

Energy (R)Evolution

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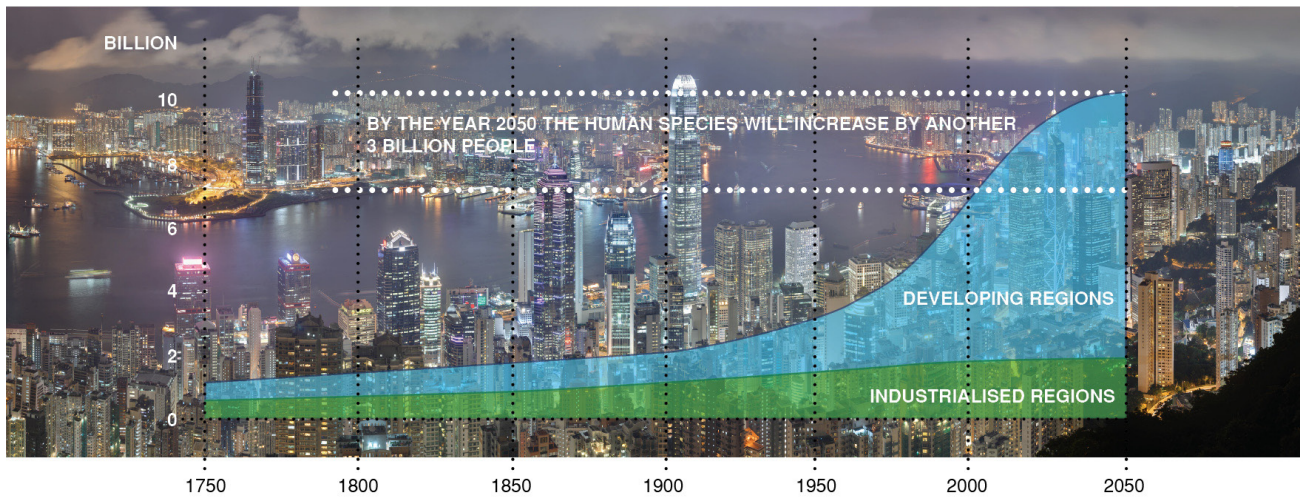


Figure 1. World Population Increase Graph by Wendy W Fok. Image used by permission
Source: United Nations - Population Division and Population References Bureau, 1993

As more than half of the world's population is expected to continue to live in cities, exponential urban development and population growth along with infrastructural increase are considered as parallel concerns and topics of discussion. The purpose of these design speculations is to offer potential design applications for architects and urban planners into

dynamic investigations, integrating a layered approach of amalgamating architecture / landscape / infrastructure within two future scenarios of "edge-based" urban environments (Hong Kong, HK, and Orlando, FL). The topic of discussion, which has been in the past fifty years, and will continue to be under relentless scrutiny given the challenges of



Figure 2. Diagrammatic representation of increasing water levels of the Florida peninsula. By Thomas Kieper. Images used with permission.

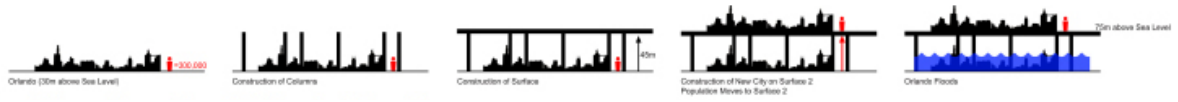


Figure 3. Diagrammatic concept of speculative intervention. By Thomas Kieper. Image used with permission.

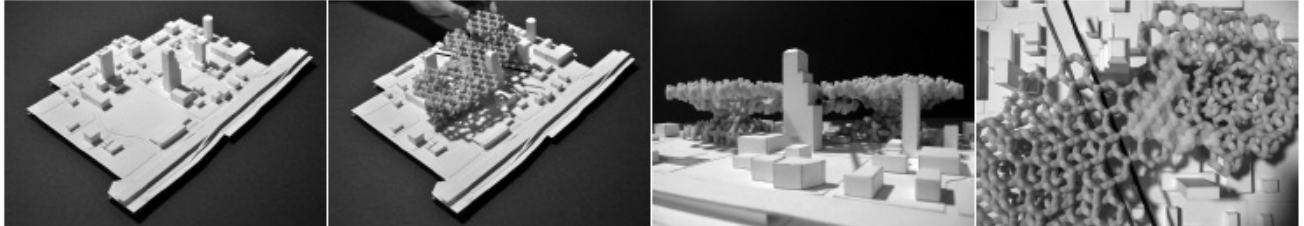


Figure 4. 3D printed model of speculative intervention. By Thomas Kieper. Images used with permission.

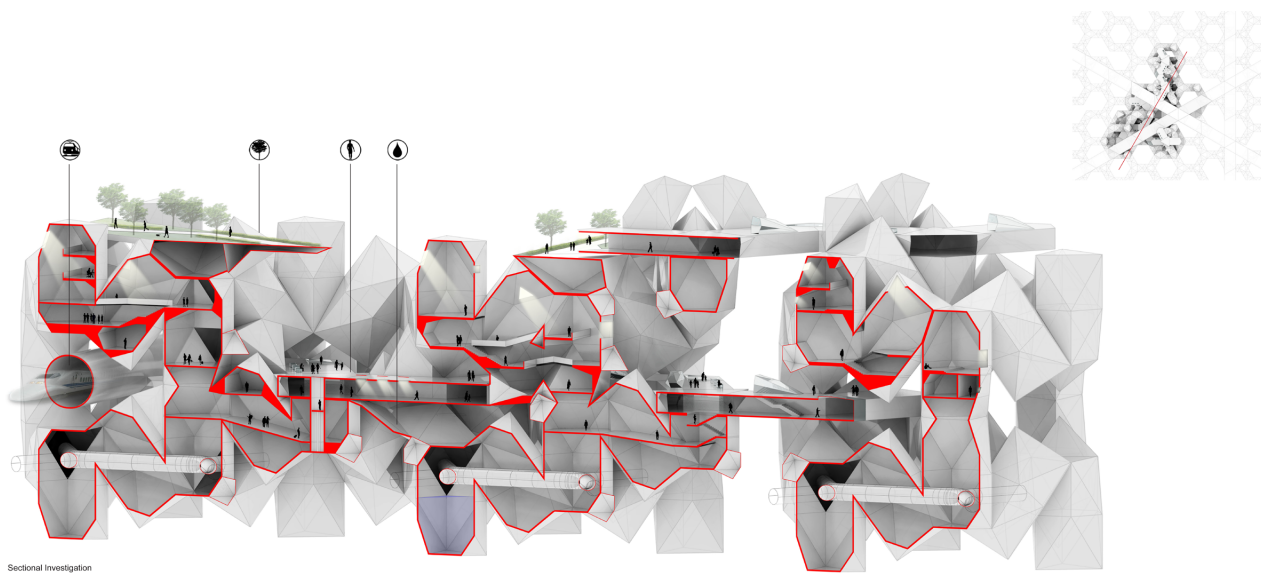


Figure 5. Sectional Cut through part of the larger modular complex. By Thomas Kieper. Images used with permission.

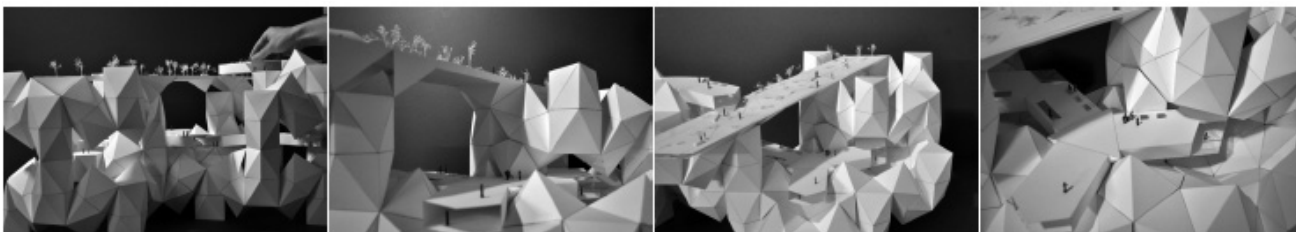


Figure 6. Developmental models of Modular intervention into Orlando's Downtown. By Thomas Kieper. Images used with permission.

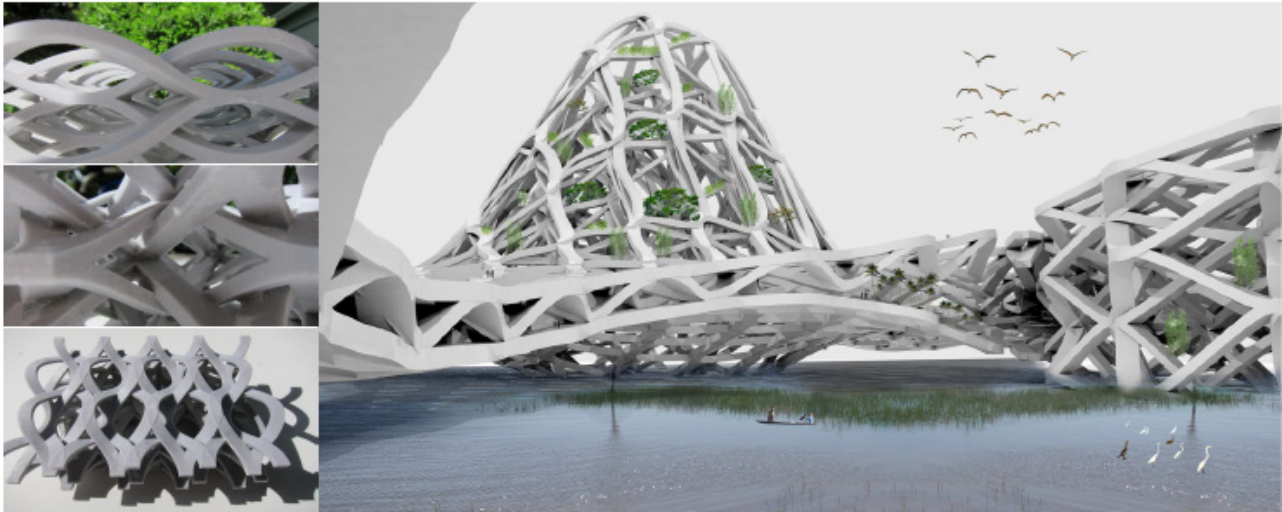


Figure 7. Developmental weaving prototypes and speculative rendered proposal of Orlando's Downtown. By Kimmel Chamat
Images used with permission.

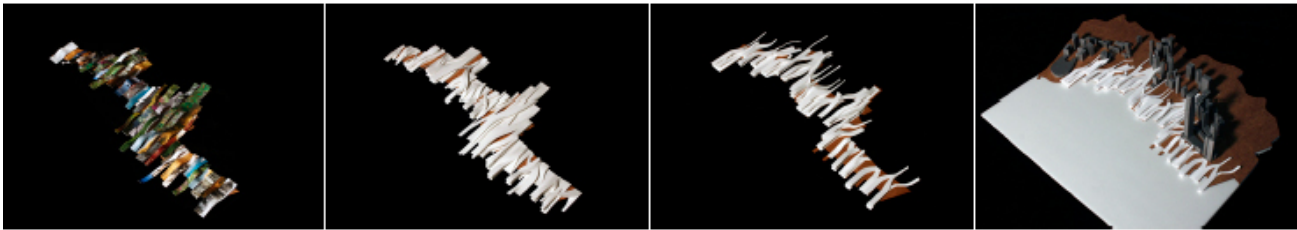


Figure 8. Developmental models of Hong Kong's proposed Central Waterfront Area By Kenneth To.
Images used with permission.

ecological changes, sustainable anxiety, and those aspects of urban development deal with design processes that consider the urban fabric and taking into account to the scalability of agricultural and ecological research, which has been and will continue to be a necessary requirement for future city planning.

To better understand the repercussions within the current state of the world, case studies developed in past studios were developed using two international major 'hit' zones: Orlando Florida (predicted to be 60 meters under water within the next 100 years), and Hong Kong, China (an edge city historically influenced through a Western persuasion, which consistently suffers from overpopulation). These two locations were used to develop topological research proposals of inquiry of alternative energy solutions that anchor itself within the system of developmental research using non-solar and non-wind driven sustainable energy solutions. The

case studies were developed through three different studios in collaboration with the Chinese University of Hong Kong, and the University of Florida – Gainesville over recent years.

The case studies took into specific environmental conditions into consideration to explore the various levels and aspects that pertained to design approaches that have certain ecological effects and techniques of self-sustainable systems. Whereby each researched location had specific contextual approaches that were based on a manifold of environmental conditions defining the ecological designs. Topics of design used both analog and digital tools to further Urban Strategies as related to each individual city. Much of the research originated through finding innovative forms of connections and quest for paradigms within digital designs applied to sustainable urban cities. Investigations partially manipulated, maximized, and extended

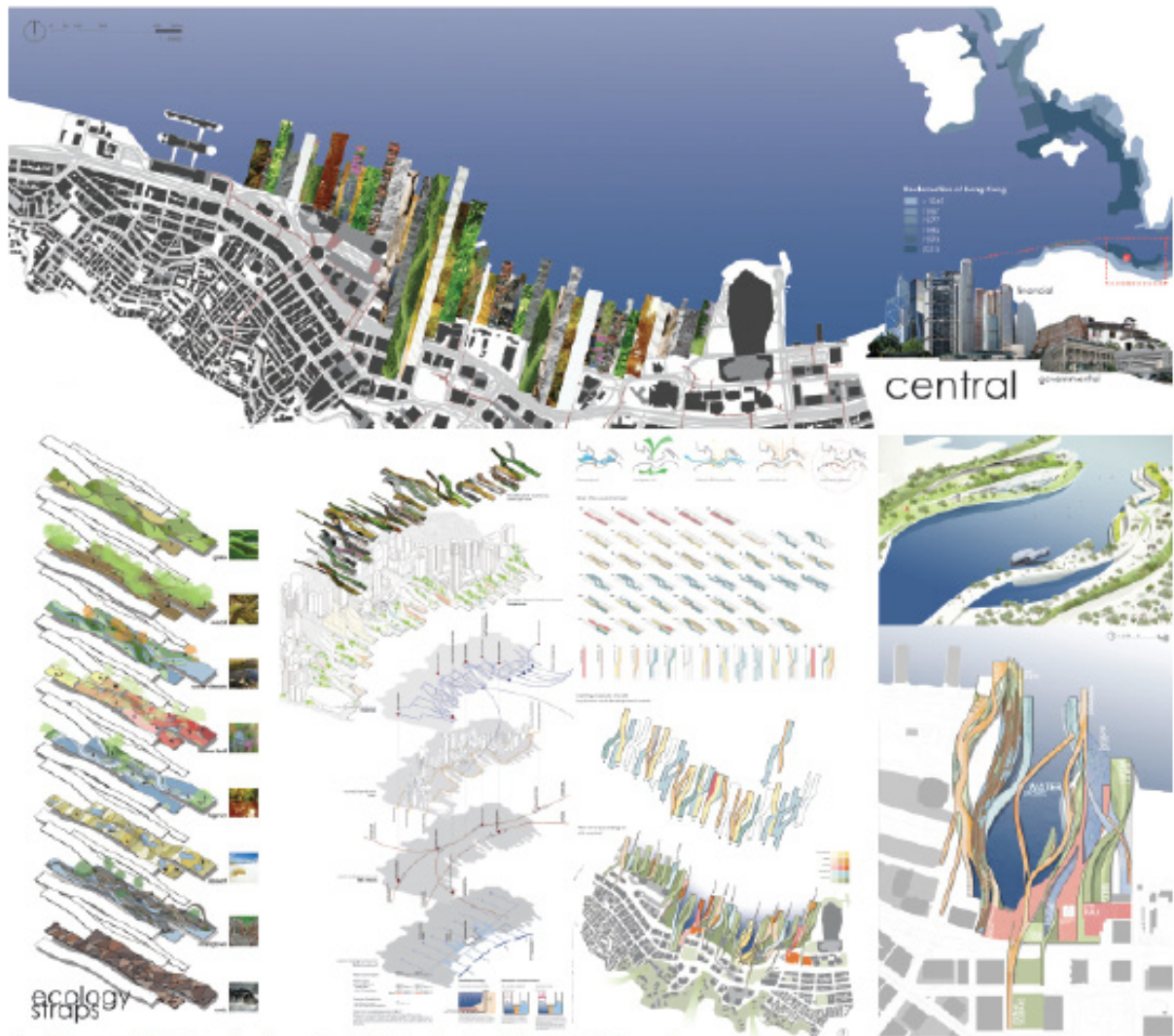


Figure 9. Diagrammatic Aerial of Hong Kong's proposed ecological "straps" into Central Waterfront Area. By Kenneth To. Images used with permission.

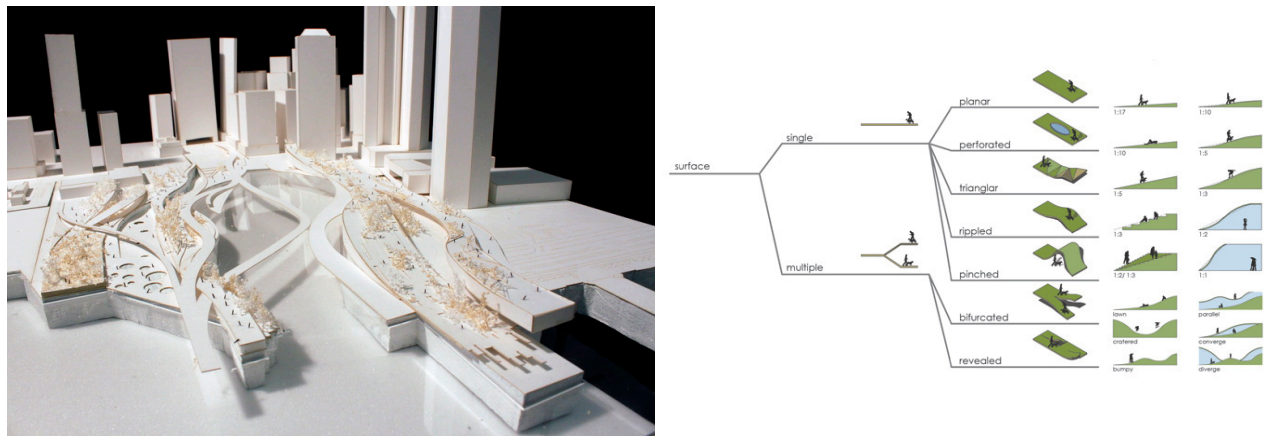


Figure 10. Site model of Hong Kong's proposed ecological "straps" and diagrammatic bifurcation studies. By Kenneth To. Images used with permission.

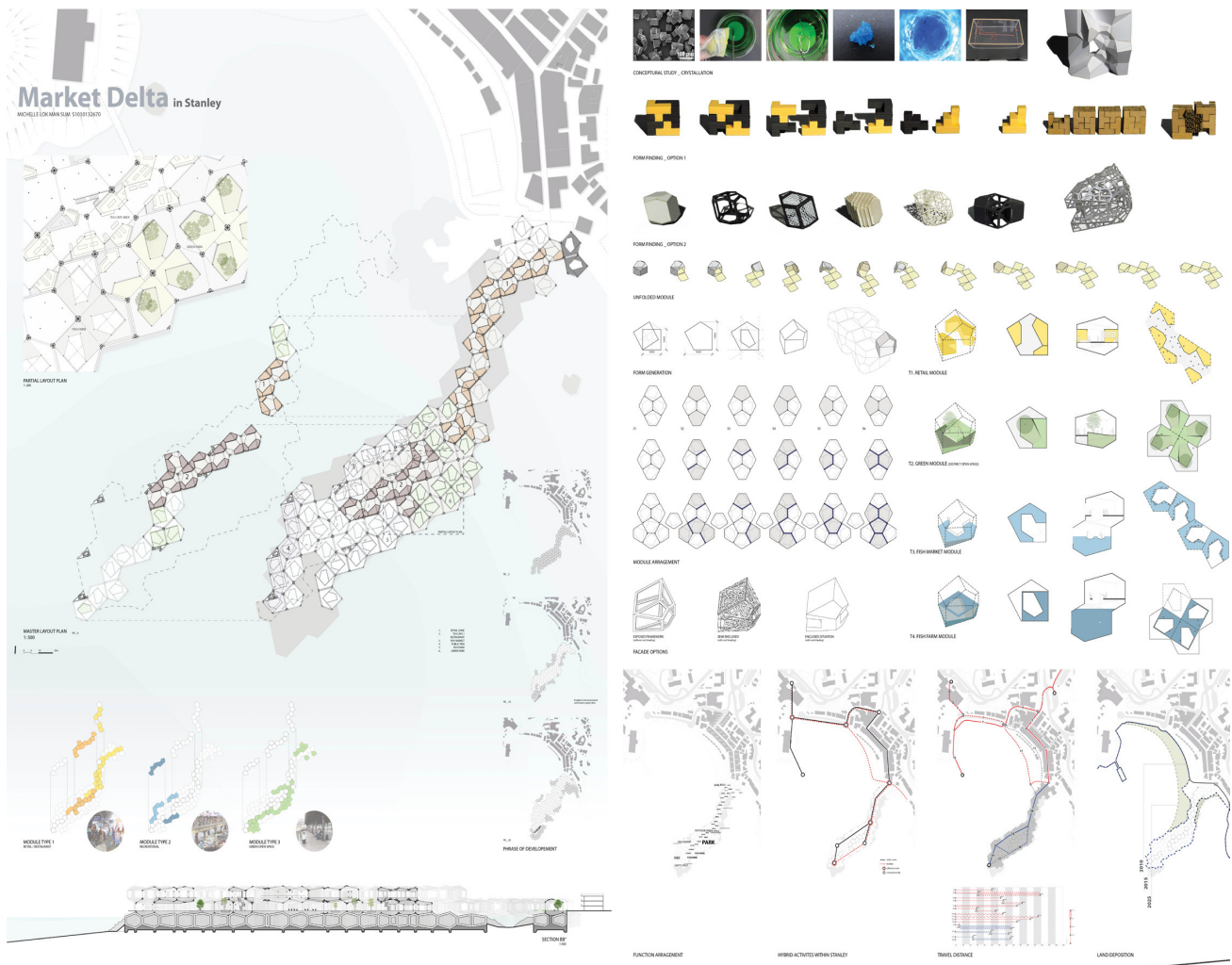


Figure 11. Diagrammatic modulation and edge re-development scheme of "Market Delta" into Stanley Waterfront Area. By Michelle Lok. Images used with permission.

the potentials of fabrication as a means of developing variable conceptual means of investigations between a discussion of global benefits, agricultural investigations, and Urban Strategies of cities.

The dominate theme within the speculative and developmental proposals questioned the edge condition of urban coastal developments, and actively ponders the role of architects, designers, and urban planners, edge intervention and construction along coastlines and waterfronts. Within the socio-developmental aspects, these projects are in search of a

new set of relationships between democracy, individualism, sustainability, and capitalism for 'edge' conditions and their typological repercussions. Whether the ecological, economical and equity are balanced within a triangular relationship between urban development and our sustainable future cities. Many of the proposals systematically questioned the authenticity of current cities, and whether the regard of sprawl and dynamic urban growth has affected the developmental behavior of the human understanding of *places* and *non-places*.

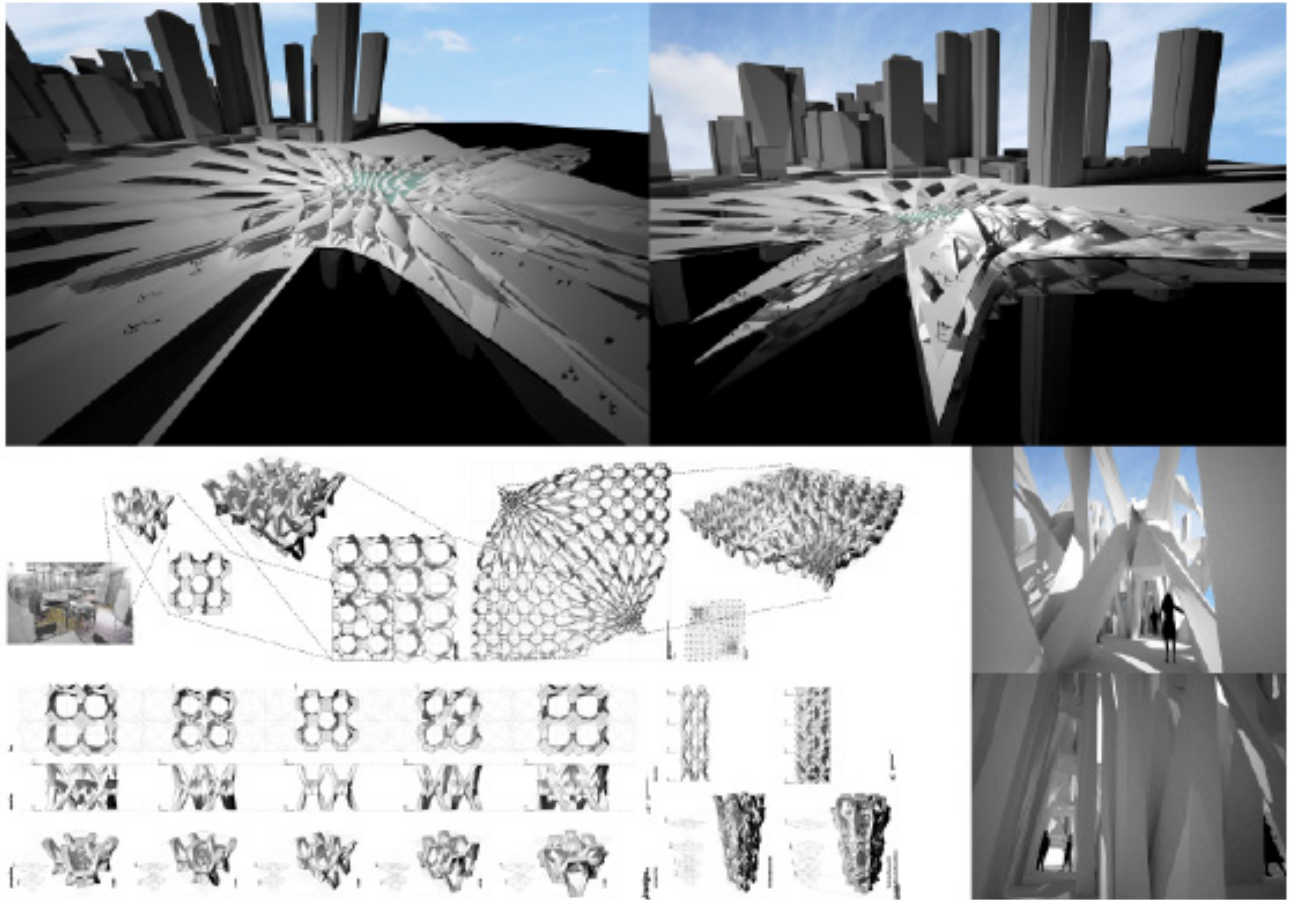


Figure 12. Developmental Renders and diagrams of Hong Kong's proposed Central Waterfront Area. By Ivan Cheung. Images used with permission.

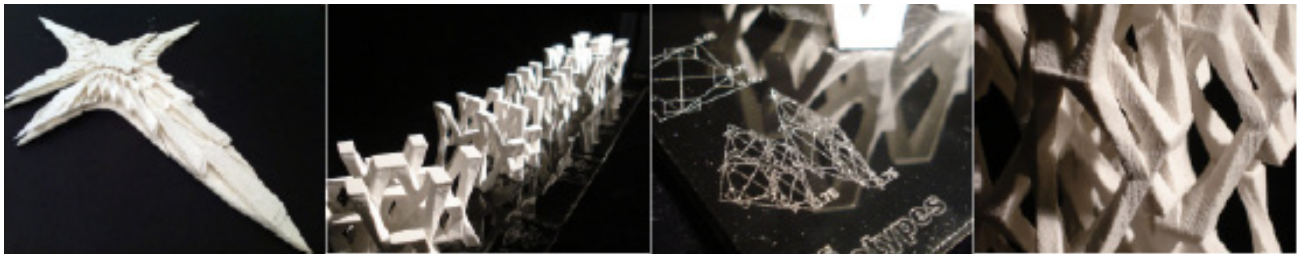


Figure 13. Series of 3D printed prototypes. By Ivan Cheung. Images used with permission.

Project / Image Credits

Kenneth To - Ecological Straps, Central, HK (the Chinese University of Hong Kong)
 Ivan Cheung - Museum of Hong Kong, Central, HK (the Chinese University of Hong Kong)
 Michelle Lok - Modular Market Delta, Stanley, HK (the Chinese University of Hong Kong)

Kimmel Chamat - Mangrove Weave, Downtown, Orlando, FL (University of Florida SoA)
 Thomas Kieper - Associative Urban Modulation, Downtown, Orlando, FL (University of Florida SoA)