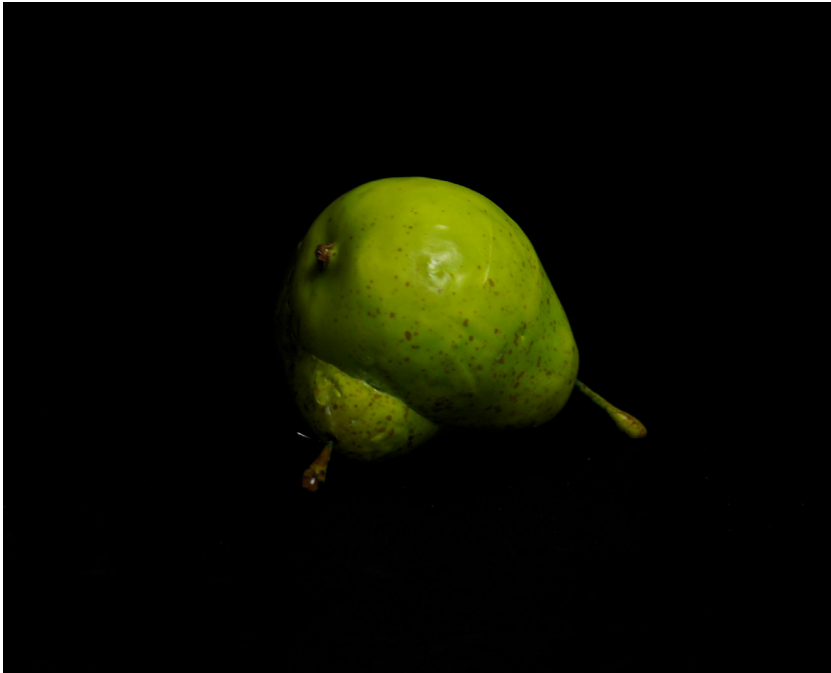
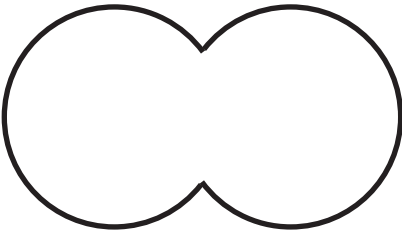


What is Boolean Logic?

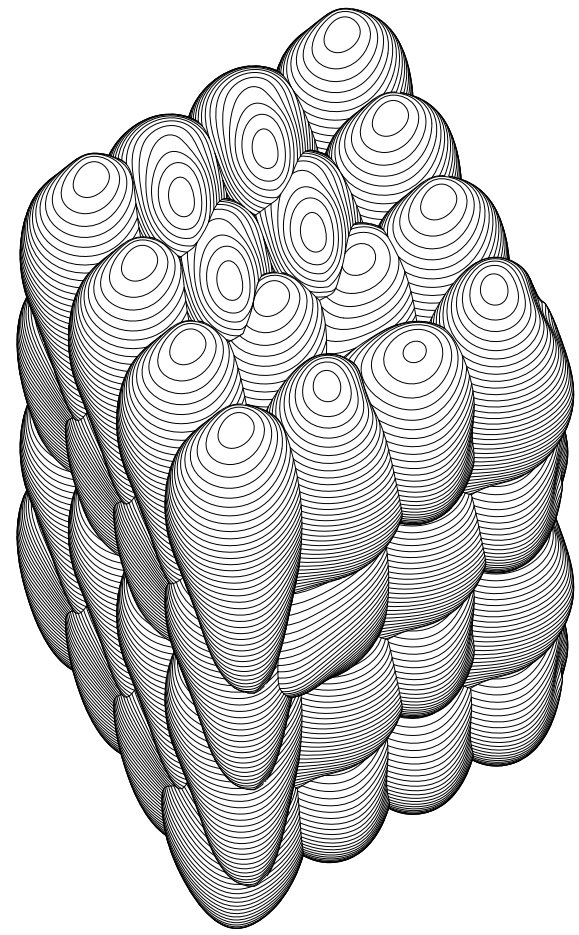
- created by George Boole (Boolean Algebra)
- based on true or false (1 or 0)
- Logic system used by computers
- the most common computational terms are AND, OR, NOT

OR

Boolean Union
Combining shapes into one singular shape



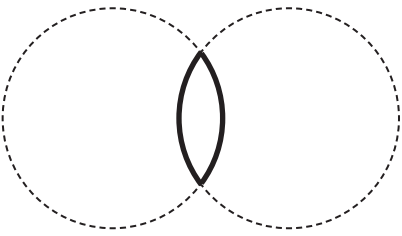
Faux Fruit Manual Boolean Union



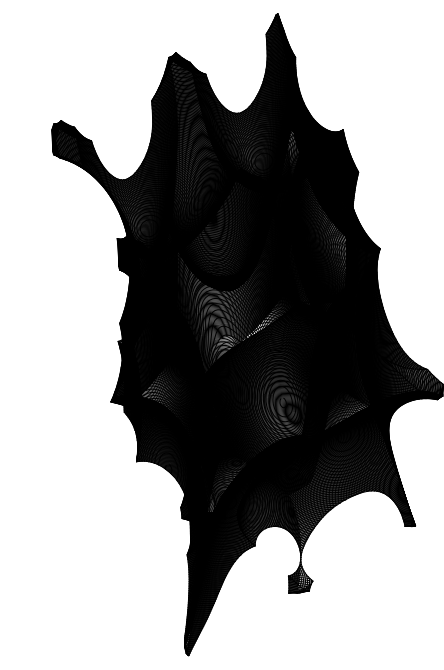
3D Computational Algorithm

AND

Boolean Intersect
Taking the intersection from shapes



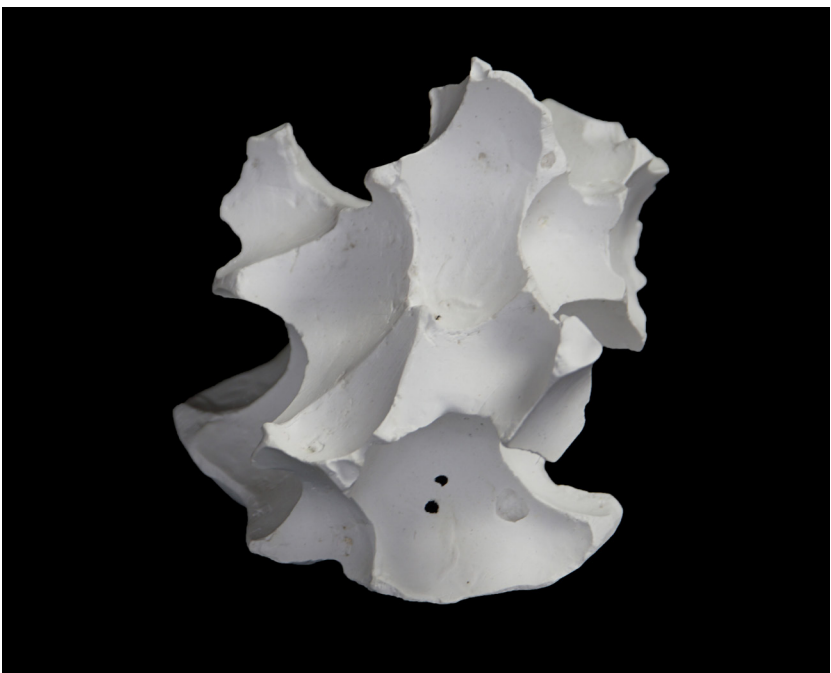
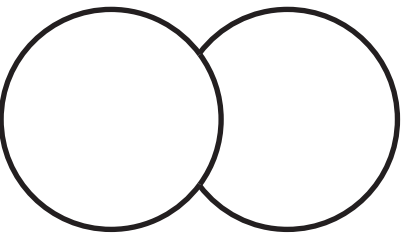
Faux Fruit Manual Boolean Intersection mold



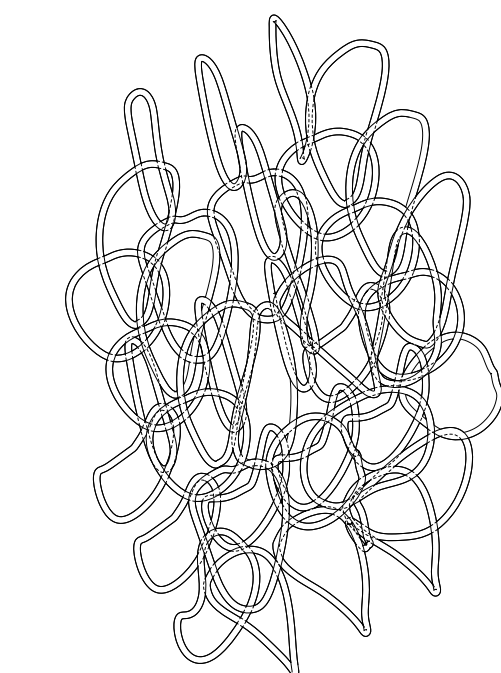
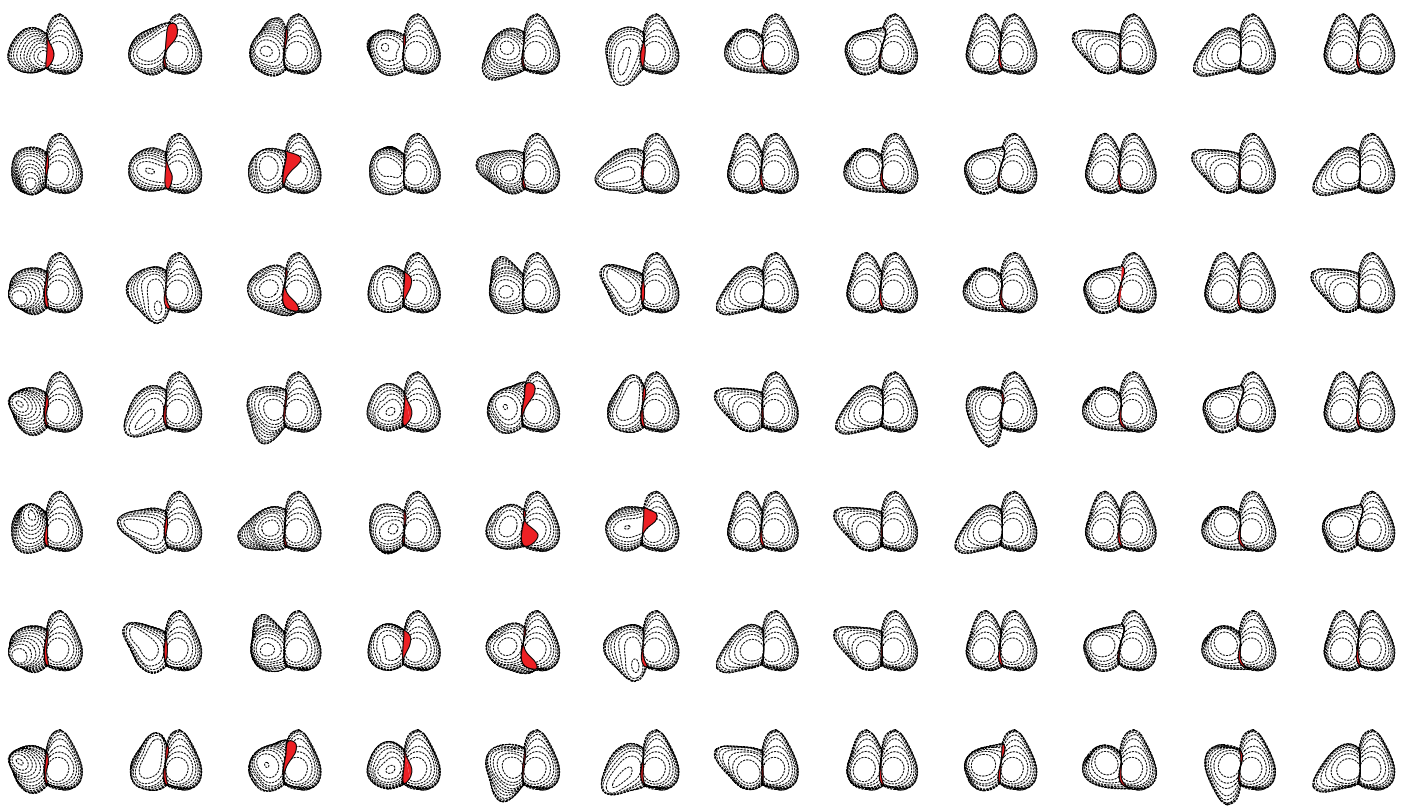
3D Boolean Difference Cast

NOT

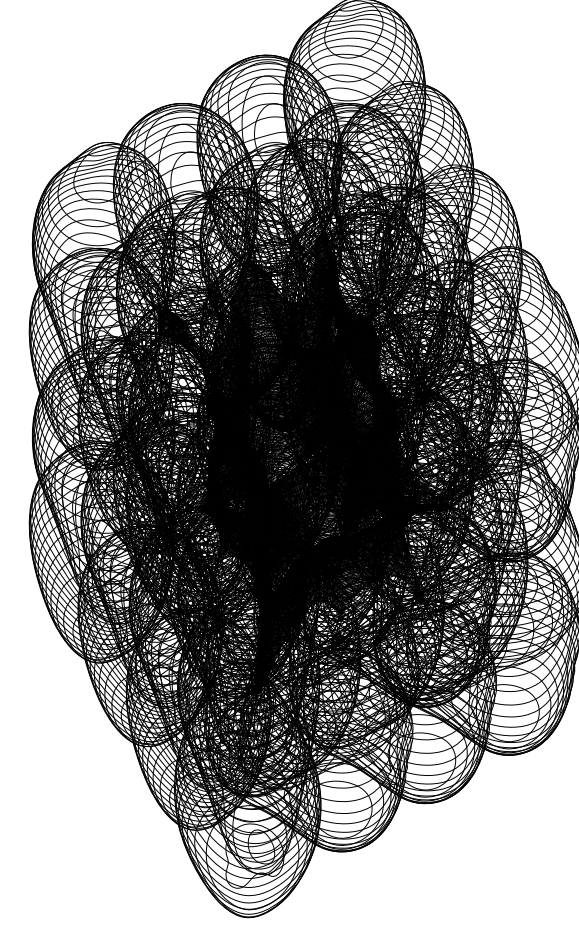
Boolean Difference
Using a shape to subtract from another shapes



Faux Fruit Manual Boolean Difference Plaster Cast

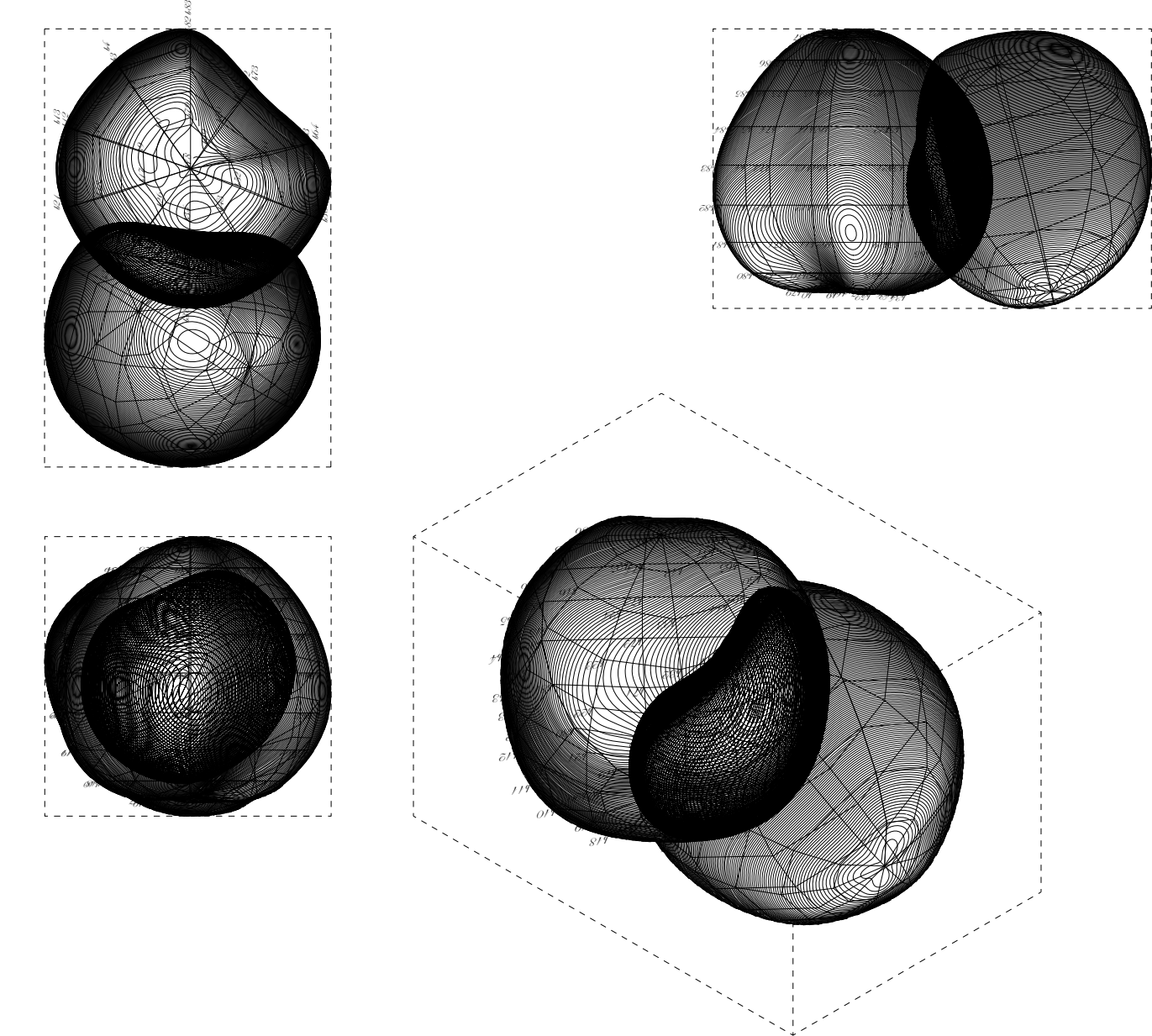


Boolean Intersections

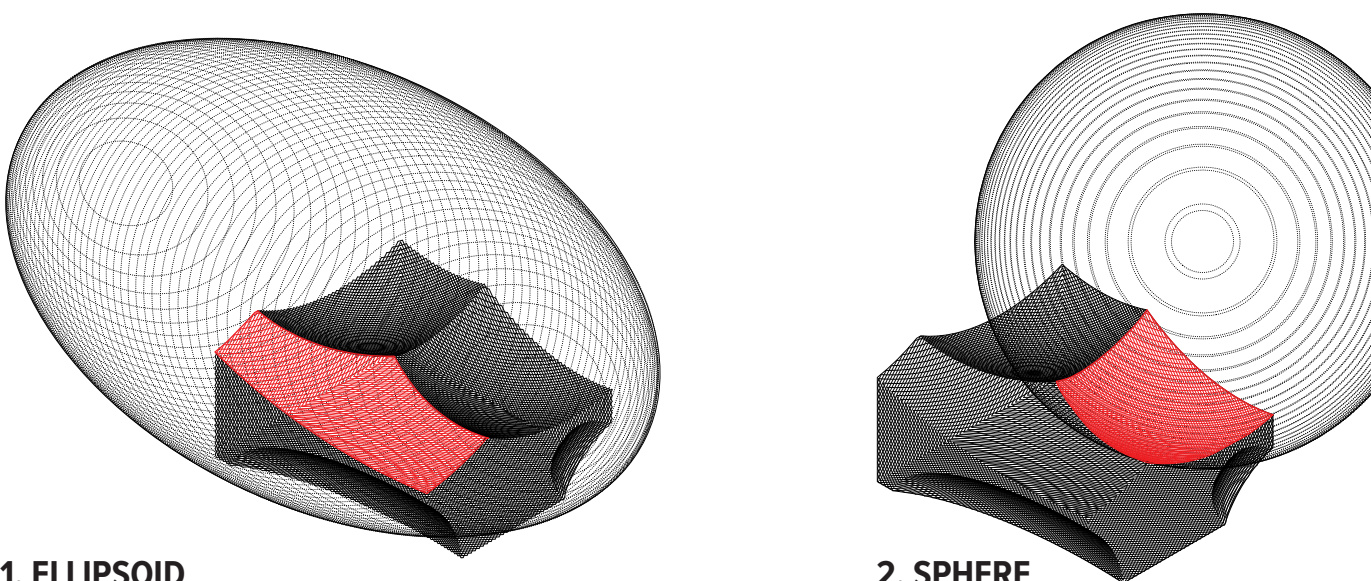


Boolean Complete Combination

Computational Algorithm for finding the best boolean intersection (the intersection with the longest curve or those with the most control points).



Descriptive Geometry for finding the best boolean intersection (the intersection with the longest curve or those with the most control points).



1. ELLIPSOID
Designing With Boolean Logic

2. SPHERE

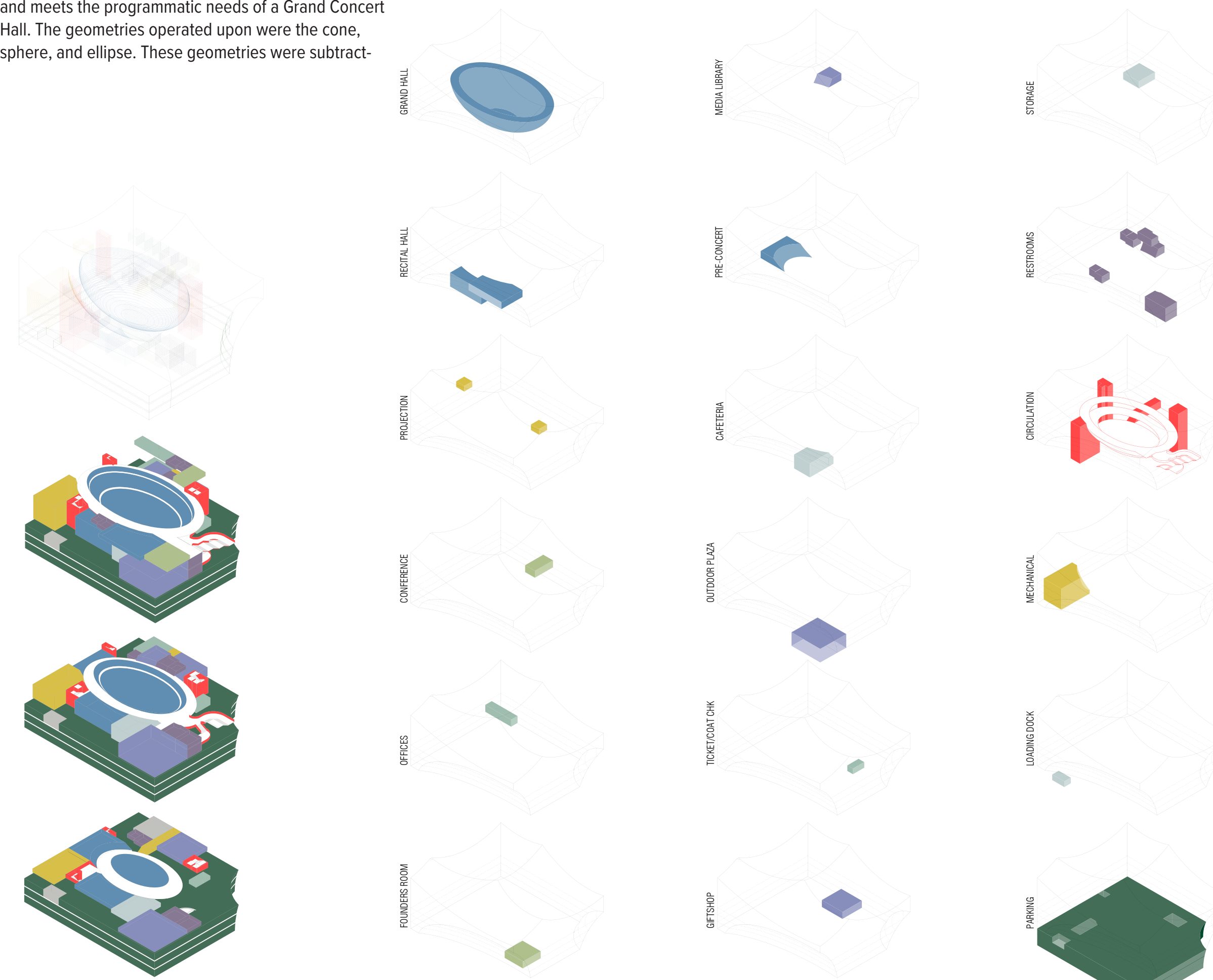
3. SPHERE

Knox Grand Concert Hall

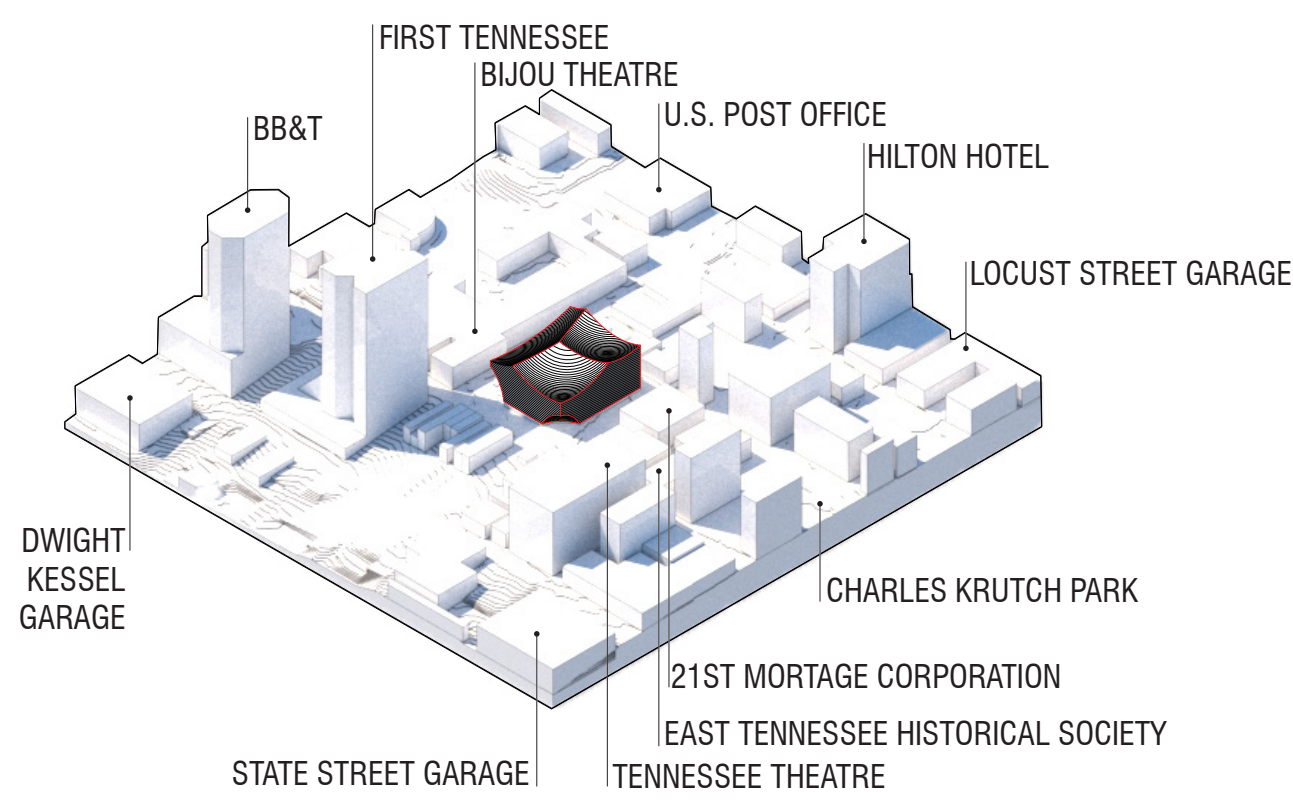
The goal of the proposed design was to create a building with a unique identity and to serve as a new attraction for Knoxville. The intent was to design a Grand Concert Hall that uses architectural features to draw in locals and create an incentive for those considering Knoxville as a destination. This design will infuse natural curves into the downtown area drawing in large audiences for concerts and become an architectural destination. Using boolean logic the design was able to have a programmatic flow that celebrates boolean operations, and meets the programmatic needs of a Grand Concert Hall. The geometries operated upon were the cone, sphere, and ellipse. These geometries were subtract-

ed to create a plaza, entrance, and roof geometry that informs acoustic performance. The lower levels support more public opportunities and gradually shift toward private elements as one ascends through the three floors. The lower levels consist of a lobby, the grand hall, grand stair case, plaza, and gift shop. The uppers levels have a conference room, administrative offices, founders room, and media room. Functionally this building has a simple

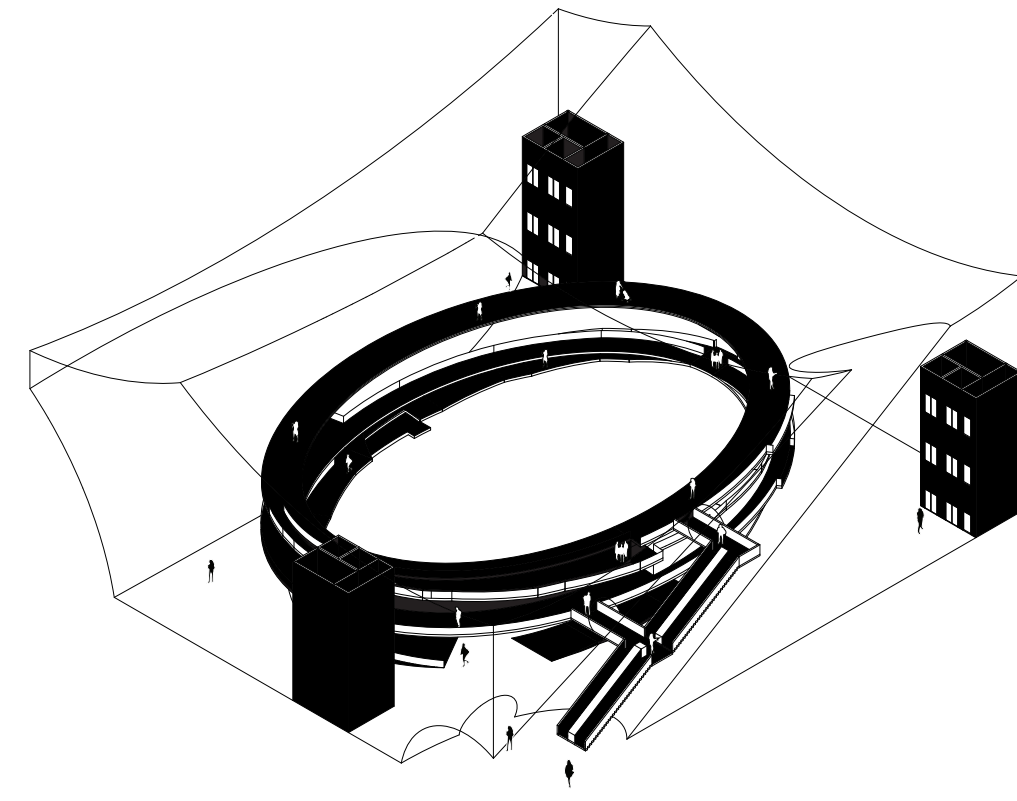
ellipsoid circulation on all three levels and a subterranean parking garage with three levels. There are three core shafts and a grand escalator located in the lobby. This schematic design has a superior function and large visual presence.



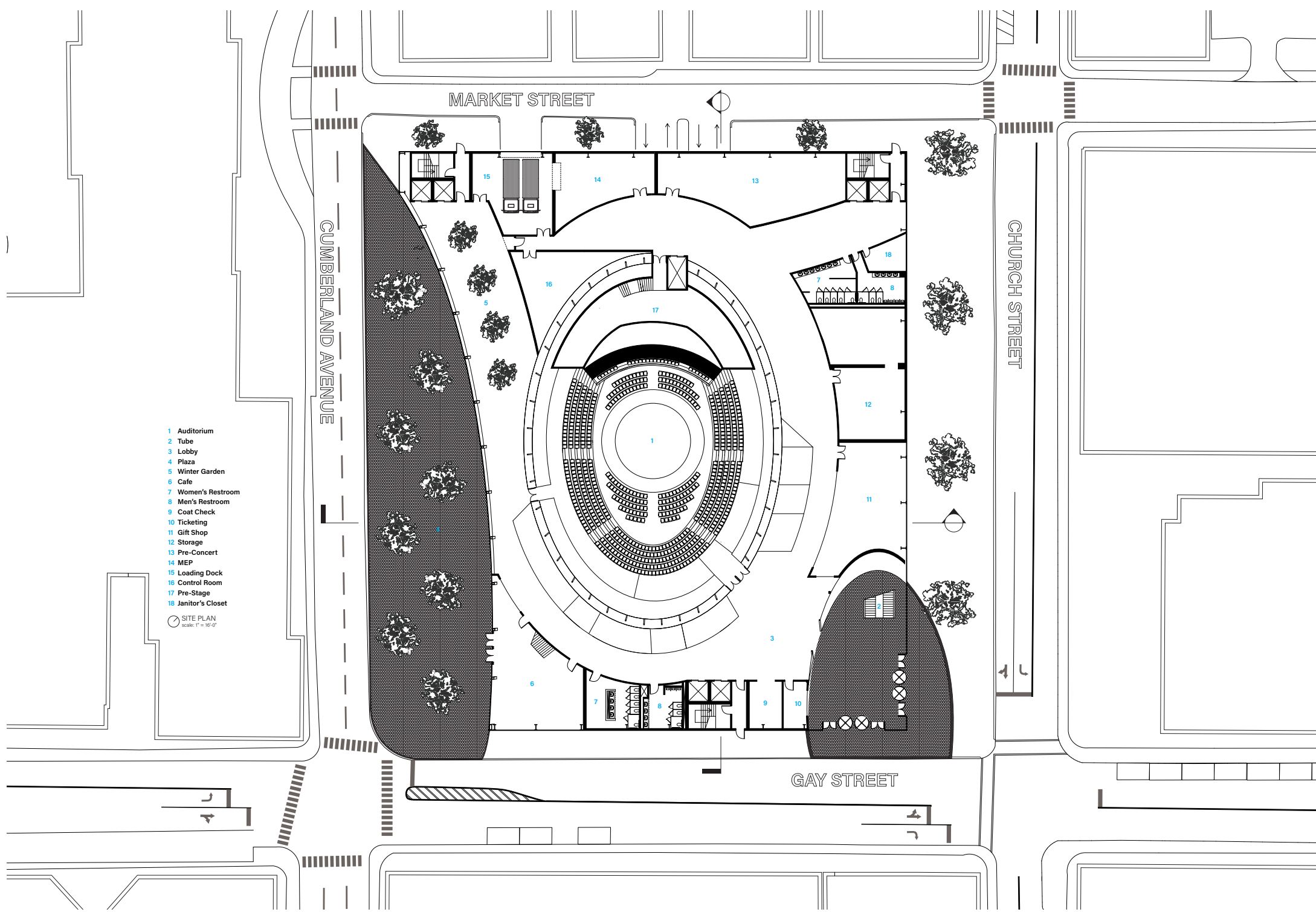
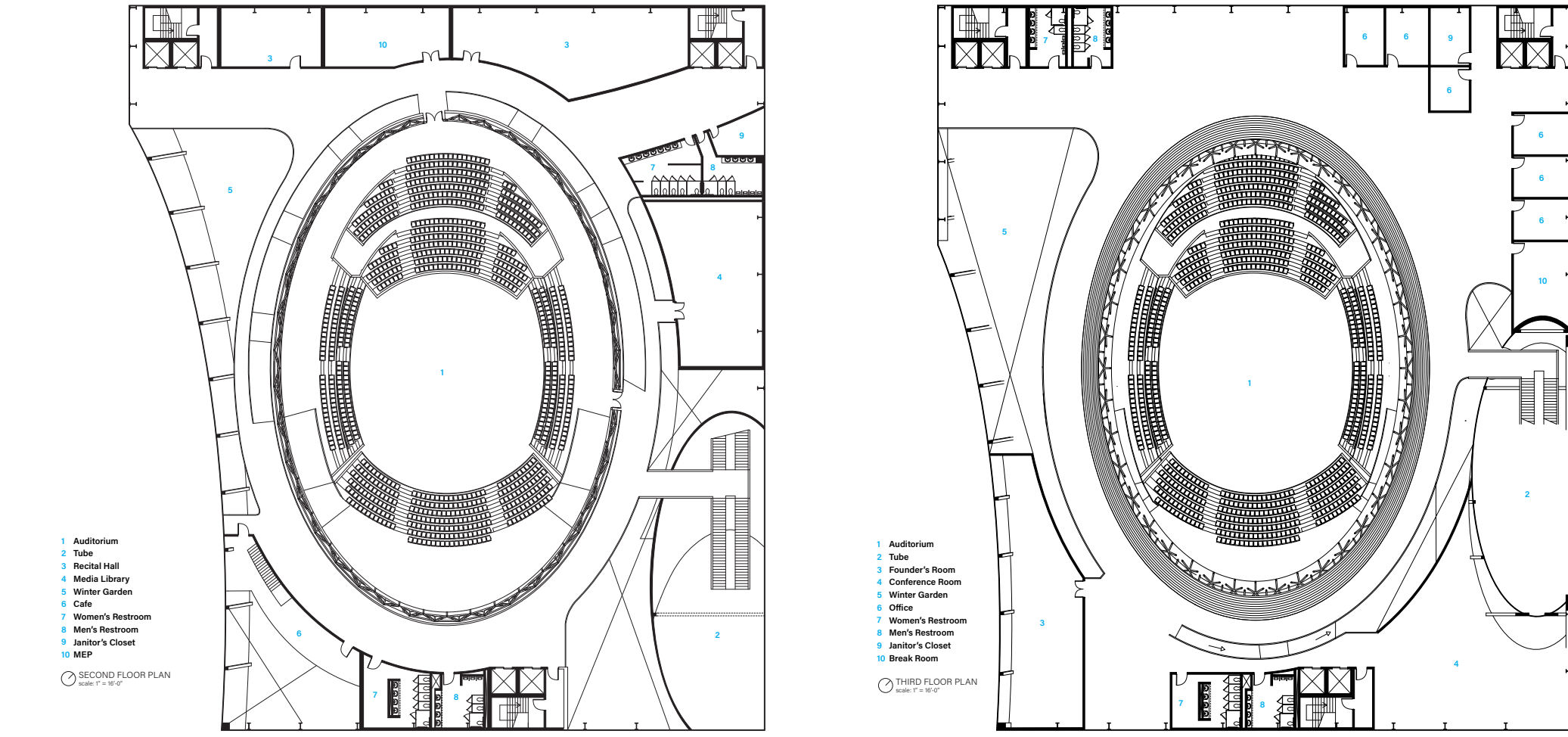
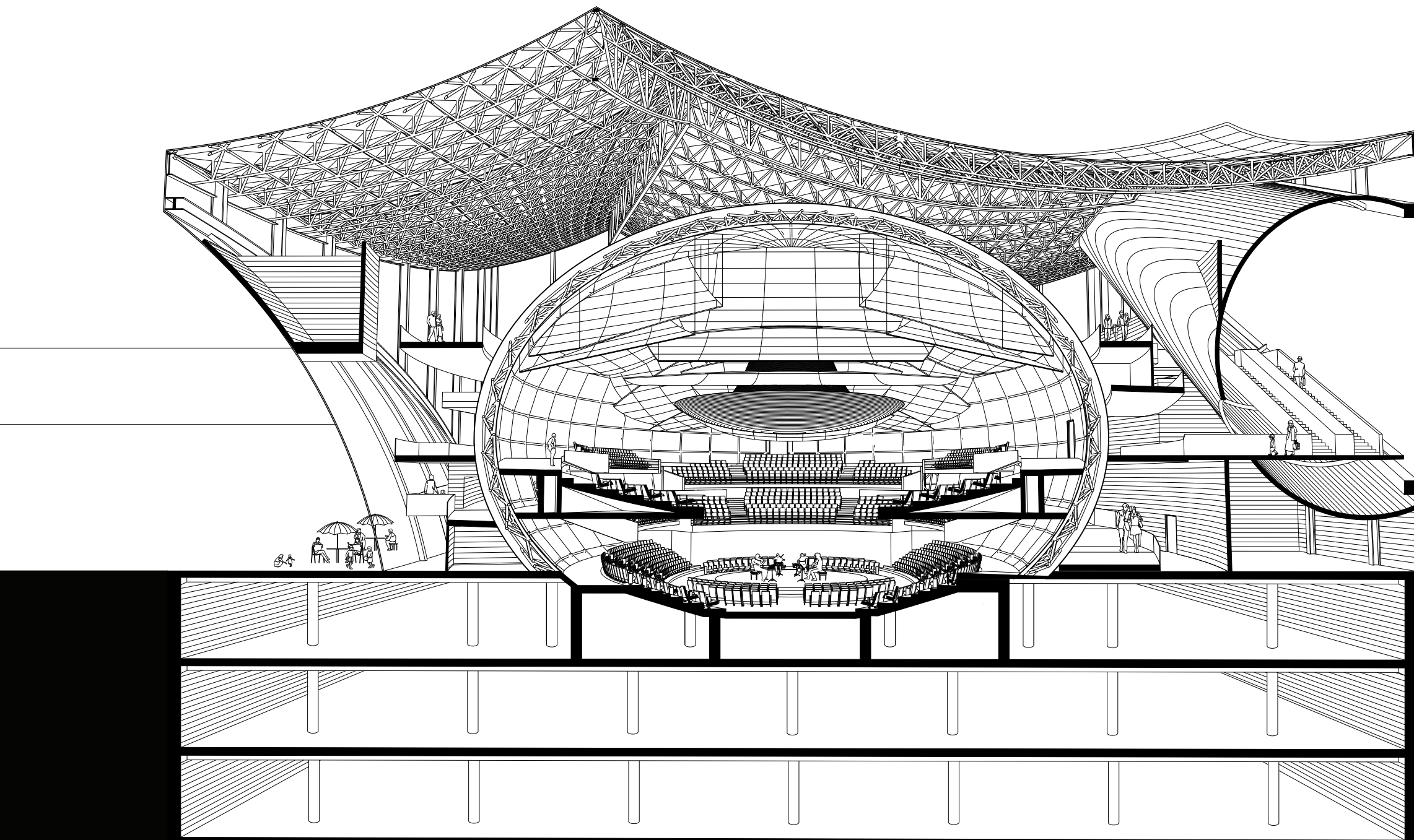
PROGRAM



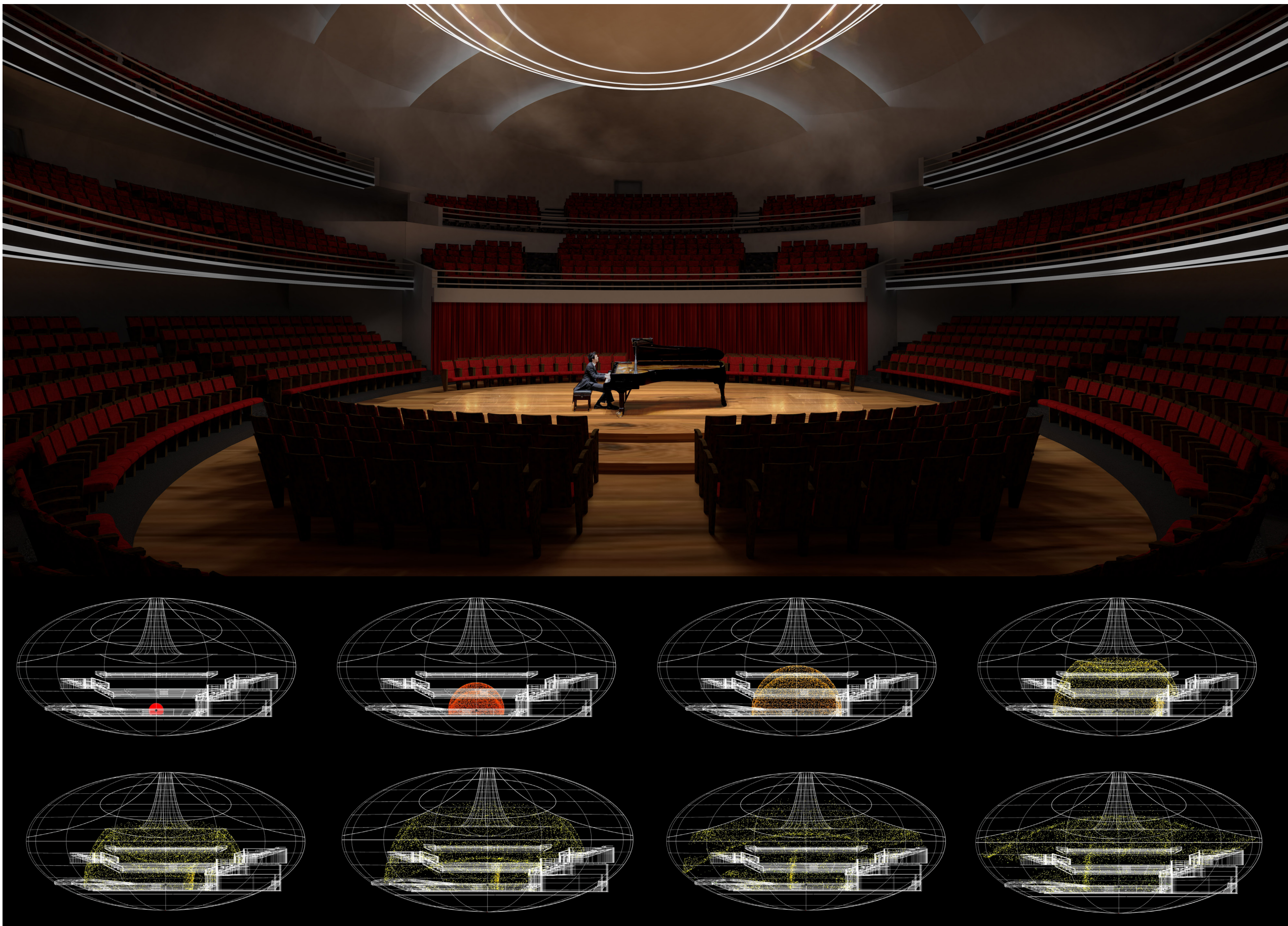
LOCATION



CIRCULATION AND CORES



PLANS



ACOUSTIC ANALYSIS SIMULATION

