BUILDING A FUTURE BY REUSING BOTTLES

Born to Learn is a NGO which works mainly in the field of education providing free bilingual education (English and Swahili) to the children of the poorest families of Mvuleni, a little village in the Kilimanjaro Region, Tanzania.

The ongoing project, which started in 2014, involves the construction of a Preprimary and Primary school that will allow the enlargement of the educative work of the Association, giving to it the needed infrastructure and equipment to embrace a total of 200 students.

In the school there will be space for eight classrooms, corresponding to the eight years of education to complete pre-Primary and Primary school, several multipurpose spaces and sports fields.

In addition, the parents of the students will benefit from several formative courses that the Organization will provide. The infrastructure of the school will be also used by the women of Tusadiane Association, who will develop multiple and different activities there. Moreover, the rest of the community will also benefit from the sport courts by joining our sport clubs or by practicing by themselves.

The proposed main structure for the construction of the classrooms comprises most of the selected constructive system, based on the reuse of plastic bottles -PET- filled with soil. This constructive system is low cost because it is based on the reuse of a solid residue and allows the autoconstruction, that is, the construction made by non qualified labour.

The structure of the light roof is open to the outside to allow both ventilation and lighting of the classrooms since there is no electric power in the school.

BORN TO LEARN SCHOOL IN MVULENI, TANZANIA

SILVIA ÁLVAREZ MERINO
5. Facilitate the use of appropriate technologies, materials and labour adequate to local values, to the cultural specificity and responsive to the natural environment.

The construction of the project is based on the reuse of different materials, considered residues, mainly plastic bottles of polyethylene terephthalate (PET). This technique, patented by Andreas Froese, consists of using plastic bottles made of PET, filled with soil. The determination to use plastic bottles for this building project is based on the specific context of Mvuleni. This small village has suffered deforestation through massive cutting down to obtain wood as a combustible for the manufacture of bricks. Furthermore, the scarcity and inefficacy of the recycling systems make the existence of solid residues a health issue.

Therefore, the use of plastic bottles provides the opportunity both to make the most of this residue as material of construction and to contribute to reduce deforestation by decreasing the consumption of bricks, although they are also used in the project.

Finally, other materials are reused in the project as well, such as glass bottles and bamboo, a raw material which is abundant in Tanzania yet whose use in the construction field is not widely extended.
BORN TO LEARN SCHOOL IN MVULENI, TANZANIA

SILVIA ÁLVAREZ MERINO

6. Share knowledge, promote discussion, reflection and awareness, and collaborate in the advancement of the ‘social production of habitats’.

The use of PET bottles and local materials in the construction allows the parents of the students in Born to Learn school to be fully involved in the project participating in an active way in the construction of the new school. Due to this fact, the “school of bottles” of (shule yo mabobo in Swahili), as it is known, is a social reference in the community.

Cooperation is crucial for carrying on this project. Building with PET bottles requires a lot of labour time so it generates a lot of cohesion within the group because there is the need of working together to carry out the construction.

Currently the group of parents and the local labour force together with Born to Learn NGO are working on the development of a more efficient architecture, trying to obtain the best possible results regarding to design, structure, construction and innovation with the limited available resources. In addition to their collaboration in the construction, they are also participating in other daily tasks of the school such as maintenance, cleaning or gardening.

Besides, a workshop in the field of bioconstruction was accomplished with the attendance of the students’ parents, the local labour force and other NGOs of the region, with the aim of promoting other sustainable building techniques and systems.

8. Support participatory, democratic, multicultural and interdisciplinary processes and approaches in strengthening community solidarity as a factor of rural and urban social development.

The project promotes education as the main foundation for social development. In this sense, it is very positive the participation on it of the multicultural, multiracial and Interdisciplinary team which conforms the NGO: the students’ parents, the teachers and the volunteers who come from a variety of countries.

This feature is potentiated in the variety of the student body which is formed for pupils of both sexes, pupils who practice different religion and pupils with cognitive and mobility functional diversity.