



Urban Agenda Platform

The global platform for sharing progress, action and knowledge on the implementation of the New Urban Agenda to achieve sustainable urban development.

Insitu Upgrading: Housing Upgrading in Informal Settlements

Region	Middle East and North Africa
Award Scheme	Dubai International Award
Themes	Waste Management
Start Year	2017
Sustainable Development Goals	Goal 11 - Make cities and human settlements inclusive, safe, resilient and sustainable
New Urban Agenda Commitments	Sustainable and Inclusive Urban Prosperity and Opportunities for All Environmentally Sustainable and Resilient Urban Development

Summary

Recycle Beirut in collaboration with a team of craftsmen, designers, and architects have renovated a house in Ouzai in the southern suburbs of Beirut. It is one of the first comprehensive green construction projects in a slum anywhere in the world. The house is occupied by a Syrian refugee, Haela, and her four children.

Background and Objective

Haela, a widowed Syrian refugee from the eastern suburbs of Damascus, was living with her four children in a small, windowless room in Ouzai, a slum adjoining Beirut's airport. The house had no natural light, poor plumbing, routine flooding, dangerous electrical wiring, and frequent rodent infestations.

Actions and Implementation

This first pilot project was launched as the first step of a larger program to develop decent, affordable housing in the neighborhood of Ouzai. Relying on a sustainable approach to design and the conversion of reclaimed materials into new products, we set out to redefine upcycling. Rather than simply re-using materials, like turning wood pallets into tables, we attempted to repurpose them completely. The end result was that these used materials were thoroughly transformed into brand new products. The process consisted of two parts: a pre-design/design development phase and the on-site implementation phase. Phase I The pre-design step consisted of surveying residents and identifying the most vulnerable households. Once the initial assessment was done, the potential difficulties identified, and the critical issues prioritized, a team of architects and designers worked closely with the family to shape the project. The objective was to create a participatory process where everyone was engaged in the decision-making process. Planning on-site works came next with our top priority finding an alternative residence for the family during the construction works. In this case they were hosted by their relatives who lived next door. We then set the schedule of construction with the contractors, taking into consideration possible delays due to the informal manner of work in slums. Phase II Under the supervision of Recycle Beirut, the contractors cleared the perimeter of the house of waste and debris, opening it up to airflow and natural light. Next they began work on drainage, which proved a considerable challenge as all the deteriorating pipes and plumbing needed to be replaced. Masonry, tiling, electrical wiring, and indoor and outdoor painting and water sealing followed. Finally the woodwork, furniture, and final decorative touches were finished.

Outcomes and Impacts

The inspiration of the project grew out of an environmental crisis. In 2006 Israel bombed Lebanon's only colored glass recycling factory, and it was never rebuilt. This meant that the hundreds of tons of glass waste discarded every day had to be land-filled, compounding Lebanon's ongoing waste crisis. Recycle Beirut decided to find another use for all of the glass we were collecting by developing a tile made from bottle glass and construction waste. These tiles now cover the floor of Haela's house. Furthermore, we had accumulated a large amount of reclaimed wood, and the neighborhood was full of scrapyards selling all types of used fixtures and architectural pieces. Considering the abundance of locally available material we came up with a plan to incorporate a hyper-local approach to the renovation. Almost all of the material used was sourced within five hundred meters of the house. New material that was used, such as PPR piping and low VOC paints, were kept to the highest environmental and public health standards. In addition to local sourcing



Urban Agenda Platform

The global platform for sharing progress, action and knowledge on the implementation of the New Urban Agenda to achieve sustainable urban development.

of material, we hired most of the labor locally as well. This had several advantages. The first was that the cost of local labor was significantly cheaper. More importantly they knew how local construction worked, what practices to use and what to avoid. For example, the mason used a special water-proofing sealer for the outside of the house because living in the neighborhood himself he knew the damage the wind and salt water brought to the buildings. All of the furniture was either refinished or made from reclaimed wood. The coverings for the mattresses and pillows were made from fabric offcuts. The fixtures, including the toilet and sink, were found in local scrapyards. Less than five percent of all material was bought new.

Gender and Social Inclusivity

Slums, loosely defined as informally constructed neighborhoods inhabited by the urban poor, are the urban planning challenge of the 21st century. Global urbanization passed the 50% mark ten years ago and will push toward 70% by mid-century. Most of these newcomers to cities will live in slums. What we choose to do about them will define the kind of world we live in: fractured, dangerous, and poor or prosperous and interconnected. To date there have been three approaches to dealing with slums - 1. Ignore them 2. Clear them and rebrand it as 'urban renewal' 3. Tinker around the edges with minor upgrades We are suggesting a fourth way – embrace them. For all of their faults, slums are the living, breathing hearts of cities. They have given birth to countless artists, intellectuals, and civic leaders, and while messy and chaotic, embody a warm sense of belonging. Their unplanned, organic construction stands in stark contrast to anonymous concrete towers, exemplifying the human capacity for community. Every slum in the world can be upgraded – in their own style and on their own terms – if granted the financial and intellectual capital to do so.

Innovative Initiative

At the outset we underestimated the time, cost, and effort of working in a slum. Our initial projection was two months and \$2,000, but for the variety of reasons listed below, the renovation took six months and cost \$10,000. • We had never managed a construction project before, and the time and effort required to learn how proved substantial. It took months and at least half the budget to identify good contractors, replace bad ones, and fix their mistakes. • The logistics of working in a slum are complex and many. Electrical outages, gang warfare, local political problems, lack of infrastructure, traffic, volatility in people's lives (e.g. death, illness, etc.), frustration and infighting within families, weather, religious festivals (e.g. Ramadan), and a hundred other variables all added time and expense to the project. • Renovation is often trickier and costlier than new construction as it would have been significantly easier to build a house from scratch. Despite these setbacks, there were reasons for optimism. About 80% of the knowledge passed from the local craftsmen to the architects and designers. That is to say, while the craftsmen learned some new approaches, such as working with reclaimed wood or environmentally sustainable materials, the architects learned even more. Designing for the "bottom of the pyramid" requires a willingness to listen and learn, adjust to changing circumstances, and modify ingrained worldviews. This is not only the world we live in but increasingly the world we will live in as climate change and a variety of social and economic factors upend long held assumptions. The good news is that these locals are resilient and adaptive. Most slums, therefore, are "resource-ready," possessing the talent and sticktoitiveness to upgrade their communities. They lack only the financial capital and the mentoring of architects, environmental specialists, and designers.

Resources devoted to delivery

Planet of Slums Planet of Slums Mike Davis Planet of Slums 1 9/17/2007

Conclusion

Modest investment in slum upgrading would bring substantial benefits. If governments, international institutions, and non-governmental organizations pooled their resources, public health, employment, trade, and a whole host of other indicators would likely skyrocket, and crime, sectarianism, and poverty would plummet. Businesses would find new markets in which to sell their products and services. However, this type of slum upgrading will require a new approach. Too often development projects are managed by people and organizations with little relevant experience. Just as you would likely prefer a qualified cardiologist over an accountant to perform your next open heart surgery, slum upgrading should be left to the experts, namely planners and architects working in collaboration with local craftsmen. These consortiums should be given maximum flexibility to achieve their goals without the interference of the funders whose own projects are too often bogged down in corruption and inefficiency. We should also dispense with the notion that we can somehow upgrade entire cities on the cheap. Projects like Liter of Light may sound good, but they still leave communities without bare essentials like electricity and plumbing. The great cities of the world were built by the best with the best. Slumdwellers deserve nothing less.