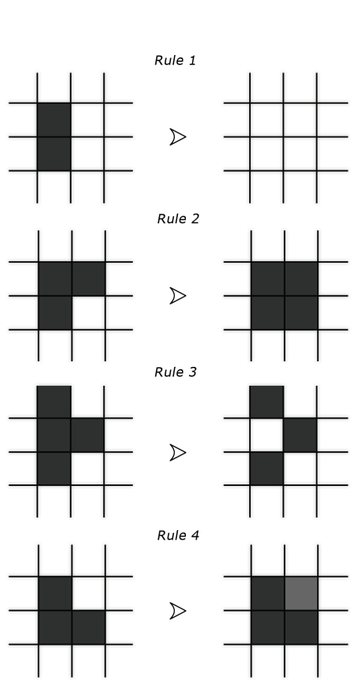
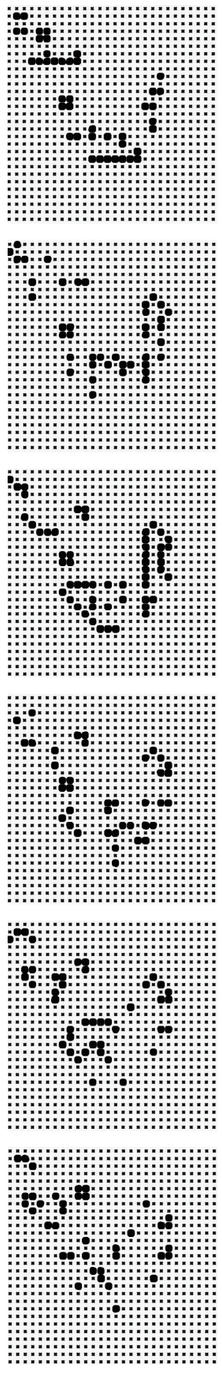
The central body of the work took place in the parametric, Grasshopper was used to facilitate the conception of an augment-able tool for the design process of the envelope. In order to realize the idea of designing facade integration through thresholds, a means of analyzing spatial qualities was necessary. In the search for an algorithmic method to do so, I was re-familiarized with an algorithm I learned about in high school. A mathematical experiment called Conways Game of Life. The experiment, first conducted in the early '70s by John Horton Conway, was designed as a cellular automaton governed by a few simple rules:

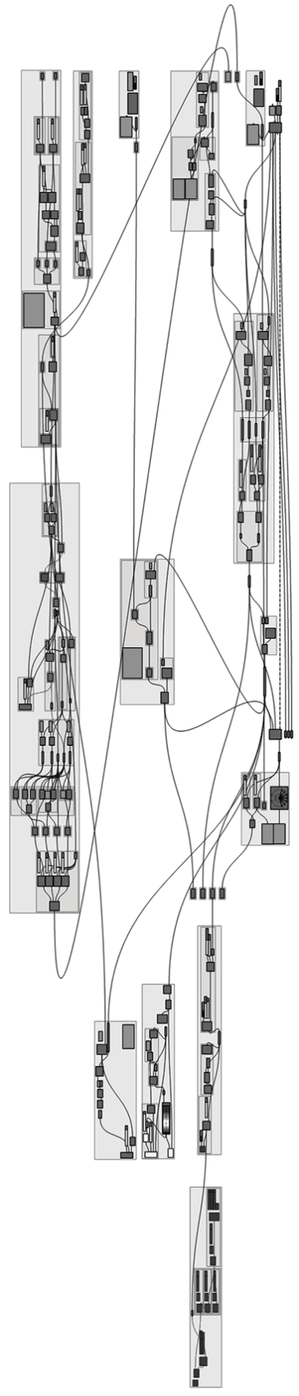
1. Any live cell with fewer than two live neighbors dies, as if by underpopulation.
2. Any live cell with two or three live neighbors lives on to the next generation.
3. Any live cell with more than three live neighbors dies, as if by overpopulation.
4. Any dead cell with exactly three live neighbors becomes a live cell, as if by reproduction.



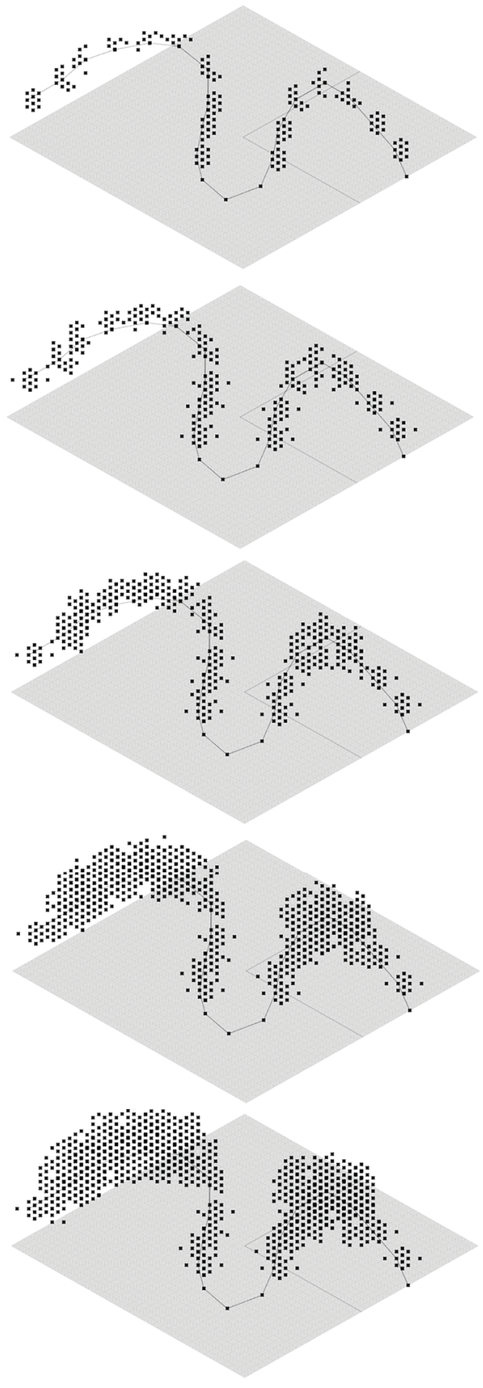
G.O.L Rules (2D)



G.O.L (2d) Simulation
In Grasshopper

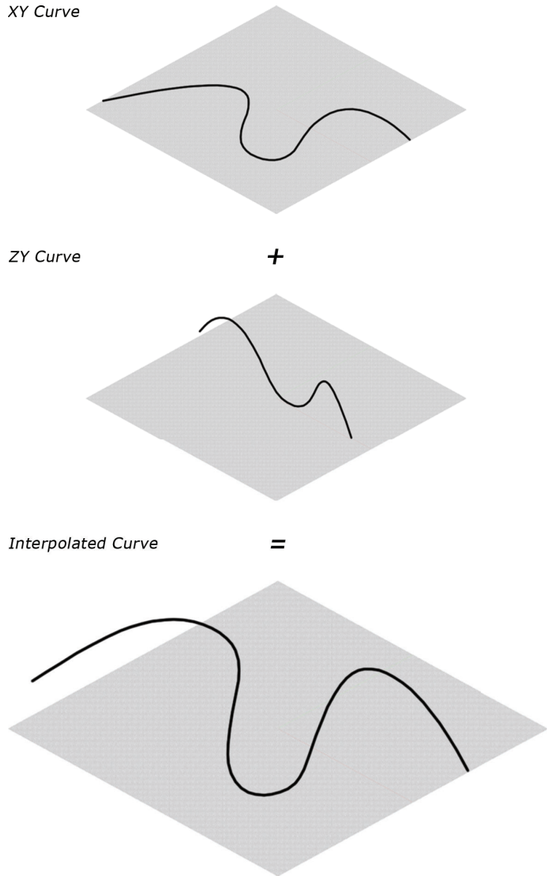


Grasshopper Definition



Control Curve Simulation W/G.O.L: Iterations 1-5

Once the simulation was functional in Grasshopper, the next step was to implement a means to control the outcome. Here the Threshold Mapping method was employed through a sectional and plan control curve. The parametric tool was designed to apply intensity values along the peaks and valleys of both control curve types. Finally, the simulation is re-run and the designer inputs(the control curves) generate a spatial sequencing tool by the integration of G.O.L logic and the custom control methods. The process was designed from scratch and represents a powerful inclusion to the architectural design process. The resulting outcome is a point cloud, used to form the confines of the envelope, which is sculpted into the general form.



Simulation Plan/Section Conrol Curve Logic