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REFLECTIVE PRACTICE STATEMENT

the question

as i sat down to write my reflective practice statement i thought about many topics, trying to narrow down my focus – what do i find interesting, where do i think architecture is (or should be) going in the upcoming years. i went back and forth with kinetic architecture, automated architecture, sustainable design, and improvements in technology and materials. i had a really hard time focusing my interests to one particular subject.

after beating my brains out for weeks, i decided to raise the question – why do i have to limit myself to one particular genre or cause? why do we need to focus on one area of architecture, when our profession encompasses so many varieties?

when i did my first architectural internship back in 1997 one of the architects made a statement that i still remember to this day. he said that his favorite group of architectural people consists of students and those who have recently graduated. he said that the older architects get, the more set they are in their ways, and that they become boring. he preferred the younger architects because they are still moldable and shapeable. at the time i thought it was an odd statement but didn't pay too much attention to it.



image credit: https://www.siemens.com/press/pool/de/pp_cc/2007/06_jun/sc_upload_file_sosep200720_02_%28jin-mao%29_300dpi_1452912.jpg

now that i have several years of experience practicing architecture, i understand what he meant. it has nothing to do with age, talent or experience. what he meant (at least my interpretation of what he meant) is that over time we often get less passionate, inquisitive and creative. architecture becomes a norm instead of an exception. we relegate our prior goals and ideals to the background and replace them with budgets, codes, and deadlines. as donald schön might say, we sometimes tend to promote the theory that architectural practice is distinct from architectural research, and therefore are not as explorative in our endeavors as we have the capacity to be.

the problem

i believe that as architects we owe it to the public to never let our zeal fade. we also owe it to them to make sure that all people have access to the same building technologies. right now american architects are failing the general public. yes, we are addressing their health, safety, and welfare. but we are becoming the status quo. we design to make the program work within budget. in our day-to-day practices we are not as concerned with the “experience” of the space as we may have been during our educational days. we also are too focused on what i call “repetitive architecture”. i define repetitive architecture as architecture that repeats previous examples without adapting them to reflect contemporary changes in society, culture, and technology. this form of architecture is outdated and fails to keep up with the changing needs of the people who live in the spaces we design.

one major concern turns to residential architecture. i am not talking about having too many “cookie cutter” houses that look the same. i am concerned with the housing industry’s general unwillingness to incorporate technological improvements into our residences. we still see houses being built today the same way they were built 20, 30, or even 50 years ago. sure we have used updated building materials, such as improved sheathing and engineered trusses. but we could be doing so much more.

there are many items available to the general public at reasonable prices that are still not used in standard residential design. for example you can easily go down to home depot, lowes, or another home improvement retailer and buy inexpensive occupancy sensors to incorporate into residential lighting. these devices help with energy savings and help reduce waste. one would think that with housing prices being hundreds of thousands of dollars on average, these devices should be standard practice in all new residential construction. but they are not. only in commercial or high-end residential projects do we see these types of items. however if we were to ask the average person if they would want these improvements in their homes, the response would be yes.

i can state this with certainty because of research i conducted during one of my classes at lawrence tech. it was research methods, taken in the summer of 2011. my resulting paper, titled “the 21st century residence: baby boomers interact with technology”, concluded that our society has a sense of comfort and level of familiarity with technology. (the paper can be read in its entirety online at my website: <http://www.tdparch.com/>.)

as my research showed, we use technology to improve our day-to-day lives and welcome it when we believe that it is beneficial or necessary for our health and/or way of life. most individuals welcome the incorporation of technology into the built environment, and would like to live in homes that contain “smart technology” to the extent that it facilitates their lives and makes things more convenient. despite this, we are still designing “dumb” buildings that ignore this aspect of our society.

the options

in addition to occupancy sensors, what other technological improvements can we incorporate into the buildings we create? let’s take a look at some examples for residential, commercial and social applications. this is the fun part....



image credit: http://www.concerto-sesac.eu/IMG/jpg/grenoble_pv.jpg

consider one material – glass. composed of sand, it has been around a long time and we use it frequently. but how can we use it in a better way? large corporate offices often have tons and tons of windows. insulated glazing units today are much more efficient than they were 20 years ago. but there are so many new technologies that can be incorporated into them. for example there is electrochromic glazing. this glass is filled with tiny particles that respond to changes in electric voltage. when the voltage is high, the glass becomes dark or opaque. when the voltage is low, the glass becomes transparent. the voltage can be linked to sensors that detect solar heat gain or can be programmed to increase/decrease at certain times during certain seasons.

electrochromic glazing can also be used to separate public areas from private areas. i visited the er room of a local hospital and all of the rooms had glass doors. however, with the flip of a switch the glazing changed from transparent to opaque, providing increased privacy when needed, but still allowing a transparency of operations. this technology is also useful in residential settings. imagine how much waste we could reduce if we did not have to bother with window blinds, curtains, and the manufacturing of similar textiles.

not only can glazing be altered to move from transparent to opaque, it can also incorporate other technologies into the surface. for example there are several companies developing transparent photovoltaic cells that can convert solar energy into electricity. just think, if all the storefront and curtain wall façades had this technology, they would produce a lot of energy, reducing our need for coal mining and other process that are environmentally destructive such as fracking. ideally it would also help reduce our dependence on other countries for oil, but that would take a while to develop.

also there are televisions now that can be totally transparent. we can reduce the amount of space and increase our amount of communication by building visual and audio elements right into the walls, windows and doors. a community center could more effectively inform the public about important events when it has the ability to incorporate graphics with text in a large scale format instead of relying on a marquee sign or bulletin board.

the previously mentioned items pertain mainly to one thing – glass. now imagine the possibilities if we took all the improvements we have made in materials science and technology, and started putting them into practice more frequently. some items may be initially expensive. but the more frequently they are used and produced, the less expensive they become.

one website that is really cool is <http://www.artcom.de/en/home/>. the company art+com focuses on providing interactive installations that engage building occupants through technology. check it out. there are also some links to a couple of their installations on my website, under the coursework for the advanced design studio (ads) ii class.

the application

as i move forward, i will do my best to recognize the changes that occur around me and design in response to (and hopefully anticipation of) these changes. i do not want my professional career to become static, honing in on repetitive architecture and ignoring the evolutions and revolutions that take place on a daily basis. i will also work to be more actively involved in my community. we often are stuck in an office, sitting at a desk drawing for most of the day, and rarely interact with the general public, unless they come in the form of a client. we need to get out from behind our desks, talk to people, and experience life with them. we need to truly understand what their needs and wants are, and design accordingly. we need to stay current with technology, and find design solutions that utilize all avenues at our disposal. by doing this we can stay renewed, refreshed, and in touch with our communities. we will be in a better position to serve them and provide environments that motivate us all to grow and progress.



mobility installation by art+com. image credit: http://farm6.staticflickr.com/5139/5493769179_0a4ff776ff_b.jpg



duality installation by art+com. image credit: http://en.red-dot.org/uploads/imagedl/07-0853-2008-2_Duality_ART_COM_AG_01.jpg

CRITICAL PRACTICE STUDIO

COURSE: ARC 5804
INSTRUCTOR: DALE Clifford
DATE: SUMMER 2012

this introductory studio at lawrence tech focused on “bio-logic responsive building technology”, particularly “tapping and grafting”. the studio is the only class that required on-campus attendance for all students. the lead instructor was dale clifford, a visiting practitioner from carnegie mellon university. he also has his own practice called binary. a team of instructors assisted with this course. there were two main focuses in the studio. one aspect involved the exploration of bio-responsive elements in architectural design. the second area of the course focused on the interaction of teams. there were approximately 100 students in the course. we were split up into 12 teams of approximately 8. we were spread out in various states and countries and had to overcome the challenges of working remotely for the majority of the semester. the five weekends that we spent on-campus consisted of intense, concentrated sessions during which each team worked together to complete the assignments. the course also featured a weekend trip to several locations that helped to expand our perspectives on architectural applications and seemingly unrelated processes.

work: memo 1: modeling responsive systems
 memo 2: hypothesis
 memo 3: refined prototyping
 memo 4: scenarios/application

read: *various passages from online and printed sources*



COURSE REFLECTION

this course involved traveling 1,200 miles almost every other weekend during the semester. the majority of the coursework was done remotely. our team relied heavily on google hangouts and other online conference and file-sharing tools. our respect for each other’s unique talents and contributions grew as the semester progressed. we were able to find what each team member was best at and also assign project portions to each team member based on location. it was brought to my attention that i have a knack for writing. i had never thought about it before, and so was pleasantly surprised. in addition to my other contributions i took team meeting notes and did the majority of the narrating and writing for presentations. sometimes i was so drained that had no words left in my head. however, knowing that my team was depending upon me to fulfill my assigned portion of the project motivated me to pushed through it and write at a higher level.

prior to this course i had not thought about the use of bio-responsive materials (that automatically respond to changes in light, temperature, humidity, etc.) in architectural applications. we had problems making the materials work in classroom settings (i.e. getting air or water hot enough to active nitinol wire and other materials, designing connections that would translate motion from the materials to into building structure, etc.). we were finally able to create a working prototype but there is ample room for future development and exploration.

the critical practice studio ignited creativity and inquisitiveness that provided motivation throughout subsequent semesters. i presented what i was learning to my co-workers as the semester progressed and all of our imaginations were fueled by the process. i will incorporate what i have learned into my professional practice.

TEAM ASSIGNMENTS

at work we usually collaborate in several project-specific teams simultaneously. during my previous school experiences the groups only worked together for a portion of the semester. this was my first experience working as a group for an entire semester. having to do this remotely, with team members dispersed across the united states and canada, increased the complexity. working remotely was challenging and sometimes frustrating because we all wished we could have more face-to-face interactions and help with model-building, etc. but since we were spread out we were limited on what we could do.

despite the challenges of working in groups, we discovered that we had more commonalities than differences. we discovered that even though we were far apart physically and did not always agree on everything, we were able to come to a team consensus on key project direction and design. everyone exercised humility, patience and restraint, yielding to the will of the team and making individual sacrifices for the greater good. we were able to be “on the same page” as a team and successfully completed the course. by the end of the semester one of the team dynamics instructors commented that our group worked so well together that if we ever opened a practice she would be happy to be a client.

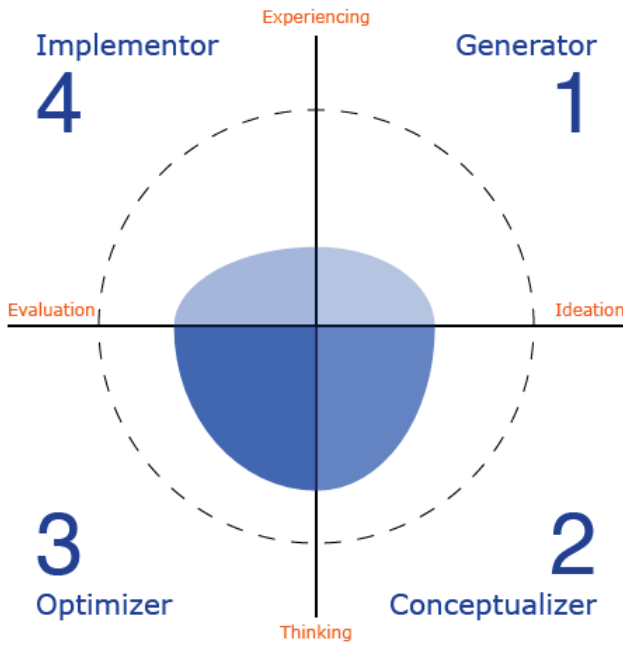
please visit <http://www.tdparch.com/> to view meeting minutes from our online team collaborations.



DEUCES WILD



Basadur Creative Problem Solving Profile



Participant
Tatinia Phinisee
Date
2012 May 14
Profile Result
Optimizing

Your strongest orientation is for Optimizing

Some typical traits of your preferred approach to problem solving are:
Optimizer

- Turns abstract ideas into practical solutions and plans.
- Likes situations where there is a single correct answer or optimal solution to a problem.
- Can sort through large amounts of data, and pin-point "what's wrong" in a given situation.
- Confidently makes a sound evaluation and selects the best solution to a problem.
- Lacks patience with ambiguity.
- Likes to focus on a few specific problems.
- Tends to be relatively unemotional and thorough.
- Prefers not to spend much time thinking about other ideas and points of view, or how different problems relate to one another.
- Interests in idea evaluation, selection and action planning.

TEAM 11 SELECTION AND MEMBERS

at the beginning of the semester we were given personality profile tests. (my results are shown to the left.) i don't think my profile is entirely accurate, but it does have some elements that are fitting.

we were instructed about the difference between a group and a team, which has a closer connection. teams were assigned so that conflicting personalities would be put in the same team. we had to fill out weekly assessments so that the team dynamics of the students could be analyzed.

our team (team 11) came up with the name "deuces wild". here are the names of the team members:

- andrew elliott
- angele dmytruk
- moneer alahwal
- natalie haddad
- nathan fisher
- scott brown
- shanshan xu
- tatinia phinisee

MEMO 1

MODELING RESPONSIVE SYSTEMS

for this assignment each team was given a selected organism to study. our goal was to study the organism and understand its adaptive strategies and development. we were to research scientific sources and biographical databases to learn the anatomy of the organism. we were to create drawings of the organism's motion based on our research. we then had to design five simple working models that were derived from the organism's motion. these models had to respond to variations in light, heat, and/or humidity. we had to consider potential and kinetic energy - how energy could be stored and released in order to activate the prototypes. we also were to explore various materials that could be incorporated into the designs. we had to create a short presentation that documented our research and design process, including sketches and videos of our models in motion. we were to focus on non-linear behavior, and the organism's ability to deform and return to its original position automatically.

our team (team 11) was assigned tubes. our initial research took a wide focus on various types of tubes. we explored the following processes of tubal displacement: vacuum, expansion, budding, permeability and regeneration. our initial models were designed to demonstrate these processes. please go to www.site.com for our first assignment under this module - a short presentation on our initial research during our first weekend on campus.

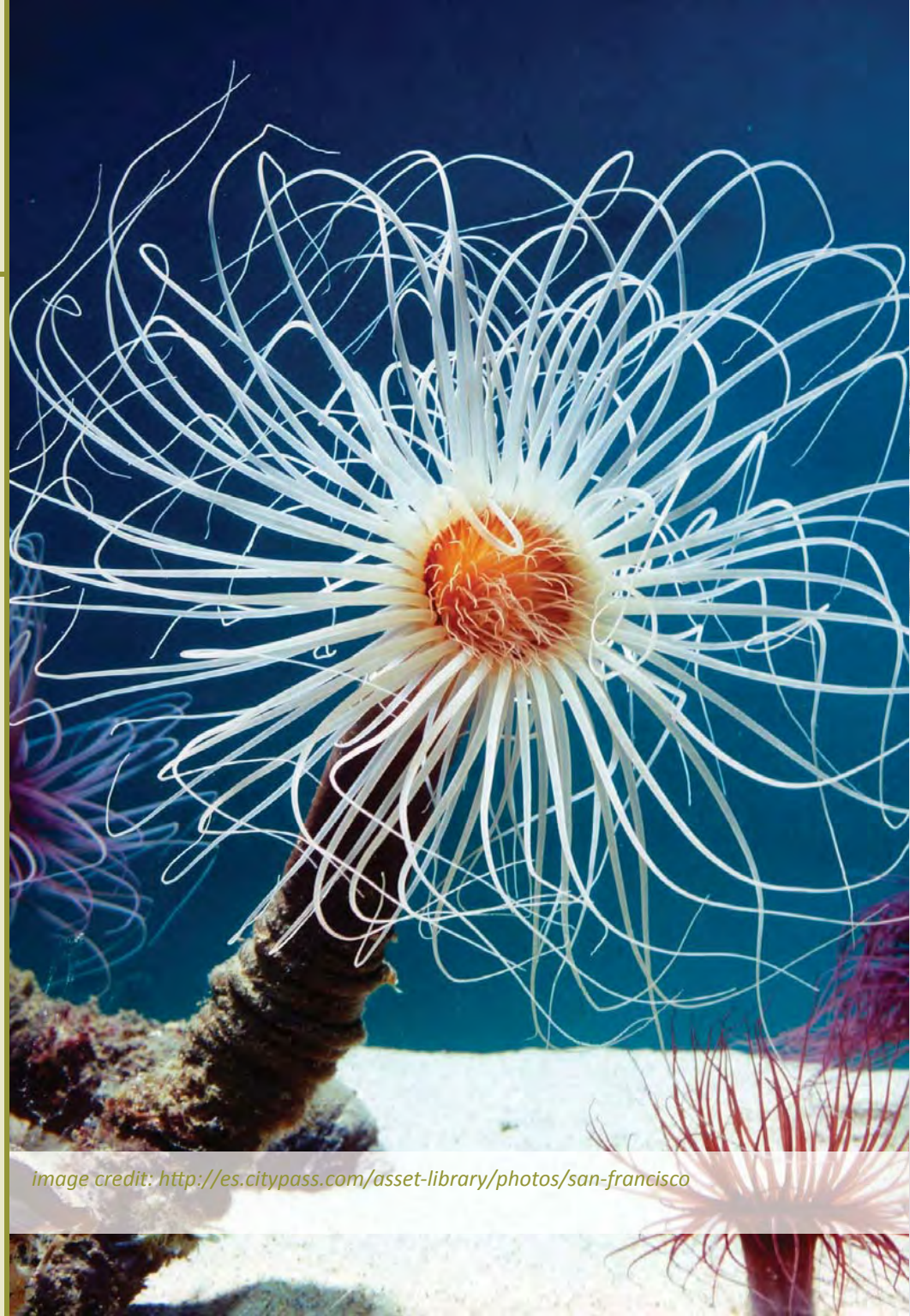


image credit: <http://es.citypass.com/asset-library/photos/san-francisco>



early on we discovered one of the team members, shanshan (a.k.a. coco), is a really talented artist. she drew many of sketches we used for our presentations.

as memo 1 developed our team focused on the tube anemone. we discovered that the organism was quite resilient, adapting to changes in its environment such as predators and light. tube anemones also have a remarkable regenerative system, being able to grow replacement tentacles and even regenerate themselves from a small particle.

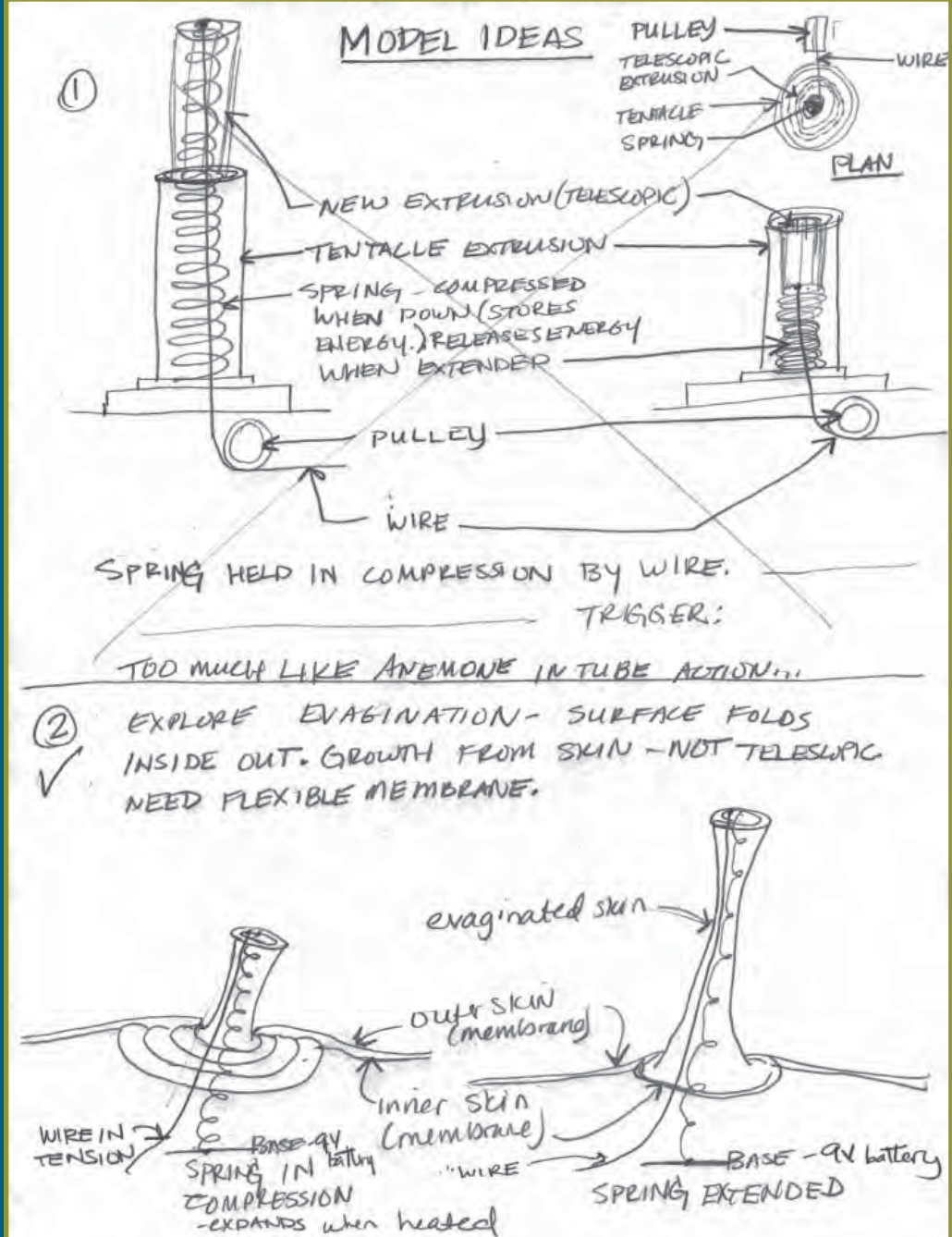
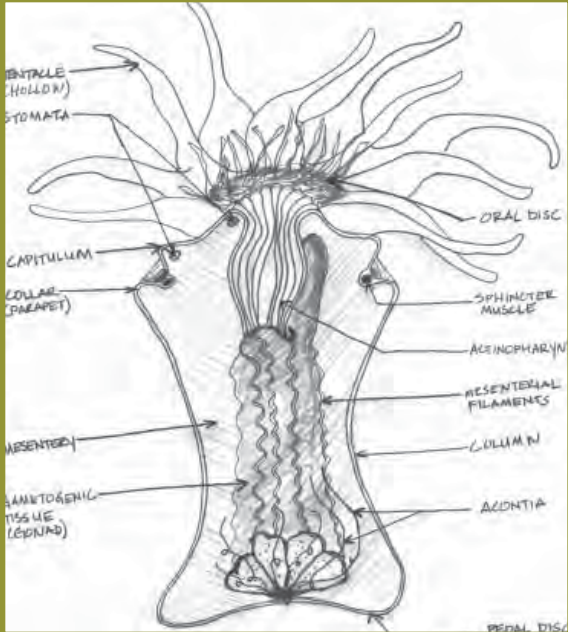
each team member developed a model. we gathered everyone's research and designs and used the information to create our memo 1 presentation.

to view our memo 1 presentations please go to <http://www.tdparch.com/>.

my research into the tube anemone started to congeal around tentacle growth and regeneration. tube anemones use a process called evagination, which is the outward folding of the skin.

i used this idea to create a model which has a double-layered skin. the concept was for the inner layer to extrude outward using a system of tension and compression. at room temperature the system would be held in equilibrium (potential energy). when heat is applied the pressure would be released as kinetic energy.

our models were supposed to automatically recover to their original positions, just like the organisms we studied. my design was to have the nitinol wire held in compression by an elastic wire or string. heat would trigger the wire's return to its straight "memory position" and cause it to exert a force stronger than the tension of the string. conversely, as the wire cooled, the force of the string would be overcome the heat-activated properties of the nitinol wire and the "tentacle" would retract.



i wanted to use nitinol wire but had difficulty obtaining it in the time allowed. i also struggled to find materials that had the elastic properties i wanted. i had to simulate the motion using regular metal wire as a spring, elastic string and glue. cloth fabric allowed structural motion. regular plastic bowls served as housing for the model.

MEMO 2

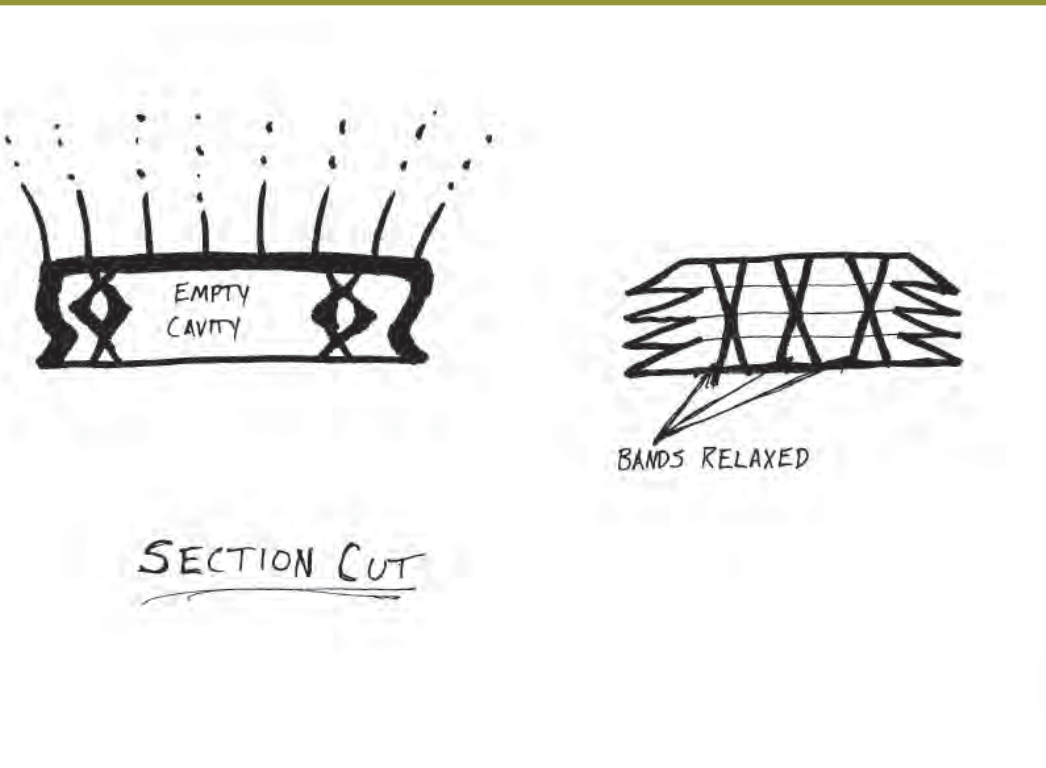
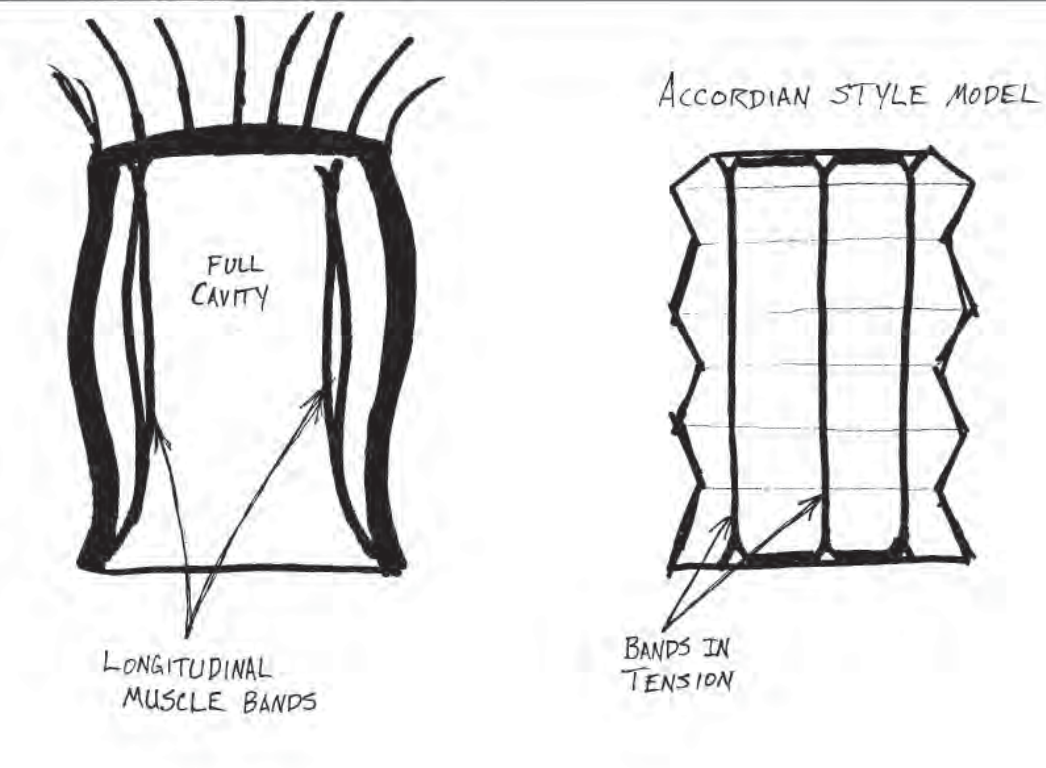
hypothesis

for memo 2 we focused on the resistance of materials, manufacturing processes and morphological complexity. we continued our exploration of sketches and model prototypes to exhibit the motion of the tube anemone. we focused on the expansion and contraction of the organism through retraction and regeneration. we honed in on the importance of the tube anemone’s longitudinal retractor muscles, use of hydrostatic pressure and variations in membrane dencity and opacity.

we experimented with various combinations of materials and tried embedding actuating materials into responsive materials. much of our experimentation involved silicone and its elastic properties. our goal was to create hybrid materials that displayed new properties that combined the best features of their individual components. our hope what that these hybrid materials could enable our models to be self-automated - able to deform in response to external stimuli and then return to it’s equilibrium position without mechanical intervention. we also experimented with membrane transparency by varying its thickness through induced tension.

during memo 2 we went on field trips to four locations:

- quality metal craft (qmc)
- ransom and randolph
- toledo museum of art / glass pavilion
- henry ford museum / dymaxion house



we learned a lot about mass-production, molds, and modular design during our tours. here is an excerpt from our memo 2 presentation:

“the molding, shaping, forming and fabricating techniques observed during the tours opened new methods of model design and exploration. we were able to experiment with variations in molds, changing the density, proportions, shapes and sizes of multiple-layered membranes to determine which combinations produced the best results. we were able to experiment with a variety of actuators to see how mechanical action can be initiated from non-mechanical stimuli. we also were able to combine processes to see how one process affected another, altering the nature of the initial theory.

one avenue that proved promising was embedding actuating materials into responsive materials in the mold. by doing this, instead of having a clear distinction between the cause and the effect, there is a melding of the cause and the effect. the cause becomes the effect. the nature of the material itself is transformed and a new material is created which responds differently to its environment. the new material now has to ability to react to an external stimulus and reset itself. this new material can then be applied in more “traditional” building technologies to transform the way we design and shape our built environment.

the creation of new materials by means of mass-production methods provides exciting prospects that open up additional possibilities for application of the modular unit designs on a larger scale. these unit designs can then be applied to system designs that can create architectural phenomena – interactive experiences that allow the users of spaces and places to do more than just look at their surroundings. this is where the dividing line between spatial and structural or practical and phenomenal is crossed. it is the goal of team 11 to further blur this distinction and blend the world we actually experience with the world we can conceive.”



henry ford museum / dymaxion house



quality metal craft (qmc)



toledo museum of art / glass pavilion



quality metal craft (qmc)



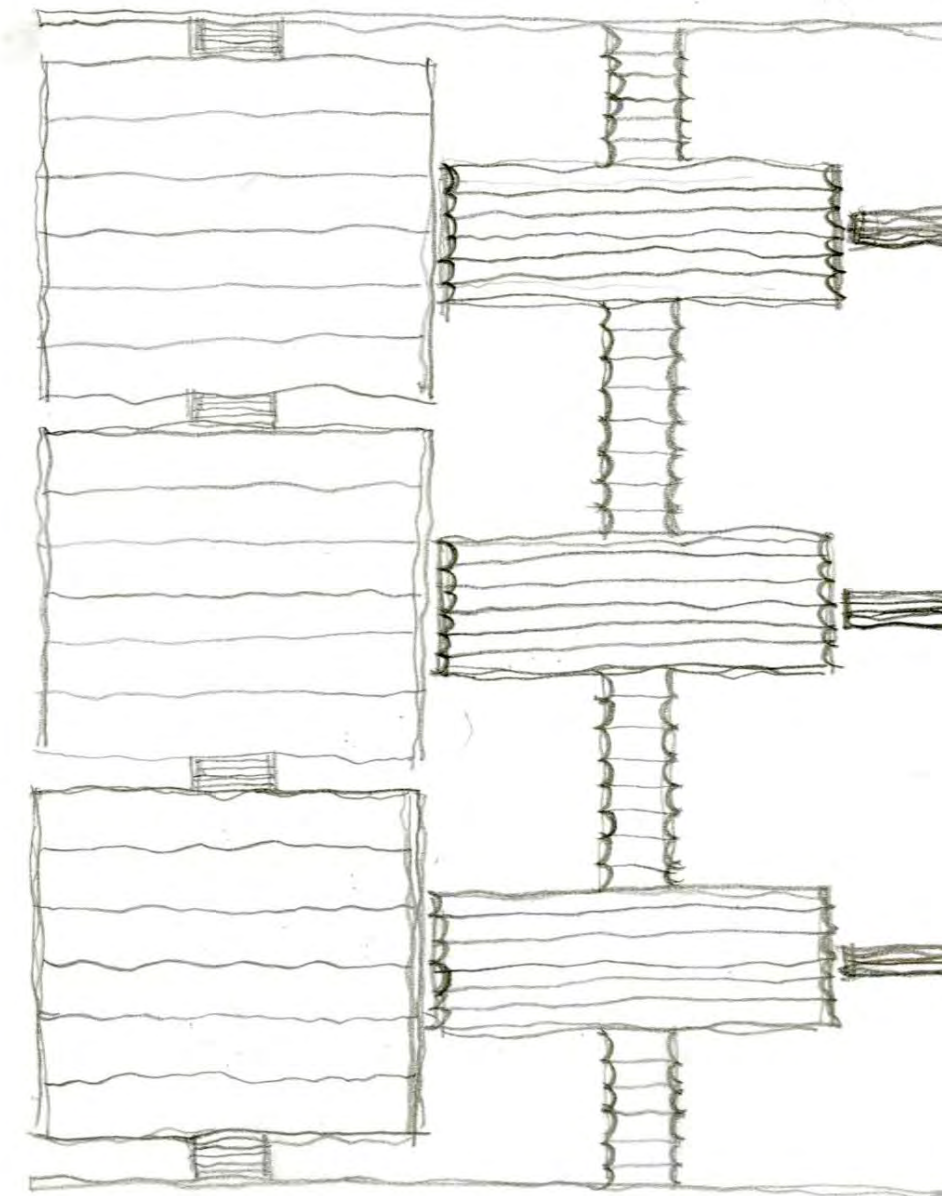
ransom and randolph

one material that we initiall found promising was “super elastic plastic”. this material exhibited great capacity to deform and return to it’s original position. however, it lacked the strength needed to resist the forces of the nitinol wire. we also experimented with spandex. this fabric did have some desirable qualities but did not have as much potential for combining it with other materials to form composites. so we decided to focus on silicone as our membrane material. incorporating some of what we learned from the tours, we formed molds for the silicone membranes, varying the silicone type and thickness. we experimented with embedding a ariety of materials such as nitinol wire as it set, with the goal of forming better bonds between the membranes and the actuators.

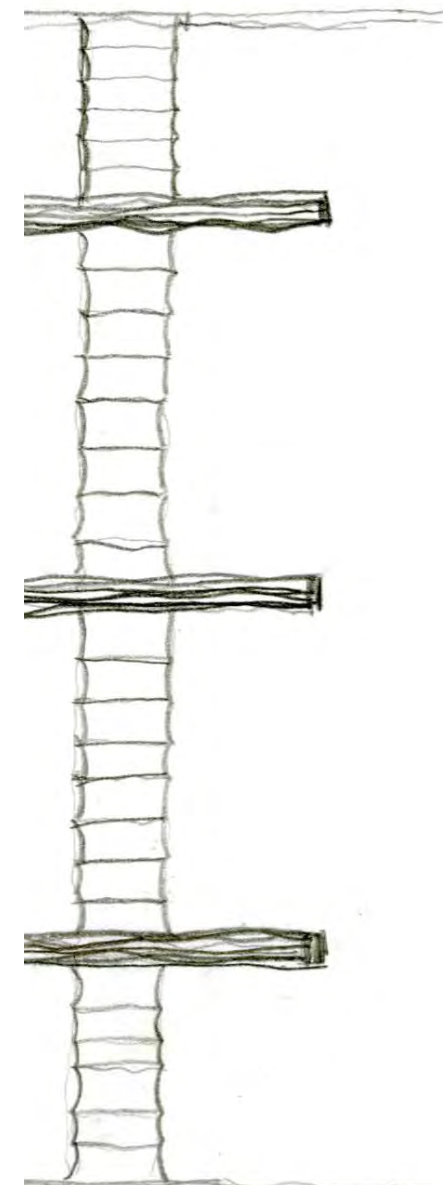
each team constructed “test chambers” to help provide qualitative and quantitative feedback during the investigative process. as we refined our designs we also began to look at potential architectural applications.

to the right are some of the design sketches we created.

please go to <http://www.tdparch.com/> to view our memo 2 book and video presentation.

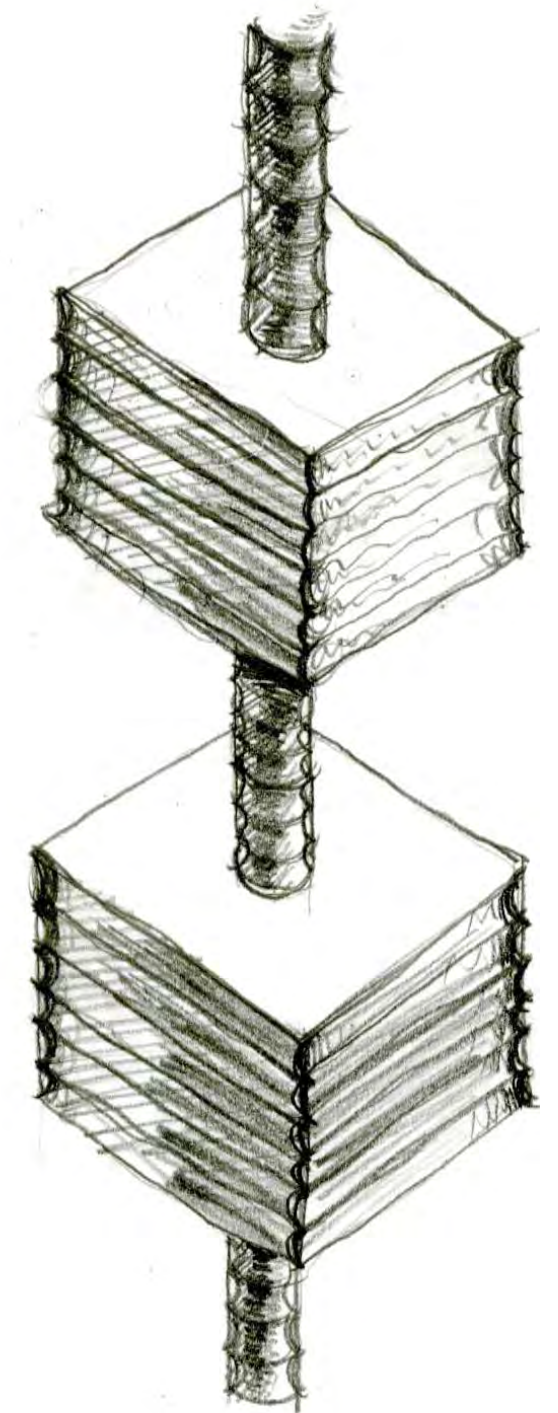


direct sunlight • normal static • cli



cloudy day •

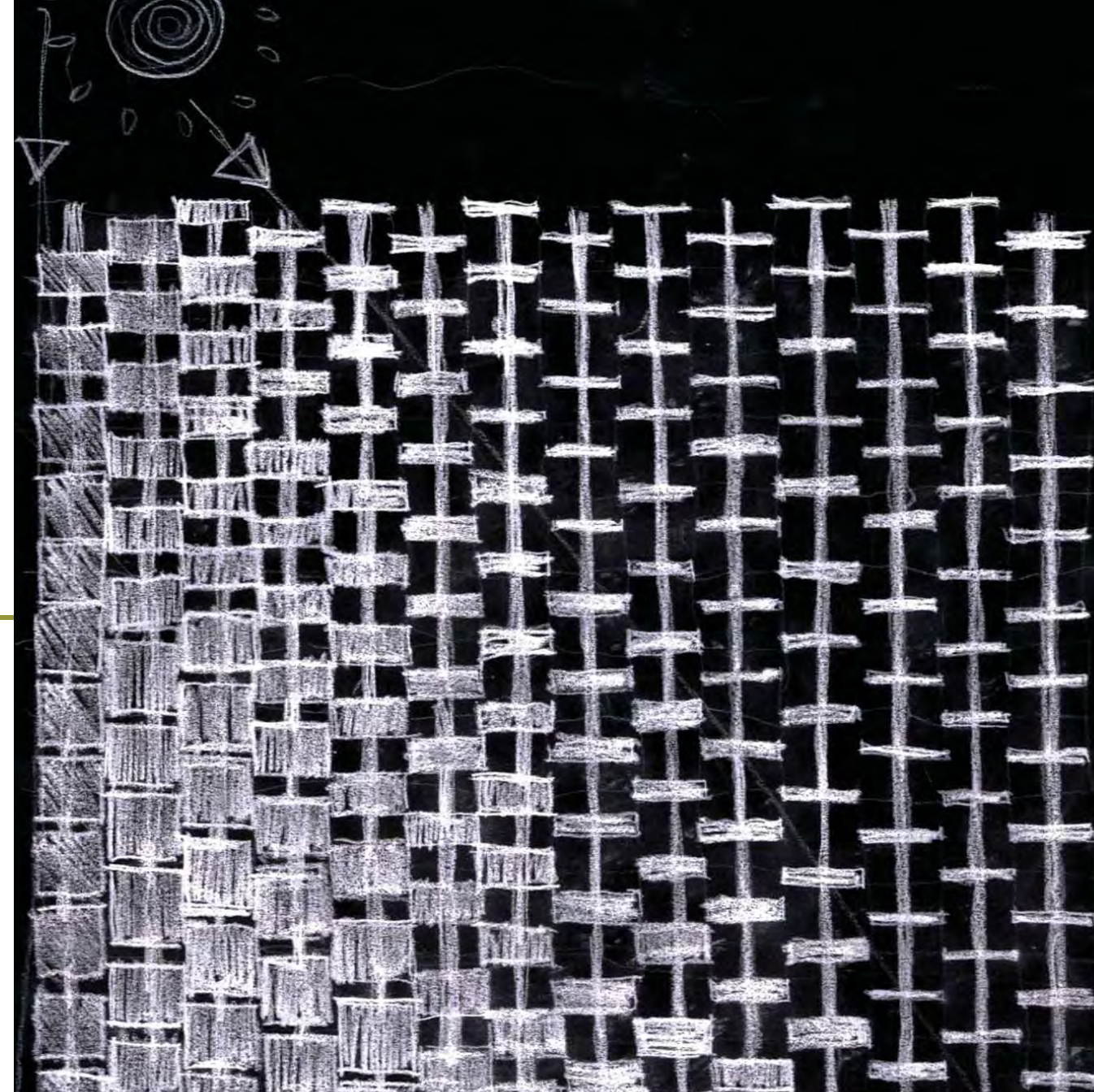
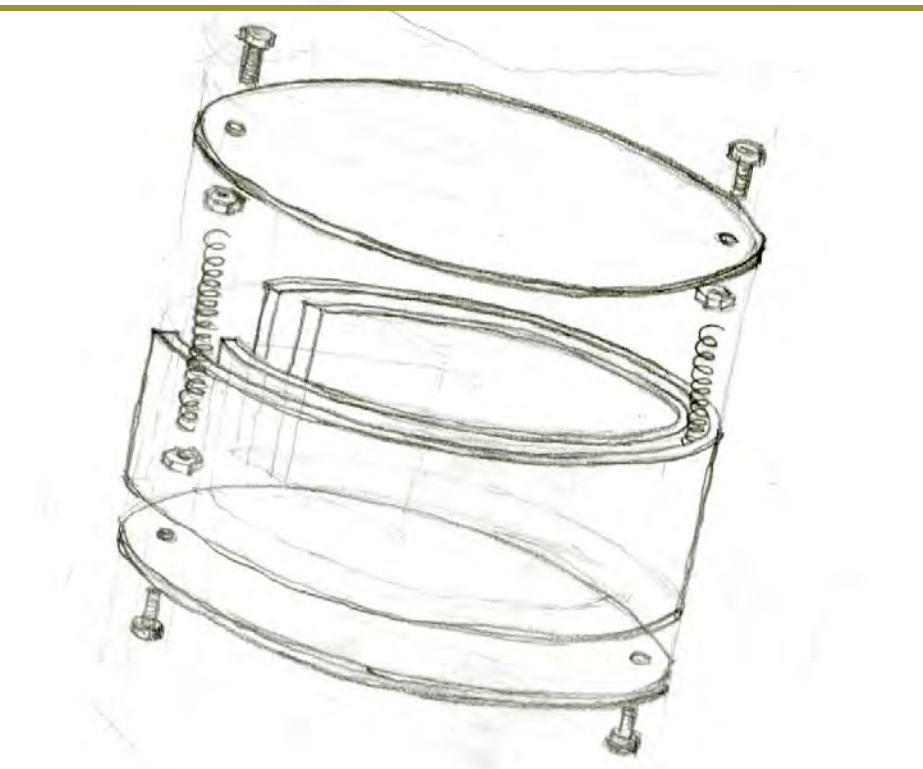
Sunlight
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heat up the air
inside
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air expand
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fill up the large
cubes
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create a shelter
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Stop the sunshine
from going in
Cloudy
↓
air inside compress
↓
cubes fold
↓
light in



we began to develop a working hypothesis about how the tube anemone's motion and biological processes could be transferred into the built environment. our theory was:

“the essence of the tube anemone's expansion and contraction motion can be applied to the model form, and ultimately to the built environment, as a system of interdependent processes rather than in one-dimensional mechanisms. rather than looking at expansion and contraction as an isolated process, it is viewed as part of a complex system of self-regulation that is dominated by hydrostatic pressure.”

this was a rather vague rough draft of our team approach. as we continued through the semester we refined our hypothesis with each iteration. we studied the organism's passive (diffusion and circulation) and active (mechanical motion of the longitudinal retractor muscles) strategies of responding to environmental stimuli.



idea for a shading devise that automatically responds to changes in the environment, creating a sort of “wave effect”



MEMO 3

REFINED PROTOTYPING

memo 3 required further refinement of our prototypes, specifically targeting architectural applications. our goal during this phase of the studio was to apply the vertical motion of the longitudinal retractor muscles to the built environment as a solar shading device which could react to external stimuli and reset itself without assistance. we expanded upon our idea of vertical contraction and expansion by including axis transfer and joint movements. we sought to create a design that would contain the structural motion of the prototype within the membrane, instead of having two separate elements. using the test chambers, we were able to explore variations in membrane opacity and light diffusion due to changes in tension. here is our updated working hypothesis:

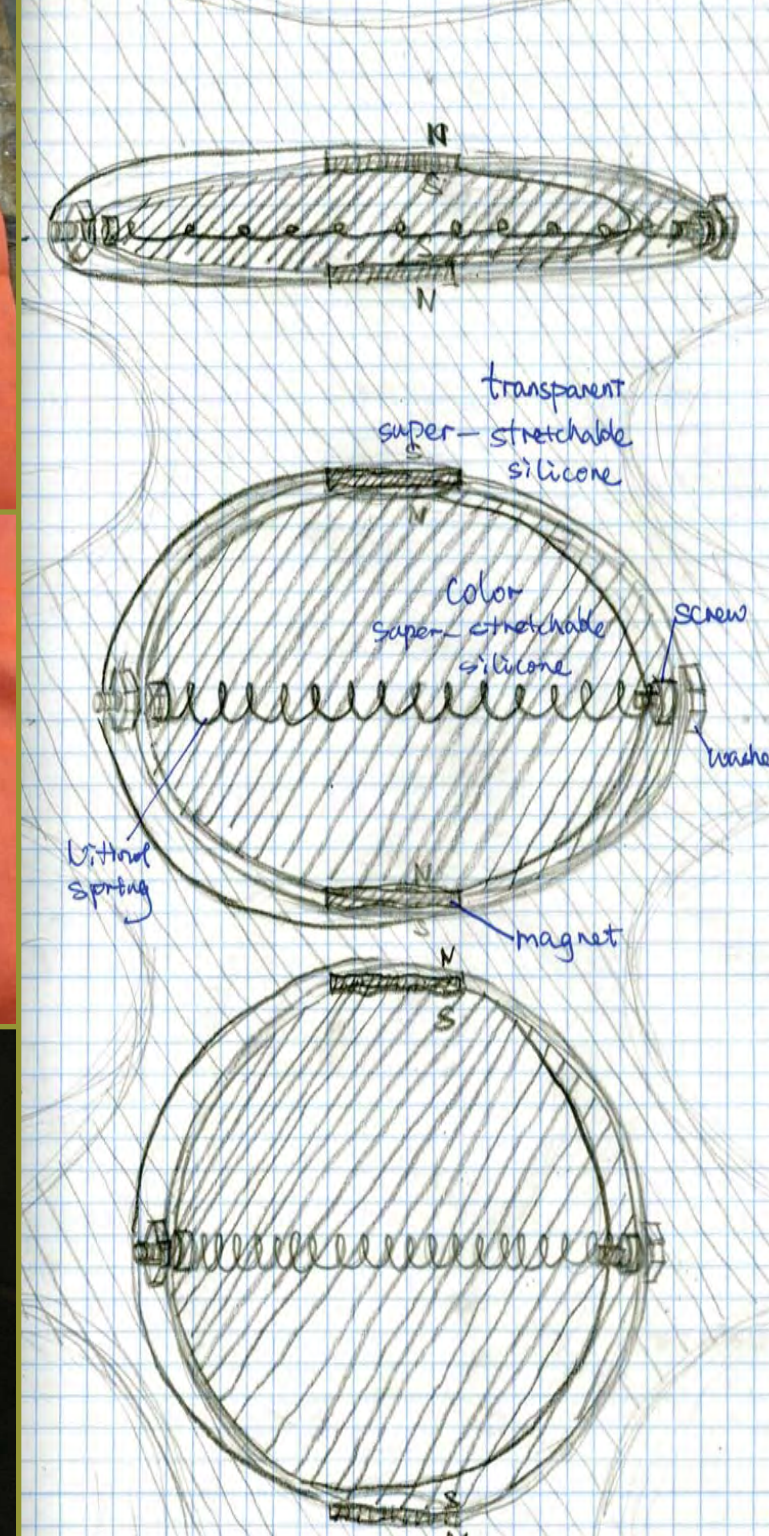
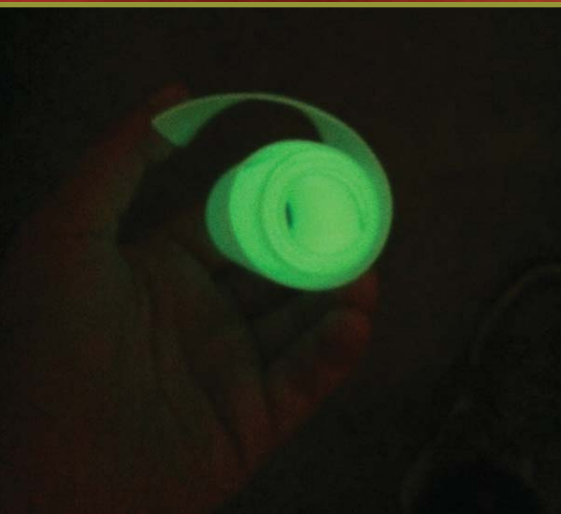
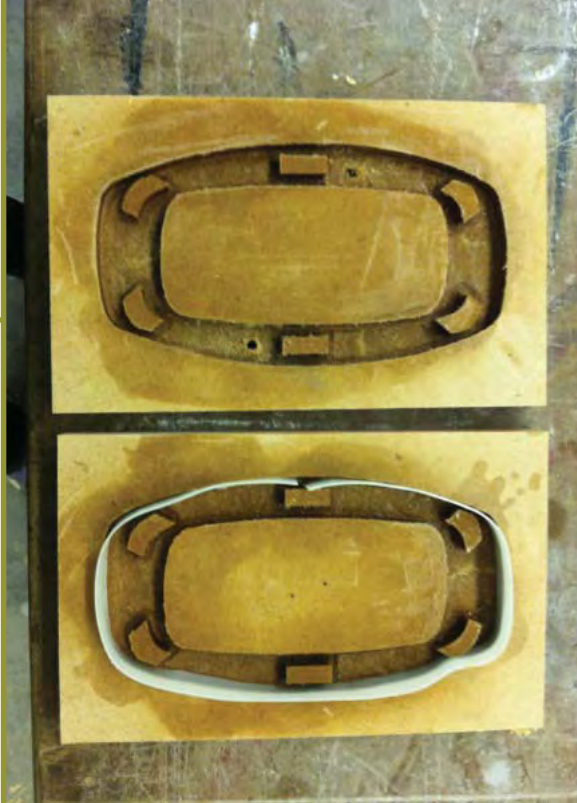
“the vertical mechanical force which is exerted by the tube anemone’s longitudinal retractor muscles during contraction is translated into the built environment as a linear force which creates a corresponding change in the shape of a tensional membrane. the inherent properties of this membrane counteract the linear force to return the unit to its state of equilibrium when not activated. this concept can be applied as a bio-reactive building skin that serves as a solar shading device and creates an interactive experience for passers-by. the device can be applied to new construction or to existing structures in order to reduce strain on the hvac system and create a dynamic façade.”



we developed a unit model that transformed from an elliptical profile to a circular one when activated. the aim was to increase the surface area of the shading elements to decrease solar heat gain in the interior of the building.

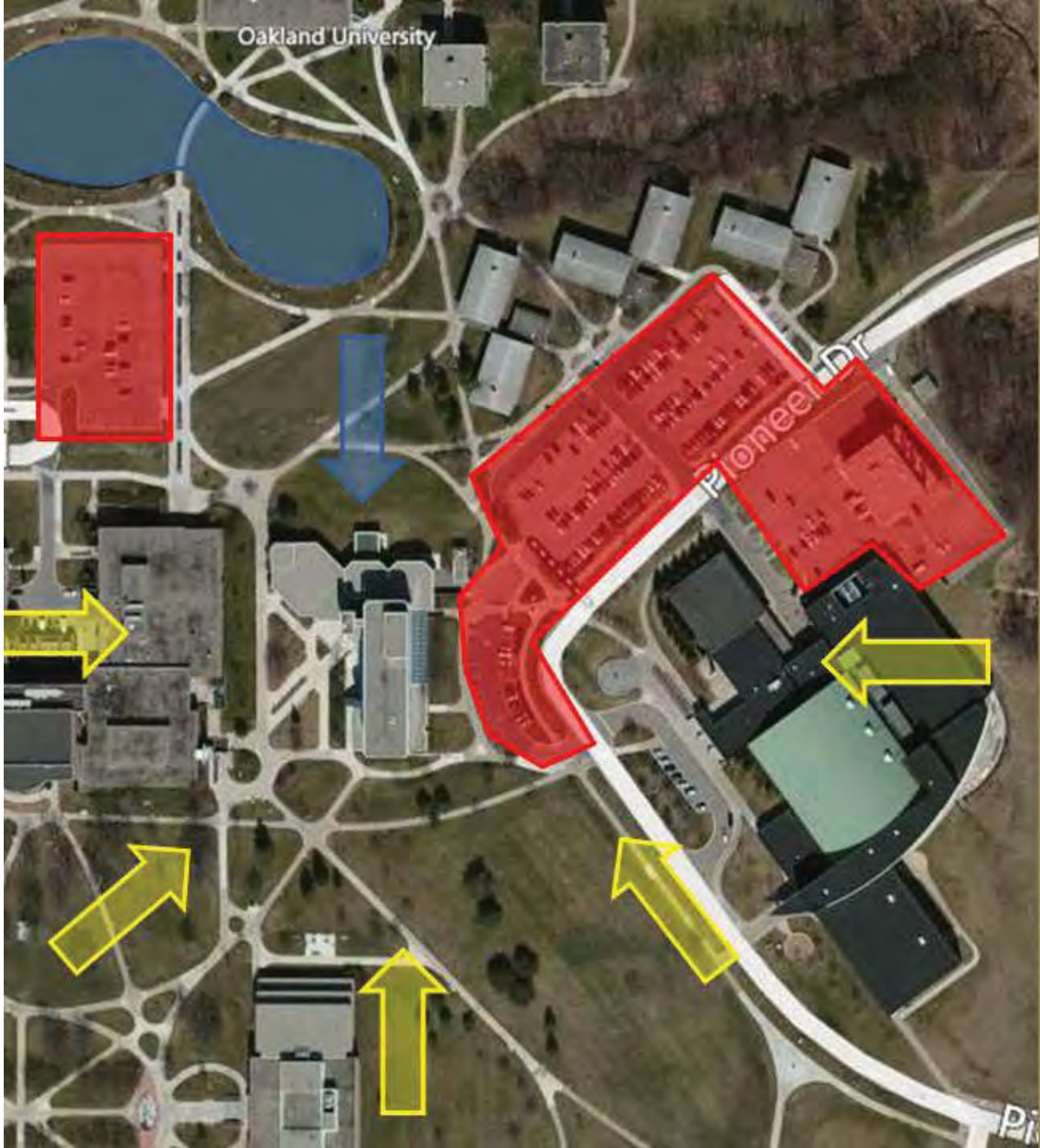
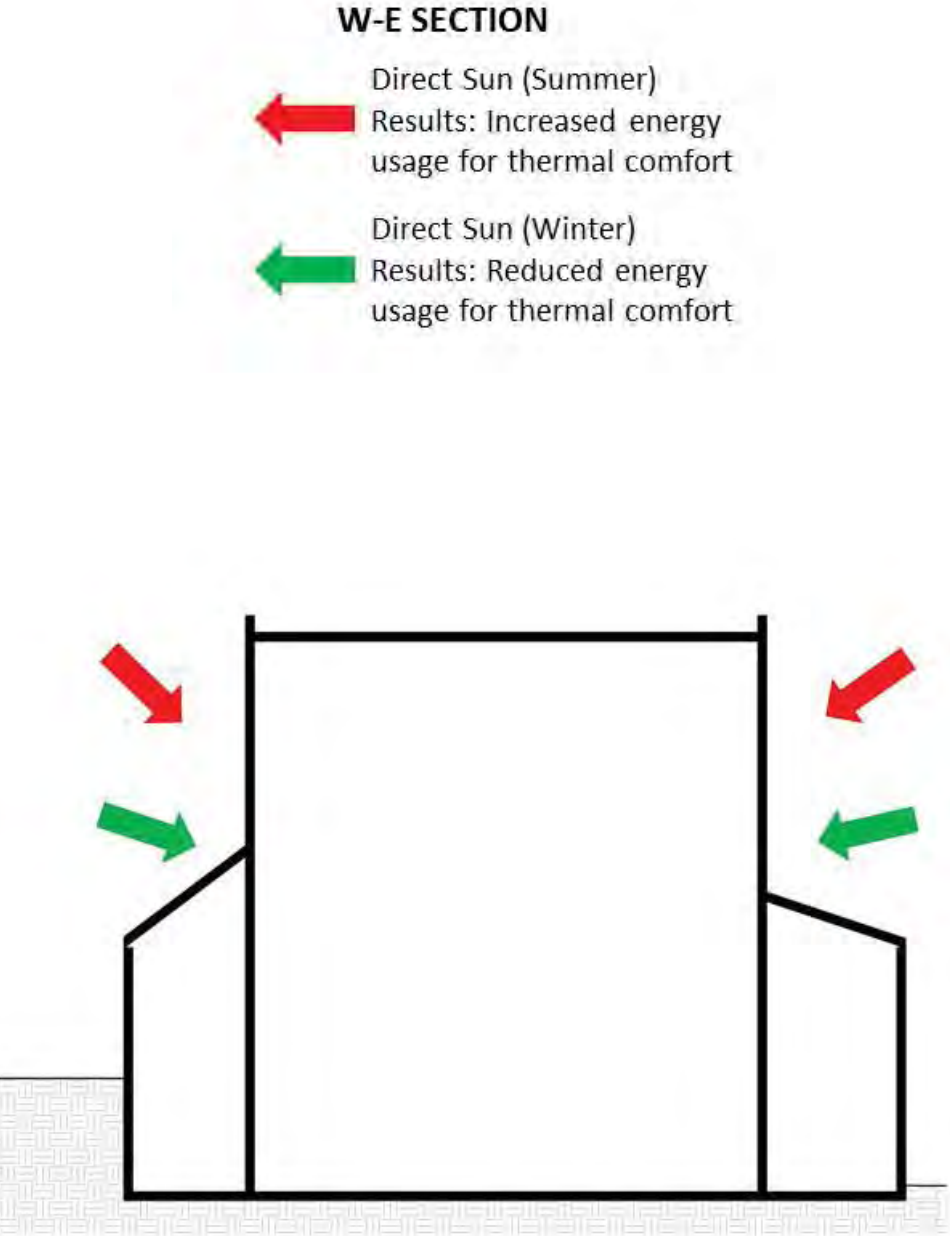
we created a silicone membrane by using a cnc milled mold. we wanted to embed the model actuating material into the membrane but the forces were too strong and the silicone kept tearing. using silicone with a different chemical composition helped strengthen it, but it also reduced its elasticity. so the nitinol wire was mechanically fastened to the membrane and held in tension until activated by heat gain.

we experimented with incorporating various materials that were also heat-sensitive, and would glow and change in color and/or opacity during prototype activation.



the next stage of the memo required us to take our prototype and apply it to an existing physical structure. we were given o'down hall as a setting. located on the campus of oakland university in auburn hills, michigan, this building presented a good opportunity for our research to positively impact its aesthetic qualities and help resduce energy costs.

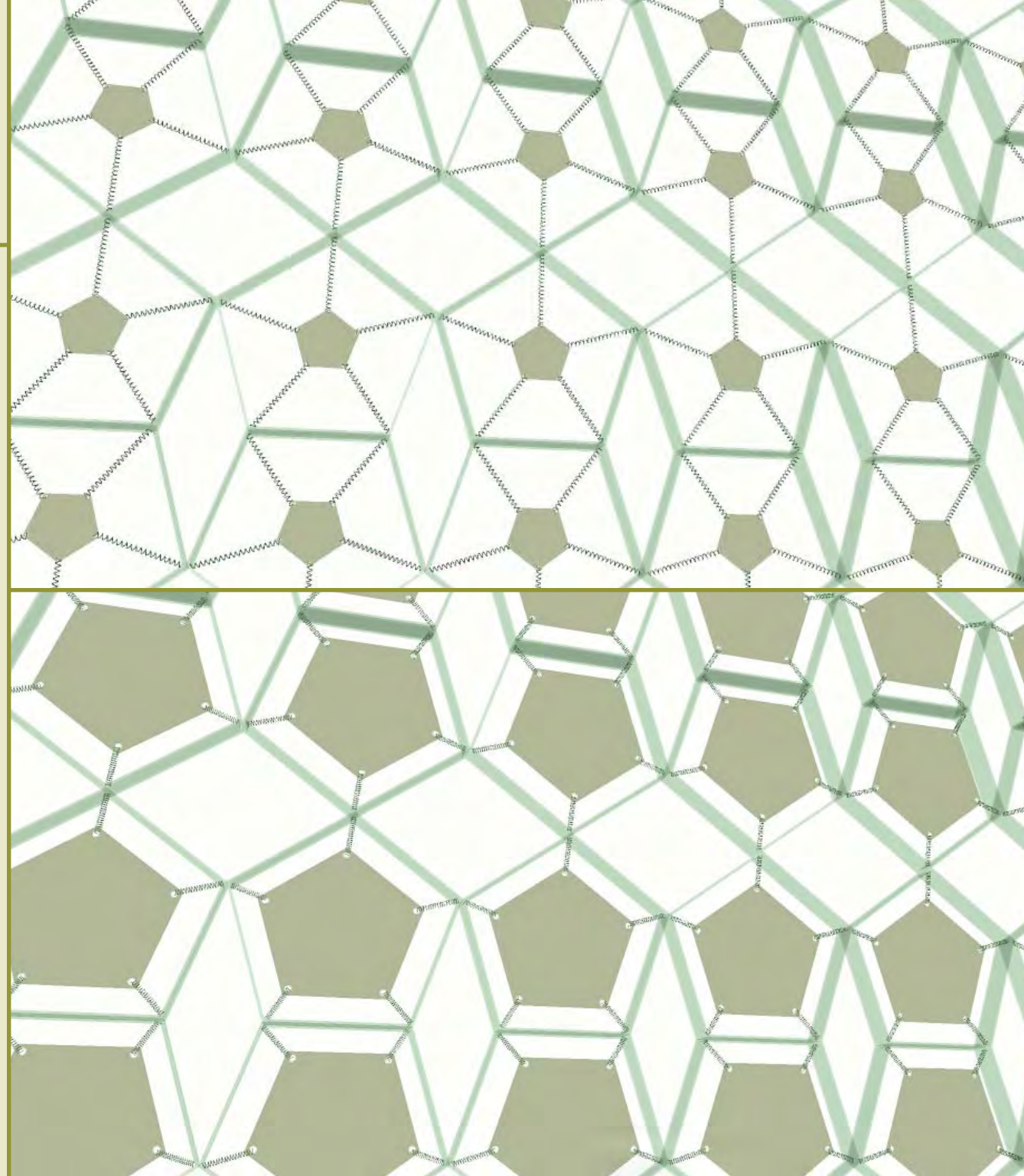
we analyzed the local climate and site conditions to determine where (and in what configurations) the shading devices would be most effective. our passive design would be heat-activated, reducing solar heat gain during the summer and allowing energy from to sun to help warm the interior during the winter time. this situation would provide energy savings year-round. we also began to consider the possibilities of using our shading device for multiple purposes, including visual communication concerning the environment and local conditions.



we had to apply our prototype to o'dowd hall at three levels: the brick, the patch and the infill. we classified our brick as the self-regulating base unit of the system. bricks could be combined in various formations to exhibit similar responses to different types of external stimuli, forming patches. these patches could then be arranged in customized locations for each façade of the building. our shading device was designed to be retrofitted to any existing storefront or curtain wall system.

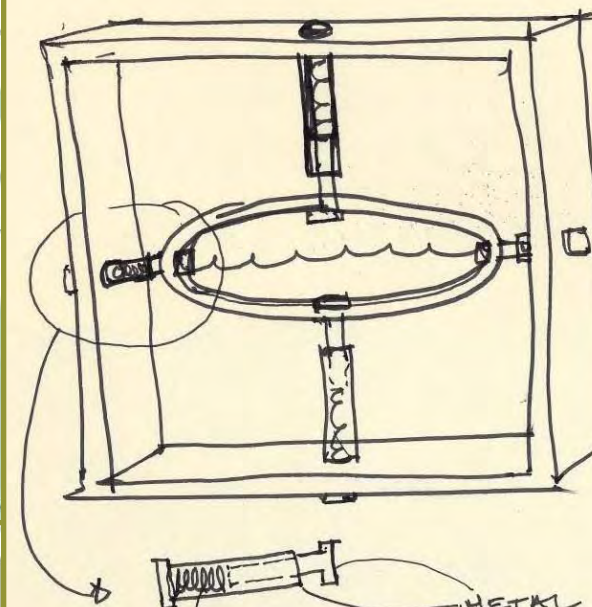
one thing we came to realize towards the end of memo 3 was that the current design changed in form, but it did not really change in surface area. the ellipse transformed into a circle but the material did not really stretch. and the frame was too thick and rigid to provide the transformation we were seeking. as we moved into memo 4 we began to explore alternate designs that allowed a rigid frame to support a flexible membrane.

check out <http://www.tdparch.com/> to see our team's progress book and documentary video for memo 3.

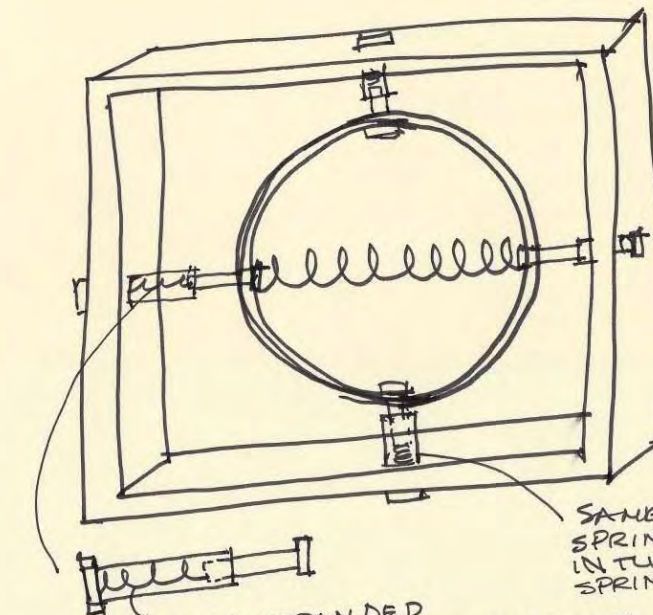


UNIT

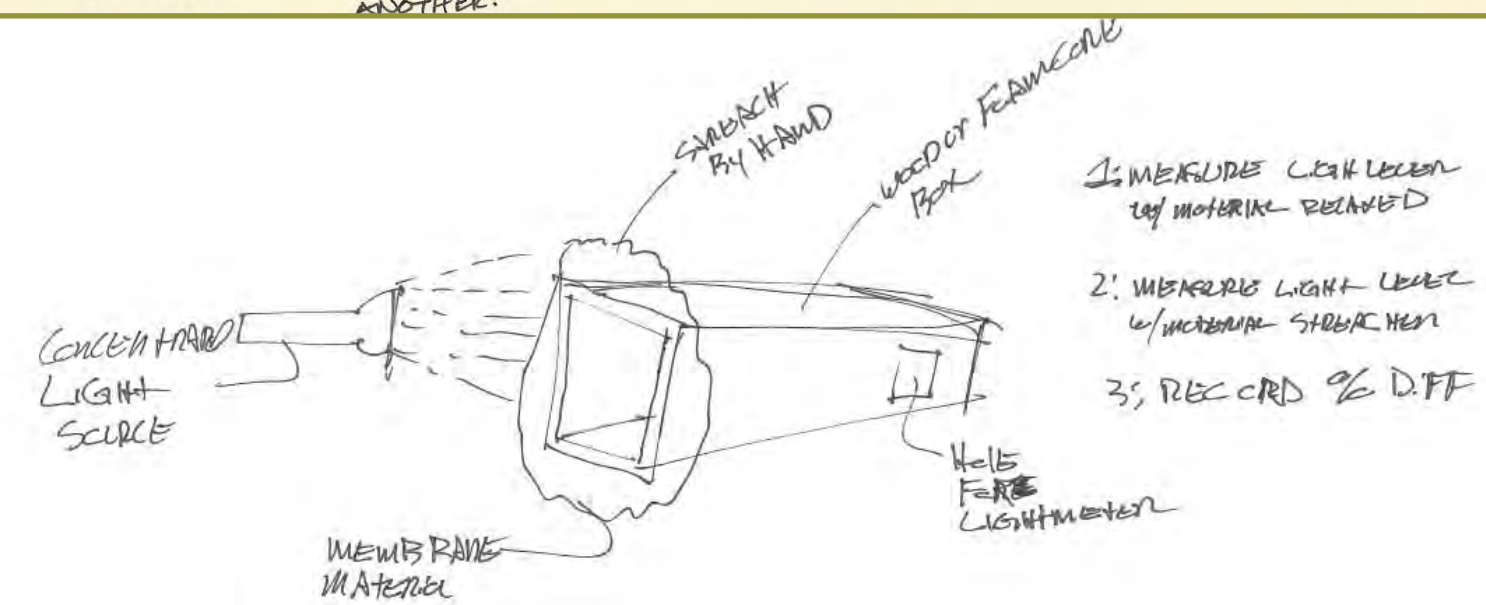
NO HEAT.



HEAT.



SAME IDEA SPRINGS EMBEDDED IN TUBES HELP SPRING BACK TO ORIGINAL SHAPE.



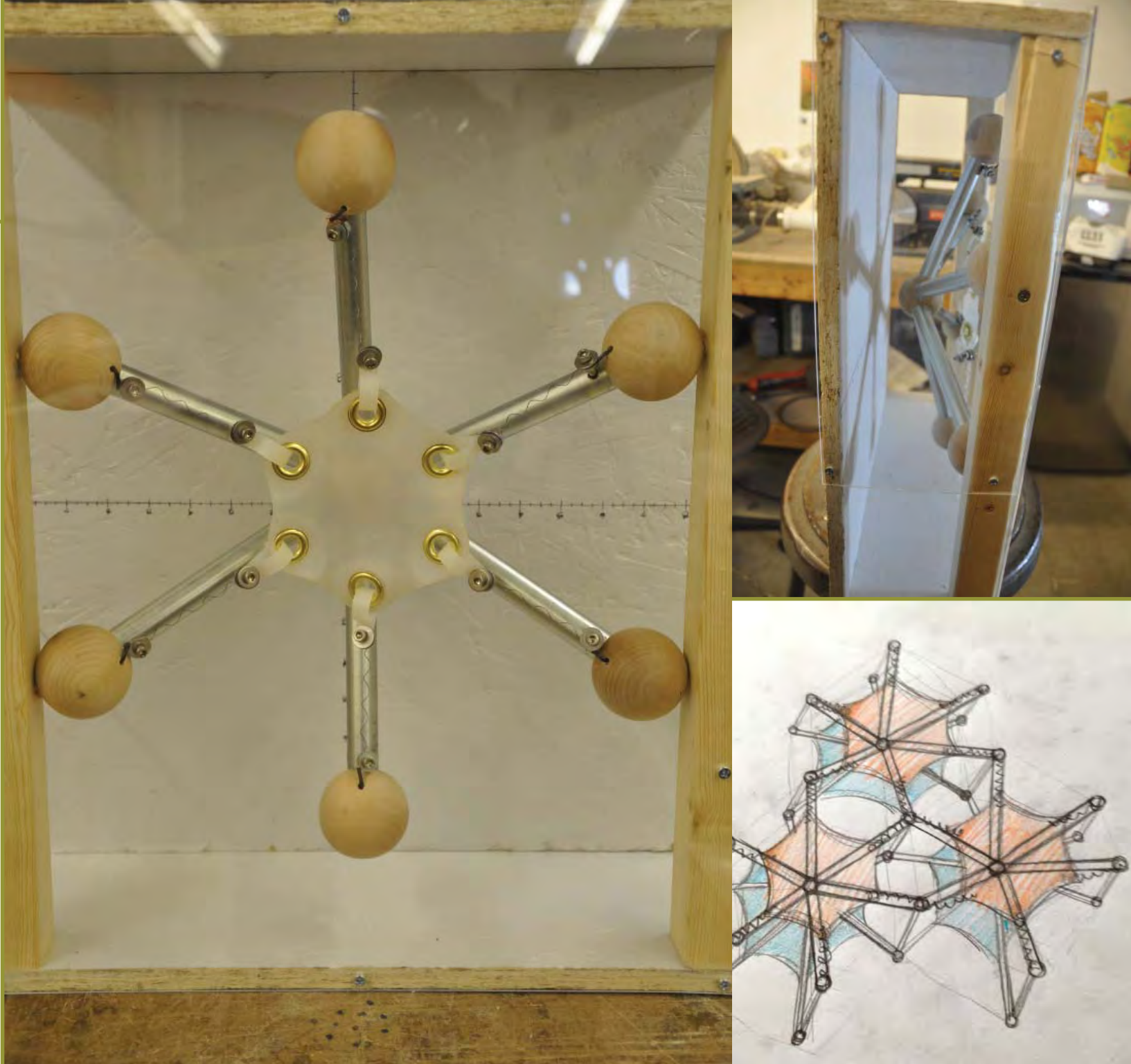
MEMO 4

SCENARIOS/application

during the fourth and final memo, we dug more deeply into the architectural application of our prototype. the following excerpts are taken from our final presentation:

“analysis of memo 3 model experimentation led to the search for an adapted unit based on the original concept of expansion and contraction. the initial prototype was not providing adequate coverage for light diffusion and was too static to serve as an exterior shelter from the elements. the materials were too incongruous, discouraging the seamless integration the team was seeking for the system design. also, the structural frame required supporting connections to the building which inhibited expansion into the surrounding site context.

the team returned to the original concept of the tube anemone’s expansion and contraction for inspiration when exploring alternative designs for the unit. while it can be shaped and formed, the anemone’s tube does not expand and contract in itself. its purpose is to create a framework within which the flexible membrane can move. therefore rather than creating an integral frame that expands and contracts, the team sought to create a frame that can be shaped and formed in response to the context in which it is placed. then the expansion and contraction can occur within the flexible membrane that is placed in that frame.”



final hypothesis

“The tube anemone’s longitudinal retractor muscles exert a linear force which controls the expansion and contraction of its amorphous membrane through tension and compression. A similar linear force can be applied to a nonlinear flexible membrane, causing it to expand and contract within the framework of a self-regulating system that responds to external stimuli. This system can be activated by passive and active forces in order to create a dynamic massing, ever-changing in response to the surrounding environment.

When integrated with a building’s façade this system forms an interstitial space that reduces solar heat gain and light glare into the building’s interior, creating a more productive and soothing environment for the building’s inhabitants. The temperature differentiation also creates air currents along the façade that provide opportunities for natural ventilation, reducing loads on the building’s mechanical systems and removing some of the dividing lines between the climate-controlled interior and the ambient conditions of the exterior.

This system is not limited to the confines of the building’s immediate vicinity. It can be extended into the surrounding context in order to create exterior zones for social interaction by diffusing light and providing protection from elements such as rain and snow. The system can also be used for visual communication through the integration of luminescent materials and/or LED lighting.”

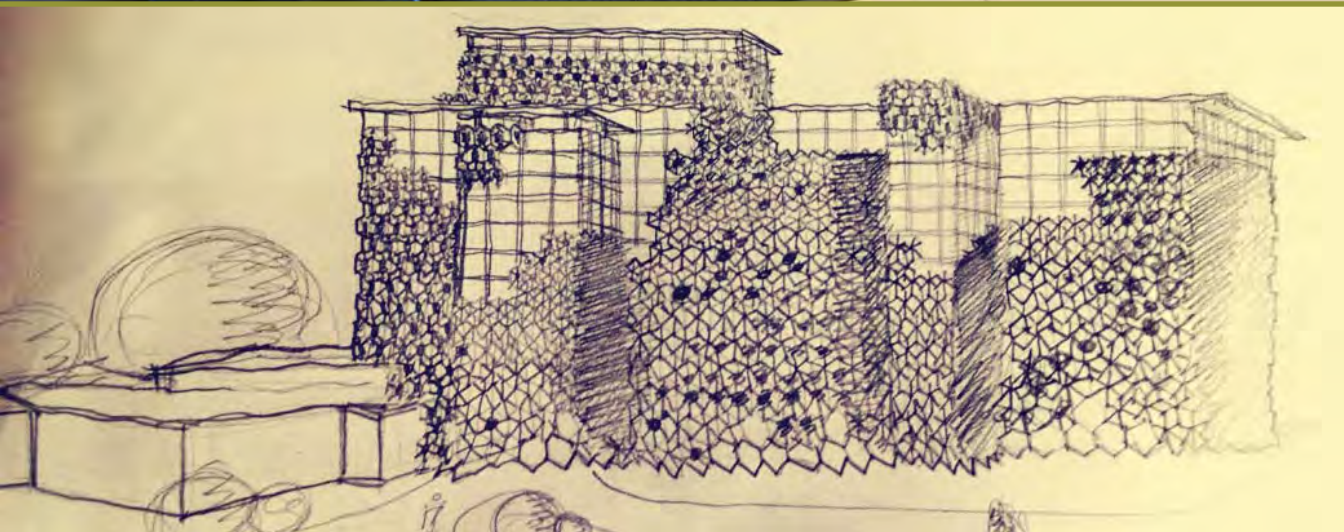
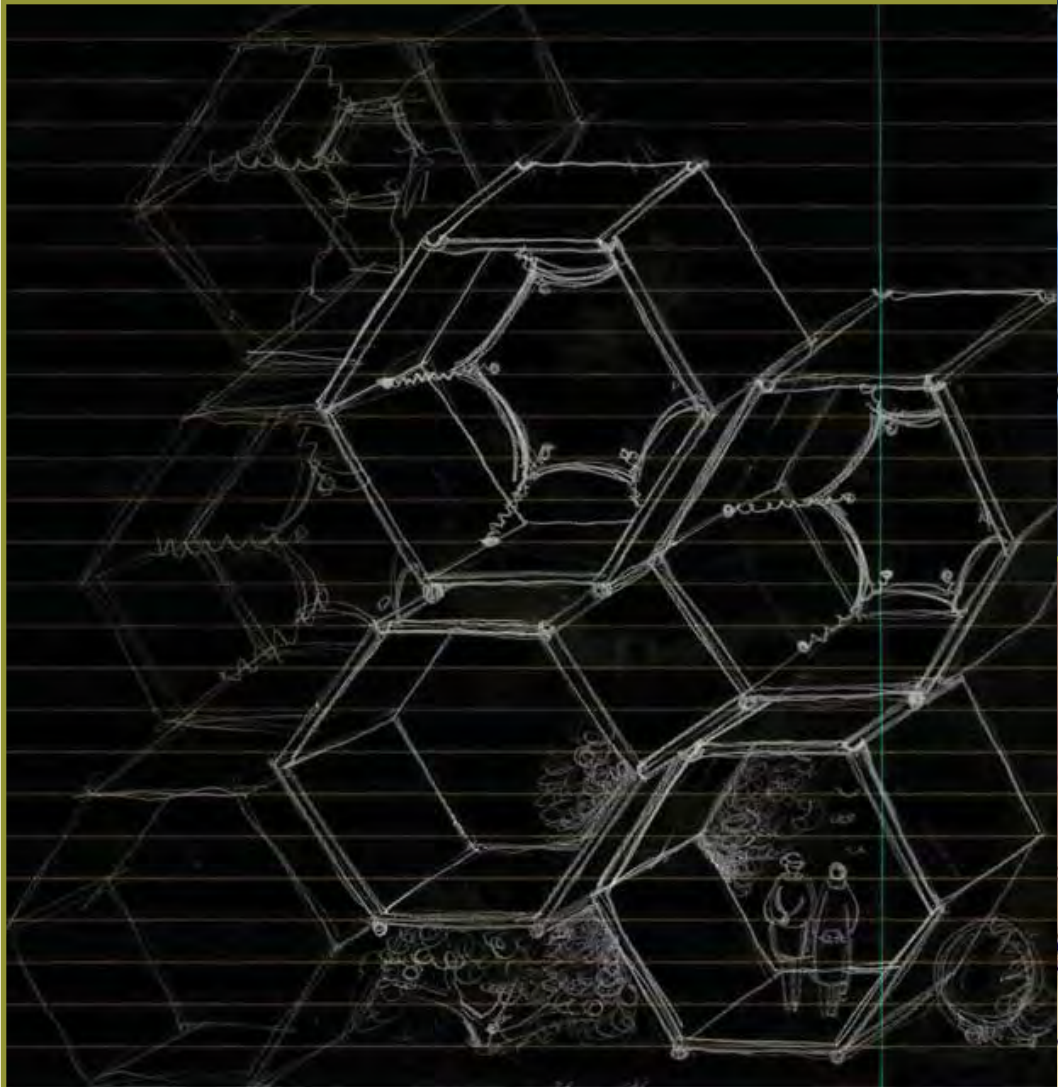
PROTOTYPE DEVELOPMENT

“the team experimented with various configurations for the frame and membrane in order to find the most effective combination.

initially the outer frame was deep and stackable, which allowed it to be self-supporting. the thought process was that the units at the lower levels could be larger, and wrapped with permeable perforated materials that allowed them to be inhabited, perhaps marking entrances to the building and other site zones.

simultaneously, the team developed what they call a “spider frame” – a lightweight structure based on space frame design. the spider frame design is based on point connections rather than panel design, and is more open and flexible in nature than the hexagonal frames.

through investigation it was discovered that the point connections of the spider frame system provided opportunities for endless pathways, creating the framework needed for multiple layers that could be offset. the central nodes that serve as bases for the module unit also enabled the tube extensions to be various lengths. this allowed for more dynamic surface undulation and gave the team opportunities to shape the system in response to the building and site context.”



“the team also looked into how the membrane would be attached to the spider frame. the constant tension at the point connects would create large forces that could tear the membrane, so it had to be strengthened. fortifying the areas around the point connections would be vital.

the team investigated sailcloth design as part of its research and discovered that manufacturers take fibers that are laminated with other materials to make them stronger and weave these fibers into the sailcloth at connection points to form denser reinforced areas. another technique used is to weave ripstop into the sailcloth at load points. ripstop fabrics are nylon fabrics that are reinforced to be more resistant to tearing and ripping. ripstop is typically interwoven into other fabrics in a crosshatch pattern.”

“sailcloth and other fabrics do not have the flexibility and transparency needed for the desired system so the team decided to stick with using a silicone membrane. silicone by nature does not allow for interwoven materials, however the team discovered that some materials can be embedded in the silicone membrane that help strengthen it at the point connections. this could also be accomplished by thickening the membrane, perhaps even extending the thickened areas to form a web-like shape.

in addition to researching options for the membrane, investigations were made into space frame systems to determine how the spider frame could be supported and held together. a common thread involved using ball connections which housed tubes that extended out to form the framework.

once the preliminary design parameters for the module frame and membrane were established the team experimented with materials to find the most effective combination for the system.”

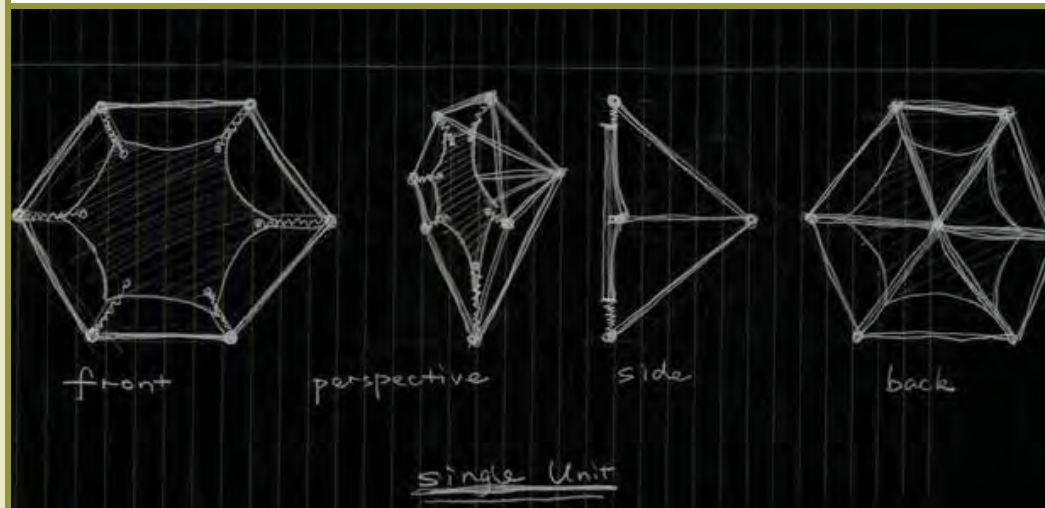
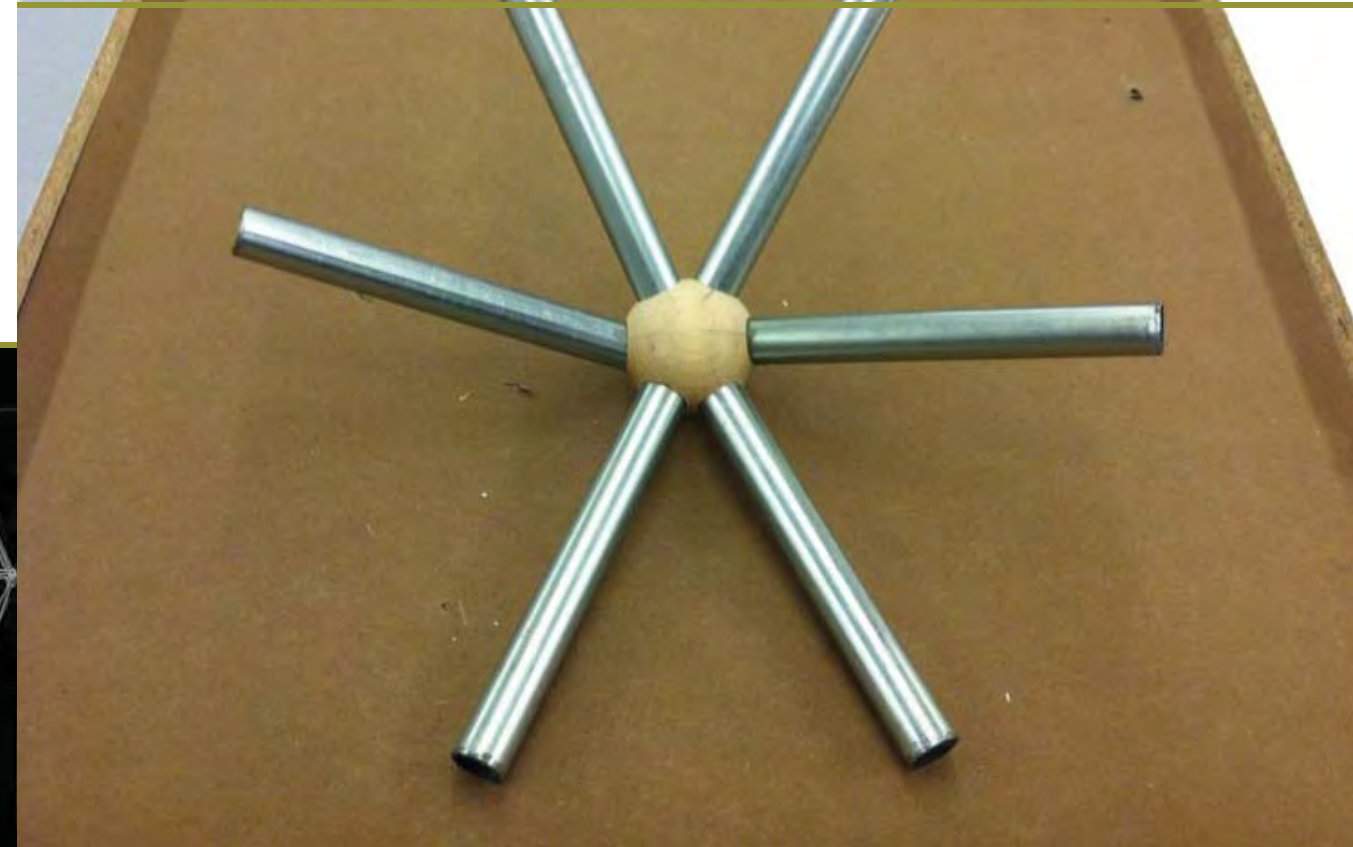


image credit: http://www.fastcodesign.com/multisite_files/codesign/imagecache/960/Inventables-Super%20Elastic-Plastic-A.jpg



“super-elastic plastic material was available for immediate experimentation so the team made a quick model using it as a membrane to see if the concept would work. the final model unit materials became wood, aluminum tubing nitinol coil wire and silicone.

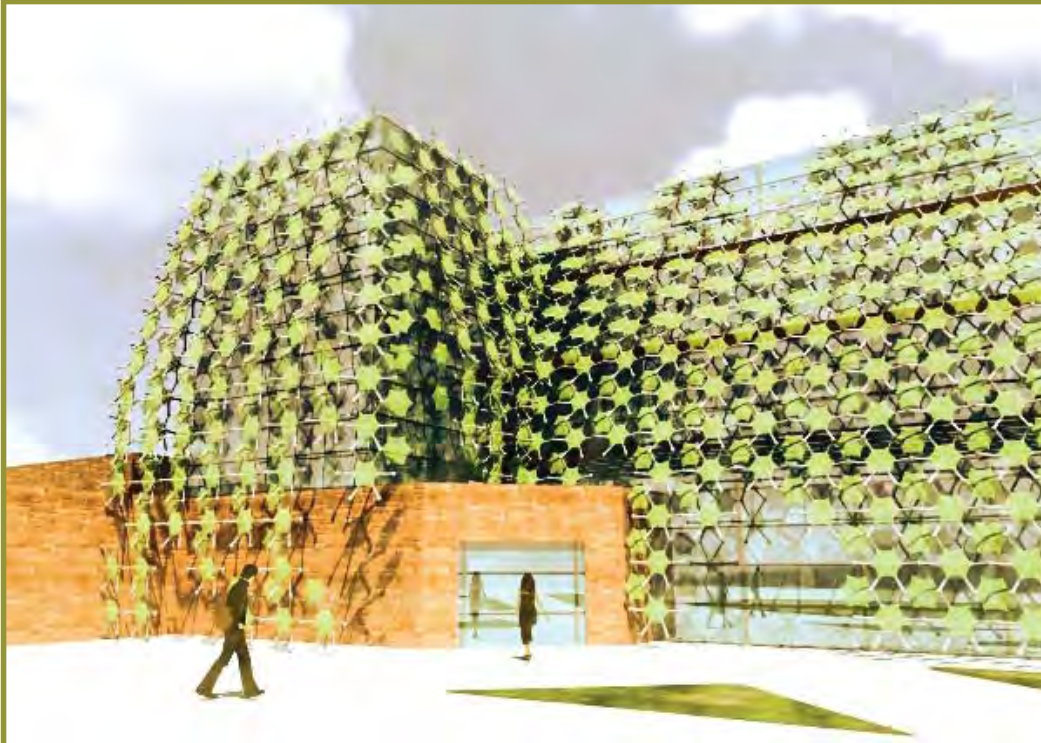
designs were made for the areas of the membrane which would experience concentrated point loads at the nitinol wire connections. the team decided to thicken the silicone membrane at connections and use grommets for the points of attachment. glow-in-the-dark silicone dye proved too expensive to incorporate into the model. however, it can be utilized in the final system design and is demonstrated in renderings and images. additional materials were tested in the membrane such as fabric patterning for enhanced light diffusion and elastic strips.”

final PROTOTYPE SYSTEM: brick, patch and infill

our base unit - the brick - refers to the self-regulating element that forms the foundation of the system. the brick is designed to be independently functional when activated by heat. it has the ability to return to it's original state of equilibrium as the ambient temperature cools.

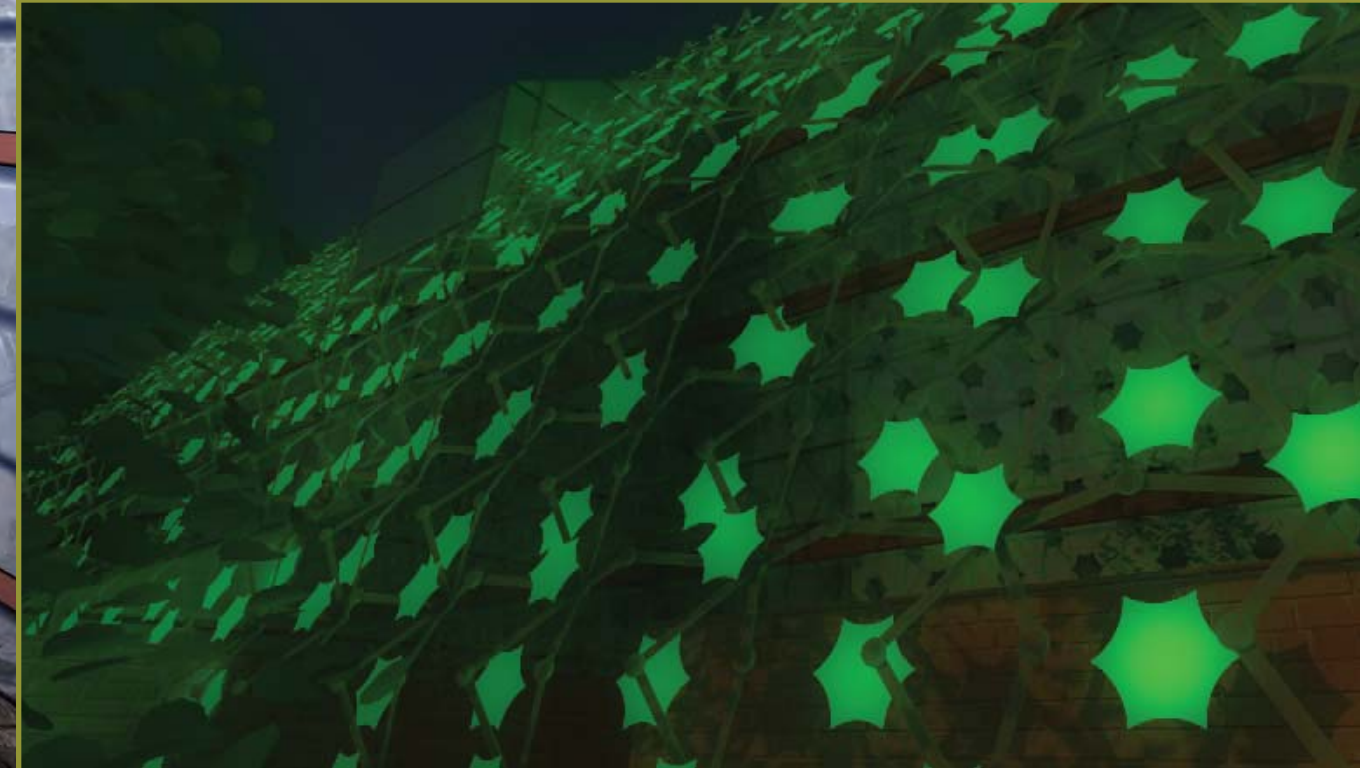
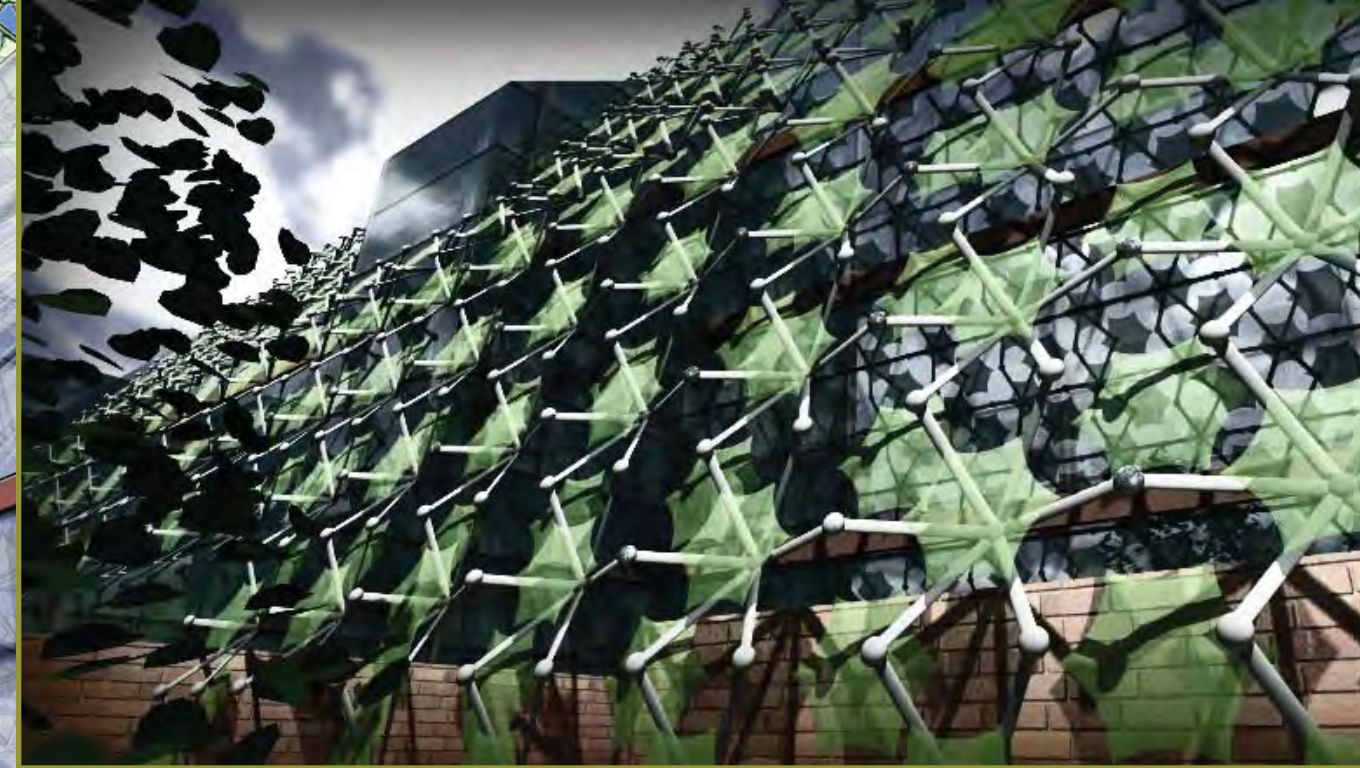
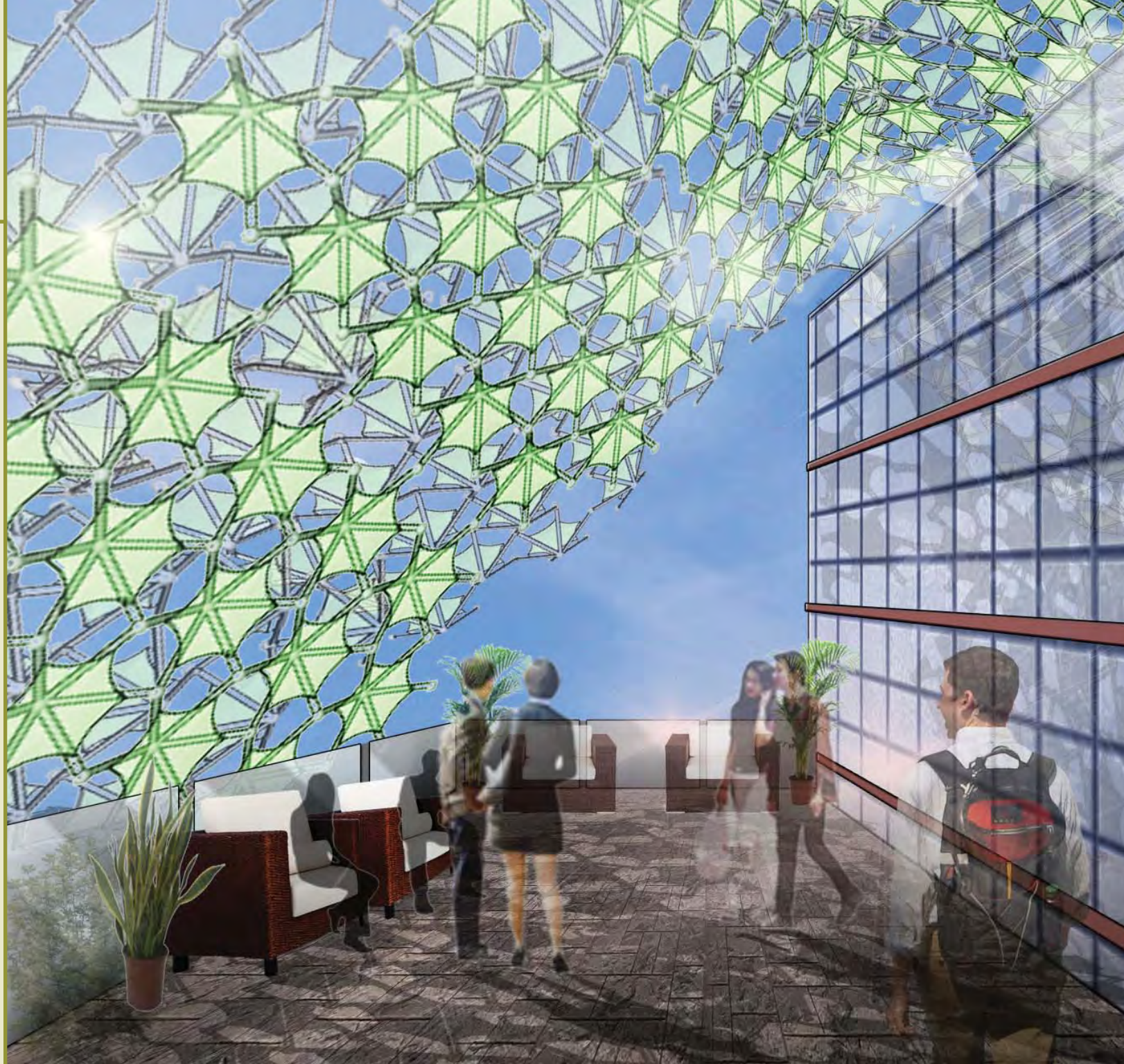
by adding a secondary layer of bricks we were able to create additional filtering. this layered formation is called the patch. in addition to arranging several patches on a building's façades in response to climactic conditions, we also extended the system into the surrounding context, creating a more inviting atmosphere for students and instructors. this expansion unites the campus physically and mentally, providing shelter from the elements and serving as gathering spaces.

in addition to the basic formula of brick, patch and infill we created a secondary activation source by electricity. i.e.d. lighting is incorporated into the system and connected to external sensors. this allows manual overrides for emergency warning systems.



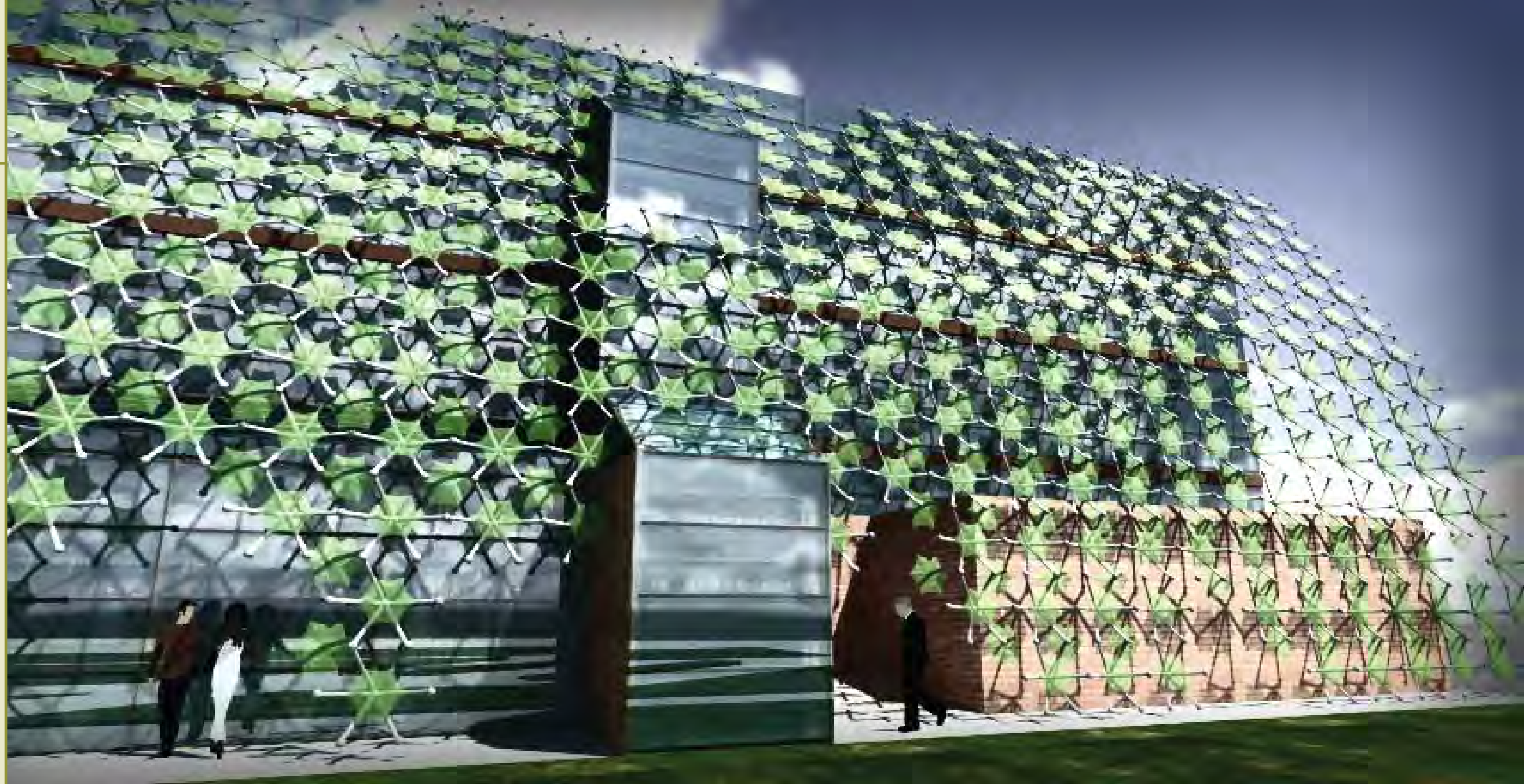
SITE ANALYSIS AND BUILDING APPLICATION

the shading system creates interstitial spaces that direct heat away from the building and help reduce h.v.a.c. expenses. is applied directly to the building's storefront system to reduce solar heat gain. it also is applied at the building's main entries to create social gathering spaces which are protected from the elements. the system flows up to the building's rooftop, creating an additional node of interaction for the campus.



we had to analyze the impact of the system upon the campus over time. according to our research, the system has a gradual cooling effect on the microclimate. as vegetation grows along the structural supports, it helps to provide shading. the system will require some maintenance to prevent overgrowth which could interfere with the responsiveness of the bio-materials. it is also anticipated that over the years the membranes will have to be replaced.

we integrated copper tubing into the framework so that over time it will develop a natural patina. this patina will provide a protective barrier that will minimize the amount of maintenance needed on the structure.

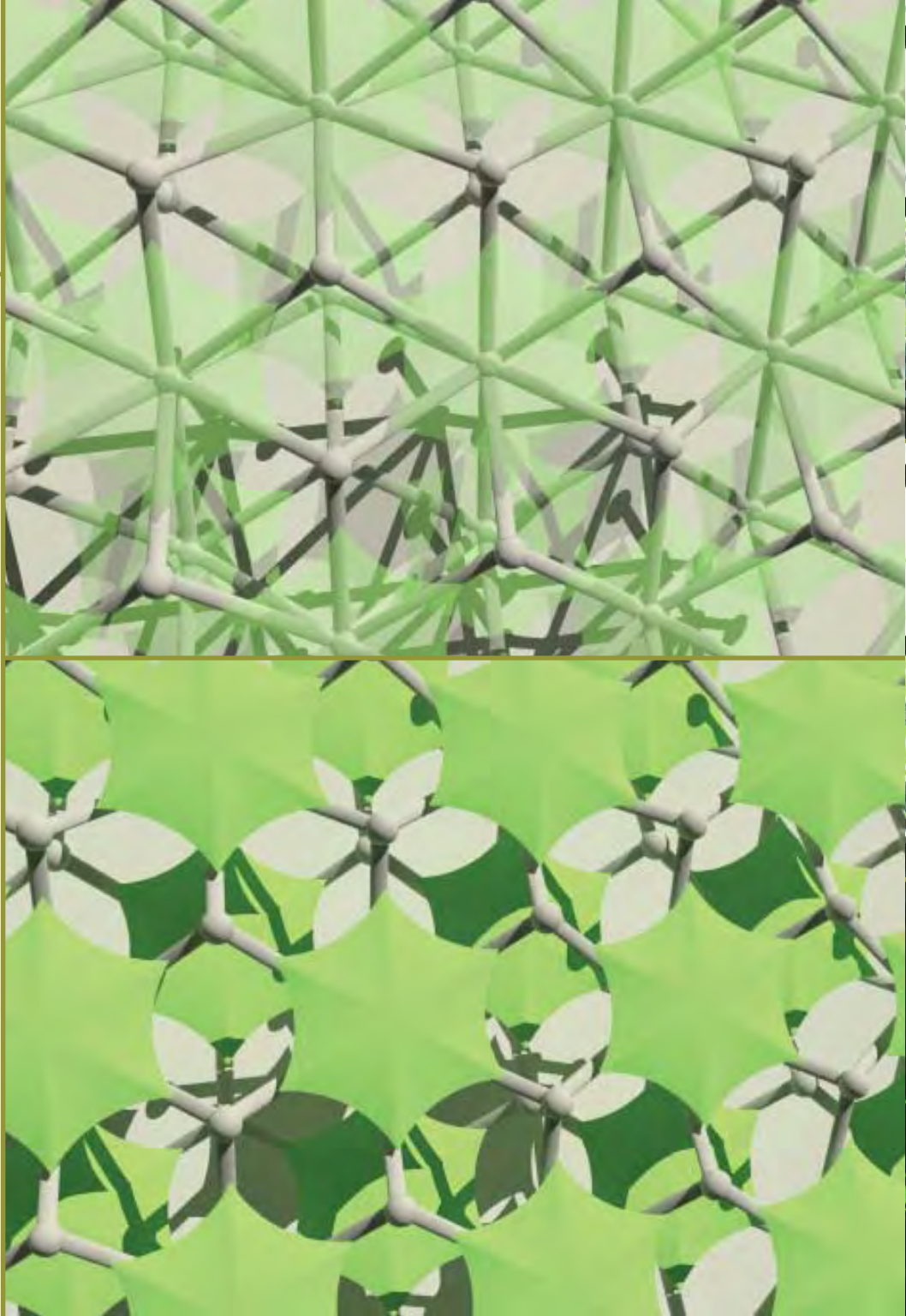


LESSONS LEARNED

this course helped us to understand the “softer side” of architecture - to get inspiration from nature and allow our research to drive our design rather than forcing our preconceived ideas to dictate our design and research. we learned to be more flexible, pliant and adaptive in architecture. it is important that we are open to new ideas and create living architecture, looking to non-traditional sources for inspiration.

it is also important that we test, retest and refine our designs. it is very easy to get stuck with a concept and do whatever it takes to make that idea work. what is more important is that we can listen to our projects - listen to the needs of the environment, our communities and our clients - and design the built environment to truly fit those needs. if we realize that we made a wrong turn, we know that we have the ability to take a step back to a previous idea and take our design down a different path, making adjustments as needed.

we also need to think about the psychological impact we have on those who inhabit the spaces we design. we are custodians of the built environment. it is our responsibility to create phenomenal architecture rather than merely functional architecture. we must pay attention to the forms, shapes and colors around us - even intangible elements such as temperatures, lighting and ambient sounds.



CONCLUSION

here are some parting words from our final book presentation.

“in this sense, the interstitial spaces and dynamic forms of our spider frame design begin to create architectural phenomena – interactive experiences that allow the users of spaces and places to do more than just look at their surroundings. this is where the dividing line between spatial and structural or practical and phenomenal is crossed. as we progress throughout our architectural endeavors it is our goal to further blur this distinction and blend the world we experience with the world we imagine.”

to see our memo 4 final presentation video and book please visit my website and follow the links to graduate coursework at the following location: <http://www.tdparch.com/>.

Ecological Issues

COURSE: ARC 5423
INSTRUCTOR: William Allen
DATE: Fall 2012

as the population continues to increase to unprecedented numbers, we have to pay more attention to the impact we have upon our planet. this course was designed to create an awareness of our impact upon our surrounding environment and its impact upon us. we focused on three main objectives:

1. identify and understand ecological issues as they relate to architecture
2. understand the political and social nature of ecological issues
3. work within the framework of the environment, both social and physical, to identify solutions addressing those issues that affect the profession of architecture

work: man on the street interviews
 waste not want not
 sustainable tours (2)
 contemporary building with historic precedent

read: biomimicry janine m. benyus
 break through ted norhaus and michael shellenburger
 collapse jared diamond
 small is beautiful e.f. schumacher
 +various passages from online and printed sources

watch: erin brockovich
 a civil action
 the 11th hour
 +various online videos



image credit: http://freerange.com/images/projects/95/work-sos-hdr__large.jpg

COURSE REFLECTION

when i first started taking this class i looked at the list of assignments, and some of them were things i had never really done before. for example, we had to go out and interview a variety of individuals from selected categories and find out their outlook on environmentalism. it reminded me why it is important for architects to be actively involved in their communities. many of the people i spoke with had interesting and insightful perspectives on environmentalism. interestingly, of all age groups, the college students knew the least about environmentalism. it is up to us architects to make sure our neighbors and future leaders are educated about ecological issues so that they can play an active role in making our communities better places.

another aspect of the class that i liked was the wide knowledge base we explored to find out contemporary ecological issues. we watched many presentations, like “the story of stuff” that explained how globally interconnected we are. the united states is the most wasteful country in the world, and we distribute our waste to other countries, ruining their environments. the root cause has to do with the development of commercialism, and the intentionally short life cycle of consumer products.

why don’t we change it? it’s very complicated. large corporations often have more power than the government to regulate the production and distribution of “stuff” and so they do what is best for their pocket books, and often influence politicians to go along with them. the situation may seem quite dire, but as we discussed during the class, each person has the power and ability to incite change at local, regional, and global levels. the course encouraged me to look for ways i can promote sustainability and conservation in my local community and professional practice.

excerpts of coursework from this class are provided in the following pages. for additional information, please go to <http://www.tdparch.com/> and follow the links to my graduate portfolio.

SHADING SYSTEM

concept:
i got a hold of some old metal wire hangers that were headed for file 13. i also found some leftover textiles, including a perforated vinyl sheet that was starting to yellow. with these items of waste i decided to construct a sun shade device.

- materials used:
- hanger wires that are no longer being used
 - old fabric, ribbon and vinyl

- process:
- bent the hangers to shape the frame of the shading system.
 - connected the hangers together with metal wire and industrial epoxy.
 - adhered & trimmed textiles to frame.

final product:
materials that were once waste have now become food for a shading system for my balcony door. the system can also be used for a window. scraps from the textiles can be used to stuff pillows, cushions, or even toys!



- lessons learned:
- metal doesn't easily stick to a lot of things, regardless of what the adhesive label says
 - skinny metal wires have rotational forces at their points of connection which tend to break the connections
 - metal wires have a much heavier gage than one would initially expect

the technological achievements of our society today have the unintended side effect of creating a world that over produces and creates mountains of waste. waste is a serious matter because it is a major factor in the depletion of this planet's resources.

what we've learned from this project is that not enough time is taken to think through how materials could be used and recycled into other reliable source items. we need conscious efforts from everyone to put an end to waste and begin to live sustainable lives, not only to save the environment but also to promote a healthier social, physical and psychological quality of human life. focusing on the environment is also an important step in erasing greed, ignorance and complacency from our lives and replacing those negative influences with a deep appreciation for the good we can get from all materials and resources – if we exercise responsible stewardship over them.

writing desk

concept:

several years ago in undergrad one studio required us to create these plexiglas layers of various areas of italy. one frame that was leftover in my parents garage and slated for destruction, was of the uffizi gallery. i thought this would be a good opportunity to rescue it and incorporate it into a practical architectural application that was modern and functional. i also wanted to incorporate plastic bags since they are often excessively abundant in landfills and oceans.

materials used:

- plastic bags
- cardboard rolls left over from the plotter
- old etched plexiglas
- leftover shelving

process:

- created ropes out of the plastic bags and tied the tubes together for support.
- cleaned the plexiglas
- explored tube support configurations and balancing for shelving support

final product:

five tubes produce asymmetrical design. shelving supported by tubes, which are also connected by plastic rope. plexiglas rests on edges of shelving.

lessons learned:

- plexiglas scratches show easily on dark backgrounds.
- when adding a center load, you have to offset or cantilever the side supports out so that the weight is balanced when the final load is applied.
- when braiding plastic bags, two-strand loops work best!



Sustainable Tour 01

BIOTANICAL RESEARCH INSTITUTE OF TEXAS (b.r.i.t.)

the botanical research institute of texas is one of the few leed platinum certified buildings in the state of texas. b.r.i.t. moved into its new facility in the spring of 2011 on the campus of the fort worth botanical gardens. the 70,000 square foot building takes advantage of the latest techniques in energy efficient design while treading lightly on the surrounding site and environment. integrated passive techniques contribute to an estimated energy savings of approximately \$37,000 per year.

- mats at major and minor entrances help keep shoe-tracked pollutants out of the hvac system.
- led light fixtures are used in the parking areas and designed to reduce light pollution. preferred parking spaces are reserved for low-emission vehicles. to the right is a bike rack that encourages reduction in fossil fuel emissions by automobiles.
- among the brit's many sustainable features is a "living roof." this green roof helps to reduce rainwater runoff to the surrounding site.
- the site contains rain gardens and native vegetation bioswales which help prevent pollution, erosion and runoff. a retention pond also stores water and serves as an additional source of nonpotable water.
- brit has a cistern on site to collect and store nonpotable stormwater runoff for use as irrigation. the above-ground tank serves as an educational tool for the community.



166 geothermal wells under the landscaped and parking areas help maintain constant temperatures and reduce heating and cooling loads by over 50%.

b.r.i.t. worked with green mountain energy company to establish a solar photovoltaic array which sits on the roof over the herbarium. the array converts sunlight into electricity, which is then transformed into a form of energy that is compatible with common electrical devices and the form of electricity that is supplied by the grid.

the benefits of rooftop solar arrays include reduction of the following items: operational costs, climate-change emissions, and dependence on fossil fuels approximately 14% of the building's electricity is generated by the array.

this double-height wall in the main entrance lobby is a great example of implementing salvaged materials into the project. brit chose to harvest sinker cypress, a wood that is recycled from logs that sank over 100 years ago when the cypress trees were logged and transported by river. by utilizing this recovered resource brit reduced the need for harvesting new trees.

a terrace on the second level is made of ipe wood. the public has access to this space during open hours. b.r.i.t. has integrated rapidly renewable materials, which are defined by leed as materials that are harvested within six-year cycles. finishes throughout the building include bamboo ceiling panels, linen and paper wall coverings, and wool carpet. the flooring in many of the building's rooms is made of recycled rubber items such as tires and even tennis shoes!

b.r.i.t. has many educational activities to enrich the public's knowledge of sustainability and botany. brit works with local schools to have teachers bring students to the center for interactive education. the organization also has free daily tours to educate the public. b.r.i.t. has an on-site herbarium and libraries for the community to use as resources.



SUSTAINABLE TOUR 02

FORT WORTH MUSEUM OF SCIENCE AND HISTORY

in 1939 the local council of administrative women in education considered starting a children's museum in fort worth. the charter was filed on may 21, 1941. with the help of the school board, the fort worth children's museum was opened in 1945 in two rooms in a local elementary school, de zavalva. in 1947 the museum moved into the r.e. harding house.

as time passed the museum gained popularity and support. on january 25, 1954 the museum opened a new facility in fort worth. in 1968 the name was changed to the fort worth museum of science and history to encourage all in the community to visit – adults and children alike. in 1983 the museum added the omni theater, the first imax® dome theater in the southwest.

over the years the museum grew from solely displaying its permanent exhibits by collaborating with other museums and science centers across the nation. the museum also added interactive, hands-on exhibits and world-class traveling exhibits. annual attendance has grown to approximate one million. due to the increasing popularity the museum saw the need to expand.



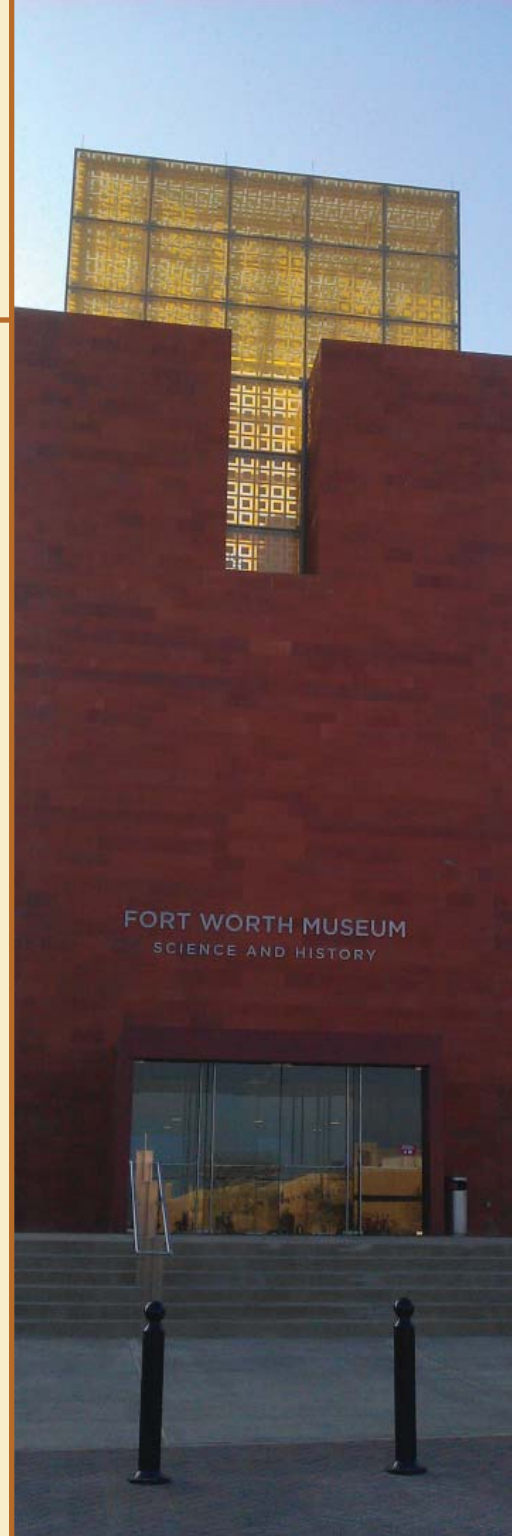
the new building, completed in 2009, was design by legorreta + legorreta. based in mexico-city, the firm was operated by ricardo legorreta and his son victor. ricardo received the aia gold medal award in 2000, the highest award given to individuals. ricardo used bright colors and geometric forms to create 'a very happy environment, a building for kids, young people and adults.'

the new facility has approximately 166,000 square feet. it is sited in the museum district of fort worth, and faces a plaza that connects it with adjacent buildings such as the will rogers center and the national cowgirl museum and hall of fame.

the main entrance is announced by a 76-foot ‘urban lantern’ that beckons visitors of all ages, just as a lighthouse guides ships at sea. the entry is designed to allow natural light into the building in the daytime and to softly illuminate the site at night, without creating harsh light pollution.

the lantern is illuminated using l.e.d. (light-emitting diode) and compact fluorescent lights. each l.e.d. fixture is 50w when at maximum power (brightest white). with a yellow/golden color, output is less than half – 20-25w per fixture. the lantern has 32 fixtures, all of which can change colors and are fully dimmable. the lantern lights are programmed to change with the seasons, reducing energy demand during daylight hours.

not only is natural light featured in the main entrance, but it is also embraced throughout the facility by a series of courtyards, indoor-outdoor spaces, skylights, clerestories, pergolas, and other openings which allow in ample natural light. The architect wanted people to experience the changes in the intensity, color, and warmth of natural through the progression of the seasons.



another aspect of the building’s sustainability is the recycling of demolition materials during construction.

the facility is partially powered by a roof-top solar array that was provided by big texas sun club a subsidiary of the local power company green mountain energy. the array produces approximately 20,000kwh of electricity each year, which is enough electricity to light the urban lantern for 8 years.

sustainable features include a concrete cistern with a 20,000-gallon capacity that was installed under the north courtyard. rainwater is routed from the museum rooftop to flow into this tank. the stored water is used to irrigate landscaping around the building and is supplemented by city water, when necessary. the cistern will hold enough water to irrigate the landscape for approximately one week, saving the museum from purchasing and treating water from a city source.

the entire children's museum courtyard features a permeable hardscape. this child-safe surface allows rainwater to pass through it and into the ground, then into the ground water.



another aspect of the building's sustainability is the recycling of demolition materials during construction. according to the museum's website the following items were diverted from landfills:

- 5,148 tons of concrete
- 140 tons of steel and metal
- 270 tons of asphalt
- 7,000 lbs. of copper wire
- 2,500 lbs. of copper pipe
- electrical breakers and switchgears
- specialty items: flag poles, cast iron tree grates, interior storage "cages", etc.

CONTEMPORARY Bldg | HISTORIC PRECEDENT

i enjoyed the botanical research institute of texas so much when i visited it that i thought it would be nice to return to it for this assignment. there are many sustainable techniques employed in this building which have historic precedents. the ones i focused on are:

- cistern
- entrance mat
- geothermal well

But first, let's take a more detailed look at this building's site layout....

1. Rain Gardens
2. Dedicated Low-Emissions Vehicle Parking
3. Restored Prairie Habitat (76%)
4. Vegetative Roof
5. LED Exterior Site Lighting
6. Indigenous Plant Material
7. Retention Pond
8. Cistern
9. Geothermal Well
10. Rooftop Solar Panels
11. Heat Absorption by Vegetation and Heat Reflection by Light Colors



image credit: <http://www.brit.org/visit/sustainable>

ANCIENT AND MODERN-DAY CISTERNS

a cistern is basically defined as a storage tank for water that is lined with waterproof material, such as lime plaster. typically cisterns were located underground in ancient times so that they could keep the water cooler, though today we see many cisterns above ground.

cisterns work by collecting and storing rainwater. sometimes aqueducts or channels were used to divert water to cisterns for storage. but often the water delivery system was much less complicated.

they also have served as settling tanks to filter the water, allowing larger debris and sediments to sink to the bottom.

cisterns have been in use for thousands of years. the earliest archaeological finds date back over 10,000 years ago to levant, in the eastern mediterranean. cisterns were also used in the first century a.d. at pompeii.

b.r.i.t. has a cistern on site to collect and store nonpotable stormwater runoff for use as irrigation. the above-ground tank serves as an educational tool for the community.

photo credit: a cistern plus an element of a pipe line of the water supply of the house of eustolios in kourion, cyprus.



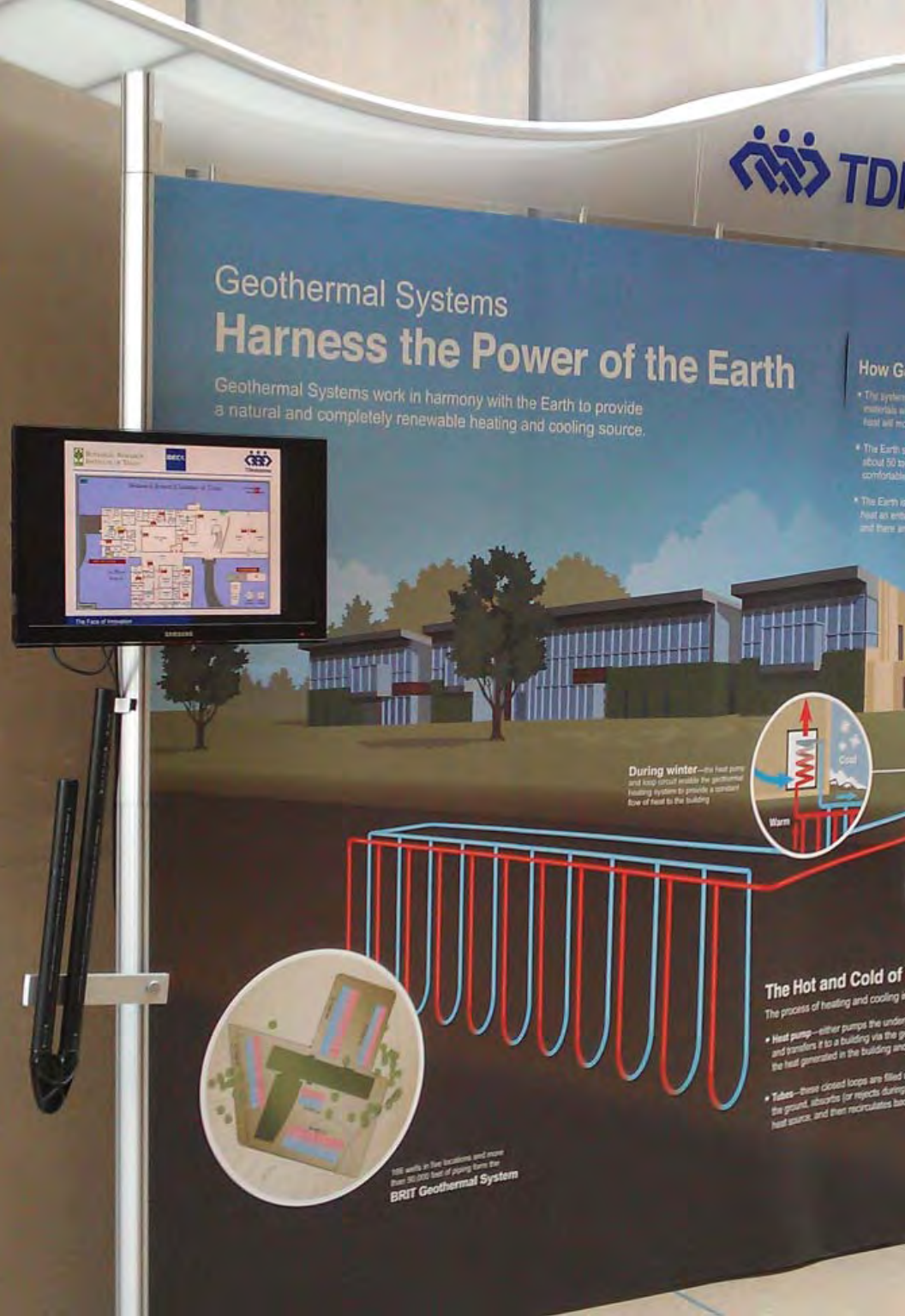
image credits: <http://www.romanaqueducts.info/aquasite/kourion/foto37.html>

ENTRANCE MAT | GENKAN

floor coverings have been used for many centuries as a protection from cold, hard earth. in addition to providing a softer, warmer living surface, floor mats also help to keep dust and dirt particles out of main living spaces.

“inside the door of a japanese house or dwelling, you find an entrance way called the genkan....there are many kinds and sizes of genkan, and usually the hallway or entrance hall beyond it is one step higher. as a general rule the smaller the genkan the lower the step. the custom of removing outside footwear within the house goes back at least as far as the heian period (794 - 1192) among the upper classes and gradually spread thereafter throughout society. one of the reasons that footwear was shed in this fashion was because of the high rainfall and the generally very damp climate. a house would be quickly dirtied if people walked in wearing mud-covered shoes or sandals. but probably what came first was the custom of both sitting and sleeping directly on the floor on straw mats or cushions laid over it. footwear was removed at the entrance to help keep the house clean.” - <http://www.tjf.or.jp/eng/content/japaneseculture/02kutsu.htm>

the adaptation of this ancient custom comes in the form of entrance mats at major and minor entrances which help keep shoe-tracked pollutants out of the hvac system.



GEOTHERMAL WELLS AND THE ANASAZI

the interior of the earth remains at a constant temperature. geothermal wells function by tapping into this constant heat (approximately 50°-70°f). there are two ways in which geothermal wells operate:

1. steam from the earth can be used to power turbines or other electrical generators.
2. water can be piped through the hot regions beneath the earth's surface. this causes the water to heat before it is recirculated into the building and used to heat the building's interior.

one group that focused on excavated architecture is the anasazi, who used the following methods:

- pithouses
- kivas
- cliff dwellings

166 geothermal wells under the landscaped and parking areas help maintain constant temperatures and reduce heating and cooling loads by over 50%. during the winter the geothermal wells are used to help heat the interior of the building. during the summer the geothermal wells are used to remove heat from the interior of the building.

Advanced Design Studio (ADS) I

COURSE: ARC 5814
INSTRUCTOR: JOHN ABELA
DATE: Fall 2012

this course focused on the application of humanism, urbanism and environmentalism into architectural practice. these principles require in-depth research and analysis of the demographic, social, political and geographic context of each site. architectural design also requires researching building codes, ordinances and other restraints which may be placed upon the project. in addition to h.u.e. principles, the studio also involved the design of hybrid buildings. traditional mixed-use developments contain a variety of spaces which can be used for different functions. however, these functions, though related, are often physically separated. in contrast, hybrid structures focus on the integration of functions within single venues. rather than remaining static, architectural spaces take on a dynamic quality that allows them to be reconfigured and rearranged to adapt to the needs of the users. this responsiveness can be varied as frequently as possible by altering the physical characteristics of the built environment. the changes are temporal in nature - they can be easily converted back to their 'original' or 'primary' form if/when needed.

work: **sketch problem 1** graphic letter of introduction
 sketch problem 2 studio for mo zi
 final project live + work + play + give back



Masdar City - an example of urban planning. image credit: http://www.bustler.net/images/news2/world_architecture_festival_awards_shortlist_2011_04.jpg

COURSE REFLECTION

as discussed in the design theory course, the search for 'truth' precipitated a shift to emphasis of the individual, which contributed to humanism. architectural application of humanism involves the study of scale, visual variety and sense of place. consideration of human activities focuses on the specific needs of the user and the project's context. urbanism postulates that density promotes diverse ideas; establishes cultural identities; fosters social interactions; provides equal opportunities; connects us to the global network; and encourages the use, re-use and recycling of shared resources and infrastructure. urbanism also focuses on the individual by promoting pedestrian-oriented communities. in the mo zi project we worked on this by developing a design that promotes the sharing of community resources. there is a community drop-off box that encourages people to recycle things. the final studio project also emphasized sharing community resources and meeting the needs of the individuals who comprise a society.

this course relates to the ecological issues class we discussed in the previous pages. taking the two courses together helped me to see how other architects incorporated sustainable design, environmentalism, and the adaptation and reuse of materials into the built environment. not only can we design places that share resources, we can also design places that share space over time, in a sort of fourth dimension. by accommodating overlapping uses through the rearrangement of elements, hybrid buildings help reduce the footprint of the built environment and create more vibrant communities. designing the mo zi studio and the final project provided opportunities to see how we can make spaces that are more responsive to the community and make more efficient use of resources and land.

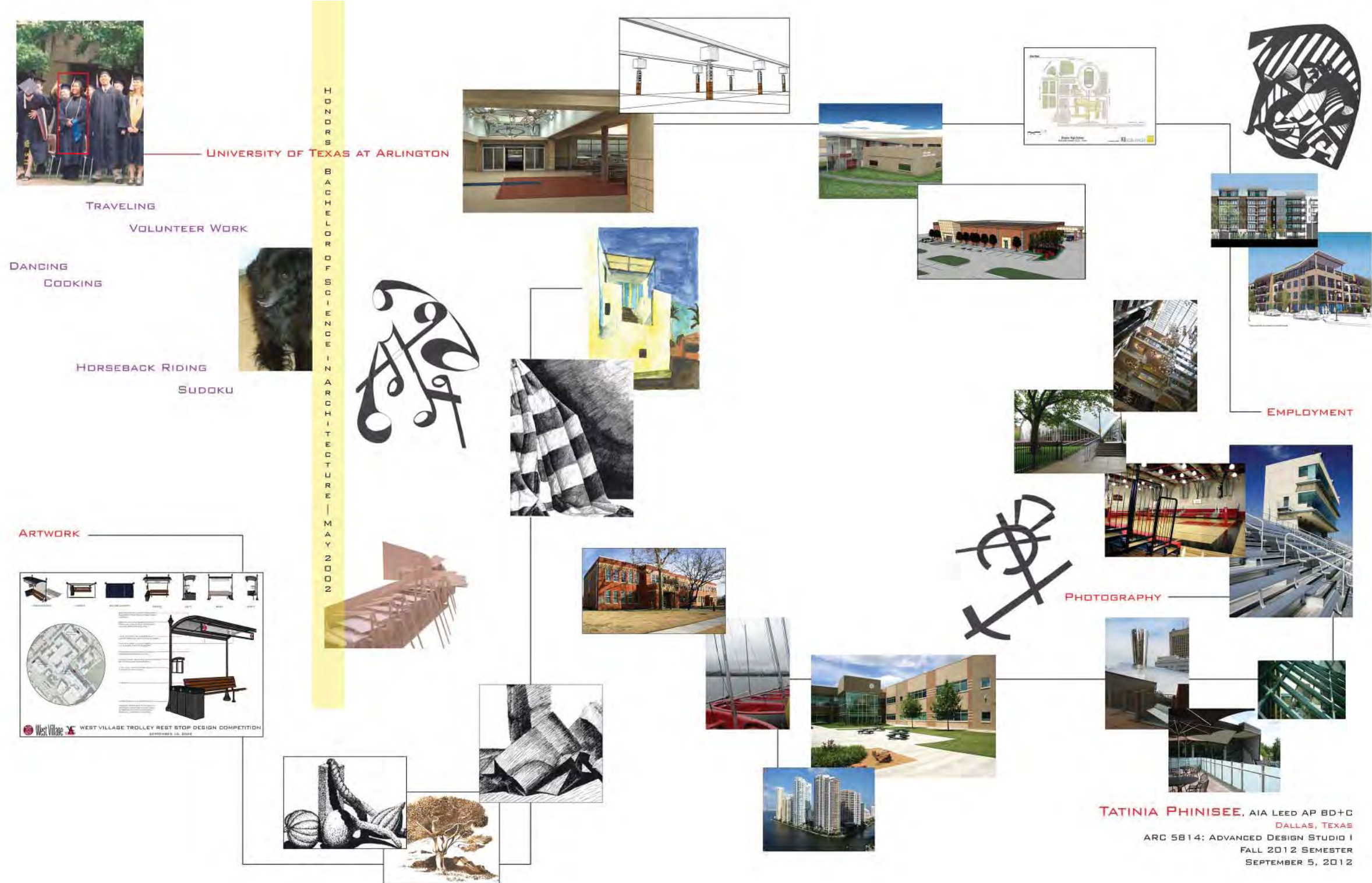
this course helped me to really dig into the needs of a community. clients often do not fully comprehend their needs or the impact they have on their communities. it is our responsibility to research and educate, to peer beyond the surface and address issues that may otherwise be omitted. when we have an understanding of how we function as individuals and the symbiotic relationship we have with our surroundings, we can design spaces that address the needs of the individual and serve as a catalyst for community growth and development.

Sketch Problem 1

GRAPHIC LETTER OF INTRODUCTION

the first assignment of the course was to create a graphic representation of ourselves to our fellow students. the goals of this exercise were to work on composition of text and images, focus on the ability to tell a story with minimal words, and create a dynamic flow that is organized by time, subject, or some other structuring element.

my design illustrated 4 aspects of my life: education, employment, photography and artwork. the composition flows in a clockwise direction, with linework connecting the parts of each category. images are clustered around and along the linework. distributed throughout the composition are black and white artwork that I have done. near the origin of the composition are additional words describing items of interest, and a picture of my dog. the words highlighted with yellow form the name of my undergraduate degree, since that ties in directly with my education at lawrence tech.



Sketch Problem 2

studio for mo zi

mo zi is a fictional client created for the purposes of this studio project. he is based upon the chinese philosopher who founded mohism - a philosophy that is similar to confucianism but theological in nature. it contains many similarities to renaissance humanism, including the importance of equality for all. one aspect of mohism was the belief that the imposition of human organization upon the natural could help reduce waste and inefficiency. it was somewhat utilitarian in nature.

our client is a craftsman and philosopher who creates works of art and flight (such as kites, hanging sculptures, etc.). he also is utilitarian in nature, living a very simple life and working with found materials. he typically makes his artwork with wood or wire frames and infills the framework with paper or fabric from discarded clothing. mo zi uses only non-powered hand tools.



CONCEPT & COMPONENTS

based upon mo zi's artwork: discontinuous framework with solid & glass infill

mohism philosophy: merging of man-made and natural with orthogonal vs. non-linear framework.

- extension of space into adjacent pavilion
- paving grid extended to become basis for floor layout on upper levels
- exposed framing allows for solid vs. void infill (opaque vs. transparent) to mimic artwork.
- ladder access to upper levels; level 1 ladder pulls down for access. open area at ladder w/ clear glazing overhead symbolizes pathway to human improvement

our assignment was to create a studio for mo zi to work, sell his goods and live in. the physical parametrs were a space between two existing buildings in royal oak, michigan. the site was 5'-9"w x 21'-4"d x 40'-0"h. we were allowed a 4'-0" overhang at 10'-0" above the r.o.w.

the studio required the following:

- a place to work and interact with pedestrians
- hours of operation 12 noon-7 p.m. (wed-sun)
- non-hazardous materials storage
- (2) 6'-0" x 2'-0" work tables
- tool storage

the residence portion required the following:

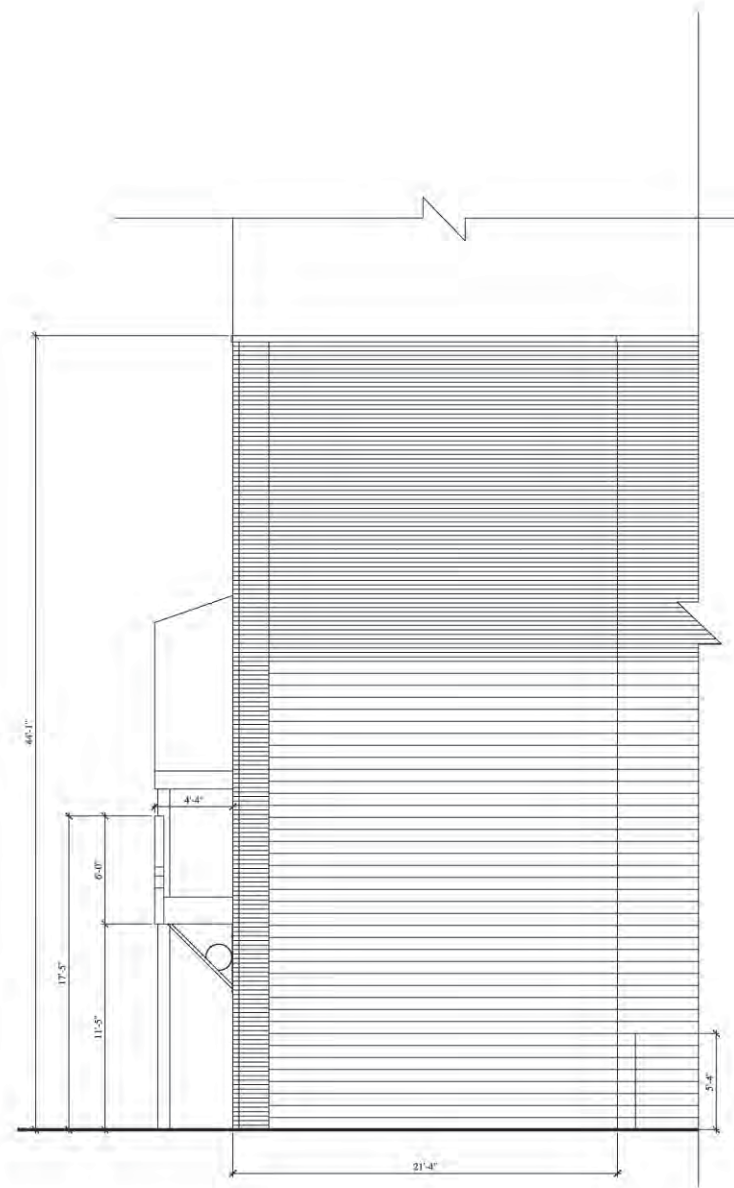
- sleeping area
- sitting/writing area
- water-closet & bathing facility
- storage
- food preparation
- meditation area

we were also required to incorporate sustainable design components into the project. the initial site evaluation included a study of the surrounding neighborhood and structures. in recognition of mohism one aspect of my design was a merging of grids to symbolize the intersection of man-made with natural by the imposition of an orthogonal grid with non-linear framework.

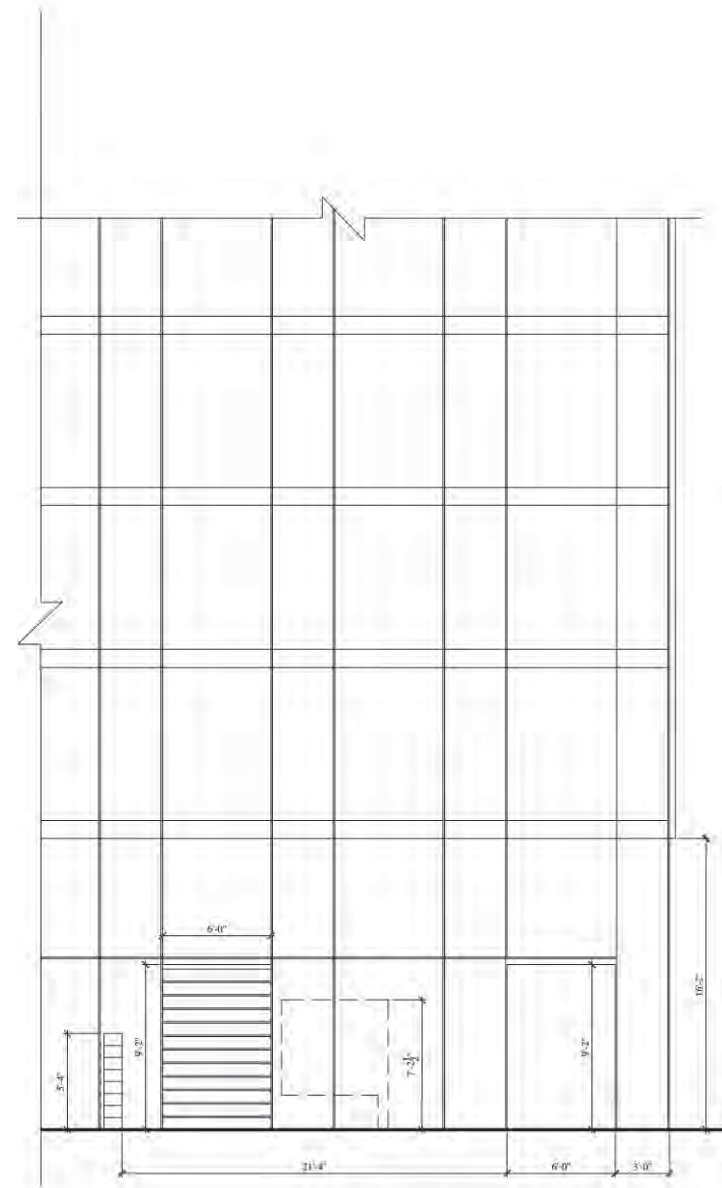


SUSTAINABLE design

- ceiling fans and operable louvers promote air circulation
- solar panels integrated with glazing to provide shading and generate electricity
- use swamp coolers in hot weather to minimize use of hvac
- radiant heating in floors



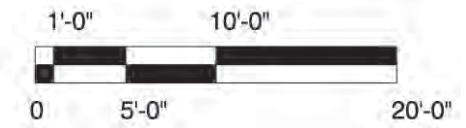
WEST ELEVATION



EAST ELEVATION

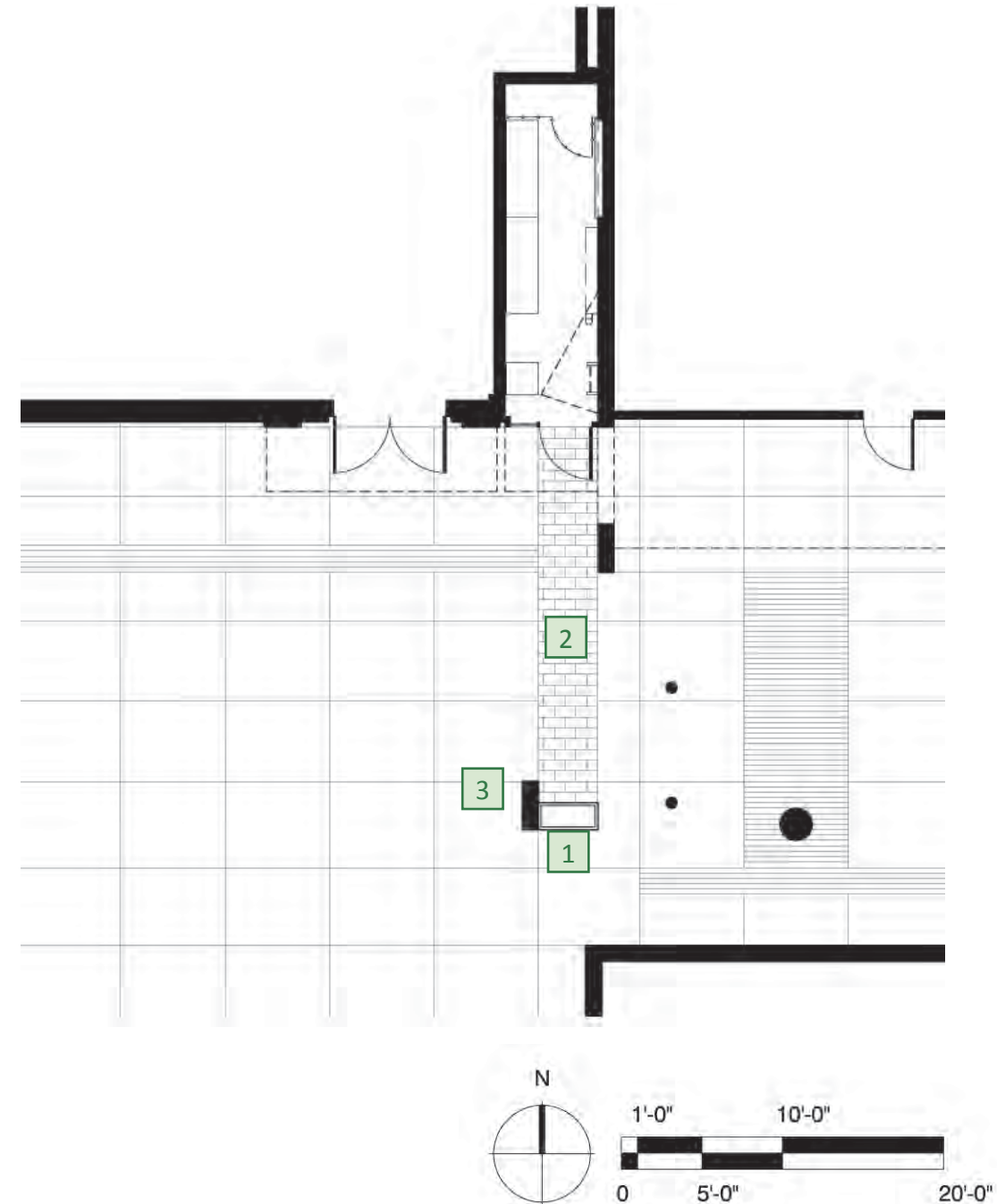
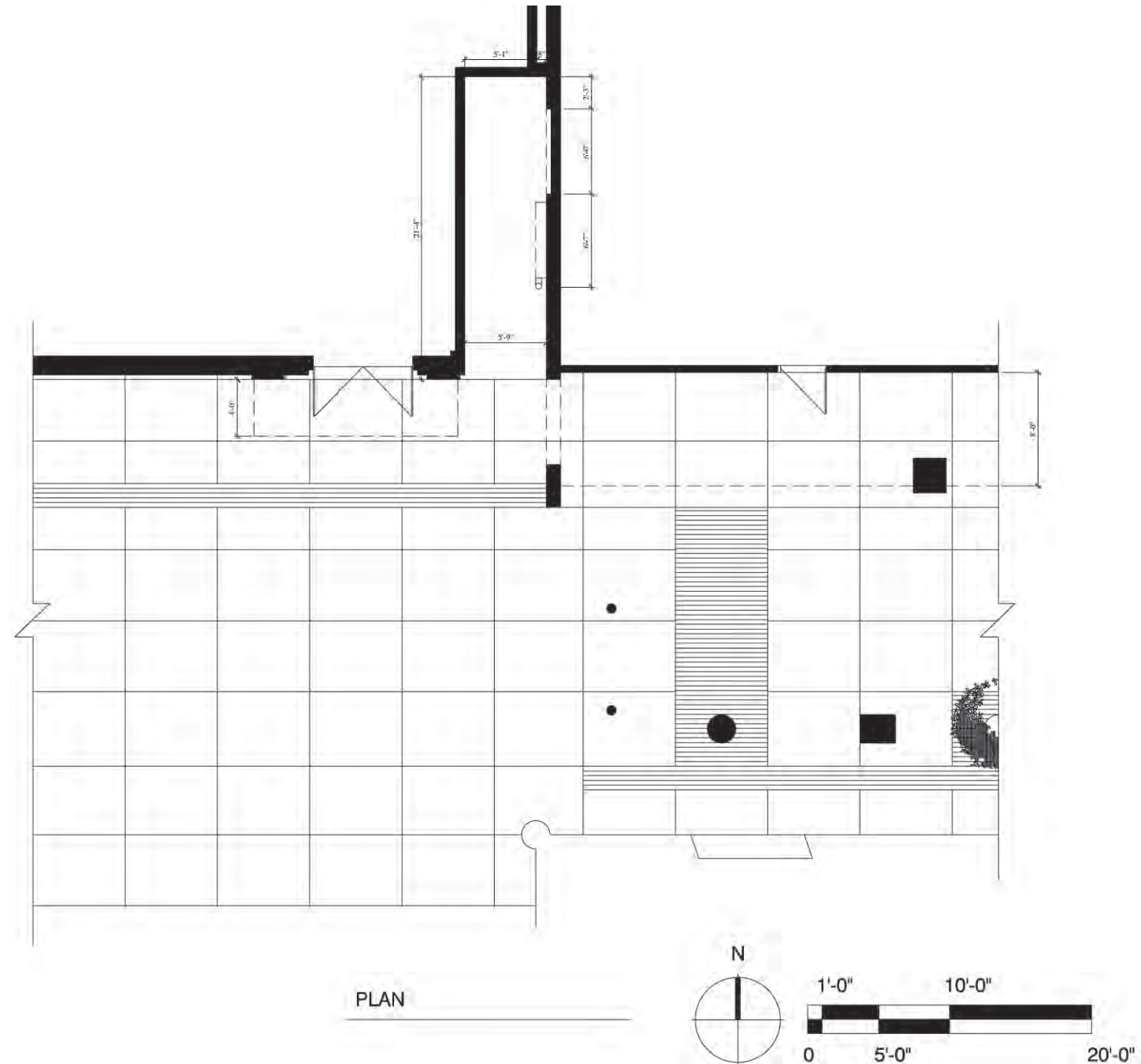


SOUTH ELEVATION



EXISTING ELEVATIONS

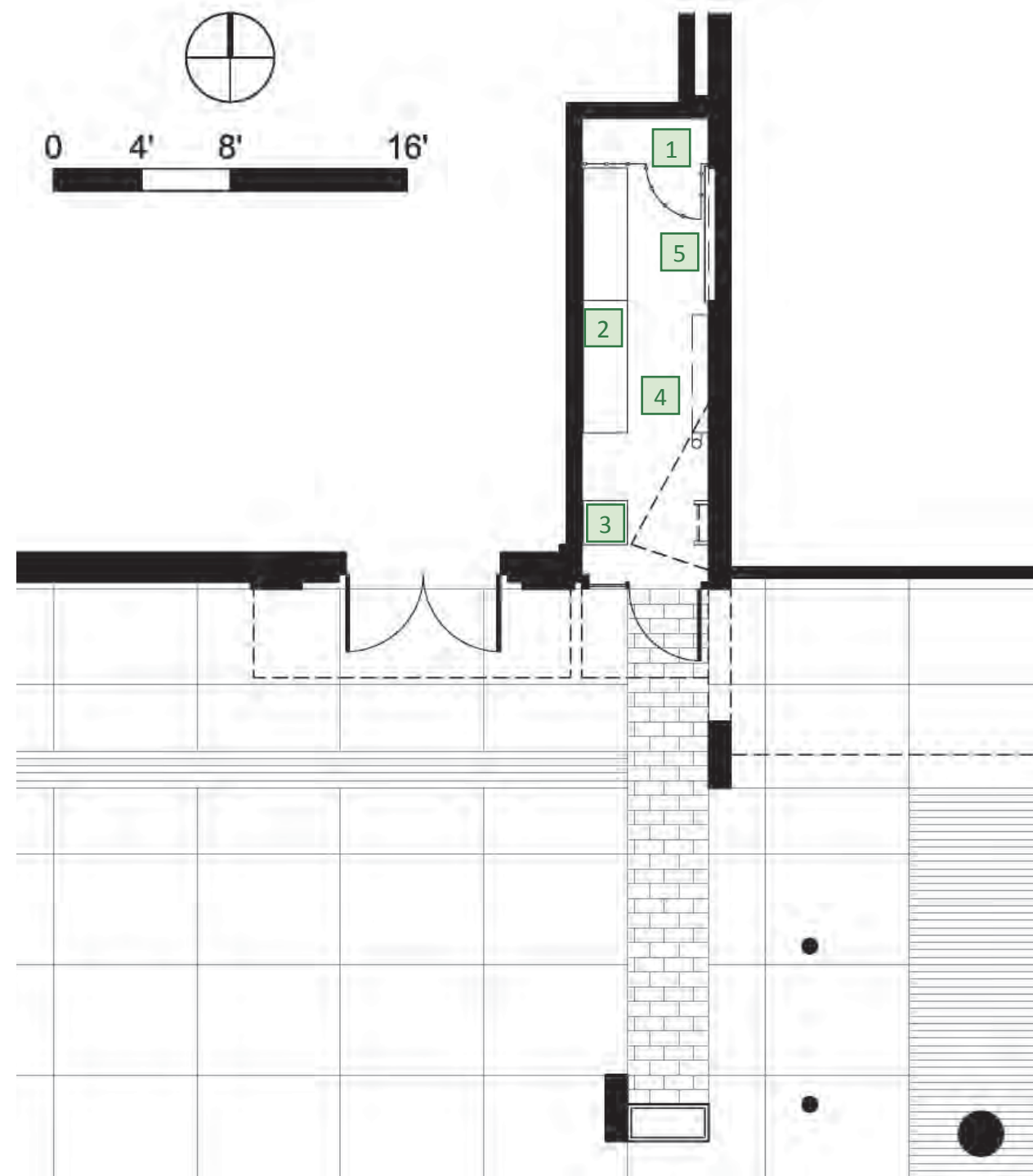
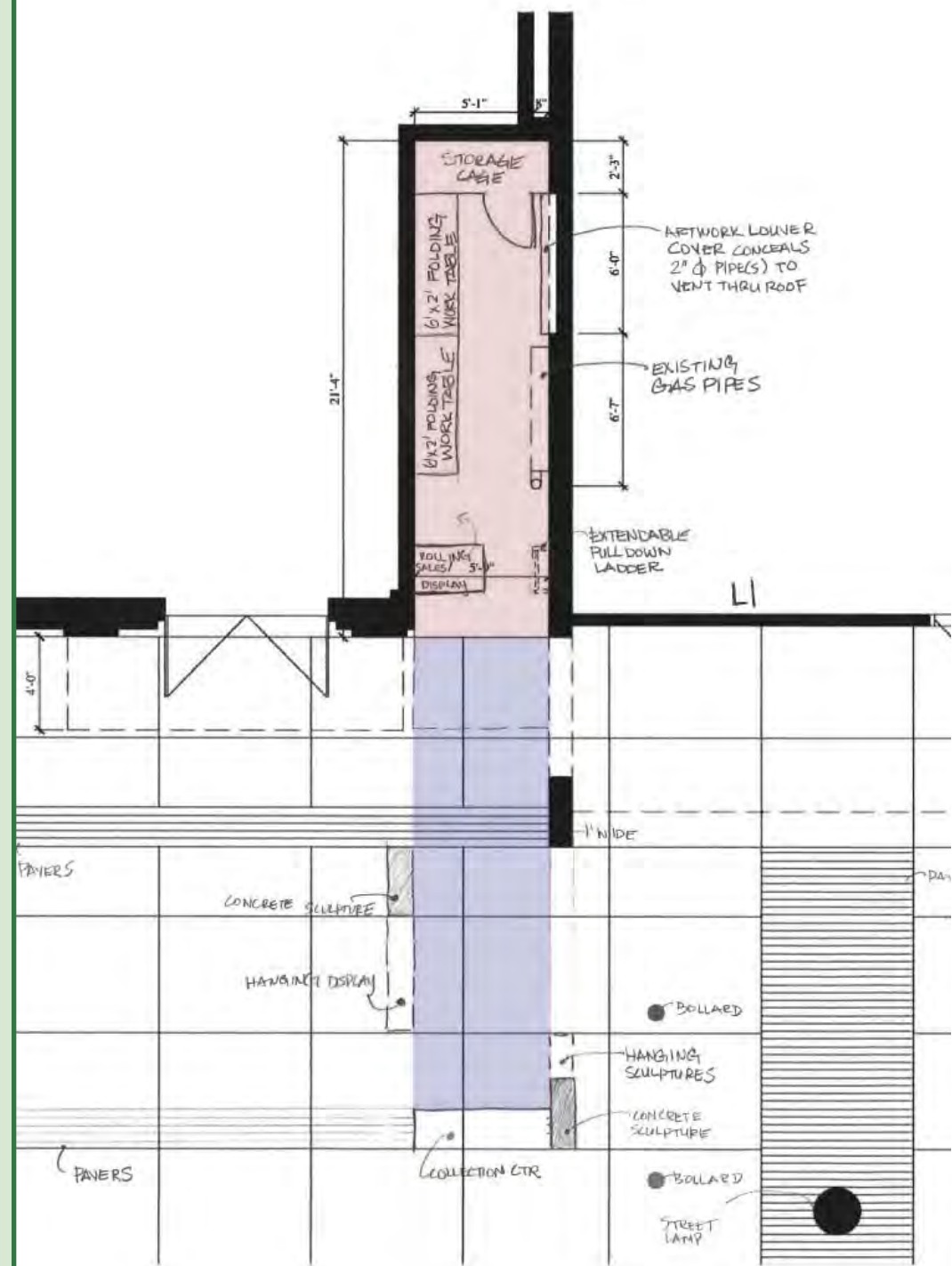
- ceiling fans and operable louvers promote air circulation
- solar panels integrated with glazing to provide shading and generate electricity
- use swamp coolers in hot weather to minimize use of hvac
- radiant heating in floors



site plan: extension into site

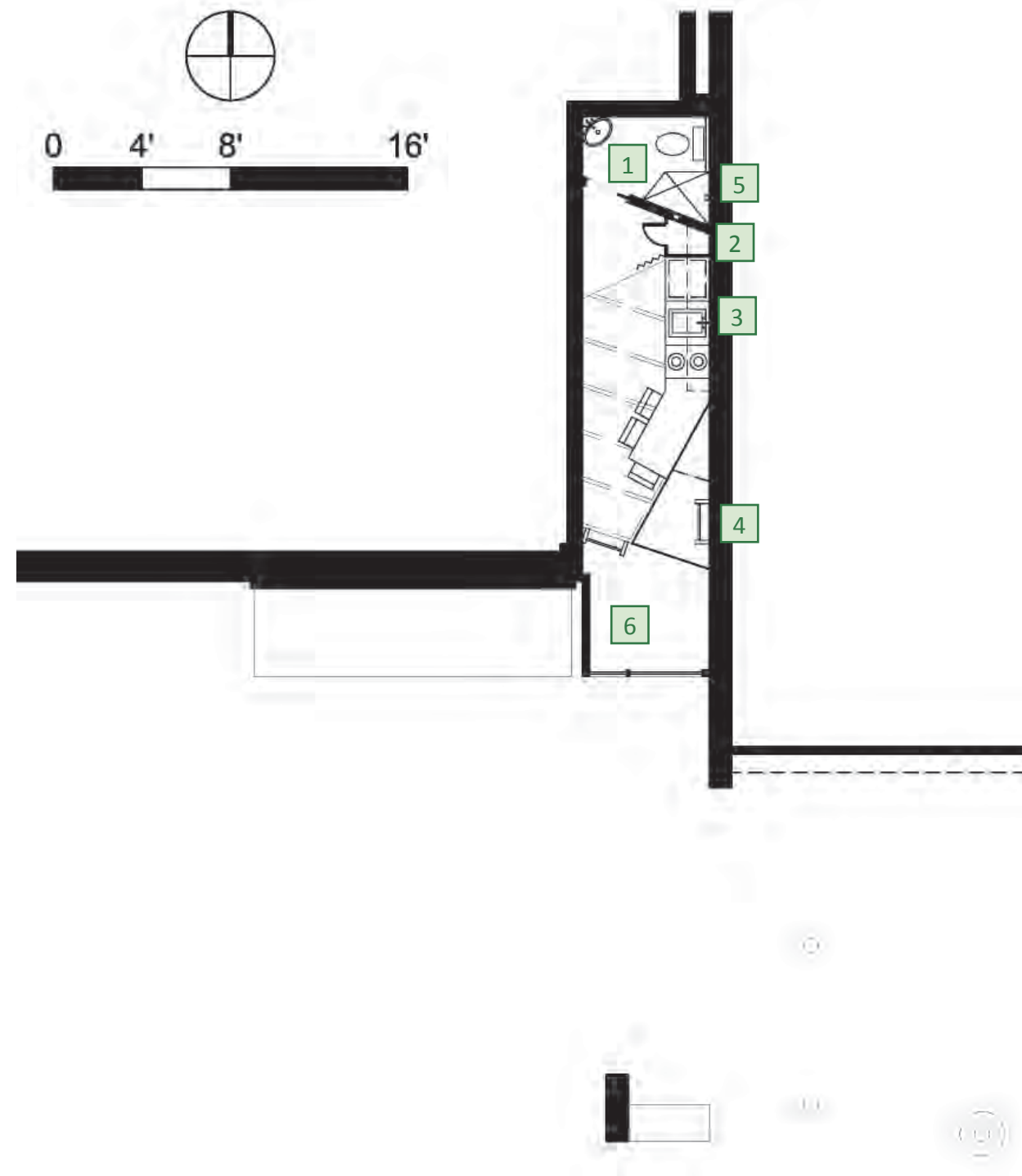
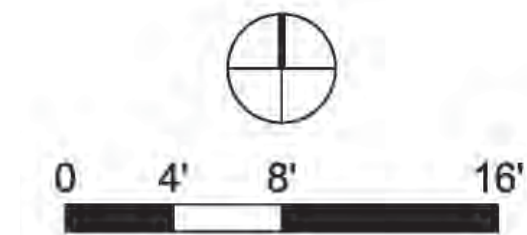
on the far left is the existing site plan. to help extend mo zi's space in to the surrounding context and invite visitors into his shop we pulled certain elements from the entry to his stop and extended them into the public plaza, as can be seen on the site plan to the immediate left:

1. community art and collection box
2. site paving
3. sculpture



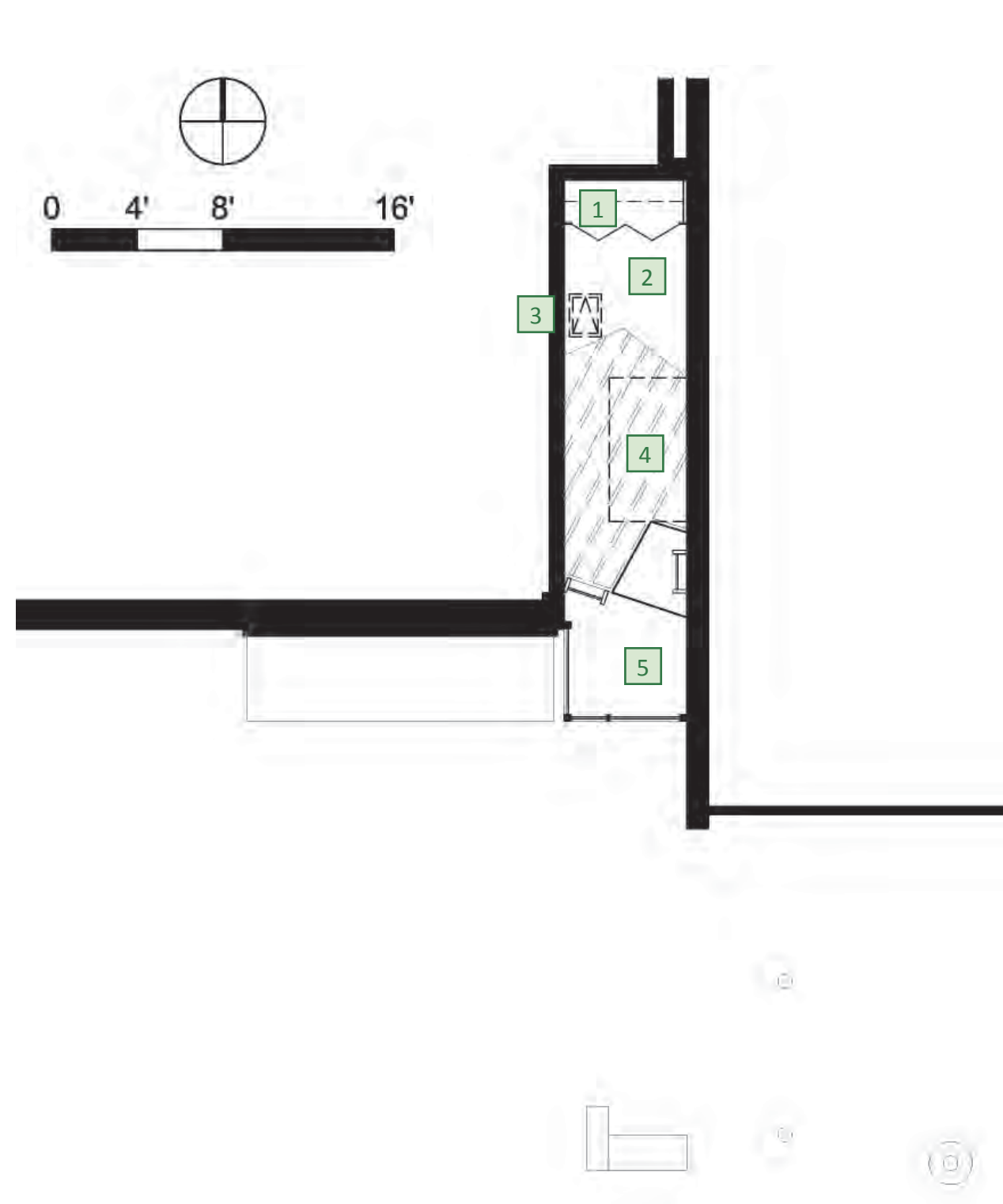
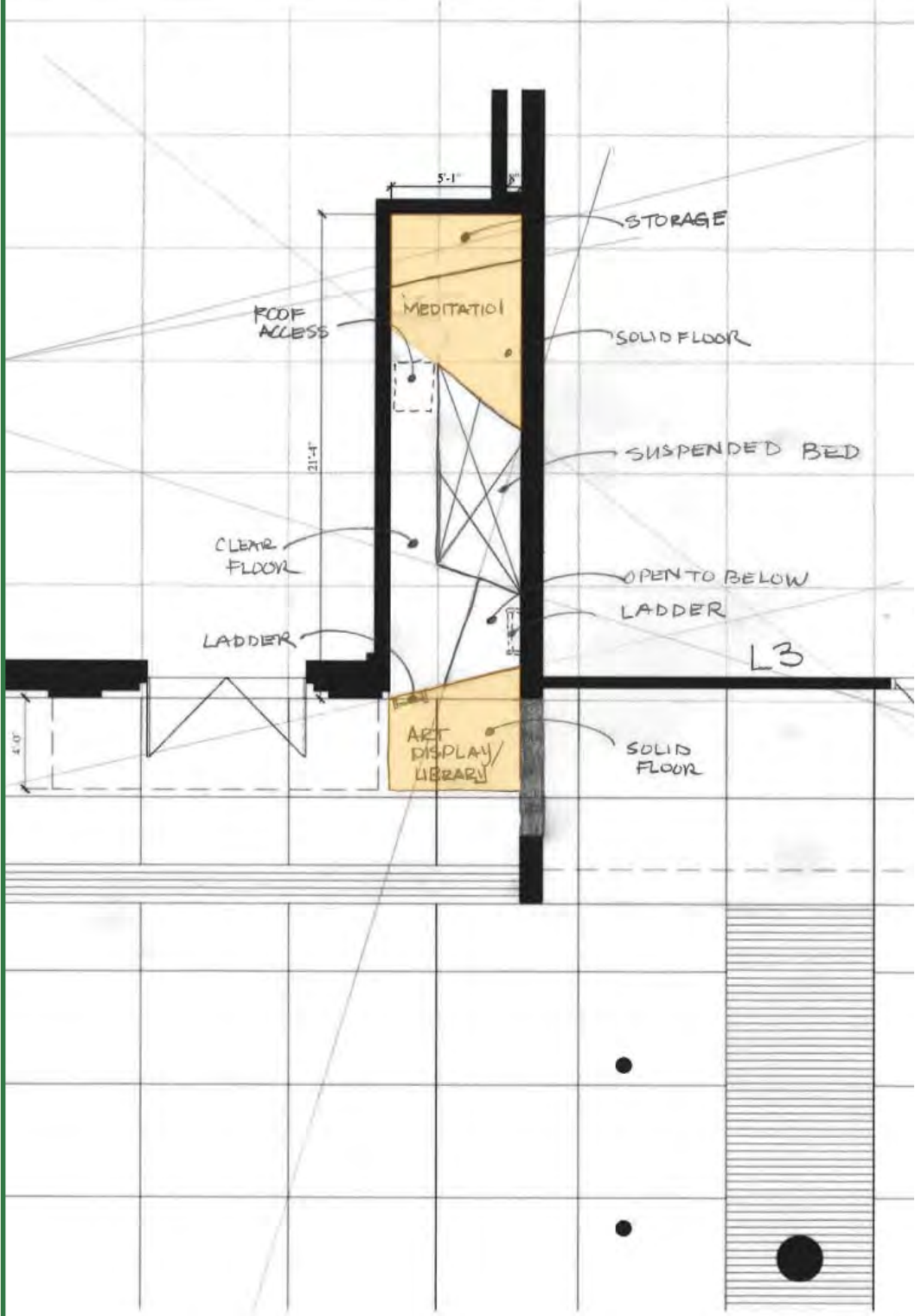
level 1: public

1. tool storage
2. work tables
3. rolling display
4. suspended sculpture
5. artwork conceals louver & allows exhaust through vent



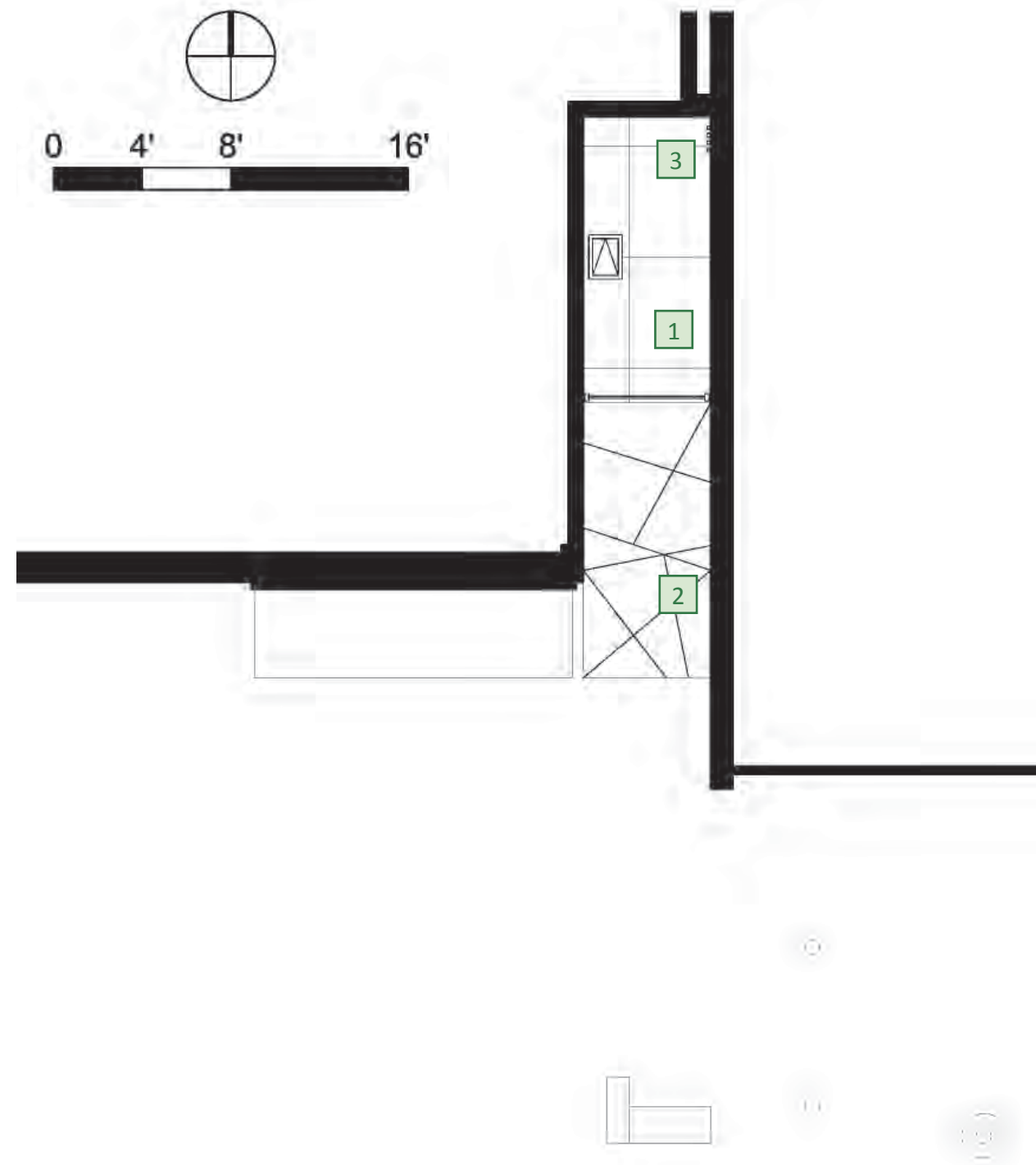
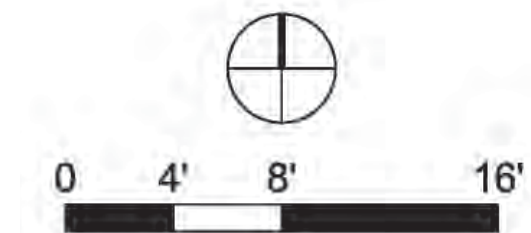
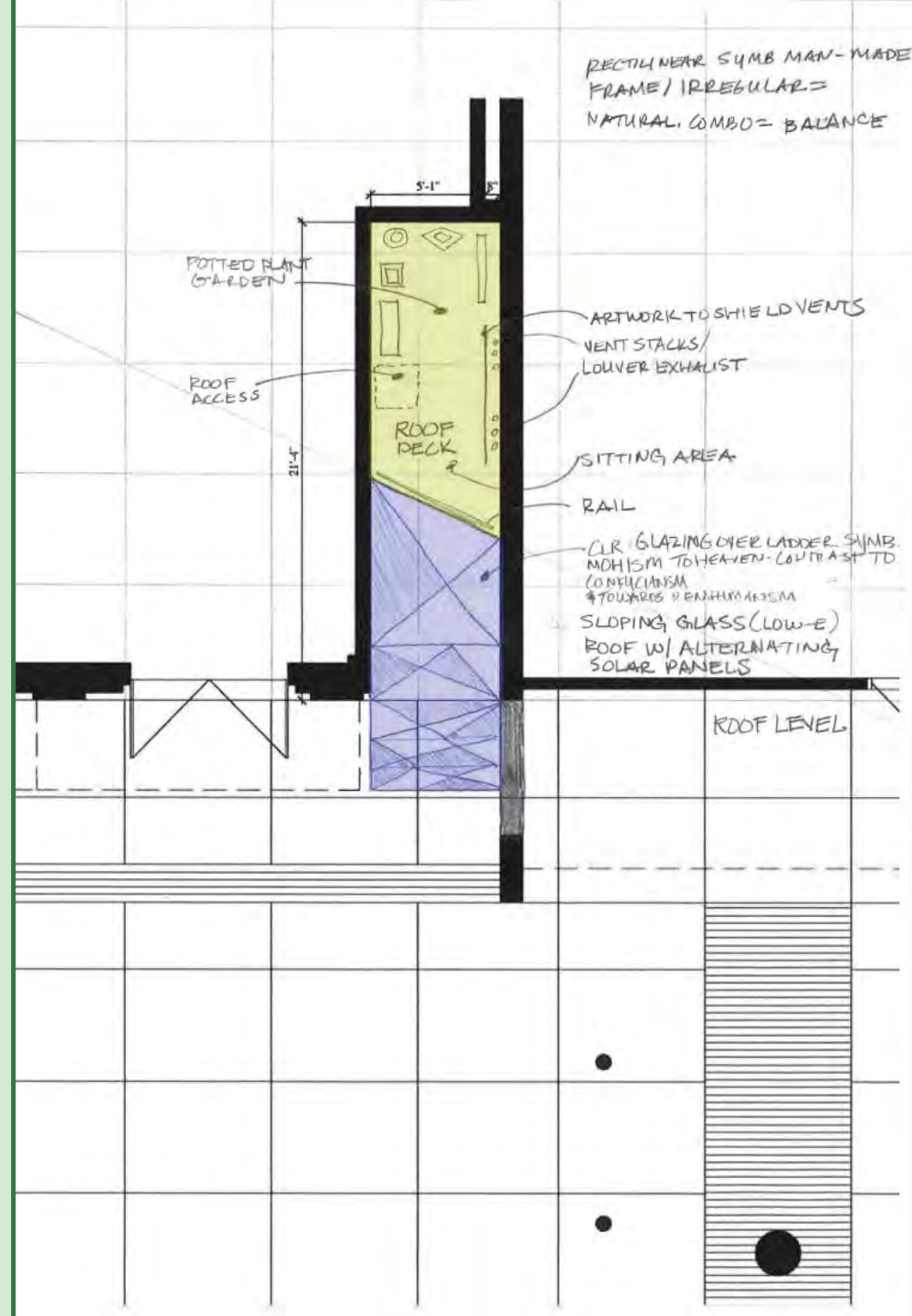
LEVEL 2: SEMI-PRIVATE

1. water closet and bathing facility
2. storage
3. food preparation
4. ladder access
5. vents to roof
6. sitting and writing area



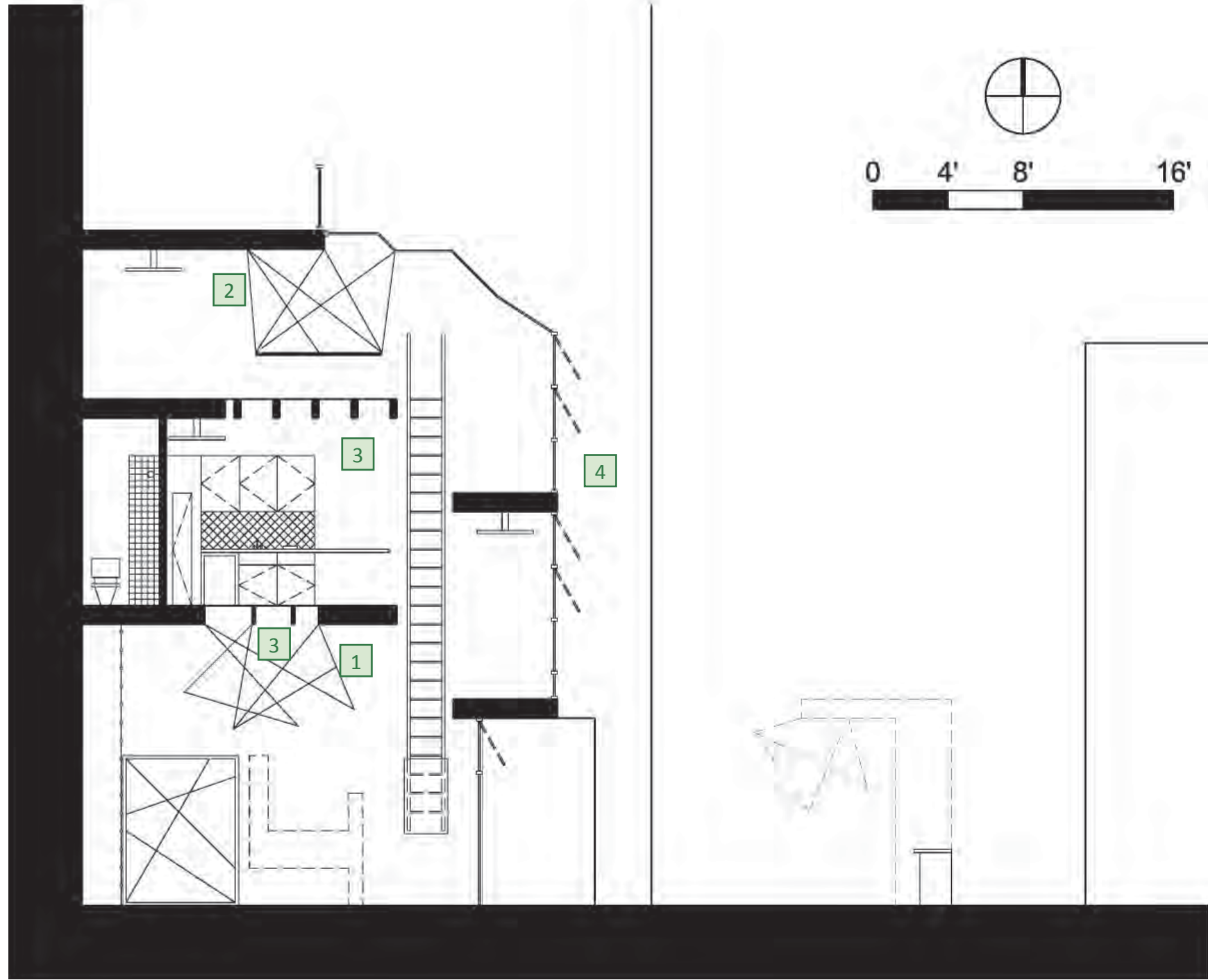
level 3: private

- 1. storage
- 2. meditation area
- 3. roof access hatch
- 4. suspended sleeping area
- 5. library/art display area



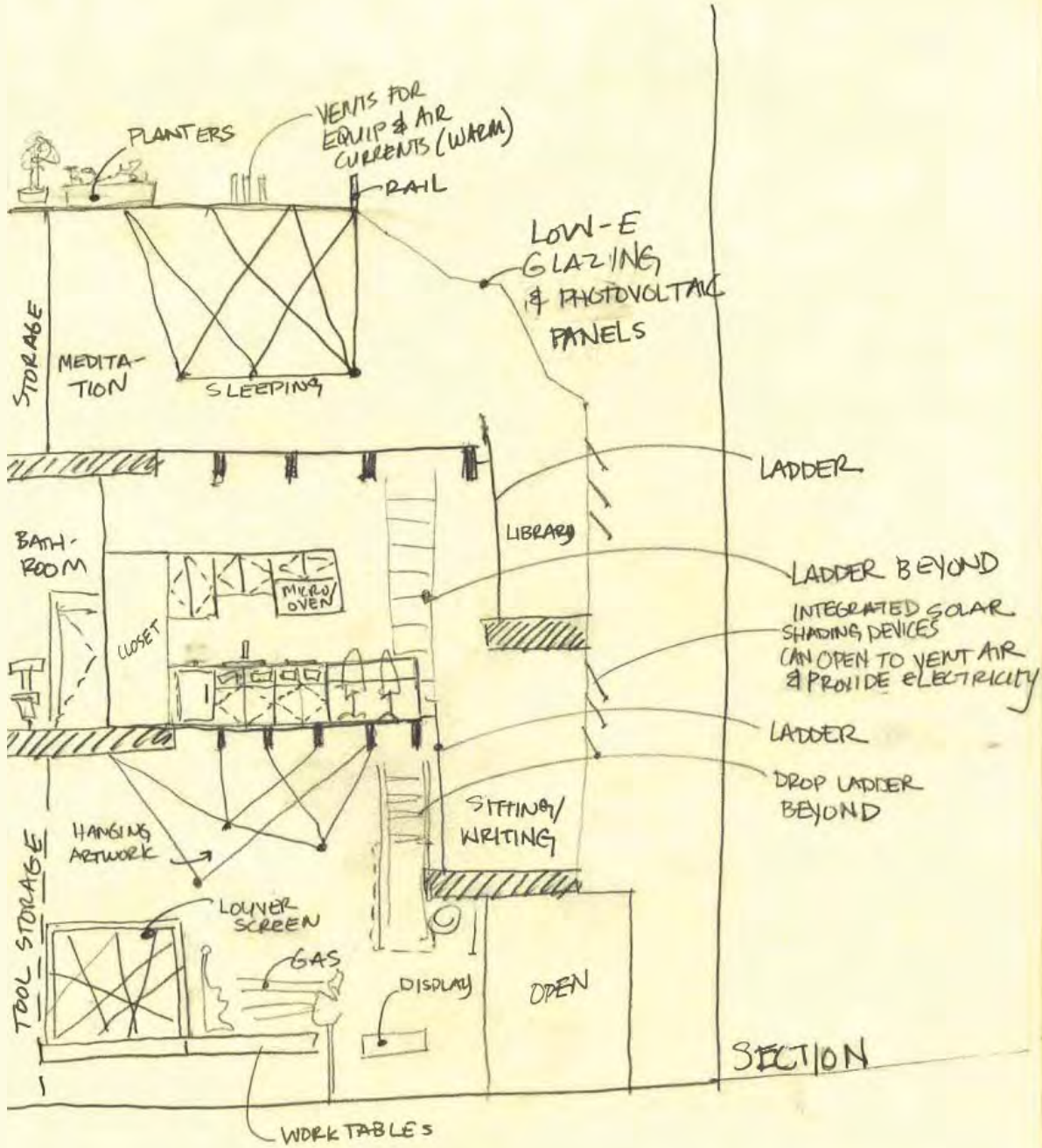
level 4: green roof

1. roof garden on north end
2. glazed roof slopes south with low-e glazing and photovoltaic panels
3. artwork shields vents



SECTION

1. higher food prep & washroom allow room for suspended sculpture
2. suspended supports at sleeping area
3. glass floors provide light and expose framework
4. manually operable louvers provide ventilation and shading



REDUCTION

to help us understand the difference between mixed-use buildings and hybrid structures, the next portion of the assignment required us to take all of the components of the assignment and merge them into a one-story space. this required innovation and research into products that were suited for this type of application.



image credit: http://farm6.staticflickr.com/5247/5293574142_50050fb543_o.jpg

OBJECTIVE REFINEMENT

concept & components:

based upon mo zi's artwork: discontinuous framework with solid & glass infill
mohism philosophy: merging of man-made and natural with orthogonal vs. non-linear framework.

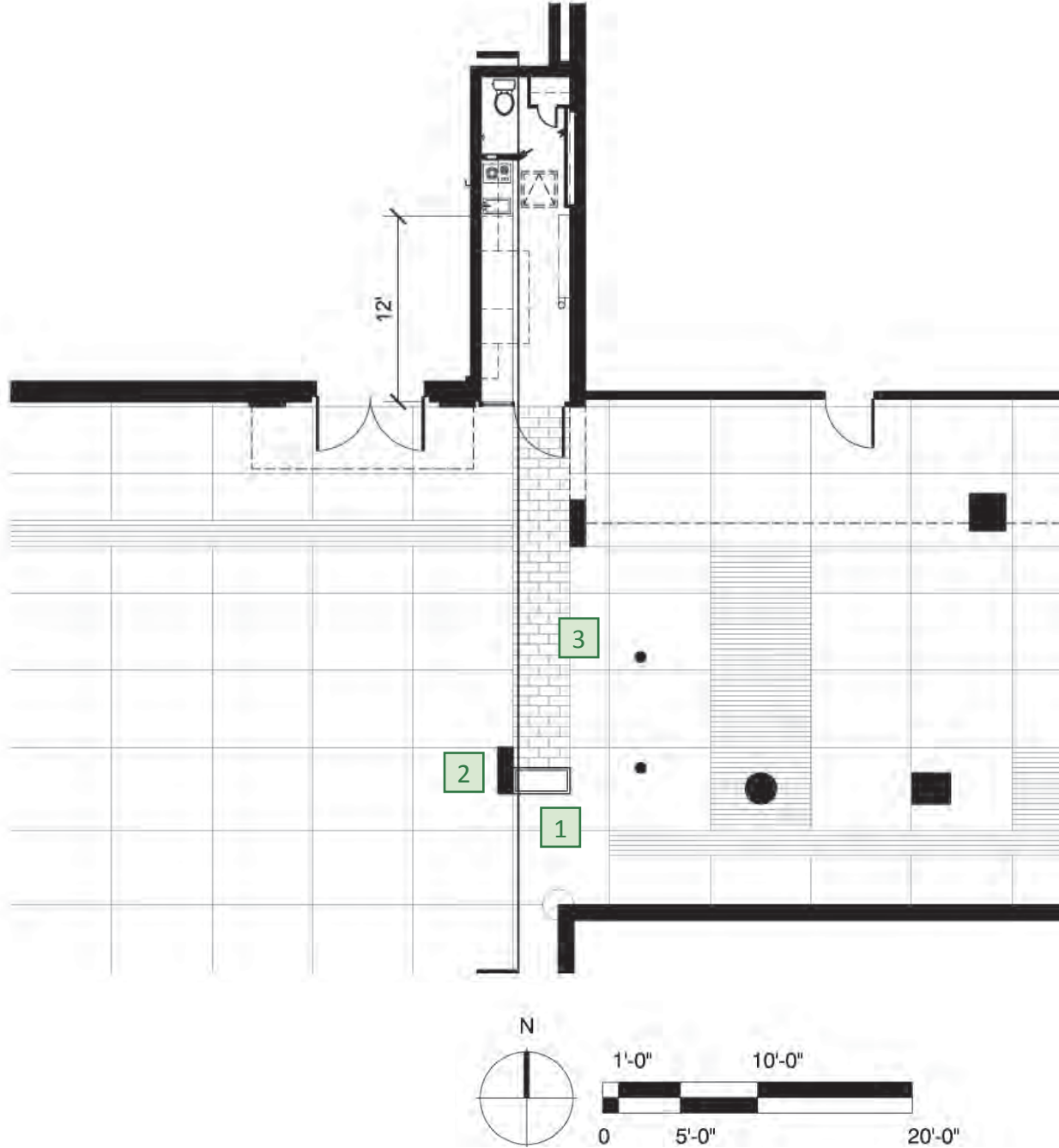
- extension of space into adjacent pavilion
- paving grid extended to become basis for floor and roof layout
- glazing allows for solid vs. void infill (opaque vs. transparent) to mimic artwork
- clear glazing symbolizes pathway to human improvement

sustainable design:

- exhaust fan and operable louvers promote air circulation
- translucent solar panels integrated with glazing to generate electricity
- use swamp coolers in hot weather to minimize use of hvac
- radiant heating in floors

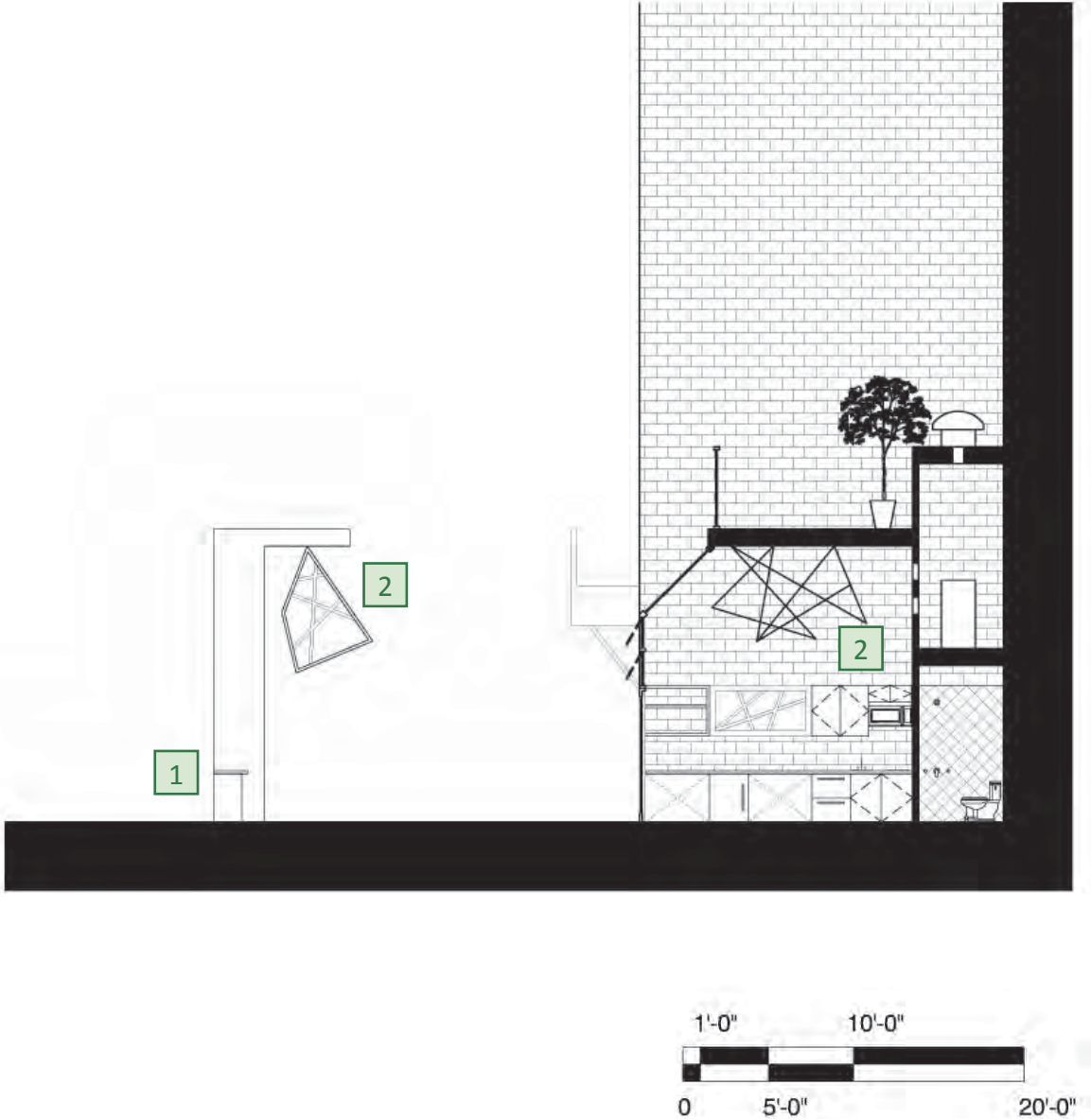
site plan

- 1. extension into site - community art and collection box
- 2. sculpture
- 3. site paving



site section

- 1. extension into site - community art and collection box
- 2. sculpture

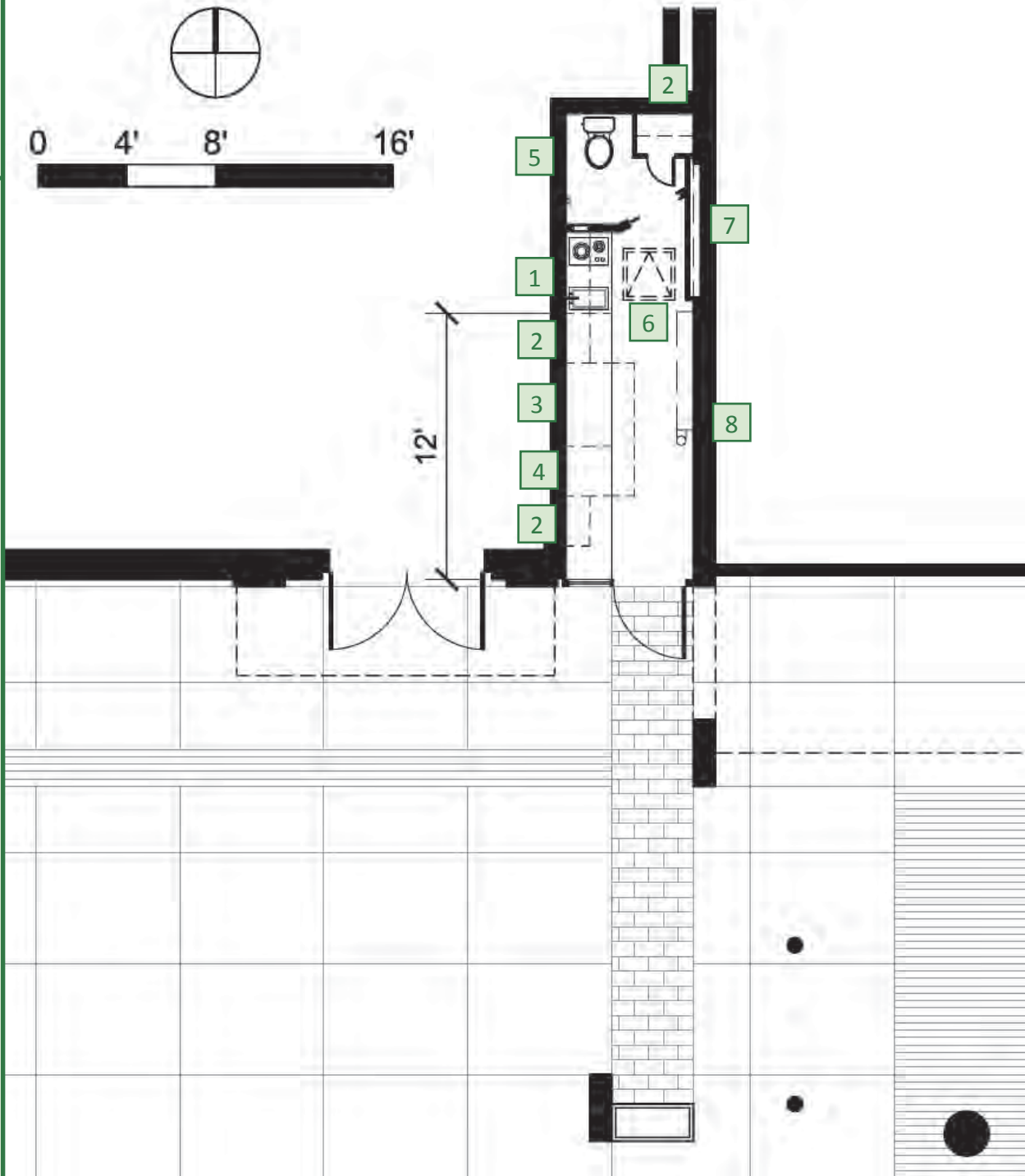


floor plan

1. food prep
2. storage
3. bed/meditation
4. work tables, siting & writing
5. bathroom
6. roof hatch
7. louver
8. gas piping

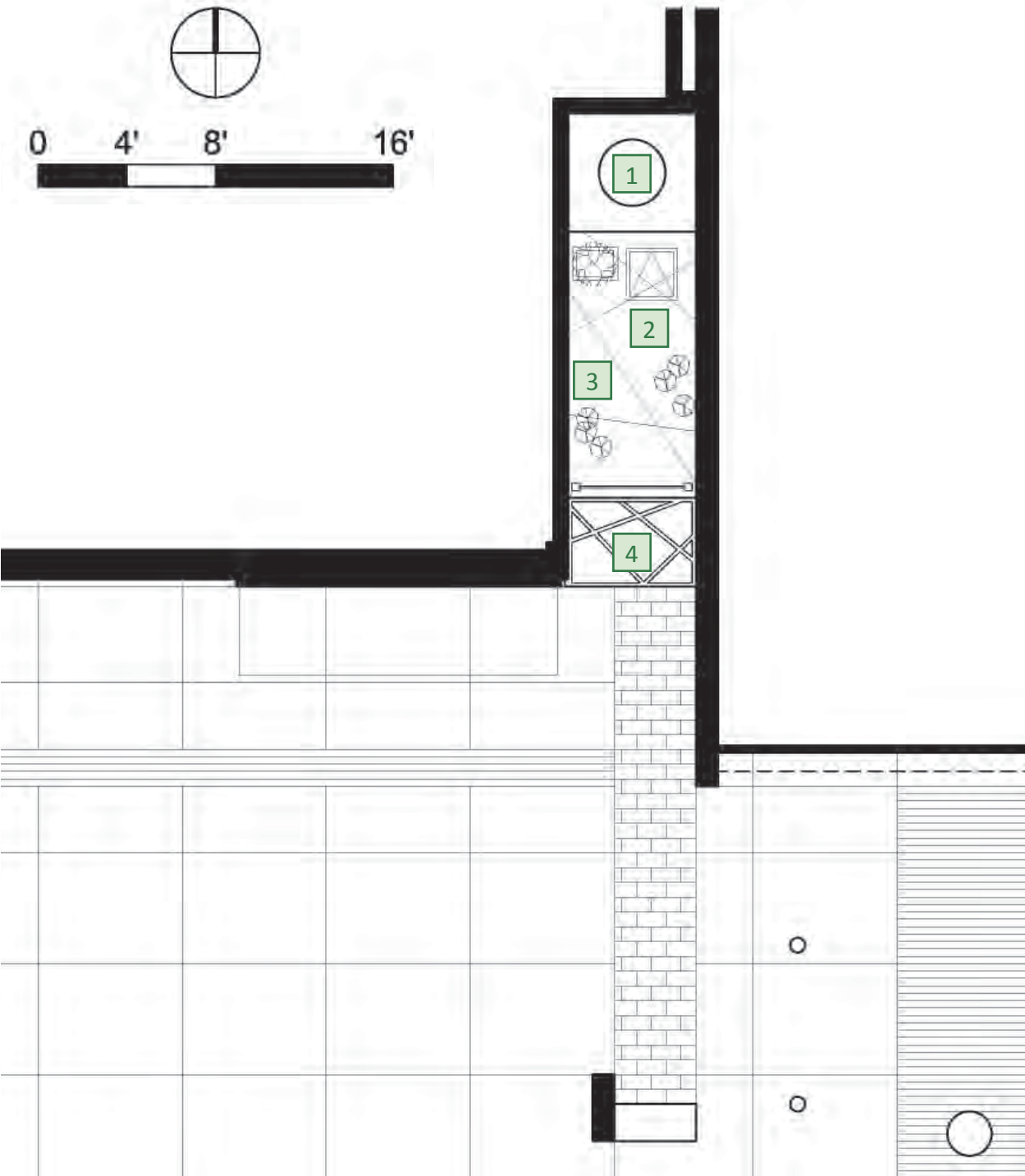
this floor plan utilizes several space-saving features, such as european-style appliances and multiple-use furnishings. the appliances have the same finish as the millwork to provide visual continuity.

the existing louver is concealed by furring, and the gas piping remains exposed as an original architectural feature.



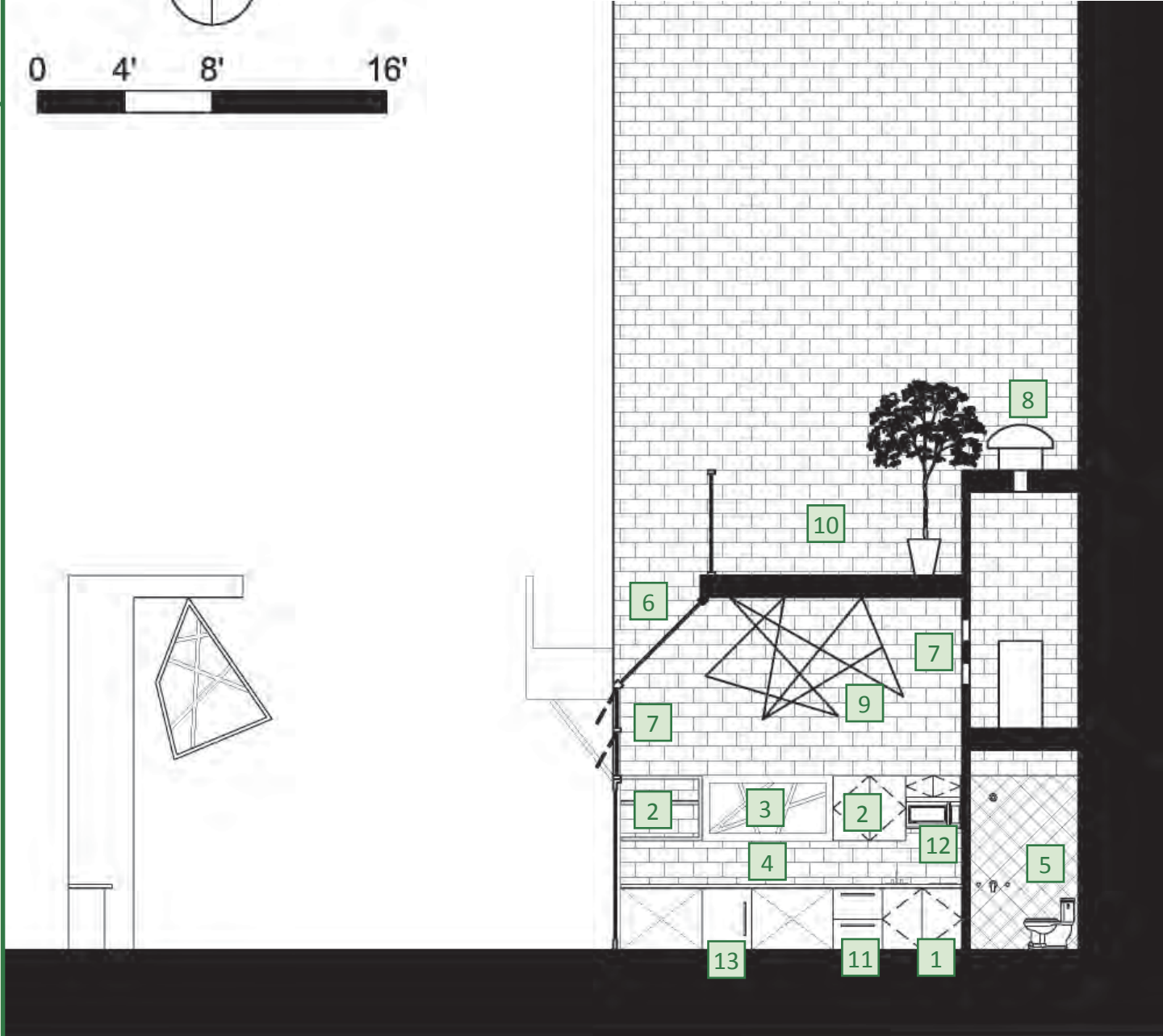
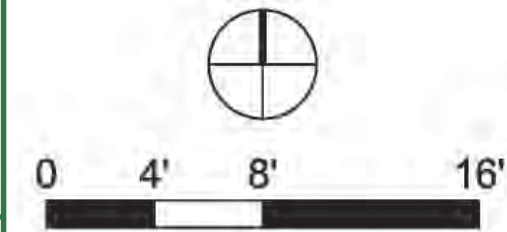
roof plan

1. exhaust fan
2. roof hatch
3. roof garden
4. low-e glazing with photovoltaic panels



ENLARGED SECTION

1. food prep
2. storage
3. hinged bed/
meditation w/
artwork frame
4. work tables,
sitting & writing
5. bathroom
6. roof glazing
7. louvers
8. exhaust fan
9. hanging
sculpture
10. roof garden
11. refrigerator/
freezer combo
12. microwave
13. clothes washer



ELEVATION

1. exhaust fan
2. guardrail
3. low-e
glazing with
photovoltaic
panels
4. louvers
5. storefront

FINAL PROJECT

live + work + play + give back

the purpose of this project is to take the principles of humanism, urbanism and environmentalism and apply them to a hybrid mixed-use development in an urban setting.

SITE SELECTION

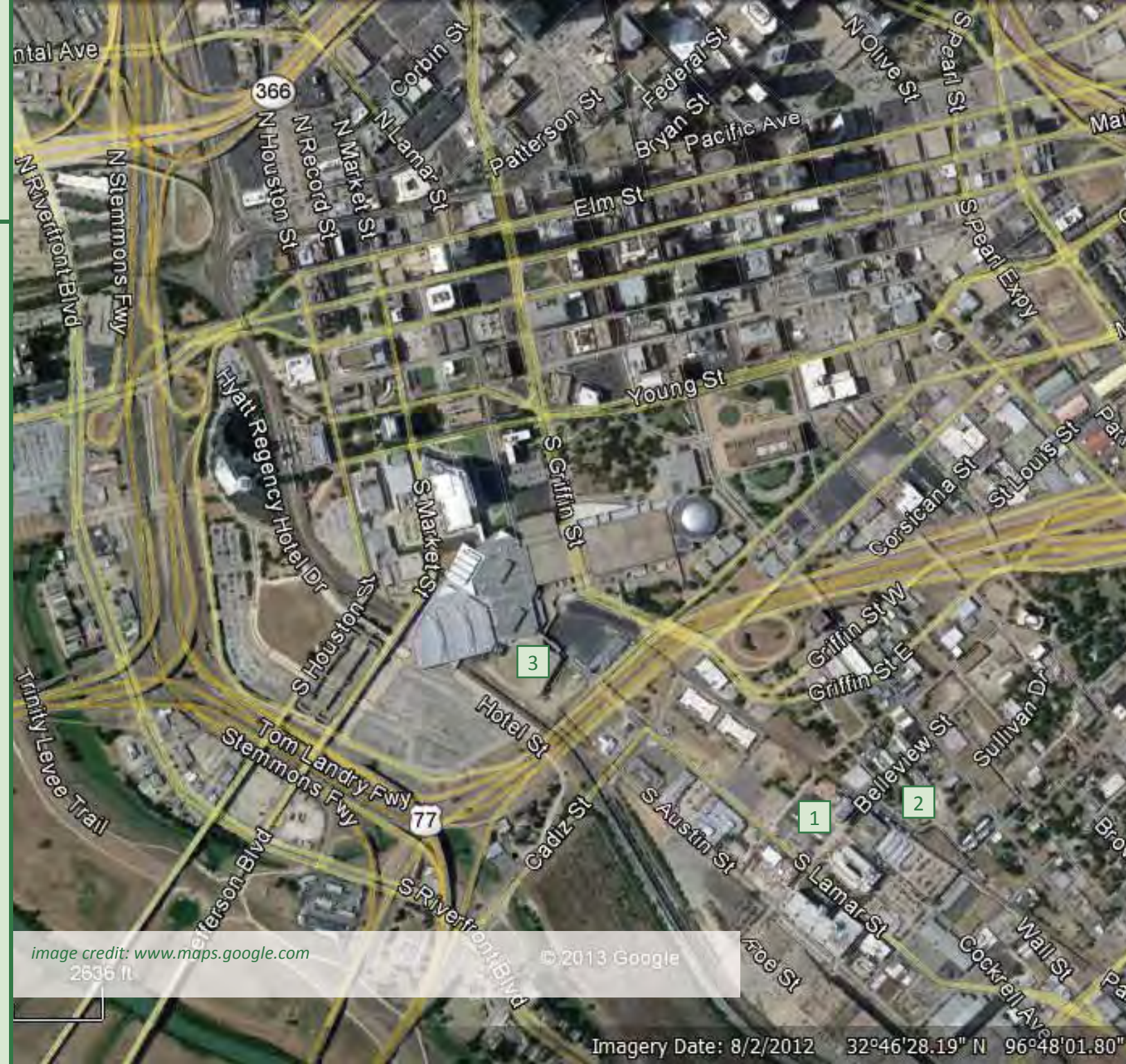
the goal in site selection was to find an urban setting that is in need of developments to improve the urban setting. the selected area, known as the cedars, is an area slightly south of downtown dallas, texas. it is located approximately 2 miles southeast of the dallas convention center.

despite its proximity to downtown, the area has long been neglected, consisting mainly of old abandoned warehouses, pharmacies, and industrial facilities. the city of dallas has made valiant efforts recently to revitalize this area, including zoning and ordinance changes and the creation of a tif district.

the particular site is located adjacent to a dallas area rapid transit (d.a.r.t.) rail station, and is on a major bus line into the downtown area.

the site is really close to downtown but there are lot of empty lots and dilapidated structures around it.

1. site
2. d.a.r.t. train station
3. dallas convention center



views

- 1. looking north
- 2. looking west



views

- 1. looking east
- 2. looking south





CONTEXT

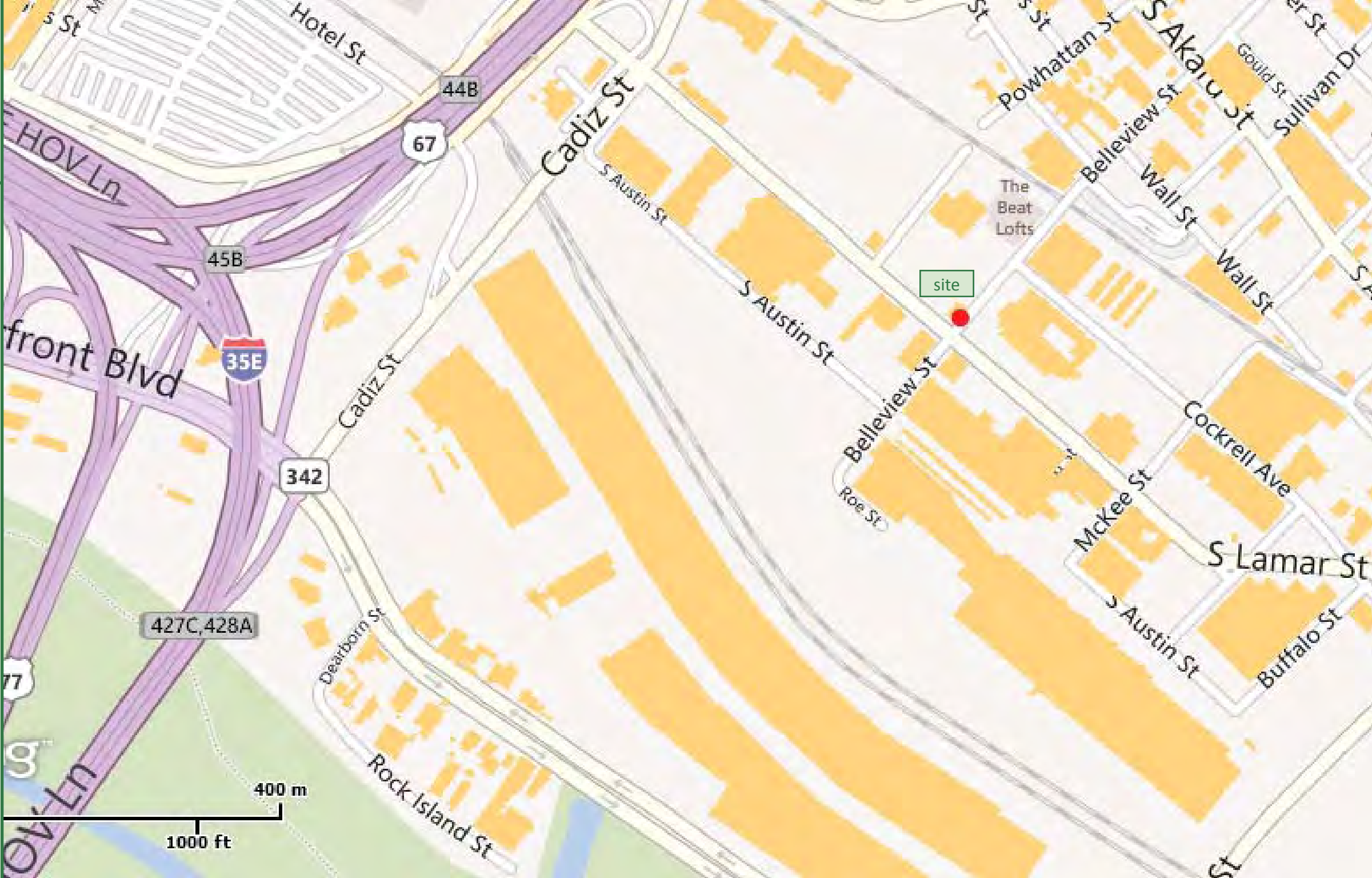
1. site
2. condos
3. d.a.r.t. station
4. i.b.m. corporation
5. parking garage
6. warehouse/industrial
7. dallas police headquarters
8. mixed-use (converted)
9. convenience store
10. dog park

zoning description

- base zoning pd 317: cedars area special purpose district
- pd sub-district 3a: transit-oriented high density mixed use)
- special provision sign district (spsd) overlay: southside entertainment district

zoning purpose

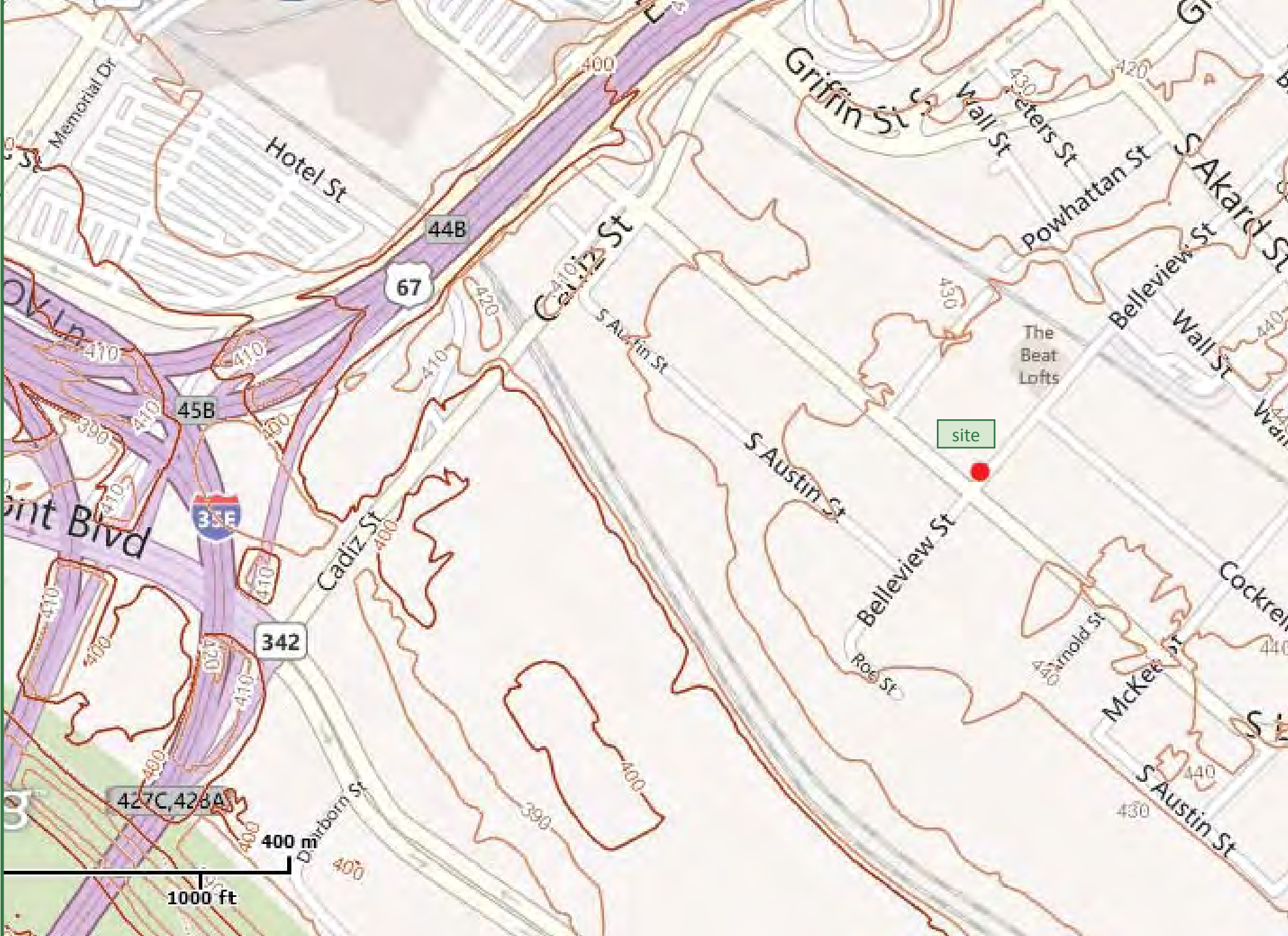
to encourage high-density residential, retail, office, and lodging uses in compatible combinations within walking distance of dart light rail stations; and to encourage development that supports day and night-time activity, use of mass transit, increased pedestrian and bicycle use, and more efficient use of parking spaces. – city of dallas development code: article 317, sec. 51p-317.111(a) “use regulations and development standards.



ZONING HIGHLIGHTS: YARD LOT AND SPACE REGULATIONS

- front yard setback: no minimum front yard.
- side and rear yard setback: no side or rear yard is required; however, if a side or rear yard is provided, it must be a minimum of 10’.
- dwelling unit density: no maximum dwelling unit density.
- floor area ratio: 4.5 for a structure with at least 50% of total floor area devoted to residential use and 50% or more of the ground floor area is restricted to retail and personal services uses; and 4.0 for all other structures.
- height: maximum structure height is 270’ for a structure where at least 50% of its total floor area devoted to residential uses and 50% or more of the ground floor is restricted to retail and personal services uses; and 90’ for all other structures.

*these regulations are superseded by the yard, lot, and space regulations contained in division 51a-4.400 in the event of a conflict.



ZONING HIGHLIGHTS: ENHANCED PEDESTRIAN AMENITIES

the following minimum amenity standards must be provided in order to qualify for the enhanced pedestrian incentives provided in this article:

- street trees: a minimum of one street tree per 25’ of frontage in the pedestrian amenities area.
- enhanced sidewalks: a sidewalk with a minimum width of 10’ in the pedestrian amenities area.
- pedestrian street lamps: a minimum of one per 50’ of frontage in the pedestrian amenities area.
- bicycle parking racks: a minimum of 5 bicycle parking spaces per 100’ of frontage in the pedestrian amenities area.
- benches: a minimum of one per 100’ of frontage in the pedestrian amenities area.
- trash receptacles: a minimum of one per 100’ of frontage in the pedestrian amenities area.

TAX INCREMENT FINANCING (tif) DISTRICT: OVERVIEW

“the cedars community occupies a prime location for redevelopment activity south of downtown dallas and stands to capitalize on its proximity to the dallas convention center and major transportation arteries. this area provides a superior location for new residential and commercial development. creation of the tif district has helped to promote this redevelopment by utilizing public investment to attract and underwrite private investment. development within the district has occurred at a slower rate than originally anticipated. in order to better achieve the goals of the tif district, this amended plan authorizes a ten-year term extension for the district from december 31, 2012, to december 31, 2022, as well as increased tif funding.

the financing plan developed by the board provides for approximately \$7,216,097 (npv in 1992 dollars) or \$23,797,823 in total dollars in public improvement to be paid for with tif funds or in expected tif collections. the financing plan allows for the sale of tif bonds funds if it promotes the financial interest of the city of dallas and the cedars tif district.” – project plan & reinvestment zone financing plan, amended june 22, 2011



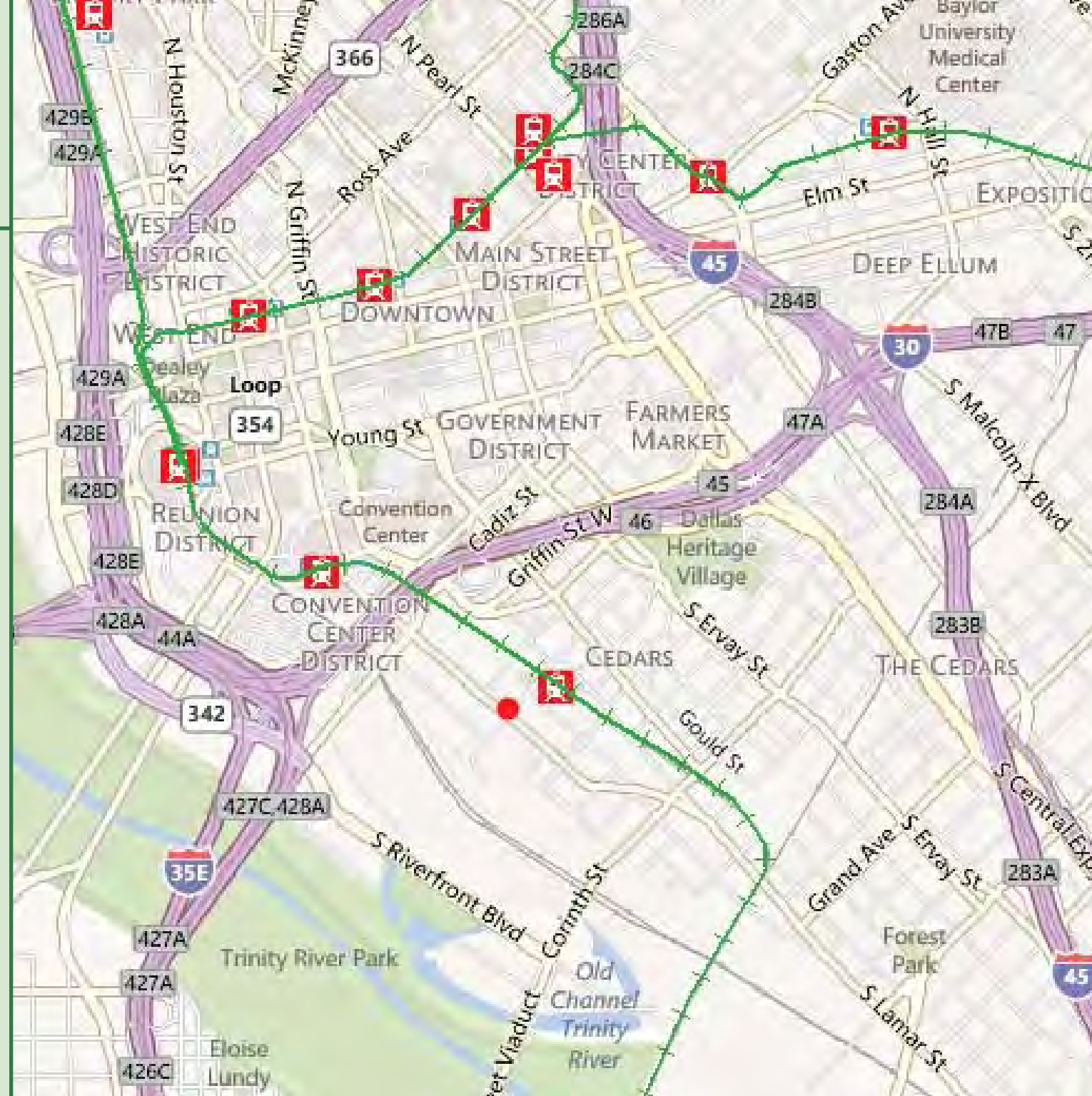
- “planned private development:
- 700 residential units
 - 400 hotel/motel rooms
 - 55,000 square feet of additional retail space
 - 300,000 square feet of service center/flex office space

increment collections in the cedars tif district have fallen well below initial projections. however, development interest in the area began to pick up in 2005. the 10-year extension will allow for additional needed development and this will generate a net present value of \$7,216,097 in tax increment revenue, which will be reinvested in the district.

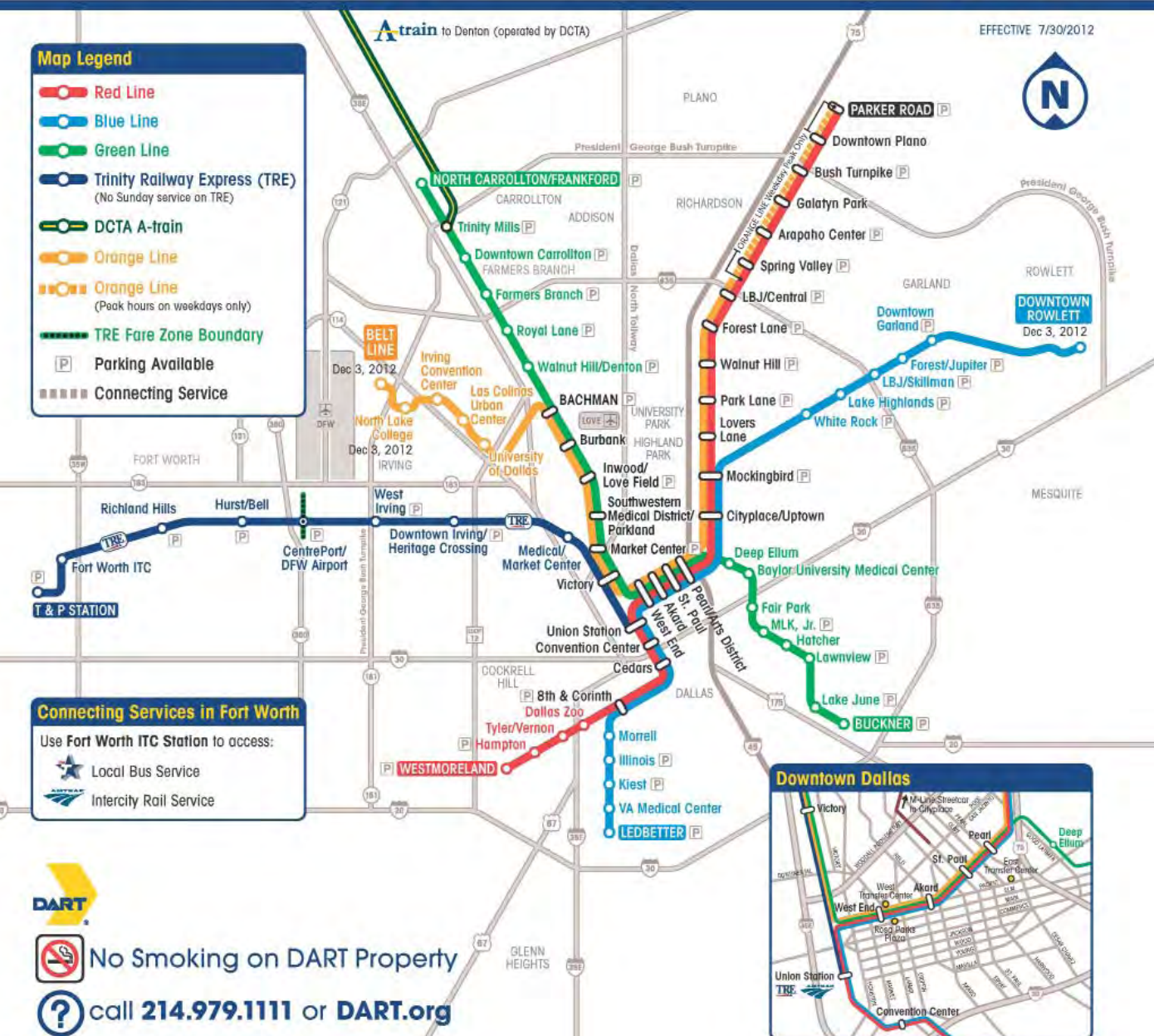
the public improvements plan provides for approximately \$7,216,097 (net present value) of streetscape, pedestrian amenities, distinctive street lighting, new infrastructure, new roadway, and public-use improvements. the improvements planned for the cedars tif district are designed to meet the long-term public needs to secure the growth and investment of the area. planned improvements will focus on three major transportation corridors - akard street, lamar street and ervay street and improvements to east - west traffic flow at belleview street.” – project plan & reinvestment zone financing plan, amended june 22, 2011

TRANSPORTATION: THE CEDARS DART STATION

- located at the corner of bellevue and wall streets two blocks east of lamar, cedars station is served by the oak cliff segment of the dart rail red and blue lines, with connections to bus route 26. facilities include a “kiss & ride” drop-off and pickup area and a bicycle rack.
- the red and blue lines stop at the cedars station practically 24/7, operating approximately between 4:00 a.m. and 1:30 a.m. m-f and on weekends.
- the bus stops at the cedars station from approximately 5:00 a.m. until 12:00 a.m. (midnight) daily.

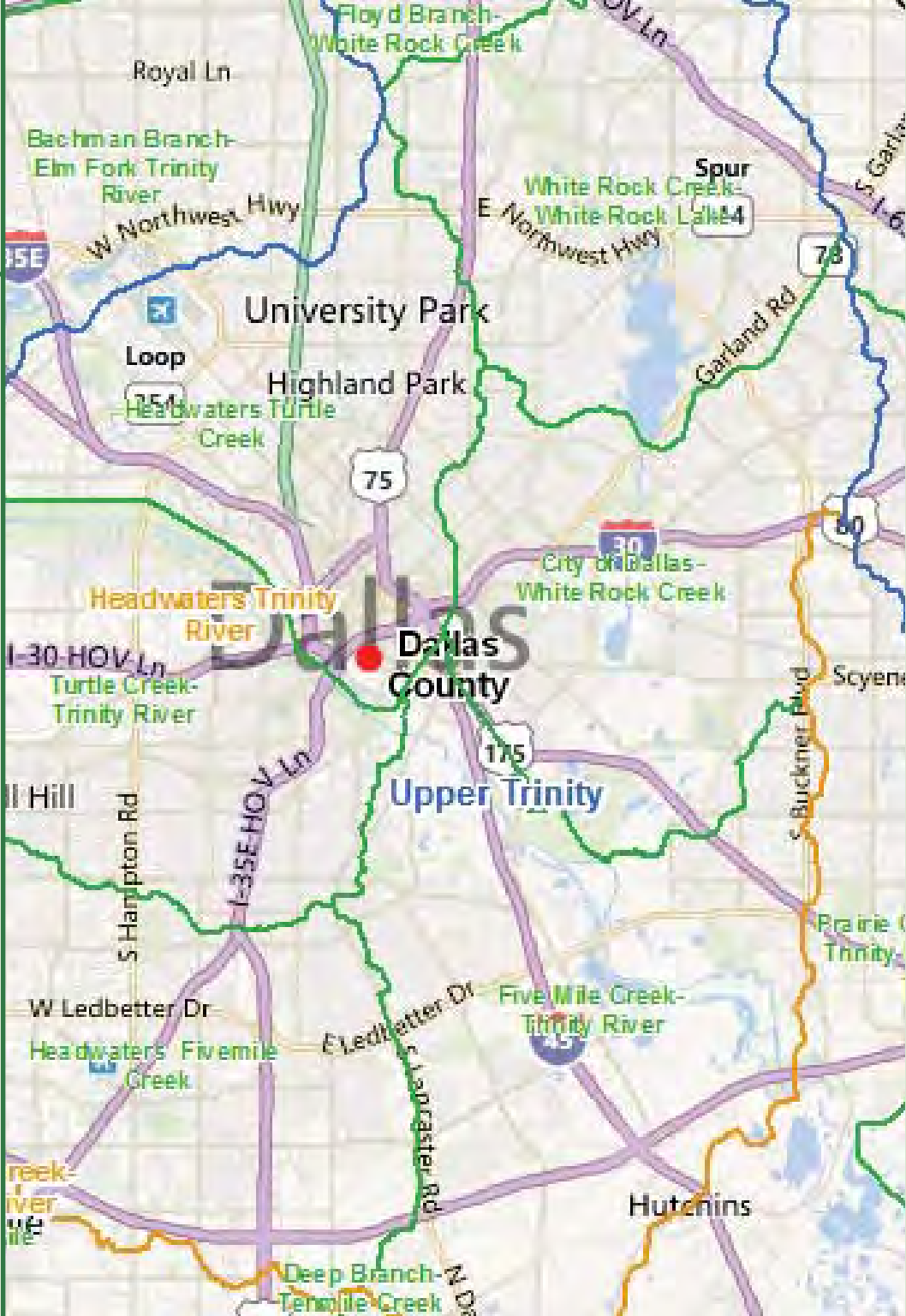


DART Rail System Map



HUMANISM, URBANISM AND ENVIRONMENTALISM

- humanism focuses on human values and concerns. for this project the focus was on the individual experience – perception of space and light. effort was also made to identify individual and community needs unique to a particular setting and provide a project that would help address those needs.
- urbanism focuses on the demographics, economy, density, and other items frequent in metropolitan settings. this project included focusing on density, networking (i.e. transportation), infrastructure, massing and scale.
- environmentalism focuses on improving the quality of the natural environment by minimizing the impact of the built environment on its surrounding context. this project incorporates several passive and active sustainable features that reduce demands on traditional energy sources and assist in improving the ambient context of the project.



PROJECT TARGETS

- include a minimum of 50% residential; a percentage of which shall be income-restricted housing
- include a goodwill center (or similar concept): clothing donations accepted, processed, sold; the retail store hires those in need of financial assistance to do the work; connected is a community training center that provides basic education & computer skills, including ged assistance
- include retail & office uses and venues that will be open during the evening and night hours, such as movie theaters and restaurants
- work with police for increased patrols to create greater sense of security
- consider overhead pedestrian walkway to cross busy lamar street
- incorporate existing structure/use (the cedars social)
- provide sufficient parking to satisfy code requirements, program needs, and any parking displaced by the project
- work with adjacent properties to improve neighborhood aesthetics (i.e. mechanical yard for the beat condos)
- promote social interactions & a sense of community
- provide incentives for people to take mass transportation (d.a.r.t.)
- reduce storm water runoff by utilizing such features as rain gardens, rain water cisterns, vegetated swales, permeable pavers, green roofs and filterra filter boxes
- maximize use of existing infrastructure
- use regional materials as much as possible
- use renewable materials as much as possible
- incorporate alternative energy sources
- utilize technology to maximize efficiency of hvac and lighting systems
- promote daylighting and ventilation to extent feasible (balance with building systems)
- incorporate native vegetation and xeriscaping
- provide trees and water features to reduce ambient air temperatures
- use project features to educate community on sustainability

COMMUNITY NEEDS: give back

- Lack of education (approximately 50% of the population did not graduate high from high school and less than 20% have a bachelor degree or higher) and high levels of unemployment. training is needed for people to obtain g.e.d. and prepare for college. computer stations could be set up for this purpose. the dallas community college district opened satellite campuses in this and nearby neighborhoods to help, but with low employment levels additional resources are needed.
- site usage after typical hours due to dart station and pedestrian activity. there is a need for facilities to accommodate these people – can stay open practically 24-7 and contain restrooms and places to safely sit, eat, and wait for connecting trains/buses.
- 6 major hospitals w/in a 5-mile radius (baylor, methodist, ut southwestern, parkland, texas scottish rite, and children's), but the only one for those w/o insurance, etc. is parkland, which is the furthest (5 miles away). there is a need for a local walk-in free clinic where community residents can come for medical check-ups, flu vaccines, blood pressure checking, etc. this clinic could also support social services such as providing fans for the elderly in the summertime and working with other organizations such as meals-on-wheels, etc.



image credit: http://www.pgal.com/media/portfolio/01_Signature_View_3.jpg

CONCEPT

the vertical forms represent the community served by the project and its forward progression towards reaching urban goals. the angles represent the faceted aspects of the community – its diversity.

the horizontal elements serve two purposes:

- represent the ties that bind the community together
- provide practical shading from the hot texas climate

the purpose of the project is to “give back” to the community in the following ways:

- provide meeting spaces for community gatherings that people actually want to go to (interior and exterior)
- green space provides urban oasis
- provide education and healthcare for the community, as well as an opportunity for artistic expression

while exploring design options i looked at several examples of green design. the outtrail house by kwk promes features a green roof that is accessible the home’s central atrium. another project was cocoon by camenzind evolution. this project was interesting because it used a gently rising ramp which encircled a central, light-flooded atrium. several program elements are arranged around the ramp, creating fluidity and continuity of space.

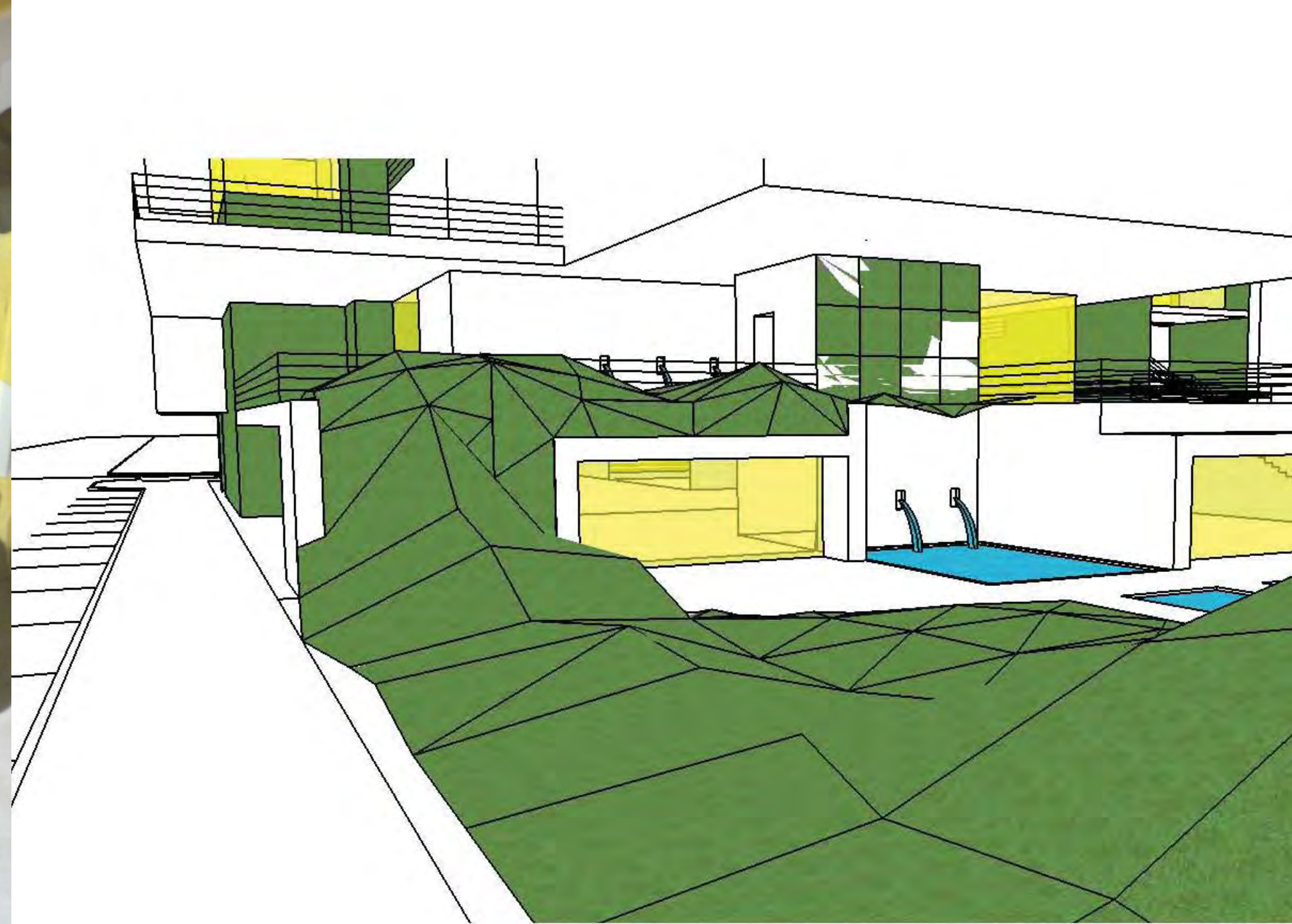


image credit: <http://www.arthitectural.com/wp-content/uploads/2011/12/cocoon%C2%A9evo-219.jpg>



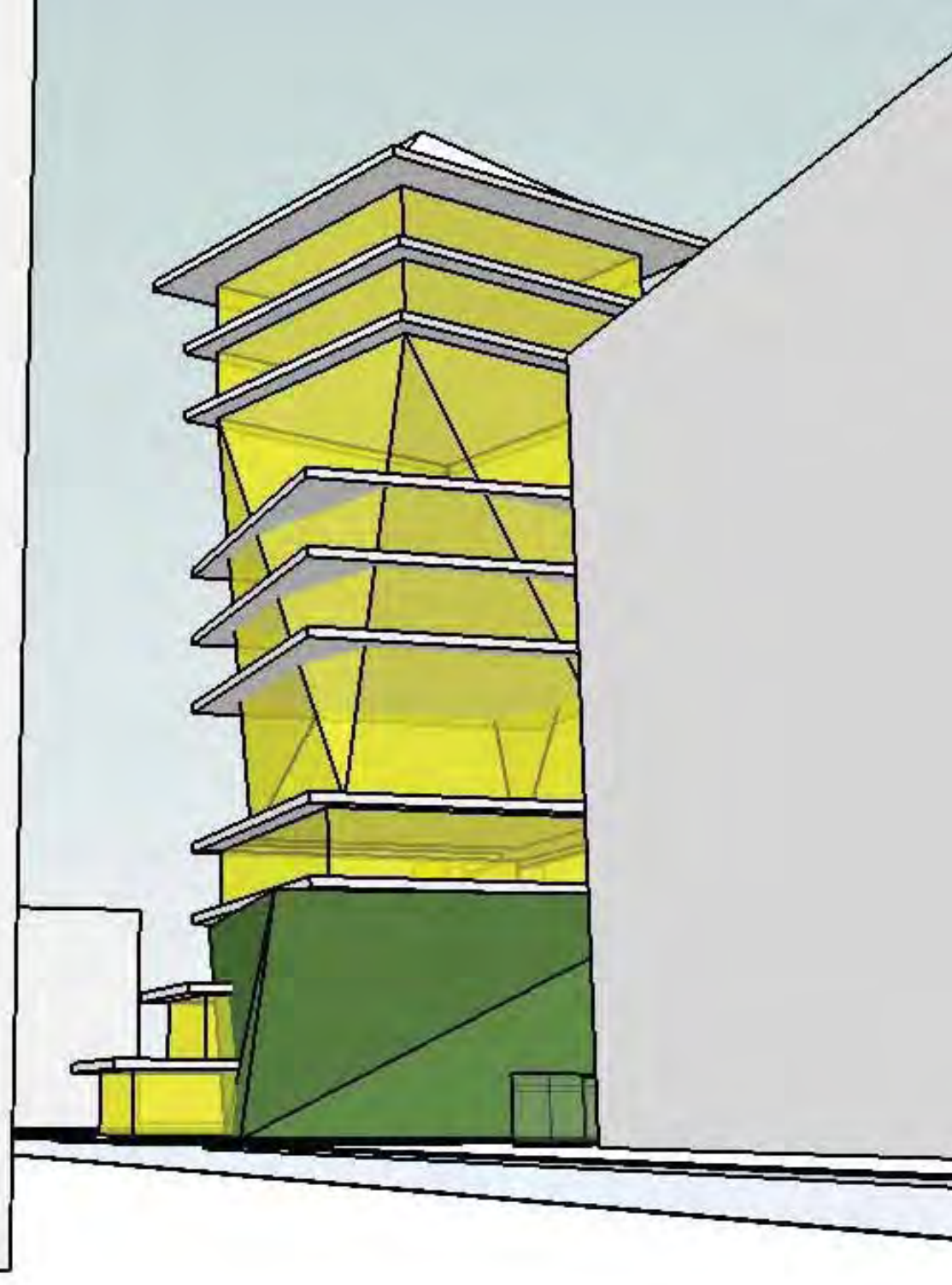
image credits: <http://www.homedsgn.com/wp-content/uploads/2012/02/OUTrial-House-03.jpg>

i also began to look at massing and the idea of earth-wrapping forms. to the immediate right is an image of one of the quick study models i created, showing the earth rising from the ground plane and enveloping the buildings. the idea was that the earth can help to insulate the concrete structures, providing additional protection from the harsh texas sun.



i looked at creating a focal point, to draw drivers into the site. the best location was at the intersection of lamar and powhattan. i also considered how the design of this focal point would be considered by the pedestrian.

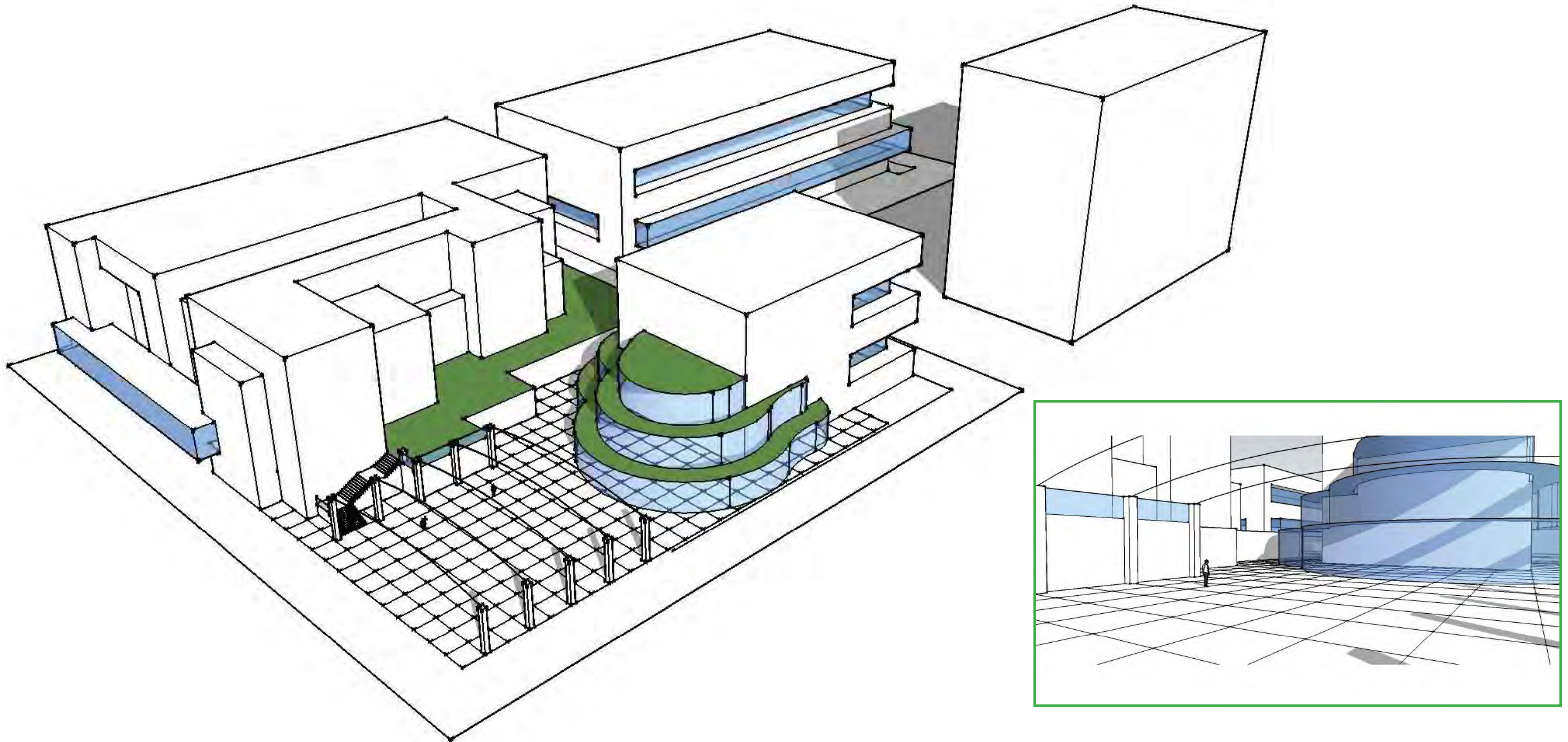
the creation of light wells throughout the interior spaces was also considered.

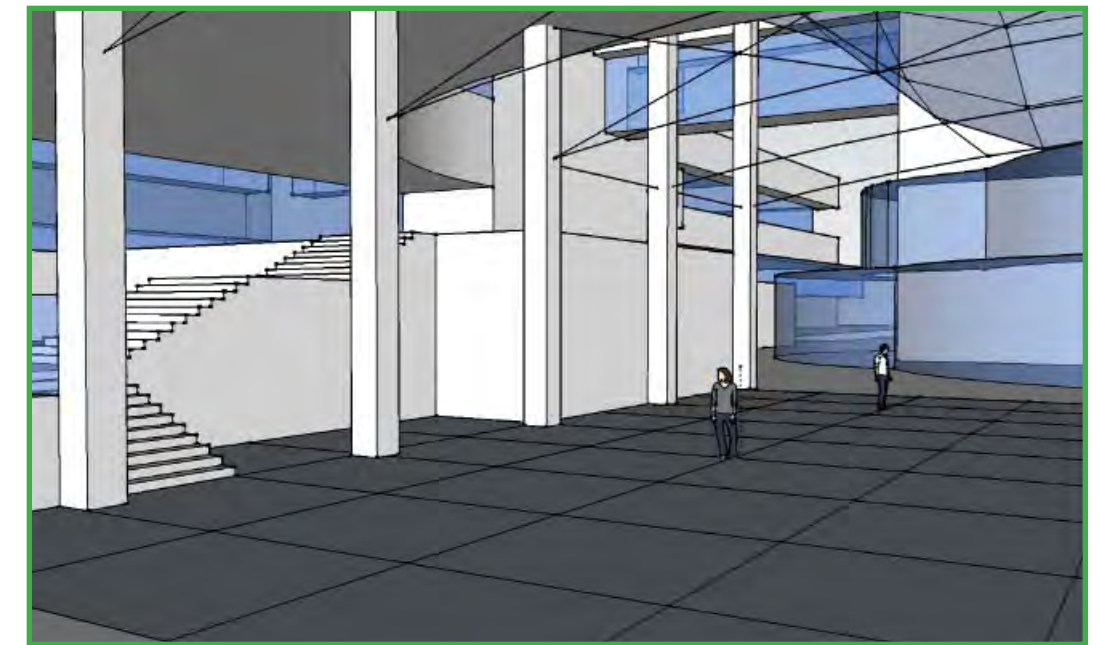
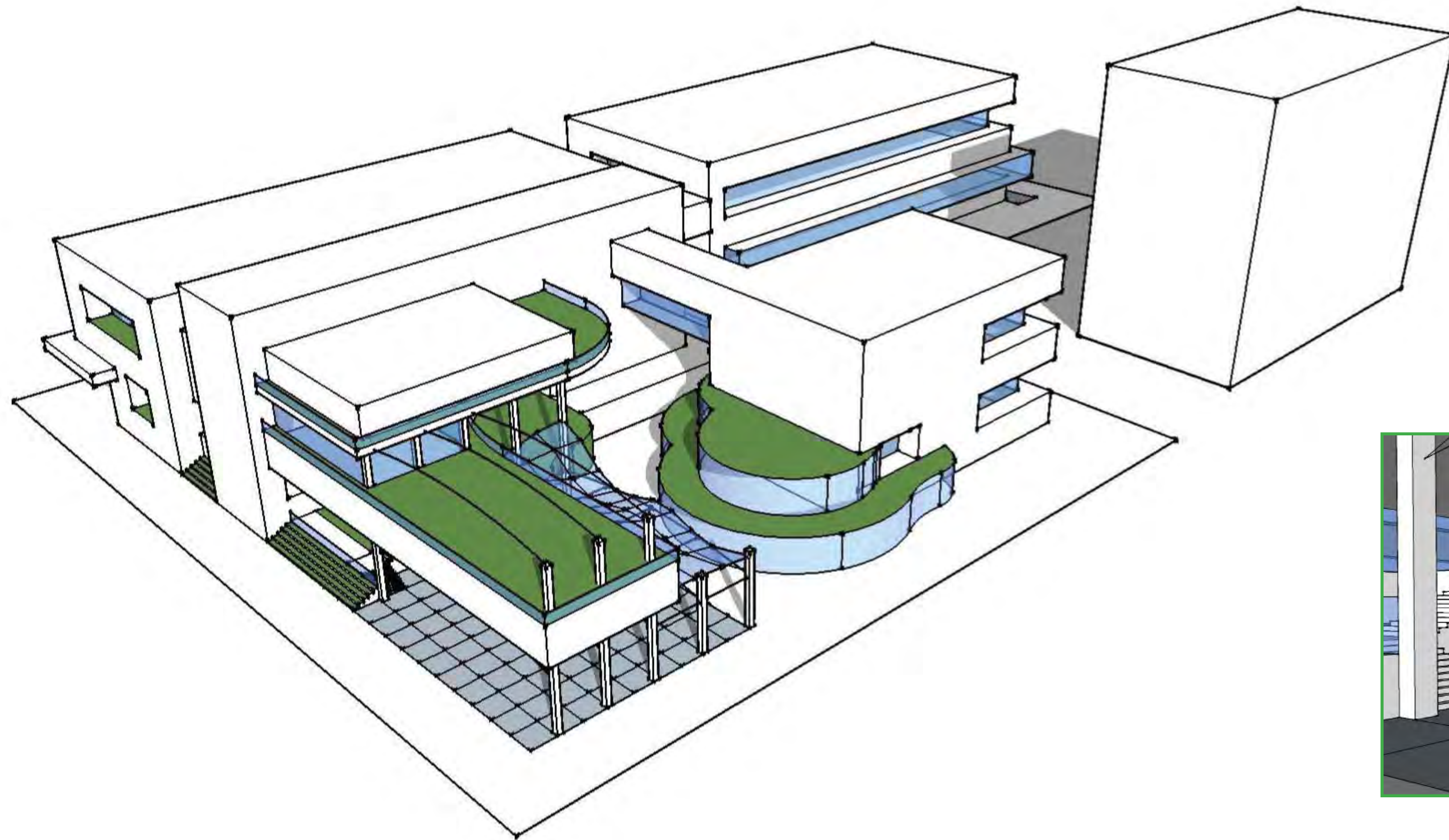


another perspective to consider was the project's visibility from the d.a.r.t. station. the adjacent condos and huge i.b.m. corporate offices obstructed much of the site. i had to design a tower element that would rise above the nearby structures and be visible to pedestrians and drivers.

design challenges

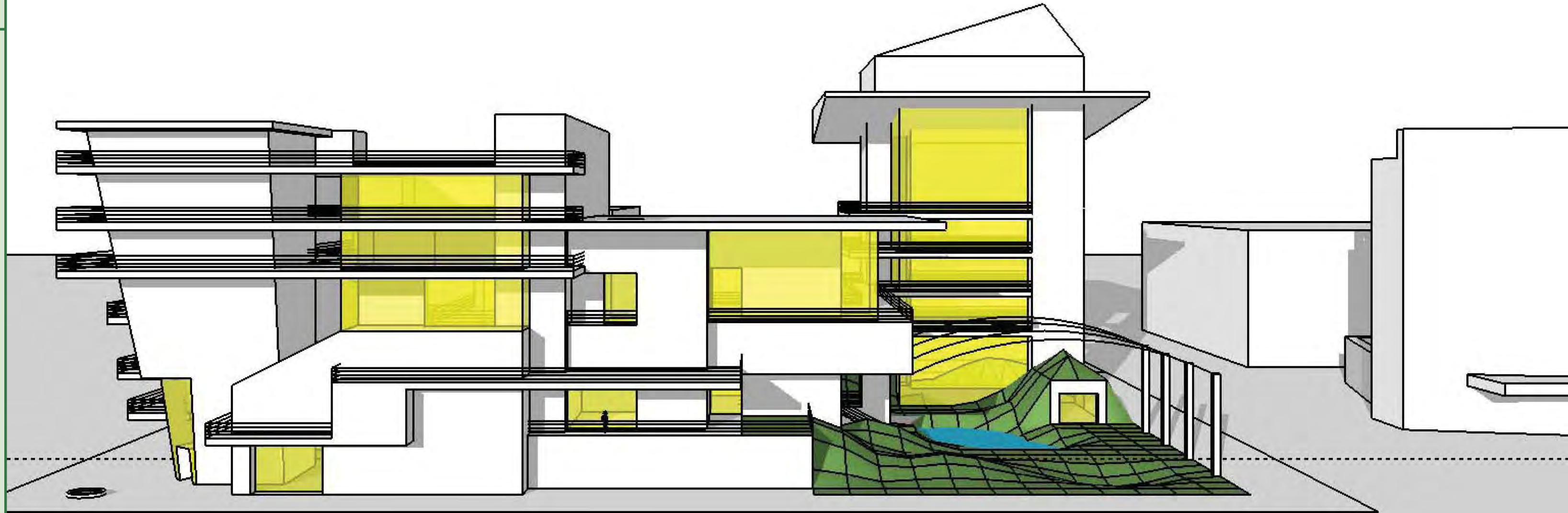
i went back and forth, developing many different designs before i reached the final form. the first designs were more rectilinear in nature. but they didn't reflect the surrounding community or tie in to the physical context of the site. they also were out of scale with the adjacent structures.

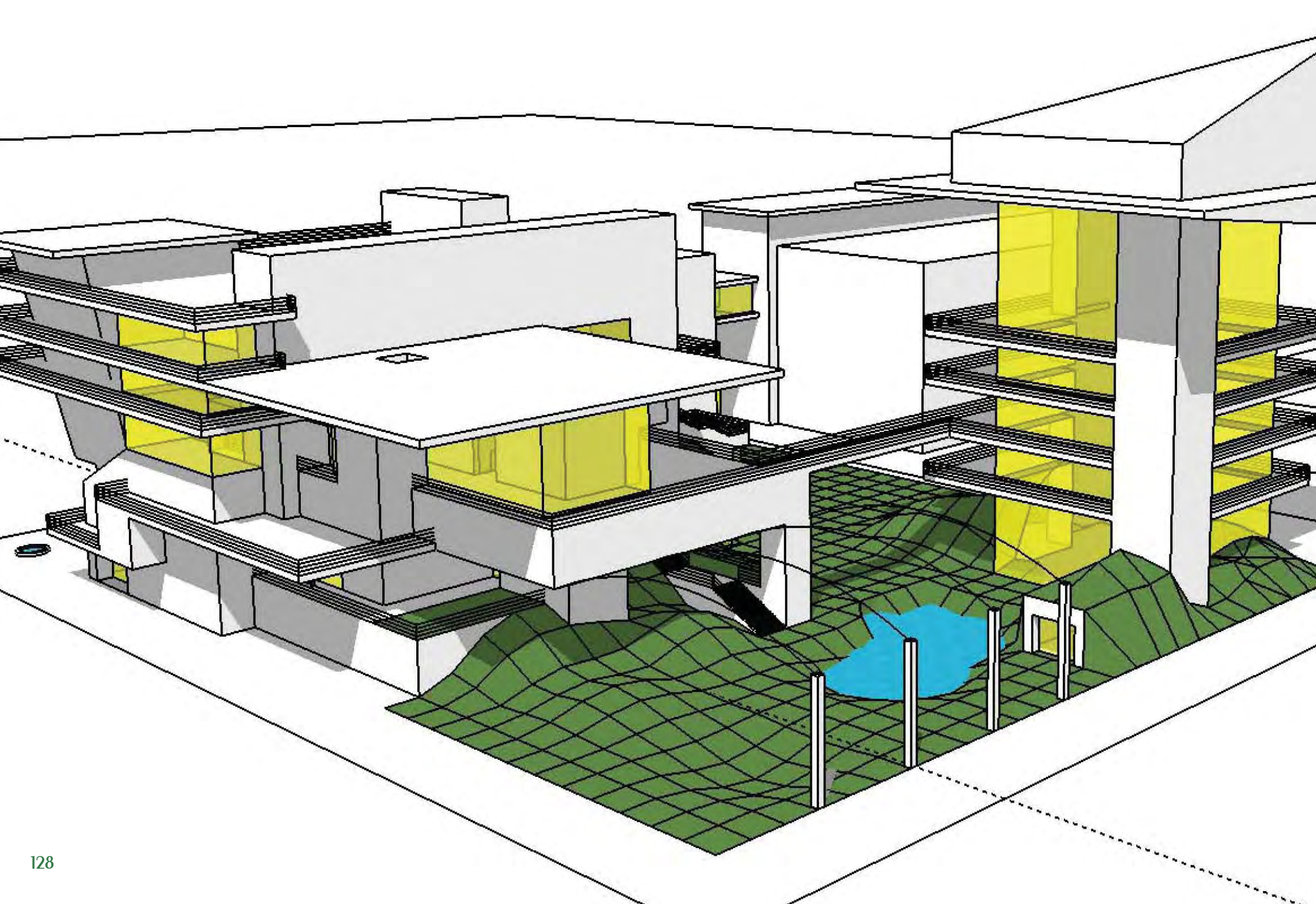




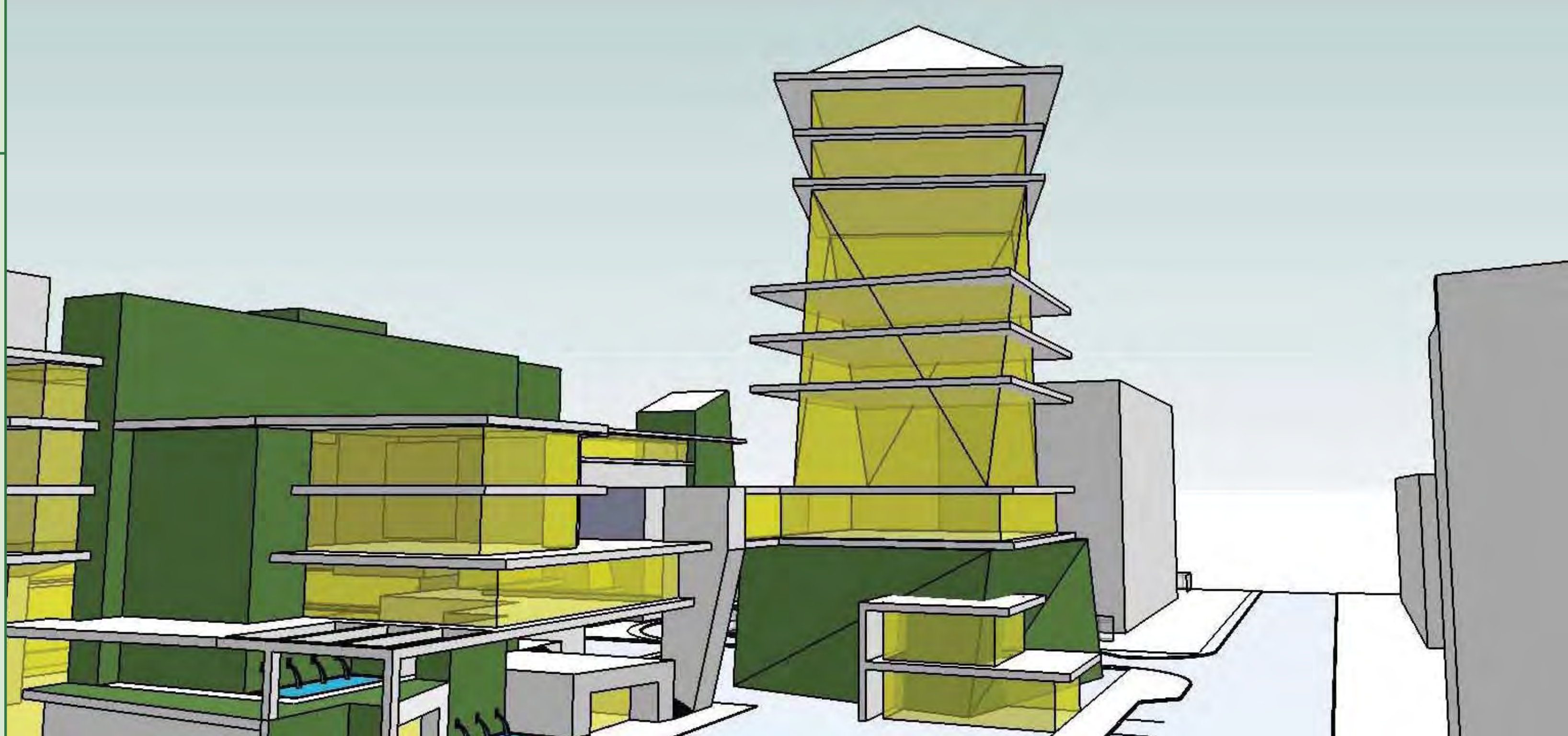
design challenges

the design slowly began to form, and to break down the cubes, rotating them and incorporating angles. my design for the earth wrapping also changed throughout the course. i had to find a way to control it so that it would be in harmony with the buildings and less haphazard. i also looked more at how the project fit into the context.





the final design incorporated all i had discovered into a twelve story development that served the community in a variety of ways, containing hybrid spaces and creating spaces that could be used 24/7/365. for more detailed information on this project, including floor plans for each level, sections and elevations, check out my website at <http://www.tdparch.com/> and follow the links to my graduate portfolio.



Global Leadership

COURSE: MGT 6013

INSTRUCTOR: David M. GREGORICH, Ed.D.

DATE: Spring 2013

this course provided a broad understanding of leadership and management theories. problem identification and problem solving techniques were introduced and demonstrated in professional environments. we explored team building concepts, conflict resolution, negotiation, interpersonal communications and methods of developing leadership & management characteristics. course objectives included gaining knowledge of contemporary leadership theories, differentiating between leadership and management skill-sets, gaining first-hand experience of effective leadership practices and learning how to assess & develop individual leadership skills.

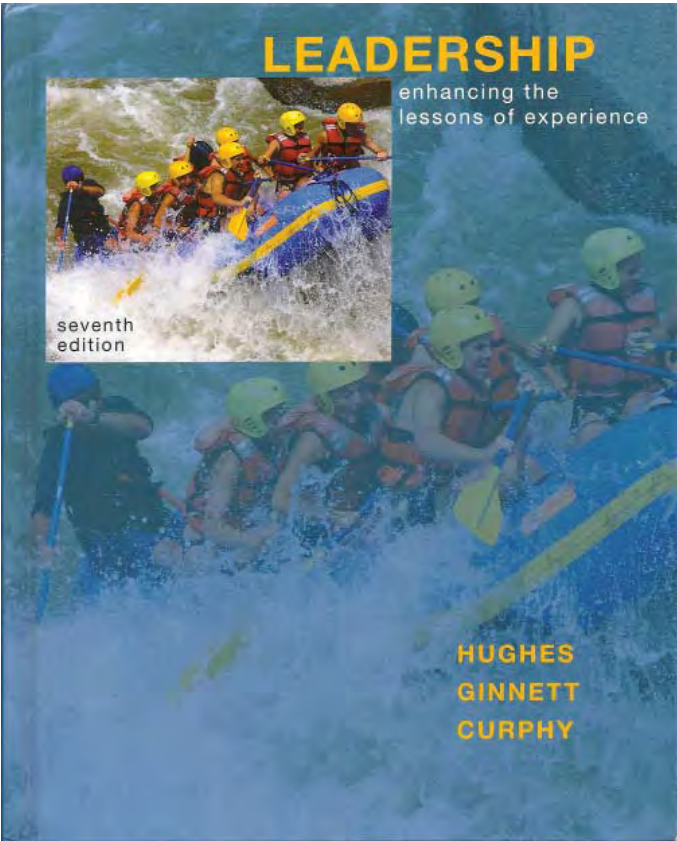
work (individual assignments):

- discussion questions in-depth analysis of reading assignment topics/questions
- bd discussion board weekly discussion of discussion questions and related current issues
- leadership interview interview of local community leader
- 360 survey instrument creation of peer survey for analysis
- individual development plan identification of weaknesses and creation of development plan for improvement
- 360 evaluation report analysis & application of 360 survey

work (team assignments):

- mini-case analysis developing leaders at ups: increasing opportunities for underrepresented groups
- team research project downsizing...or not?

read: leadership: enhancing the lessons of experience (7th ed.) richard hughes, robert ginnett & gordon curphy



COURSE REFLECTION

course assignments were targeted at helping us perform critical self-analyses. i especially appreciated the 360 survey and 360 evaluation report because they forced students to get personalized feedback from professional peers.

it is very easy to go through our careers with blinders on, unaware of our impact on those around us. often we have an idea of how we want to be perceived by others, or how we believe we are perceived. unfortunately, reality frequently does not coincide with our perspectives. gaining insight from our peers is invaluable to help us truly understand our behaviors and motivations.

effective leaders are successful because they nurture whatever personality traits are beneficial and combine them with focused research and application of proven leadership tactics. i realized that almost everyone has the potential to be an effective leader if he/she is humble, adaptable and dedicated. i used this knowledge to reflect upon myself – what leadership traits i exhibited and how much potential i had to be an effective leader. i was also able to appreciate the importance of teamwork and the role everyone plays in a company. i gained a deeper understanding of my role at work as a leader. the course also focused on the role of the follower. every leader is a follower of someone else. so i had to look at myself in that role as well and realized that improving my skills in that area will help me to improve my skills as a leader.

with guidance from the instructor i analyzed the information gathered, identified my personal strengths and weaknesses, and developed an individual plan for improvement. i realized that often i am more critical of myself than others are, and that i need a better work/life balance. i also learned that i could benefit from being more assertive and delegating more to others. so far i have been able to meet several of my short-term goals for improvement and am looking forward to additional growth and development. take a look at the 360 assignment listed below to see what i discovered. additional information can also be found on my website.

module 10 discussion question #2:

‘based on what we seem to be observing of the youngest generations of workers and potential future workers, there is a growing trend towards the use of technology in the workplace, particularly with virtual teams. how can organizations encourage workers to engage in highly productive teams? a lot of younger people occupy their time and relate to one another through technology - they may be in the same room but prefer to text one another over face to face conversations? these behaviors are not necessarily conducive to team work behaviors. how do leaders and organizations deal with these potential issues?’

my response:

of course this issue addresses the digital vs. physical world – the virtual vs. the brick-and-mortar. this is one of the biggest discussions of the 21st century. i agree that there is an intangible quality with face-to-face interactions that is lost in the digital world. however, technology is becoming more advanced and more available that allows people to interact more intimately. applications such as google+ hangouts and real-time presentation tools allow people to see each other, observe facial expressions, listen to voice fluctuations, read body language, see gestures, etc. on the other hand technology still has its limits. if you are trying to explain something to someone in another city and just need to point to an item while talking, it may not be as easy as one would think. there are issues with having compatible software and hardware, having the necessary utility infrastructure, overcoming obstacles presented by governmental limitations on internet usage in different countries, working across time zones, etc.

the situation is complex indeed. that being said, the up-side is that people are more accessible today than ever before, and can work across time zones and political boundaries. because generation “y” is more electronically savvy than previous generations, they view technology as an extension of themselves rather than merely a tool. this helps them to put more credence into digital interactions than prior generations. also, learning how to navigate the technical aspects of digital interactions helps young ones to perceive that they are part of a larger group – just a drop in the bucket, which fosters greater empathy among team members (less emphasis on the self – ego). working with digital communications also helps people to be more organized and tolerant of others – taking into consideration factors such as language barriers, cultural differences, politics, etc.

the textbook mentions the importance of cohesion and team identity (hughes, ginnett, & curphey, 2012, pp. 402-403). this is a problem that i feel is exacerbated by digital connections. when we connect digitally, we only see what we allow each other to see – the portal or frame that is opened to the outside world.

leaders and organizations may think it would be best to limit these digital interactions when possible. however, since generation “y” is so interdependent on technology and social media, this may not be a good idea. what organizations and leaders should do is educate themselves and their employees on the pros and cons of digital interactions – because they are unavoidable. many employers already have training programs, policies and procedures in place to address e-mail etiquette, digital archiving and security concerns.

the textbook mentions five major areas that are essential to change when working with virtual teams: “[1] senior management leadership, [2] innovative use of communication technology, [3] adoption of an organization design that enhances global operations, [4] the prevalence of trust among team members, and [5] the ability to capture the strengths of diverse cultures, languages, and peoples” (hughes, ginnett, & curphey, 2012, p. 425). it is not just an adaptation of current procedures by making slight modification. it really is an overhaul – a new way of thinking and operating. if all members of the organization do not embrace the changes then it could be problematic to the organization’s future success.

the textbook also mentions ten principles virtual team leaders can embrace, as listed by terence brake, the president of tma-americas:

1. be proactive.
2. focus on relationships before tasks.
3. seek clarity and focus early on.
4. create a sense of order and predictability.
5. be a cool-headed, objective problem solver.
6. develop shared operating agreements.
7. give team members personal attention.
8. respect the challenges of the virtual environment.
9. recognize the limits of available technologies.
10. stay people-focused (hughes, ginnett, & curphey, 2012, pp. 426-427).

the emphasis on building and maintaining strong connections is really important because when problems, misunderstandings, etc. arise (and they will) these relationships will help both parties to be more willing to work with each other and reach a compromise or put forth extra effort to address a situation that could otherwise escalate in a negative manner. this also keeps the lines of communication open and helps team members to be more approachable. as listed above, it is also important to establish parameters at the beginning of the relationship. this should include putting items down in writing to mitigate opportunities for memory differences or misunderstandings to develop later on.

companies should also make sure they have in place a strong corporate and/or team culture that every employee knows and has bought into. it is also important to host team-building activities that can forge relationships in person and remotely. there are a variety of programs now that assist with the planning and implementation of team building activities for organizations with employees scattered across the globe, such as sandstone, a team development company based in the united kingdom that offers services for physical and virtual teams (sandstone limited, 2013). working with these types of organizations can be a great help to companies who are trying to bridge the gap between the digital and the physical.

bibliography

hughes, r., ginnett, r., & curphey, g. (2012). leadership: enhancing the lessons of experience (7th ed.). new york: mcgraw hill irwin.
sandstone limited. (2013, april 3). about us. retrieved from sandstone: inspired team development: <http://www.sandstone.co.uk/>

discussion questions

for each of these weekly assignments the professor provided us with a list of discussion questions/topics. we selected which items we wanted to explore and provide in-depth responses. we had to incorporate research and real-life experiences into our responses. these exercises helped us to develop critical thinking skills and personal application of the material covered during the course.

here is an example discussion question and response from my assignments.

360 SURVEY AND EVALUATION REPORT

“the purpose of the 360 survey was to provide constructive feedback that assisted with the assessment of my leadership skills, identifying strengths and weaknesses. the results of the survey were used to develop a plan for improving my leadership skills in order to become a more effective leader.

before passing out the survey to individuals i filled out one to analyze my own leadership skills. respondents then were selected within the constraints of time, availability and finding individuals who had enough familiarity with my leadership capabilities to provide feedback. respondents were asked to place their names and categories on the surveys but told that they could choose to remain anonymous if they felt more comfortable doing so, as long as they selected the appropriate category.”

“on the whole, much of the feedback confirmed areas for improvement that i was already aware of. but it also helped me to realize that i am a bit overly critical of myself at times.... i can really reduce stress and workloads for myself by being more organized and learning to depend on others.... i am very glad that that i took this course. it provided some insight into my own strengths and weaknesses in leadership areas and also provided perspective from others. without the 360 survey i doubt i would have received this feedback.”

“respondents were asked to be frank and honest in their assessment of me in the following areas:

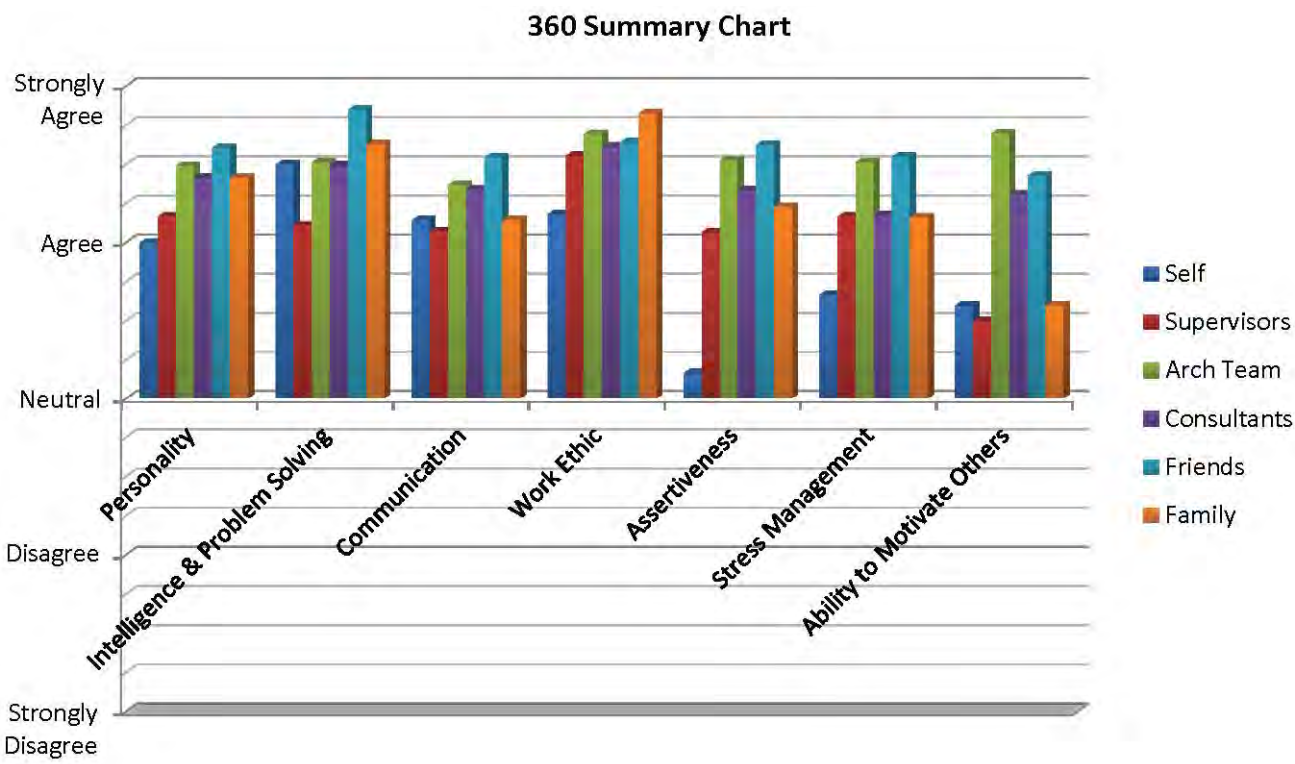
- personality
- intelligence & problem solving
- communication
- work ethic
- assertiveness
- stress management
- ability to motivate others

in order to get a well-rounded set of responses people were selected in the following categories:

- supervisors (three respondents)
- architecture team members (four respondents)
- consultants: non-architecture team members, including administration (eight respondents)
- friends (five respondents)
- family (six respondents)

ratings ranged from strongly disagree to strongly agree and were given a corresponding numerical value for calculations: -2 (strongly disagree), -1 (disagree), 0 (neutral), +1 (agree) and +2 (strongly agree). respondents were instructed to use neutral for survey questions that they felt unqualified to answer based on lack of observation in that particular area. the neutral responses were omitted from the survey calculations. some of the individual responses were disagree and strongly disagree; however the averages by respondent type were all greater than 0.”

please go to <http://www.tdparch.com/> and follow the links to find additional coursework and presentations.



TEAM RESEARCH PROJECT: DOWNSIZING...OR NOT?

part of the coursework included team assignments that helped us to work in groups, negotiate and compromise. due to the online nature of the course, we were also able to gain additional experience in remote collaboration and communication. my team member’s name was mari senko.

for this particular assignment we were to analyze a situation where the owners of a family business were facing economic difficulties due to increased local competition. they considered downsizing to help reduce costs. we analyzed the situation to determine which of the employees presented would be the most ideal candidate, and why. we had to weigh the pros and cons of each candidate and then rank them in order of the most likely to be downsized (*see chart to the right*).

our research involved exploration of human resource guidelines which included the negative and often unintended consequences of downsizing on an organization’s morale and future profitability. we also looked at teamwork principles to help us see which employees contributed to the company in “intangible” ways. another element considered was corporate culture: whether employees uphold the values of an organization or not and the impact that can have on the company.

this excerpt from the paper contains analyses of two of the candidates:

“our top candidate to be laid off is ted (accounting). ted has a good combination of education and experience but everything about him is average. as previously mentioned, team members should bring unique talents and skills, not just take up space in an organization. he has been with xyz a relatively long time when compared with some of the other candidates. despite his education and years of experience, he has not demonstrated any outstanding abilities which would endear him to the elimination selection committee. he does work hard but has frequent skirmishes with others. team interaction is important in fitting in organizational culture. his attitude can contribute to a negative work environment, creating an organizational climate that is not in harmony with the company’s core values, especially as a family-owned business. his actions could cause problems that make other employees want to leave. that could be detrimental to the company’s long-term outlook and contribute to a high turnover rate.

vince (service department) is the last person we would lay off. the best and easiest type of customer is the repeat customer, partially because very little money has to be spent on marketing. vince’s excellent work ethic, volunteer work within the company, in-depth knowledge of company processes due to his length of employment, and his technical skills make him an ideal employee, even though

he does not have a college degree. this type of employee helps the company retain existing customers, and their word-of-mouth recommendations in turn help to bring in new customers. plus, with less formal education, vince does not make as high as salary as some of the other candidates, so you get more bang for your buck as the saying goes. vince has been with the company for a long time so there is less chance that he will leave. and all the training and preparation that the company spent on him will be retained.”

this is a problem we never want to face and may not think would fall upon us during our professional careers. but in reality, especially with present economic conditions, we must know how to assess this type of situation and make sound decisions.

for the full research analysis and results please go to <http://www.tdparch.com/>.

Name/Dept./Role	Education	Seniority	Performance	Leadership	Personality	Misc
1 Ted <i>Accounting Mngr</i>	4yr degree	3.5yrs	Average	Average	Disagreeable	Hard Worker
2 Randy <i>R&D Computer Engineer</i>	4yr degree	1.5yrs	Average to above average	Moderate	Well-liked	Average skills
3 Sam <i>Sales Rep</i>	MBA	2yrs	Excellent Exceeds goals	Moderate	Disorganized Often late Very social	High technical ability
4 Greg <i>HR Assistant</i>	2yr degree	4	Average to above average	High	Easy going Respected	Low technical Hard worker
5 Vince <i>Service Dept. Assistant Mngr</i>	HS grad	7yrs	Very good	Low	Customer-oriented	Neat, organized- Dependable

Advanced Design Studio (ADS) II

COURSE: ARC 5824
INSTRUCTOR: JUAN TORRES
DATE: Spring 2013

this course explored the concept of monuments, and how they relate to their context. there are various types of monuments. some are buildings. some are sculptures. regardless of their physical characteristics, all monuments have the same common definition: monuments are fixed elements that are re-used and re-appropriated throughout the years to fit the needs of the community. even though the function of the monument may change over time, it retains traces of the past. in any given culture or society monuments serve as a link between the past, present and future of the community, and help to define its cultural identity.

- work: **component 1: citing the monument** exploration of various types of monuments
 component 2: citing the narrative development of a fictional narrative based on the reality of the site
 component 3: re-vision the monument research and investigation of alternatives for new/existing site-specific monuments; development of project based upon site analysis, cultural significance, and environmental factors
- read: **living in a post-traditional society (pp. 56-109)** anthony giddens
 reflexive modernization ulrich beck, anthony giddens, scott lash
 the architecture of the city aldo rossi



image credit: https://artsandsciences.osu.edu/sites/artsandsciences.osu.edu/files/newsimages/PAA_Ann_Hamilton_JamesEwing-4794.jpg

COURSE REFLECTION

we usually think of buildings as static. but they are like glass, which appears to be solid and stationary but is always in flux, a viscous material constantly flowing. this is something that ralph nelson dicussed with us back in the critical practice studio in the summer of 2012 when we toured the toledo museum of art’s glass pavilion. the structures we inhabit sometimes appear to be solid, unyielding forms that impose themselves upon their context. however, more frequently these structures are much more dynamic – expressions that remind us of our past but are in a continual state of flux, being altered by successive generations to fit the needs of the community (ergo the urban artifact, or monument).

opportunities of architectural study and exploration provide us with the freedom and flexibility to pursue many areas that can open doors which cannot be fully explored. there has to be a balance. we do not want to limit our creativity but we know that in the end we have to produce a tangible product for the client. i feel this course gave me the opportunity to do both. as the course progressed i continued to find correlations with prior courses such as design theory and current issues in architecture. my investigations naturally progressed to what i call kinetic architecture in my final project. at the end of the course i was able to summarize my research through the final project.

another thing that i realized as the course progressed is the importance of editing. sometimes i am loaded with a wealth of information. i want to process it all - to explore it all. and i want to share the entire process with others so they can experience what i experienced. the down side to that is when you overwhelm people with information, you lose focus on the main idea, and cloud the point you were trying to make. though my education at lawrence tech is officially coming to an end, it has inspired curiosity into various subjects which i intend to pursue throughout my career. i will work on editing my discoveries so that i can use them effectively in professional and community settings.

Component 1

citing the monument

monuments are important to the history of any civilization because they help to preserve tradition in a manner that allows it to be continuously re-interpreted. monuments remind us of who we are and where we came from.

seeing how these relics relate to current values, practices and systems has a sort of “grounding” effect. sometimes we think the past is something that has no relevance in our lives. we may feel separated from it, like it is something we read about, or a movie we watch, but that when the episode is over we return back to our daily lives.

reading the words of aldo rossi concerning the theory of permanences reinforced the connection that we have to our past through monuments and urban artifacts:

“the difference between past and future, from the point of view of the theory of knowledge, in large measure reflects the fact that the past is partly being experienced now, and this may be the meaning to give permanences: they are a past that we are still experiencing.” - the architecture of the city, pp. 57-59

for my case studies i decided to explore monuments that were in my geographical location so that i could form a deeper connection with the sites and sounds that i take for granted every day, giving the city a new level of depth.



image credit: http://3.bp.blogspot.com/-Ux2vhGJx40I/Tghf09-PZ5I/AAAAAAAAPSY/_rFOlgVadIk/s1600/P1300992.jpg



image credit: <http://www.bluffton.edu/~sullivanm/spain/granada/alhambra/0071.jpg>

the following excerpt from rossi (pp. 59-60) differentiates between two types of permanent artifacts: propelling elements and pathological elements....

“...according to the theory of permanences, in order to explain an urban artifact, one is forced to look beyond it to the present-day actions that modify it. in substance, the historical method is one that isolates. it tends not only to differentiate permanences but to focus entirely on them, since they alone can show what a city once was by indicating the way its past differs from its present....

artifacts either enable us to understand the city in its totality, or they appear as a series of isolated elements that we can link only tenuously to an urban system. to illustrate the distinction between permanent elements that are vital and those that are pathological, we can...take the palazzo della ragione in padua as an example....not only can one still experience the form of the past in this monument, but...the physical form of the past has assumed different functions and has continued to function, conditioning the urban area in which it stands and continuing to constitute an important urban focus. in part this building is still in use; even if everyone is convinced that it is a work of art, it still functions quite readily at ground level as a retail market. this proves vitality.

an example of a pathological permanence can be seen in the alhambra in granada. it no longer houses either moorish or castillian kings....it is evident that at granada we experience the form of the past in a way that is quite different from at padua. in the first instance, the form of the past has assumed a different function but it is still intimately tied to the city; it has been modified and we can imagine future modifications. in the second, it stands virtually isolated in the city; nothing can be added. in constitutes, in fact, an experience so essential that it cannot be modified....but in both cases the urban artifacts are a part of the city that cannot be suppressed because they constitute it.”

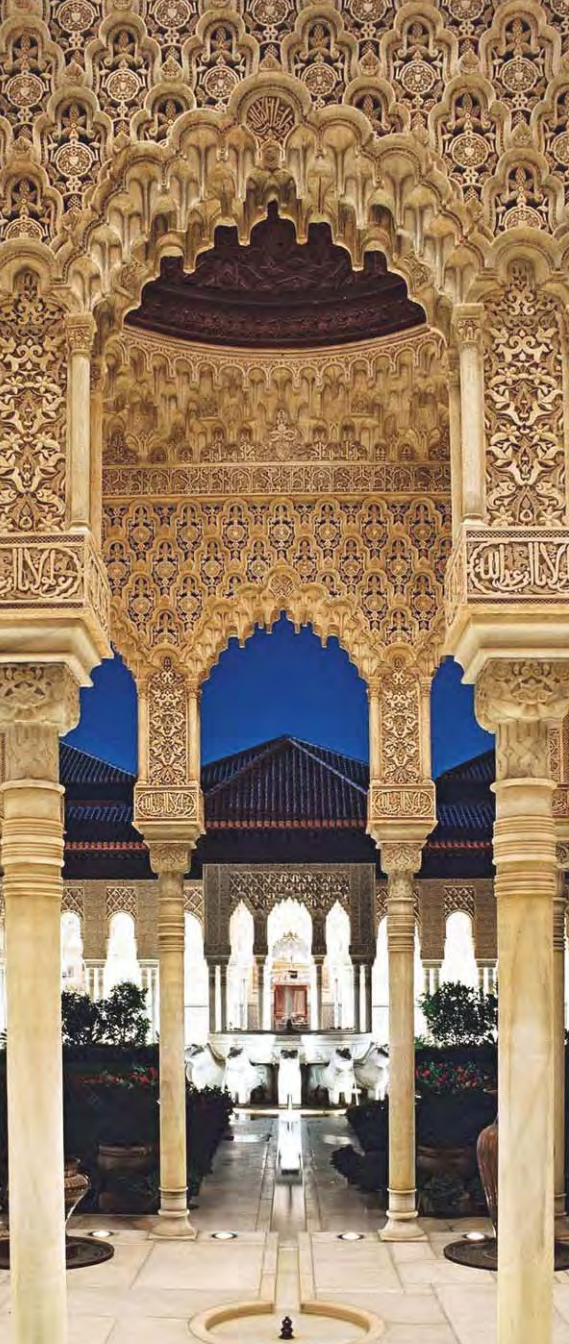


image credit: <http://perso.numericable.fr/~aizacjacq/images/alhambra.jpg>

CASE STUDY 1: JFK MEMORIAL

the john f. kennedy memorial plaza was designed by philip johnson and dedicated in june 1970. it is located in downtown dallas near dealey plaza, where president kennedy's motorcade was passing through at the time of his tragic assassination.

johnson desired to create a monument that would symbolize the essence of kennedy's charisma and national popularity. he used a cenotaph as the basis for design. a cenotaph is a monument (or empty tomb) that is created in honor of someone who is interred elsewhere. similar structures include canada's national war memorial; the voortrekker monument in pretoria, south africa; and the memorial cenotaph at the hiroshima peace memorial park in japan.

the memorial was created as a place for private contemplation and reflection, a respite from the surrounding distractions of busy downtown dallas. it's austere geometry was designed to reflect the world's feelings of loss and emptiness after the sudden and unexpected death of president kennedy in 1963.

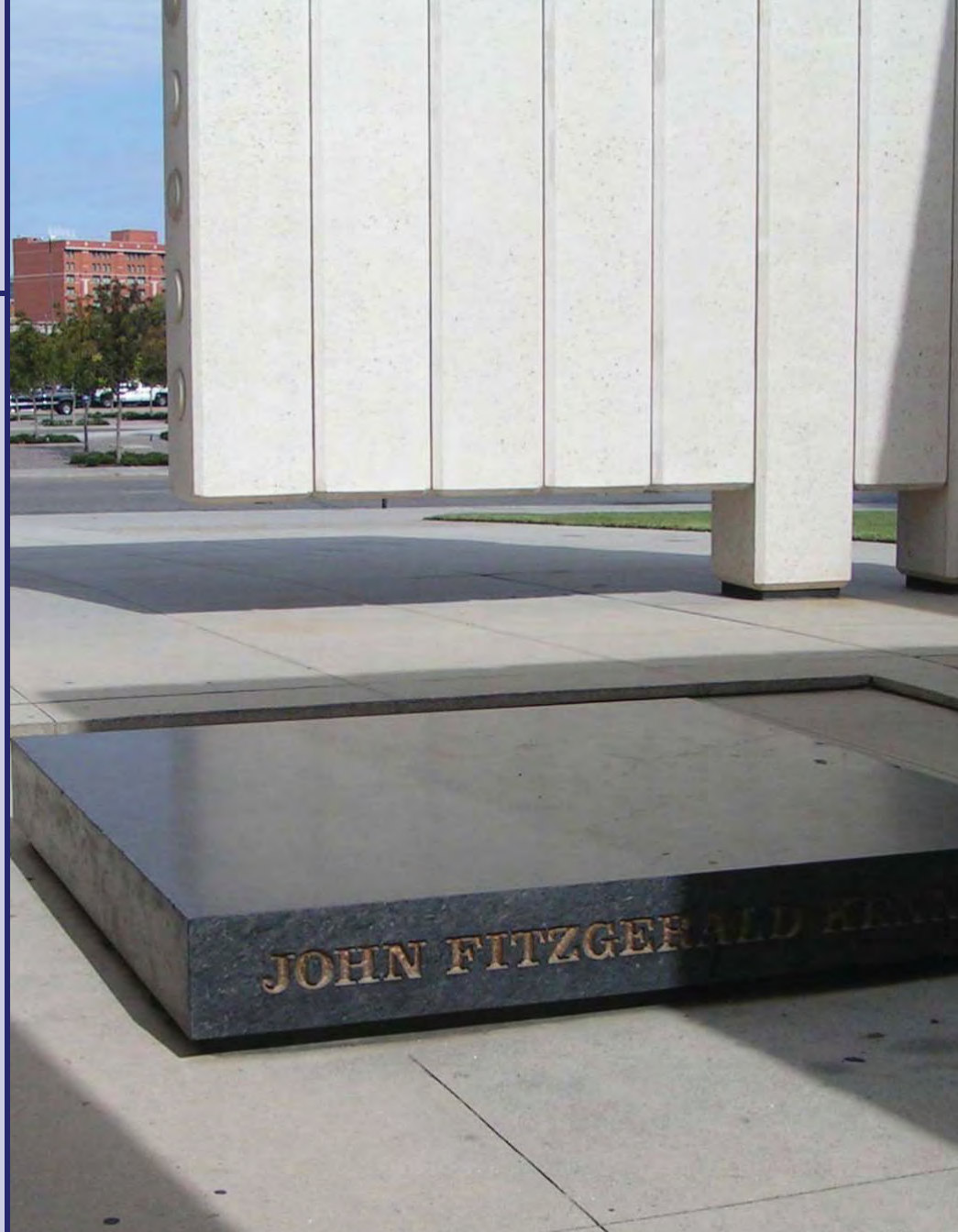
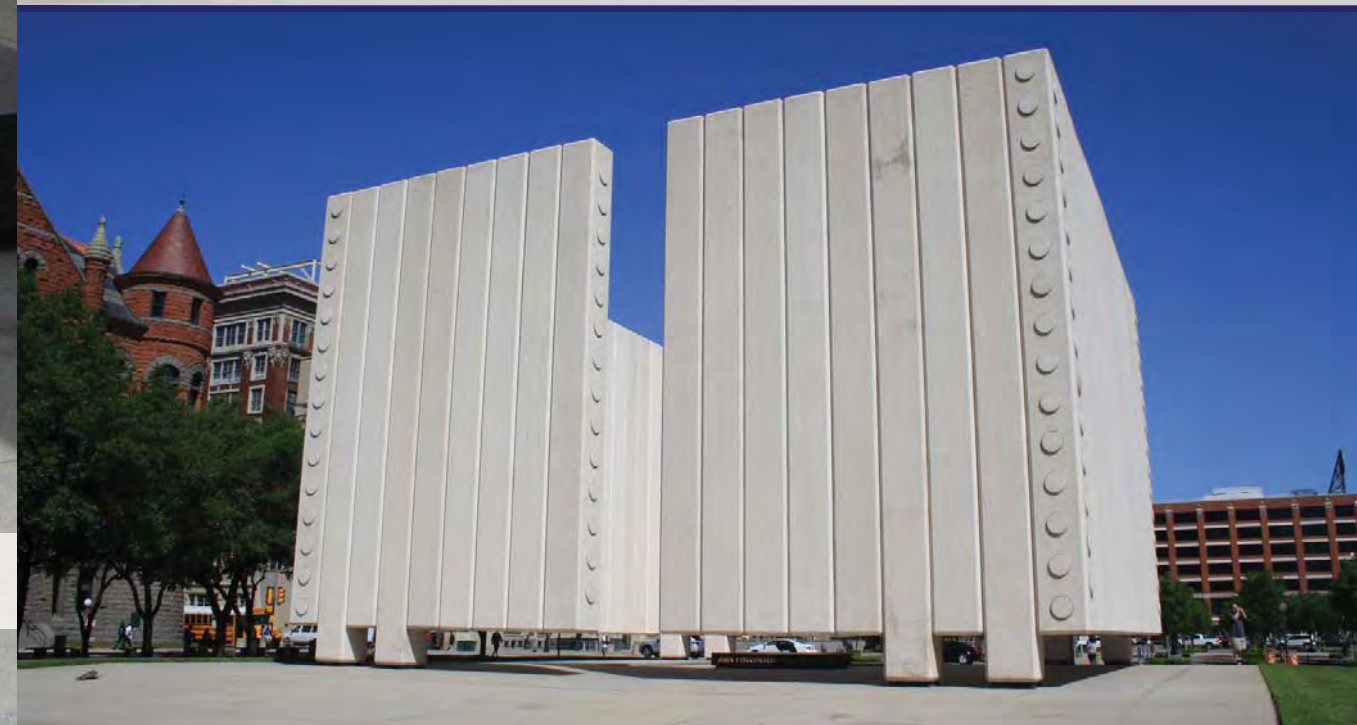


image credit: <http://dallas.about.com/od/history/ig/jfk-assassination/inside-the-jfk-memorial.htm>



image credits: <http://www.galinsky.com/buildings/kennedymemorial/index.htm> | <http://www.sheeldz.co.uk/2011/07/life-through-pretentious-lens-volume-2.html>



the memorial sits alone on a paved city block, flanked by rows of trees on each side. it consists of a 50' square by 30' tall structure comprised of 72 white pre-cast concrete columns.

narrow openings provide a visual slot that runs from north to south. the monument appears to float 29 inches above ground, with only 8 of the columns extending down to the ground. it is open to the sky, with no ceiling. at the center of the monument is a square black granite slab with president kennedy's name etched in gold.

CASE STUDY 2: FREEDMAN’S MEMORIAL CEMETERY

my second case study involved the freedman’s memorial cemetery in dallas, texas, which was designed by classically trained sculptor david newton and dedicated in 1999.

founded in 1869, freedman’s is one of the city’s oldest burial grounds. during the majority of the cemetery’s active period, it served as the only public burial ground for african americans residing within dallas until it closed in 1907. originally the cemetery held over 7,000 people but over the years many of those graves were destroyed by the expansion of a nearby expressway.

in the late 20th century a massive project was undertaken to exhume, document, analyze and reinter the remaining 1,150 burials. the neighborhood around the cemetery has grown into a bustling, vibrant area.

the memorial is built at the cemetery site and includes an arched ceremonial entrance, flanked by figures representing free africans on the outside. inside are figures depicting african-americans struggling with slavery. at the center is a statue of a man and woman grieving for those who have died. behind this central figure is a polished granite slab containing a poem. the memorial is surrounded by a false moat, lined with black stones. this moat symbolizes the “river” between life and death.



image credit: maps.google.com

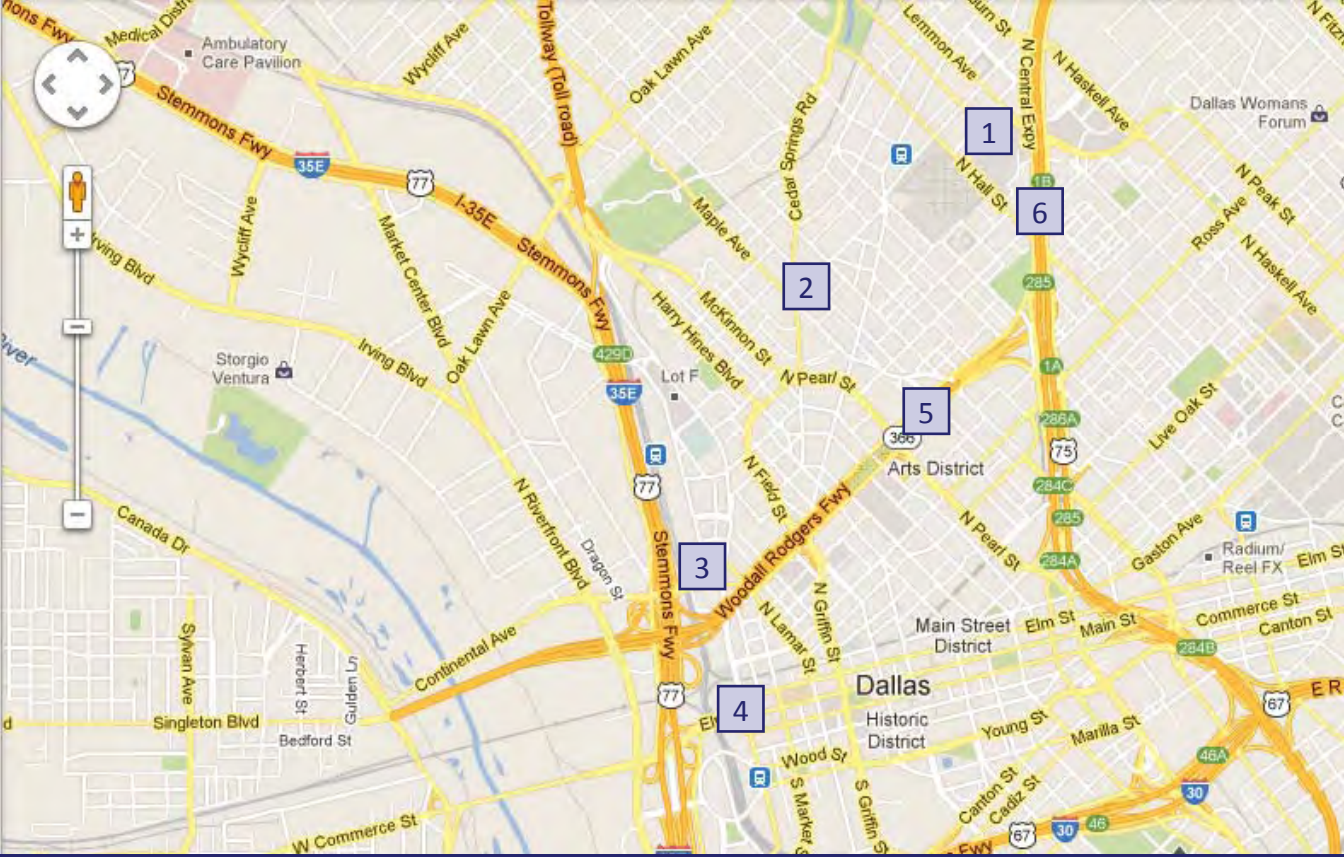


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1. freedmans memorial cemetery
2. state thomas neighborhood (freedman’s town)
3. dallas brewery (old dallas burial ground)
4. jfk memorial plaza, dealey plaza and 6th floor museum
5. woodall rogers frwy
6. central expressway (us highway 75)

the entire cemetery is enclosed by a wrought iron fence supported by cast stone columns. attached to 10 of these columns are bronze plaques which contain poems about freedman’s cemetery which were written by dallas school children. when the bodies were reinterred they were placed according to the prevailing custom at the time of their burial – with their heads facing east towards the rising sun.

exploration: the cube

the final part of component 1 included exploration into areas that could serve as a basis for our final projects. one of the areas i explored was the cube - not just viewing it as a static object, but seeing how it can shift and adapt over time. it can change form as it transitions between solid and liquid. it is responsive to the surrounding environment. it can be arranged in groups, positioned at various angles. this is when the idea of kinetic architecture was planted. kinetic architecture is discussed in further detail in my graduate education reflective practice statement.

some of the organizational tools i gathered from component 1 (aside from the cube) involved incorporating orientation on axes, highlighting a processional entry to the site, and identifying the boundaries of the site with architectural elements.

cardinal orientation:

- north | south at jfk
- east | west at freedman's

gated entrance:

- slits at jfk
- entryway flanked with sculptures at freedman's
- perimeter columns



image credit: http://th03.deviantart.net/fs70/PRE/i/2010/097/e/0/Glass_Cubes_Wallpaper_by_Deviant_Len.jpg

Len - 2010



image credit: <http://us.123rf.com/400wm/400/400/drizzd/drizzd0912/drizzd091200075/6099947-floating-glass-cubes-in-the-sky--3d-illustration.jpg>



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image credit: <http://us.123rf.com/400wm/400/400/Serp/Serp0711/Serp071100063/2078805-abstract-glass-blue-cubes-on-a-white-background.jpg>

Component 2

CITING THE NARRATIVE

the goal of component 2 was to create a narrative myth – a story founded in historical reality but expanded on by imagination. my research focused on the a priori history of fort worth, featuring the symbiotic relationship between native americans and eagles.



image credit: <http://web.gracesgraphics.com/5/451634f071baab61de.jpg/>



image credit: <http://cdn.nativeamericanencyclopedia.com/wp-content/uploads/2013/01/Holy-Eagle.jpg>

FORT WORTH HISTORY

fort worth was established in 1849 as part of a series of military posts that were a boundary between the nomadic native americans and the us. over time, the military moved west but civilian settlers continued to migrate.

fort worth became a famous stop on the chisholm trail and the t&p railroad. from 1684 to today, texas was under the rule of six different entities – france, spain, mexico, the republic of texas, the confederate states of america, and the united states. this bit of history is referred to today as the “six flags over texas”.

in 1917 the oil boom struck fort worth and it became known as the “pipeline center of texas”. the oil and natural gas industries are still a major part of fort worth’s economy today.

NARRATIVE MYTH: GUARDIANS | MESSENGERS

according to the myth, as long as humans provided protection, the eagles would serve as messengers to the creator and protect the people and the land from the more destructive forces of nature. as european settlers drove away the guardians, the balance was disturbed and the protection was removed, resulting in a series of warning disasters.

to help stem the disasters the residents of fort worth created memorials such as the aviation building of 1930 (*shown to the right*). built in the zig zag moderne art deco style, the entrance featured two golden eagles and a pair of aztec native americans. when i came across this image i was truly awestruck and at the same time saddened. though stylistic, the design is quite beautiful and intricate. it is regrettable that architecture today generally does not acquire this level of detail and craftsmanship and that many of these buildings have been demolished.

per the narrative, monuments such as this one helped to minimize natural disasters. however, as fort worth grew and these urban artifacts were demolished the natural disasters intensified. one hundred years after fort worth was established a warning was issued in may 1949 when a devastating flood occurred. in april 1957 fort worth was hit by a major tornado outbreak. in march 2000 the “great fort worth tornado” struck, causing \$500 million in damage. tornadoes again struck fort worth in april 2012.



image credit: <http://www.fortwortharchitecture.com/aviation-entry.jpg>

researching fort worth's history and creating the narrative myth helped me to get a better understanding of the city, and of the type of monument that would fit into the context. i was able to incorporate this information into my project for component 3.

Component 3

RE-VISION THE MONUMENT

as we moved into component 3 i began looking at kinetic designs. one was the wyly theater in dallas, texas. this performance venue utilizes a system of lifts to reconfigure the seating and stage arrangements as needed in a minimal amount of time.

my investigations were not limited to buildings, but also encompassed interactive sculptures and displays. i examined installations such as the interactive display at the german salt museum in lüneburg, germany (2010). another interesting exhibit entitled “kinetic rain” is located in the changi airport in singapore (2012).

my project, named morphosis, provides a link to fort worth’s history, provides shelter from exterior elements, incorporates an interactive water feature, and promotes sustainability. it serves as a gathering place throughout the year. some of the elements included in this project include axial organization, repetition of elements, a processional avenue, definition of space by architectural elements, and adaptation of the physical environment by the end user.

the project is located in a rapidly expanding mixed-use area 2 miles east of downtown fort worth known as the museum district. this neighborhood contains many cultural facilities such as museums, performance halls, and convention centers.



image credit: http://4.bp.blogspot.com/_I0knesLSHsl/TB0t3NFwhhI/AAAAAAAAAbs/ibUlcidOnWo/s1600/3.bmp

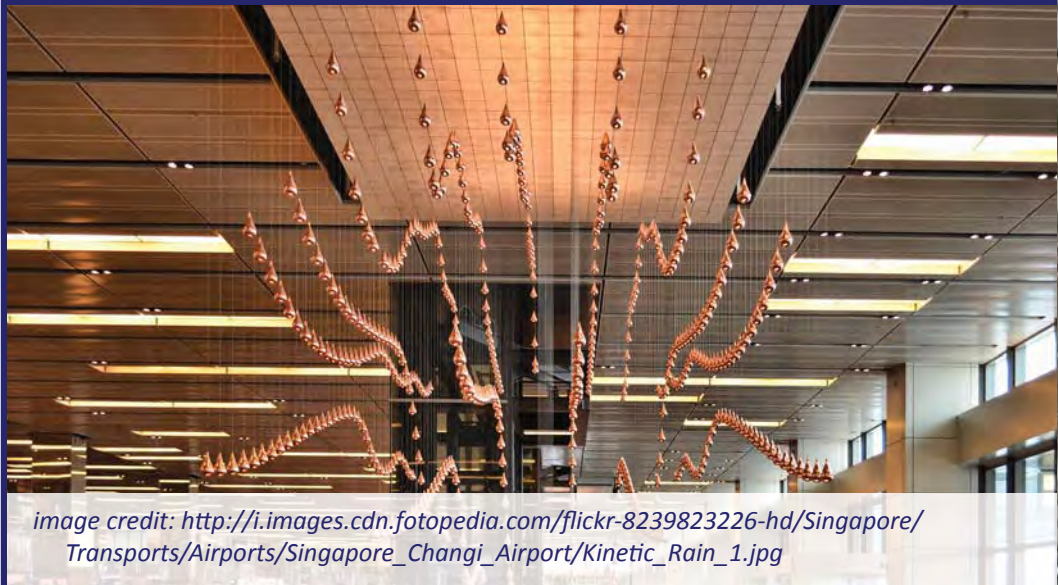


image credit: http://i.images.cdn.fotopedia.com/flickr-8239823226-hd/Singapore/Transports/Airports/Singapore_Changi_Airport/Kinetic_Rain_1.jpg



PROGRAM ELEMENTS & LEGEND

- Function – Relation to History
- *Sculpture – Habitable Wall*
 - *Protection from exterior elements (sun, wind, rain, etc.)*
 - *Interactive Water Feature*
 - *Sustainable Features (Thermal Mass, Vegetation Wall, etc.)*

- Social Needs
- *Urban Park*
 - *Indoor/Outdoor Sports Activities*
 - *Year-Round Features*
 - *Community Gathering*

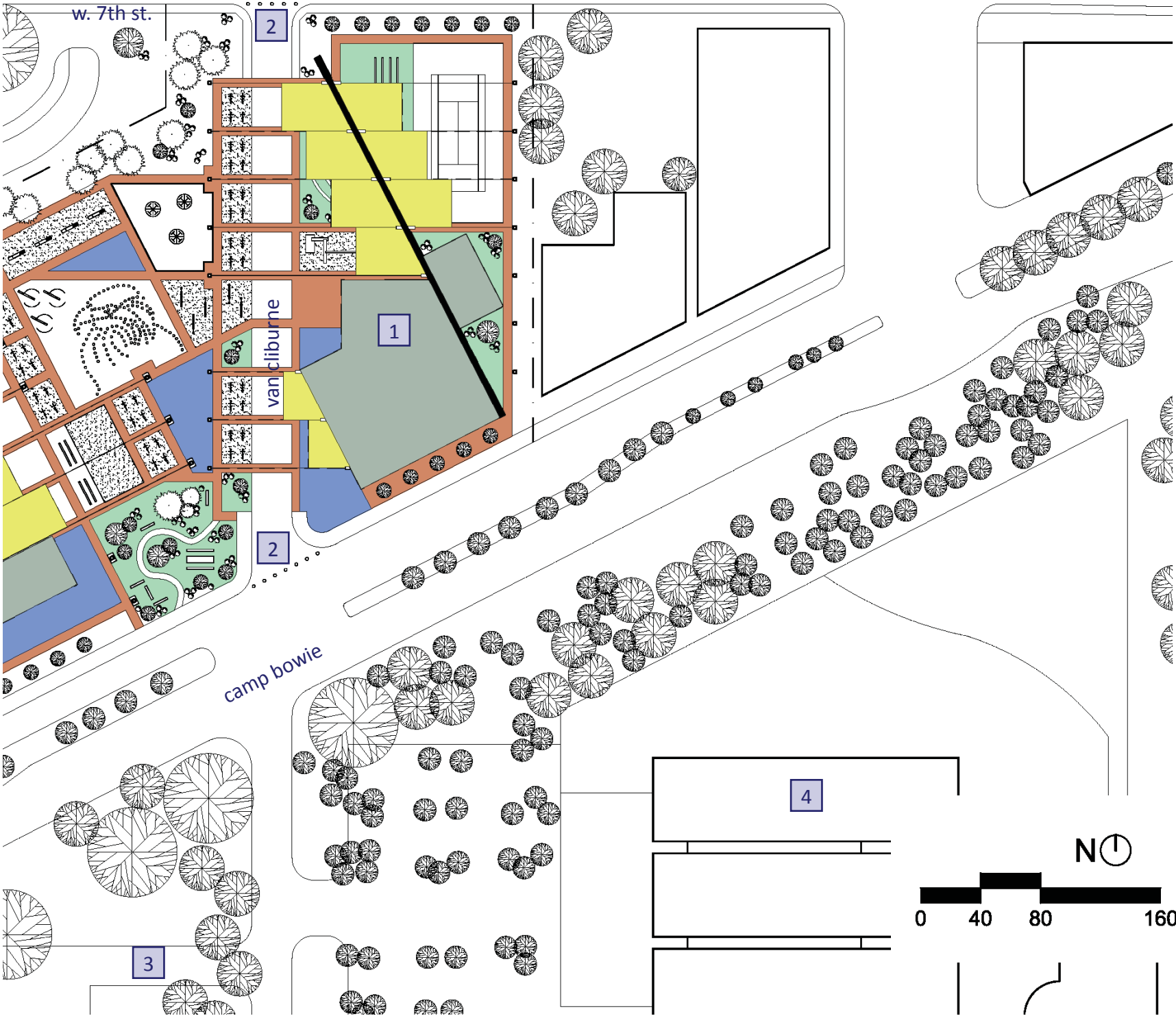
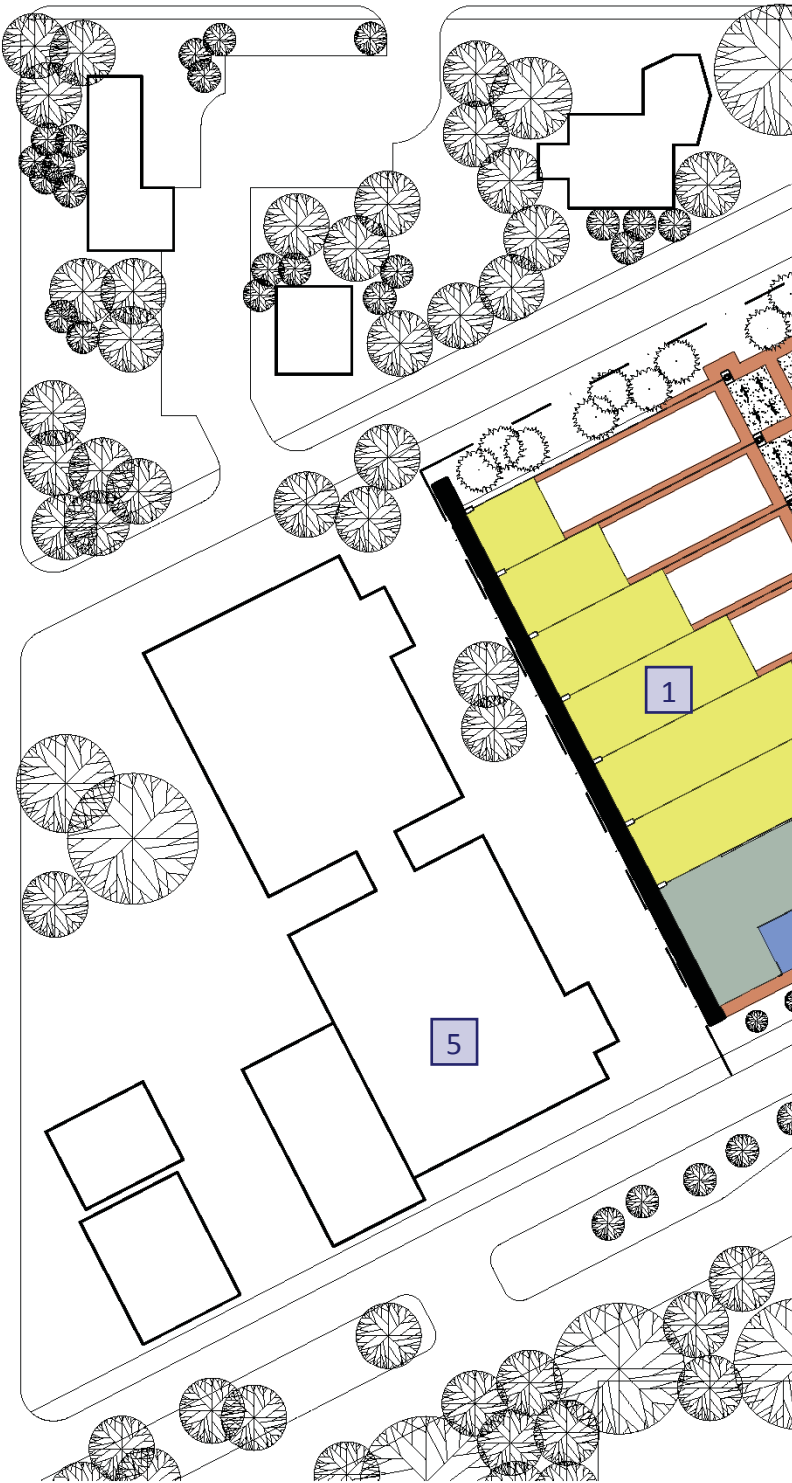
- Design Notes
- *Coordinates/Axes*
 - *Repetition of elements*
 - *Perimeter – the “Line”*
 - *Motion*
 - *Moveable Glass Partitions – Interior/Exterior*

- 1. site
- 2. kimbell art museum
- 3. modern art museum

site plan

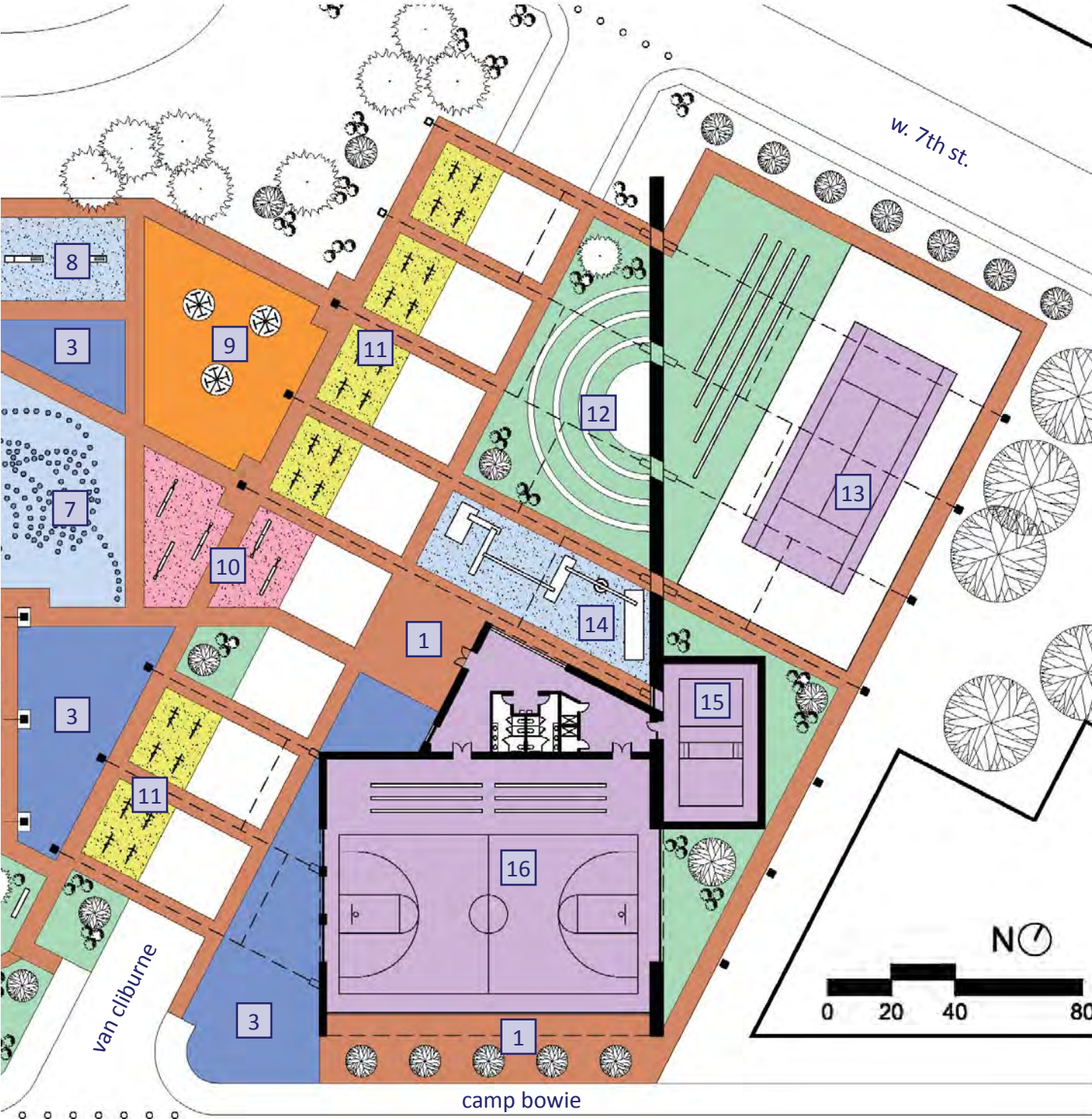
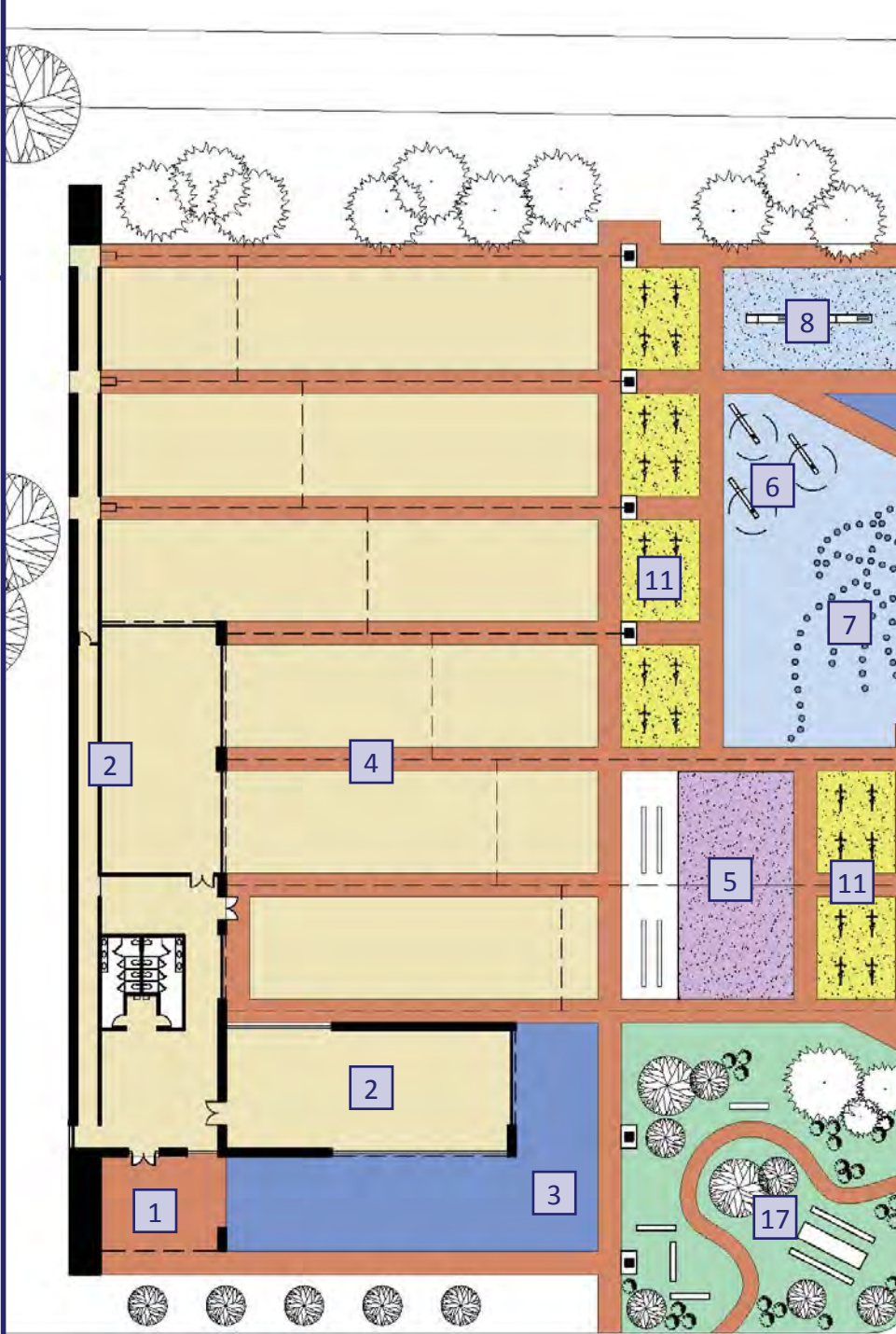
the project unites the east and west sides by closing off van cliburne to vehicular traffic with bollards. van cliburne becomes a processional gateway, flanked by columns, that serves as a pedestrian link between the museum district and the mixed-use and residential areas to the north. the pavers extend and become a tool for arranging elements on the site. the angle of rotation echoes the geometry of the converging streets.

- 1. site (note existing paving on van cliburne)
- 2. bollards
- 3. kimbell museum
- 4. modern art museum
- 5. condos



PROGRAM ELEMENTS

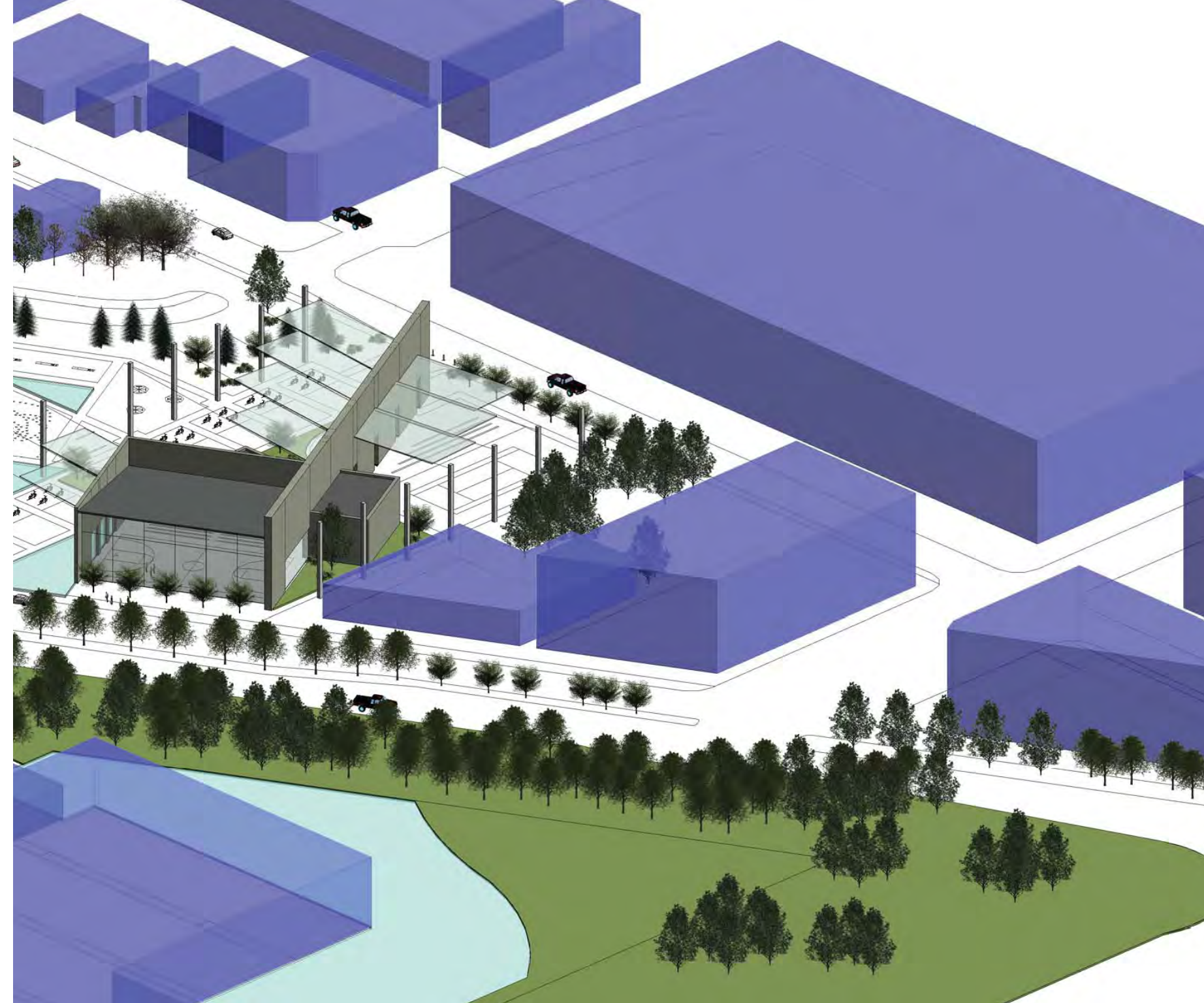
on the west side you can see the indoor and outdoor pavilions (numbers 2 and 4 respectively) and a rest area (number 17). on the east side is an indoor sports complex and an amphitheater. scattered throughout the site are other activity centers. the site is defined by thermal mass walls of precast concrete panels which help to provide shade, moderate the ambient temperature, and define the perimeter. the walls serve as spines of the two indoor facilities and can provide areas for hanging urban mini-gardens. the 8' thick west wall is habitable to allow additional access to the outdoor pavilion from the indoor pavilion. reflecting pools also help to moderate the ambient temperature. landscaping provides shade during the hot months and protection from the northwest winds during the winter. the project serves as a link to the past, honoring the history of fort worth by incorporating kinetic elements which are typically viewed as regular playground equipment but in this instance allow the users to alter various features throughout the site. at each kinetic station will be a plaque, qr code, or other element that can connect users with a particular part of fort worth's history, similar to the poems at freedman's and the granite slab at the jfk memorial.



LEGEND

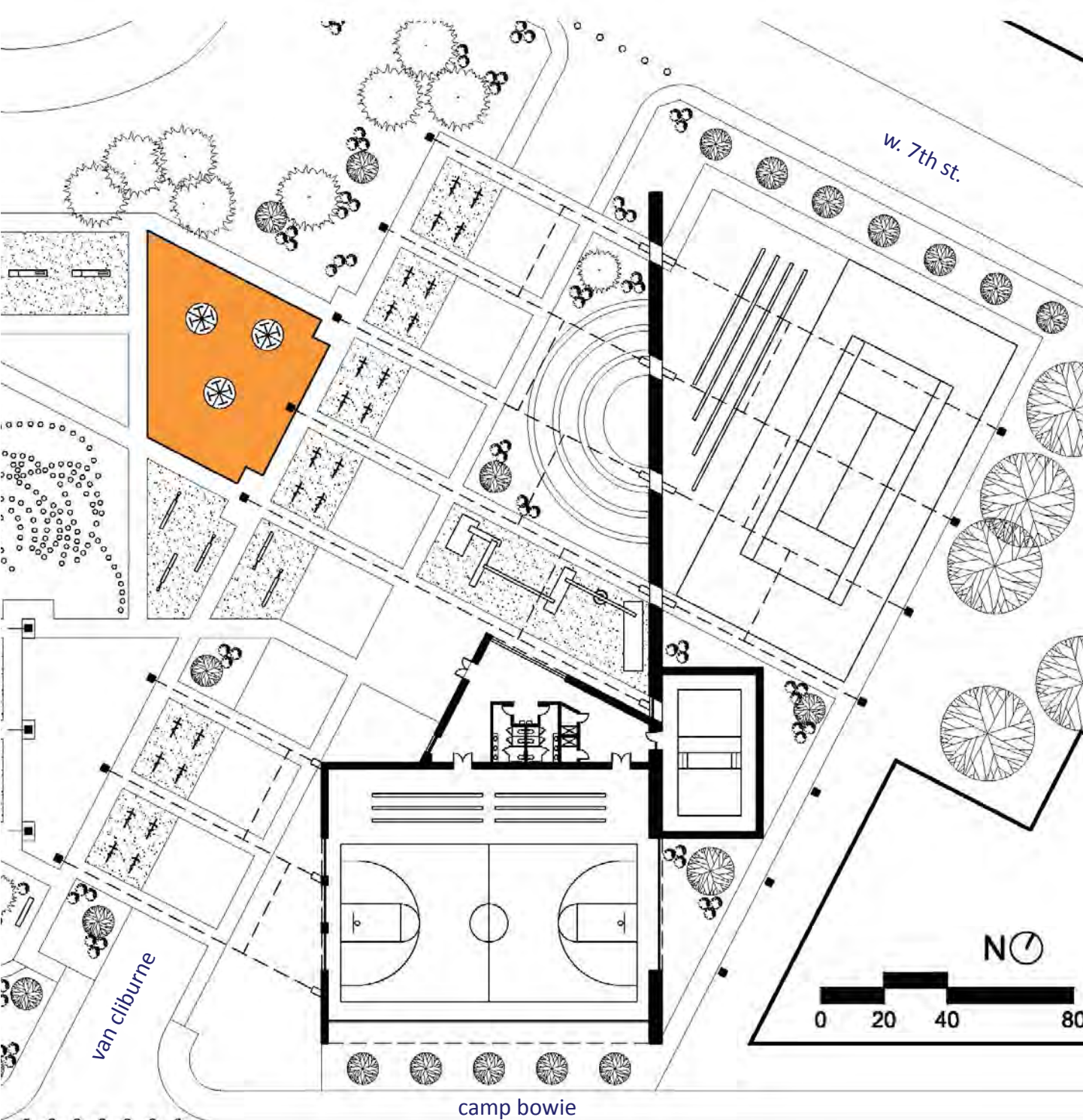
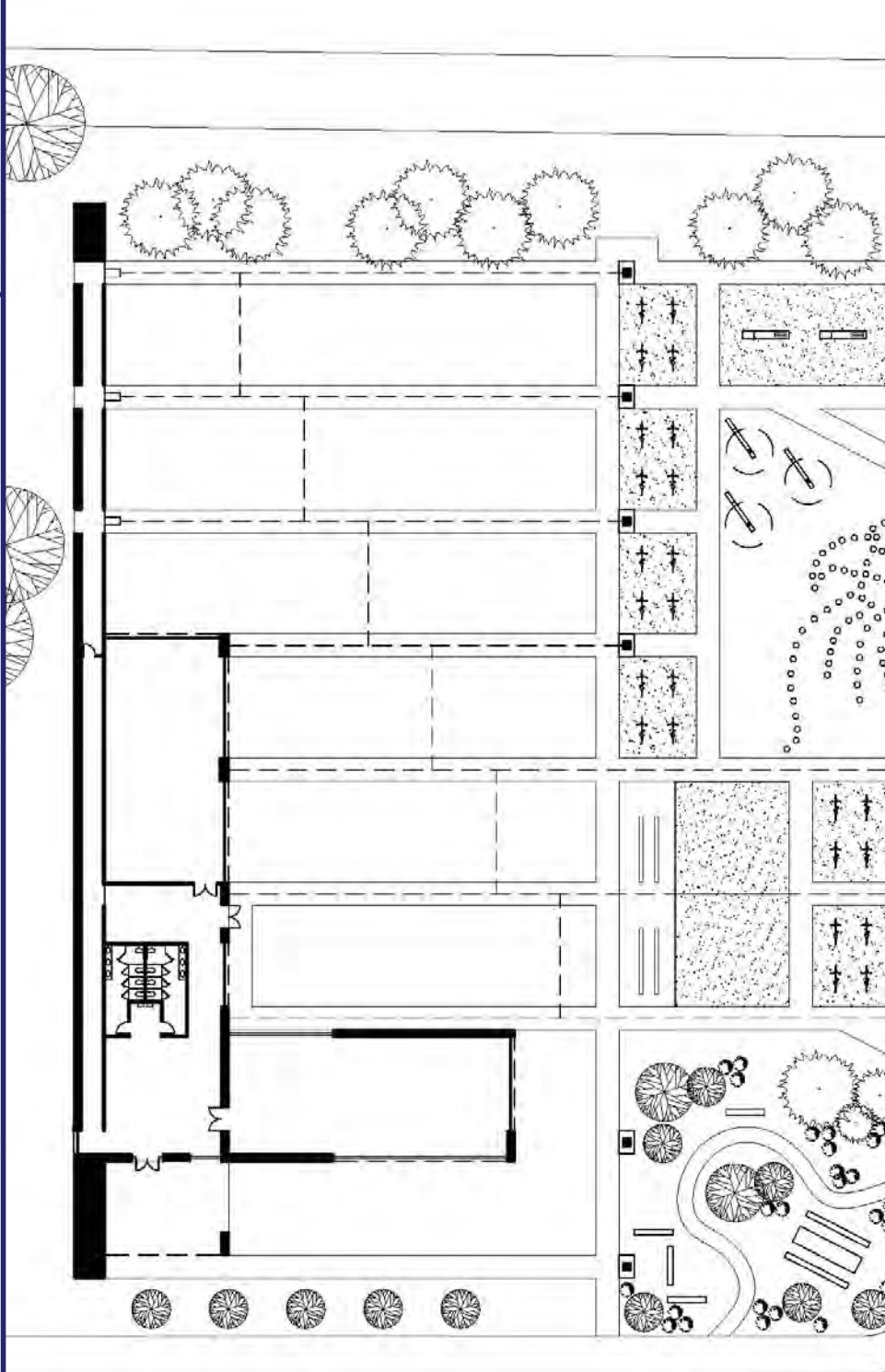
- 1. plaza
- 2. indoor pavilion (& habitable wall)
- 3. reflecting pool
- 4. outdoor pavilion
- 5. sand volleyball
- 6. tetherball
- 7. water fountains
- 8. swing sets
- 9. merry go rounds
- 10. seesaws
- 11. bicycles
- 12. amphitheater
- 13. tennis court
- 14. water games
- 15. racquet ball
- 16. basketball court
- 17. picnic & rest area

conceptually the project provides an oasis in a growing urban setting where museum visitors and residents can co-mingle. one major element is a system of shading devices which extend over large areas to provide shade from the hot texas sun. the vertical angle of the shading devices as they protrude from the spinal thermal mass walls over the built elements is reminiscent of the protective outstretched wings of the eagle. like other kinetic features in the project, the shading devices require mechanical activation by the end user through sports activities.



kinetic feature: MEERY GO ROUNDS

the first kinetic features we will look at are the merry go rounds, which relate to fort worth's sordid history with tornadoes. as people use the equipment electricity is generated for cooling fans that are located at the structural beams which span van cliburne.

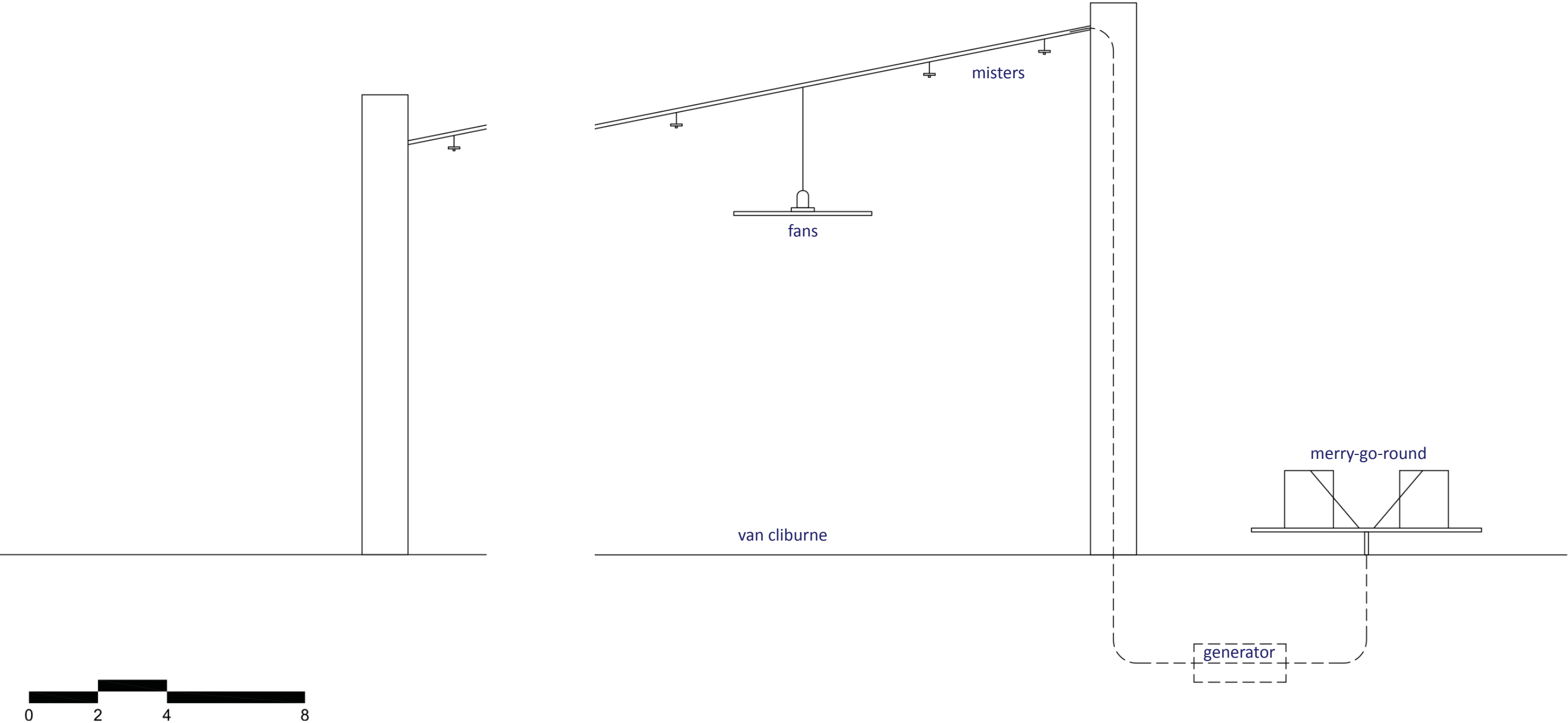


highlights

- historical precedent: fort worth's tornadoes
- kinetic function: generate electricity for cooling fans over van cliburne in hot weather

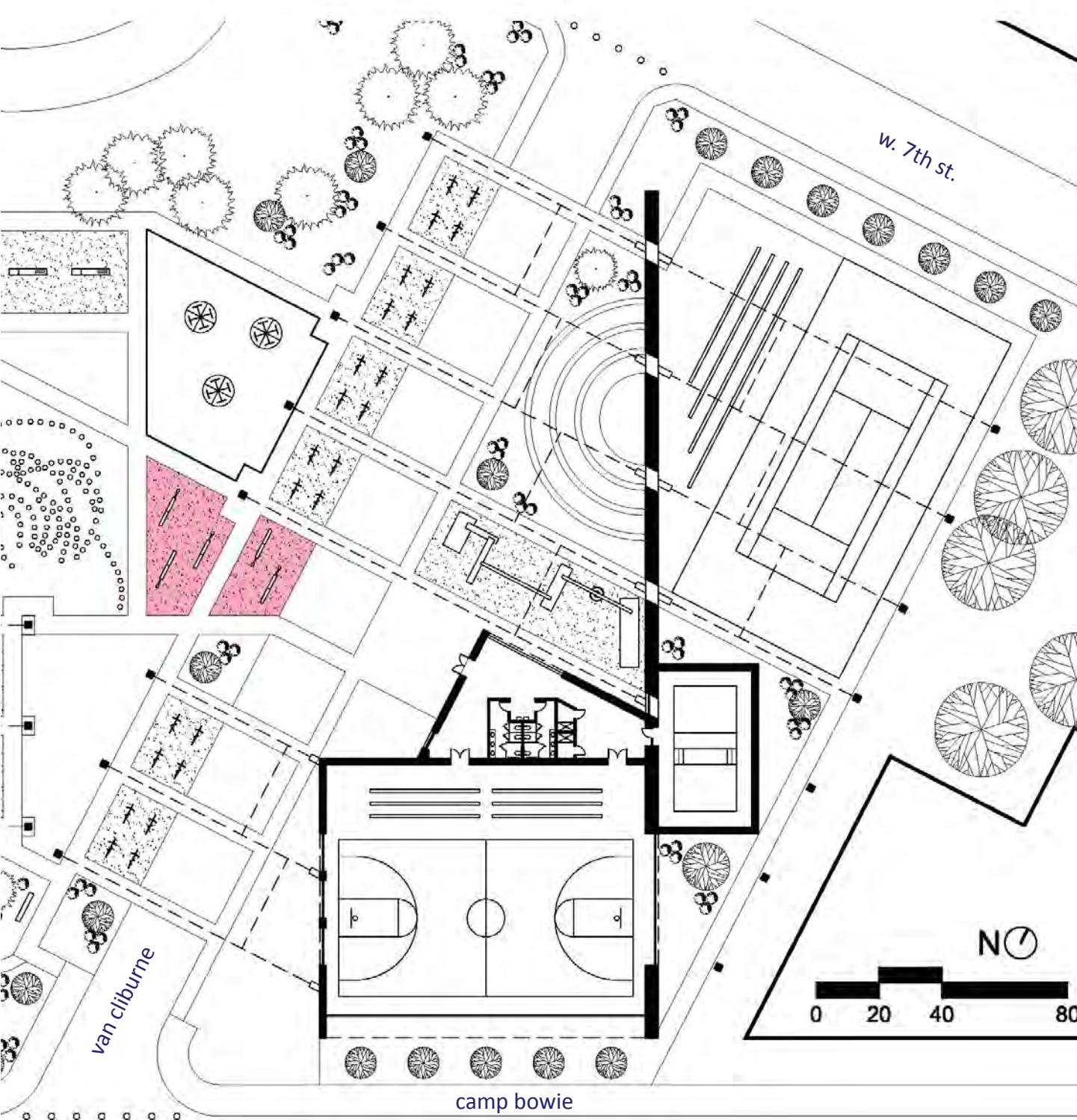
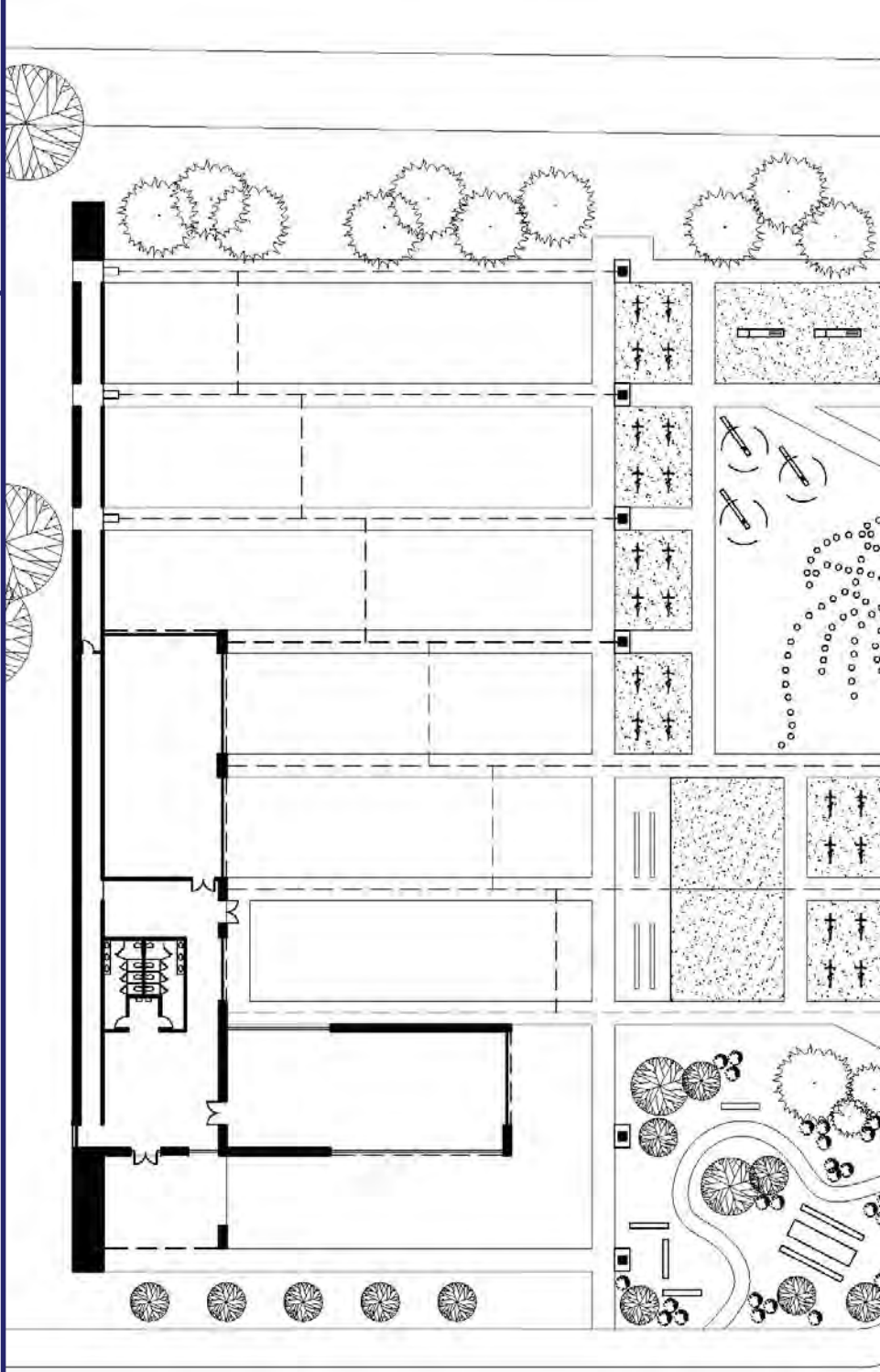
MERRY-GO-ROUND DIAGRAM

this is a diagram of how the merry go rounds function. the rotation of the equipment generates electricity which is stored and then used to power the fans.



kinetic feature: see saws

the vertical motion of the seesaws recalls fort worth's rich oil history. they are used to pump water through a system for the cooling water misters over van cliburne.



highlights

- historical precedent: fort worth's oil history
- kinetic function: pump water to cooling misters over van cliburne in hot weather

SEE SAW

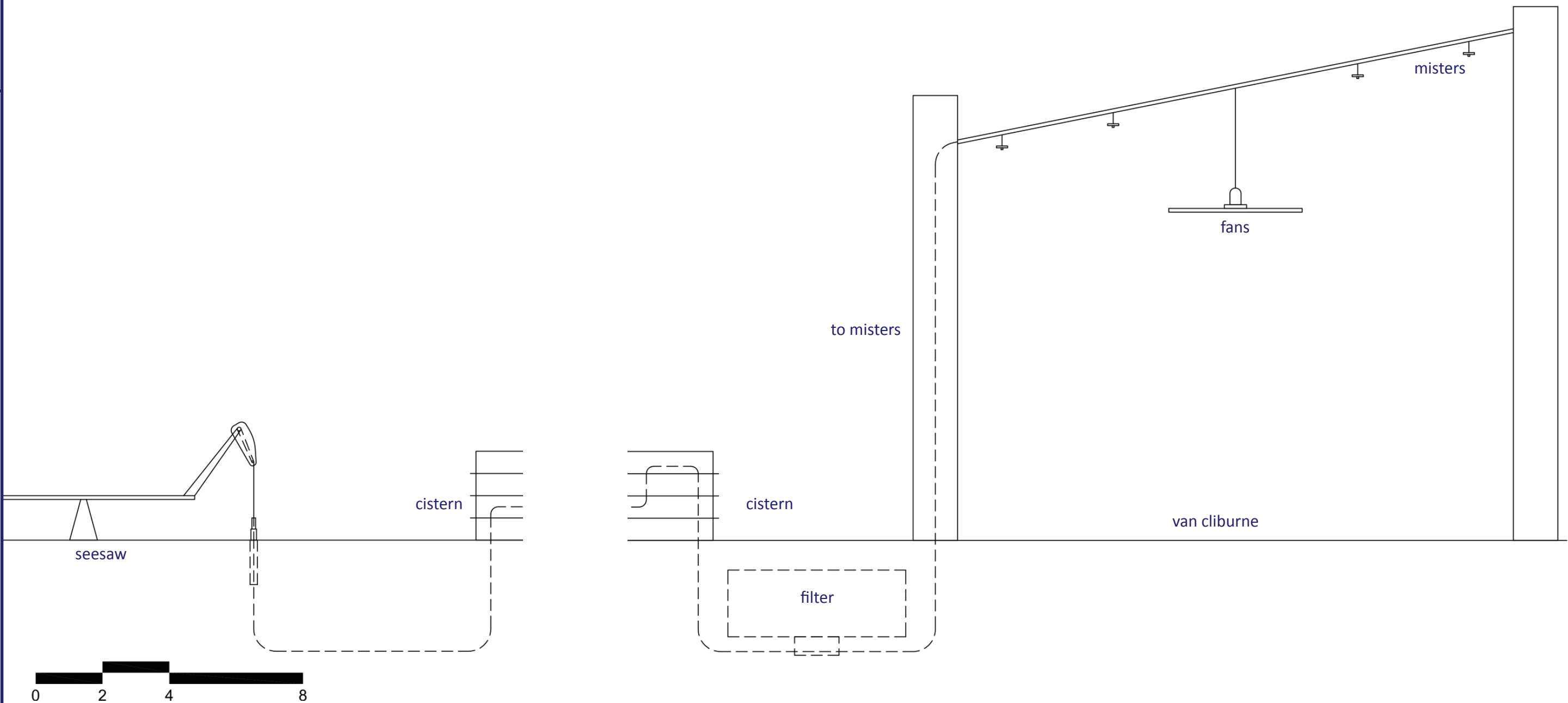
here we see an image of an oil pump, and an above-ground cistern.



image credit: http://preview.turbosquid.com/Preview/2012/01/13__11_12_21/Pumpjack%2002_sig_img2.jpgfd4bfbbe-7901-4f8e-b90f-8e01ee8b3ab4Large.jpg

SEE SAW DIAGRAM

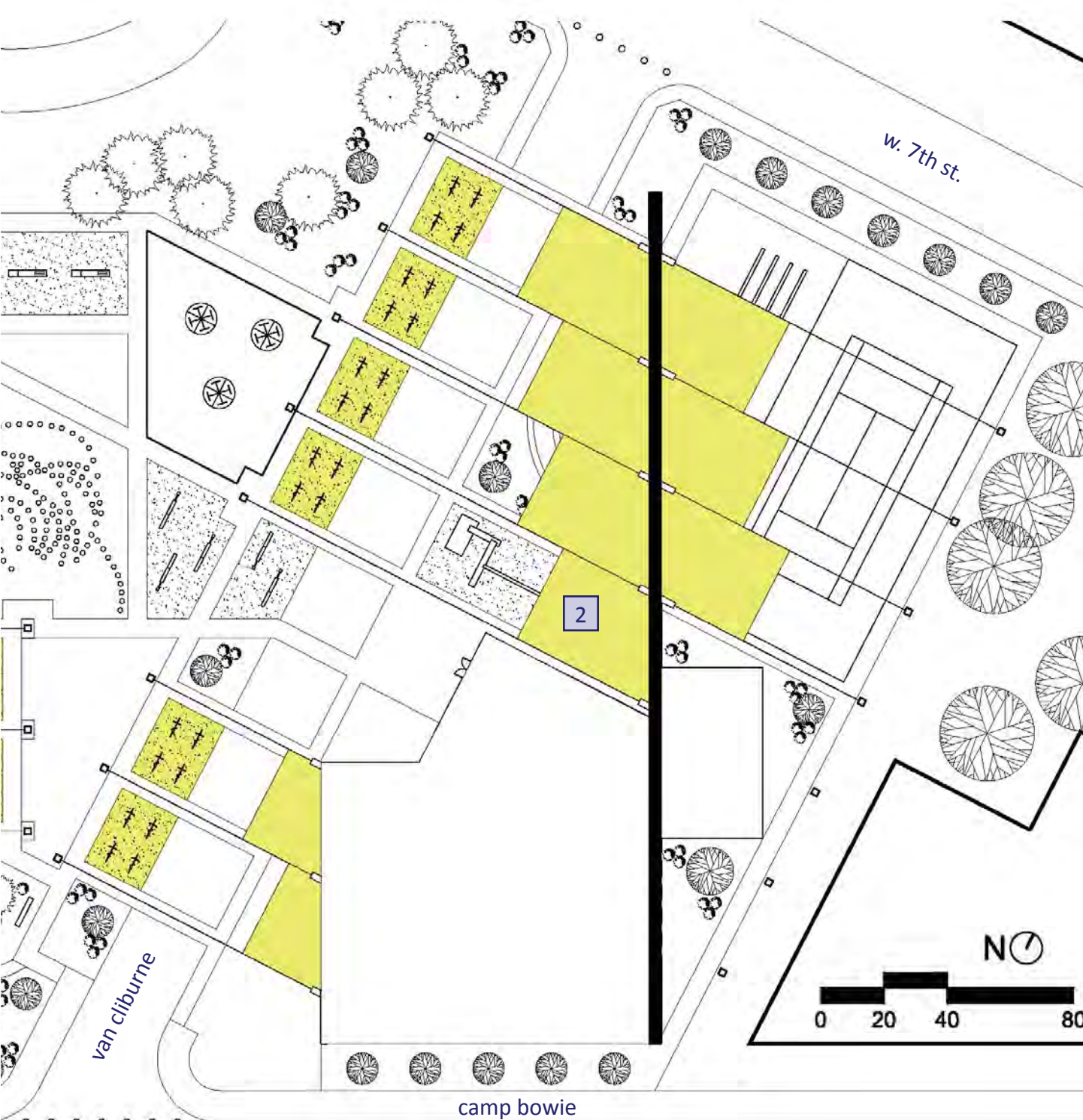
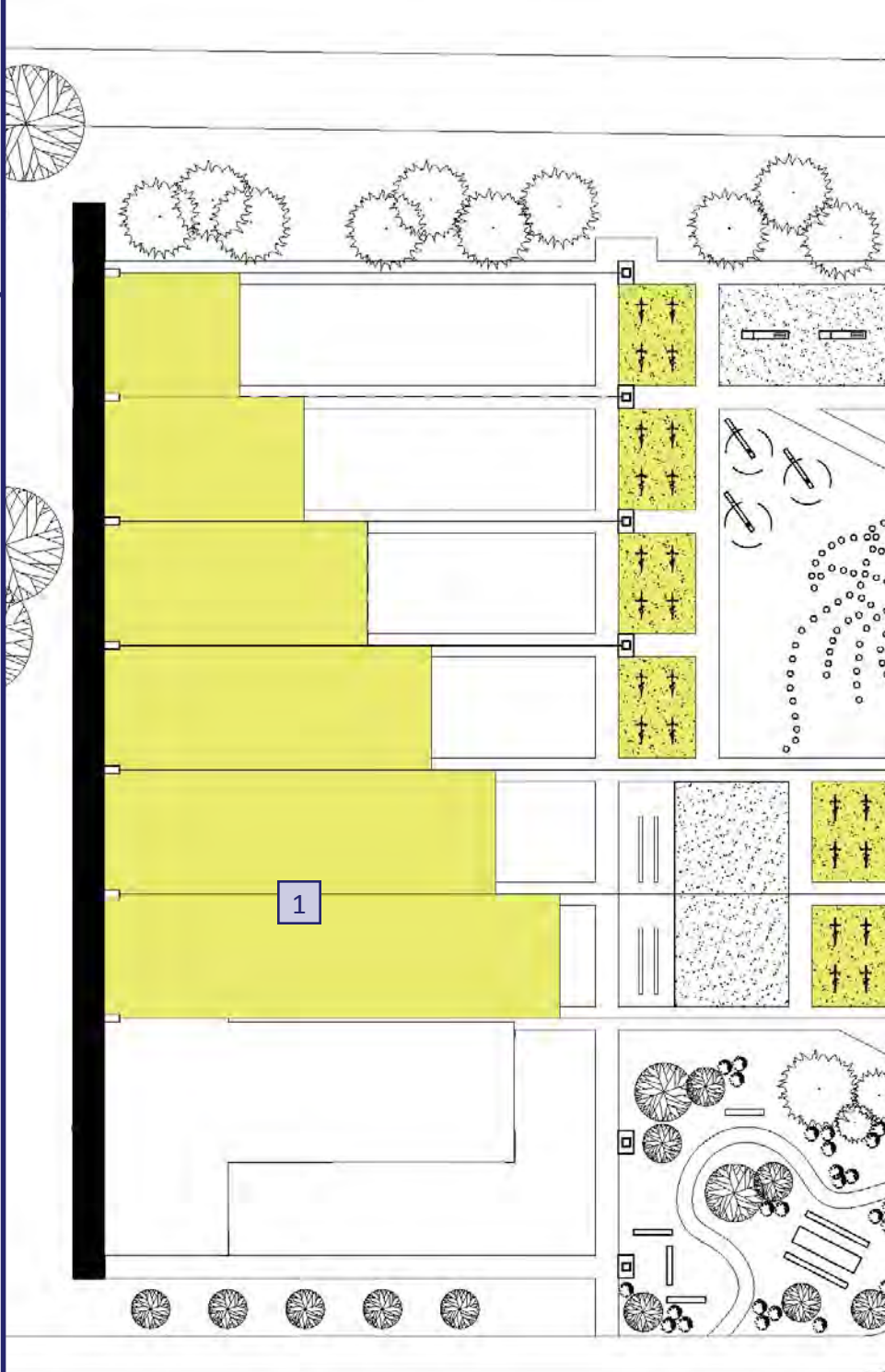
this diagram demonstrates how the vertical motion of the seesaw emulates the oil pump, forcing cistern water through the filtration system to prime the misters.



kinetic feature: shading devices

two shading device systems also serve as kinetic activity centers. each panel is composed of a lightweight material that provides protection from the sun and rain, and is operated by adjoining stationary bicycle stations. when the users pedal forward the shade is extended. by pedaling backwards the shade is retracted. this allows for individualized configurations that can be adapted to specific needs depending on the weather and the users. on the west side we see the shading system that covers the outdoor pavilion and volleyball courts. the east shades protect the amphitheater, tennis court, water games area, and provide shading along van cliburne. Shading is providing for each side of the site for the following locations:

1. outdoor pavilion
2. amphitheater & van cliburne

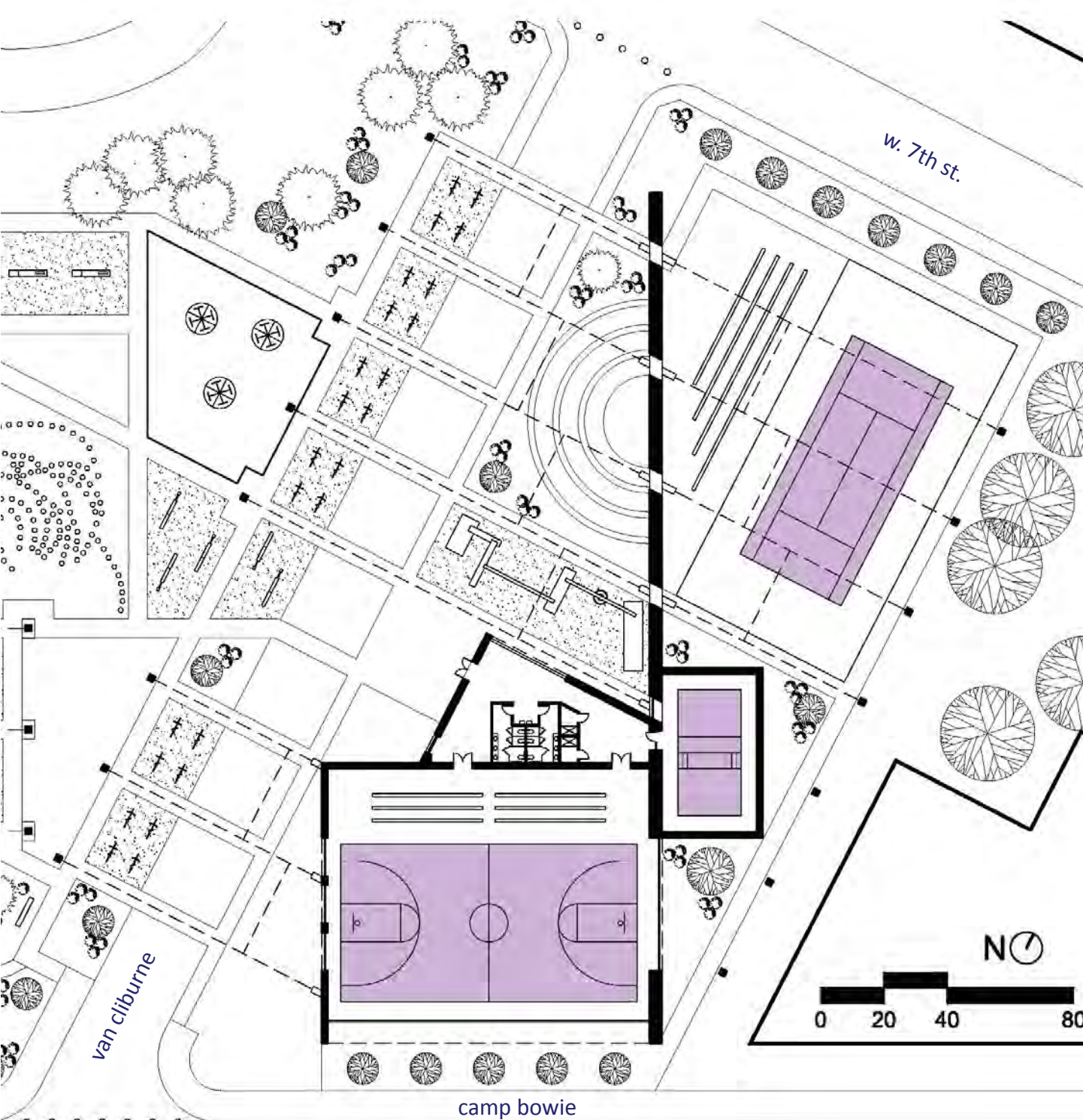
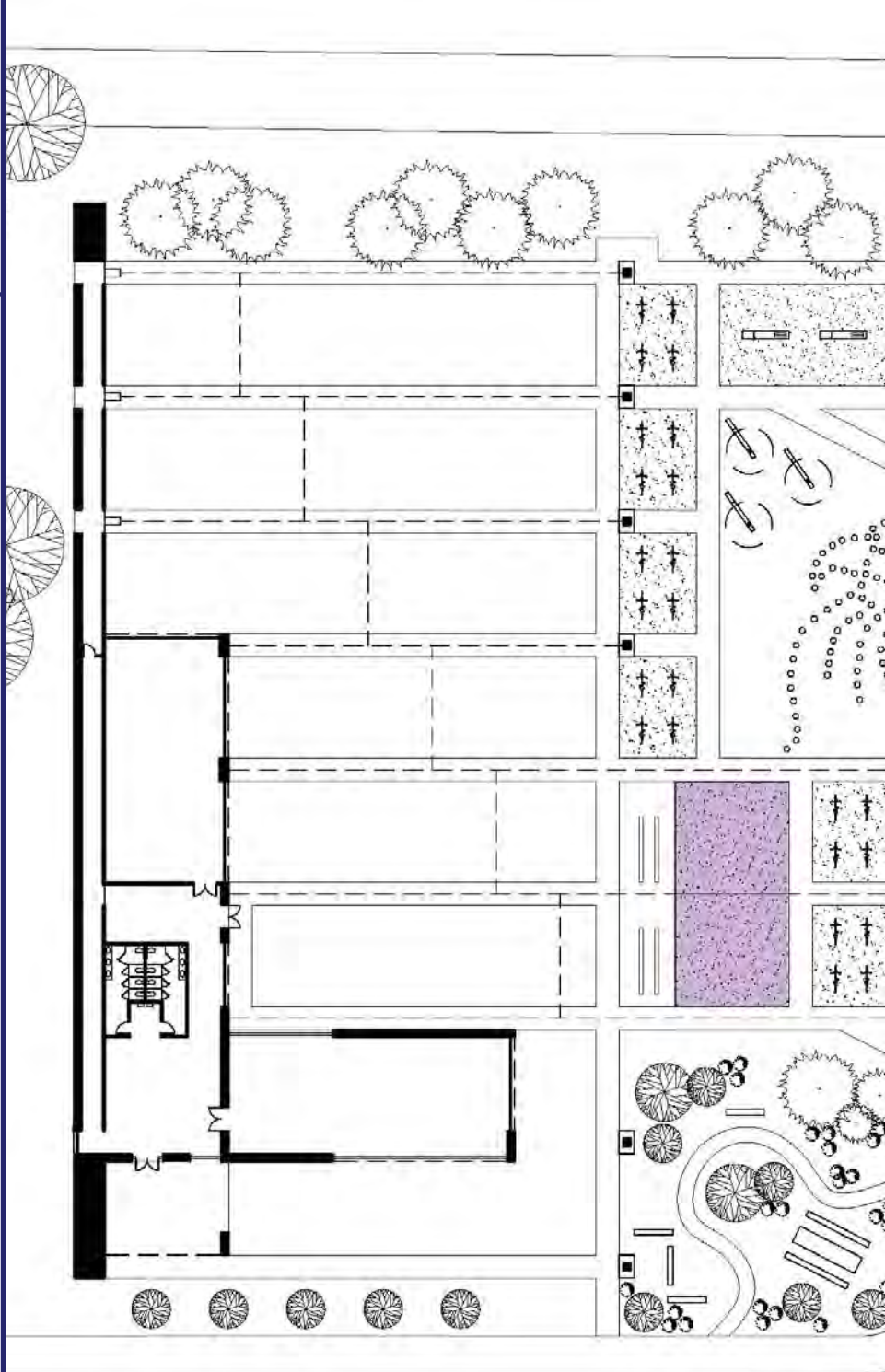


highlights

- historic precedent: the flags of 6 different entities flew over texas during its history
- kinetic function: bicycle stations activate shading devices. pedal forward to extend and pedal backwards to retract.

kinetic feature: l.e.d. sports courts

the interior and exterior sports courts tie in with fort worth's migratory history. as users traverse the volley ball, tennis racquetball and basketball courts, sensors under the floor record the impressions and use the data to alter the frequency and color arrangement of nightly led lighting.



highlights

- historical precedent: fort worth's history of migration – american indians, cattle drives (chisholm trail), train
- kinetic function: impact sensors detect motion and create a corresponding pattern for l.e.d. lighting at night

KINETIC FEATURE: L.E.D. WATER

the final kinetic features deal with the great flood of 1949, a major event in fort worth's history. here you can see how flooded the area was.

- swing set station and tetherballs impact frequency & height of water fountains during daytime
- includes other playground equipment such as interactive water station
- sensors at water fountains also impact spray heights
- reflecting pools serve as reminder of great flood of 1949

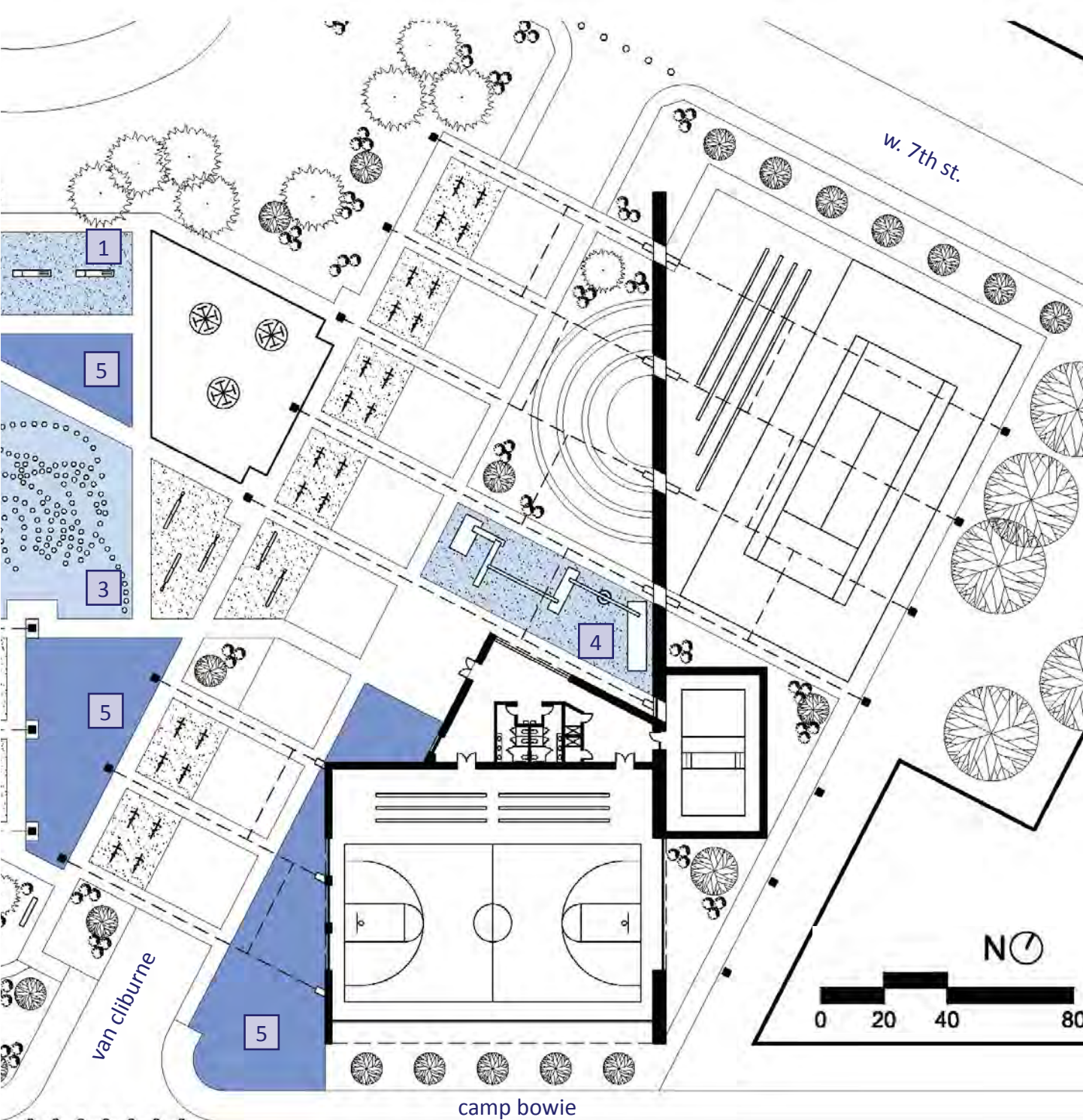
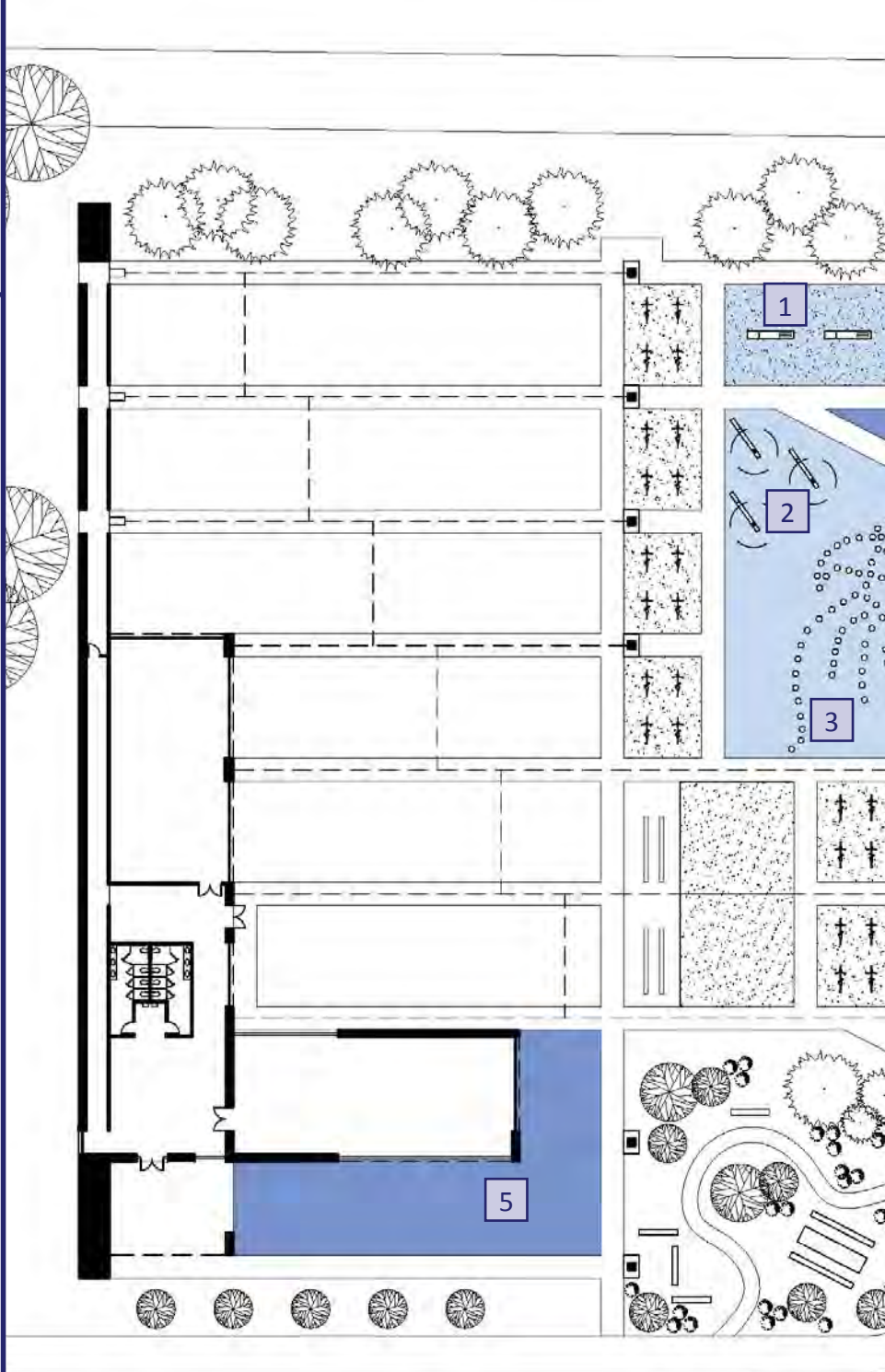


image credit: http://www.shorpy.com/files/images/7th-street-theatre-ft-worth-tex-flood-1949_1.jpg

the swing set stations (#1) are connected with the water fountains (#3). as people swing higher and faster they can see corresponding changes in the height and frequency of the water fountains. the tether ball stations (#2) also affect the velocity of the water fountains. there are also sensors under the pavement so that when people walk near certain spouts they can see the height of the water immediately rise and lower as they move away. in addition to the water fountains, an interactive water games area (#4) is included which allows children (and adults) to play with water, pumping it through the system and using it to move smaller elements.

the fifth water element is the reflective pools, which are pervasive throughout the site in a manner reminiscent of remnants of receding flood waters. to verify that ample shade would be provided by the thermal mass walls and shading devices, i studied the solar path at various times of year. i also used this information to locate the reflecting pools, checking to make sure they would be able to receive a sufficient amount of sunlight so they could provide mirror images of the surrounding context.

the plan of the fountain spouts was based upon the profile of the eagle, another nod to the narrative myth of the guardians and the messengers.



- LEGEND
1. Swing set Station
 2. Tetherballs
 3. Water Fountains
 4. Interactive Water Games
 5. Reflective Pools

this 21-acre park was created when atlanta hosted the 1996 olympic games. 'it serves as georgia's lasting legacy of the centennial olympic games and anchors efforts to revitalize residential and commercial development in georgia's capital city of atlanta'. - <http://www.centennialpark.com/index.php/about-the-park/park-history>



image credit: <http://static.travelmuse.com/docs/artwork/atlanta/atlanta-overview-centennial-park-fountain-full.jpg>

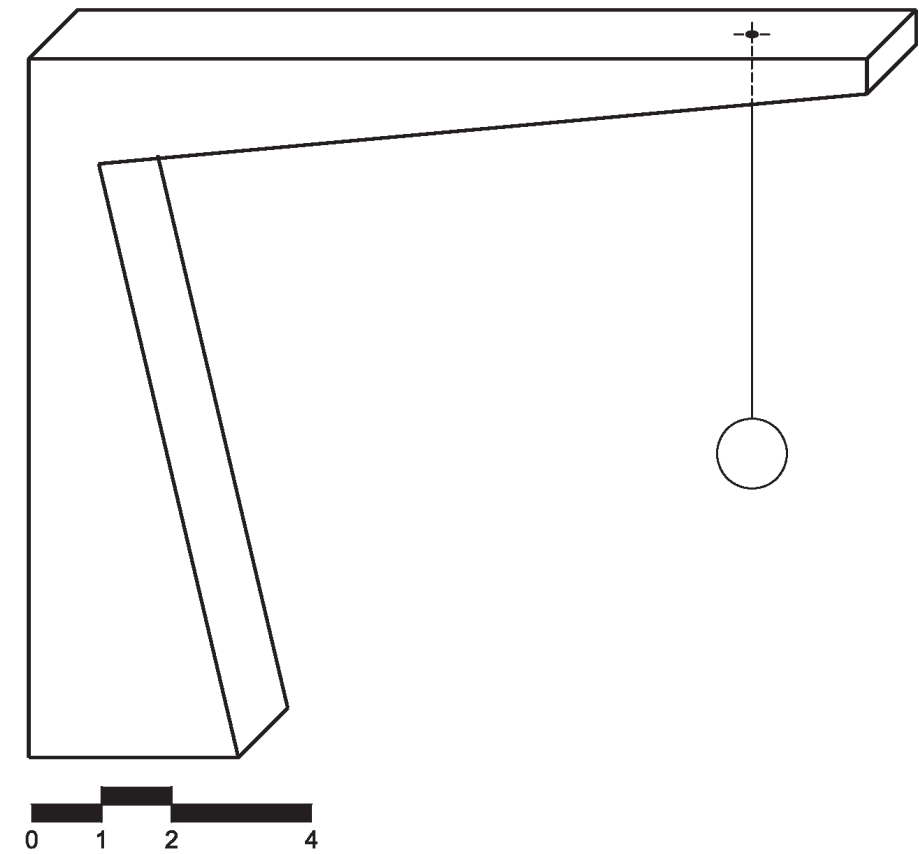
centennial olympic park in atlanta, georgia, demonstrates how the interactive water feature can provide a place where people can gather to cool off in the hot climate.

this is another image of the centennial olympic park showing how the lighting of the fountains could vary. when not overridden for a specific function, the impact sensors at the fountains can also create led patterns at night.

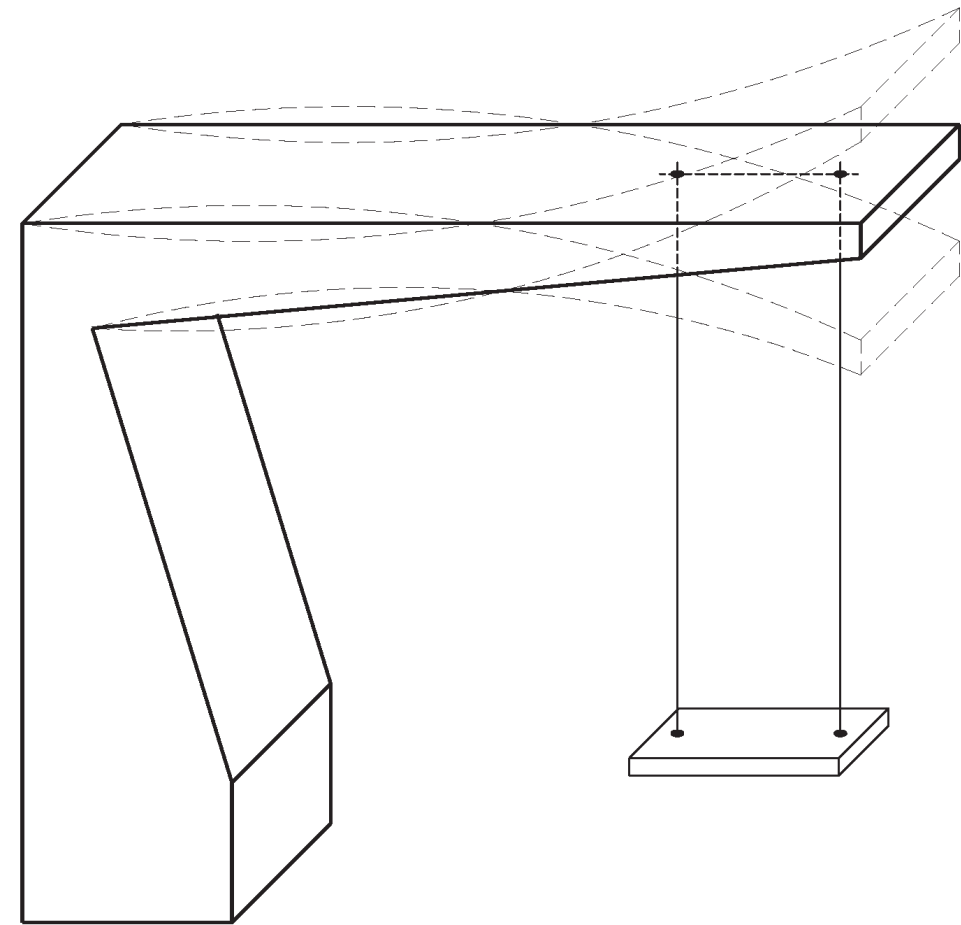


image credit: http://farm6.staticflickr.com/5058/5465098412_61d6112624_o.jpg

this is an idea for the swings and tetherball stations, based upon the function of the oil pump. future development of the swings includes motion in 3 dimensions.



tetherball station



swingset

this is an interactive water element at the nearby fort worth museum of science and history. this concept can be incorporated as a fun feature to the urban park project.

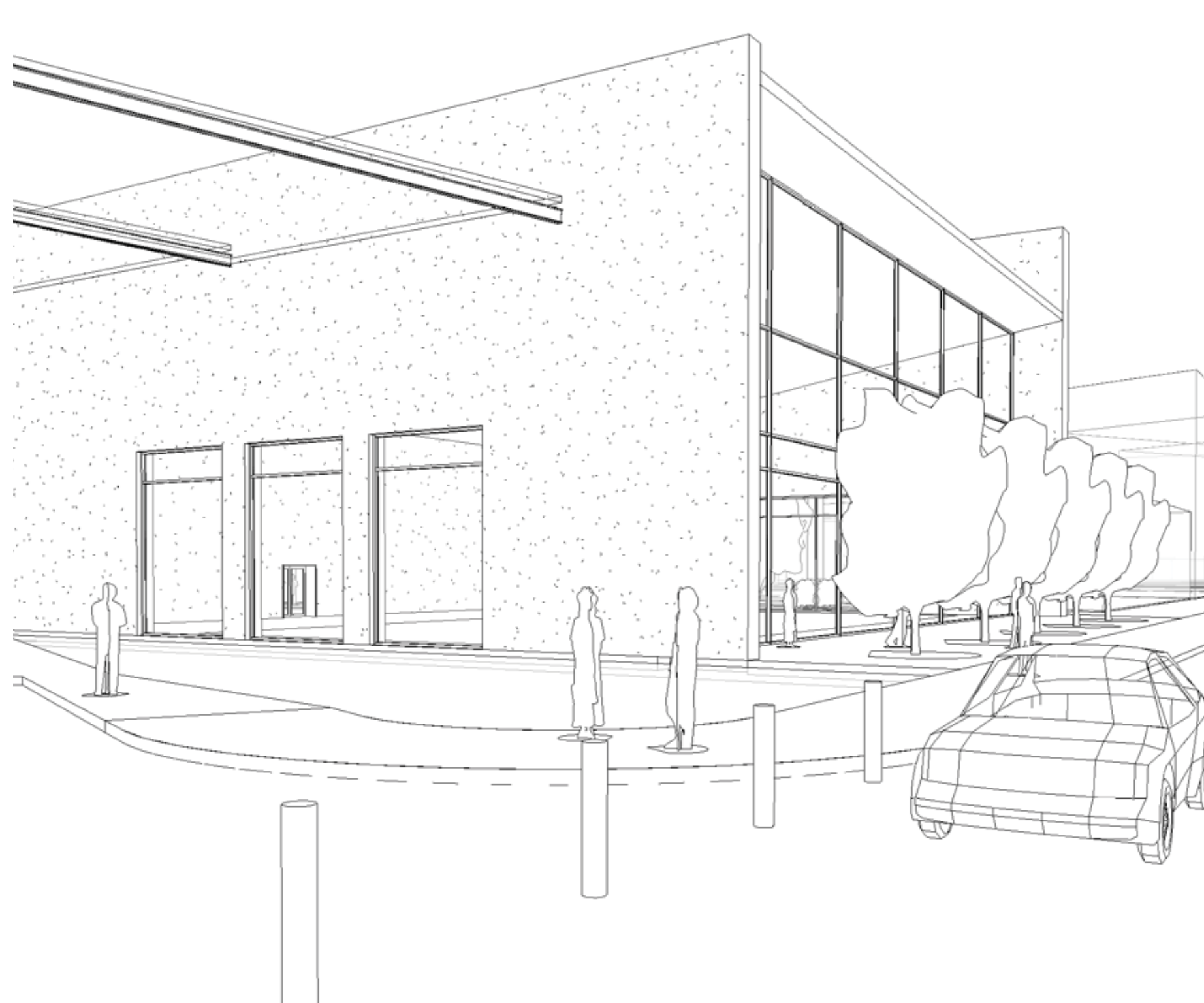
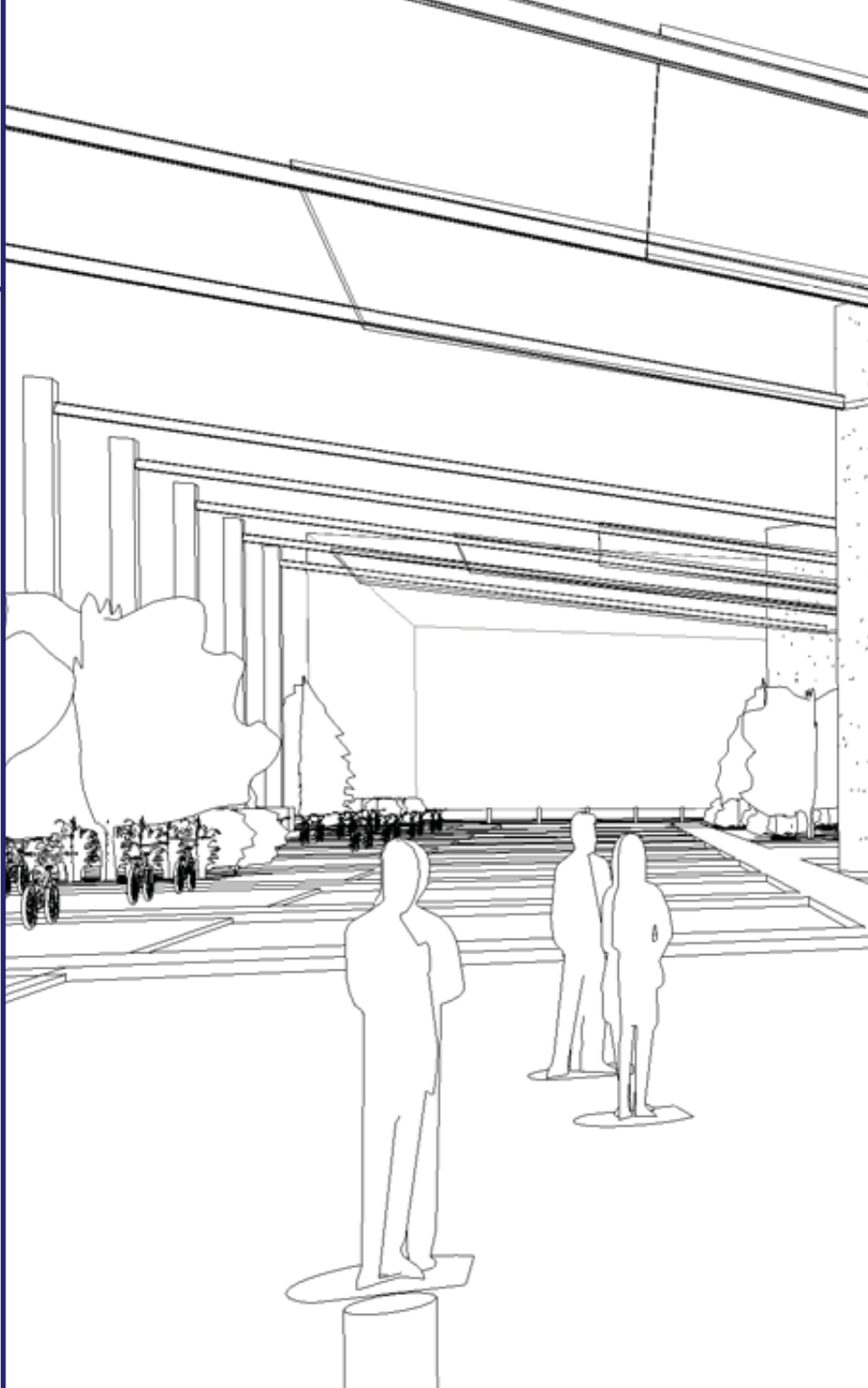


this is a view of the reflecting pool at the nearby modern art museum.



image credit: <http://cnunez301.files.wordpress.com/2012/10/1330621426-fw191.jpg>

this vignette shows a view looking at the indoor sports complex from the southwest. the shading devices span from the structure to the columnar supports across van cliburne. the roof over the indoor basketball court slopes and, as is the case with many other indoor spaces, the glass partitions can open up, providing interior and exterior connections. the sloping roof here also is reminiscent of the outstretched wings of the eagle, drawing passersby into the site.



this perspective looks across the reflecting pool from the landscaped rest area to the indoor pavilion. the kinetic urban park project serves as a neighborhood destination and seeks to provide a place for rest, social gathering, and entertainment while addressing issues such as obesity and mitigating the distancing effect urban environments can have on their residents.

sustainable features can allow the kinetic architecture to respond to and reflect external stimuli such as pollution and ozone levels, high solar heat gain, and changes in the weather.

kinetic architecture can also serve as a forum for the community. elements can be arranged to reflect special events, to make announcements, or to serve as reminders of the past. as communities interact with the built environment, they develop a closer connection to it.

the buildings are not just hollow structures but living, breathing elements that share our spaces with us. a symbiotic relationship is created. we care for the kinetic structures and use them in our daily lives. in turn they provide shelter and protection for us, serving as a link to our past and a gateway to our future that people of all walks of life, income levels, and cultures can enjoy.



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