TALK of the TOWN

Please send feedback to
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Storm-resilient school

Perspective

THE IMPACT of climate change is slowly redefining today's architecture and design toward resiliency and sustainability.

One of the four winning teams in "Designing Resilient Schools," a massive open online course (MOOC) on iversity (a European-MOOC platform), uses bamboo as the main element of its design. The design is for a proposed high school in Guiuan town in Eastern Samar, where Supertyphoon "Yolanda" (international name: Haiyan) first made landfall on Nov. 8, 2013.

Yolanda destroyed close to 6,000 classrooms and damaged more than 14,500 classrooms in more than 2,900 public elementary and 470 public high schools in four regions.

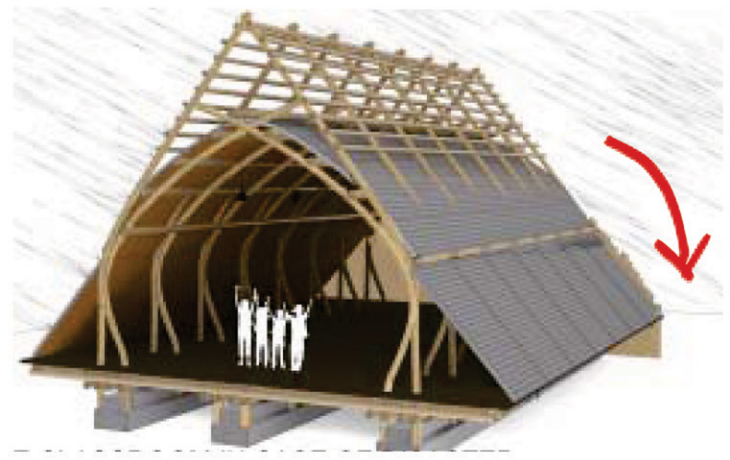
The New York-based Open Online Academy (OOA) produced Designing Resilient Schools to crowdsource architectural projects for storm-resilient schools to help typhoon victims.

OOA founder Ivan Shumkov of Harvard Architectural and Urban Society and Illac Diaz of Architecture for Humanity in the Philippines served as instructors in the recently concluded course.

The course attracted people from around the world, including architects, urban planners, other professionals and students, who were asked to come up with designs for resilient schools that could serve as community centers for typhoon victims. Talk of the Town audited the course.

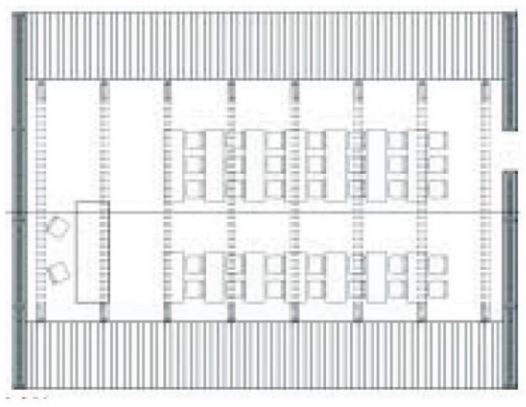
The winning design featured here was submitted by the Blue Bottle Team composed of architects Stefano Cova and Caterina Espangher of Trieste, Italy. Due to space constraints, Talk of the Town was not able to use other elements of the design for this issue.

Maricris Irene V. Tamolang



Classroom in case of disaster (perspective)

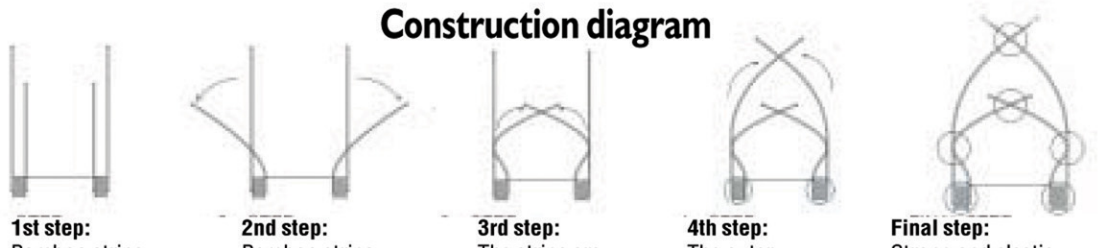
Classroom layout



THE WALL consists of a load-bearing bamboo structure, covered by a double layer of mud (that will function as a natural insulating material) and completed by a bamboo mesh on the external side and a plaster layer on the inner side.

Bamboo beams cross the wall and join the corresponding group of beams on the other side so that the structure can withstand strong gusts of wind.

Construction diagram



1st step: Bamboo strips are connected to the foundations.

2nd step: Bamboo strips are folded and merged into a junction.

3rd step: The strips are folded toward the inside and joined.

4th step: The outer bamboo strips are folded and joined.

Final step: Strong and elastic structure; double-dome system for proper climate comfort; six connection points

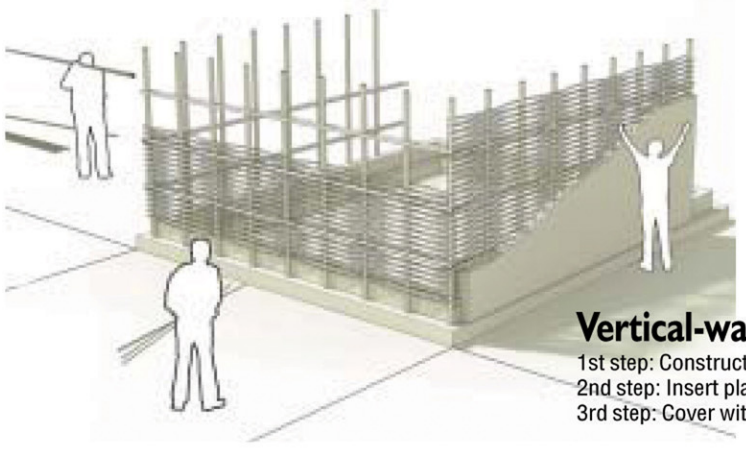
Material and construction techniques

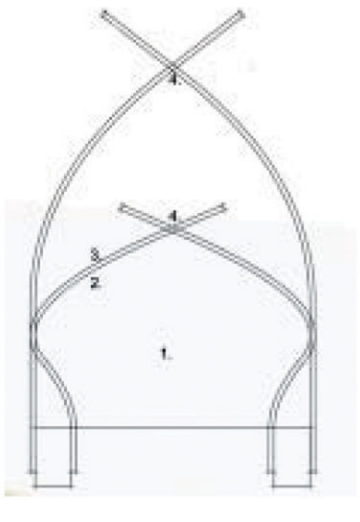
1. Wall Bamboo, earth

2. Dome Bamboo, earth

3. Roof Corrugated metal

4. Main structure Bamboo strips



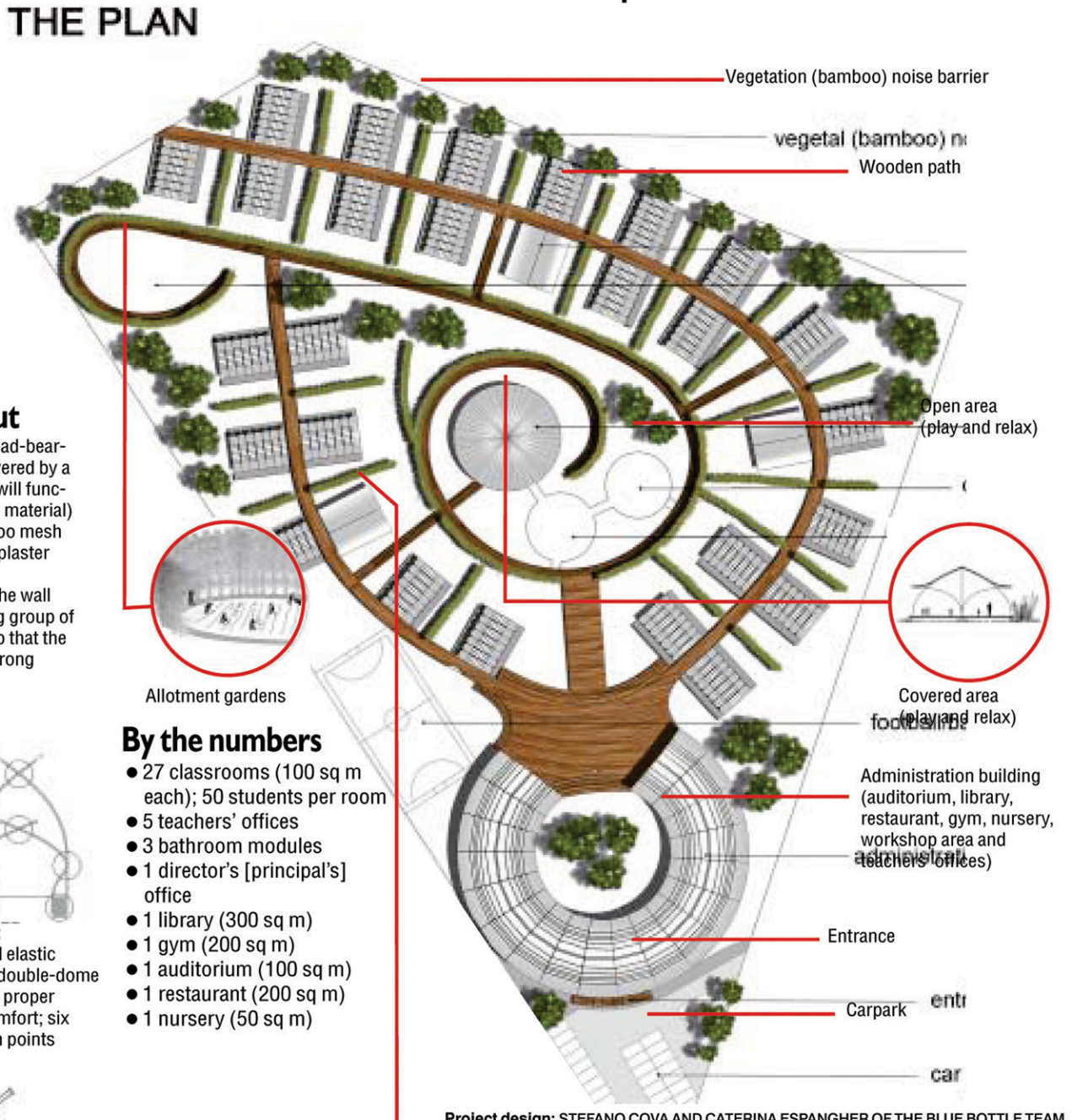


Vertical-wall building method

1st step: Construct the load-bearing bamboo structure
2nd step: Insert plaited bamboo strips
3rd step: Cover with mud

Plan and components

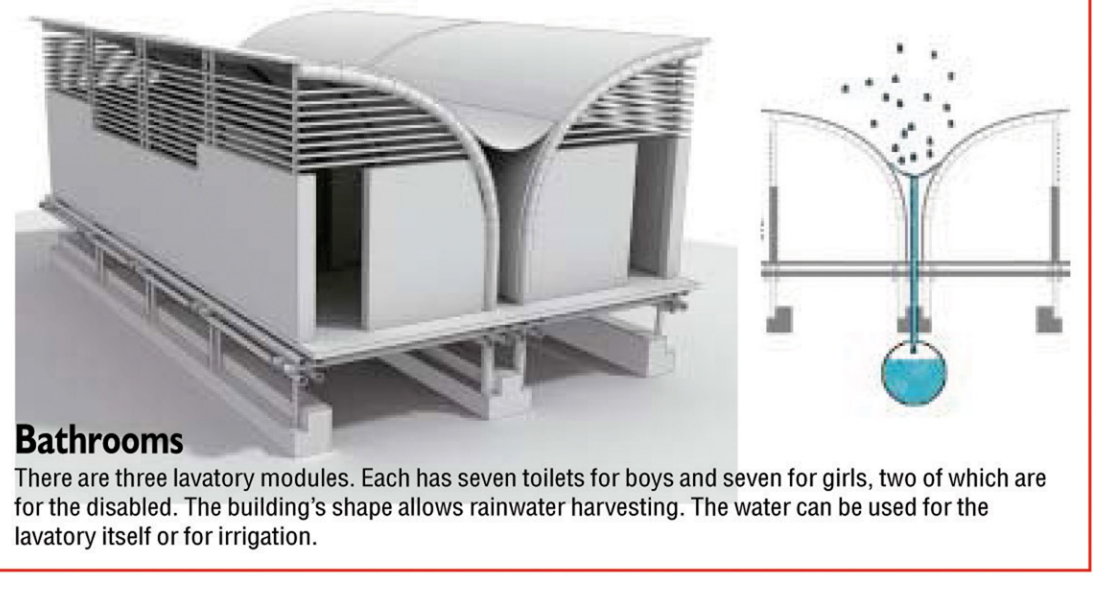
THE PLAN



By the numbers

- 27 classrooms (100 sq m each); 50 students per room
- 5 teachers' offices
- 3 bathroom modules
- 1 director's [principal's] office
- 1 library (300 sq m)
- 1 gym (200 sq m)
- 1 auditorium (100 sq m)
- 1 restaurant (200 sq m)
- 1 nursery (50 sq m)

Project design: STEFANO COVA AND CATERINA ESPANGHER OF THE BLUE BOTTLE TEAM



Bathrooms

There are three lavatory modules. Each has seven toilets for boys and seven for girls, two of which are for the disabled. The building's shape allows rainwater harvesting. The water can be used for the lavatory itself or for irrigation.