanmar Architects (AMA), SDC and the DBE. SDC awarded the contract to a joint collaboration between the architects "Team One Design Studio" and "Inception – Design Team". The architects studied the local climate of Kon Khen, and used passive solar design to optimise natural ventilation as well as natural lighting, east-west building orientation, and solar reflective white colour for walls and roof to reduce solar heat gain within the buildings. They also took design cues from traditional vernacular buildings and used local materials.



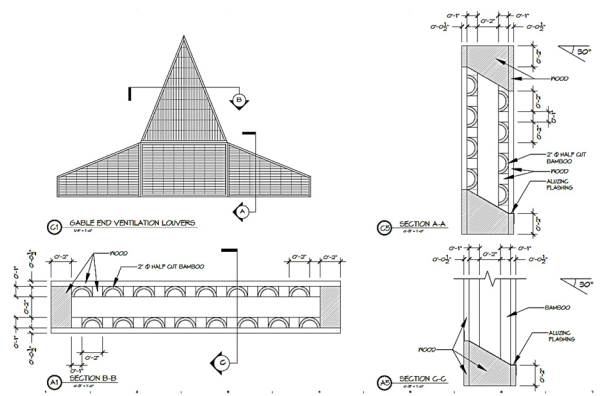
Two story steel structure building in Kon Khen Shan State



Bamboo louver

The combination of a steel structure building with local lime bricks and locally available materials such as bamboo for window louvres are unique compared to standard DBE school designs. Lime is mixed into mortar and plasters to reduce the use of cement and it is used as lime-wash paint for walls. The many eco-friendly qualities of lime include a lower carbon foot-print than regular paint, being free from volatile organic compounds (VOCs) and odours, non-

toxicity (child safe), natural resistance to algae growth and natural anti-microbial properties due to its chemical compounds (naturally germ-resistant walls). The roof shape of the kindergarten and the library building reflects the traditional Shan architecture and is a significant feature.



Shan traditional roofing design using bamboo as louver blades



Kindergarten and Library Building

There are separate toilet units and handwashing facilities for boys and girls. A ramp and rails assure accessibility for people with disabilities.



Toilet units for boys and girls with hand washing facilities



Accessible Toilet

Additionally, the architects experimented with the use of various colours especially for the kindergarten and toilet buildings. Playgrounds were added, however, larger sport grounds remain to be constructed.



School Playground

Classroom Layout

The classrooms are designed following the SCSCG with 30 ft x 24 ft (9.1 m x 7.3 m) for middle schools. It allows adequate space for different teaching methods such as multi-grade teaching. Folding doors between classrooms provide additional flexibility for different uses such as for: assembly hall, computer room, lab etc. To further foster a positive learning atmosphere, desks can be rearranged to support an inclusive teaching environment for group work and other activities. In all classrooms, the layout includes:

- Use of bamboo louvres for ventilation and air circulation.
- Good sightlines to teacher and board. Two white boards in each classroom.
- Flexible classroom layout. Wheelchair users are able to approach the board.
- Use of non-toxic paint (lime wash)



Multi-Purpose Classroom with folding door partition



Kindergarten

Library

Implementation

There are two ways to apply the SCSCG in practice when constructing a school: either through a selected contractor - respectively through a tender process following the government procurement rules - and/or through a community led construction. Both ways rely on community participation during the whole construction process. This ensures the adherence to the SCSCG quality standards and contributes to reducing the risk of corruption. Construction

of the school started after selection of a contractor through a tender process. The quality of the construction was supervised by site engineers (from SDC and the contractor) with the collaboration of the State Education Department and Kon Khen school committee by applying the checklists in the SCSCG.



Architect visit construction site Bamboo treatment process

Community Led Construction:

Through the strengthening of the capacity of the school committee and the construction of small-scale community ownership was enhanced as a lead in the communal infrastructures.



School committee strengthening training



Local carpenter at work

Financial training to school committee

The community participated through contributions of labour, funds and local construction materials; the School Committee played a leading role throughout the process.



Bicycle stand constructed by the community



Rain garden construction by the community

Maintenance:

Maintenance is crucial in ensuring a safe and secure school environment for the durability of the infrastructure. The cost of rebuilding a deteriorated school is far greater than the cost of maintaining one. The school maintenance task force should be formed to manage the maintenance of the school, understand the lifespan of building materials, set maintenance priorities and manage its budget.



School operation & maintenance training

Lessons Learnt

- A proper site safety and security assessment regarding potential hazards should be integrated into the planning and designs of the school in order to mitigate potential risks and create a safer and child-friendlier school. Identified hazards in the region are floods, hail, earthquake and armed conflict. To reflect some of these hazards, bamboo louvre blades and acrylic glass for windows were used and are less harmful than glass in case of breakage.
- Involving the community and Education Department during the implementation process leads to more accountability.
- The involvement of specialists in the design process (i.e. architect) can benefit the outcome of a sustainable infrastructure by...
- Providing suitable facilities to children with physical and mental learning disabilities enables an inclusive safe and secure learning environment.
- Good lighting and natural ventilation creates a better teaching and learning space. Good ventilation is important for health considerations such as the reduction of airborne transmitted diseases



- Combining two rooms with a wall divider adds flexibility to the uses of the school venue and provides a space for larger indoor gatherings such as community meetings.
- Instead of choosing vibrant roof sheets- or wall colours, the designer highlighted smaller surfaces like doors or furniture with bright colours. The white coloured roof sheet reflects solar heat away from the building to reduce solar heat-gain and improve thermal comfort within the building.
- The use of locally abundant construction materials such as timber, bamboo or lime, generates opportunities for the community to be resourceful with local materials and enhances knowledge of more eco-friendly materials.
- The community-led construction activities created an opportunity for the community to understand the construction process better and created ownership, which in return increased their incentive to maintain the facility.
- Connecting authorities and especially the teachers with the school committee enables a better understanding of needs and improves the coordination of sustainable school infrastructures.



IMPRESSUM

Safe & Child friendly School Construction Guideline link as below;
<https://www.humanitarianlibrary.org/resource/safe-and-child-friendly-schools-construction-guidelines>

Embassy of Switzerland
 Swiss Cooperation Office Myanmar
 Vantage Tower, 623 Pyay Road
 Kamayut Township, Yangon, Myanmar
yangon@eda.admin.ch / www.eda.admin.ch/yangon