

THE RESEARCH

LOCATION PORTLAND, OREGON, USA

SITE 701 SW BROADWAY AVE
62,500 SQ. FT. BASE
PIONEER COURTHOUSE DISTRICT
+2,300 SUNLIGHT HRS/YEAR

AMENITIES PIONEER COURTHOUSE SQUARE
TOURIST INFO, WEEKLY FARMERS MARKET, PUBLIC SPACE
PUBLIC TRANSIT SURROUNDS SITE
CLOSE TO WATER SOURCE
HIGH DENSITY RESIDENTIAL
NUMEROUS SURROUNDING RESTAURANTS

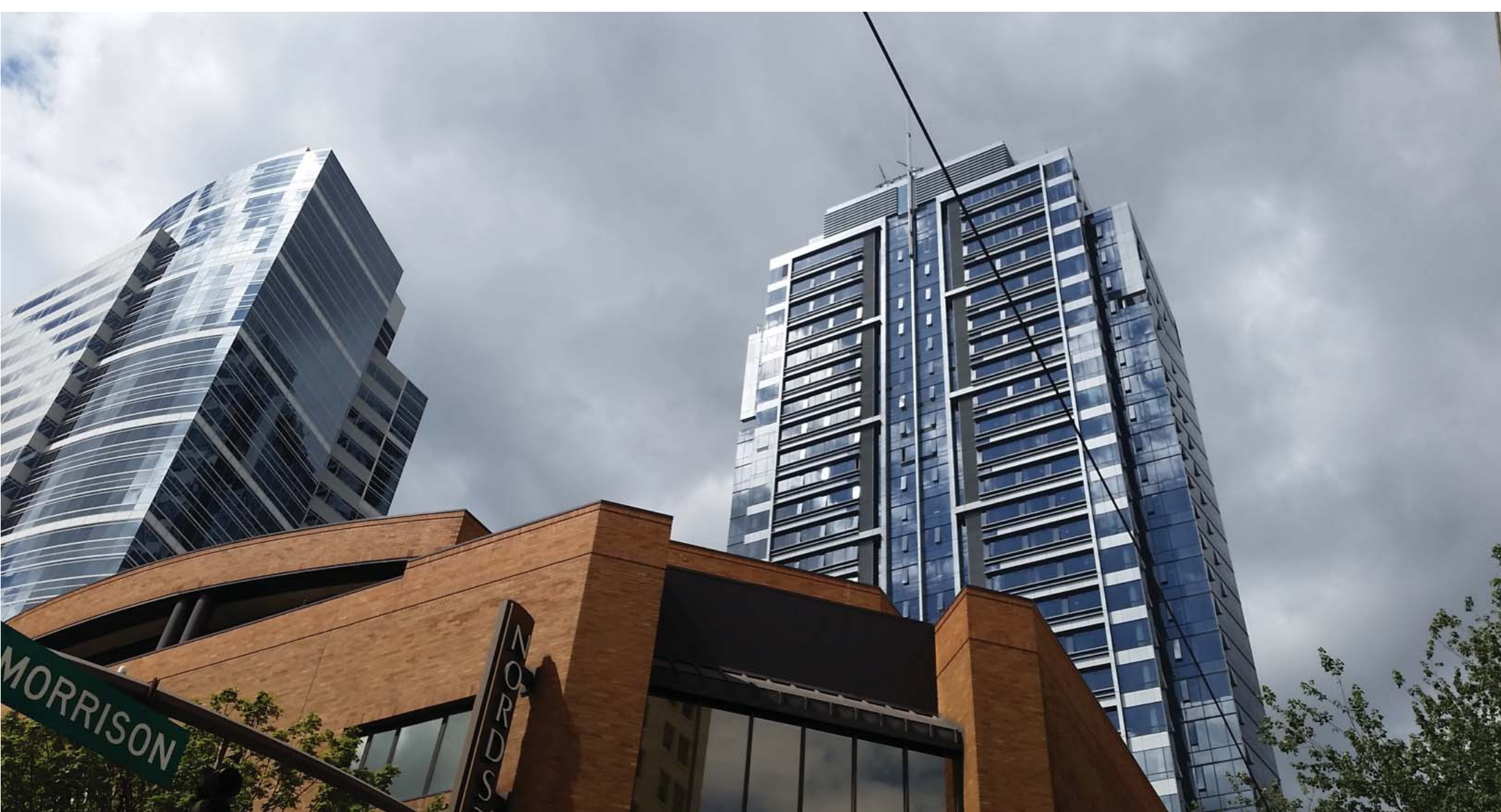
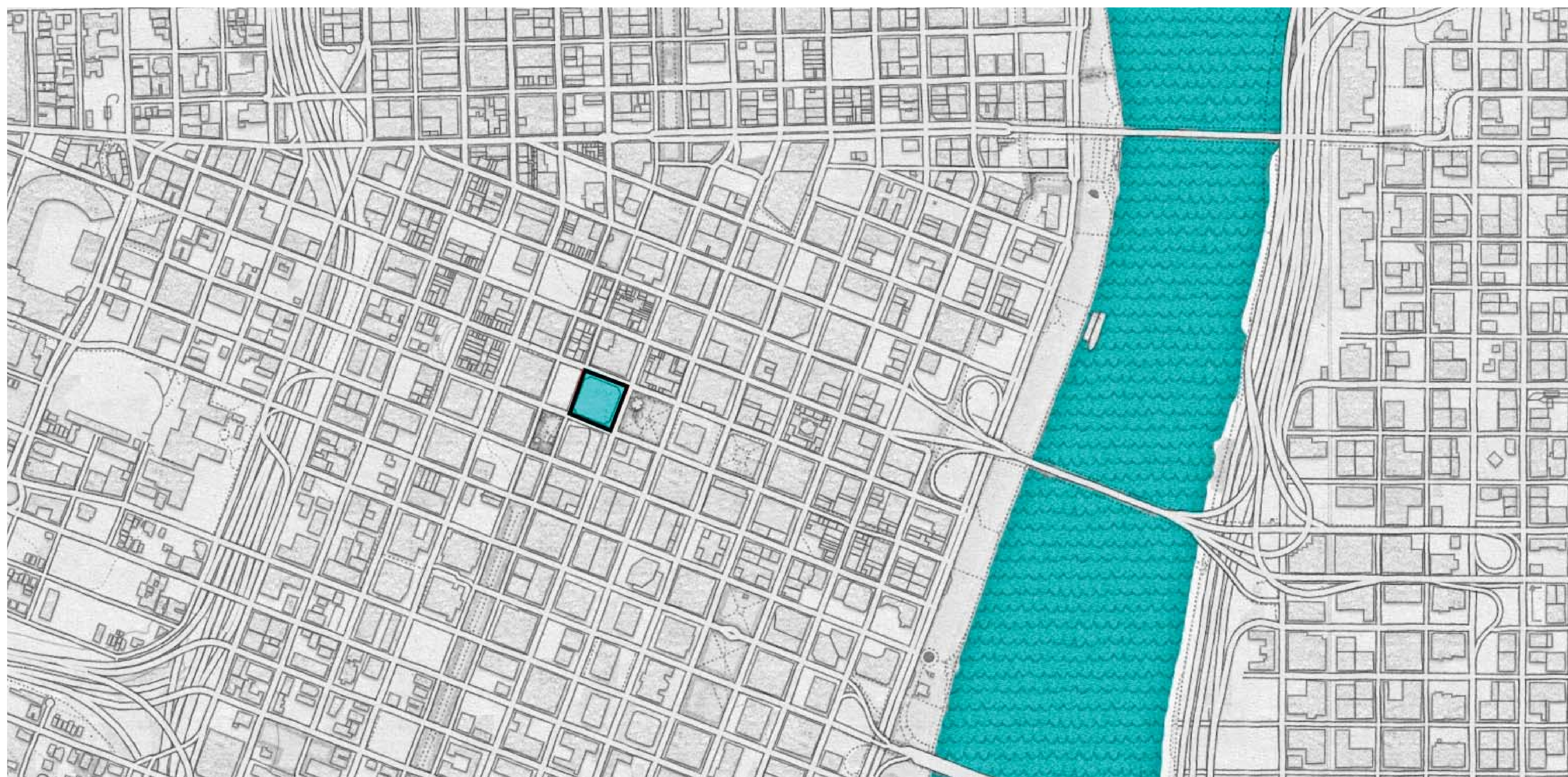
HYDROPONICS

ALTERNATIVE GROWING TECHNIQUES ALLOW FOR PLANTS TO BE GROWN FASTER, MORE NUTRITIONAL, AND WITH ONLY 10% OF THE WATER NEEDED FOR TRADITIONAL METHODS.



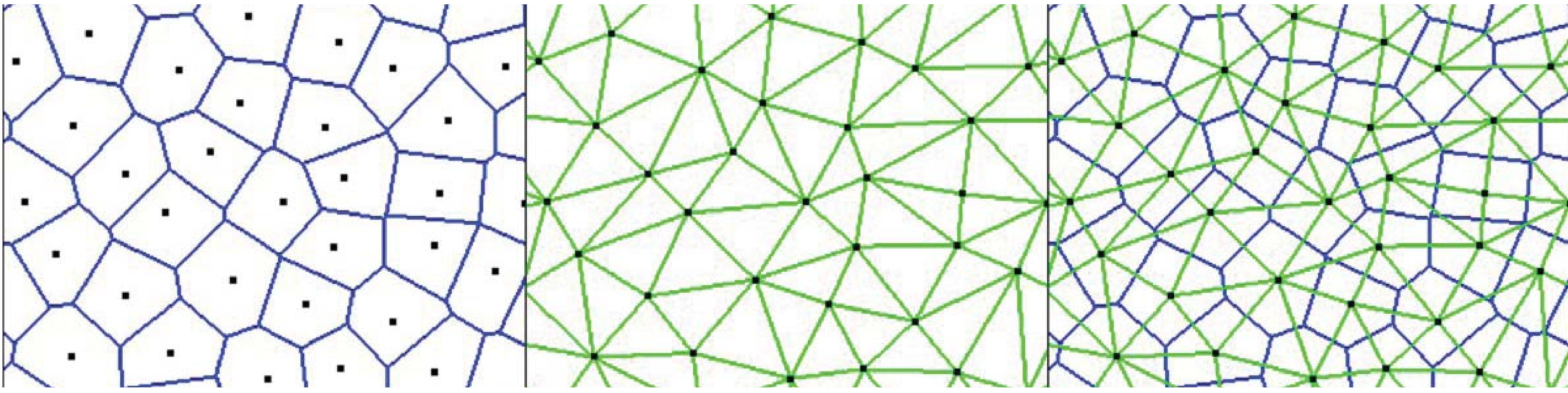
LIGHTING TECHNOLOGY

CERTAIN WAVELENGTHS ENHANCE THE AROMATICS, GROWTH, AND FLOWERING OF PLANTS. LED LIGHTING ALLOWS FOR THE WIDEST RANGE OF LIGHT, FROM HIGH UV TO LOW INFRARED WAVELENGTHS.



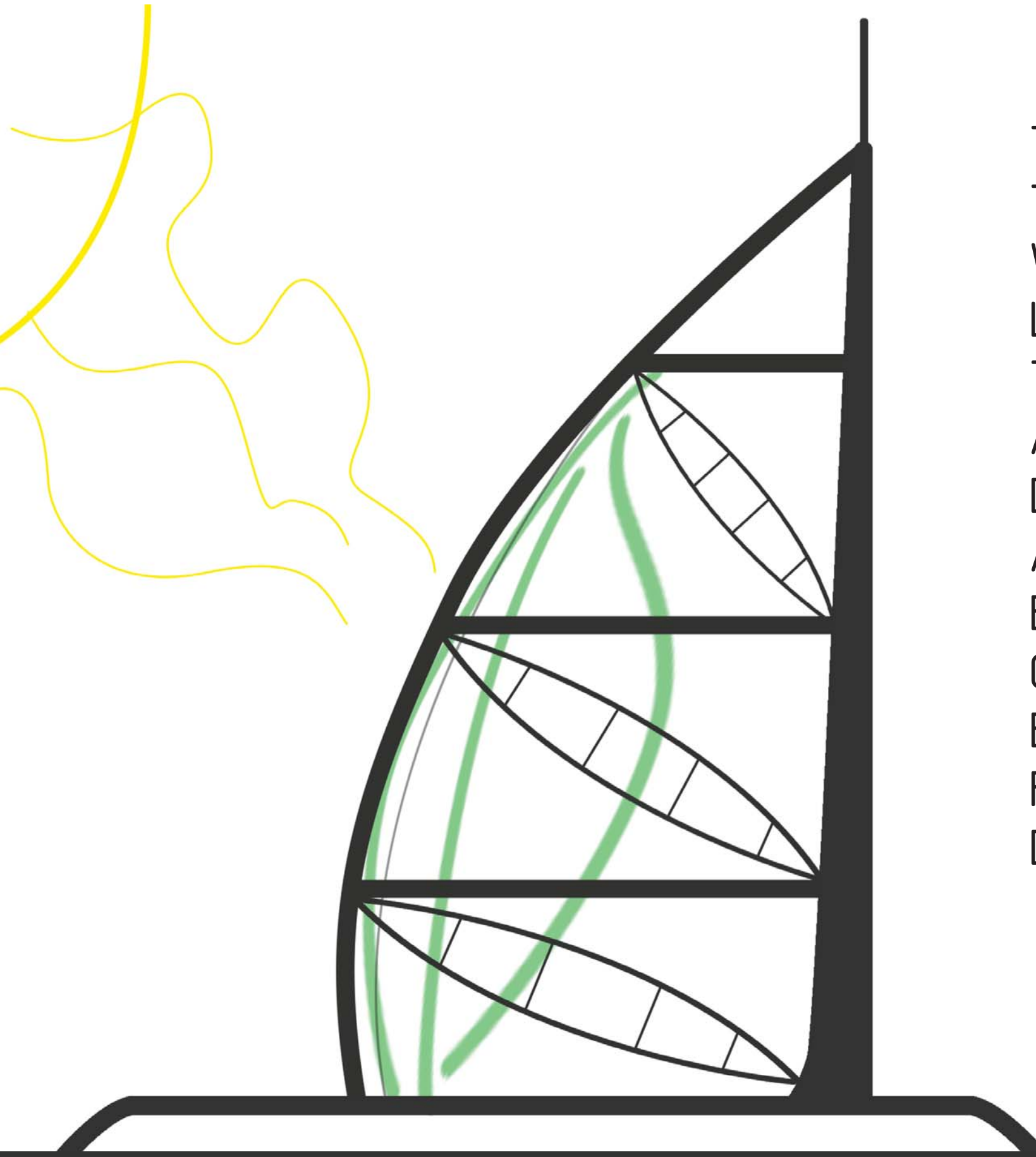
DESIGNING WITH SCIENCE

TO EMULATE NATURE, INITIALLY A VORONOI PATTERN WAS INCORPORATED. AFTER FURTHER STUDYING THE DELAUNAY MESH TRIANGULATION REFLECTED THE PREVIOUS PATTERN, AND ALLOWED FOR A MORE STRUCTURAL APPROACH TO THE GLAZING FACADE.



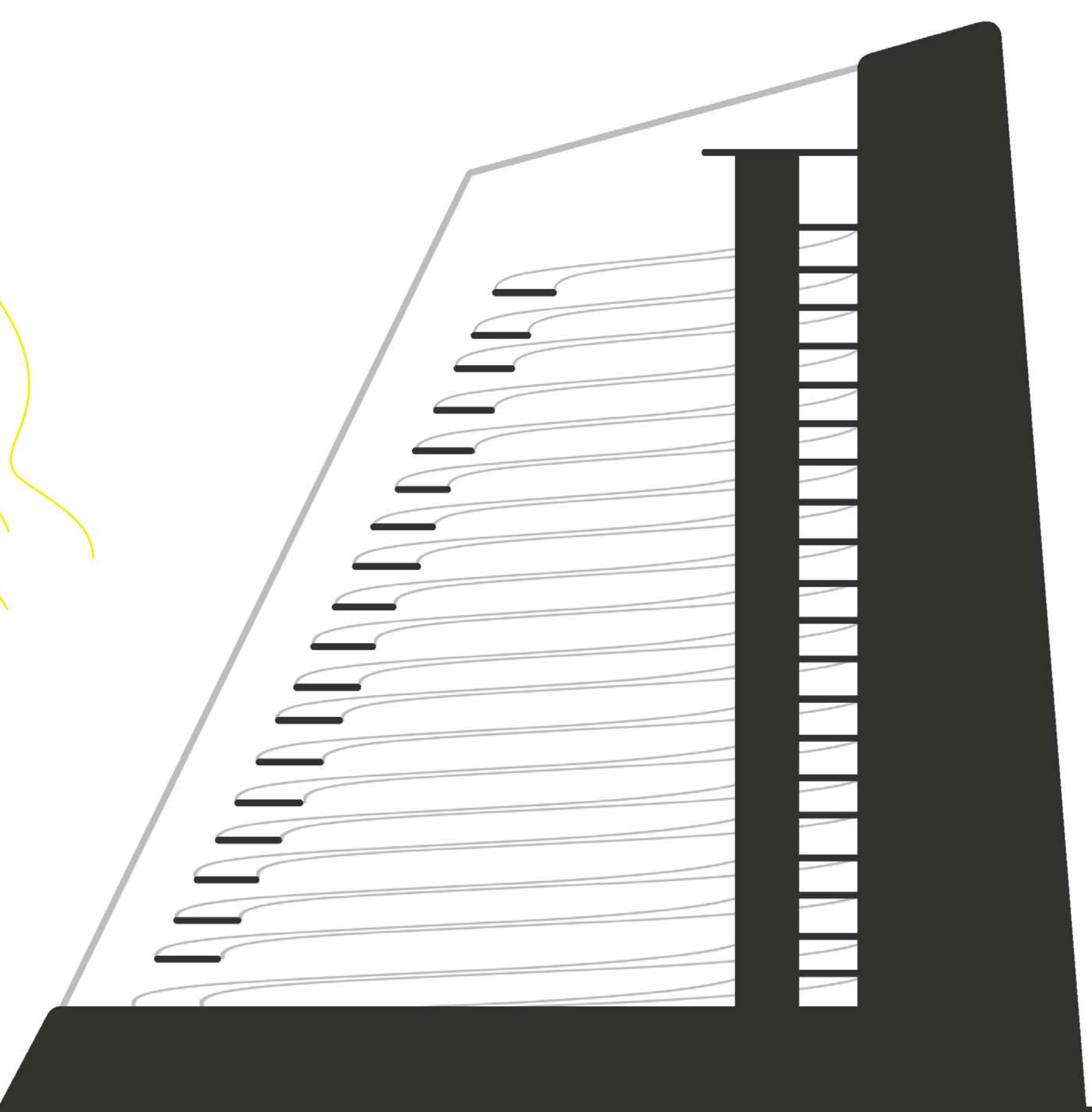
OPPORTUNE LOCATION

THE SITE LIES IN THE ONLY AREA OF DOWNTOWN PORTLAND WITH A LARGE QUANTITY AND QUALITY OF SUNLIGHT HOURS YEAR ROUND. THEREFORE IS WAS THE OBVIOUS CHOICE TO PLACE THE SITE WHERE A CURRENT NORDSTROM'S CLOTHING STORE IS LOCATED. THE PIONEER COURTHOUSE SQUARE HOSTS A FARMERS MARKET EVERY MONDAY FROM MAY TO SEPTEMBER, THUS AN ALLEGIANCE WILL BE MADE TO INCORPORATE AND NOT DECIMATE THE LOCAL FARMERS CURRENTLY USING THE AREA.



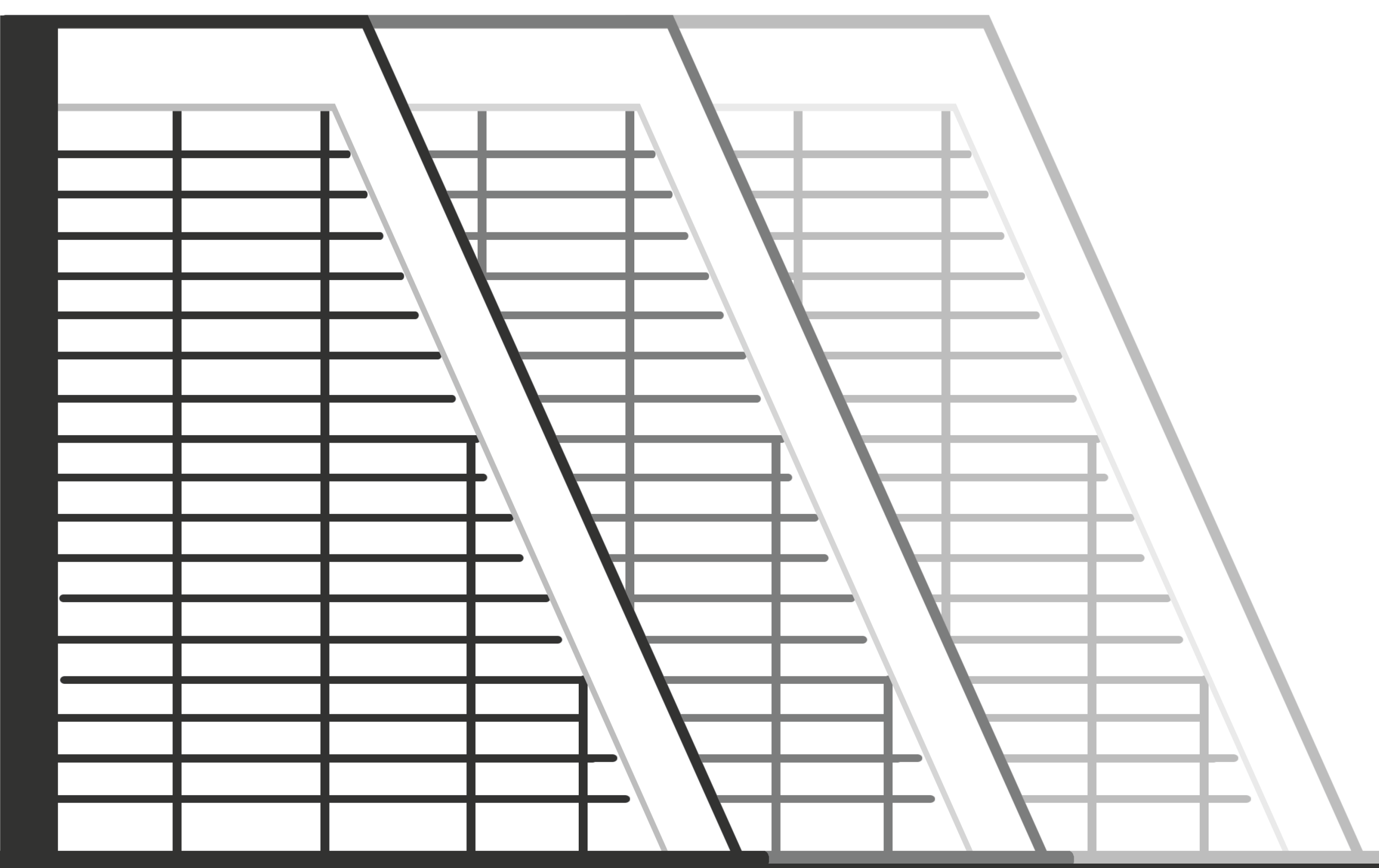
BURJ AL ARAB, DUBAI,

THE MAIN FOCUS OF THIS CASE STUDY WAS THE ATRIUM. AS THE LARGEST IN THE WORLD, THIS ATRIUM PROVIDED AN EXAMPLE OF HOW TO DESIGN WITH THE SUN AND STRUCTURE. THE BUILDING HAS STRUCTURAL CONCRETE SPINE IN THE BACK THAT ALLOWS FOR ALL LOADS TO BE DISTRIBUTED DOWNWARD.



PLANTAGON, CONCEPT

PLANTAGON OFFERS A GUIDE TO GROWING AND SELLING PLANTS WITHIN A CONTROLLED ENVIRONMENT. THE TRACT-SYSTEM IN PART WITH A HELICAL FLOOR DESIGN SHOWED HOW PLANTS CAN BE GROWN WITHIN A TIME FRAME FROM SEED TO HARVEST. PLANTAGON HAS ALSO PROVIDED A REFERENCE FOR GLAZING TECHNIQUES AND STRUCTURE ESSENTIAL FOR GROWING PLANTS IN AN INDOOR ENVIRONMENT.



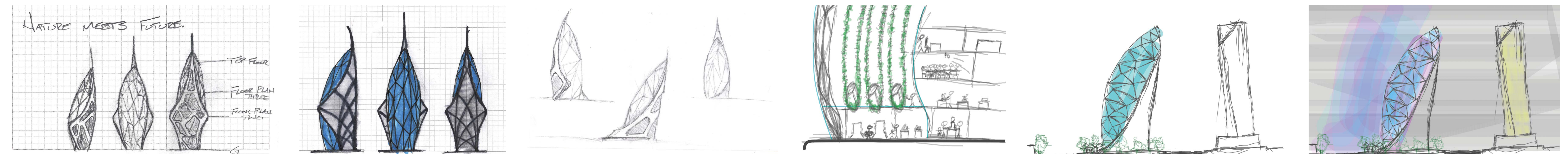
THE PYRAMIDS, INDIANA

A COLLECTION OF THREE BRUTAL BUILDINGS ON A CAMPUS OUTSIDE INDIANAPOLIS MAY NOT SOUND LIKE A GREAT SOURCE OF A CASE STUDY, BUT WHAT LIES WITHIN IS THE REFERENCE FOR THE INTERIOR SPACES ASIDE FROM THE VERTICAL FARMING ASPECT. BY PLACING THE CORE IN A POSITION OUT OF THE WAY, THE FLOOR PLAN OPENS UP AND ALLOWS FOR MORE OPPORTUNITIES FOR APARTMENT LAYOUTS.

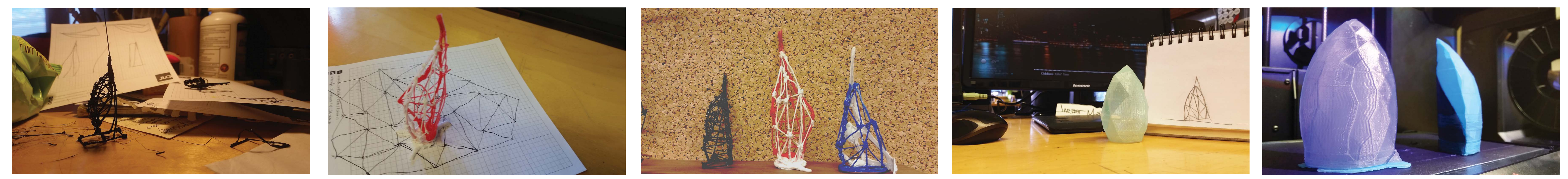
THE PROCESS

D E V E L O P M E N T

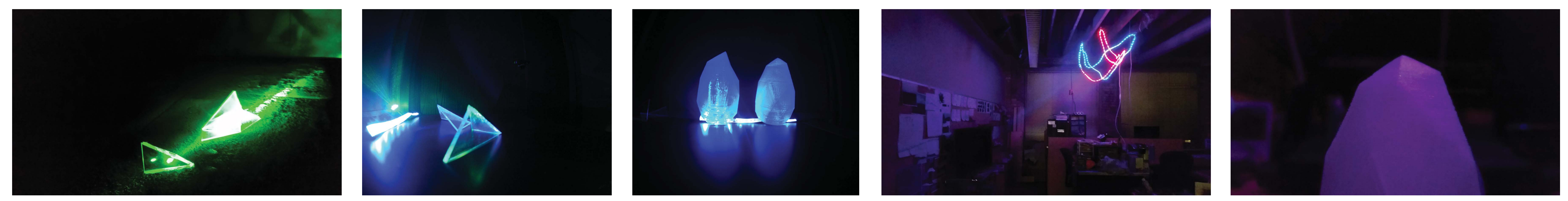
M E



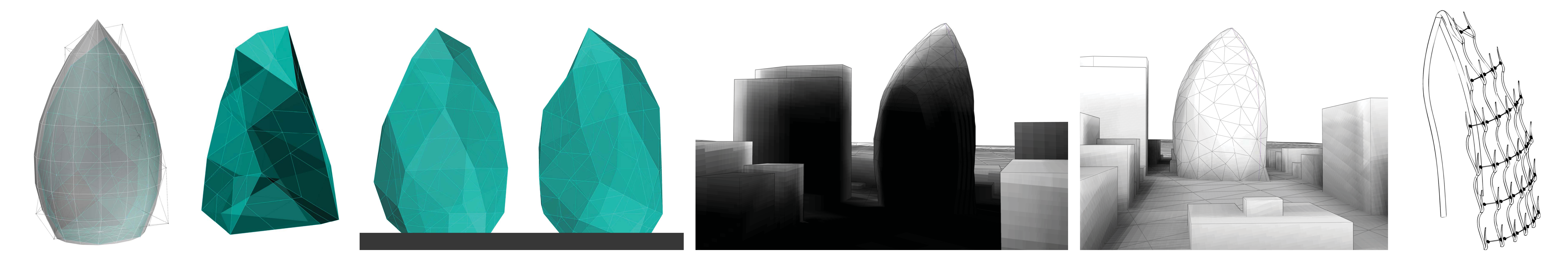
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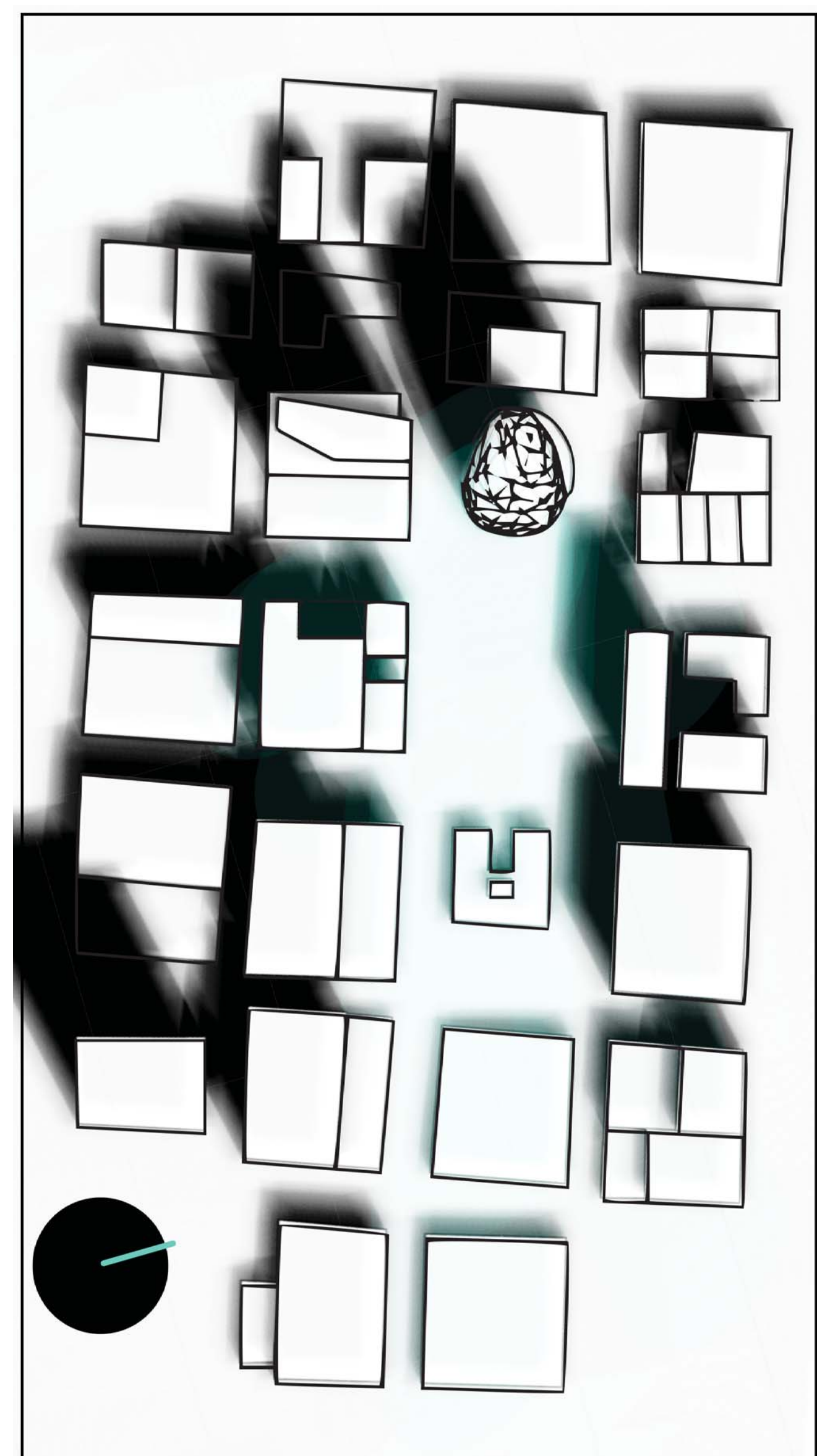
H O



D S

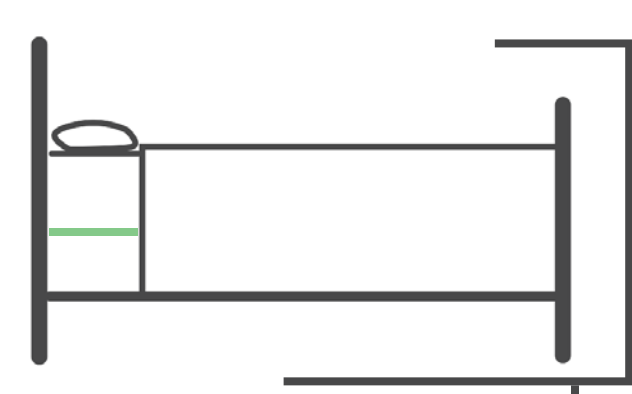


THE RESULT



S I T E
S H A D O W

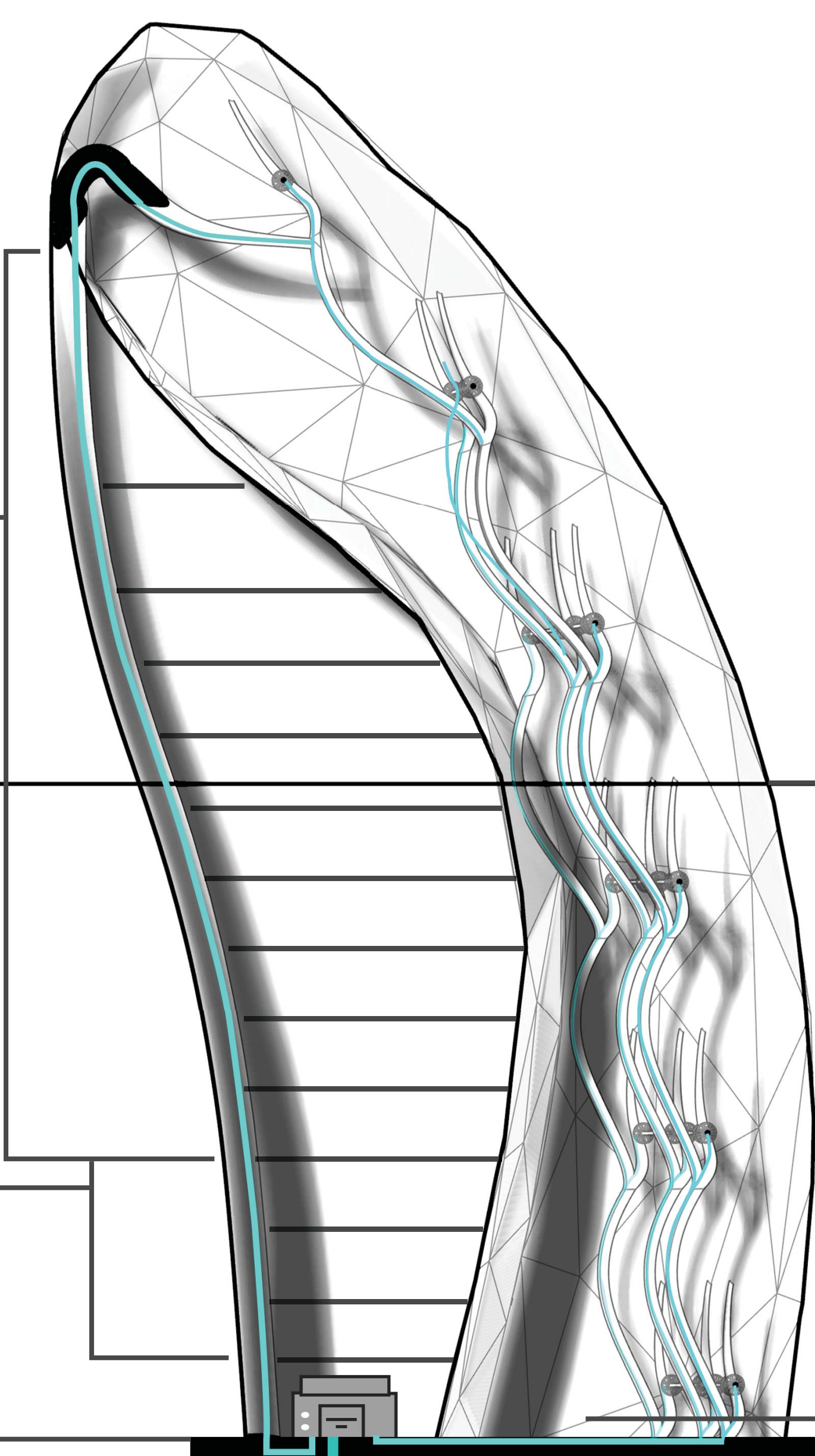
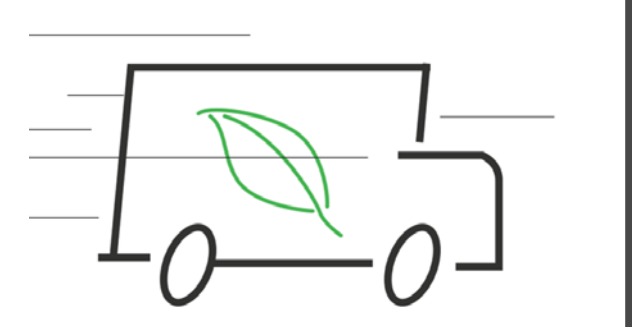
RESIDENTIAL



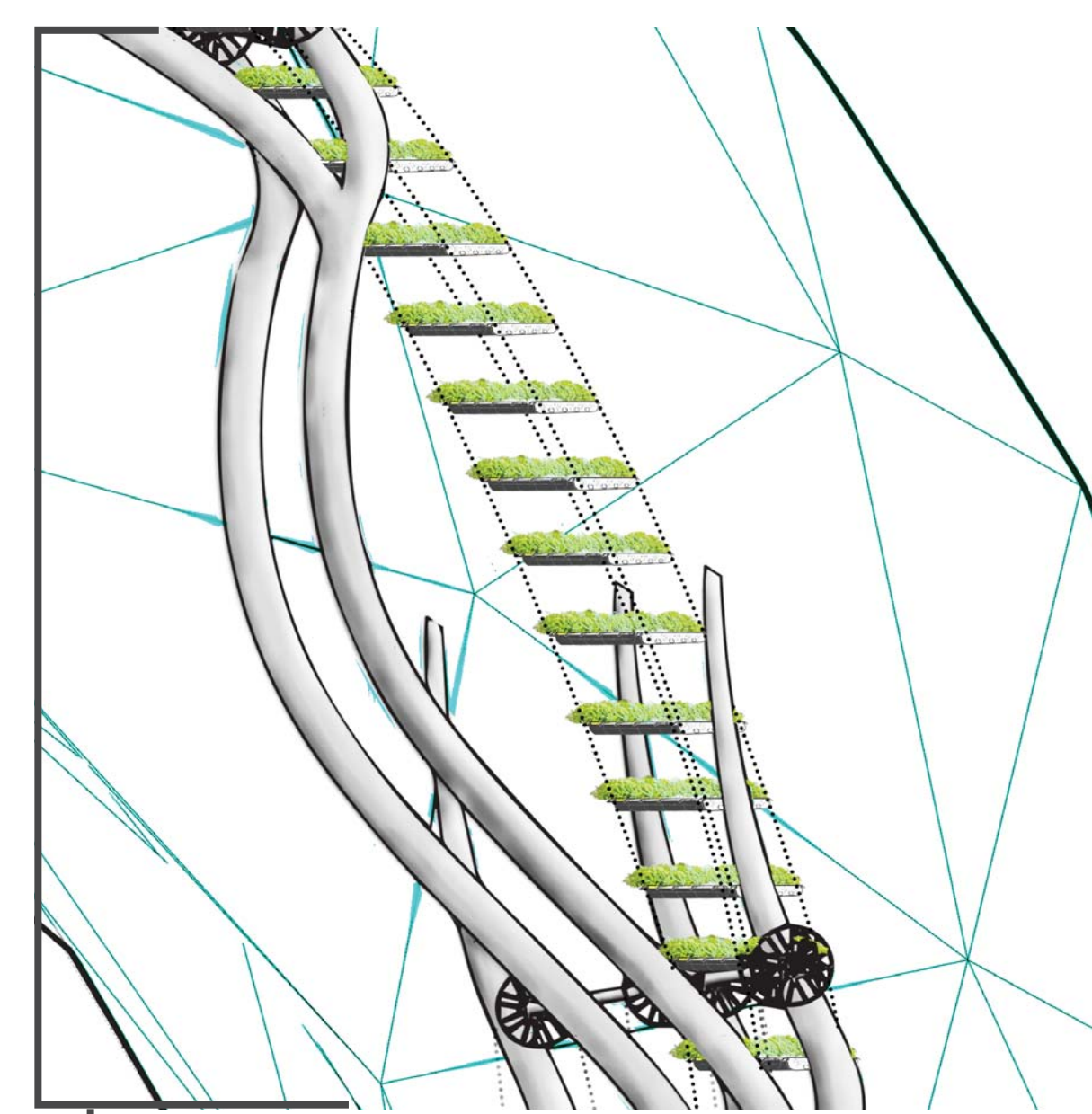
MULTI-USE



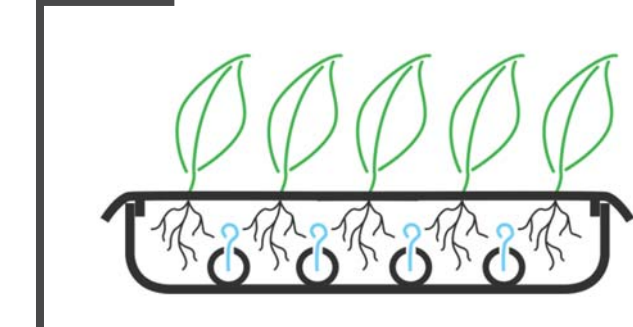
MICRO-TRANS



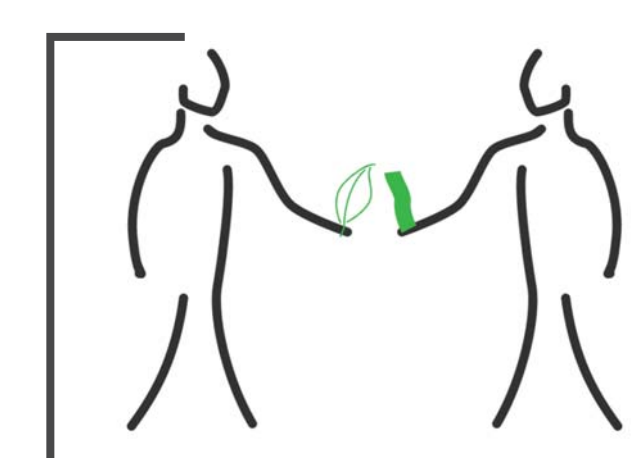
S Y S T E M
S E C T I O N



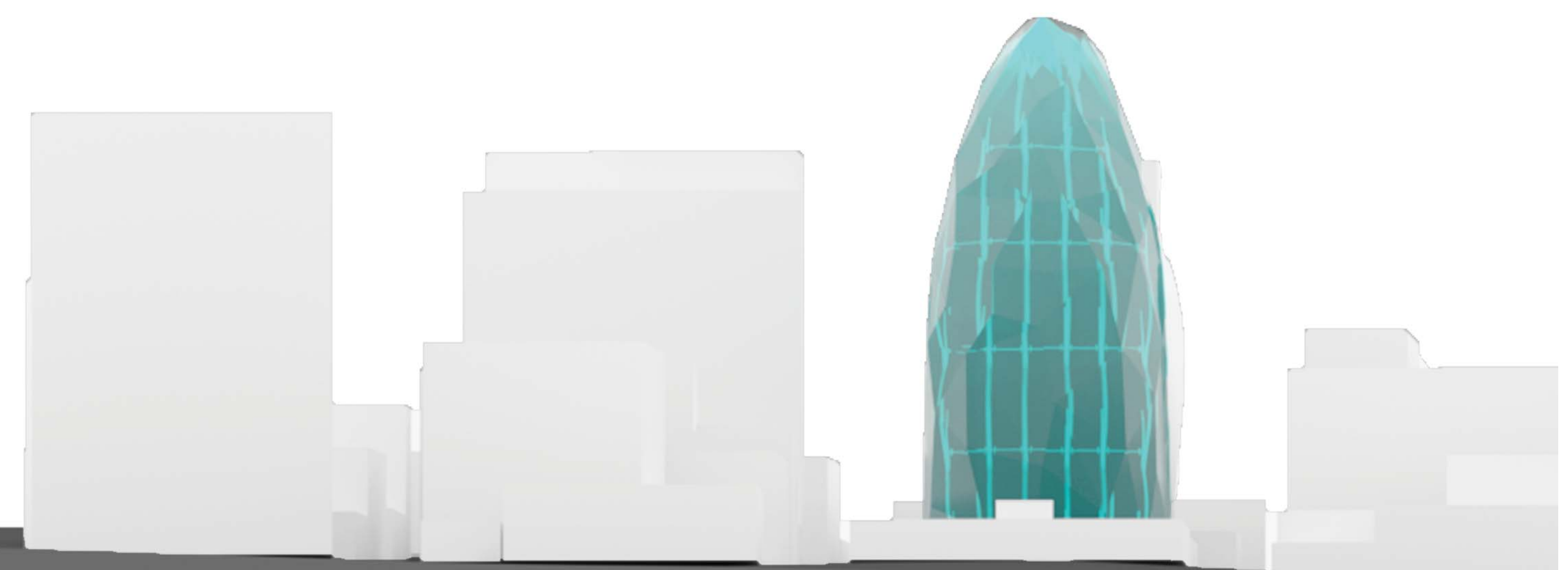
D E T A I L
S E C T I O N



V E R T I C A L F A R M



M A R K E T



S O U T H E L E V A T I O N



S O U T H W E S T E L E V A T I O N