

The Safer Schools Project, Ayeryawaddy Delta, Myanmar

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On the 2nd May 2008 Cyclone Nargis hit the Ayeryawaddy and Yangon delta areas of Myanmar causing very widespread destruction. 800 000 houses and 4 000 schools were destroyed and damaged. Over the ensuing months huge efforts were made to rebuild damaged infrastructure, and to support the initiatives of the population in rebuilding their homes. But many of the rebuilt structures would not resist another storm.

The Safer Schools project in Myanmar was developed by Development Workshop's (DW) based on DW's very long and successful experience since 1989 to 2014 in Vietnam of promoting the preventive strengthening of houses and schools to resist the effect of typhoons and floods, based on the application of ten key principles of cyclone resistant construction.

After Cyclone Nargis, Save the Children in Myanmar (SCiM) invited DW to develop a programme of safer construction to meet the challenge of assisting people rebuild safely. To develop skills and knowledge about safe storm resistant construction, DW proposed to demonstrate this through a programme of preventive strengthening of existing schools, buildings that had been quickly repaired after Nargis but that were not safe resistant structures. The Safer Schools Project (SSP) was designed by DW and implemented with SCiM field staff trained by DW. By late 2009 the SSP had strengthened 105 schools and trained hundreds of carpenters and masons in the process in the Ayeryawaddy and Yangon delta areas.

For the Safer Schools project, a small technical team was recruited and trained by DW, with a study tour in Vietnam to see examples of strengthened houses and schools. Back in Myanmar, villages with schools that needed to be partially or comprehensively strengthened were selected with community support. An initial one day theoretical training programme carpenters, masons and village leaders took place in the school. The SSP team explained the ten principles of safe construction, and showed how these principles apply to different construction systems, including masonry walls or timber frame structures, using models and full scale examples. Techniques included strengthening the structure of the schools (putting in diagonal bracing, making good connections at joints between two or more components, for example with metal brackets), and showing how to firmly fix down the roof covering using horizontal bars of the roofing sheets and how to make sure that doors and windows will not be blown away. The next day, the participants surveyed the school to identify its weaknesses and to determine what strengthening work was required. Once the necessary materials arrived the local builders began work, with the supervision of a SSP team member (a Myanmar architect or engineer).

To make it easier for school children and the community to see what strengthening work had been done, the team arranged for different strengthening components to be painted in different bright colours, for example, metal brackets were orange, diagonal bracing painted in blue or red. Once strengthened, the project organised an open day for all the children, teaching staff, builders and the community to inspect the work and explain to the public how the school had been made safer. Children in the schools also put on a play written by DW, called the 'stubborn builder', who had to be encouraged to make his house safer to resist floods and storms, and distributed posters to raise awareness of preventive strengthening methods amongst the community.

In order to increase the impact and message about safe construction to the inhabitants, in January 2009 the SSP added the construction of small bamboo frame demonstration structures in the playground of each school, that showed how the principles of safe construction used in the schools (mainly timber frame or brick noggin structures) can equally be applied to the construction and strengthening of homes built with bamboo, poles, thatching and bamboo mat walls. The SSP and the DW ten key points of safe construction in turn influenced the design of additional SCiM education facilities and shelter projects which applied the same principles of safe construction.

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