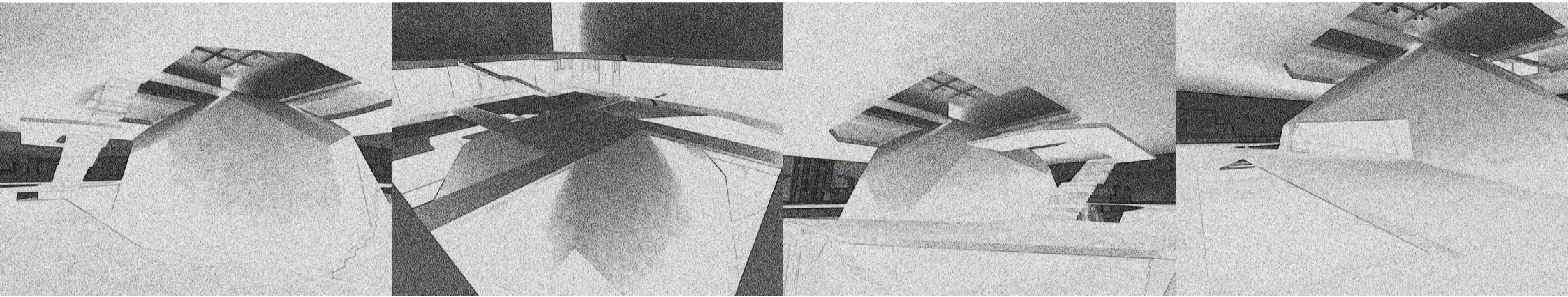
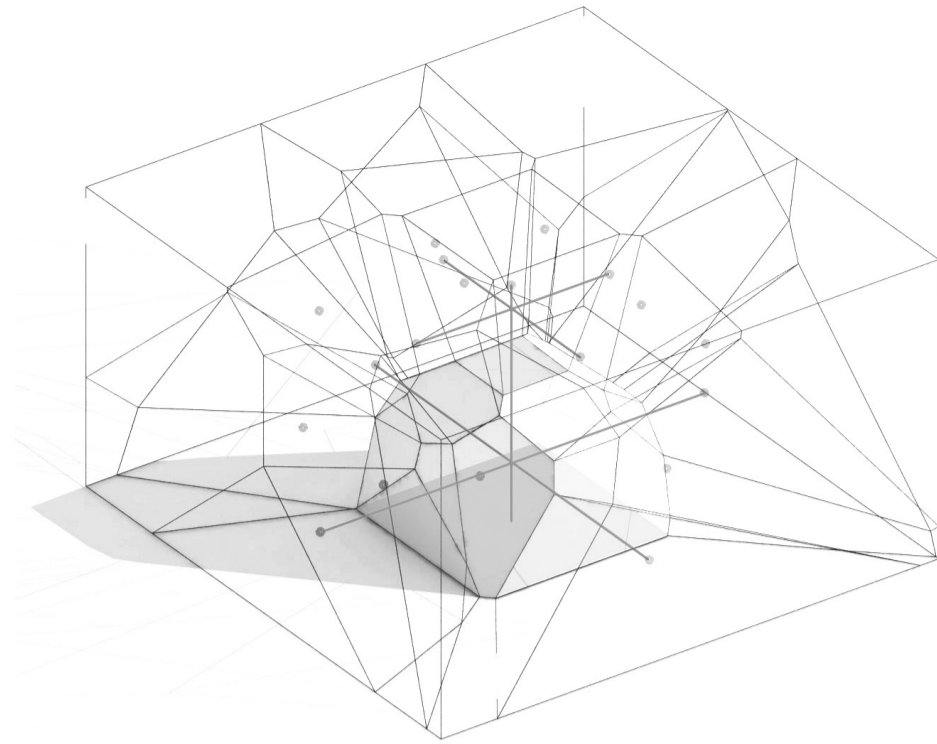


**THE VORONOI ALGORITHM
AS A DESIGN TOOL**

In mathematics, a Voronoi diagram is a special kind of decomposition of a metric space determined by distances to a specified discrete set of objects in the space, e.g., by a discrete set of points. The voronoi algorithm is applied to generate the cell (the planetarium) in its specific arrangement. The algorithm uses points in space to create the cells. This way various forms can be created, opening up endless possibilities, yet constrained by elemental rules of mathematics, functions, stability, etc. The points are arranged in a way that the base and the top flat surfaces define exact squares.



CONSTRUCTED WETLAND

An environmentally friendly solution to wastewater treatment. The applied technology employs classical activated sludge system and SBR configuration to achieve total nitrogen & phosphorous removal. A constructed wetland system (CWS) pretreats wastewater by filtration, settling, and bacterial decomposition in a natural-looking lined marsh. The properly operating constructed wetland should produce an effluent with less than 30 mg/liter BOD - biochemical oxygen demand, a measure of organic material.

GREENHOUSE

The technology uses the metabolic processes of living organisms to treat water. A series of aerated reactors, clarifiers, and final polishing units are used. Plants with extensive root systems are placed on a supporting mesh just below water level in the open aerobic reactors. It looks just like a greenhouse, where trees and other plants are planted upon the water. Small microorganisms and other species grow and live amongst the plant-life, which digest and neutralise contaminants in the water, thus, cleaning the water.

GEO THERMAL HEAT PUMP

The ground source heat pump is a central heating and/or cooling system that pumps heat to or from the ground. It uses the earth as a heat source (in the winter) or a heat sink (in the summer). This design takes advantage of the moderate temperatures in the ground to boost efficiency and reduce the operational costs of heating and cooling systems. A vertical closed loop field is composed of pipes that run vertically in the ground. A hole is bored in the ground 100-150m deep.

