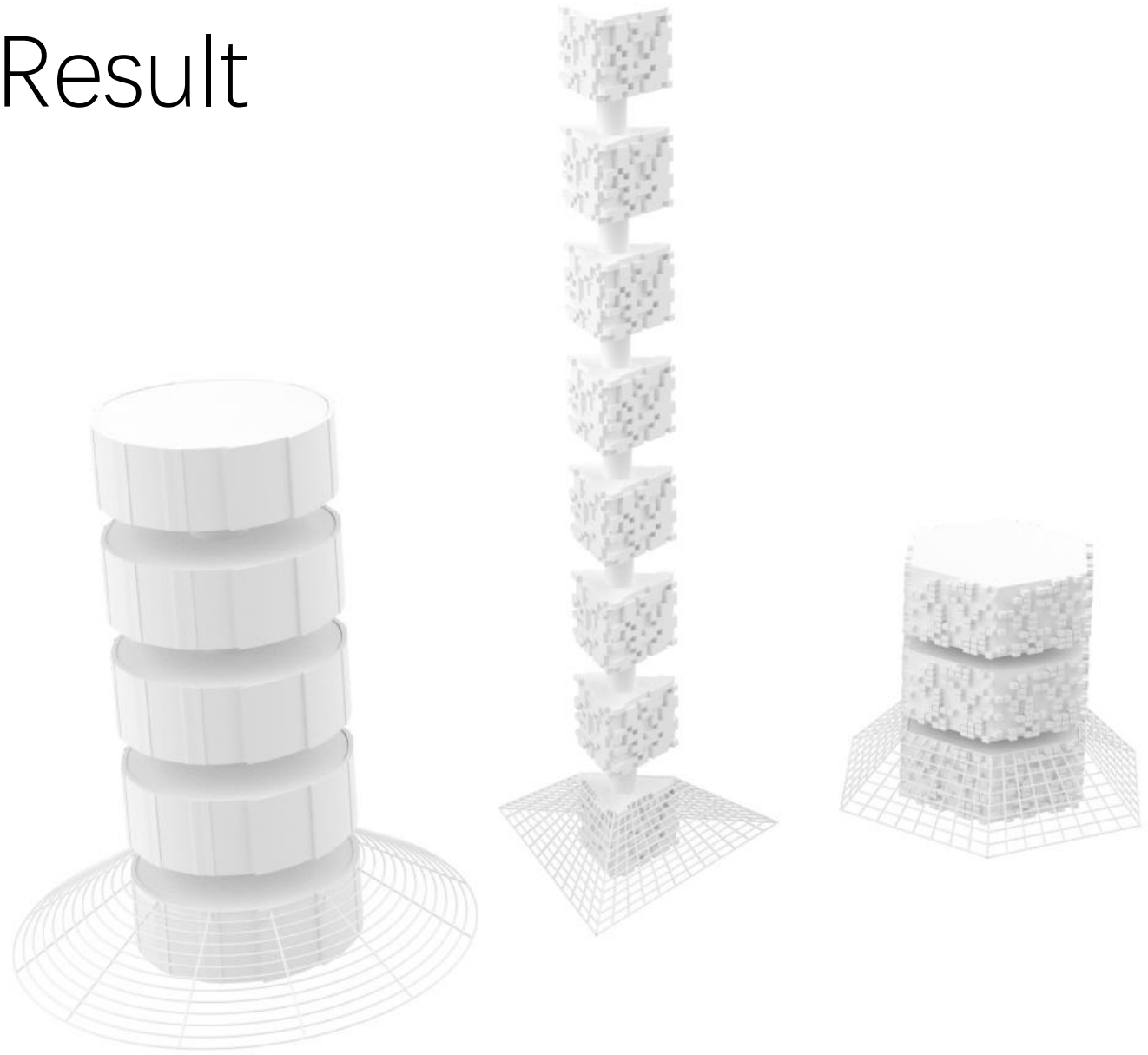
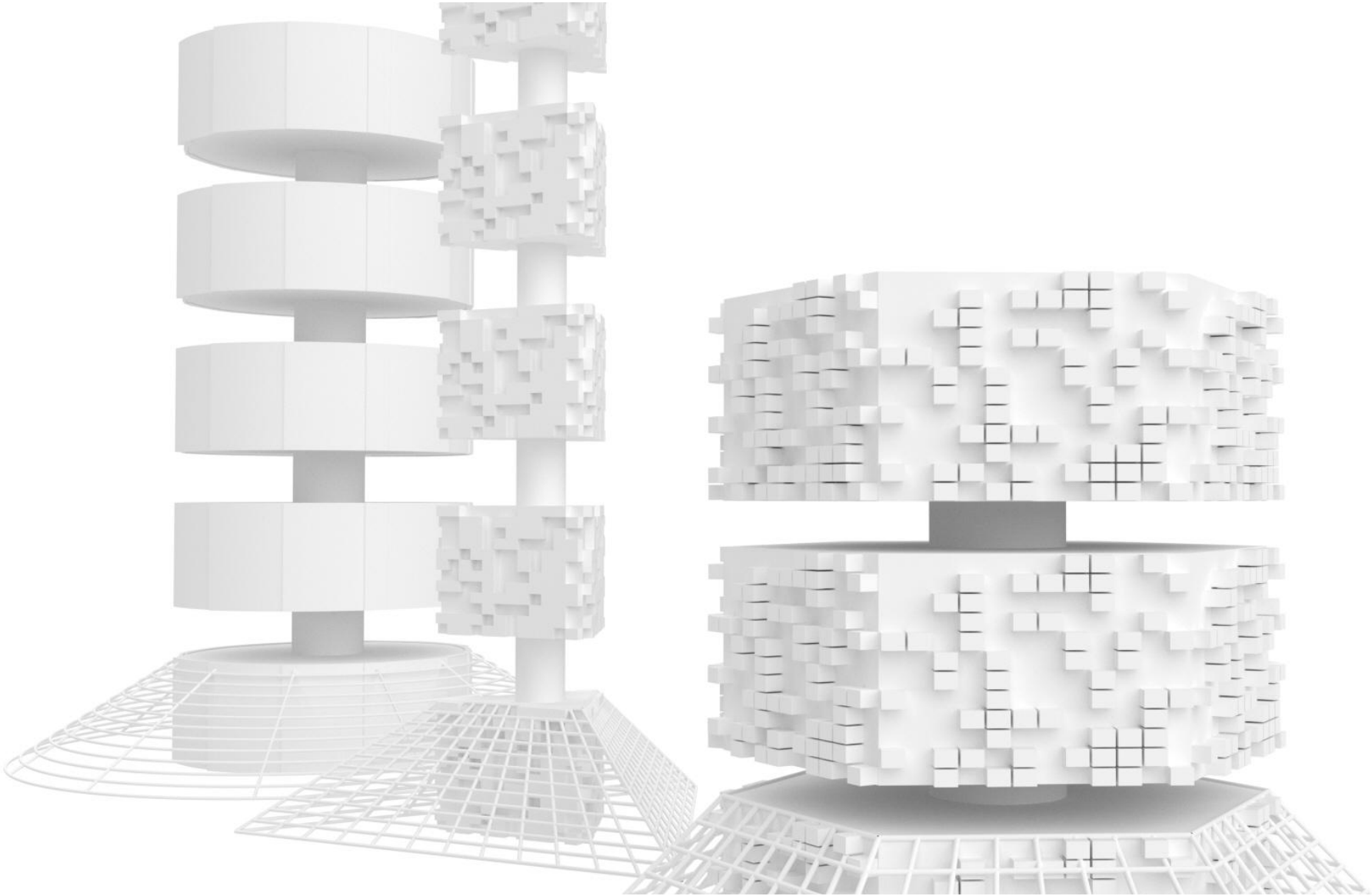
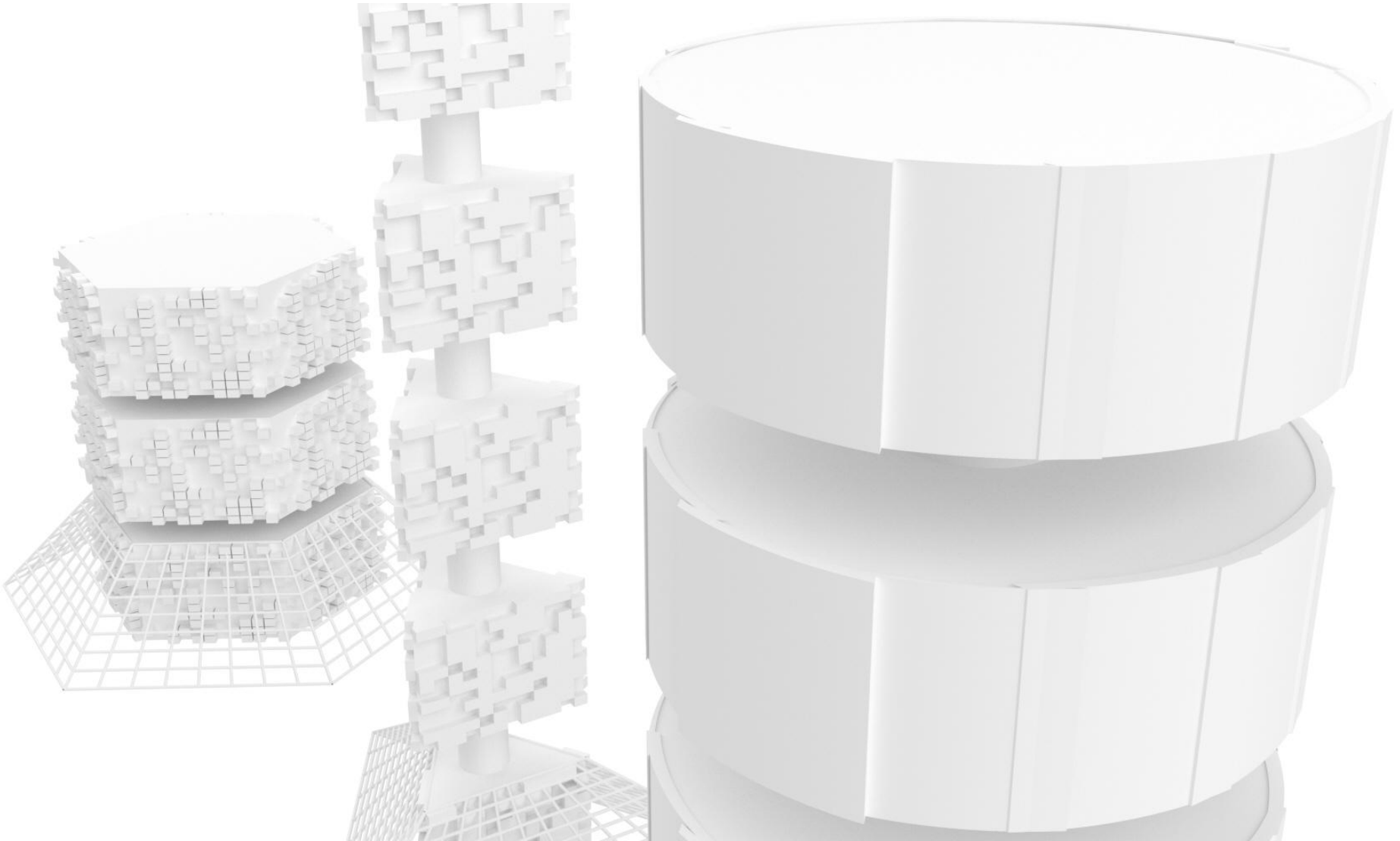
Final Result



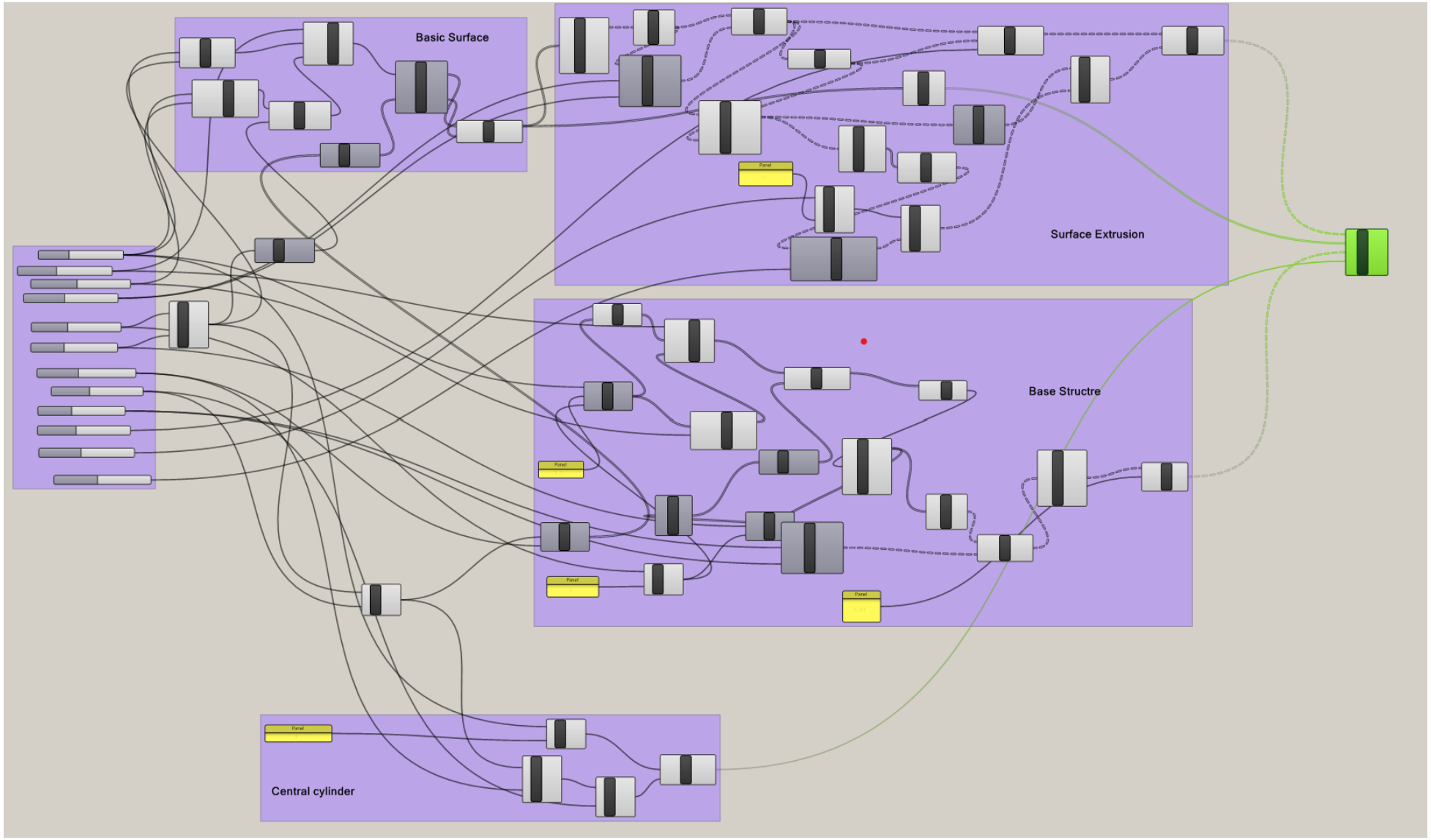
Final Result



Final Result



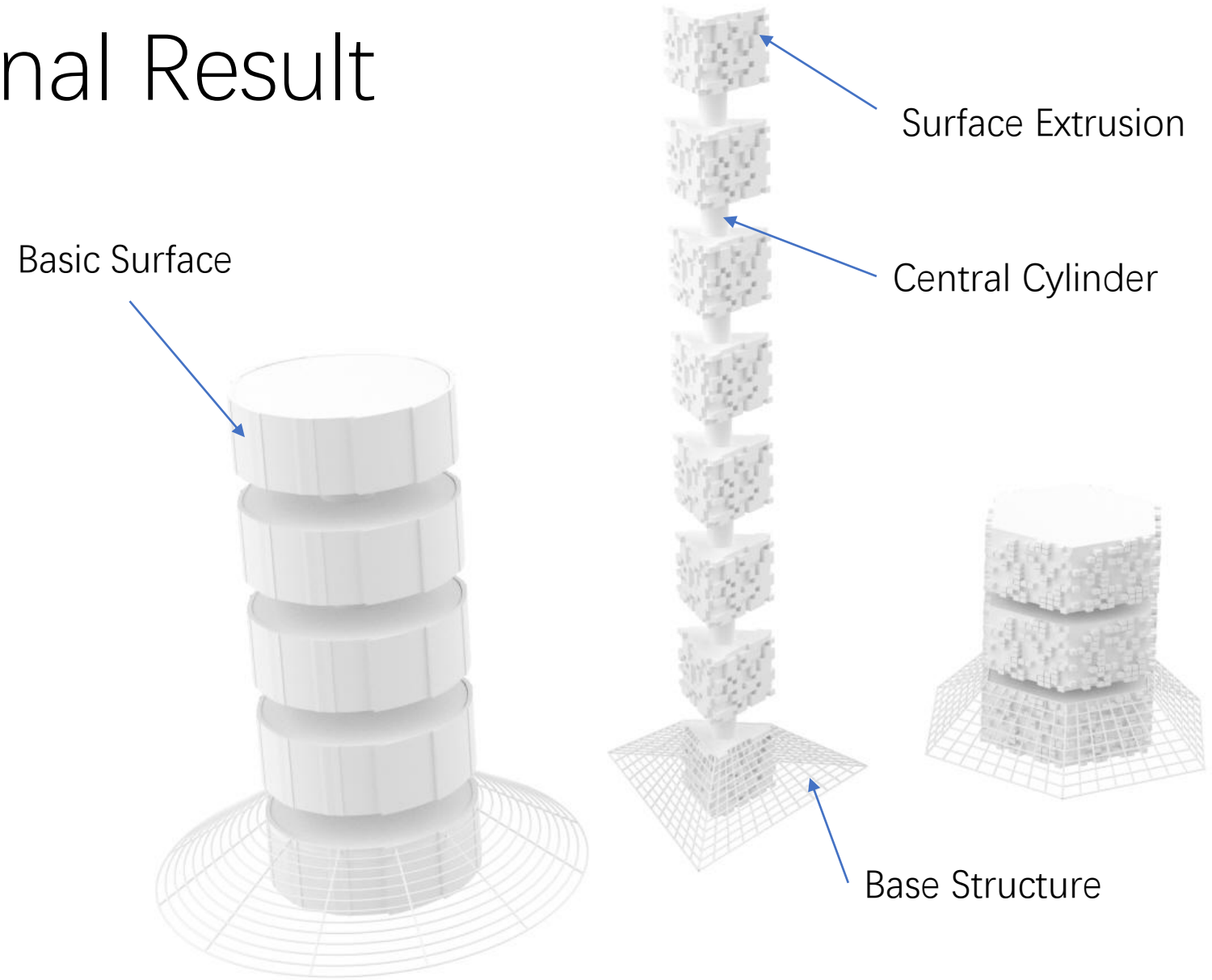
General Structure



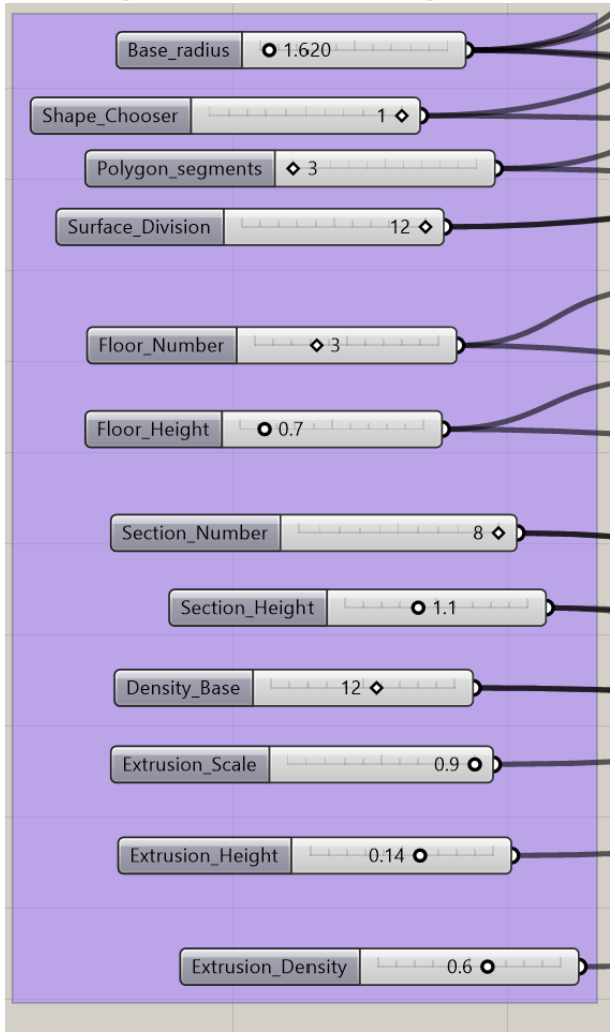
General Structure

- There are mainly four parts of this building: Basic Surface, Surface Extrusion, Base Structure, Central Cylinder.
- Basic Surface means the general outer surface of the building without extrusion.
- Surface Extrusion means the extrusions from the surface.
- Base Structure means the supporting structure at the base of the building.
- Central Cylinder means the pillar supporting the whole structure in the central axis.

Final Result



Input Explanation



Base_radius: Radius of the base

Shape_Choose: Choosing between circle and polygon. 0 suggests circle and 1 suggests polygon.

Polygon_segments: If the polygon is chosen, specifying its segments.

Suface_Division: The division parameter for the basic surface.

Floor_Number, Floor_Height, Section_Number, Section_Height are similar to the parameters in the class.

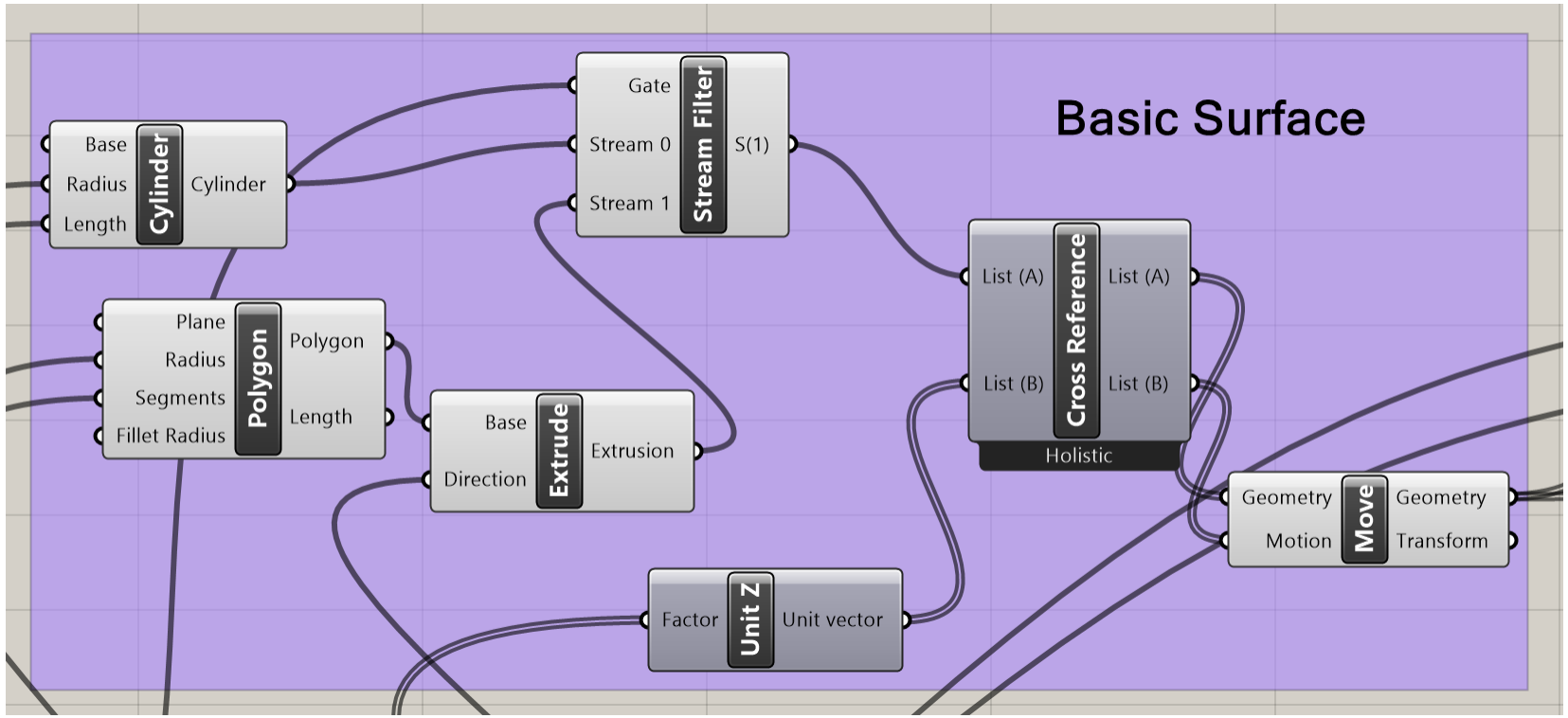
Density_Base: The division parameter for the base structure.

Extrusion_Scale: The scale parameter for the extrusion.

Extrusion_Height: The height of each extrusion on the surface.

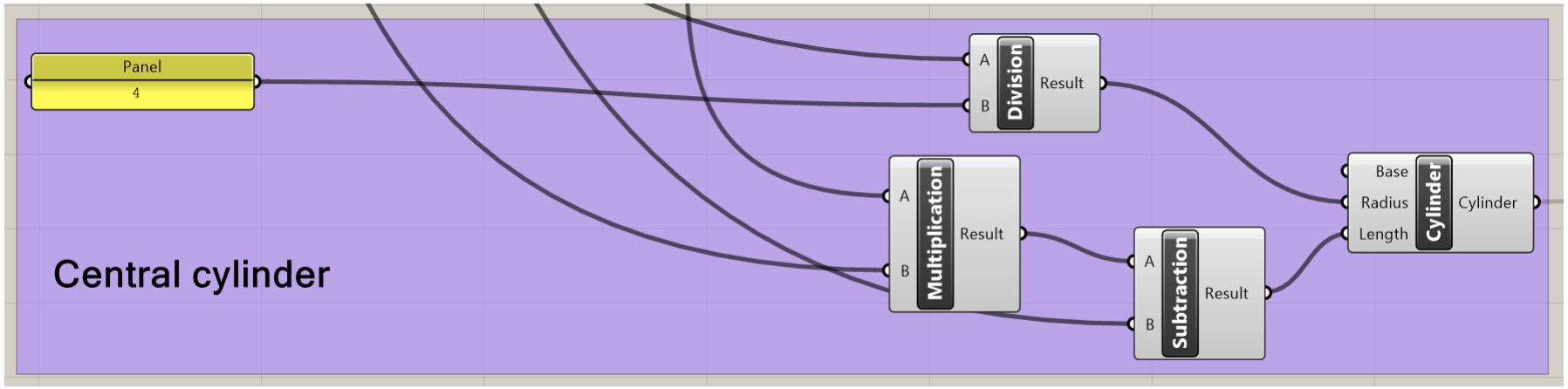
Extrusion_Density: The density of extrusions.

Section Explanation



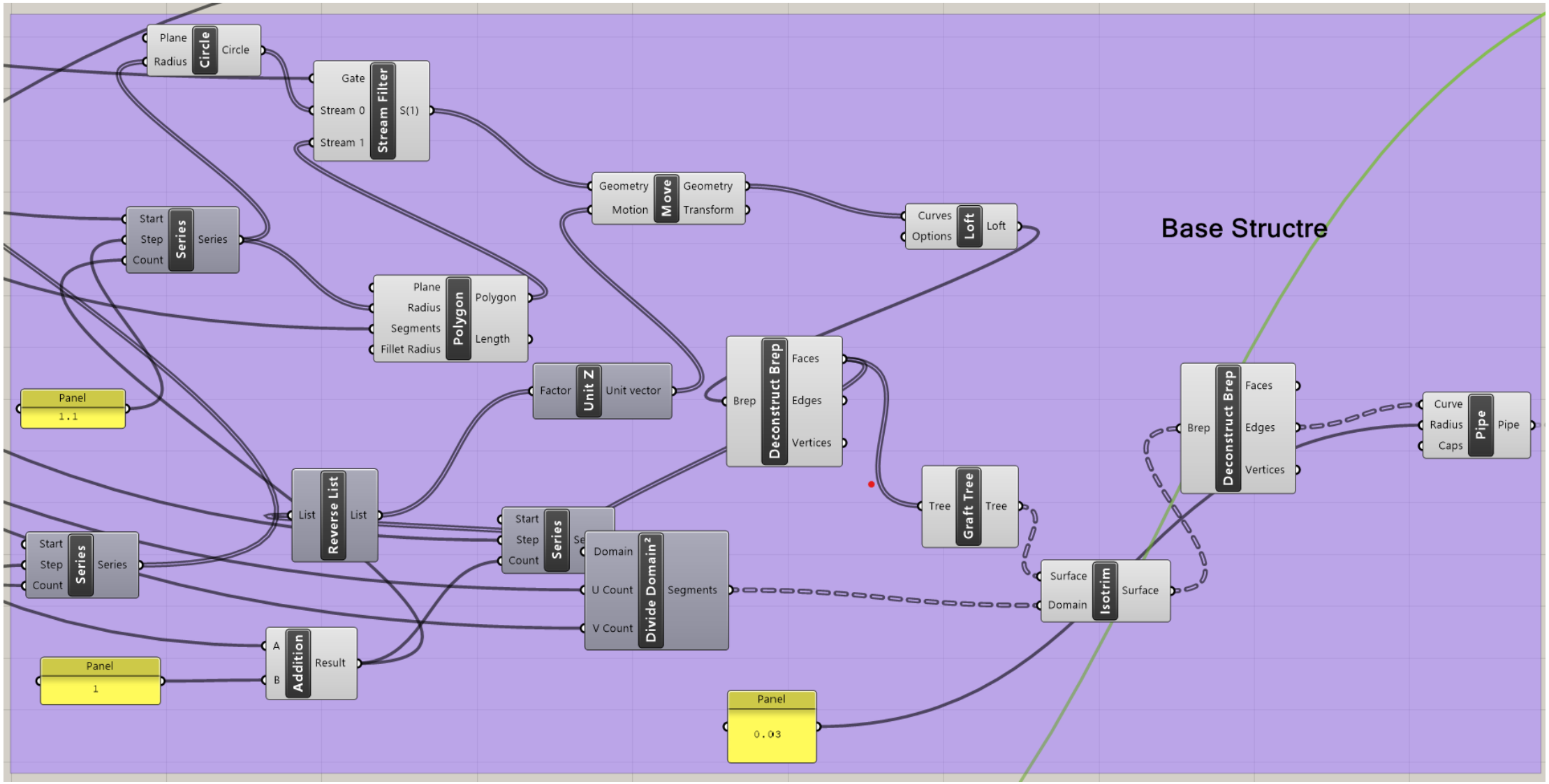
This Section forms the basic surface of this building. The highlight of this section is that I use a stream filter choose between cylinder or polygon extrusion. After that, a cross reference is used so that the building will have multiple sections.

Section Explanation



This section is for the central cylinder. We use multiplication and subtraction to calculate the height I need for the total building. A division is used to make the cylinder have less radius than the base radius.

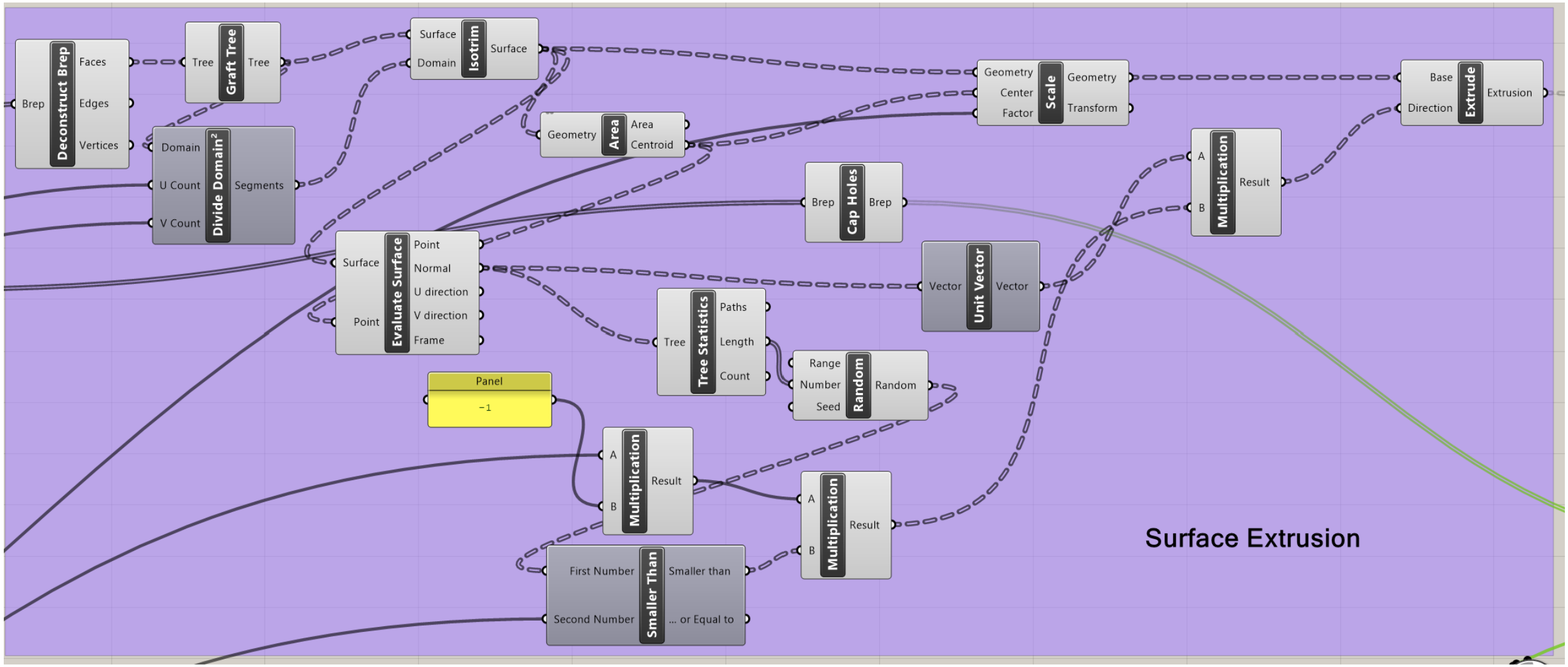
Section Explanation



Base Structure Explanation

- Similar to the basic surface, a stream filter is used to select from circle and polygon. Similar to the examples in the class, I use a “series” to create a bunch of shapes with different radius. I then use a “move” node to move those shapes. I then loft them together and “deconstruct brep” to get a surface.
- I then divide the domain in to several subdomains and use “isotrim” to create plane out of each domain. After that, I used the “deconstruct brep” again to get each edge and then pipe it.

Section Explanation



Surface Extrusion Explanation

- I use “deconstruct brep” to get a surface and then divide the domain in to several subdomains and use “isotrim” to create plane out of each domain. Then “area” and “evaluate surface” are used to get the centroid and normal vector of each smaller surface so that it can be scaled and extruded correctly.
- Another the highlight is the use of random number. I generate a bunch of random numbers. By comparing them with a threshold, I am able to get a series of 1 or 0. The extrusion height is then multiplied with this series so that some extrusion has 0 height. By changing the threshold, I am able to control the extrusion intensity.