

In recent years, shipping containers have become an avant-garde solution to housing problems across the world. Numerous publications tout its eccentric pre-fab qualities and design flexibilities; from modular single-family homes to camping retreats and newsstands. The shipping container as **(CLA) Container Living Apparatus** is the basis for our design intervention because of its **flexibility, self-sustaining structural integrity and versatility**. It is our intention to use that unique quality and fuse it with other industry standardized components, technologies and practices.

A shipping container's standardization allows its deployment in multiple ways: by air, multiple land options, and by sea. Virtually, there is no location it cannot be placed. And the standard 40'x8'x9'-6" module allows for design flexibility with integrated utility systems. Using the concept of **"off-the-shelf"** components, it is our estimation that the **cost and deployment time will greatly reduce**. This will allow more residents to move within a closer radius of their original dwelling in a shorter period of time.

Purchased for **as little as 2,500 dollars** and sitting idle in many of the world's shipping yards, containers are readily available. Numerous companies specialize in the reclamation and modification of containers into habitable spaces for business, construction, military and disaster relief scenarios. While many of these examples are effective, they often lack comfort. But it is plausible that these design concepts can be recharged into a **Living Apparatus that has similiar qualities of home**. Designed are four spacial alternatives; **DIVIDE module, BY-PASS module, UNILATERAL module, and UNILATERAL shared module**, providing flexibility in community planning. Each module creates unique living arrangements with various methods for personalization. And by integrating sliding hardware and technologies from the RV industry, additional interior space is created as well as visual interest on the exterior.

Reclamation of the container itself is an act of **sustainability**. But beyond that, material and fixture selection is key. Solar power, composting toilets, Energy Star appliances and restrictive water managment procedures will be integrated into each **CLA**. Each module will be self-sustained with battery back-up connected to PV arrays placed on slide-out roofs and awning framework. The "service cabinet" will house other utilities, such as HVAC compressor and waterless hot water and propane tank. Simple plug-in connections will be provided for use of an external generator or attaching to the city grid. Other components will be quality modular cabinets and furniture. Interior finishes will consist of MDF, reclaimed plywood surfaces, cork flooring and carpet tiles.

Social implications of disaster relief is one of the most important features of creating a successful design. The concept of the **CLA** agglomerations is to create site adaptable solutions which encourage reestablishment of community. Post disaster relief housing mirrors existing social inequities... inappropriate to cultural preferences of community, poorly situated temp-shelters...some find their neighbors incompatible" Dynes and Tierney 1944 Disaster, Collective Behavior and Social Organization. With the CLA agglomerates, there is the possibility to respond to neighborhood and cultural difference in a positive manner. Also frustrating for many who have resided in disaster relief housing was the inability to personalize their space. "You can't print or put up pictures, so many rules". According to Urasmo McCaghney, Fullerton 1994 The Structure of Human Chaos, crisis situations eliminate ones ability to choose. "Efforts to make novel housing by transforming key physical and social elements into something meaningful. In the **CLA**, residents have surfaces and shelves in which to personalize their space. For those residing longer than a year, gardens shared with 7 other neighbors allow for meaningful interaction and a **sense of ownership and collaboration**.

Another concern is safety. **CLA** agglomerations are layed out in groupings condusive to a "neighborhood watch" system. There was an effort to **orient doors to interior courtyards**. These small courtyards provide areas for children to play safely, but also provide connection to more public paths in the community. **Way-finding is aided by colored and numbered containers** along public paths. It is also vital that the **CLA** agglomerations adapt as the communities they serve change during the city's restoration and rebuilding. For larger families, there is the ability to connect adjacent units.

And as families return to their newly renovated or rebuilt homes, the **CLA** will take on any number of uses in its next life. It will potentially become refugee or disaster relief housing, or part of an affordable housing system locally.