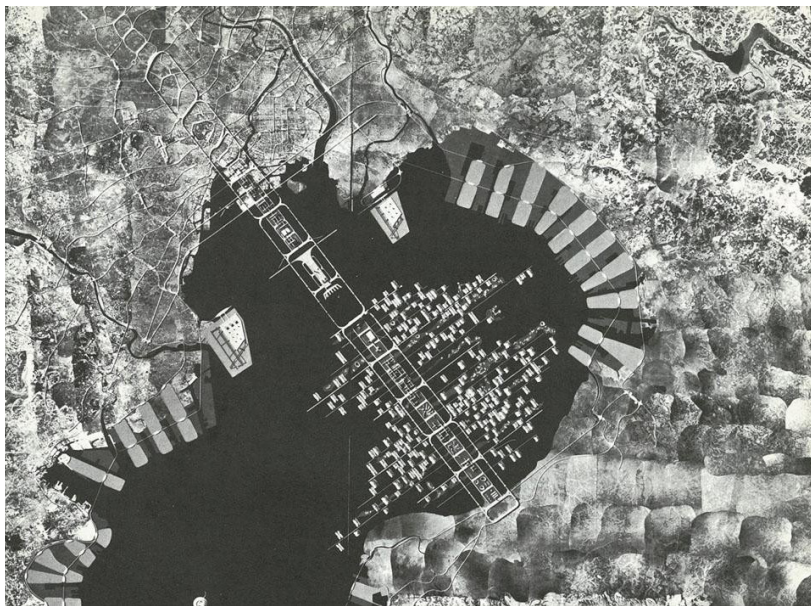


Yona Friedman, Villa Spatale, Perspective, 1958-1959.⁴



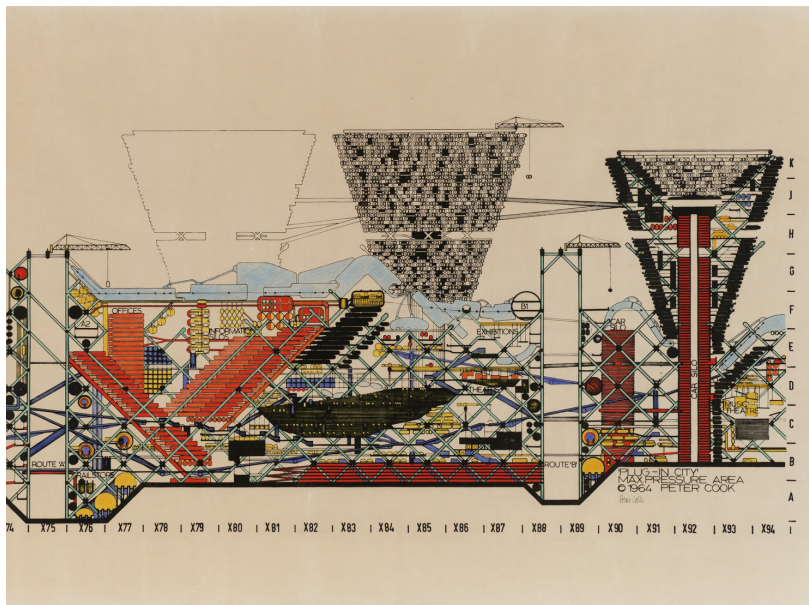
Kenzo Tange, A Plan for Tokyo 1960, 1961. Photo Courtesy: Tange Associates.⁵

Megastructures of the Future

Instructor: Joanna Grant

Curved, bulbous objects juxtaposed by lines, two categories I believed were opposites and was interested in investigating due to their dissimilarities. I ventured throughout Los Angeles - visiting craft stores, dollar stores, street markets, and more - collecting items that fit the respective parameters. The first step focused on representation, referencing readings by Gilles Deleuze and the *Simulacrum*.¹ Through photography as the medium, I created two new collections, maintaining a strict and constant composition for the photographs in order to assign anonymity to all the items in the collections. The curved objects were framed with the same forced perspective while the lines were photographed orthographically. The purpose or function of the objects did not matter, only the form was important for this investigation.

The next step of the investigation was to re-represent the two sets in 3D in order to explore their interactions in digital space. The program of choice was Unity, a 3D real-time engine, in order to simulate gravity and physics, components unavailable in traditional 3D modeling software. In Unity, I created multiple scenes exploring the different types of interactions between curved objects and lines. However, I first began by creating scenes exploring objects individually, utilizing scale to provide new perspectives on the items. The first interactive scene looked at lines supporting objects in the form of a grid. This investigation referenced the 1960s, specifically Yona Friedman's *Villa Spatale* and *Metabolist Architecture*. Friedman states that the grid in his *Villa Spatale* acts merely as a support structure that allows any freeform objects to exist, fully at the discretion of the user. Here, agency is taken away from the architect and given to the inhabitant, an idea that was unfavored by many of his critics.² The second scene explored how lines could become dynamic supports for objects through changes in scale. Rather than a static grid, what would happen if a singular line supported the object. I created "slides," derived from the formal qualities of each line, that acted as a vessel for the objects. The third scene explored how objects could support lines similar to a pin cushion, impaling the object with lines. Unlike lack of effect of the supporting grid on the objects, the supporting object is afforded total agency over the lines as they are affected by every curve of the object.



Peter Cook, Plug-in City: Maximum Pressure Area (Section). 1964. Photo Courtesy: MoMA⁶

The third step involved the translation from digital to physical. I began to look at how weight could drive entropy in this 1:1 mockup model. I cast the original curved objects with Rockite, creating yet again a new set. The new, cast set of objects was then connected to cantilevered threaded rods with T-nuts to cause bending in the rods. The weight becomes the driving factor in turning the straight rods into bent rods. Within the model existed instances of lines supporting object, object supporting line, and line supporting object supporting line supporting object. Additionally, ideas of representation is present through casting and is juxtaposed with the existence of the “original” on the other side of the wall. This model is the physical manifestation of the various investigations conducted up to this point, a mockup that experiments with and conglomerates various ideas.

The final step was the translation of the 1:1 mockup to a scaled architectural project. I was interested speculative architecture of the future. If the world continued its course, what could happen? With precedents including Villa Spatale, Archigram, and the Metabolists, I sought to create a megastructure that was its own city. The system for this megastructure is reminiscent of Peter Cook’s

Plug-in City. A megastructure that sees constant change of temporal parts that are constantly being moved and replaced based on the needs of the structure's inhabitants.³ However, my megastructure still grapples with issues of society such as wealth disparity, speculating into a non-ideal future.

The 1960s was a time of rapid urbanization and change, leading to many speculative architectural proposals such as the Plug-in city or a number of the unrealized Metabolist designs. I believe urbanism will again make rapid changes due to technology and other unforeseen circumstances and this was an exercise in designing for the unknown. To design and propose something that is exaggerated and impossible but produces underlying ideas that are entirely possible.

1. Deleuze, Gilles, and Rosalind Krauss. "Plato and the Simulacrum." *October*, vol. 27, 1983, pp. 45–56. JSTOR, www.jstor.org/stable/778495.
2. Belogolovsky, Vladimir. "Interview with Yona Friedman: 'Imagine, Having Improvised Volumes 'Floating' In Space, Like Balloons.'" *ArchDaily*, ArchDaily, 27 Jan. 2016, www.archdaily.com/781065/interview-with-yona-friedman-imagine-having-improvised-volumes-floating-in-space-like-balloons.
3. Merin, Gili. "AD Classics: The Plug-In City / Peter Cook, Archigram." *ArchDaily*, ArchDaily, 10 July 2013, www.archdaily.com/399329/ad-classics-the-plug-in-city-peter-cook-archigram.
4. Friedman, Yona. "Villa Spatale, Perspective." 1959.
5. Tange, Kenzo. "A Plan for Tokyo 1960." 1961.
6. Cook, Peter. "Plug-in City: Maximum Pressure Area (Section)." 1964