PARTICIPATORY ARCHITECTURE
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ARC 500
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Khalili adapted a NASA competition entry to design a system for the construction of temporary, earth single-family residential units for refugees from the Persian Gulf War. Sand-filled tubes are stacked to create a dome and are finished with barbed wire and finished with earth. Refugees take part in the construction of the domes under the supervision of an architect.

The firm designed a modular system using shipping pallets to create temporary residences in disaster situations, where pallets are readily available due to the high amount of aid. This system can be implemented by the future occupants of the units and can be insulated with local materials such as rubble, straw or earth.
This UN sponsored housing project in Lima, Peru was an experiment in participatory design. The architects were asked to create designs for low income housing that the inhabitants could add on to over time. They created not only housing, but an overall urban scheme for the neighborhood.

The design improves and upgrades an already existing informal settlement, as well as provides serviced sites for future development of the area. It includes the base for 6,500 homes that residents are encouraged to build upon as needed.
The project creates a vertical barrio in a sense by providing a structure and basic utilities for the future inhabitants to build within. As a basis for this project, Urban Think Tank looked at Torre David, an unfinished housing tower that has been illegally occupied and filled since 1994. Inhabitants use the unfinished apartments as a framework for their own interventions.

Reurbanization of Diadema, one of the most dangerous cities in Brazil. “The community helped determine priorities for the annual budget, “distributing resources in a democratic way,” notes Filippi [the former mayor]. The community also had a voice in reurbanization meetings with architects, engineers, and social workers from the Housing Secretariat, suggesting upgrades and approving projects on work, part of which was performed by community members themselves.” Residents were involved in planning, design, and construction. The project included healthcare facilities, roads, as well as improved housing.
Inhabitants of squatter settlements in Buenos Aires have created a cooperative in order to improve their neighborhood. 325 families designed and constructed their homes with the help of an architect. Now they build social housing around the world.

A group of women banded together to move their community away from the area’s pile of garbage that was a hazard to the community. They designed housing with an architect’s help and gained the knowledge to purchase materials and construct homes themselves. Together they were able to create a new “eco-village” called Miraculous Hills, and they are now working to create a large number of completely sustainable homes and settlements.
BANG BUA CANAL COMMUNITY UPGRADEING
Scale: Housing, neighborhood, urban development
Participation (amount): Planning, design
Location: Bang Bua Canal Community, Bangkok, Thailand
Year: 2004
Architect: Community members and architects from Sripatum University
Materials: Recycled materials

Thailand’s Baan Mankong Community Uplifting program is working to improve housing, land tenure security, and urban infrastructure for those in informal settlements. The program subsidizes infrastructure and environment upgrades, and works with the communities to improve their living conditions. They created three basic house types - detached (single), semi-detached (double), and row houses - and constructed them from recycled materials. This allowed for improved neighborhood layouts and connection to the canal. The project also brought about social change in the community, such as welfare homes, and welfare funds to improve the lives of the elderly and the area’s youth.

SANGALI INCLUSIVE PLANNING
Scale: Housing, urban development
Participation (amount): Design
Location: Sangali, India
Year: 2009-present
Architect: Shelter Associates, Baandalini Federation
Materials: Concrete

Shelter Associates collected data about Sangali, India in order to inform their own designs, as well as the government’s plans. By providing the government with vital information about the slums, such as location, caste, electricity connection, etc., they were able to understand the problem at hand. Shelter Associates then worked with the community and Baandalini, an informal federation of poor men and women, to create a neighborhood that would suit their specific needs. They incorporated active and passive open and public spaces, with flexible housing plans to create a transformable neighborhood.
The design features three modular concrete frames to be deployed by the community in cases of empty lots or when buildings were in need of improvement. The modular units are left deliberately open for modification by the residents themselves.

Kere’s design dismissed conventional concrete construction and favored natural mud brick to improve energy efficiency, respond to local context and social waste associated with concrete production. To offset the potential dangers of the rainy season to mud brick construction, Kere covered the project in a large tarp roof to cover the building from rain, provide shade and increase natural ventilation.
Construction-grade straw bale blocks serve as the main structure and insulation in an adaptable system that is rarely prefabricated with Adobe. Intended specifically for use on Native American reservations, the system can be constructed by the community and in some instances, homes were designed and constructed without the aid of an architect.

HOPI NATION ELDER HOME
Scale: Single-family residences, educational community centers
Participation: Constructed by the community using local materials and able to be adapted without the guidance of an architect
Location: Hopi Nation, 2005

THE BAREFOOT ARCHITECT
Scale: Single-family housing, community buildings, community planning
Participation: Community members decide which design features to use according to their needs and means.
Location: International
The Mexican government bought 40,000 cases and distributed them nationally; hundreds of thousands of copies have been sold in Latin America.
Architect: Johan van Leegen
Materials: Local materials (earth, wood, recycled metal, etc.)

The book outlines basic methods for sustainable design using local materials and labor, explaining labor processes and basic design principles. The book outlines general strategies for home construction, energy production, efficient energy use, community planning and building structure.
PARTICIPATORY ARCHITECTURE

RECYCLED HOUSING
Scale: Single-family housing
Participation: Community members employ design suggestions according to available resources and need
Location: U.S./Mexican border
Architect: Teddy Cruz
Materials: Wood pallets, tin, recycled tires

Teddy Cruz developed a system by which shelters can be added to or totally comprised of recycled materials which are abundant due to the United States' use of the U.S./Mexican border as a dumping ground for waste, specifically tires. The aggregation of these materials can serve as the basis for extended plots of land, in some ways similar to the treatment of wasteland in the territories of Caracas.

CASA FAMILIAR
Scale: Block containing residences, community spaces and small-scale economic enterprises
Participation: Community members facilitate the growth of each parcel through increased political engagement through a linked NGO. The NGO is responsible for the phased development of the lot.
Location: San Ysidro, CA
Architect: Teddy Cruz
Materials: Various

Casa Familiar is a community-based NGO that aims to promote civic engagement and economic growth through the treatment of single parcels of land as pieces of infrastructural and economic work. The land is subdivided to facilitate a multitude of program and circulation to allow for the construction of tight-knit communities and economic enterprises.
THE OPEN CITY
Scale: Student-designed and constructed campus of classrooms (interior and outdoor) and residences
Participation: Students are taught an inter-disciplinary design curriculum and participate in design-build projects that generate the built space of the campus
Location: Valparaiso, Chile
Architect: Multiple
Materials: Varied

The Open City is conceived of as an inter-disciplinary learning environment that takes advantage of the local natural context to generate form. Students design and build the campus facilities and there is not a formal classroom environment in many cases. The school favors open discussion and embraces the poetic qualities of architecture.

IQUEQUE HOUSING
Scale: Multi-Family Residential
Participation: Architect, Community Infill, Adaptability
Location: Iquique, Chile
2004
Architect: Alejandro Aravena
Materials: Concrete Blocks

This housing project was designed to shelter 100 families legally on the same site which previously held that many illegally. The design was such that a bare bones structure was to be created and then filled in by those how call it home however the sea fit.
PLUG-IN PIECES

STAIR MODULE
vertical circulation

KITCHEN MODULE
plumbing/electricity

7.5 feet 7.5 feet

BATHROOM MODULE
plumbing

7.5 feet

LEARNING MODULE
computer

15 feet 7.5 feet

structure increase/decrease height based on topography