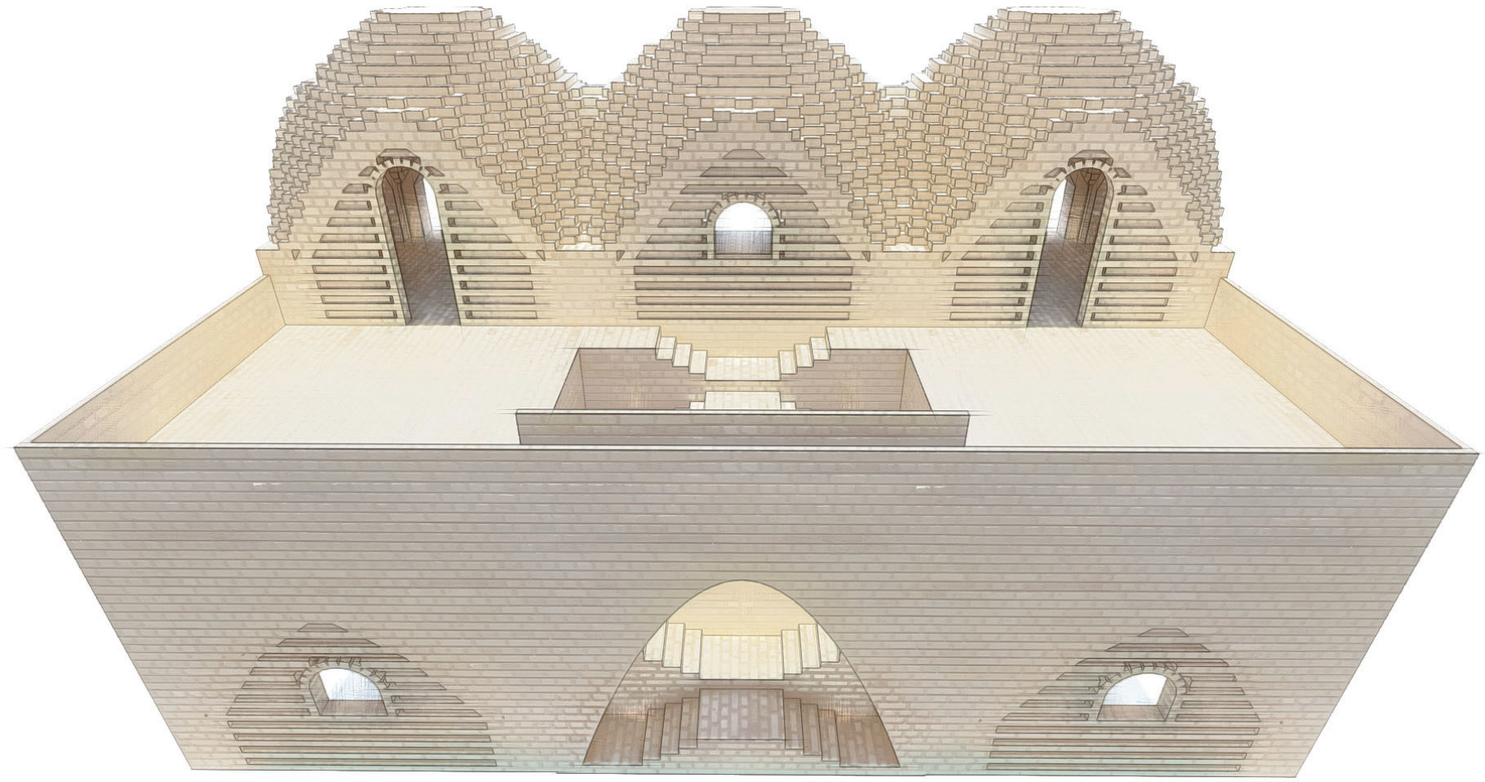
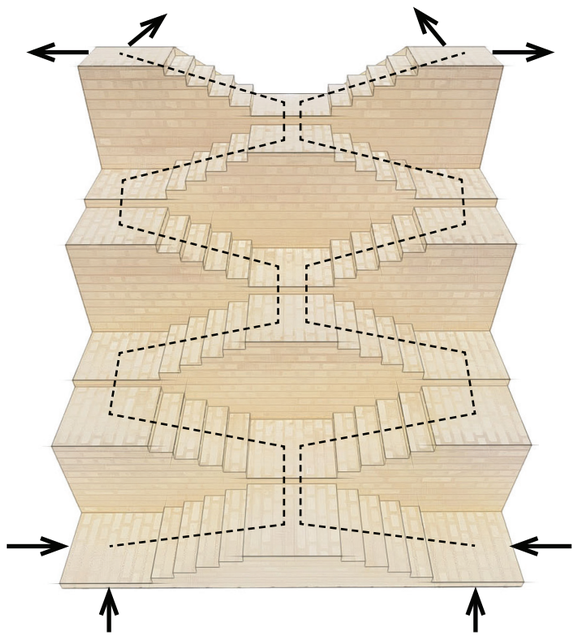
Staircase

The stair design is an important part of a floor plan. They connect the ground floor with the 1st floor, but in our design also connect different functions on the same floor with each other. With the help of a grasshopper script we were able to produce different possibilities for a design based on the Indian stepwell. Our staircase design always start in 2 places on the ground floor, on the left and right side of a grid. This allows one function to be placed in front of the stairs or two functions to the left and right of the stairs(see option 1). We made the script so that we can enter the following and get a staircase design: Height of the platforms, Number of steps per ascent, Riser height, Tread depth, Max height. The width of the stairs will be determined by dividing the required number of ascents by the grid size (5 meters). The stairs will therefore always end up at the height of the floor above. In the 2 images below it can be seen that if the number of steps per ascent is lower, the width of the stairs also become less wide. Two more options have been added to make the stairs connect even more functions in the floorplan with eachother.

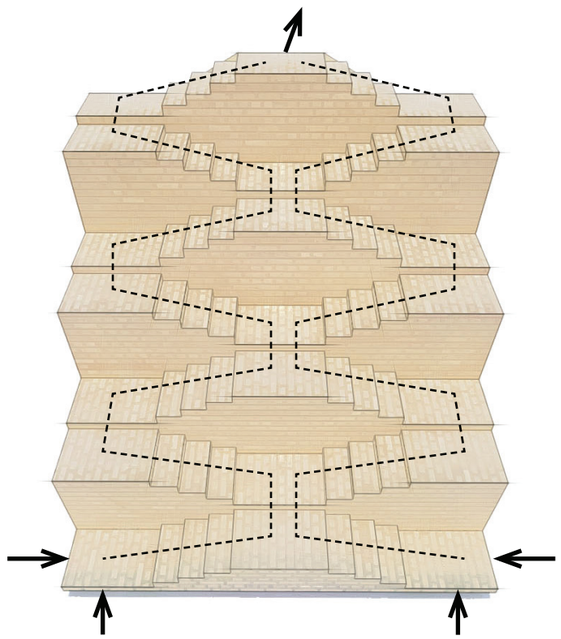
Option 1: If you want to connect the functions on the ground floor with eachother, an arch can be added under the stairs. The height of the arch and the width of the arch are adjustable.

Option 2: When no modules are placed on the 1st floor to the left and right of the stairs, an arch is automatically placed above the stairs so that the 2 roofs are connected to each other.

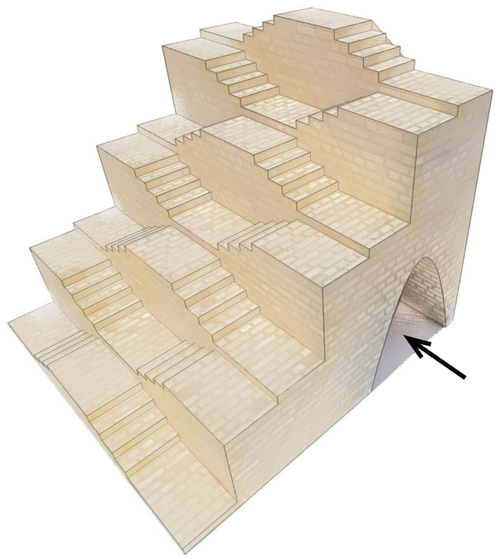




1. Staircase (default)



2. Staircase, changing the input in grasshopper



3. Staircase, arch below the stairs (connecting the ground floor)

4. Staircase, arch above stairs (connecting the first floor)