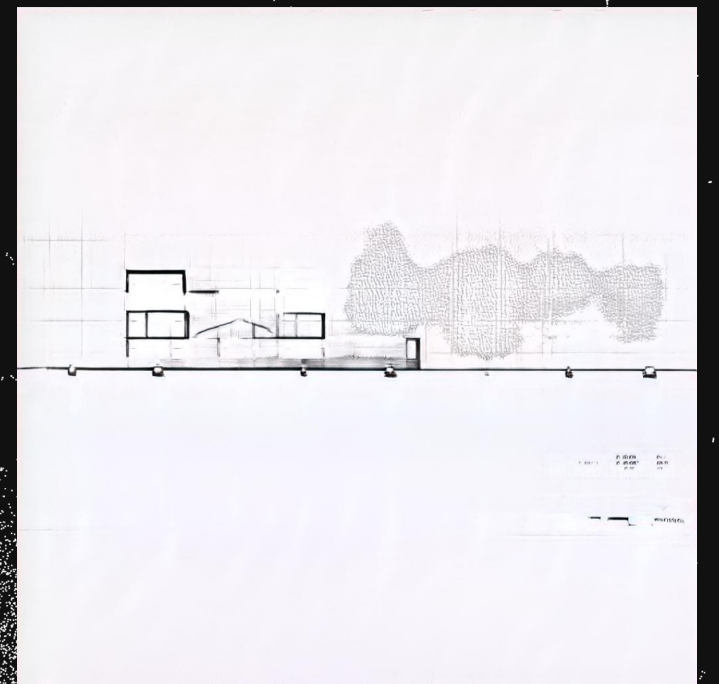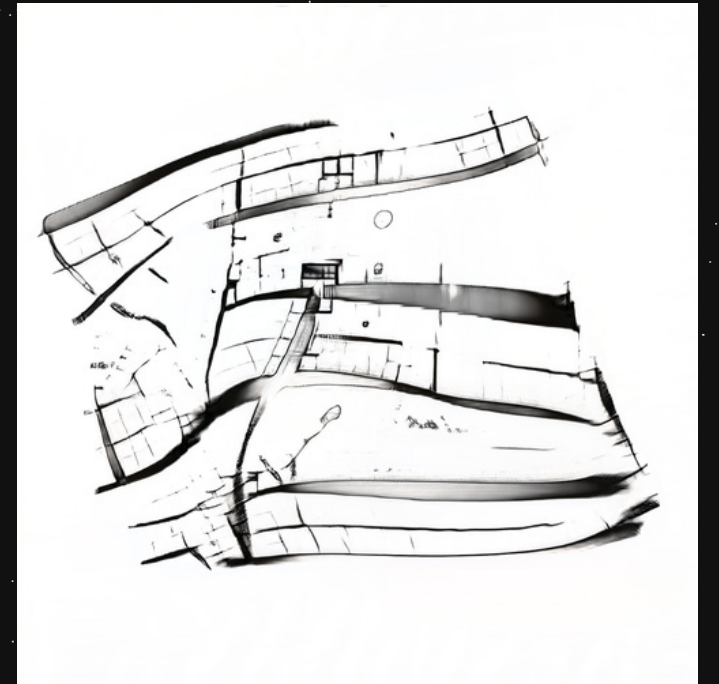# JESSE BASSETT

2021 Design Portfolio

DRAW BY NUMBER
[THESIS]

'Draw By Number' uses machine learning to create architectural projects. Machine learning allows us to generate representational images and texts in new ways, based not on projections or formulaic operations, but rather on a statistical relationship created by a data set consisting of thousands of architectural projects. This approach allows design bias to be investigated and controlled in new ways. My Thesis consists of two parts: first, it assembles a data set of architectural drawings; second, it creates tools for use in design processes.

DRAW BY NUMBER
[THESIS]

The data set used in this project consists of 225,000 drawings scraped from architectural periodicals, primarily from ArchDaily. An interactive visualization is available through the QR code or my website jessebassett.net. Since every data set is subject to bias, drawing tools created from data sets will reflect these biases. For example, ArchDaily has publishing protocols that link each project drawing with a manufacturer to advertise products; it publishes more houses than any other program type, and most projects originate from the US, Europe, and China —very few are sited elsewhere.

I have created two drawing tools (available through the QR code): one generates a novel architectural drawing from a text caption. The other allows control over image properties across the most visually apparent changes in the dataset, such as drawing type, poche, rotation, and image size. This list can be expanded to any categorizable visual difference.
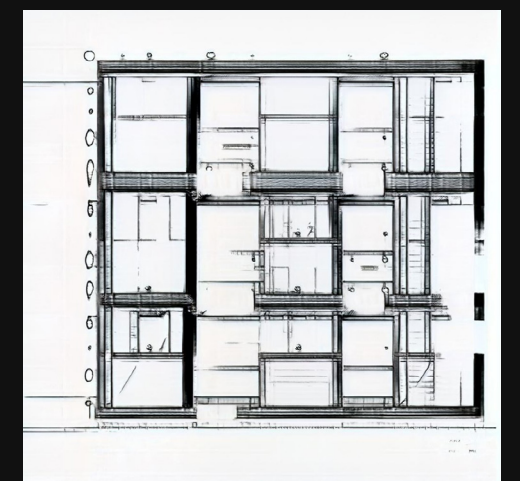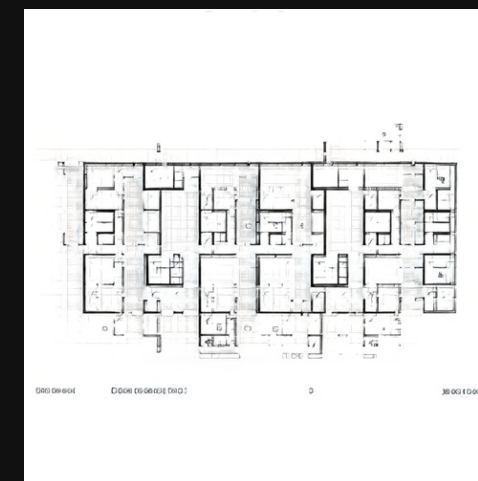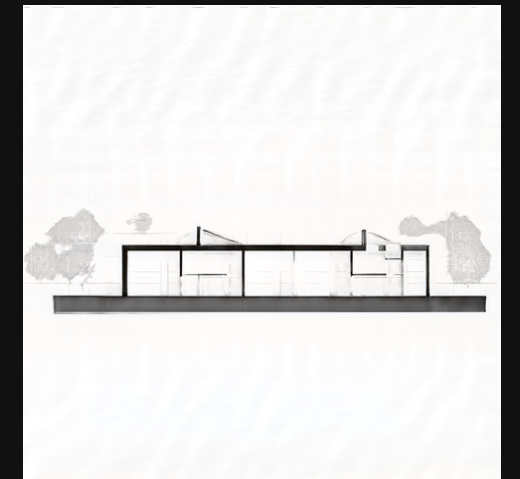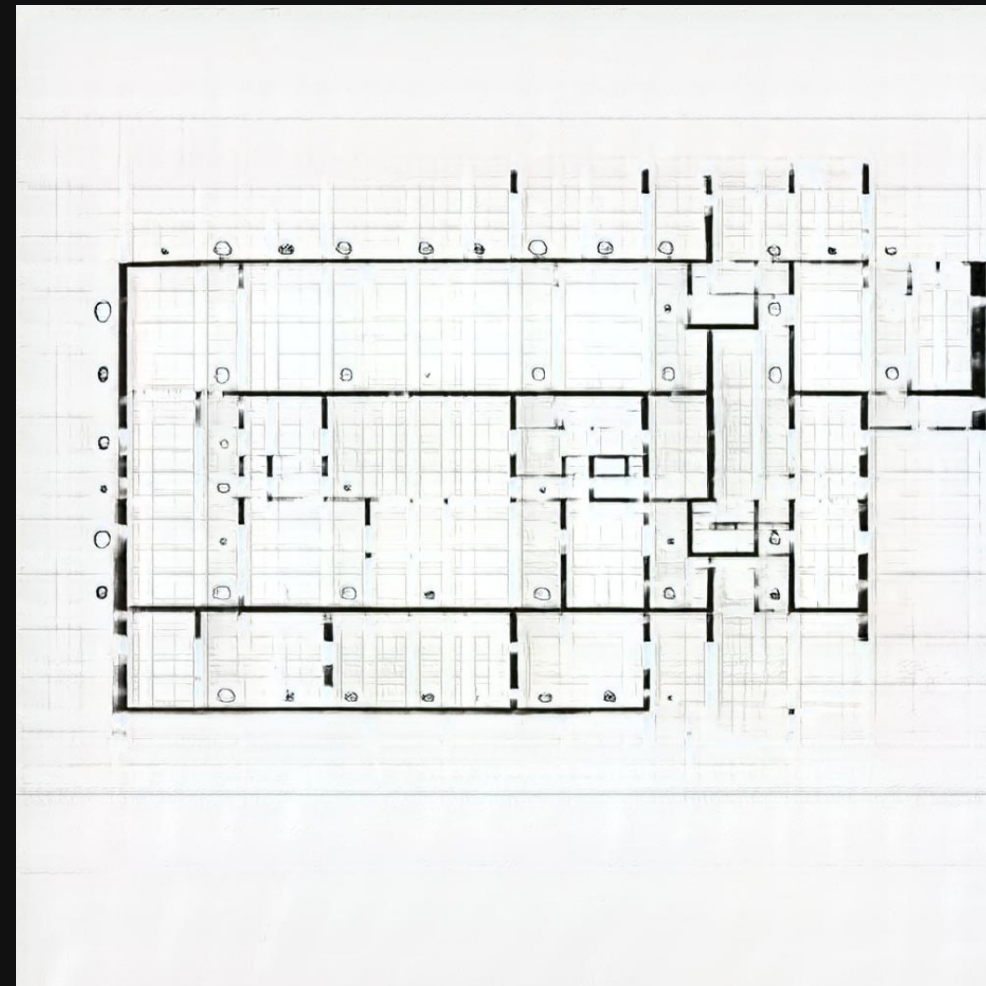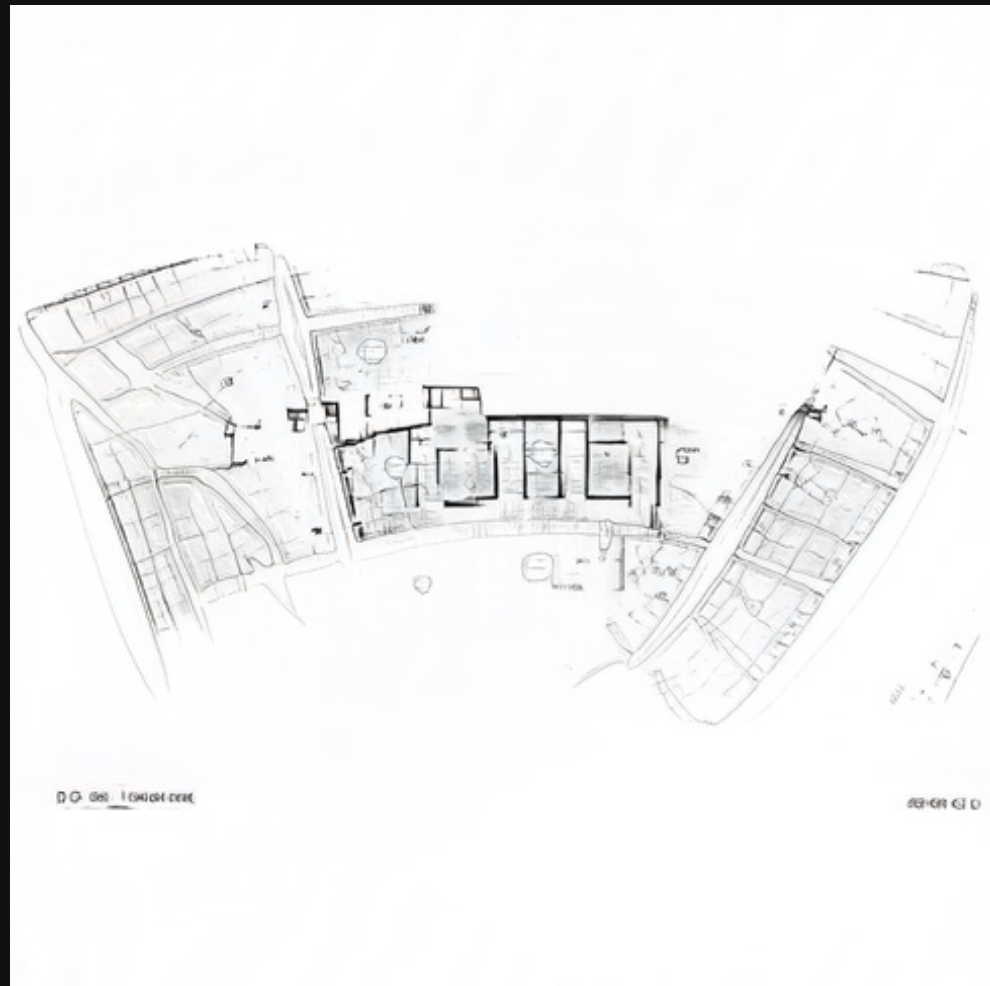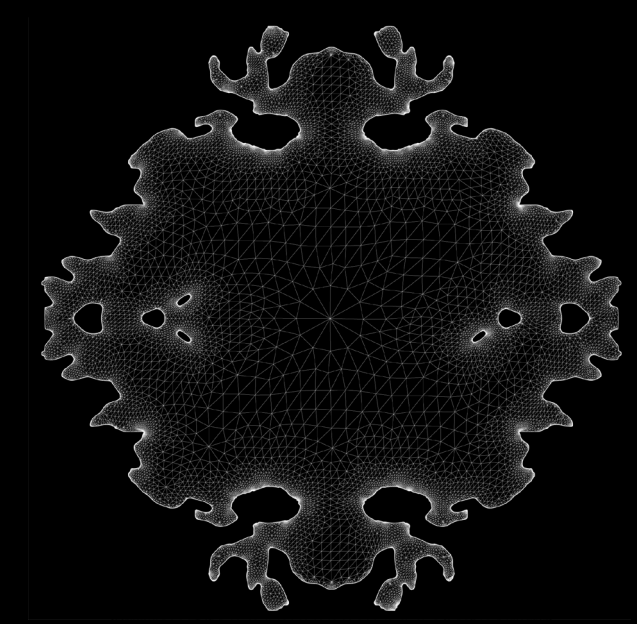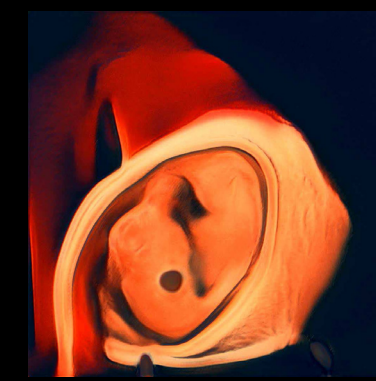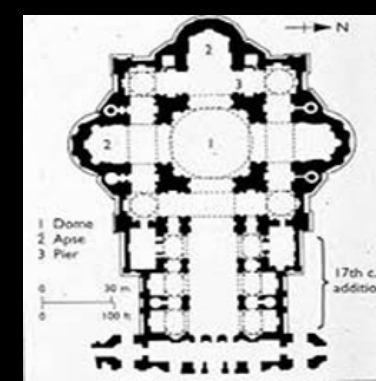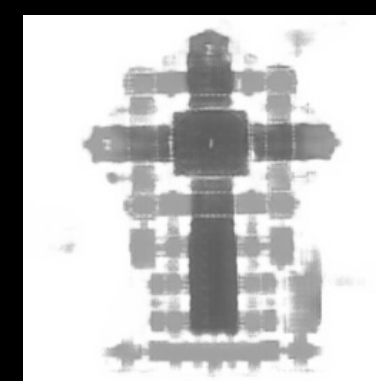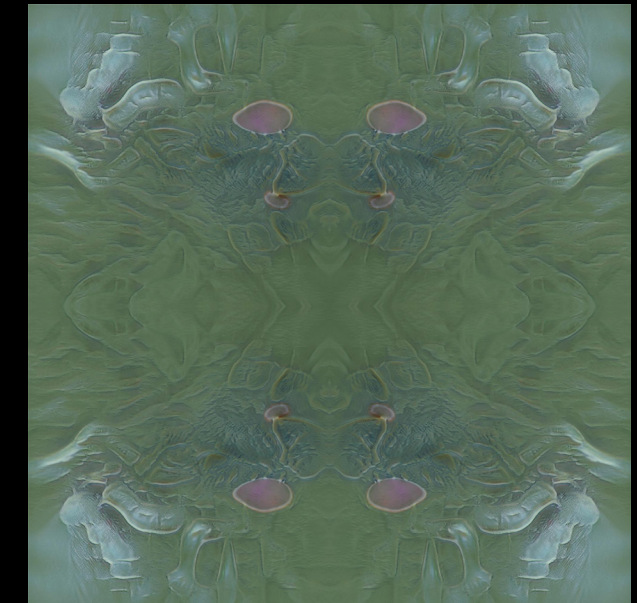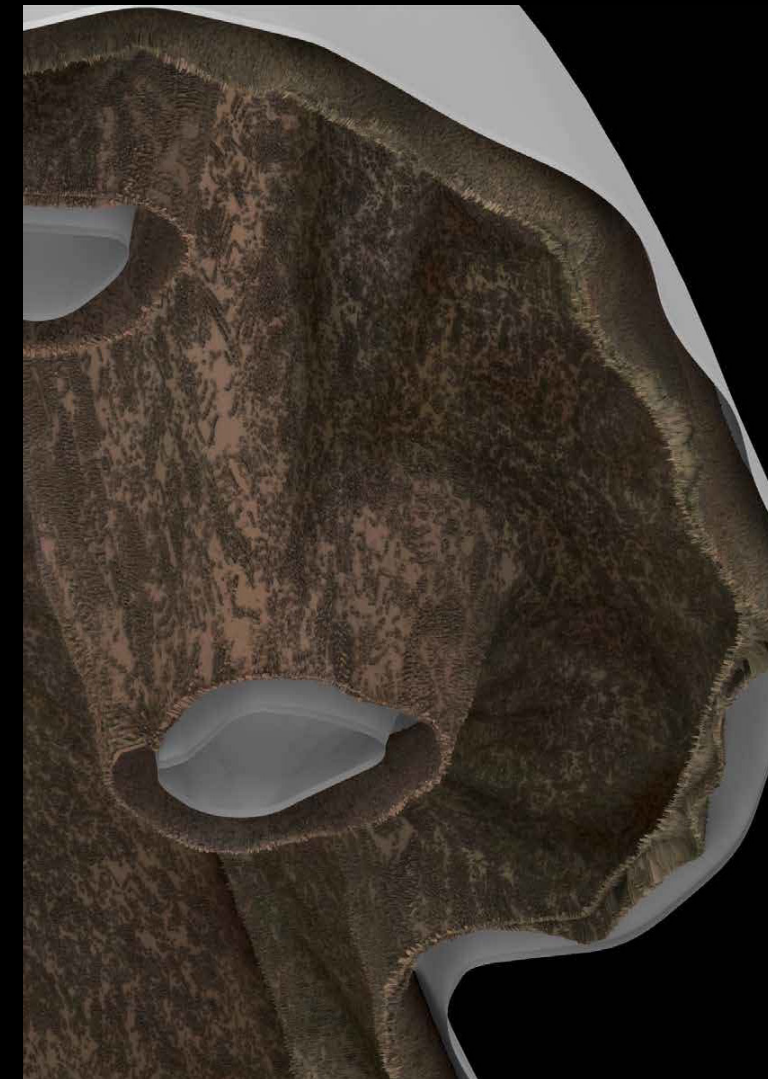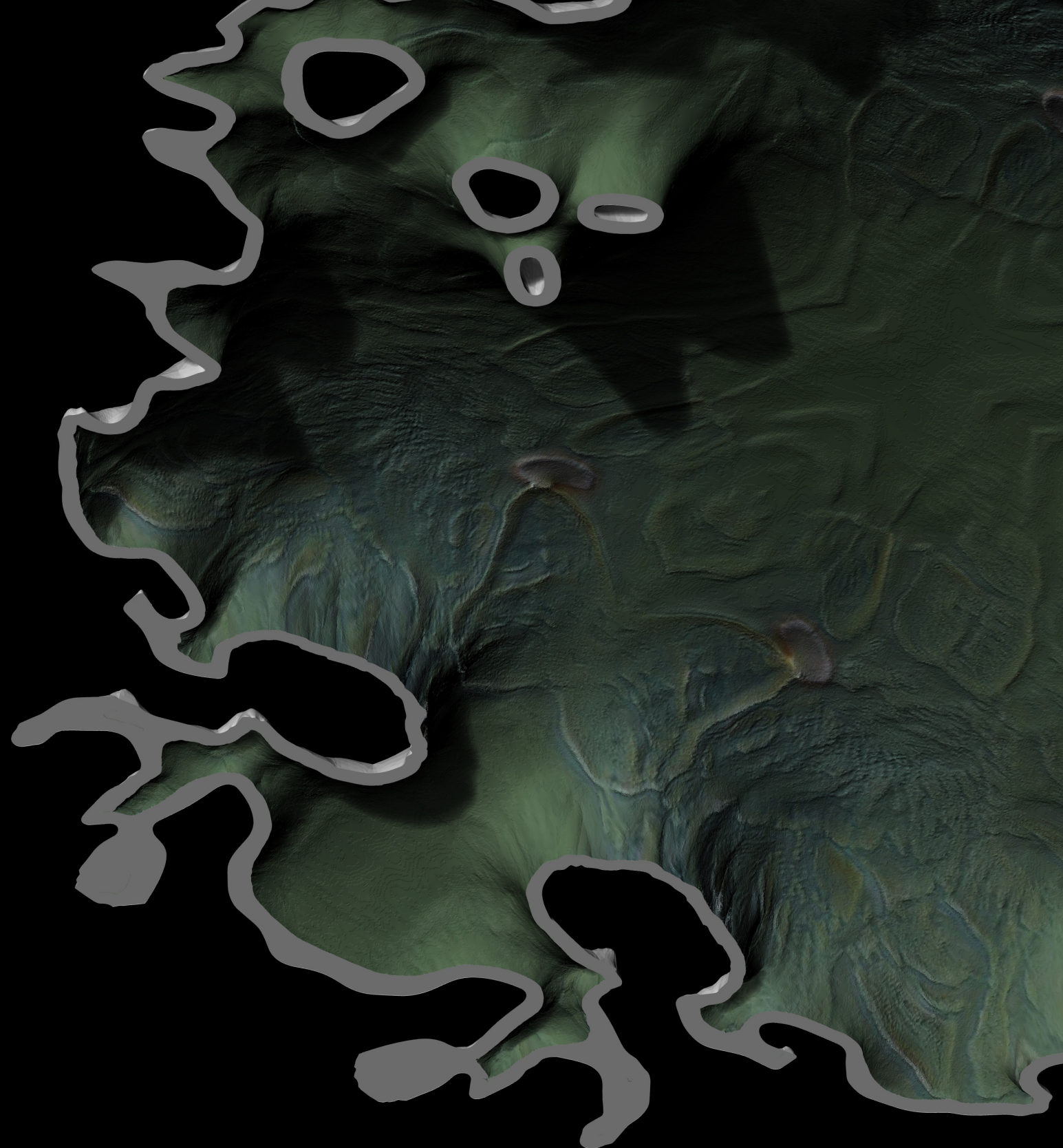
COLORING THE DOME
[COMPUTATIONAL]

Machine learning is used to bring color, texture, and depth to the interior of a dome. A machine learning algorithm can accurately create depth maps from architectural plans —but what happens when other types of images are used instead? Flowers, paintings, and landscapes change the interior space.

POINT CLOUD PROJECTIONS
[COMPUTATIONAL]

Projection has always been used by architects for drawing. Now with advances in Machine Learning we can project from higher unimaginal dimensions down to 2D. Can this new layer of complexity be used for any new meaningful representation?
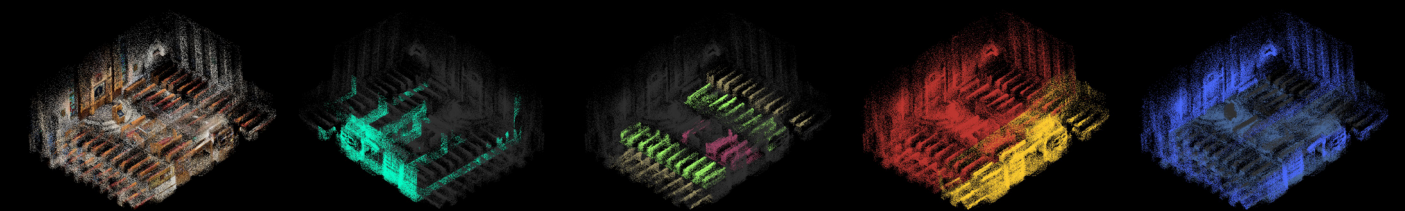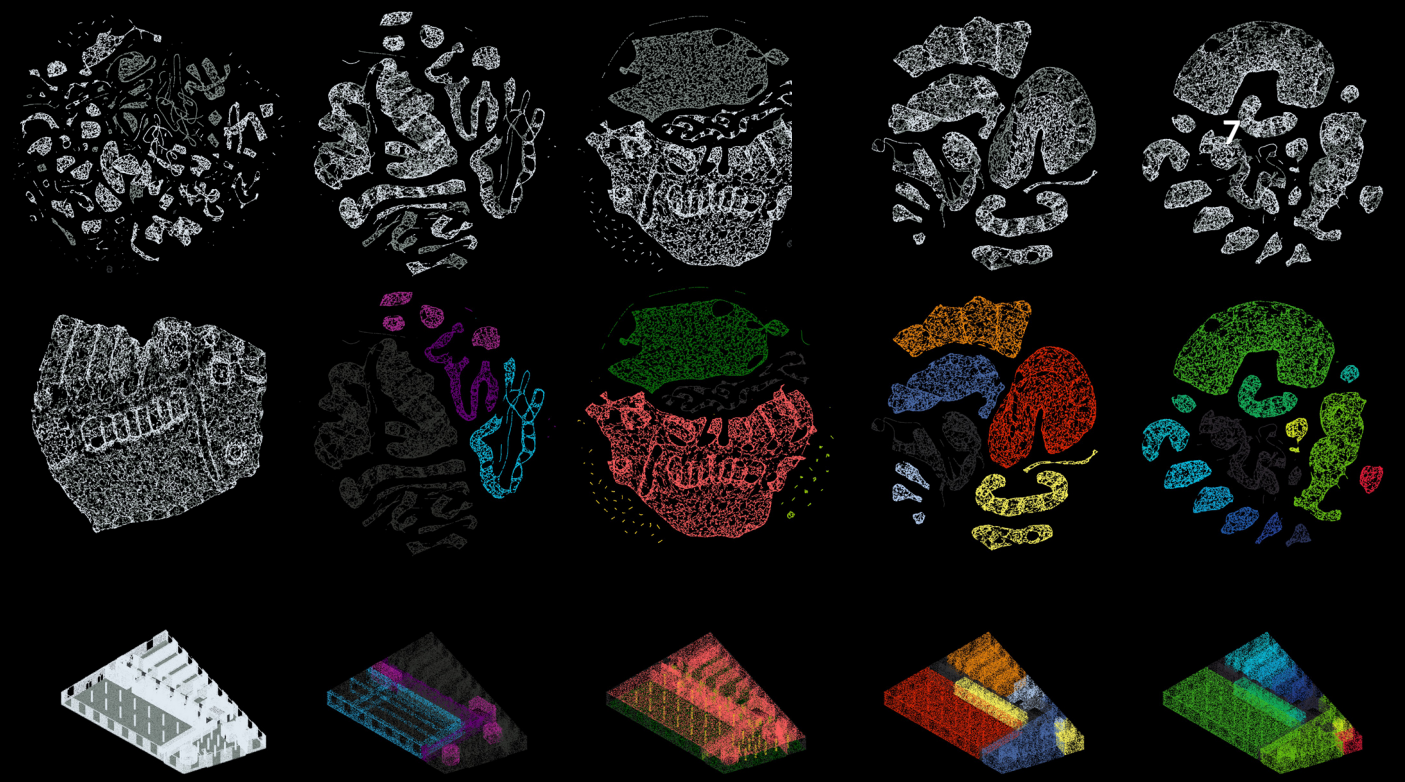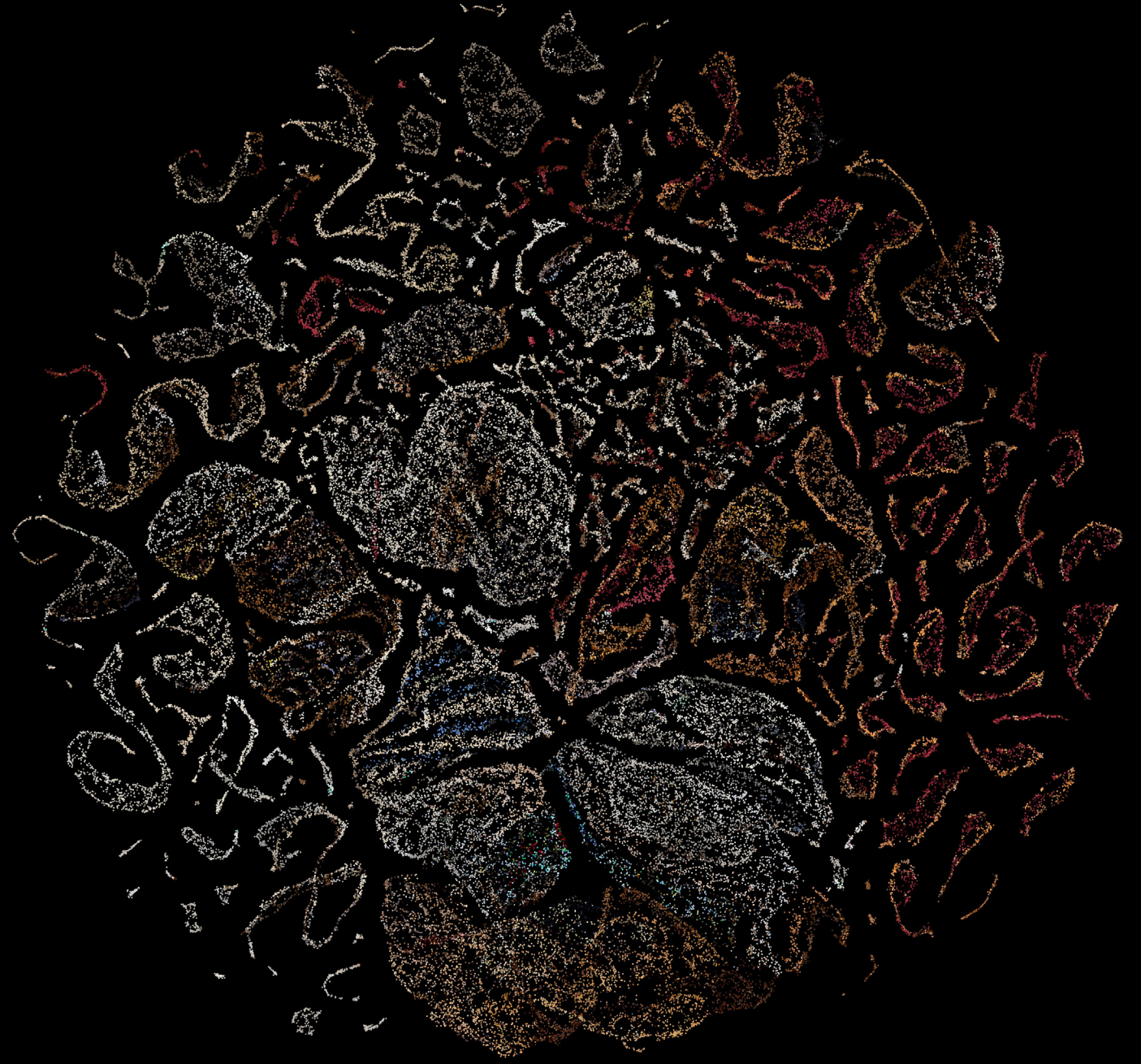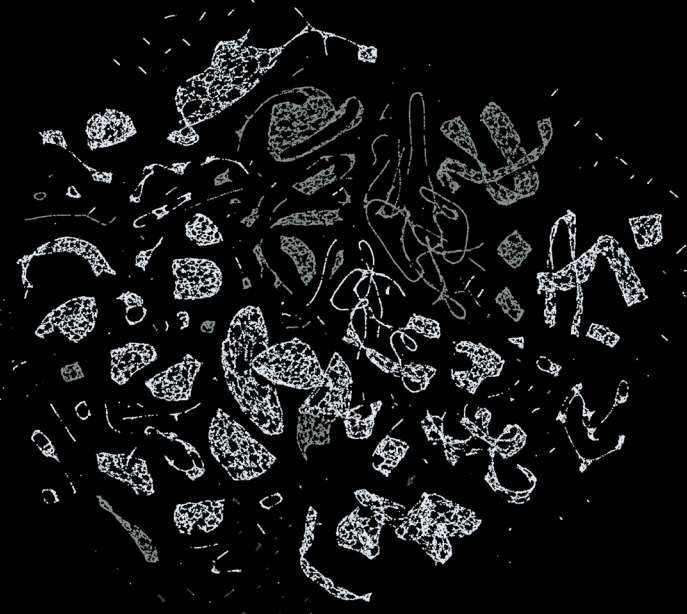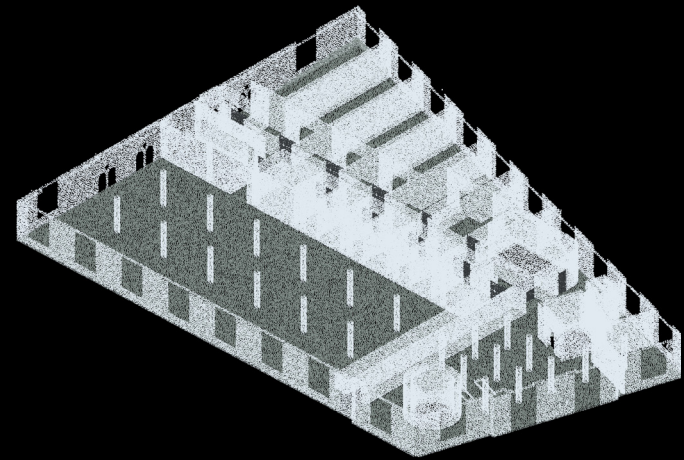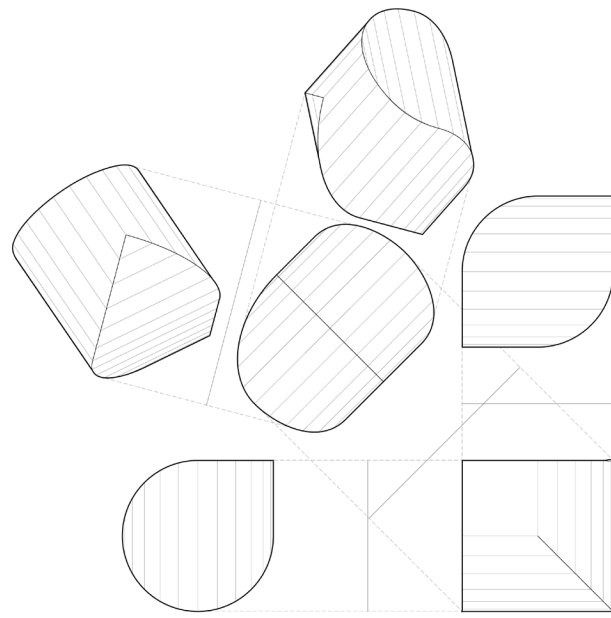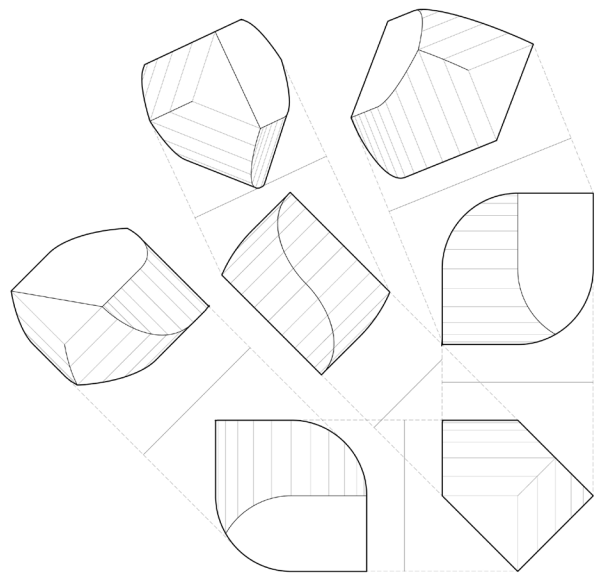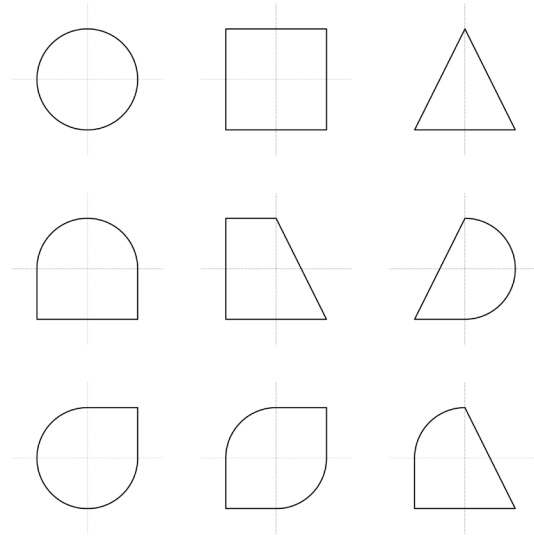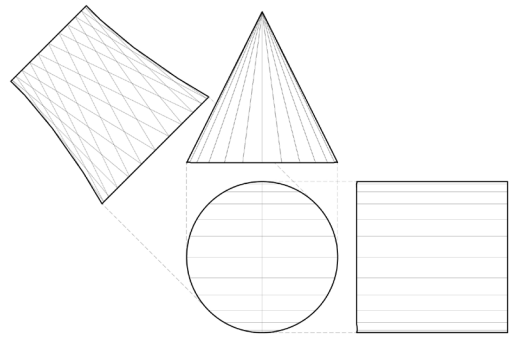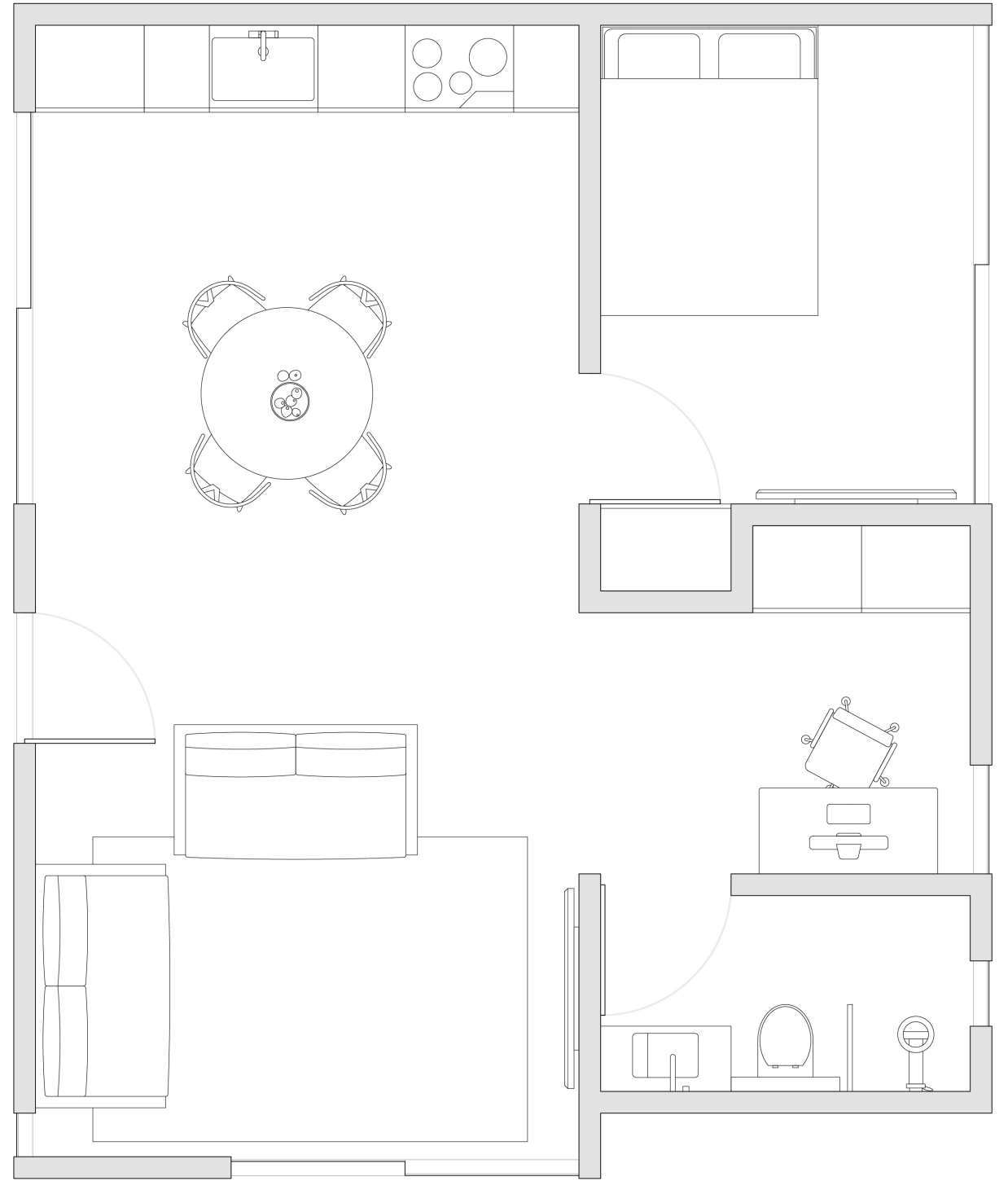
ONYMOUS FIGURES
[LMNOP - DESIGN]

Starting with primary views of primary
geometries, tension is created looking around
the corner as primary geometry fades into
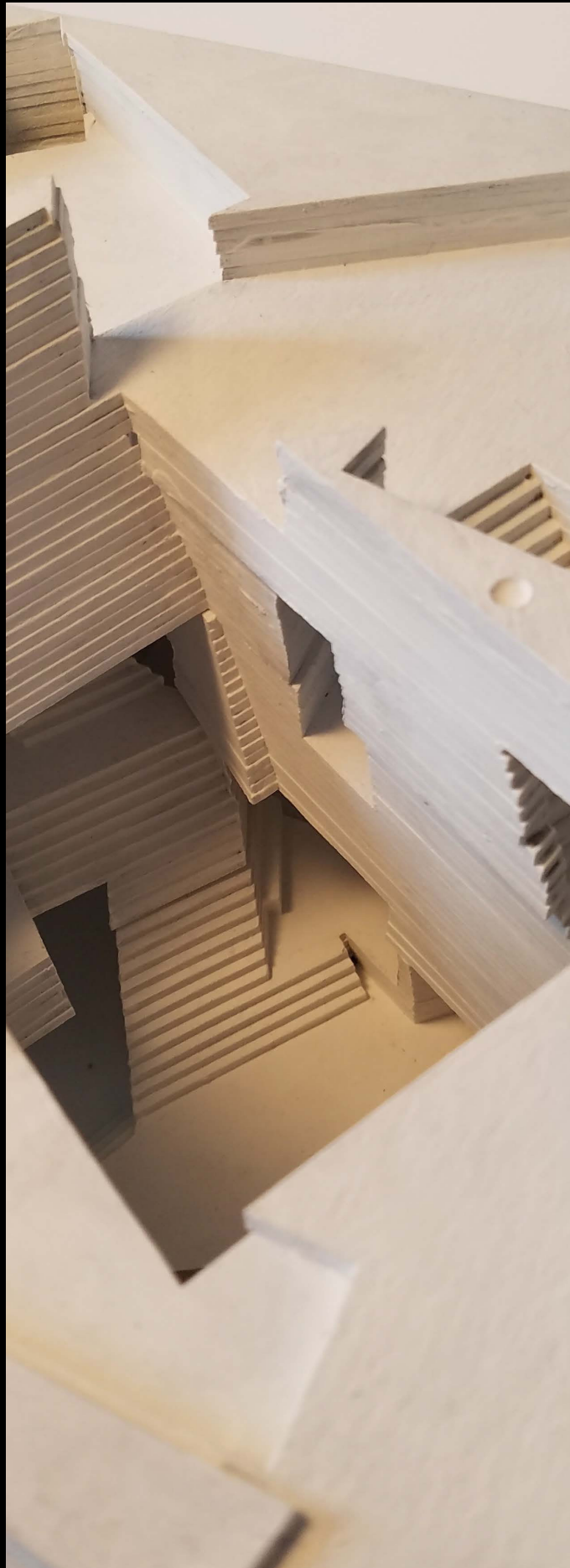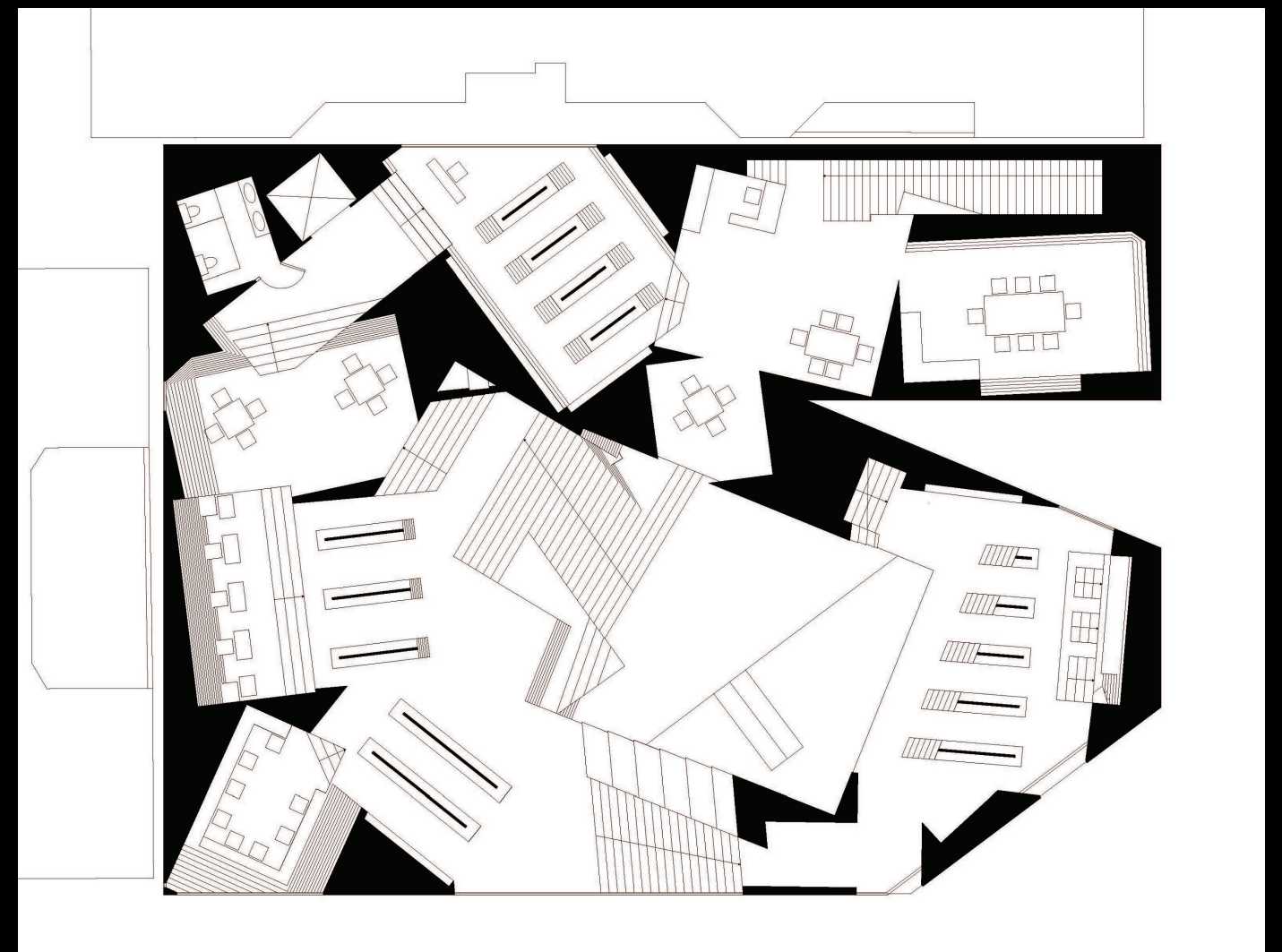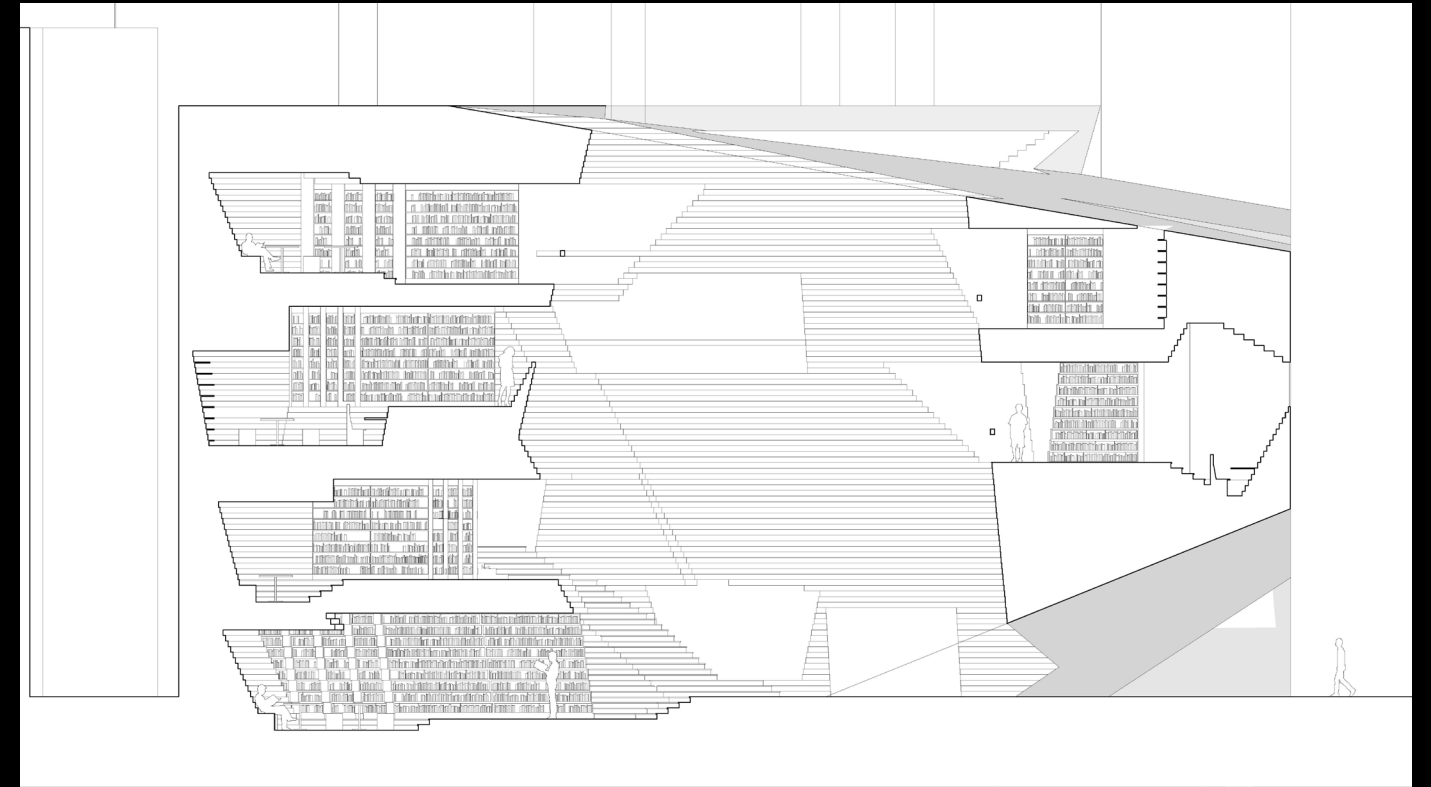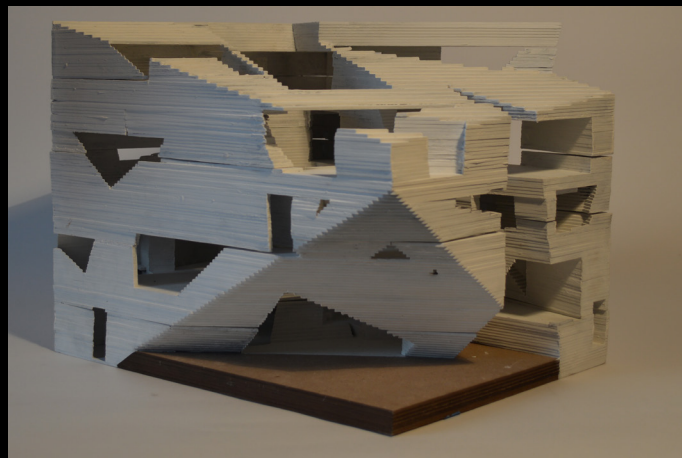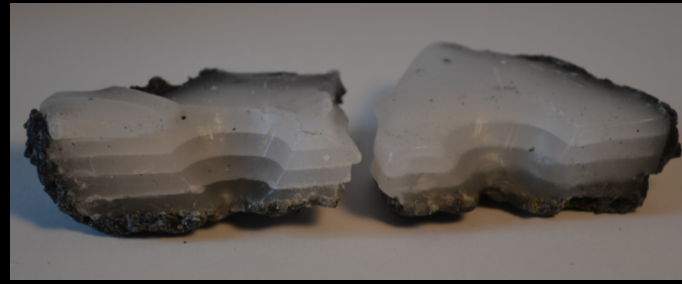unknown forms. Work done for LMNOP
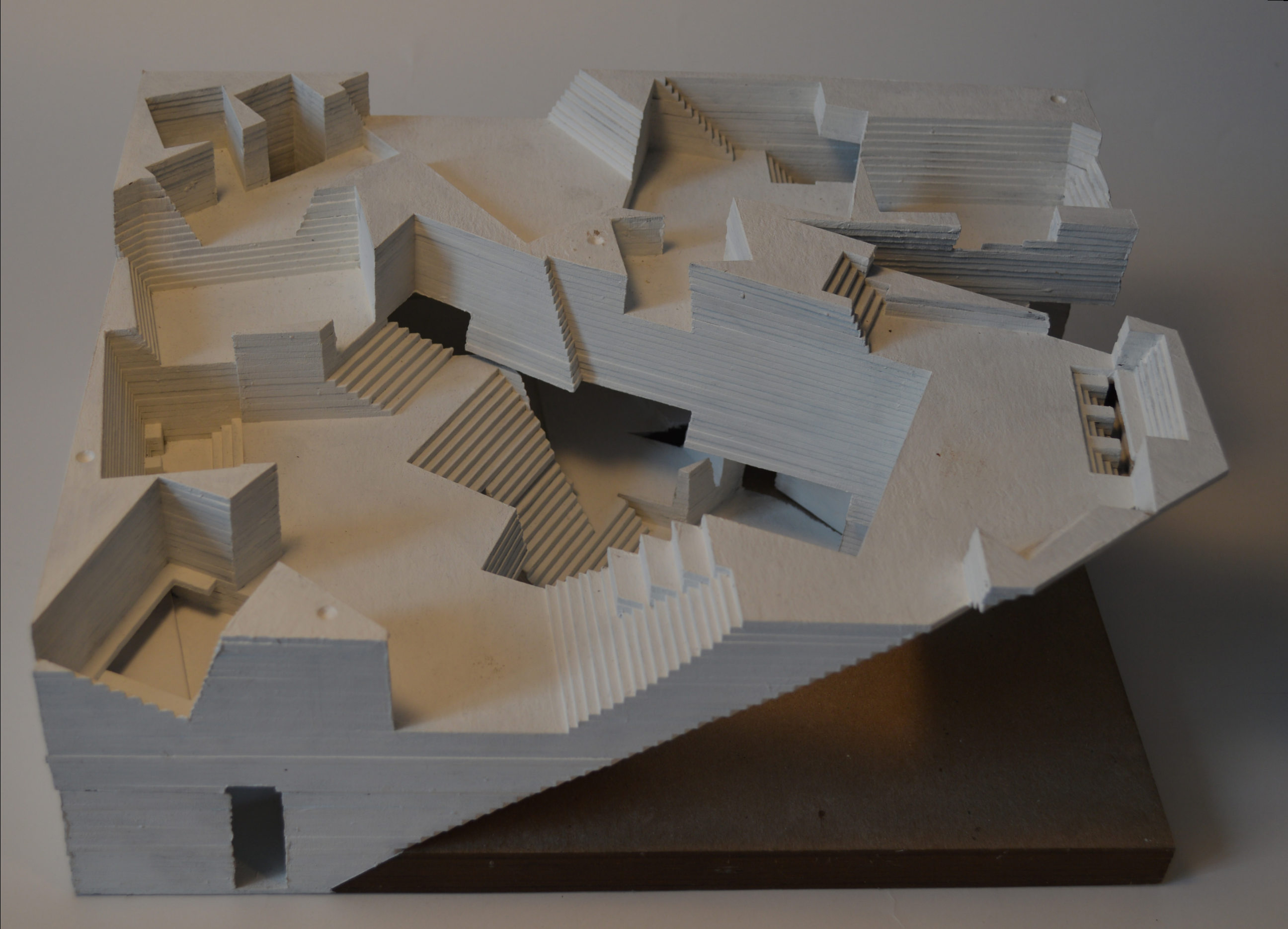

ADUs
[COVER -DESIGN]

ADU with studio, workspace and private
bedroom. Work done for Cover

± LIBRARY
[DESIGN]

Beginning with a material study of stone, sand, and wax, a tectonic relationship between stacking, carving ,and gluing was coaxed out. Carving out of slabs created different moments — stairs, seats, stacks, sitting, and seeing.

± **LIBRARY**
[DESIGN]

PUBLIC HOUSING
[DESIGN]

A mat building optimized to bring in the maximum amount of sunlight through the building to the courtyards below. Rooms are organized parametrically around light quality, privacy, and use. Decentralized courtyards create smaller communities around circulation hubs, with different public programs available as gradients of privacy vary courtyard to courtyard.
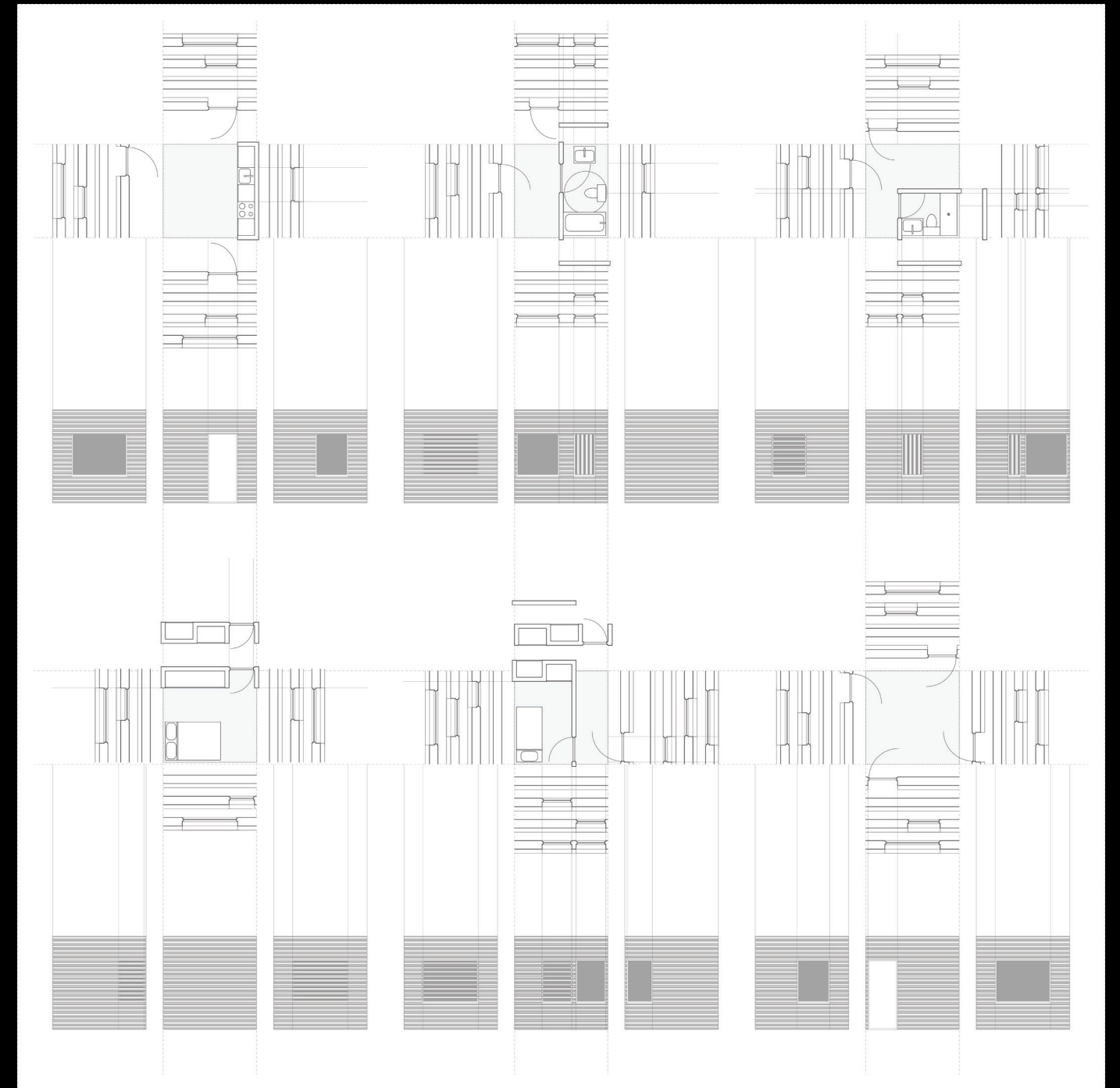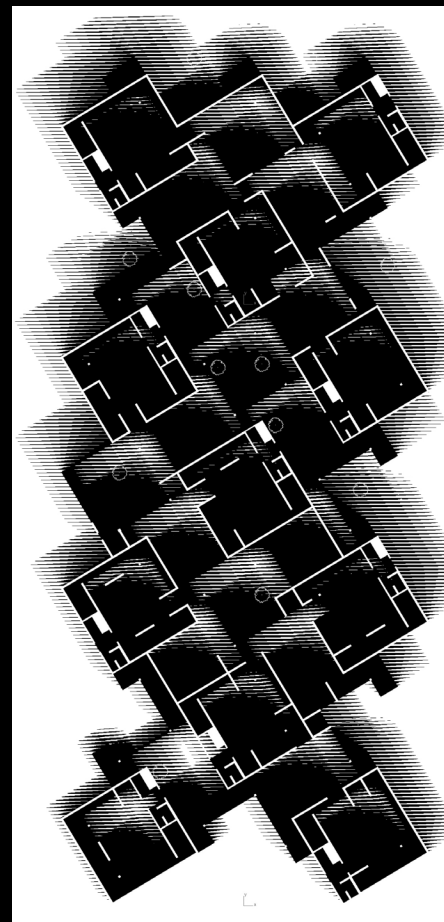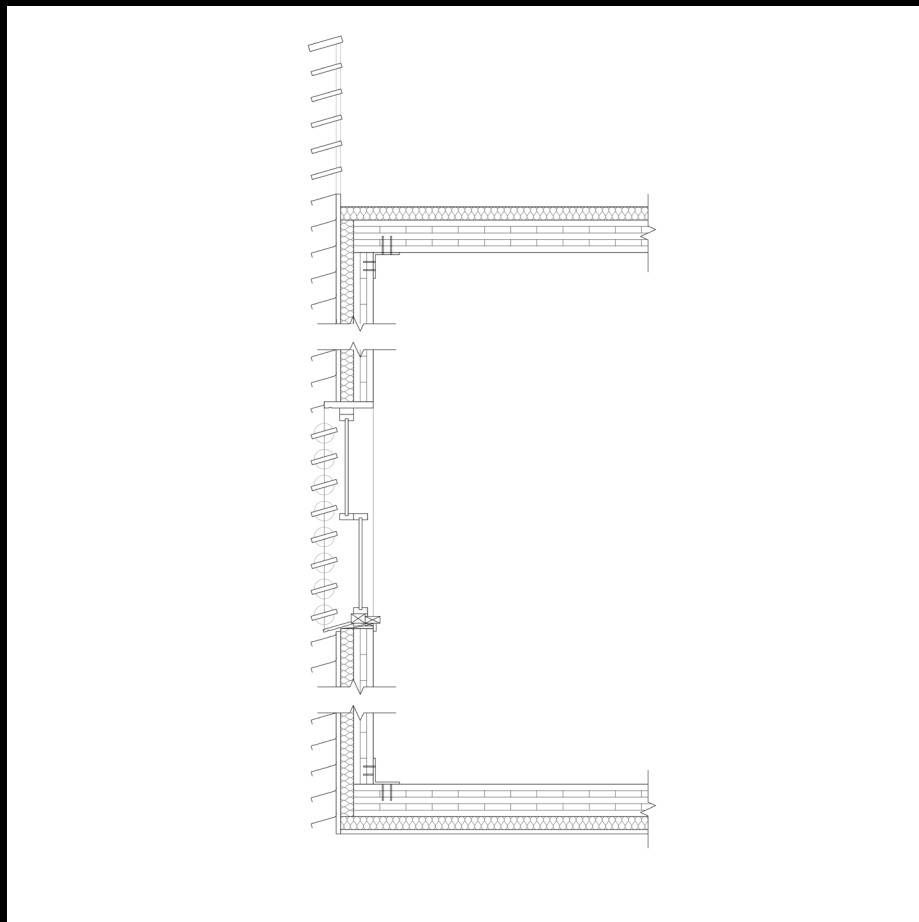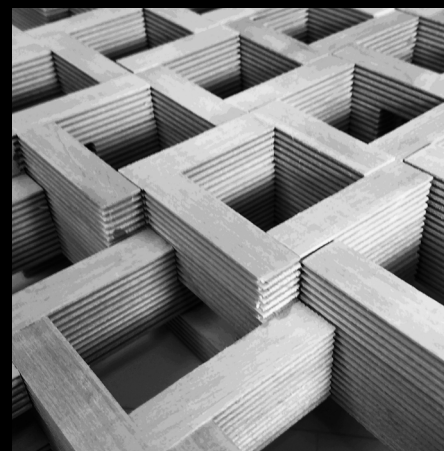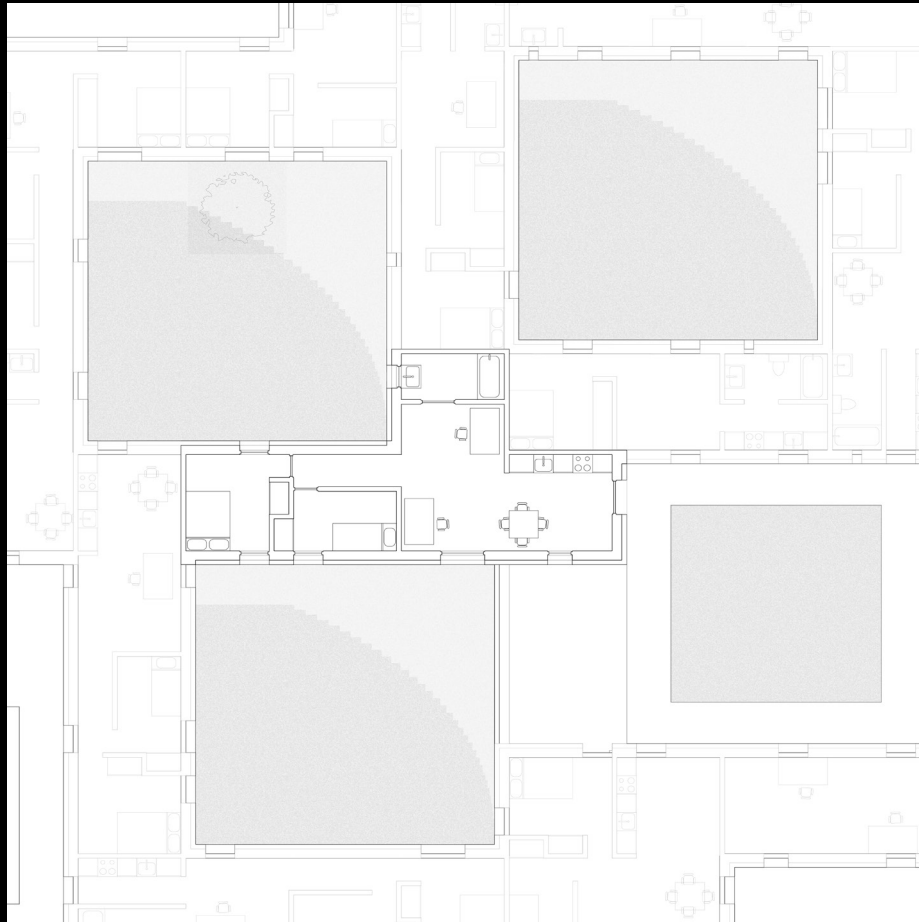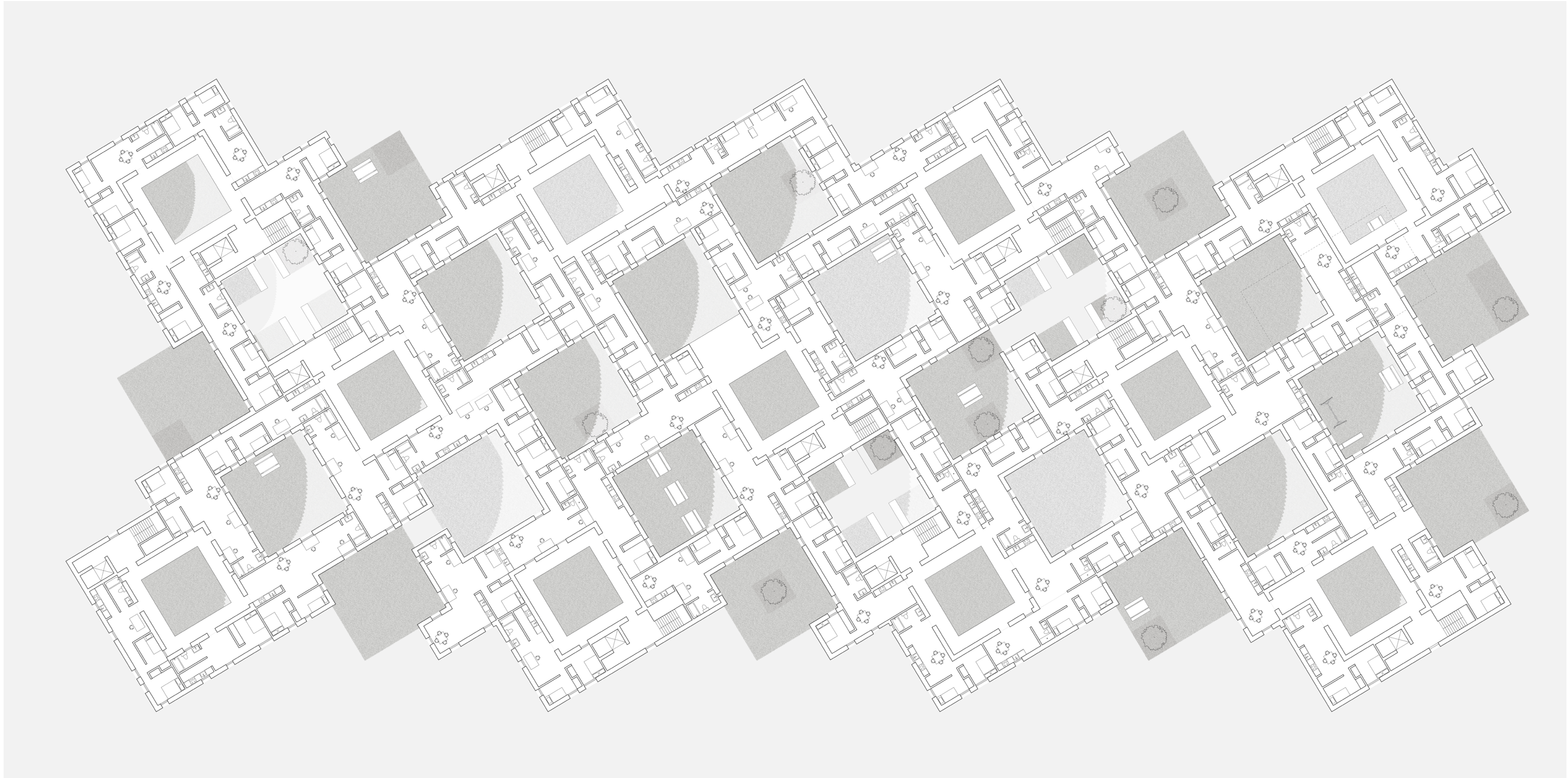
PUBLIC HOUSING
[DESIGN]
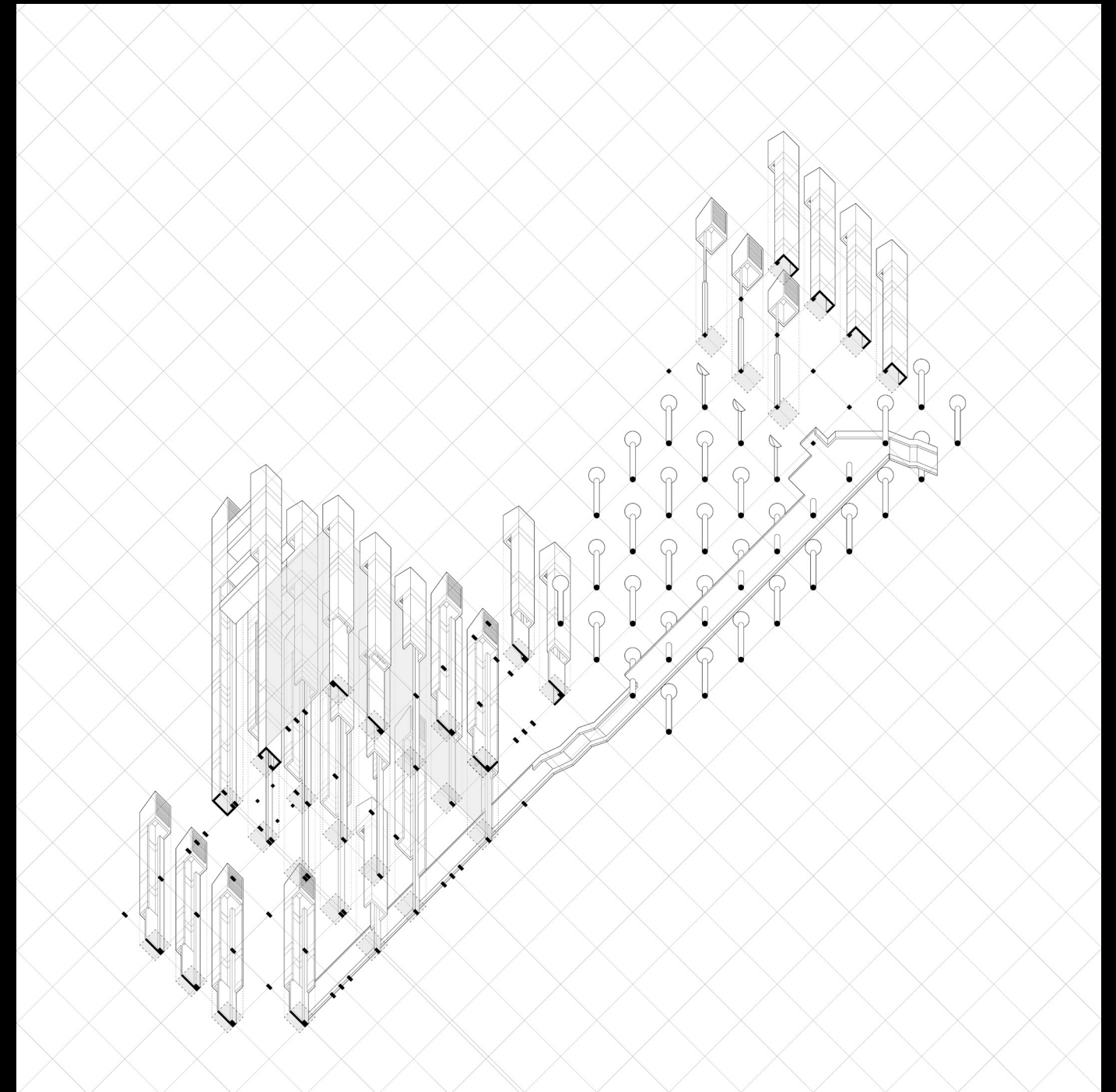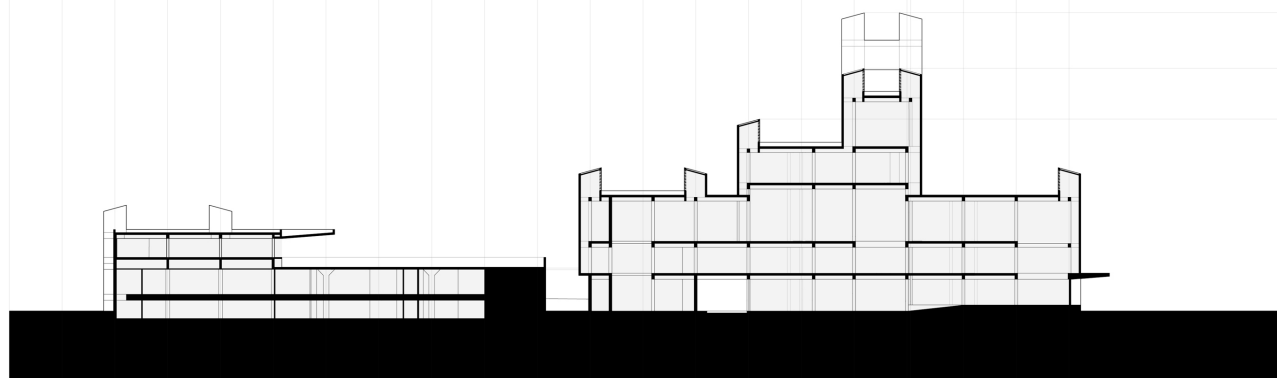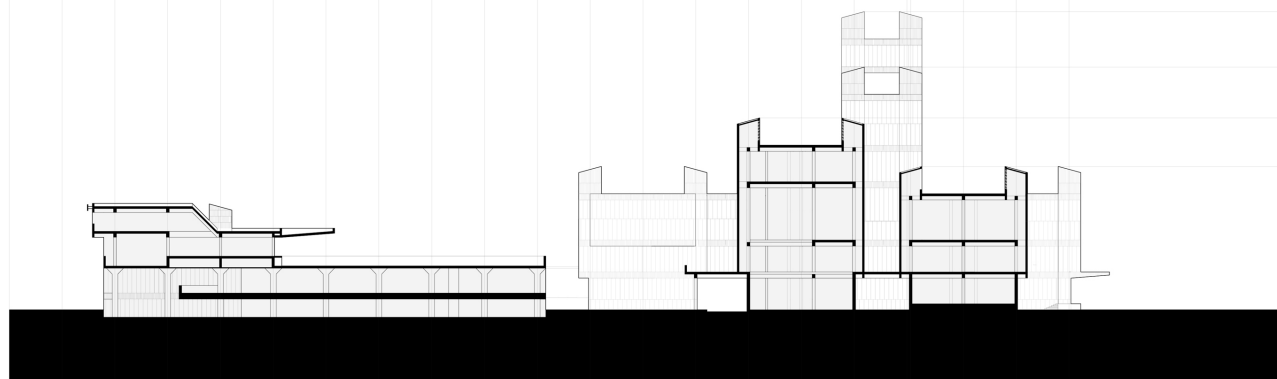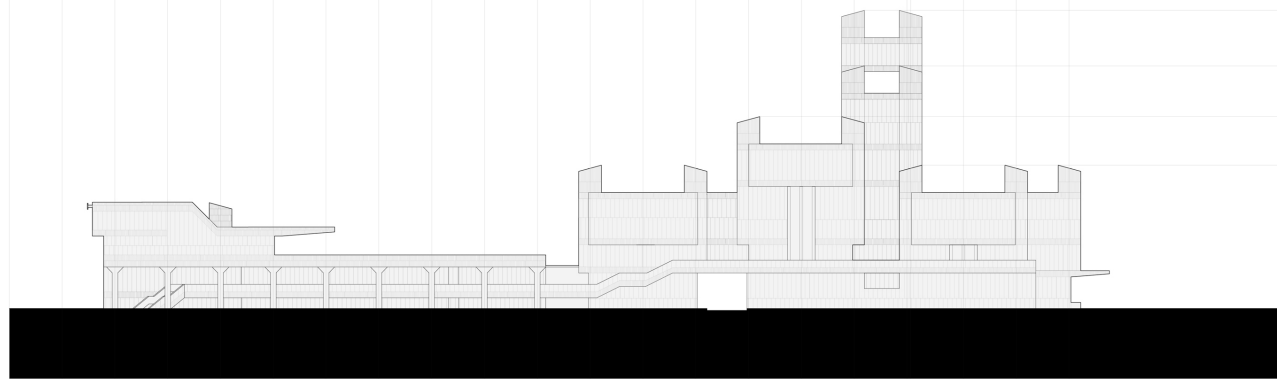
DUDHSAGAR DAIRY COMPLEX
[EXHIBITION- MoMA]

Model and drawings of Kanvinde's Dudhsagar Dairy Complex (1973) for the Modernism in South Asia exhibit at the Museum of Modern Art, NYC 2022. The column grid supports ventilation shafts that makeup the Volumetric facade of the building. This creates a cooling solution without importing western ventilation technology.
Work done for Museum of Modern Art

DUDHSAGAR DAIRY COMPLEX
[EXHIBITION- MoMA]