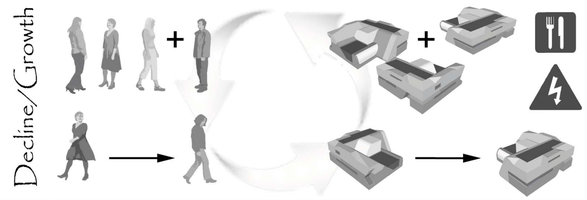
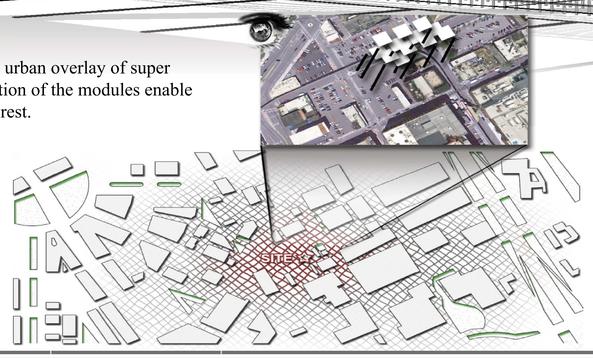
Adaptive Plug nPlay Community

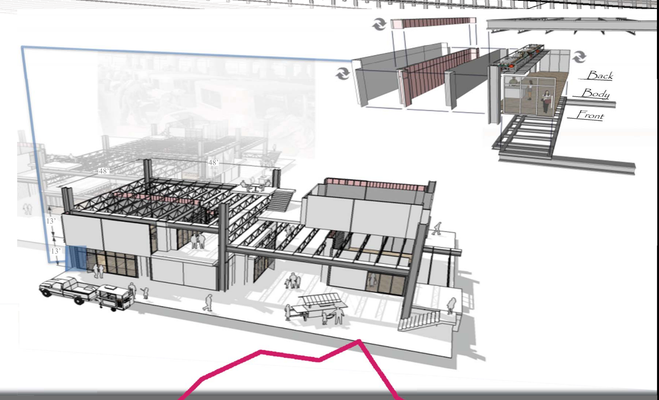
The sustainable growth and decline of an economy has failed to provide an environmentally responsible, resource efficient and cost effective solution which is none more evident than in the city of Detroit, Michigan. Unfortunately, as in many cities across the developed world, areas of dense urban fabric experience large economic boom and eventually the subsequent decline in population which presents an excess of infrastructure and underutilized built context.

Therefore communities should be designed around an organic self-sustaining development that can allow for flexibility in arrangement to accompany local demand functioning at optimal performance – no more, no less than needed.

The design proposal features a module assembly of manufactured architectural components that plug into an urban overlay of super structure and supporting core elements (circulation, water supply, ventilation and solar collection). The versatile customization of the modules enable an array of configurations that develop a scalable community dictated by economic demand and popular interest.



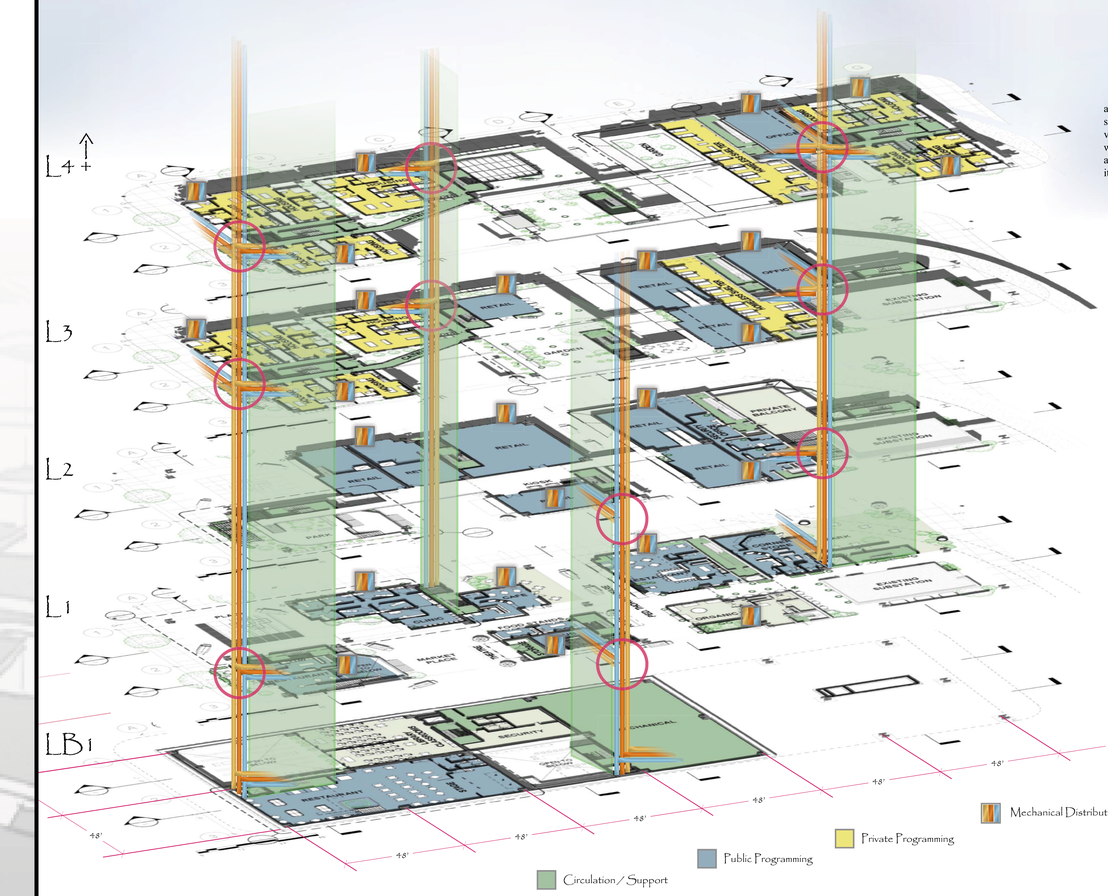


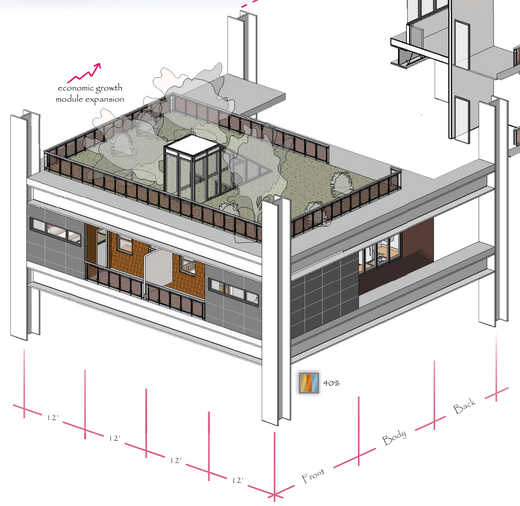


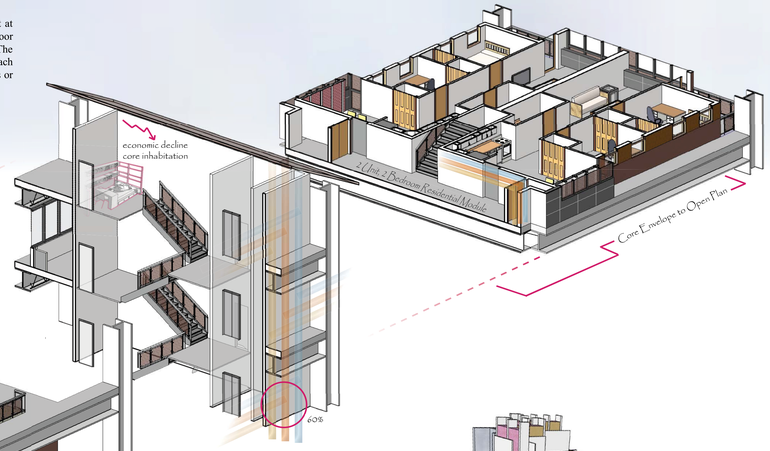
DESIGNING FOR ADAPTABLE FUTURES

A grid system based upon an investigation of ergonomic relationships is set at 48' which allows for each module assembly placed upon an undulating floor to floor height of 13' to be comprised of varying sized front, body and back components. The combination of these standardized components creates an open floor plan to which each module can be customized to fit any programmatic need with partition installations or adapt to adjacencies within the community simply by interchanging components.

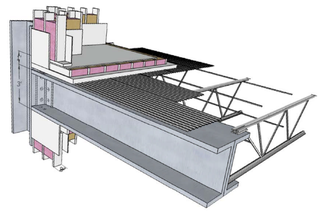
The community is formed through connection to core elements that would supply 60% of the basic amenities required for each module inhabitance which is collected from an overall site implementation strategy while the other 40% is inherently generated from the module unit itself. Intersections of vertical core elements to horizontal modular construction result in flexible plug-in connections which allow, for example, circulation to replace a large window component in the core assembly with that of a door to gain access to new modules and mechanical to plug its standard module system into the core delivery channel.

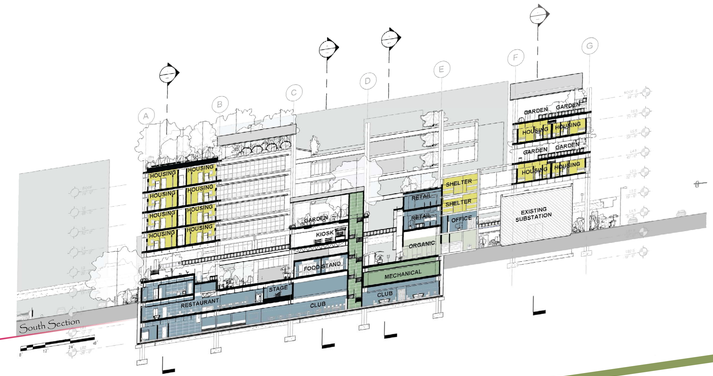


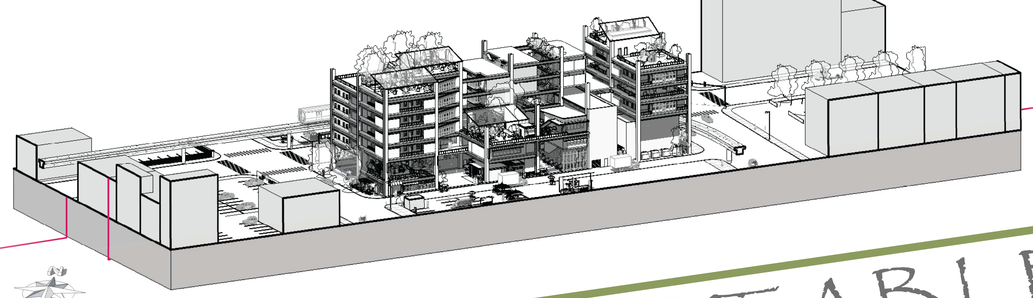




Construction for module assemblies would rest upon 3' primary load bearing C-channel beams will feature super insulation for implementation of passive designs that emphasize solar collection and water retention, natural and stack effect ventilation, and heat gain through thermal mass.





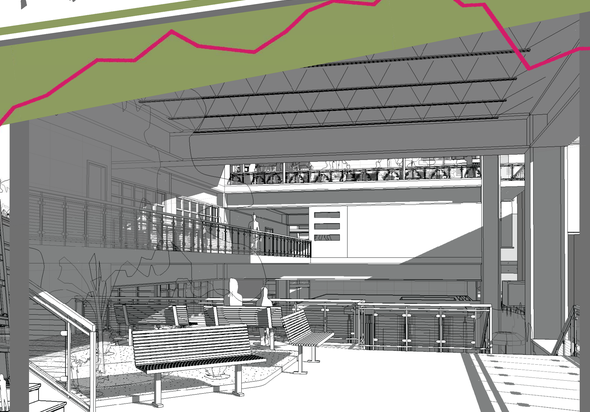


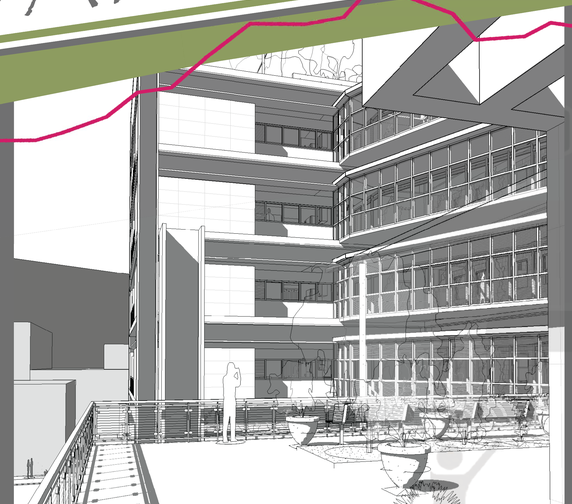
Mechanical Distribution & Collection

Private Programming

Public Programming

Circulation / Support





The design proposed for Detroit, Michigan is not simply a manifestation for the adaptive future of the urban communities within the city but a reflection upon the history of its regional manufacturing. By incorporating an architectural application that treats the assembly of dwelling units much like vehicles for transportation, the mobility of resources maintain a more sustainable intervention when communities expand and decline.

The adaptability of space from open plans to indoor outdoor exchanges host flexible hybrid programmatic layouts that develop greater contextual connections to the urban environment at multiple levels. A Human, Urban and Environmental (H.U.E) approach toward the establishment of the design proposal presents unique social implications that allow society to reclaim existing abandoned building for transformation into housing shelters to subsequently provide basic amenities for all classes of economic impact.

The hierarchy for design composition allows various building layers to be interchangeable as well as repurposed elsewhere creating a more sustainable community development model. Cultural and social boundaries throughout developed countries are free to own the urban relationships, regional architecture and economic sprawl most suitable a balanced present and future.