LOCAL PROJECT CHALLENGE 2020: Accelerating the SDGs

SUDDO NEUVE: RETHINKING HABITAT
KEDOUGOU, SENEGAL

Project Overview: “Suddo Neuve: Rethinking Habitat” investigates the architectural form of habitat in the urbanization process in West Africa. The project seeks to develop a building typology adapted to the urban environment; the idea of the project is thereby to substitute the traditional round clay hut, but to impermeable, and adjust the Cinderblock houses that ubiquitously replace traditional dwellings in the urbanization process. The project team, consequently, seeks to find, on the preservation of a regional building culture, ecological sustainability, the reduction of construction costs, and the integration of the local community into the planning and building process.

In this process three major shortcomings of the Cinderblock structures were found:

1. The concrete buildings have poor, climate control and ventilation. Additionally, the roof construction of corrugated metal sheets causes the rooms to heat up to unbearable temperatures during the dry season.
2. Cement is expensive as it is not locally produced. The increased building cost makes housing less affordable and increases the construction time as families struggle to raise the funds for the construction. Through the use of local resources, the project hopes to create economic opportunity in the region rather than outsourcing it to multinational corporations in the cement and steel industry.
3. Similarly, the construction with cement requires large quantities of sand. Sand soils are not suitable for Cinderblock construction. The sand is sourced from rivers and has led to significant erosion and alteration of the ecosystem in some regions of Senegal. Reducing the amount of concrete used in construction by replacing it with local and natural resources that are CO2 neutral in production and therefore, nearly economical, but also environmentally sustainable. Furthermore, Cinderblocks are non-biodegradable and cannot be recycled. Hence, considering the biodegradability of the used materials was another factor considered in the planning process.

Although plans were finalized with the local community on site, university students with different backgrounds and from different countries have been involved in the planning and drafting process of the project. The project team is currently constructing an exemplary building in Mako, an urbanizing community in Eastern Senegal. The building will be used as a training site for local craftsmen during the construction phase to ensure the long-term sustainability of the project.

Project Process:

- **Challenge:** The project was identified and all agreements between between project stakeholders and community members were found.
- **Publication:** We provided the space for different community members to come together and start the conversation. This allowed community members to take on leadership roles within the community and learn valuable skills during the realization process.
- **Provision:** We sought out potential partnerships with universities and sponsors to realize the project and ensure its long-term sustainability.
- **Take-off:** Currently, the project is being realized off site. Construction started in Fall 2019 and will be completed by April 2020.

- **Independence:** The training of local craftsmen will ensure the repeatability of the project.
- **Community Engagement:** Discussions about the future built environment in light of increasing urbanization and the role construction can play in the urbanization process. Hence led to the creation of a local task force in Mako. Accompanied by an international team of university students and local partners, an organization named AEERN, the local task force completed a detailed analysis of local building materials and techniques (traditional and recent) over the past two years and clarified wishes and demands the community has for an urban building typology. Upon acquiring funding, local craftsmen have started the realization of the proposed design and our organization has offered different trainings to familiarize community members with the innovations of the construction project.

SDGs Considered:

6. Clean Water and Sanitation: Considering the lack of a public sewage system in the region, our project incorporates an autonomous filter system for used water.
7. Affordable and Clean Energy: The building will be equipped with solar panels to produce its own electricity.
9. Industry, Innovation and Infrastructure: The building concept reconsiders traditional building technologies and adapts them to the contemporary building plan.
11. Sustainable Cities and Communities: Integration of the population and local resources into the design of a housing typology fit for the future.
12. Responsible Production and Consumption: The proposed typology greatly reduces the amount of cement used and therefore decreases the amount of pollution.
13. Climate Action: Reduction of emissions through the use of local and natural resources.

Life on land: Sustainable and improved housing conditions for urbanising West Africa.

Project Impact:

1. Creation of new, local employment through creation of new construction material industries.
2. Improved residential spaces adapted to local environment.

Project Outcomes:

1. Preservation of a local building culture.
2. Offering of a cost-effective alternative to the modern prestige building made from concrete Cinderblocks.
3. Passing on expertise and techniques for future construction projects.

Project Takeaways:

Two years of planning, drafting and fundraising have now resulted in the production of 10,000 compressed earth bricks and the construction of an exemplary building to illustrate the visions.

For more information visit www.project-mako.com