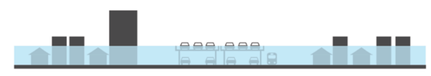
Undergraduate/Graduate
Category: Multidisciplinary
Degree Level: Undergraduate
Abstract ID# 828

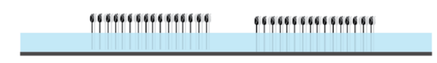
THE PROBLEM

Highways

Traffic



Floods

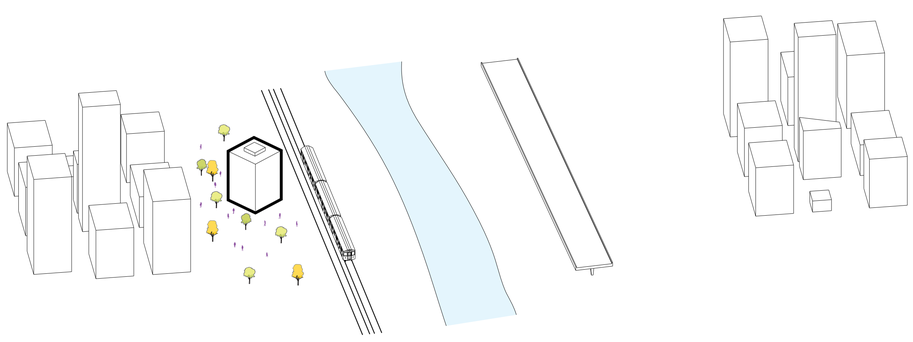


Food Supply

The changing nature of society creates unplanned and often chaotic growth of urban centers. In the mid twentieth century, the prevalence of the automobile spawned urban flight and the creation of suburbs throughout the United States. Specifically in Boston, these developments infected the cityscape with a crippling highway system that led to a fractured city. Historic Boston, a predominately pedestrian city, responded poorly to the rapidly changing needs of its citizens. This reactionary approach to urban design is common to cities throughout the world despite its repeated lack of success.

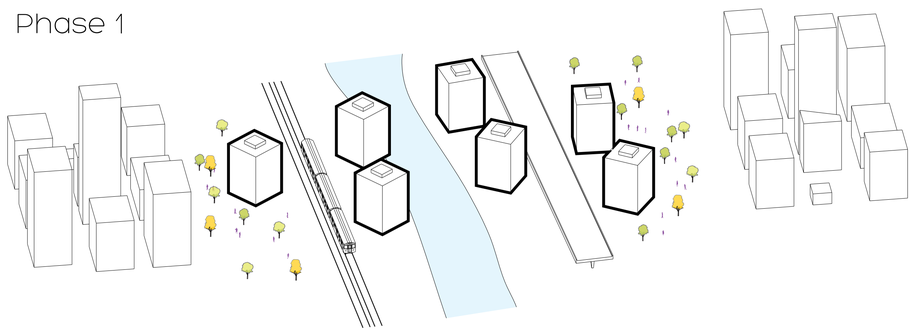
The coming century promises even more change: technical advancement, increased economic stratification, and the imminent threat of global warming. In order to prevent the same failures of the twentieth century, cities like Boston must anticipate the future with a multi-step method that embraces change by creating a framework for controlled yet adaptable growth. Our approach is to implement first a new energy producing building type that will prepare the city for its transformation while remediating a dependency on fossil fuels. Then a new infrastructural datum of which the city can grow will be created through the construction of a series of urban planes. The urban planes, constructed elevated land, provide new space for construction while stitching together the existing urban fabric of the city. By creating a new sustainable and flexible model for urban centers, we provide a means for our cities not only to keep up with our changing society but also to evolve with it.

THE SOLUTION



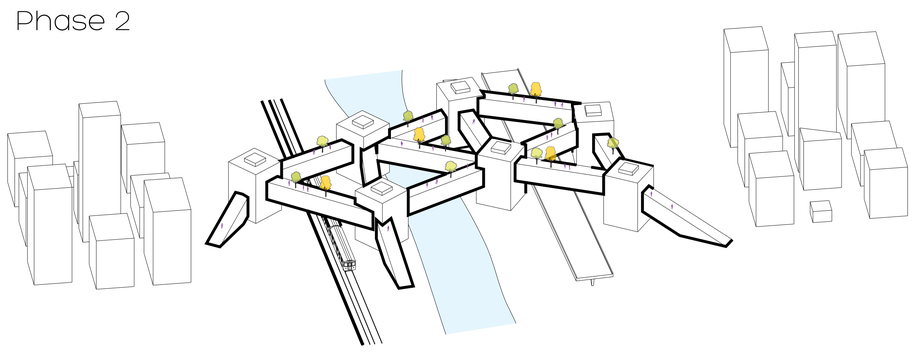
Disconnection

Phase 1



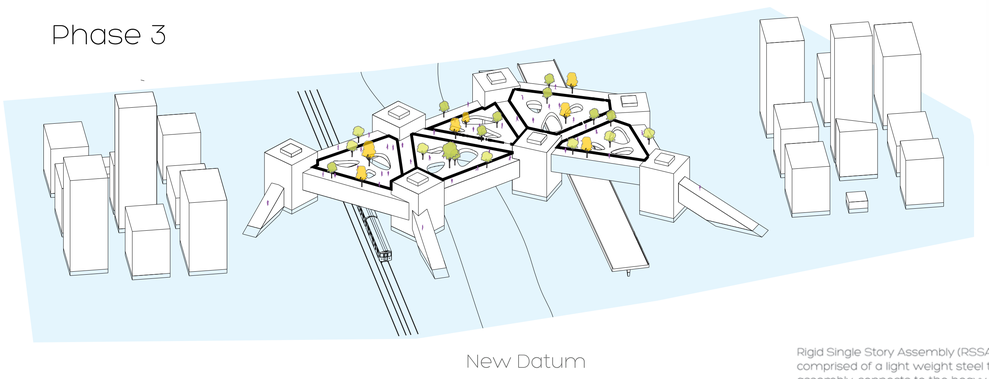
Growth

Phase 2



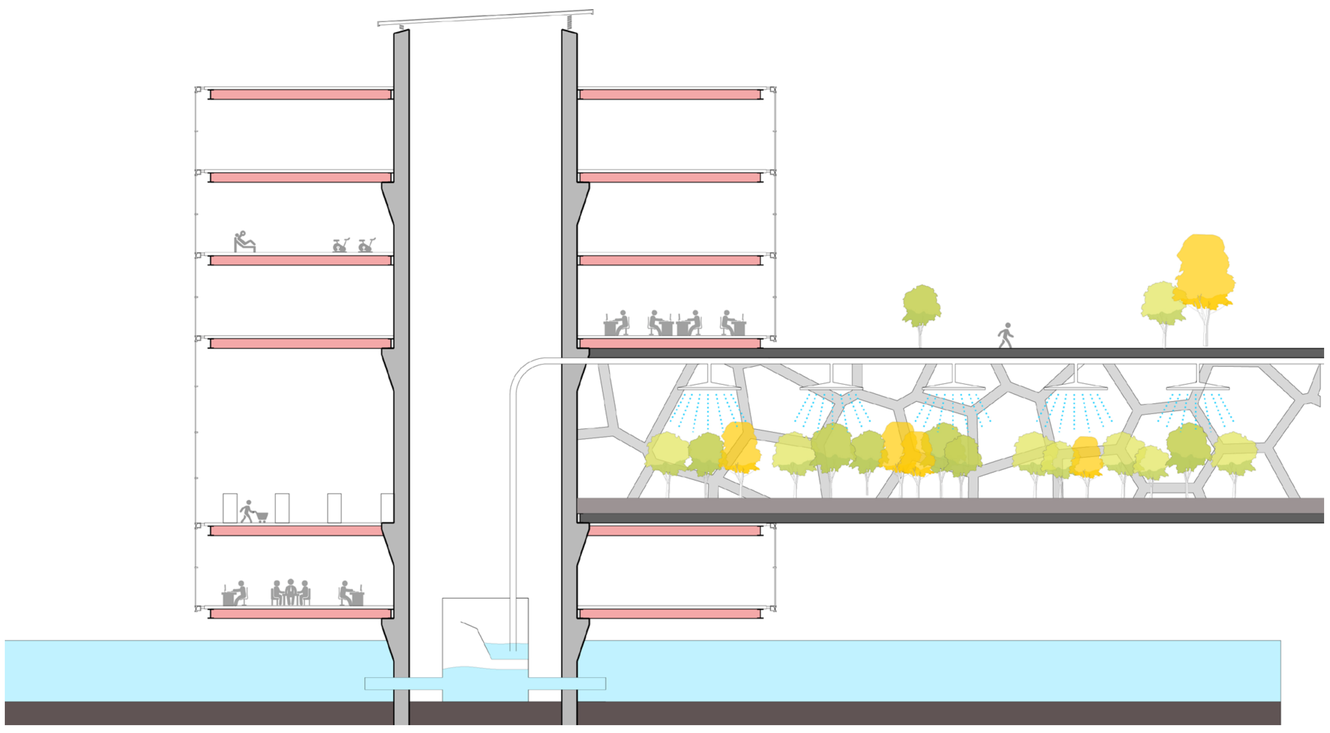
Re - Connection

Phase 3

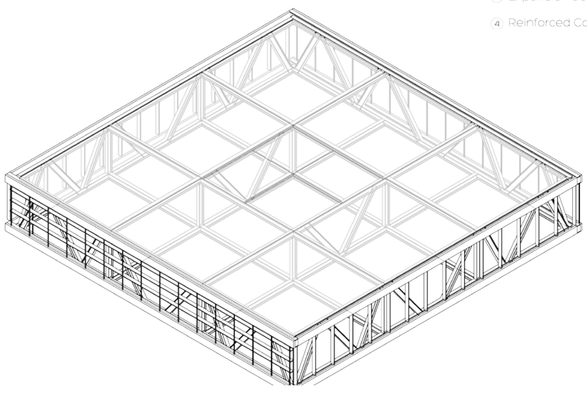


New Datum

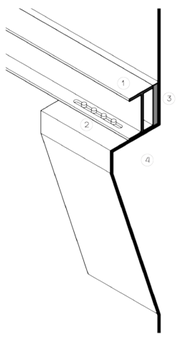
Phase 4



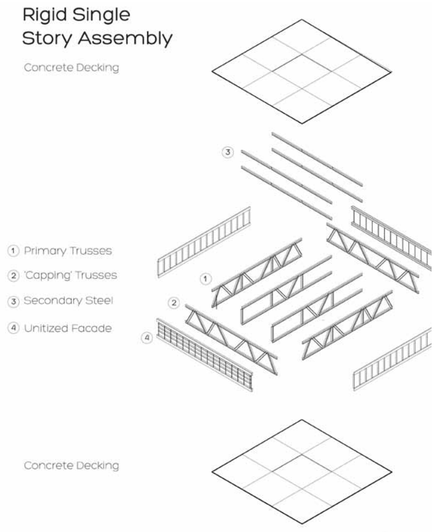
Rigid Single Story Assembly (RSSA)

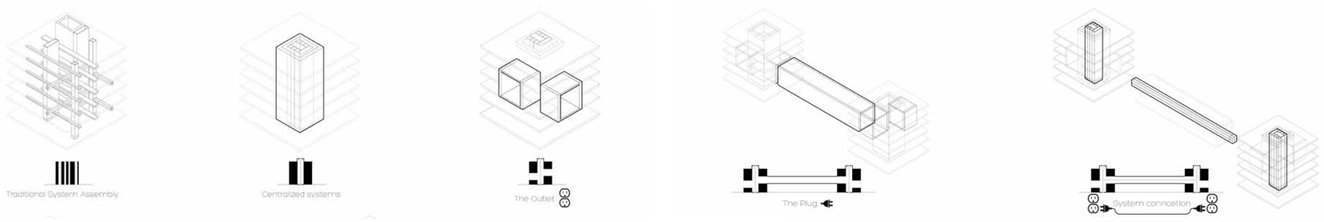


Truss and Corbel



Rigid Single Story Assembly

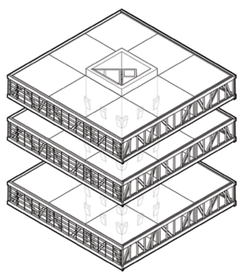




RSSA on Core

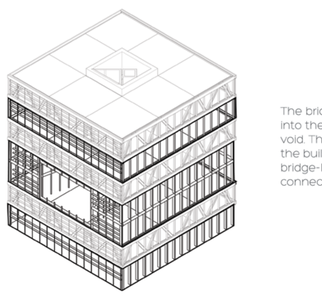
Curtain Wall Infill

Bridge Connection

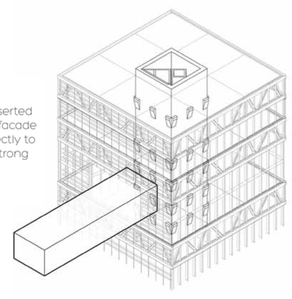


Rigid Single Story Assembly (RSSA), comprised of a light weight steel truss assembly, connects to the heavy core. The RSSA is designed to resist sheer forces within the assembly and to withstand lateral shifting around the core

The RSSA is deployed on alternating floors or every third floor. This creates 'negative' spaces that are infilled with minimal structure and a curtain wall system. A void is left in the infill curtain wall in anticipation for the bridge connection. The negative space provides an oppurtunity for unique program space.



The bridging elements are inserted into the building through the facade void. The bridge connects directly to the building core, creating a strong bridge-like decking and pylon connection.



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