

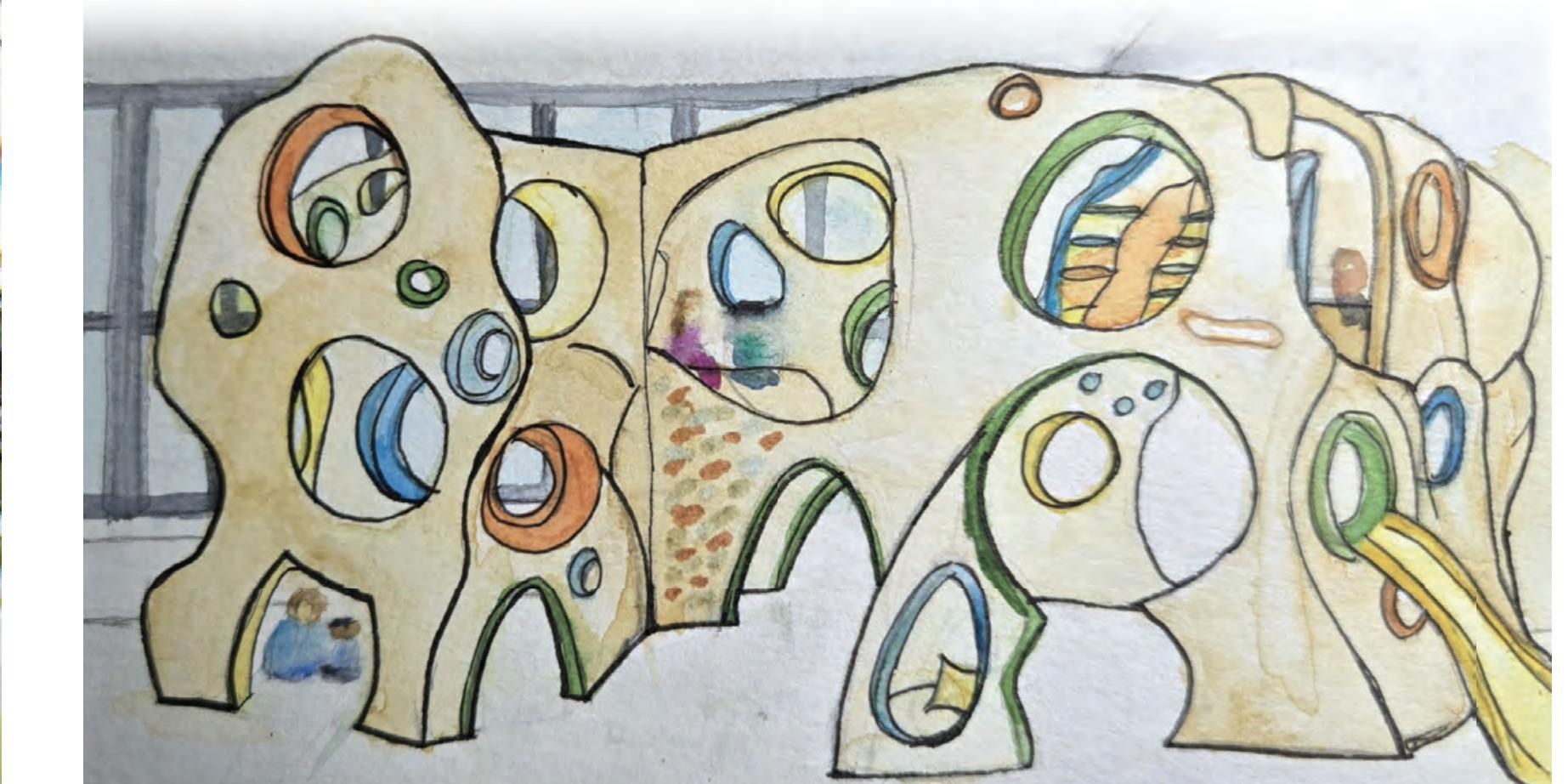
# ARCH565 ADV. COMPUTER APPLICATIONS FINAL PROJECT

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## PROJECT DESCRIPTION

For this project, I wanted to connect it to my thesis, which centers on educational architecture and learning through play and experiencing nature, so I decided to design a small, collapsible play structure that could be used inside and outside. Using forms inspired by nature, specifically flowers, the play structure is composed of interlocking panels that have randomized gaps that create windows and space for play equipment attachments such as slides, building blocks, a climbing structure, and a reading nook.



Original Watercolor & Ink Play Structure Sketch



Developed Digital Play Structure Sketch

# SITE

I had originally chosen a site adjacent to an elementary school in Bozeman, Montana, for which I found LiDAR data and created a site model, but as my thesis project moved locations, I decided to also relocate this project to the same site. This site, which will serve as the site for my thesis design project, an elementary school utilizing biophilic design principles, is a lot directly adjacent to Scissortail Park in Oklahoma City, Oklahoma. The renders of the play structure show the structure placed outside in one of the wooded areas of the park.



Render: Under the Climbing Structure



Render: Top of the Slide



Personal Photo from Scissortail Park, Oklahoma City, Oklahoma



Project Site Map

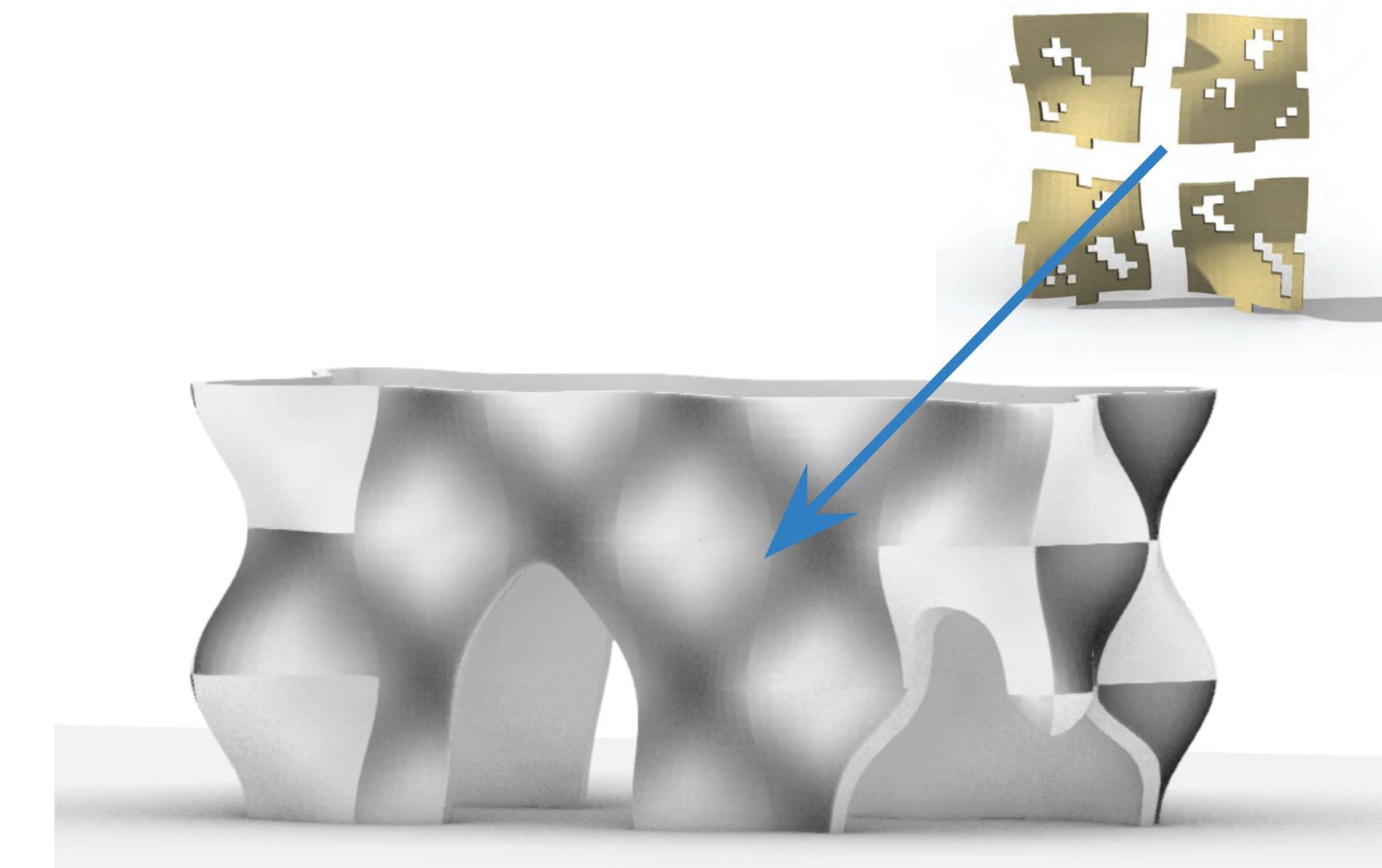


## PROCESS

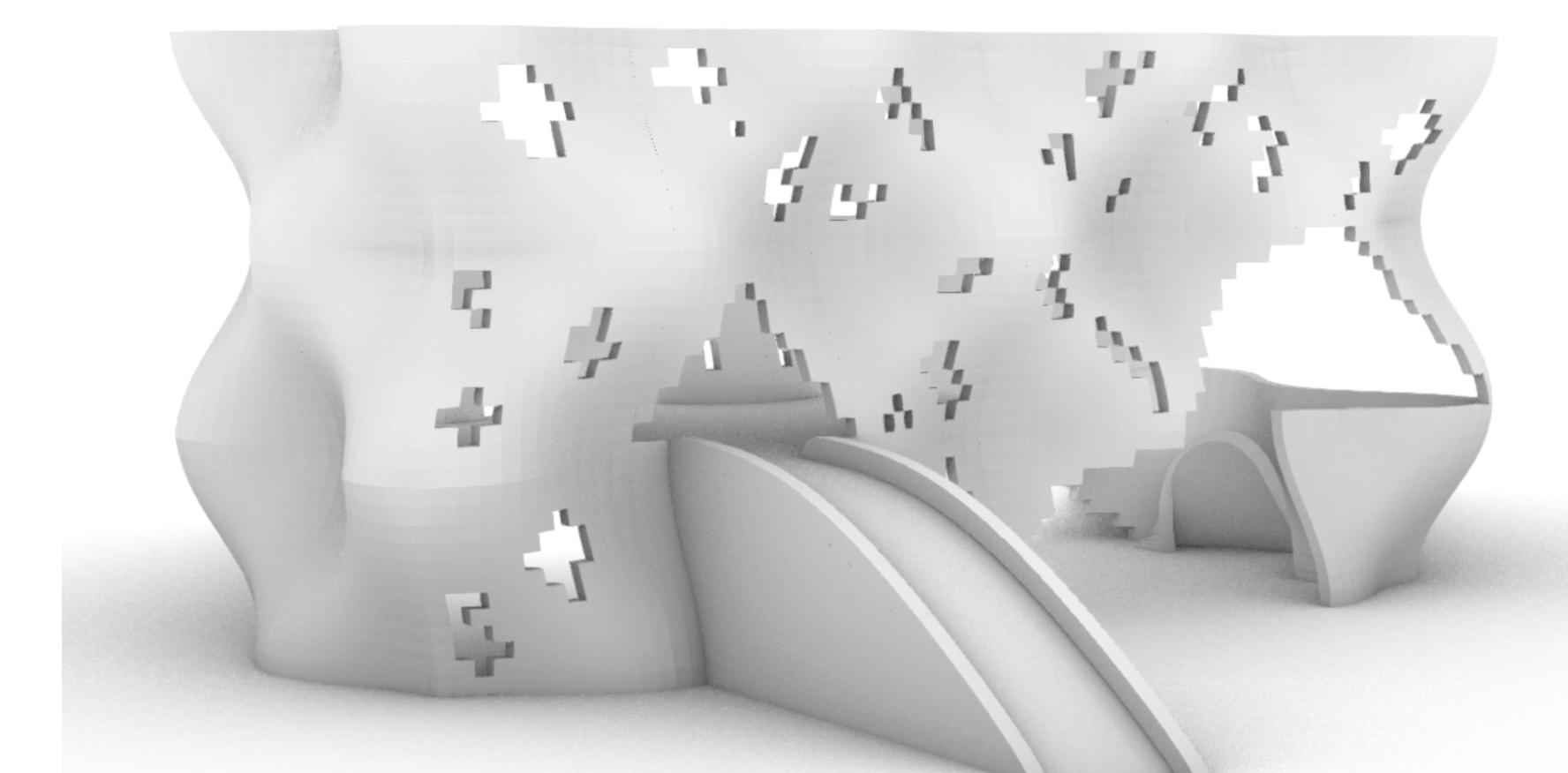
To model this design, I began by experimenting with various tools from Grasshopper add-ons such as the Kangaroo solvers, Weaverbird blocks, and other components like the Delauney mesh. While most of these experiments did not directly impact the design of the play structure panels, they proved helpful for creating interesting play features attached to the main structure. For example, the climbing apparatus was modeled using a Delauney mesh workflow with several Weaverbird components. For the panels, I used a simple model based on two curves rotated in four different directions to create the alternating curves of the panels.



Play Structure Exterior Draft Renders: Spring (Above) & Fall (Below)



Initial Model Iteration of Play Structure & Interlocking Strategy



Developed Model Iteration of Play Structure (Penultimate)

## DESIGN DRAWINGS & RENDERS

The final design includes a slide with a stair leading up to it, a reading nook, a set of mobile steps, a climbing structure, and building blocks that allow children to fill in the gaps in the panels. The renders and drawings indicate how elementary-age children might engage with the play structure at the park.

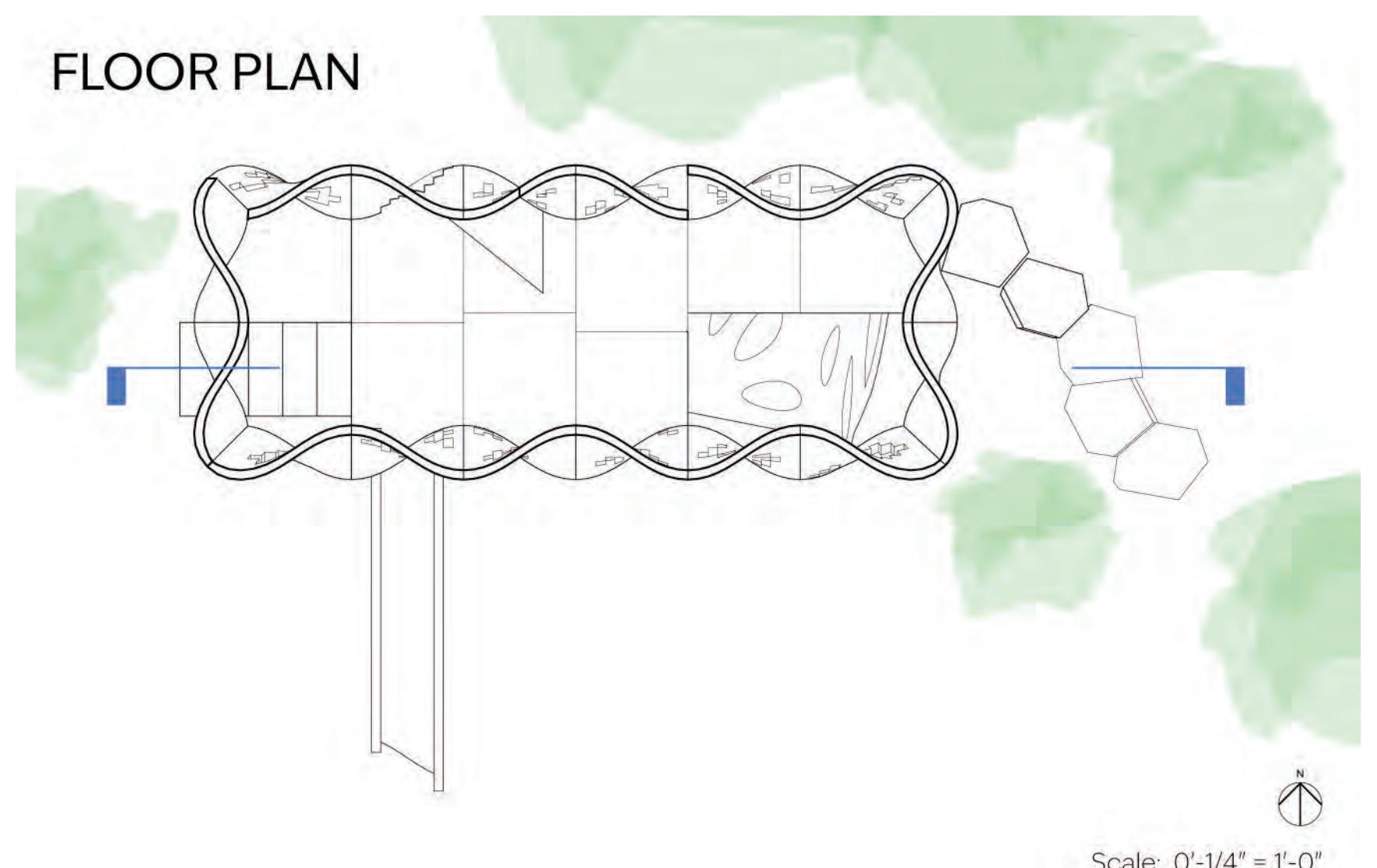


Render: Reading Nook & Openings



Render: From the Stairs to the Reading Nook

### FLOOR PLAN



Play Structure Floor Plan

### SECTION



Play Structure Section

