

Recovering Aleppo

Rubble recycling units, Aleppo, Syria



Main authors

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Project data

Project group: Architecture, building and civil engineering
Client: Humanitarian Organization
Project background: Research project

Summary and appraisal of the project by the jury

In the city of Aleppo in Syria, war has indiscriminately destroyed the homes and neighborhoods of many, not to mention the livelihood of entire communities. Addressing the city's devastation, the project proposes temporary structures embedded within the urban fabric to process concrete from damaged and destroyed buildings into aggregate useable in new construction. The intention is to recycle concrete rubble while reconstructing the city's social and urban fabric. The so-called "recycling modules" are to be located there where people once lived and are thus dispersed throughout the city, allowing citizens to rebuild their neighborhoods in situ. The proposal relies on civic engagement and offers hope and opportunity for the people of Aleppo to return to their devastated lands. With the support of a humanitarian agency, the project raises awareness on cultural continuity while rebuilding a "lost" city.

The jury applauded the humanitarian tenets at the core of the project – a politically motivated initiative of young designers able to deploy their discipline for reconstructing war-devastated neighborhoods and for alleviating the precarious living conditions of a people under stress. Notwithstanding the overriding qualities of the scheme, the jury wondered whether it would have been possible to re-use the materials on site to build more permanent structures rather than temporary ones that would need to be repeatedly erected and dismantled. This said, the jury nonetheless argued that the proposal is founded on a strong ethical posture that more than simply deserves recognition, rebuilding communities while rebuilding their places to live – an enlightened next generation of architects reversing the senselessness actions of previous generations.

Statements on the sustainability of the project by the author

Technical framework and objectives for recycling Aleppo's emergency waste

The substantial amount of concrete waste generated from regular (non-emergency) construction and demolition works as well as emergency states such as wars and natural disasters poses a great threat to the environment in terms of increase in quarrying demand and diminishing landfilling space. A technical study was conducted and involved estimating construction and demolition quantities, building a GIS model for recycling module siting, and carrying out an economic assessment for the case of Syria. The GIS model considers environmental and transportation objectives as well as a time frame to process all the emergency waste. The competitive price for recycled concrete aggregate alleviates the pressure from quarrying natural aggregate and renders the recycled material an attractive commodity.

The module operational system: Macro versus micro

The proposal holds a modular system that allows it to react flexibly to different locations through site responsive configurations. Eleven modules are to be implemented within Aleppo on seven proposed sites in 100% damaged zones. Together they inhabit a net-

work of urban voids aiming to rebuild the city from within. On a practical level, it consumes nearby waste, processes it, and transforms it to usable material. On a civic level, it ensures newfound prosperity in local job opportunities while providing a cultural platform for public engagement. Its temporary nature allows it to leave a minimal trace in its context.

Architecture of temporal functional transformation

The architectural quality and aesthetics rethink a conventional recycling facility into an operational modular system consisting of human scale structures. Catering to different functional and spatial zones, its rhythmic planning and proportions complement the neighborhood by creating circulation routes shaped by the adjacent context. The module form is true to its construction method while holding different possibilities of enclosure, thus reconfiguring the constant skeleton into spaces of different experiences. The anchoring foundations of the module on the other hand, are the only permanent elements and are designed in the form of public benches. They are created from the rubble within, envisioning a potential future where the space is reclaimed into a breathing point in the city.

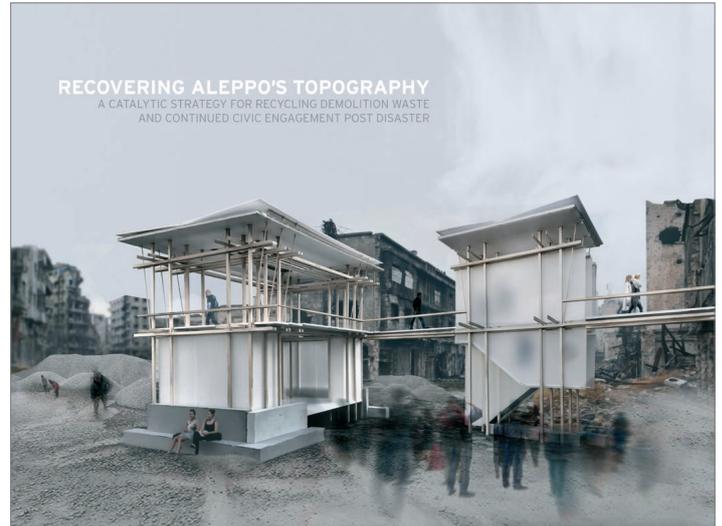


Image 1: A sense of security and responsibility is critical after a disaster; moreover the sight of millions of tons of concrete rubble is a call for an environmentally conscious recovery strategy. The proposed recycling facility will allow the people to hands on receive and process what once made the fabric of their neighborhood, and in a sense, not everything is lost.

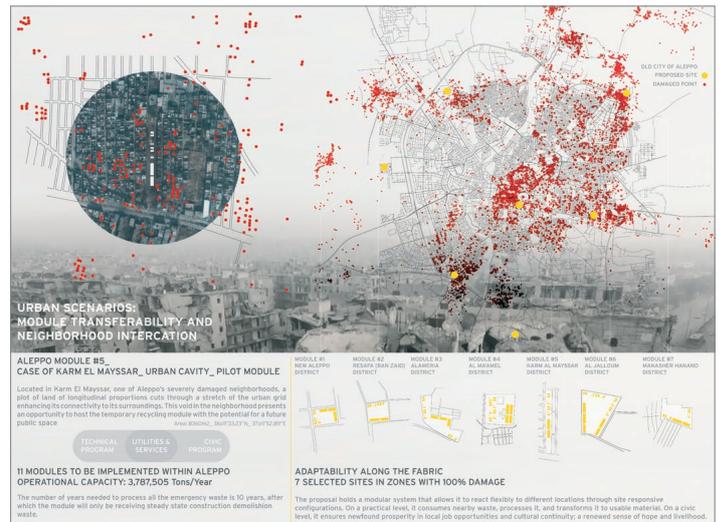


Image 2: Zooming into Aleppo: Recycling modules work together as a network at the city level. They respond to their allocated neighborhoods. The proposal holds a modular system that allows it to react flexibly to different locations through site responsive configurations.

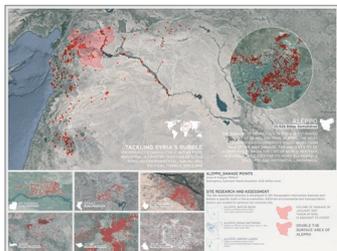


Image 3: Quantitative assessment of damages from the ongoing war in Syria.

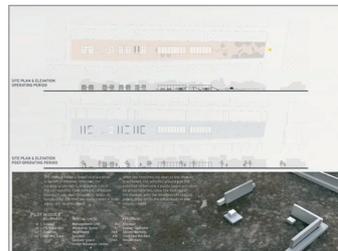


Image 4: The life of the project - during operation, and what is left then after.

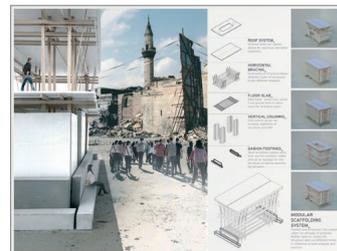


Image 5: System of assembly of the temporal scaffolding structure.



Image 6: The aesthetic impact of the module is true to its method of construction.

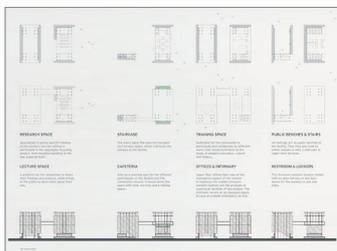


Image 7: Programmatic distribution along the different elements of the module.

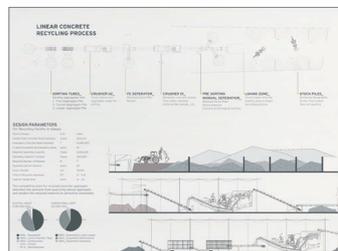


Image 8: Detailed understanding of the concrete recycling process - from rubble to aggregate.



Image 9: In parallel to the urban porosity, interconnections weaving the modules allow further public access.



Image 10: The proposal relies on civic engagement to present hope and opportunity for the people of Aleppo.