

CULTIVATING MEMBRANE

Ian Barnett and Taraneh Khaleghi

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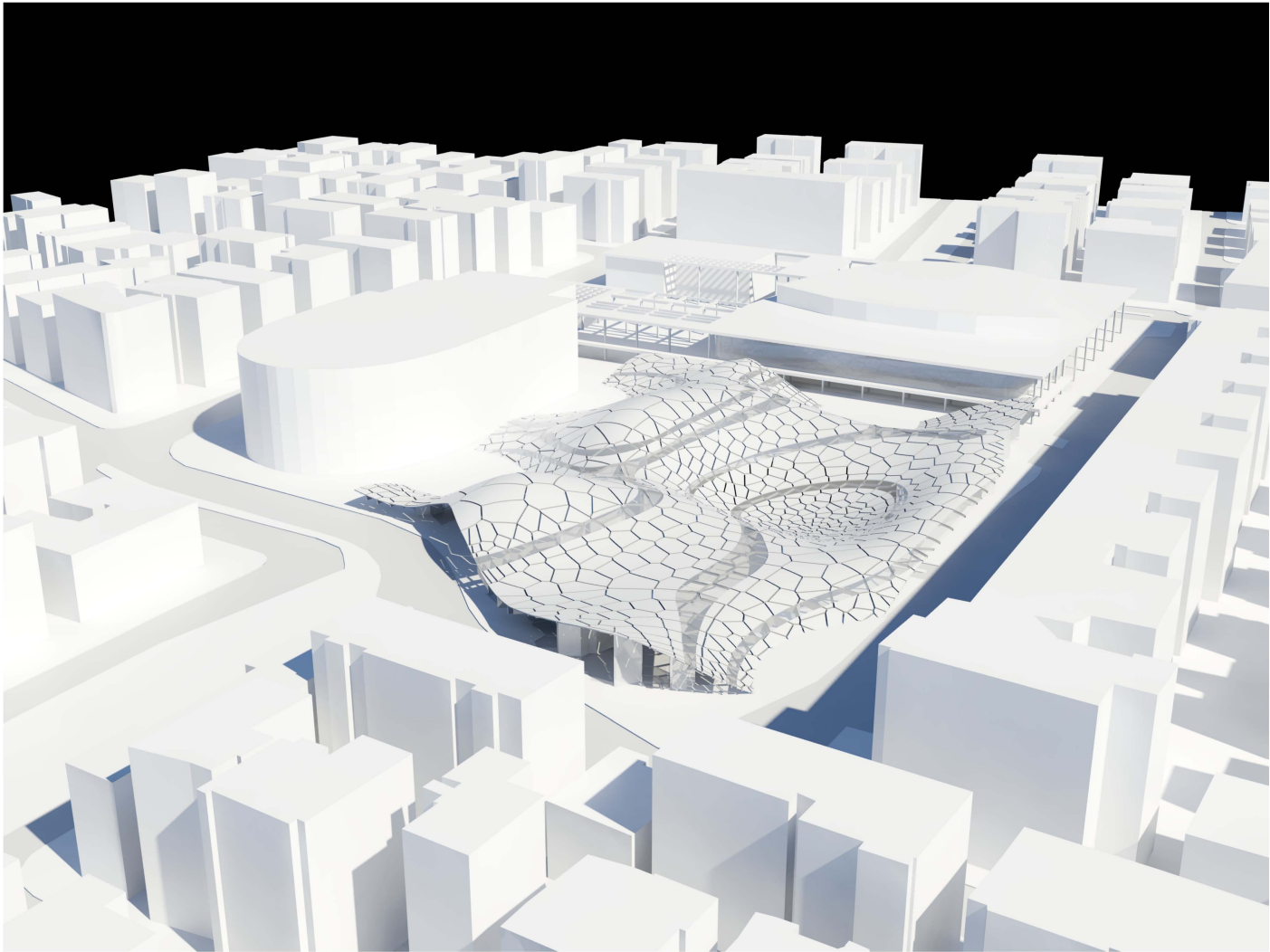
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“The difference between city and nature no longer actually exists. [...] The city has become an outstretched urban landscape. The city dweller is no longer limited to his immediate surroundings. [...] The city-dweller is a self-assured, exploratory individual, is extremely mobile, disposes of the achievements of technology, and has access to several media. The surroundings do not always have to be adapted to the supposed desires of the city-dweller, it is he that adapts himself to his surroundings. The home is to the city-dweller no longer an individual world. He is continually changing his guise and surroundings.”

In Bart Lootsma's quote from *The New Landscape*, the distinction between city and nature is completely blurred; the city is a landscape, the *new landscape*. What could traditionally only happen in separate places could now happen all in the same place. The “city-dweller”, through technological and communication devices, has access to things much further than the human's immediate surroundings; with a car, the human can travel distances; with a phone, the human can communicate with friends on the other side of the world; with the internet, the human can congregate with individuals with similar interests. These media provide the *city-dweller* with a sort of virtual life where the human can physically be in one place, but virtually be in a land with people from all corners of the earth. The limits become virtually endless and

no longer physical. Lootsma further states that “the media radically destroy the traditional urban and architectural spatial organization and notably the traditional distinction between private and public space”. One can remain in the private space of one's car while travelling to the most public of spaces. One can be in the privacy of one's home meanwhile broadcasting in an online public arena. One can be contacted by telemarketers and email spammers without so much as allowing permission for this private access.

Can architecture act as a media? Can architecture blur the space between public space and private space? Can architecture create “the new landscape” by merging city and nature? What *Cultivating Membrane* does is bring together people in their own private devices, their cars or bikes or any such vehicle, and have them experience a public realm through different lenses. They interact with their public surroundings, meanwhile remaining in their private bubbles. The project melds nature and technology, using technology to broadcast nature, within the genetic laboratories and screening areas, and nature to broadcast technology, on the surface through genetic manipulation of organisms. The users get to interact in their own way with their surroundings while still influencing the private/public space of others.



South-East View



Cultural Center
32°4'20.69"N
34°46'47.05"E
10 350 m² / 111 410 ft²

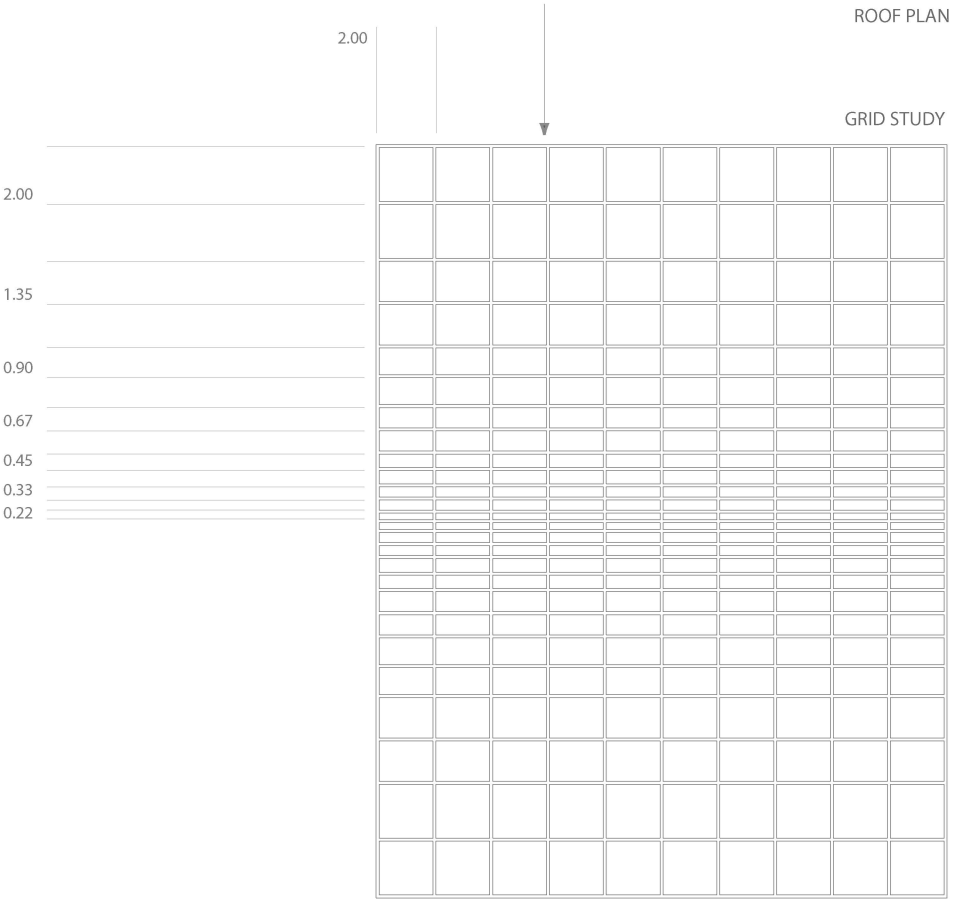
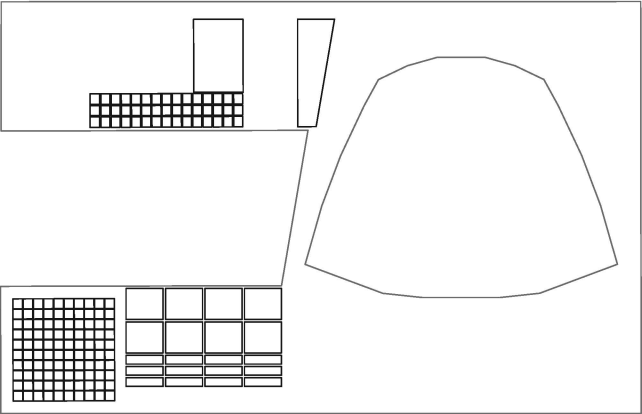
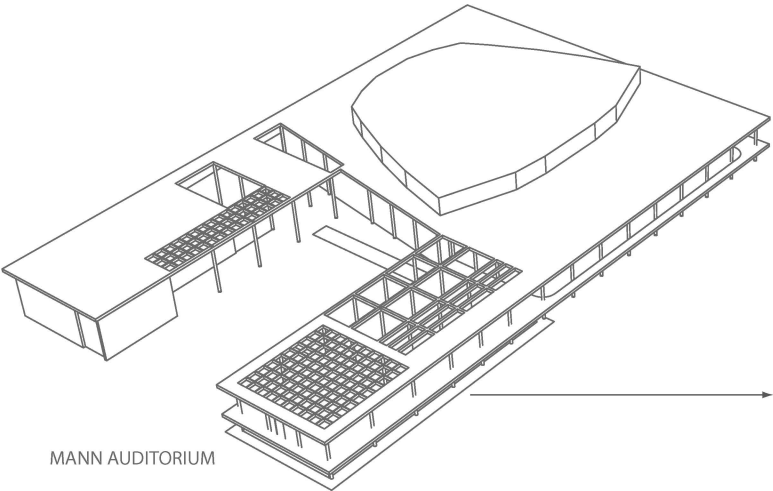


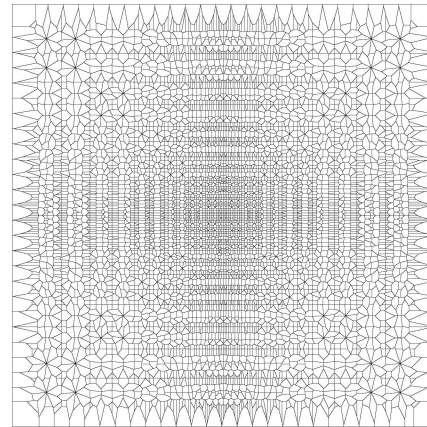
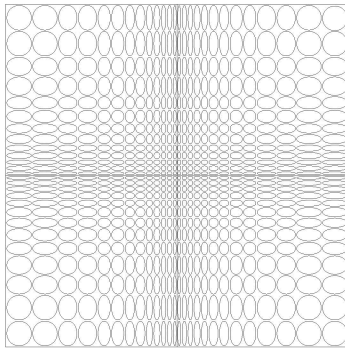
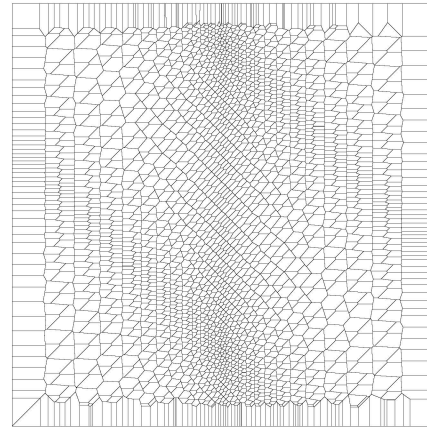
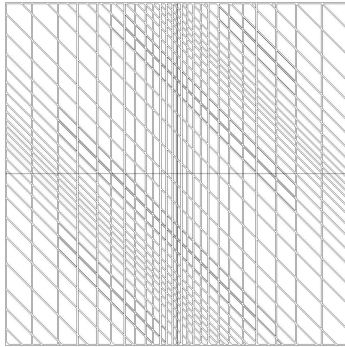
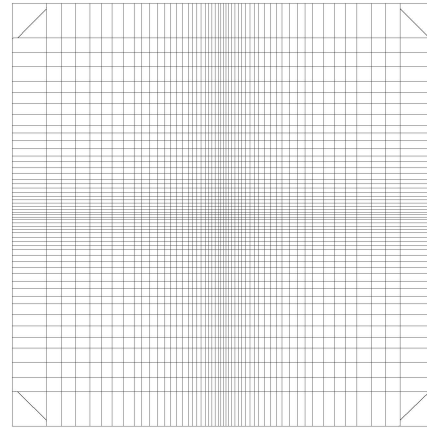
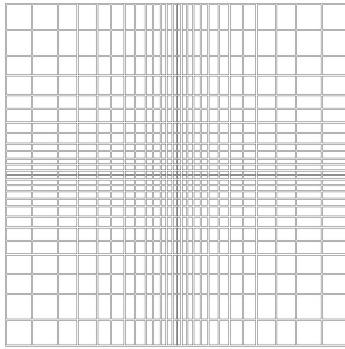


FORCES OF MOVEMENT

- vehicular traffic
- main entrances
- pedestrian influx

- city hall to independence hall green axis
- secondary green axis
- enter Mann auditorium
- enter Habima theatre
- enter Helena Rubenstein pavilion
- residential access
- secondary pedestrian/green axis
- observation
- commercial and public connection
- cultural connection

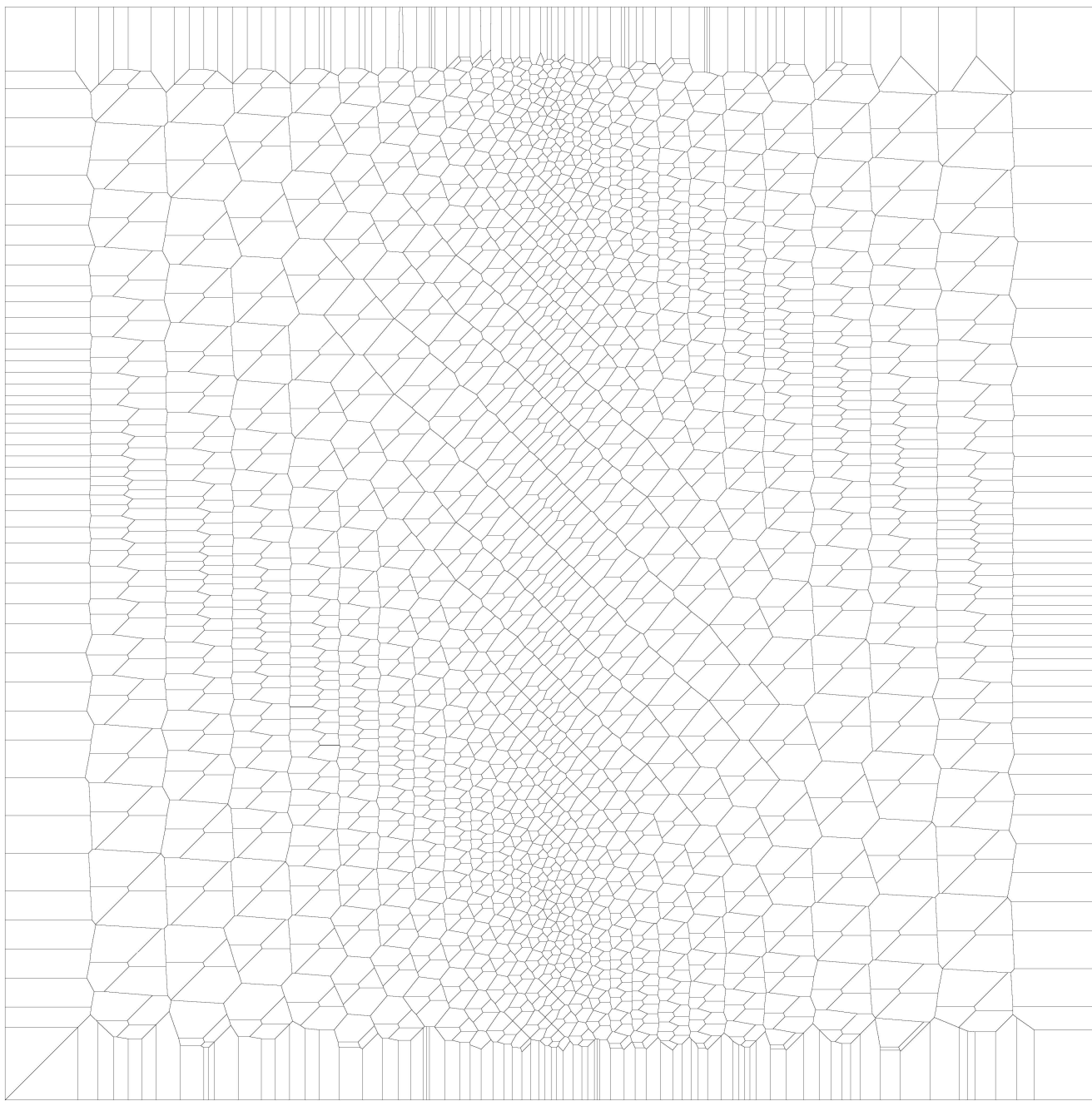




GENERATIVE LINES

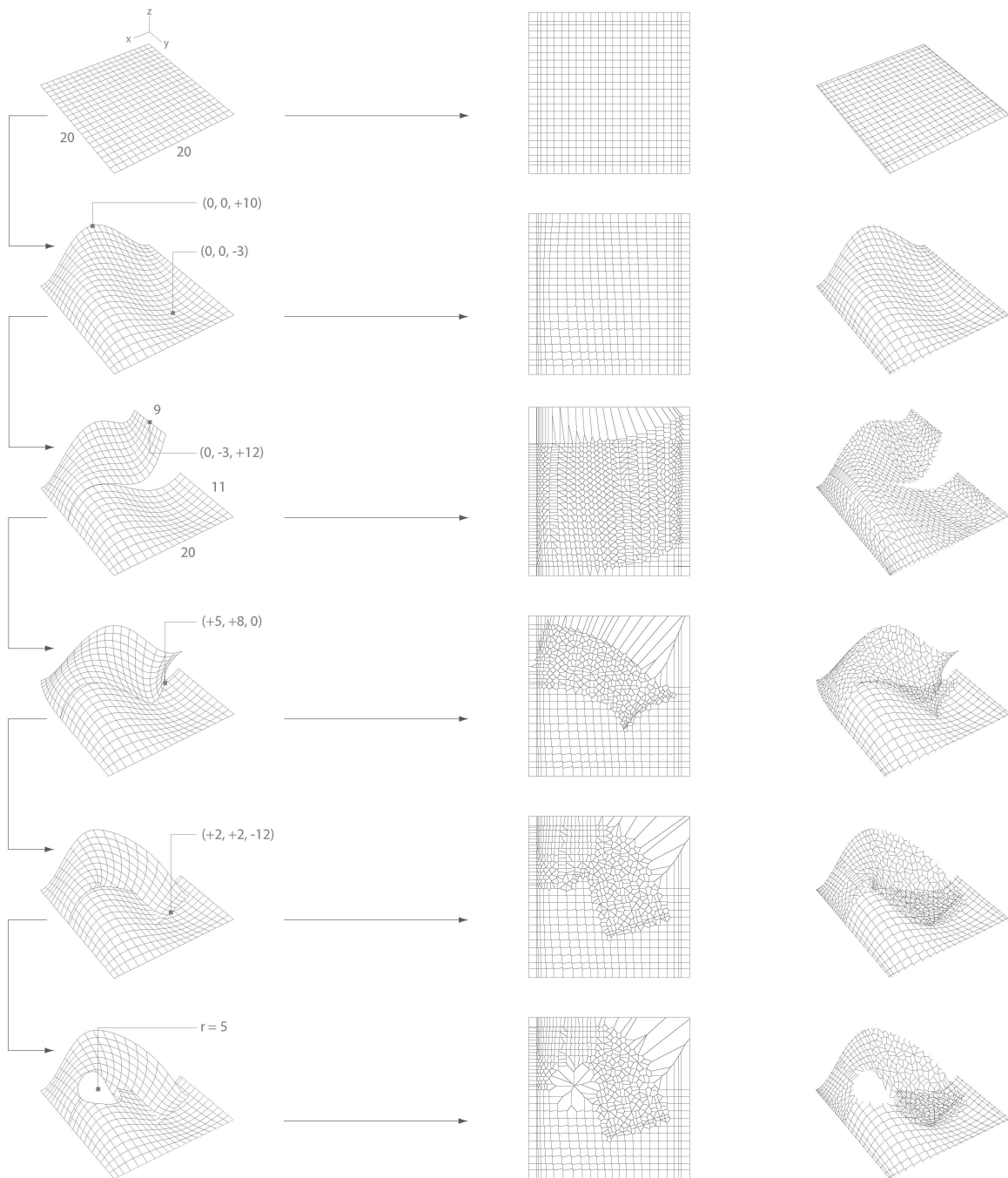
RESULTANT CELL TESSELLATIONS

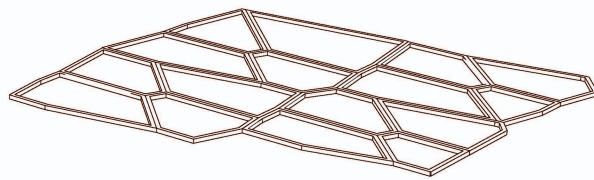
Cell Formations



CELL CONSTRUCTION

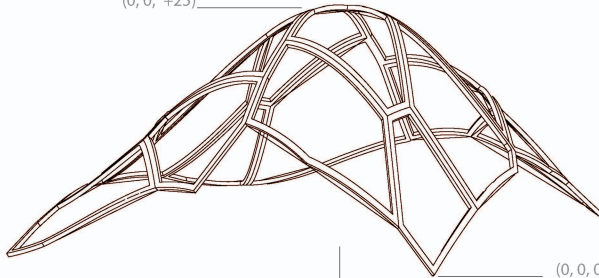
Cell Formations





PORTION OF CELL STRUCTURE

(0, 0, +25)

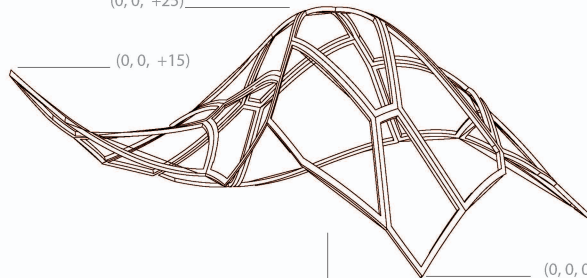


(0, 0, 0)

CELL MANIPULATION

(0, 0, +25)

(0, 0, +15)

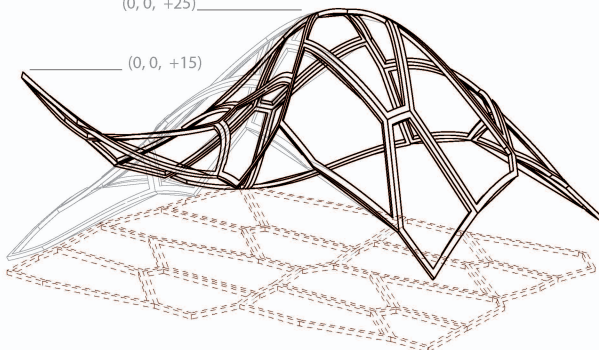


(0, 0, 0)

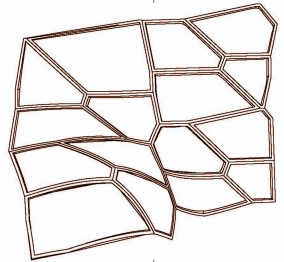
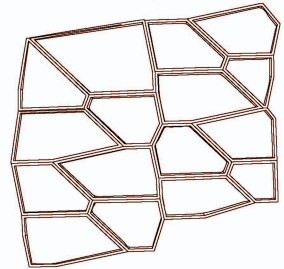
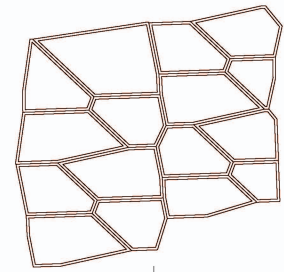
OVERLAY

(0, 0, +25)

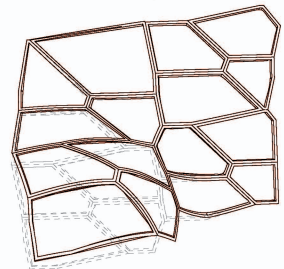
(0, 0, +15)

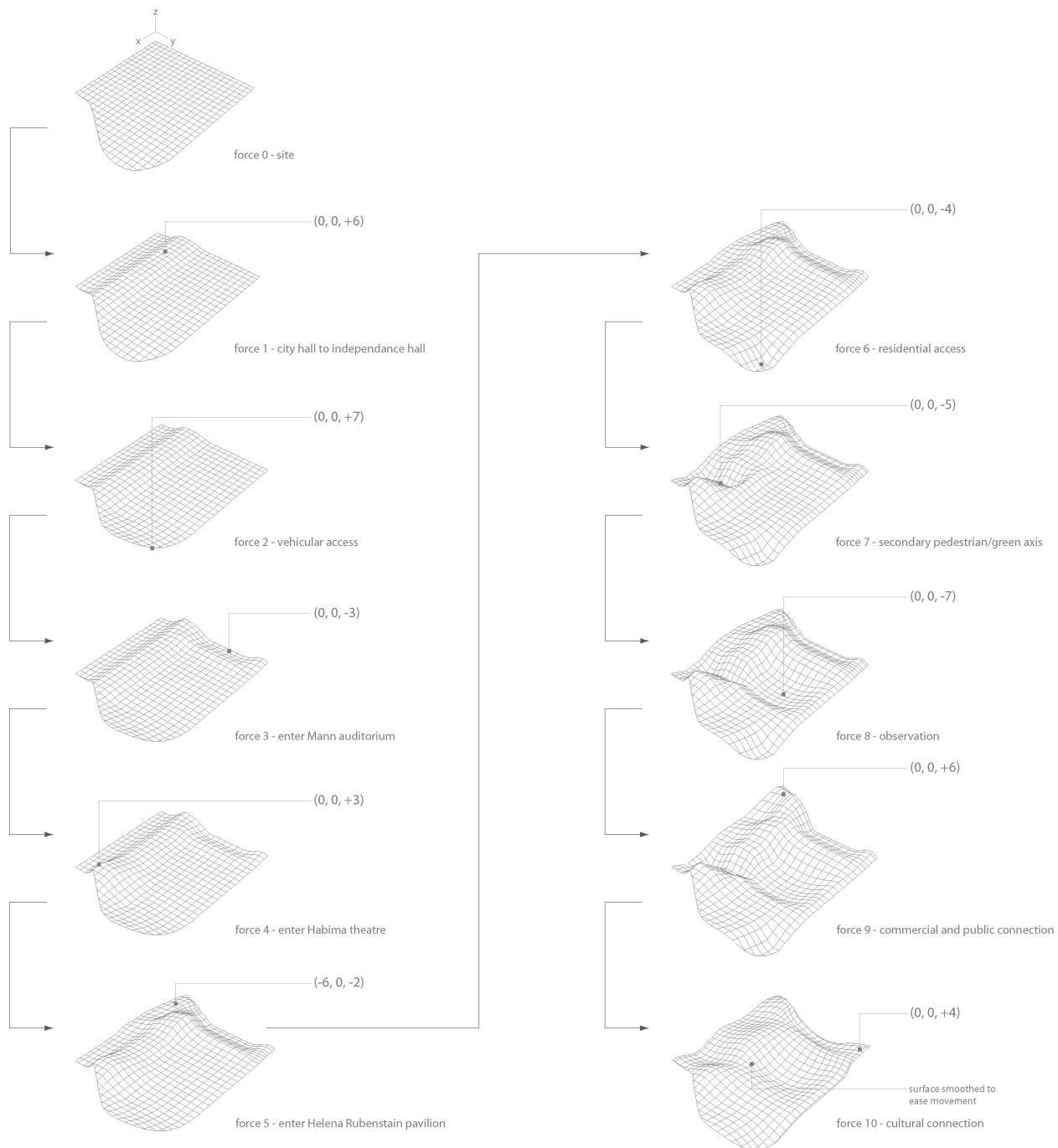


PLAN

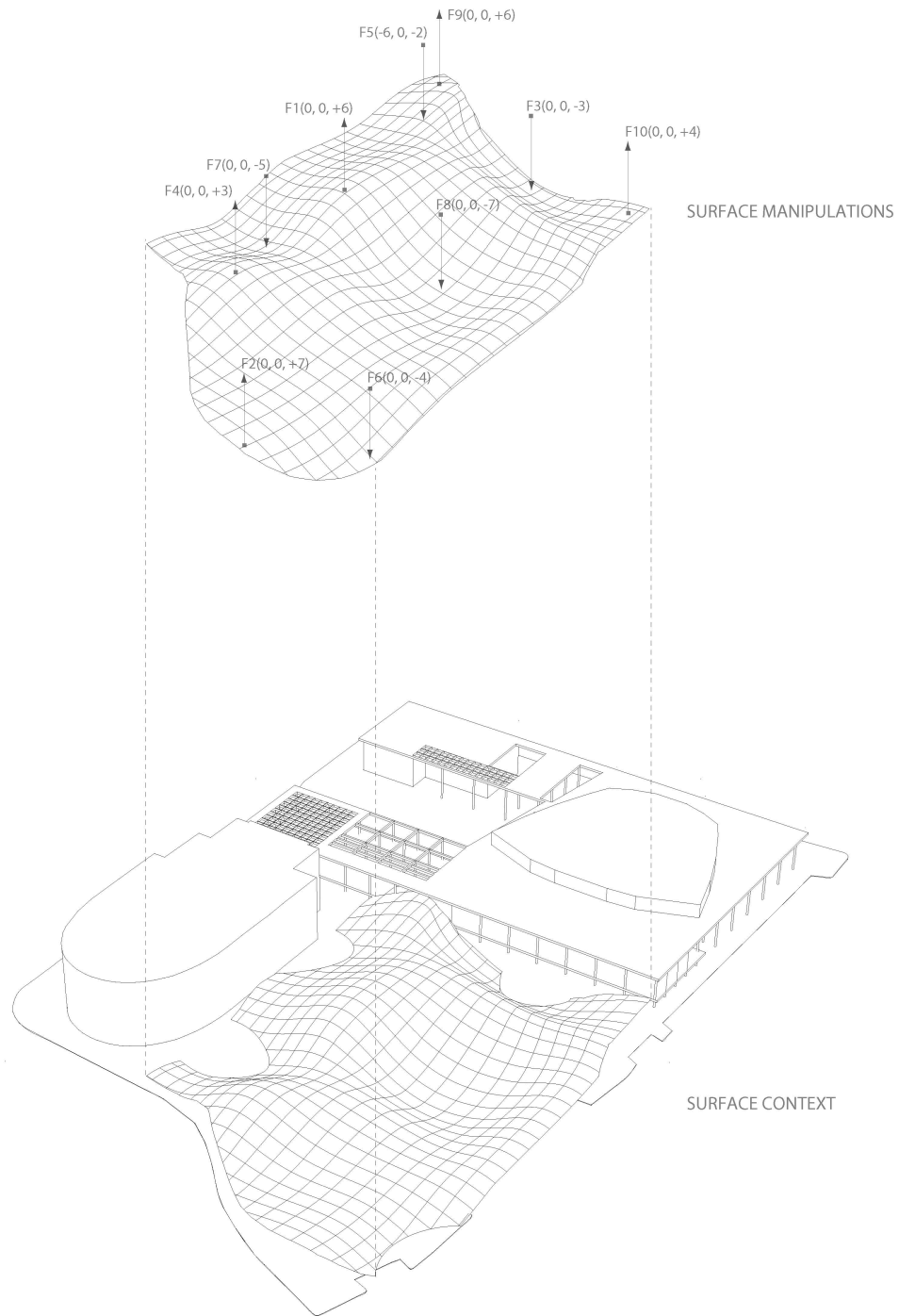


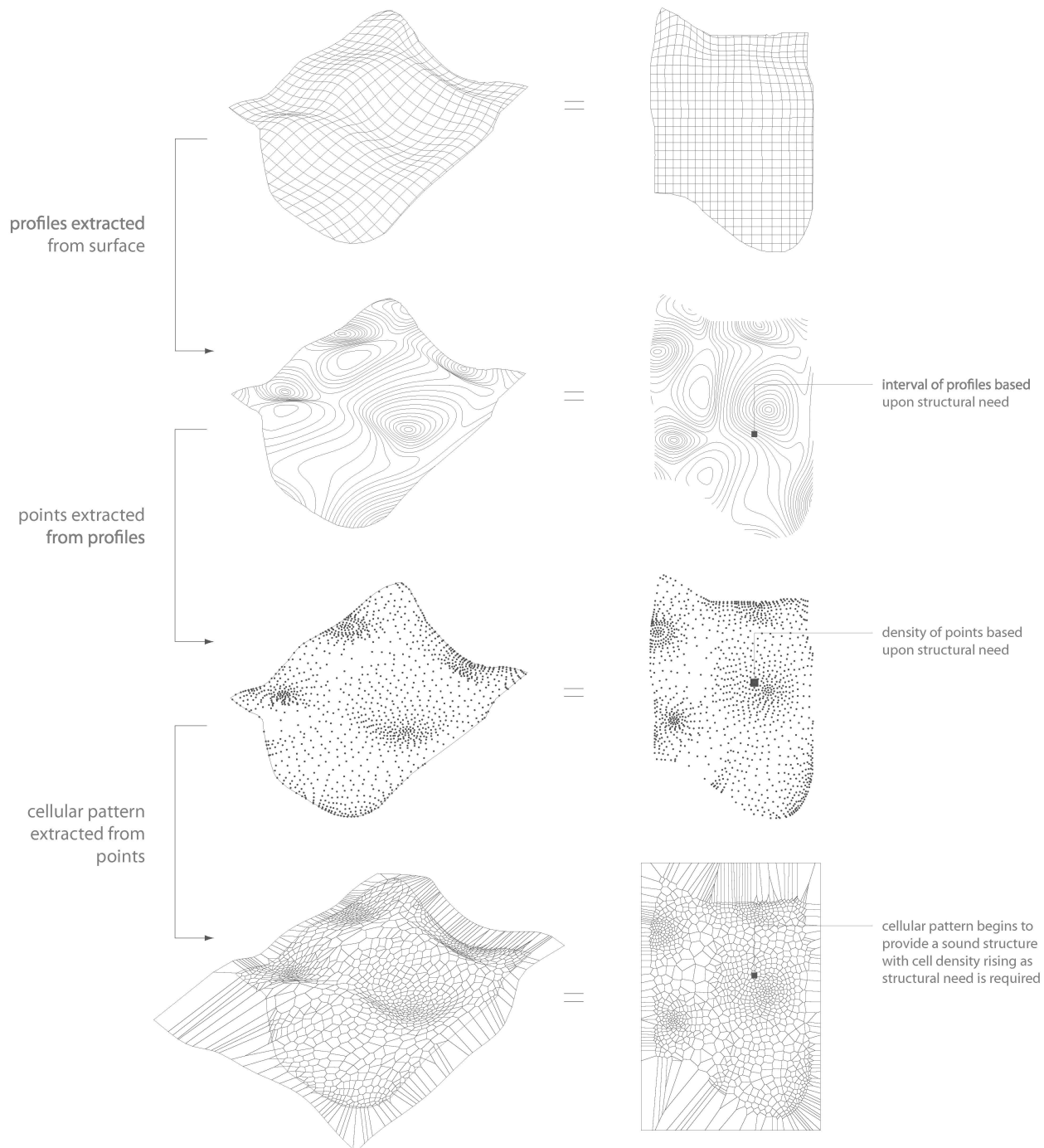
PLAN OVERLAY

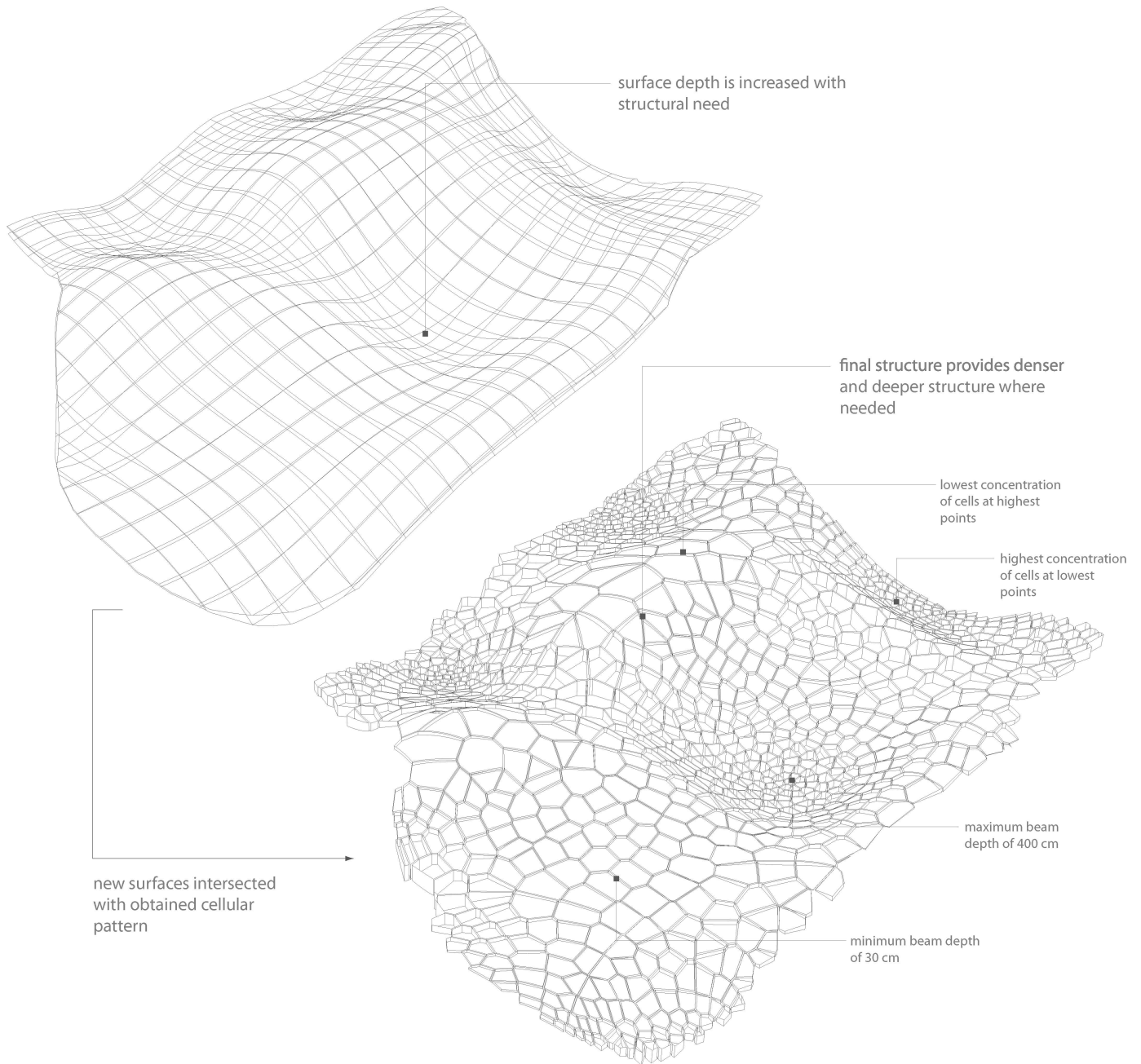


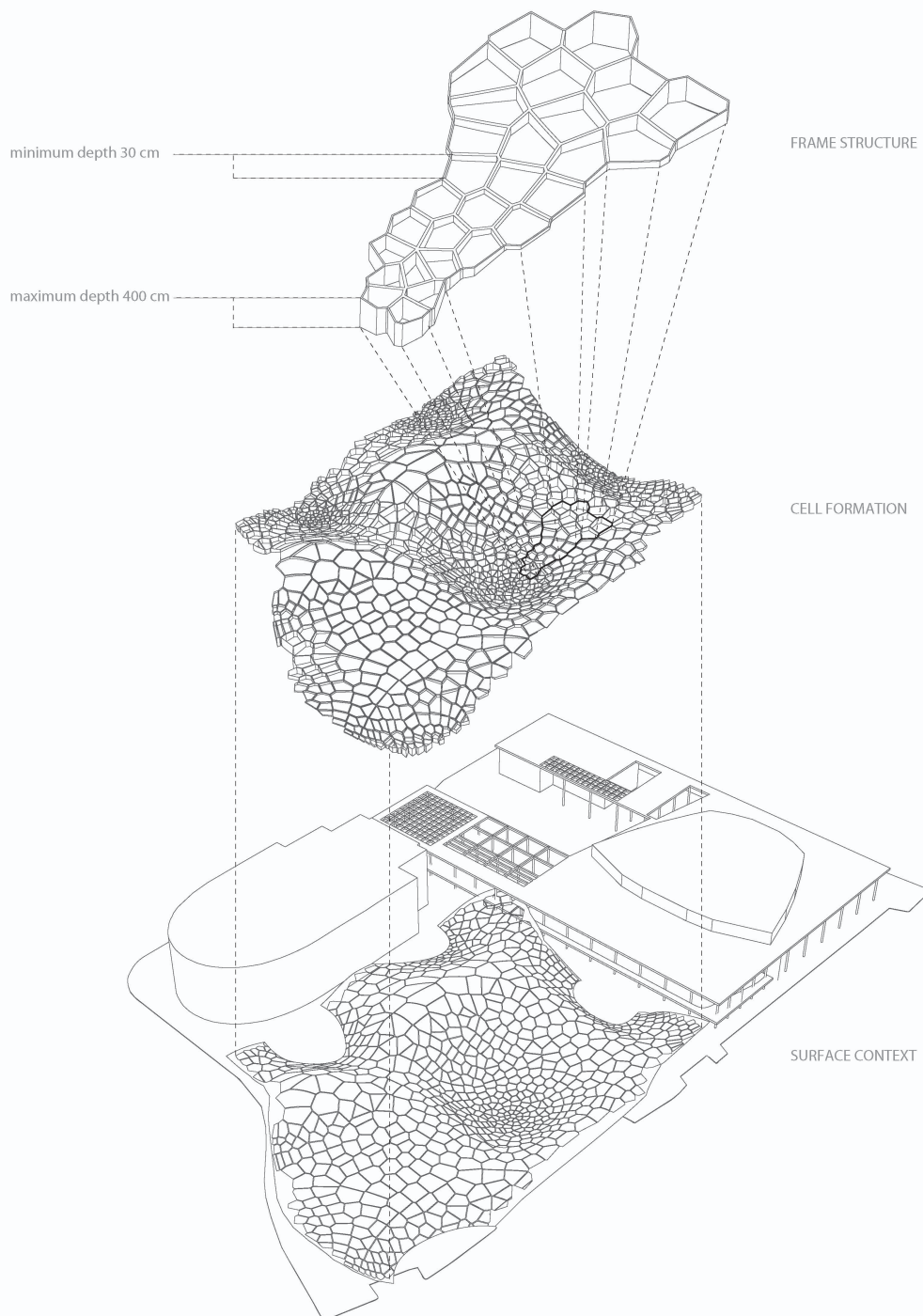


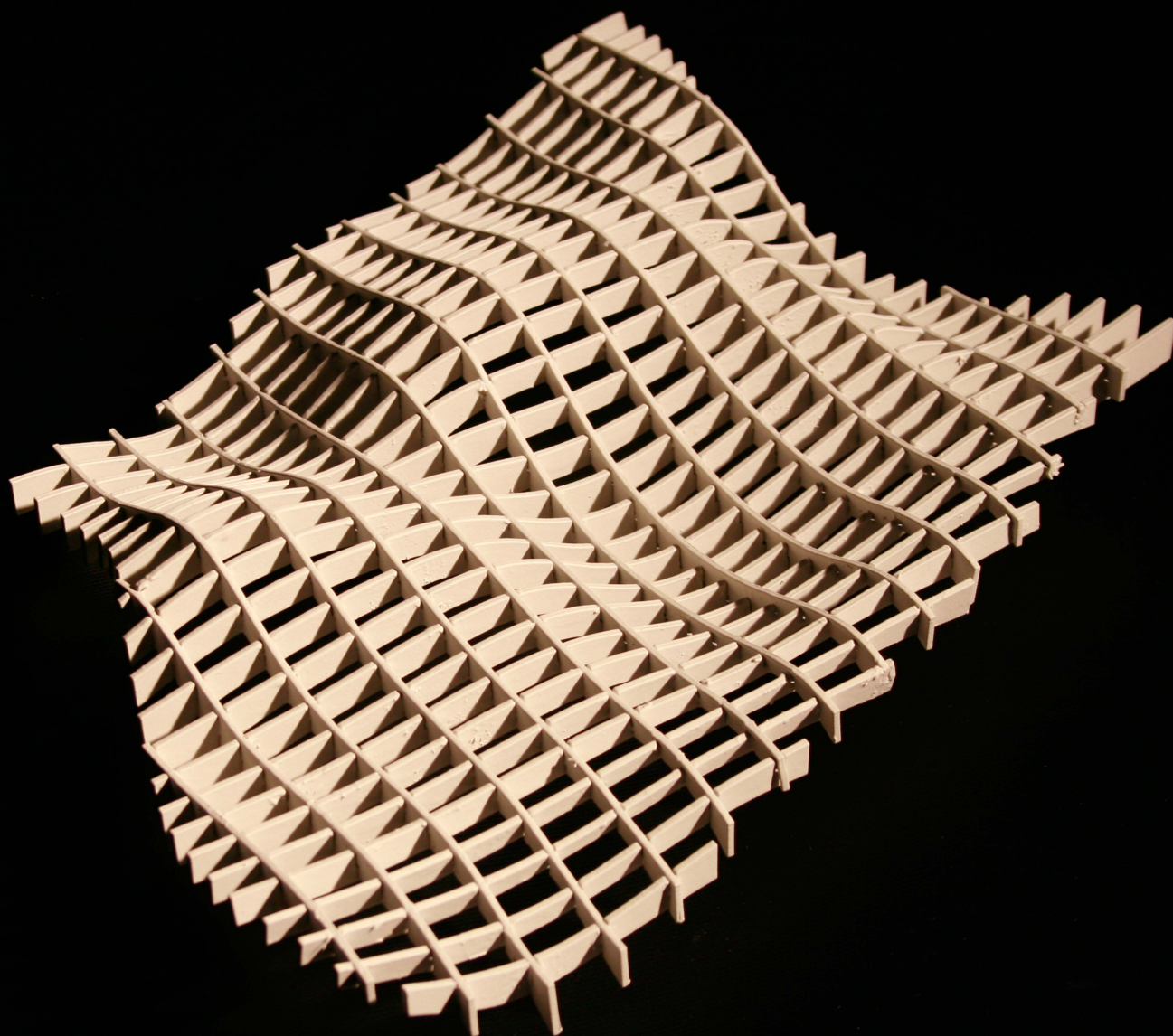
Site Manipulation Study

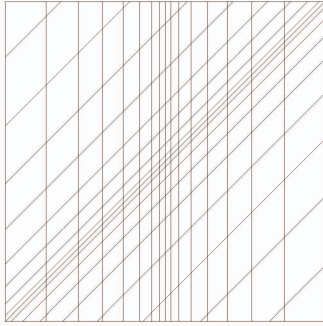




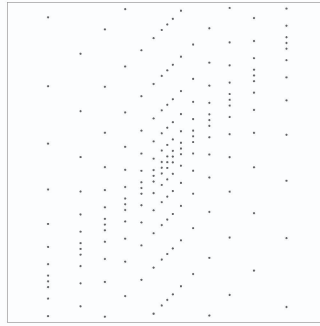




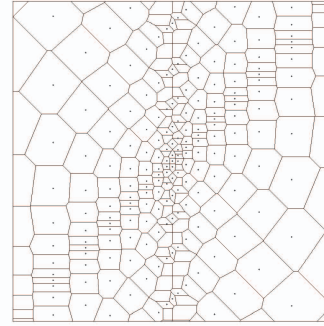




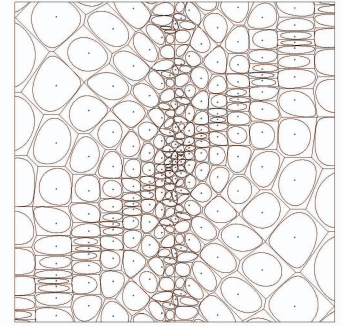
GENERATIVE LINES



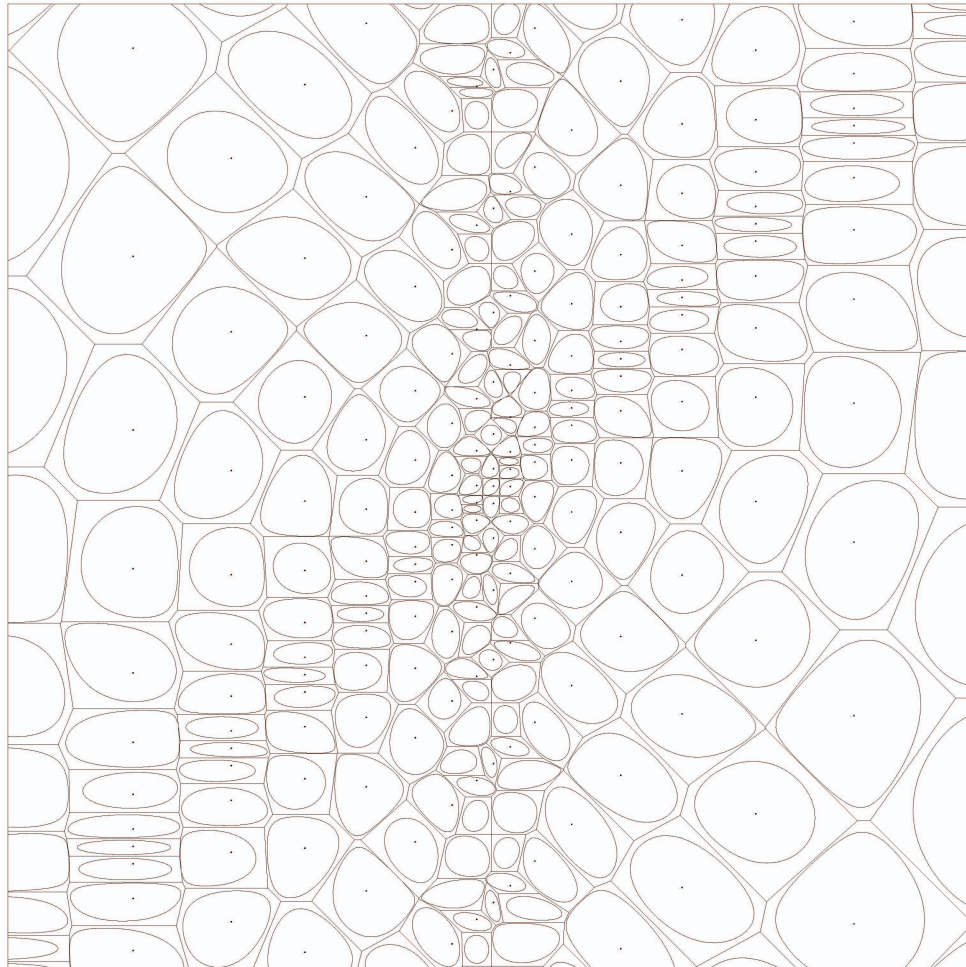
SOURCE POINTS

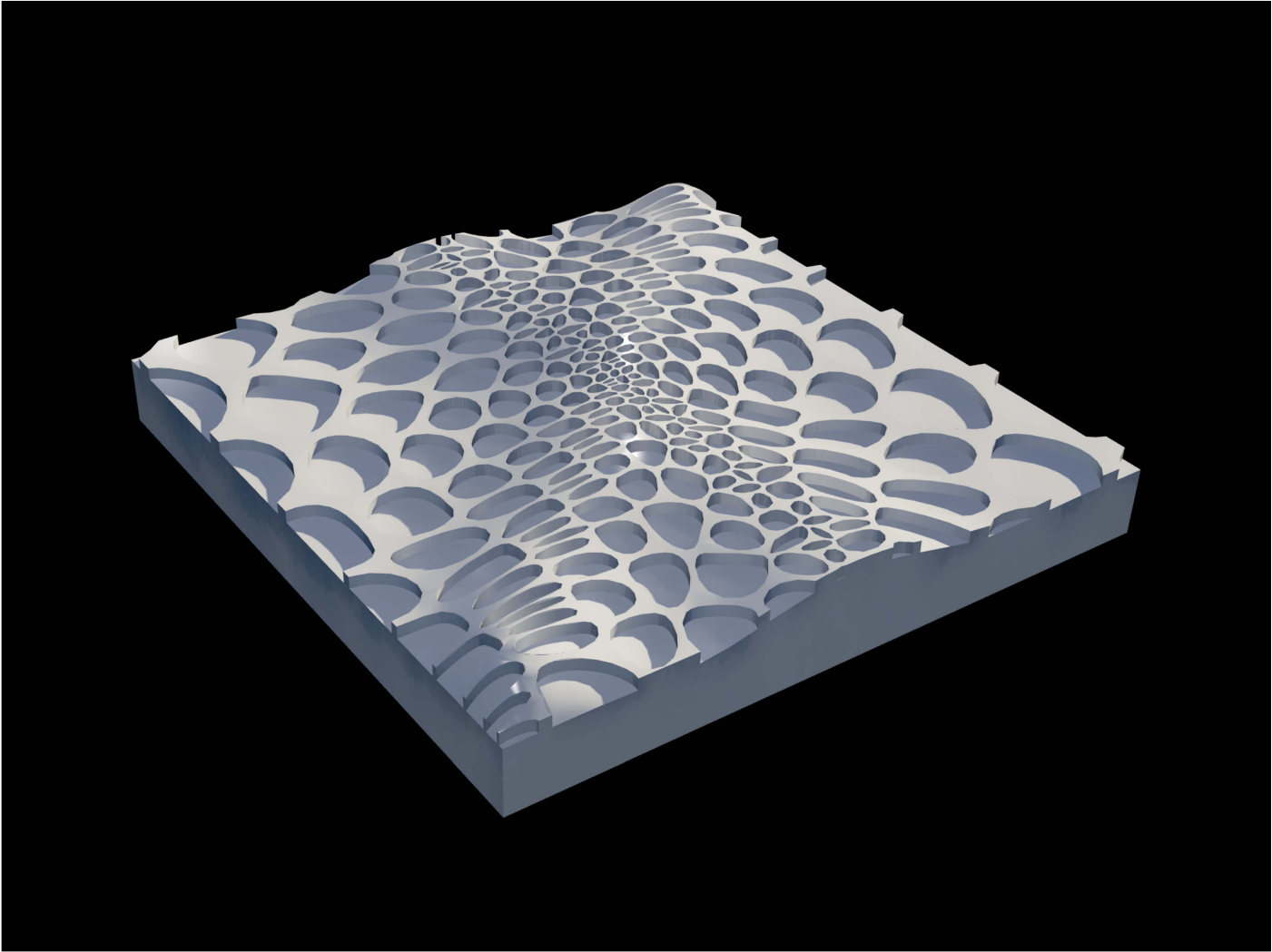


RESULTANT CELL TESSELLATIONS

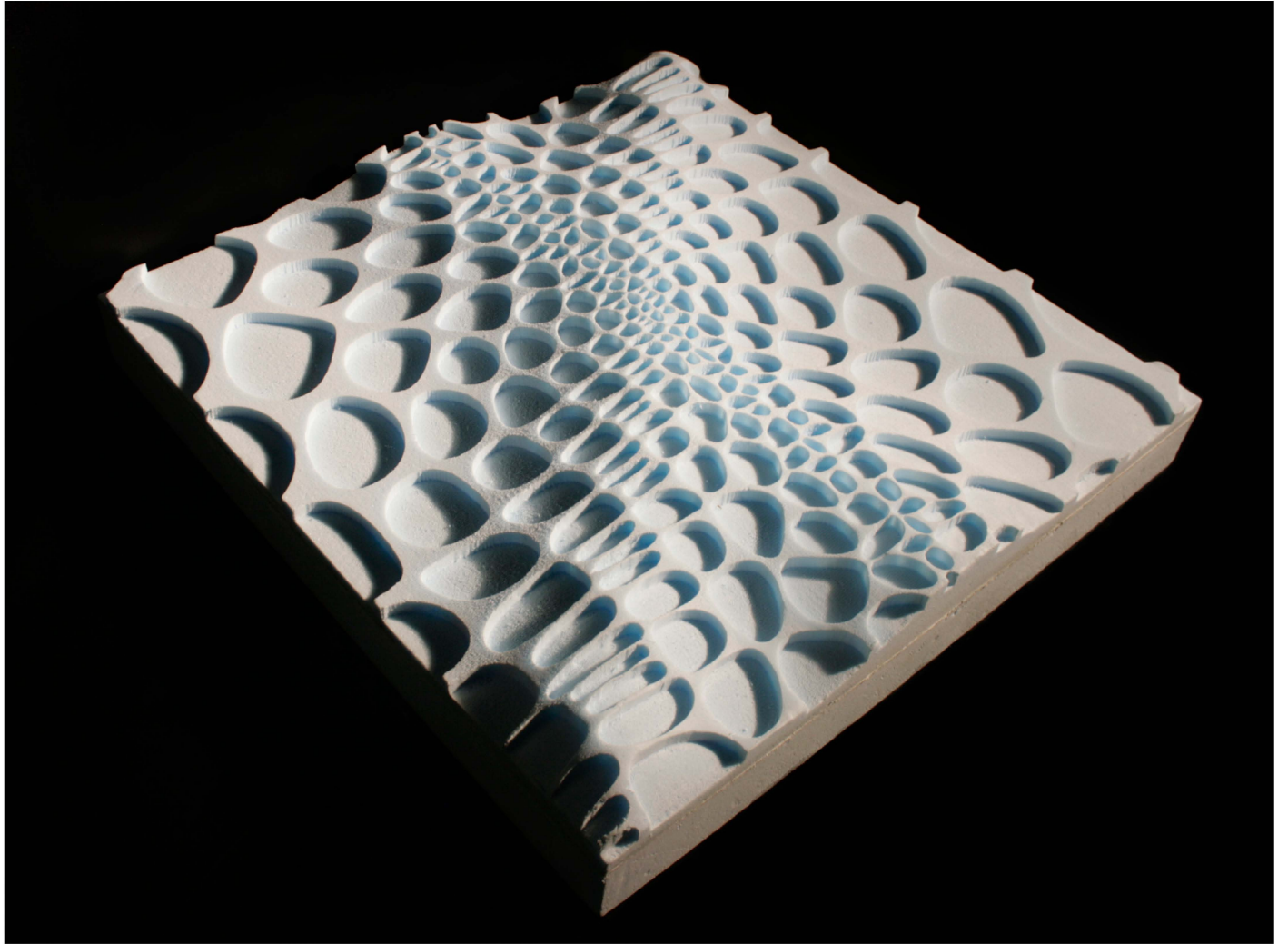


CELL CURVES





Module Tile



Physical Module Tile



GROUND FLOOR

Program:
Ecological and sustainable design art studios
Ecological and sustainable design art galleries
Digital art galleries using light projection on screens.
Genetic art laboratories
Parking lot
Bike rental

Light projection:
Sustainable design screens

Contemporary Sustainable Design Studio
Program:
Sustainable design studios
Sustainable design gallery

Light projection:
Genetic art screens

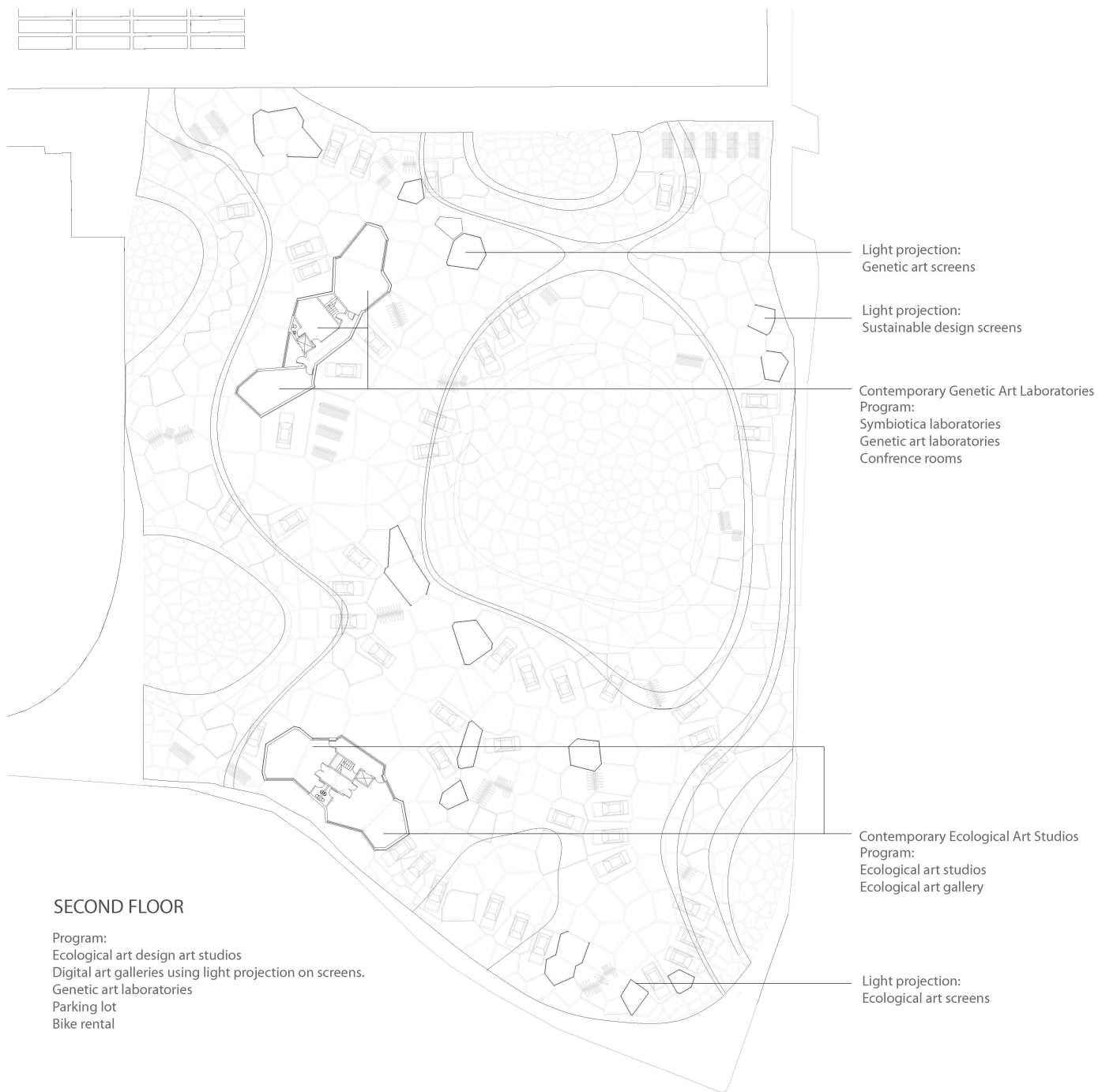
Public operated bike rentals

Contemporary Genetic Art Laboratories
Program:
Symbiotica laboratories
Genetic art laboratories
Conference rooms

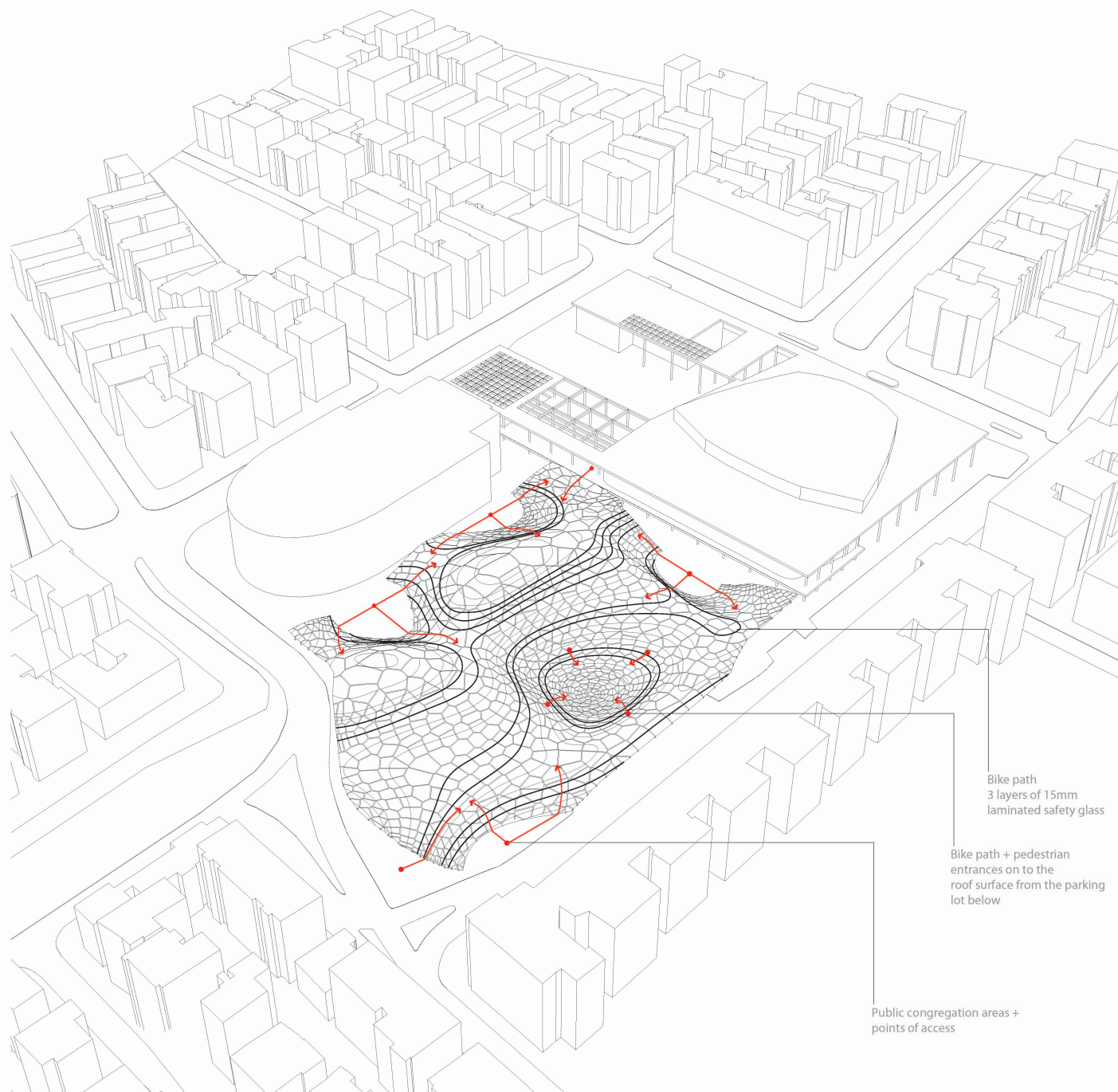
Pedestrian and bike entrance
to roof from ground floor

Contemporary Ecological Art Studios
Program:
Ecological art studios
Ecological art gallery

Light projection:
Ecological art screens



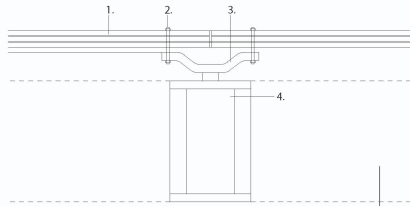
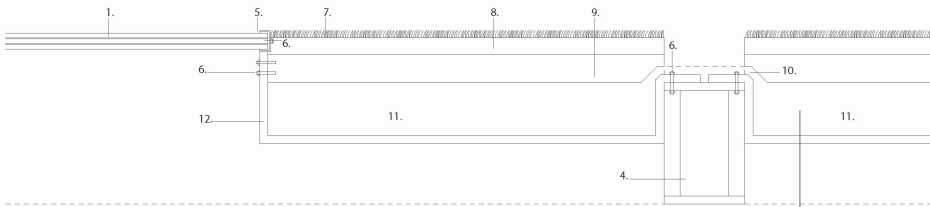
Floor Plan



Bike path
3 layers of 15mm
laminated safety glass

Bike path + pedestrian
entrances on to the
roof surface from the parking
lot below

Public congregation areas +
points of access



1. Tread, laminated safety glass 3 x 15 mm, anti slip finish
2. Aluminum bolted fixing
3. Glazing support attachment
4. Timber beam
5. Linear glass retainer
6. Steel bolted fixing
7. Tall fescue grass
8. Perlite growing medium
9. Reinforced concrete slab
10. Rain water access
11. Hydroponic rain water reservoir
12. Metal hydroponic container

BIOLUMINESCENCE

making living things glow

LUCIFERASE GENE

an enzyme present in certain luminous organisms.



ADENOSINE TRIPHOSPHATE (ATP)

a nucleotide involved in energy metabolism and required for RNA synthesis; it occurs in all cells.

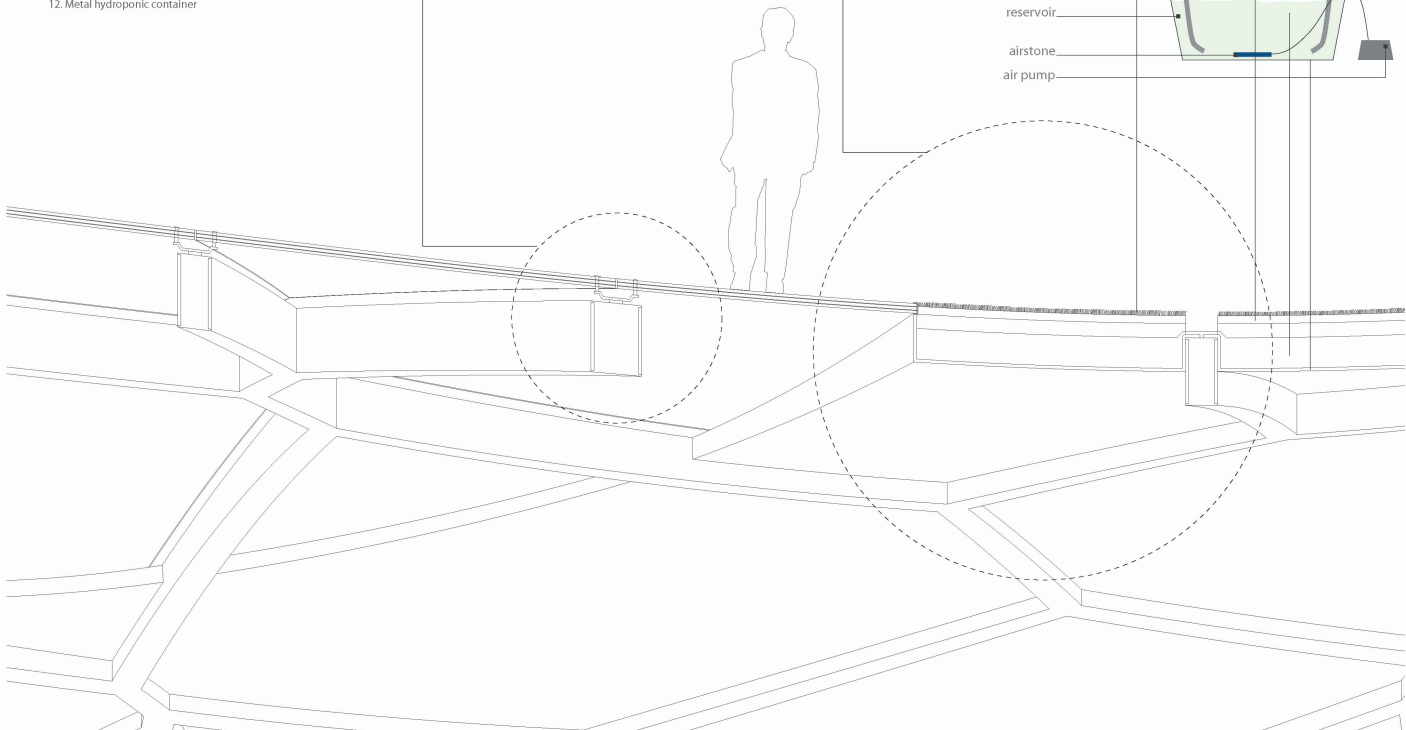
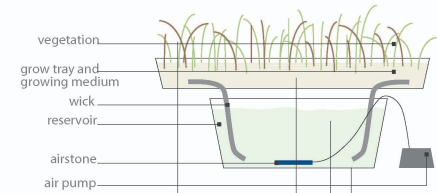


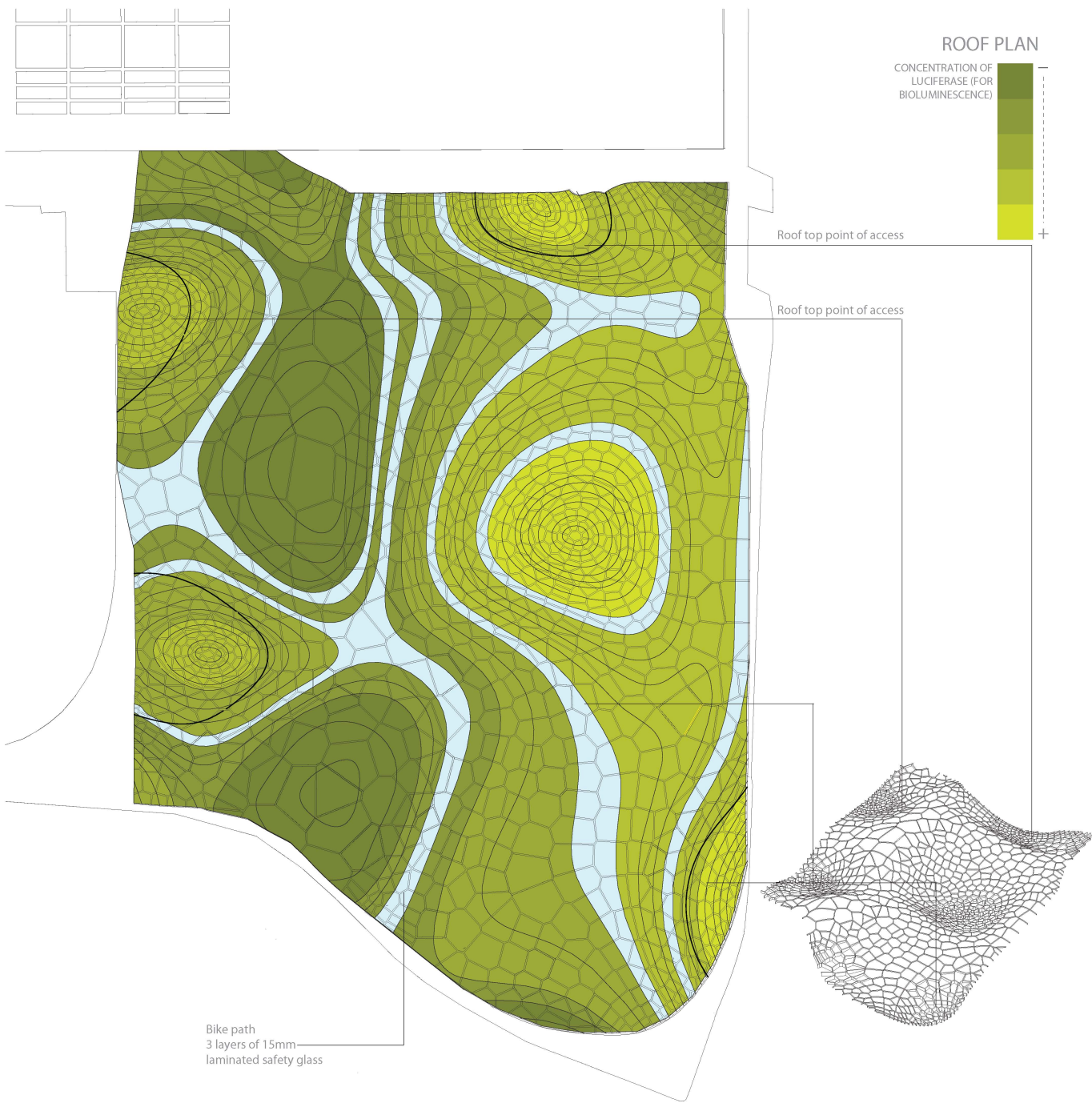
firefly

genetically- modified plant

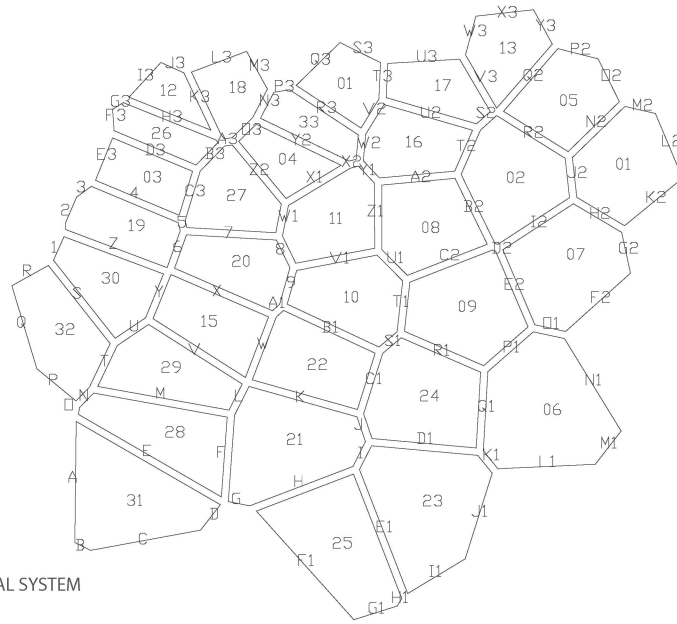
HYDROPONICS

feeding plants only what is necessary





Roof Plan



PORTION OF STRUCTURAL SYSTEM

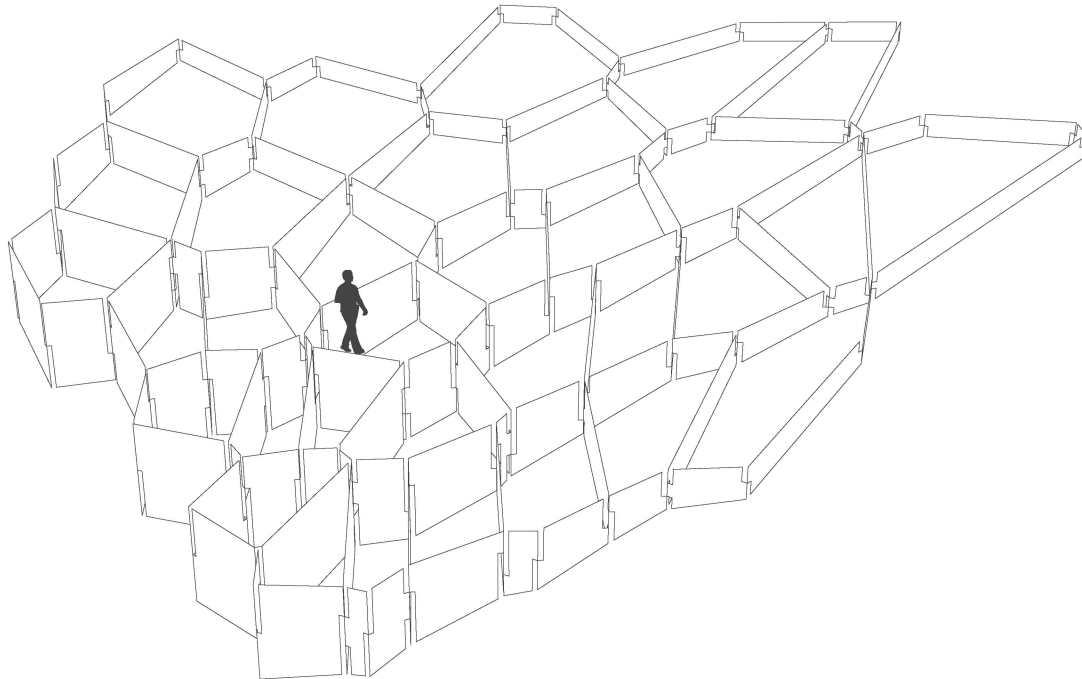
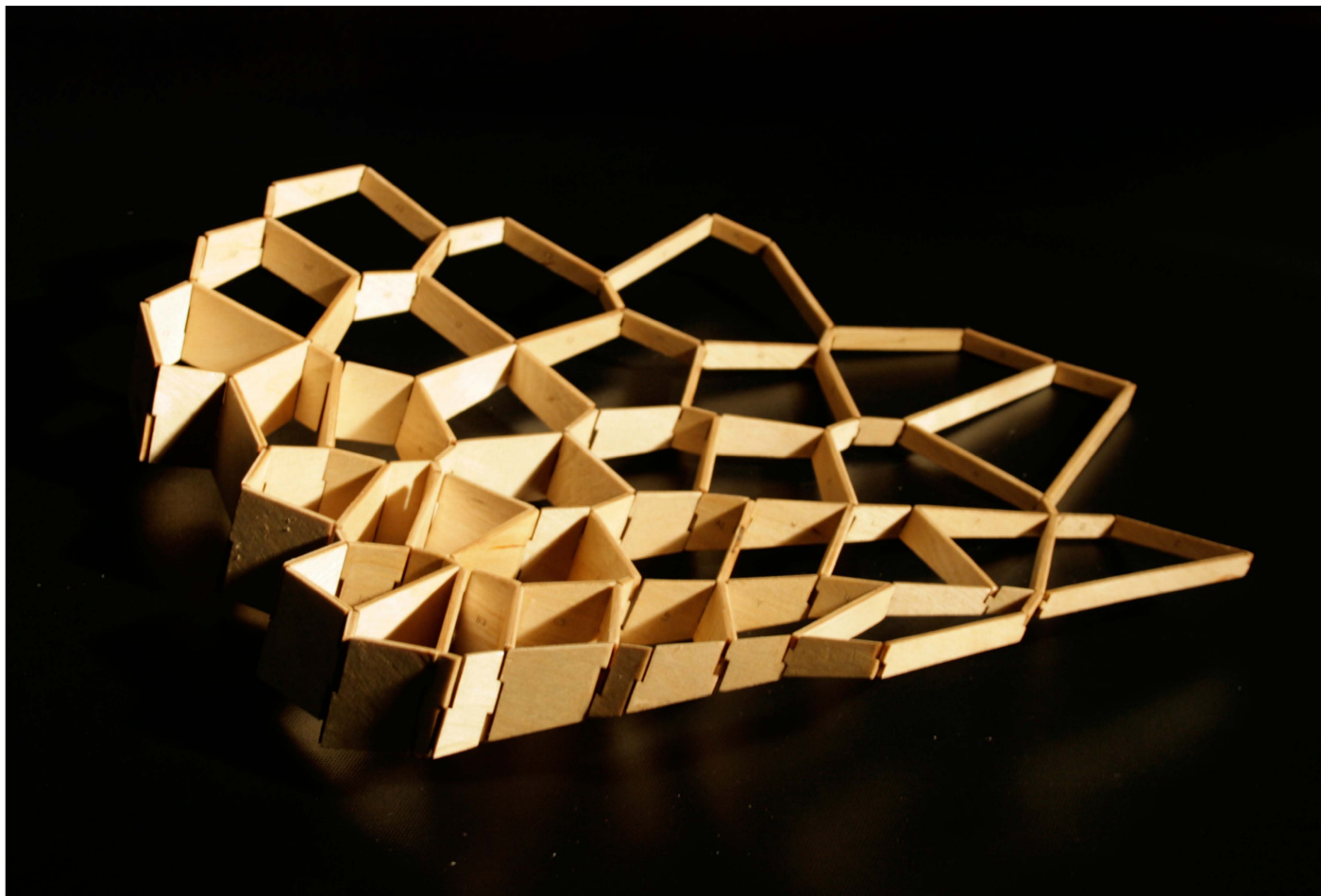


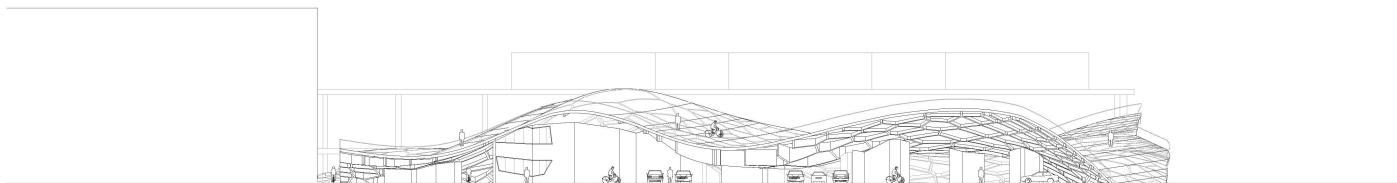
DIAGRAM OF INTERLOCKING BEAMS

Structural Beam Study

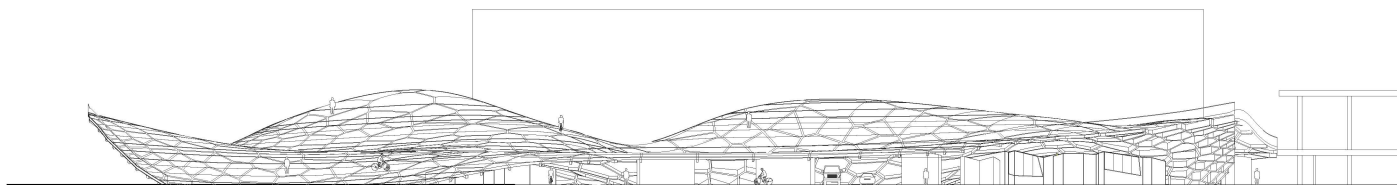




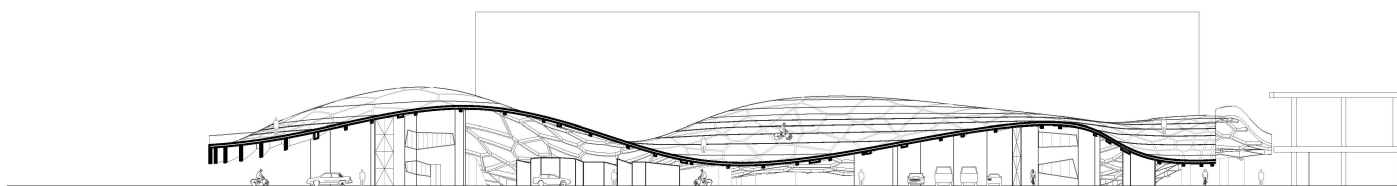
Structural Beam Study



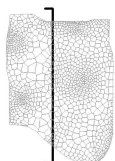
SOUTH ELEVATION

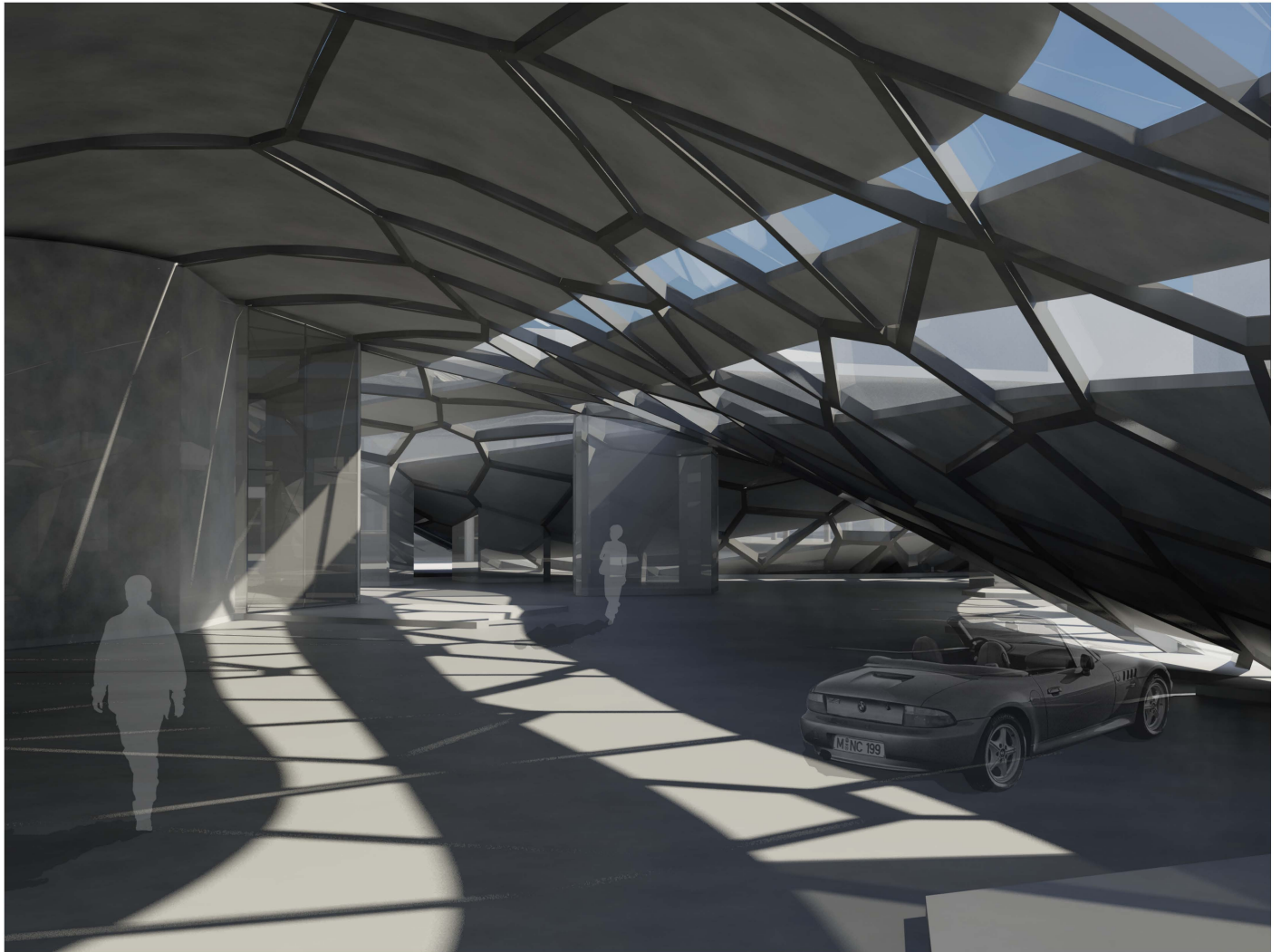


EAST ELEVATION

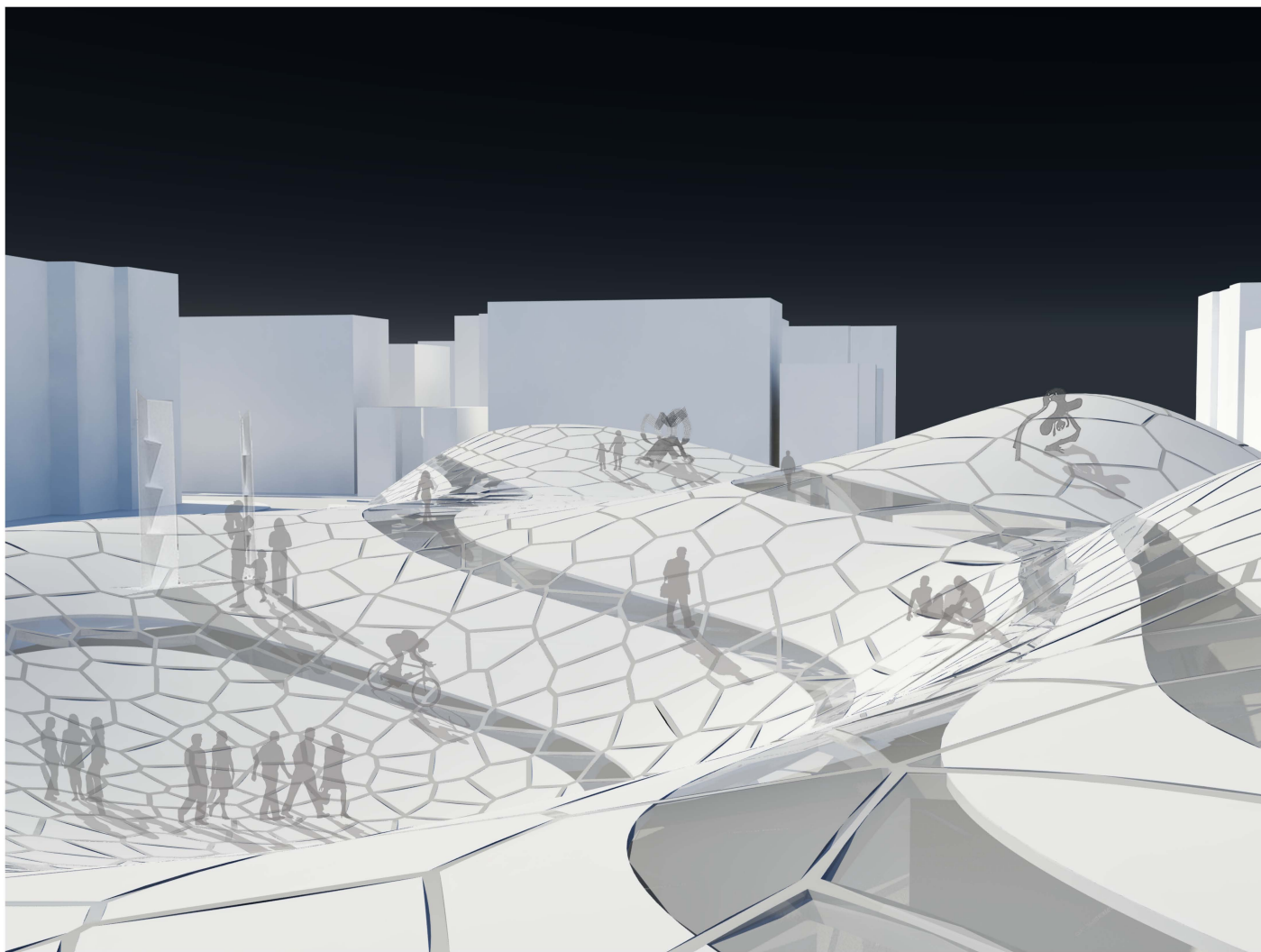


LONGITUDINAL SECTION

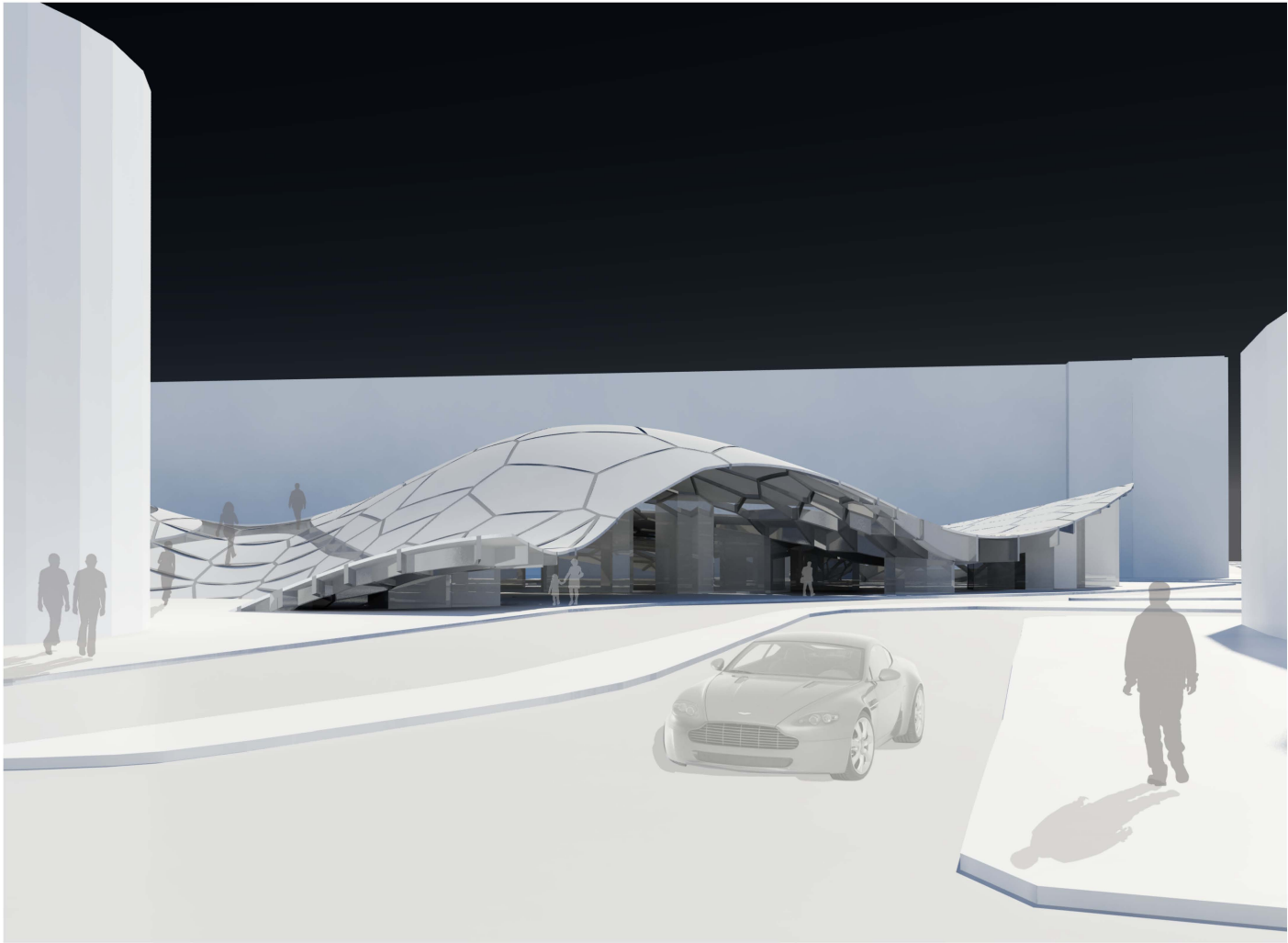




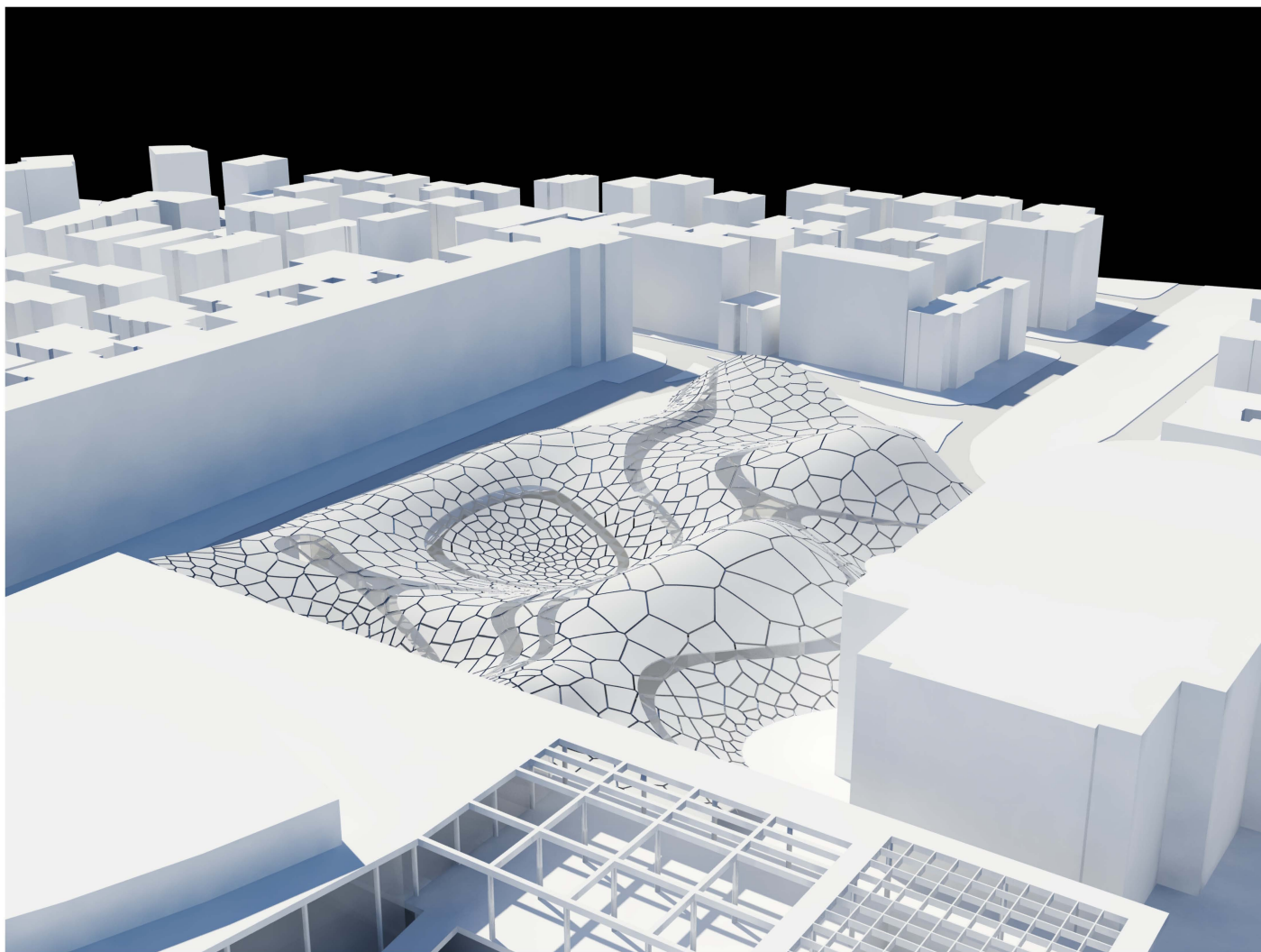
Interior View



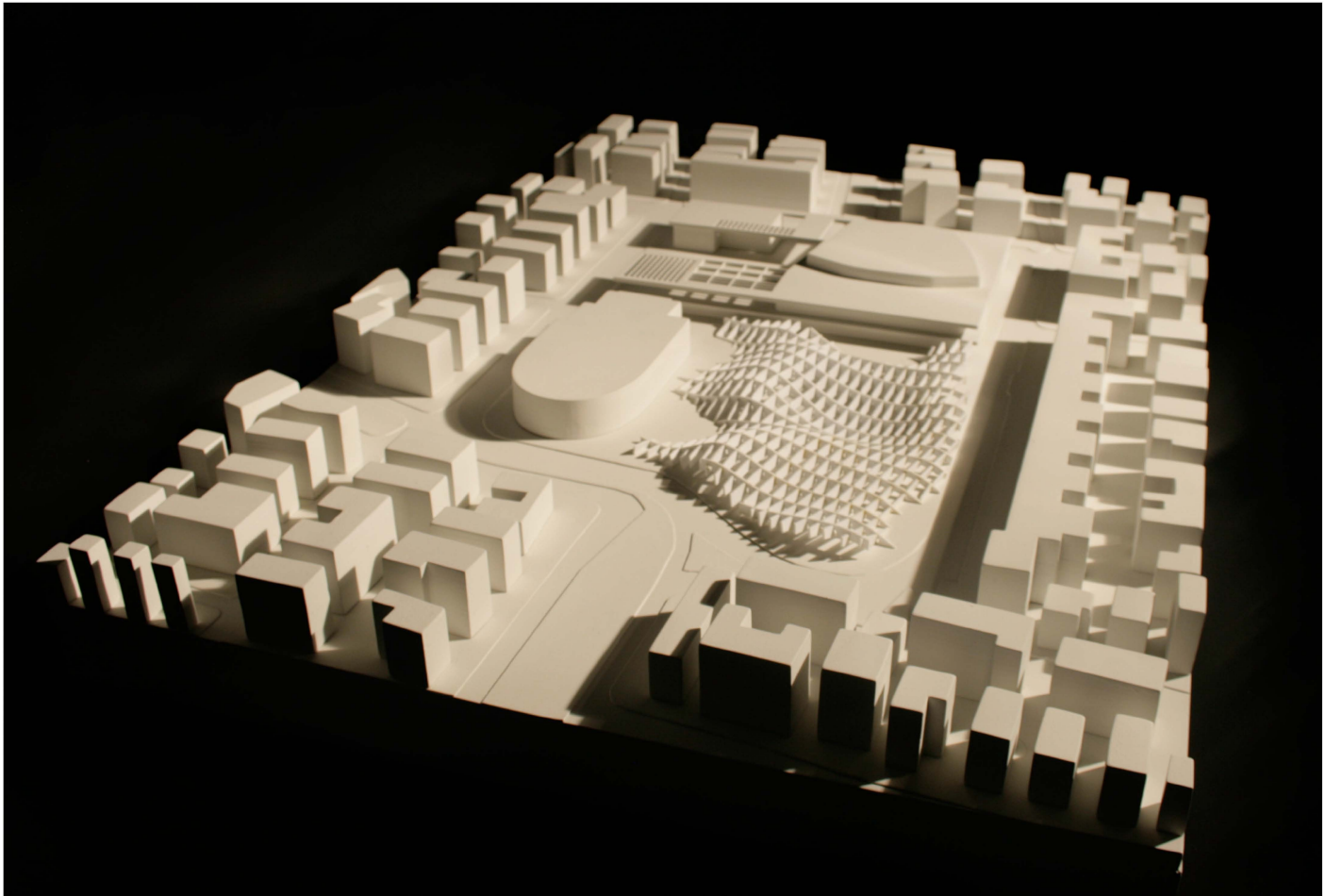
Surface View



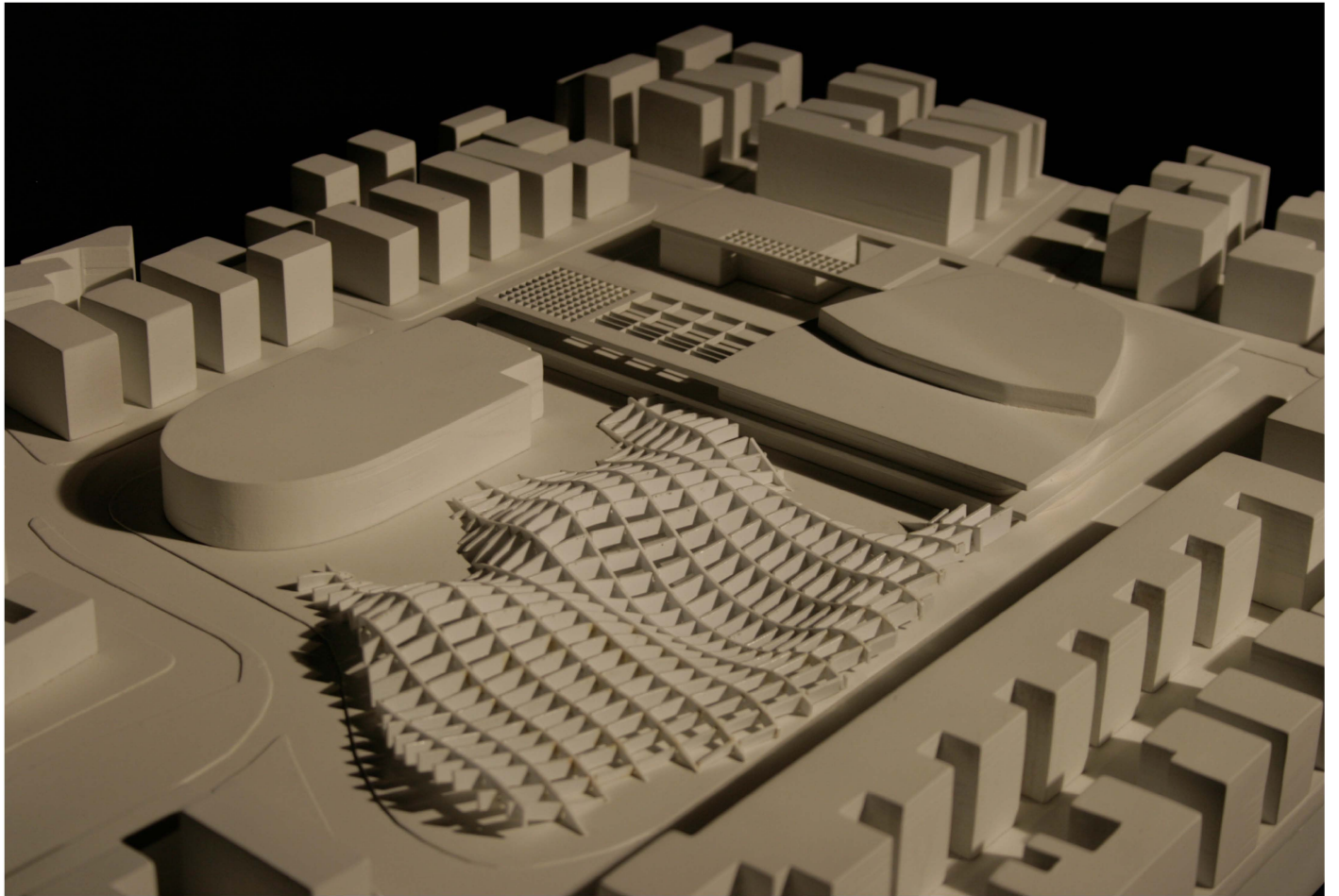
Street View from Ben Zion



North-West View



Physical Model



Physical Model