Students as Researchers
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Team Universidad Iberoamericana (UNIBE)
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Theme: Culture as canvas for new sustainability

City growth, has often taken place at the expense, not only of a healthy environmental balance, but also of culture and identity. We think, that a new architectural and urban sustainability should consider culture as the very platform where change happens, the framework for the circular economy.

Challenges of our world population figure

Our world´s human population has reached the unprecedented figure of about 8 billion, and although our growth rate moderately decreases, it is projected that the number peaks 11.2 billion by 2100. These figure comes at a price: Parallel to the environmental challenge, there is an increasing production of solid waste and demand for more building resources worldwide. According to the World Bank, in 2020 our planet generated approximately 2.24 billion tons of solid waste, that meant 0.79 kilos per person per day. While the environmental and health-related cost of our consumption needs are well documented, the efforts to systematize sustainable management practices at the global scale are still incipient. At the same time, our growing and changing population elevate the demand for construction materials triggering with it non-renewable and environmentally challenging industries like mining and fossil fuels.

A value chain is needed

Therefore, to successfully live though the 21st Century, our world of the 4th Industrial Revolution must invest in a value chain that connect the production of solid waste with the demand for more, and new, construction materials.

Santo Domingo as potential melting pot for transformation

The city of Santo Domingo has one of the fastest growing urban economies of the Americas, its resident and floating population comprise about two million people that generate 1,500 tons of solid waste every day. From this number, 30% is plastics, glass, metals, wood, branches, paper, and cardboard. Yet, our housing deficit reaches 25.8% and 12.1% for qualitative and quantitative measures respectively.

Culture as the field of convergence

Finally, we believe new materials and development itself should address our cultural geography. The aggressive pace of development in our territory, has also left a toll in our collective memory. Our generation has seen how entire neighborhoods and facades with strong cultural worth have disappeared to give way to new, culturally uninformed aesthetics. We think culture can, and should, be a platform where the value chain that connects solid waste resources and new materials takes place.
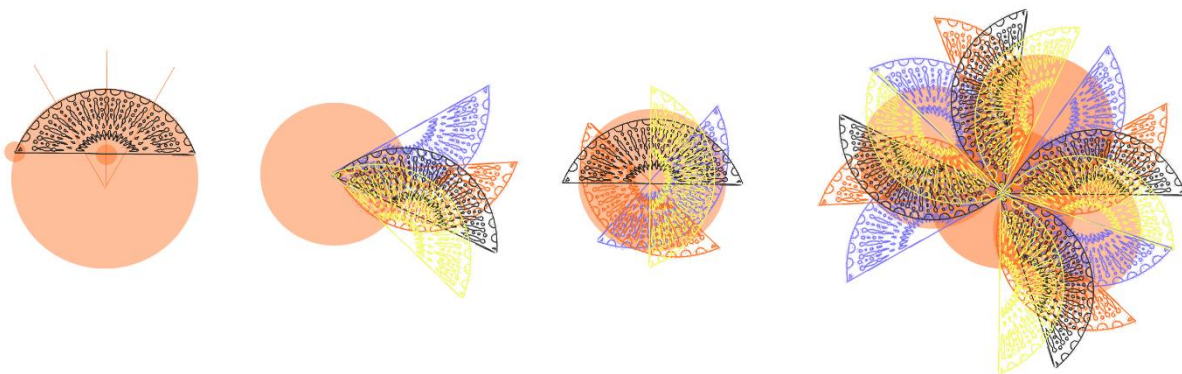
The Dominican transom window

As case study, we have decided to probe into resources of passive design that could also belong to our collective memory. In that pursuit, and among a number of options from our architectural legacy, we chose to research the potential of the almost extinct transom window. Remaining only in spared locations around the national geography, their often radial and organic patterns pierced through a wooden board allowed fresh air currents over doors in homes and public buildings. This resource, saw its origins in Victorian buildings erected in the Dominican Atlantic coast during the 19th Century, as well as in the Caribbean town of San Pedro de Macoris around the same time.

Our Object

On one side, our object will explore how traditional transom window patterns can be used for space generation. Its radial and organic nature can offer limitless rich variations. On the other side, we research how our object and transom windows themselves can be built out of recycled glass, cardboard, paper, or wood in order to potentiate our urban circular economy. The initial exploration below shows how the transom window pattern is repeated over itself around its center as well as over its extremes.

Image. *Initial conceptual exploration from left to right.*

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