Harbor/Harbor 2.0
A Symmetrical Proposal for Repurposing
00. Description

Among the world’s largest, most densely populated metropolises one trend is common regardless of location, societal diversity, or status in the global marketplace. Progressive and sustainable development is threatened by the need for more built space—housing, commercial and institutional. However, built space consumes raw land, a rare commodity in Tokyo or New York or Delhi or any other world megalopolis. In addition to land availability obstacles, rising construction costs coupled with a lingering global recession present significant fiscal setbacks. Private developers are not initiating low-profit affordable housing projects while municipalities lack the capital to fund ventures large enough to satisfy its residents’ needs. Currently, despite the ailing condition of the world’s economy, many world capitals and second-tier cities are floating with their heads above the waterline; however, this paradox—a severe deficiency in built square footage and no land to build it on or money to build it with—will, in the near future, drown our vital urban centers.

Seemingly, the unavoidable task at hand is an impossible one: generate vast numbers of housing units, commercial areas and public space without consuming any land and expending minimal capital resources.

### Past Response

The trend of abandoning existing cities for blank-slate urban generation represents an extraordinarily costly, wholly unsustainable and superficial response. Often, these urban hubs are constructed far from viable ports causing infrastructural constraints to reduce the cost benefits of constructing on vacant plots of land. Furthermore, new towns suffer from low-density sprawl—a symptom of minimal space constraints—a condition both environmentally detrimental and prohibitive to the type of spontaneous human interaction which characterizes our thriving and lively world cities. The strategy of starting over at vast, vacant sites and superimposing artificial urbanism is a failed method that should be deserted.

### Current Response

The solution proposed in this project is rooted in an ardent belief that existing high-density metropolises are the foundation upon which future modes of city living will be built if we desire functional urbanism. Operating within existing metropolitan areas [harbor/harbor] calls for the adaptive reuse of salvaged commercial ships for mixed-use development. As such, these ships will supply essential square meters of built space without exorbitant cost expenditure and without exhausting new or unavailable land. Increased layers of urban density will develop centrally as opposed to aimlessly bleeding into the suburban hinterlands.
Prosperous contemporary metropolises owe their social diversity, economic stability and continual growth to their proximity to passable waterways and deepwater harbors. Beyond its trade function, the port behaved as an interface between the city and the world—a threshold through which all cultural exchange was facilitated and filtered, a role now filled by the telecommunications industry. Decentralization of ship-based trade away from the waterfronts of the world's most dense, diverse and successful cities, however, left a functional void which has, in recent years, become occupied by generally unattainable luxury housing (Canary Wharf, London; Battery Park, New York, e.g.). Clearly, such projects do not address the needs of residents and have proven to be an unstable economic bet.

Conversely, not-yet-developed obsolete ports lay vacant without realizing their potential to influence future approaches to urbanity. The bustling ports of the 18th, 19th and first half of the 20th century were the economic and cultural centers of today’s large cities—[harbor/harbor] chooses these sites with the goal of re-establishing the familiar, bustling energy to the port. Populated by reclaimed and retrofitted ships, the new port will be a loudspeaker, broadcasting to inland city streets the potential to live in dynamic, high-density, mixed-income, variable-use communities.
With the masses singing “everything has changed” in unison, our critical contribution to recovery — itself a product of the critical/crisis model — has been to take stock of what has remained the same. Unscathed by the filter of crisis, statistics has remained the dominant means of public representation. Not unique to recovery or its immediate antecedent, statistics has operated in this fashion since at least the 18th century, what is different in this period, however, is that simultaneously the image trade has suffered and the statistics have reached intractable proportions, a veritable statistical sublime.

02. Site Feasibility & Vessel Supply

Implementation of a scheme to ensure a positive future for cities must be feasible; the future arrives whether or not facilitative tactics are developed. Viability, in this case, is determined primarily by kilometers of unused waterfront space and further refined by the depth of the adjacent body of water (river, bay or ocean) — even small classes of commercial ships require twelve meters of depth to accommodate their hull’s draft. When applied to the world’s twenty largest urban agglomerations, this method reveals that only in Mexico City is the adaptive reuse of tankers and bulk carriers for residential and commercial purposes impossible. More commonly, the case is similar to that of New York City where more than 600 potential sites exist in the Hudson, Harlem and East Rivers as well as Jamaica and Pelham Bay with capacity enough for one or many classes of large commercial ships.


9 of the world’s 10 largest cities have feasible sites for Harbor/Harbor

### Ship Supply

Ship breaking is the demolition of large ships and recycling of scrap materials, primarily steel. The ship breaking industry is centered principally in Bangladesh, China, India and Pakistan. [harbor/harbor] proposes to eliminate the middle step in the recycling process, modifying the function of the ship breaking industry from one of demolition and scrapping to one concentrated on the preparation, retrofitting and completion of mixed-use, inhabitable ships ready for new permanent locations at the waterfronts global metropolitan areas.

![Ship supply diagram](ULCC 320 19,200 15,600 12,420 10,800 80,840 32,416 24,747 20,963 13,815 52,416 20,963 13,815)

![Existing hectares of land consumed to create new public & private spaces](NEW PUBLIC SPACE NEW RESIDENTIAL SPACE NEW COMMERCIAL SPACE)

![Area in square meters](15,600 12,420 10,800 8,280 6,540 5,590 4,100 3,042 2,650 1,381)
The steep, frictionless landscape of finance which readily multiplies quantities into the realm of trillions and beyond has previously been a domain reserved for its own kind, separated from the contoured, softer public landscape. Through the global financial crisis the damn which separates these two worlds has catastrophically failed, washing over the public with a deluge of numbers intractable to the collective imagination, and leaving the government with the equally daunting tasks of explaining and mopping it up.

03. Repurposing for Energy Production

Water-rich cities are incorporating tidal power into their energy production programs, opting for this renewable strategy as its reliability far exceeds that of solar or wind. Ships, with their propeller-driveshaft-turbine propulsion systems can realistically be repurposed to function as tidal power plants.

The topside decks of the largest commercial ships are vast, approaching 20,000 m², enough space for a combination of 5,000 solar panels and 12 high-production wind turbines.

Altering the Section

Commercial bulk carriers and tanker ships are designed with maximum efficiency and singularity of function as an imperative. The redesigned ship still strives for maximum efficiency, spatially and regarding energy usage; however, it will perform many functions simultaneously and be filled with a mix of programmatic spaces.
Recovery.gov is an attempt to make intelligible this immense clean-up effort, a website offered by the government to make publicly transparent the spending of the nearly trillion dollar Recovery Act. This site, a compendium of charts, graphs and graphics offers accountability numerically, but it also obfuscates, giving a sense of transparency while painting a picture too large to focus on. We previously launched a competition called Imagining Recovery which calls upon designers of all types to produce an ‘experiential image’ of recovery for the public, supplementing and challenging the stacks of data.

04. Repurposing for Housing

The section of a standard tanker is comprised of two large dividing walls creating three equally-sized chambers. To achieve livable housing space, steel floor plates are added for story divisions. The plates are split, creating a four-floor open gallery with each housing unit enjoying interior terraces. Internal zones of interaction emerge along with visual dialogue between apartments on either side of the void. Natural light is brought in from above through a linear skylight cut into the topside deck and from the side through new wall openings above the waterline that permit access to exterior balconies.
05. Repurposing for Mixed-Use

Four more floor plates are placed below the apartments, descending from the waterline. These open, submarine spaces continue to achieve natural light, filtered through two layers of skylights: first, the continuous linear cut in the topside surface and, second, through punctures in the indoor public surface located four floors below topside. Between 13,800 m² and 52,400 m² depending on ship type are available for retail, offices, or any number of entertainment purposes.
The discursive reflection of this symmetric proposal offers the image as the discursive infrastructure most in need of a refurbishment. To this end, we offer the idea of the 'significant image'. In Greek antiquity, a dream was significant if it possessed some objective character while evoking a real place, partially removing it from the altogether subjective realm of the dreamer and making it, for the Greeks, an object itself. Simultaneously infrastructure and object, partly subjective and objective, the significant image can similarly circulate, populating the collective imagination.

06. Repurposing for Public Space

Outdoor public space will be placed on the topside deck alongside solar panels and wind turbines. Pipelines and container cranes will be replaced with a variety of gathering spaces, entertainment facilities and recreational areas. Blank surfaces with areas ranging from 5,600 m² to 19,200 m² depending on ship class, the topside deck can assume a new image city-renowned for its communal interaction and diverse programmatic possibilities:

Athletic fields, outdoor movie theaters, natural amphitheaters community gardens, greenhouses, urban agricultural fields, wildlife reserves, landscaped parks, new-growth forests.
The significant image harkens back to a not-so-distant history of 1960s visionary practice, an attempt to revive the idea of a regulatory system wherein images and statistics keep one another in check. What the significant image denies from this period is the search for patterns, universal truths in statistics which could be codified in an image, circumventing the practice of futurology. Instead of imaging the data, the image operates as a separate medium of representation with a separate task, partly its own trajectory, and partly to provide friction to challenge the statistics.

In retrofitting Habor/ Harbor for this competition, a number of ideas and images were slashed, updated and augmented to respond to the landscape of recovery. Where the symmetry between the discursive and the design is bridged is in the image below, a significant image we have produced to give a post-crash representation to a pre-crash project.

07. Significant Image