

A Space to Complement an Accelerating Species:
A Space of Slower Time, Optimism, and Contemplation

by
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ABSTRACT:

We stand at the edge of a period of great evolution within human civilization. Renowned inventor, Ray Kurzweil, in his book, *The Singularity is Near*, predicts that in the next 100 years, we will make 20,000 years of technological progress at year 2000 rates. In other words, that will be the equivalent of 1000 20th centuries in 100 years. This is due to the explosive nature of exponential growth. He also pinpoints an instant when the so-called technological singularity is reached. After this point, technological progress occurs at an essentially vertical rate. He places this around the year 2040.

The changes that are to come are positive, inevitable, and completely natural. We should embrace technological progress while not forgetting the basic psychological and spiritual needs of human beings.

While all of this progress is to our benefit, constant stimulation can lead to blindness to the universe around us. This blindness does not refer to knowledge. True, we know exponentially more each year, but we also grow increasingly scornful of learning that does not revolve around facts, of pure spiritual wonder at the universe. We scorn downtime and silence as useless and wasteful. We need to regain a positive sense of the word silence (as opposed to definition of emptiness). We need spaces where we are able to stop and simply let our minds idly consider the universe around us. We need spaces that exist outside of contemporary high-paced urban life. We need to feel part of the environment of the universe, in synch with infinite and ever-modulating universe rhythms. We need spaces of slower time, optimism, and contemplation.

We can create these types of spaces through a deep understanding of Earth Rhythms, the infinitely changing variables that interact to create our constantly modulating experience of Planet Earth. The architect can be thought of an Earth Composer, someone who decides which environmental phenomena to accentuate. Architecture can be a responsive performance that interacts with the natural world, carrying on a two-way conversation with its environment. The building can be thought of as an infinitely varying performance, a performance that exists as a direct performance to an audience, an internal dialogue with itself, and an interactive performance with human beings. Finally, architecture can be thought of as a holistic system with both technological and biological elements, in which the two are indistinguishable from one another.

Thesis Advisor: Jan Wampler
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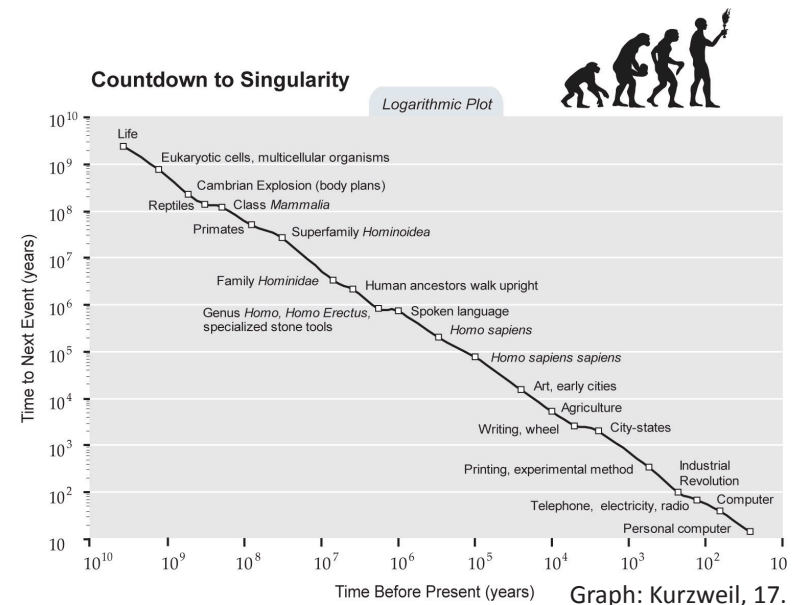
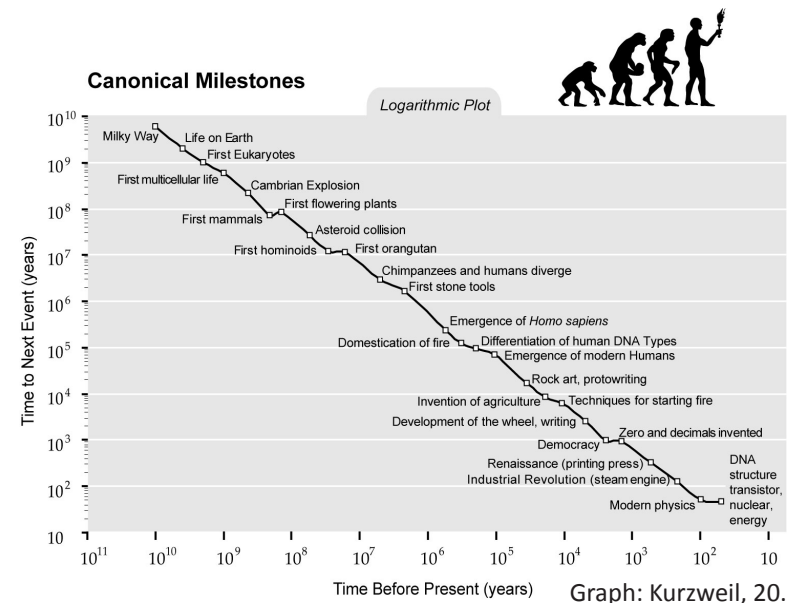
Introduction: The Accelerating Species

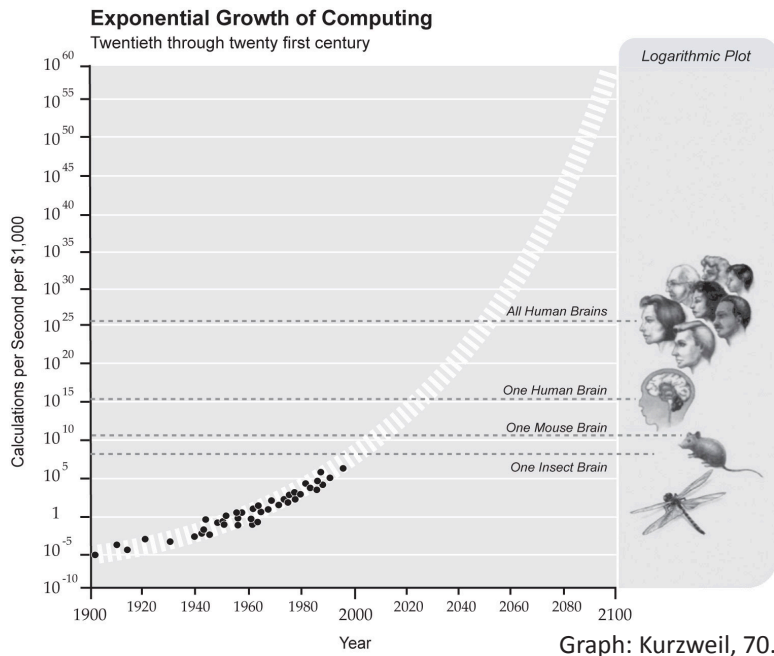
We are at the edge of a period of great evolution within human civilization. Renowned inventor¹, Ray Kurzweil, in his book, *The Singularity is Near*, predicts that in the next 100 years, we will make 20,000 years of technological progress at year 2000 rates.² In other words, that will be the equivalent of 1000 20th centuries in 100 years. This is due to the explosive nature of exponential growth. He also pinpoints an instant when the so-called technological singularity is reached. After this point, technological progress occurs at an essentially vertical rate. He places this around the year 2040. Although many futurists have been wrong in their predictions, Kurzweil's book is based on a structured analysis of existing data regarding the rate of increase in computing power over the past 100 years as well as the points in history in which major scientific and evolutionary developments occurred (back to beginning of life on earth). This survey of sources from across the board then allows for Kurzweil to predict years in which certain scientific breakthroughs will occur. Finally, one of Kurzweil's main points in this book is that humans will "transcend biology," and overcome the limitations of biological systems including biological death and slow evolution. In Kurzweil's eyes, this is the next major step for evolution. Biological evolution has done what it can, and now a new form of faster evolution is to emerge.

Whatever the outcome of the next 20, 50, 100 years, many people will be unprepared for the changes that will come to society. The possibility of prolonging life indefinitely may turn people's lives upside down. Generally, people in the world today base their lives on the hard fact that someday they will die. People who are baby-boomers or younger, however, may possibly one day have to face the fact that the short, but sweet, life they had based their entire spiritual foundation on has been redefined, and that life will start to need new or additional meaning. Religion and spirituality have always celebrated the beautiful brevity of life. These belief systems may have to adapt in the coming years. Already, we see certain factions, albeit small, in which radical fundamentalism sees the future as an attack on certain qualities in life that they deem basic to a proper human life. Every single person on earth has qualities that they hold dear to themselves, be it their hometowns or a certain way of life.

1 Inventor of the CCD flatbed scanner, first print-to-speech reading machine, the first text-speech-synthesizer, first commercially viable speech recognition program. Source: <http://www.kurzweiltech.com/aboutray.html>.

2 Kurzweil, 11.





1000 20th Centuries in 100 years...

Maintaining Human Needs While Embracing Change

As we enter this new world, it is vital that we remember those things that we hold dear to ourselves. Embracing the future does not mean that we must throw out the past. Moving into a rapidly changing world, we must be open to change and willing to accept new ideas, but also to meld these new concepts with the ancient needs of human beings, including a need to feel part of the natural, physical world. By reawakening a closeness to the rhythms of the universe within the context of a technologically advanced civilization, we may even find ourselves defining a new spiritual side to society.

This being said, it is absurd for anyone to suggest that he or she knows the exact future of religion or philosophy, especially since philosophy depends on collective understanding between many people. What can be said, however, is that we are entering a period of radical change, and it may be harder for people to cope with the changes as we reach the point of a technological singularity.

Right now in western society there is a great need and hunger for optimism. Nearly all of the news we hear is about wars, terrorists, global warming, diseases, rapes, and murders. This can lead to an overly paranoid, agitated public and a general feeling of impending doom. It is difficult to maintain a positive outlook in these times, but it is also necessary for survival, especially for the survival of free thought and democratic society.

One of the largest themes that we find if looking at the future of society is that life, in terms of our day-to-day activities, has the potential to speed up considerably (in addition to rapid changes and advancements, we may also find ourselves busier and busier). We will be able to do more, learn more, work more, and do these things in almost any place we want. We will have more opportunities to do just about anything we want. These new abilities have great potential to radically improve our well-being, but there are downsides to any change that we must be conscious of. We can take modern society as an example of this. In a way, we already live in the future, as we can work anywhere, see anything on earth, and consume as much as we want (at least when we don't consider the environmental consequences). We find significant portions of society that are completely caught up



Paranoia in a confused world.

Image by Steve Rhodes. <http://www.flickr.com/photos/ari/2347593532/>



Light pollution and haze trapping the Human Being Within the Accelerating Culture. There is no obvious path of escape, nor is there reason to believe in another reality.

Image by Thomas Hawk: <http://www.flickr.com/photos/thom-ashawk/100050220/>

Times Square, NY, a capital of surface time. We need both surface time and contemplation time.

Image from <http://www.flickr.com/photos/3336/96905377/>



in the act of working for monetary gain and are either unable or fear stopping and doing nothing. We have no way to comprehend the level to which technology and information will literally saturate the air around us in the not-too-distant future. If one is unable to separate him or herself from day-to-day worries, however, it is difficult to begin to reflect on life and develop philosophical ideas. We are going to need to have spaces where people are able to clear their minds and think about things beyond this week's deadlines. This may mean creating spaces of "meditation," or it may mean encouraging people to live in a more laid-back manner. The future can be a very optimistic place, especially if we learn to combine our philosophical beliefs with our quest for knowledge.

In the words of the modern philosopher John O'Donohue, "stress is a perverted relation to time."³ He sees stress as a result of seeing time as a physical commodity, something to be saved and used wisely. When we think of time in this way, it makes time the enemy, something to work against. Downtime equals wastetime. O'Donohue believes that there are multiple forms of time. There is "surface time," which he describes as rapid time that is overstructured. There is also meditation or contemplation time, where one can "slip down beneath the waves, where it is still."

As mentioned above, these factors suggest that modern society is in need of new type of space, a space where time is slower and people are able to say, "ah." This is a space that is conducive to meditation and contemplation of the world around us. This is also a place of optimism, a place in which one's spirit rises.

Many spaces of this character exist in today's world. Perhaps the most obvious are churches and gardens. Churches exist to fill this very spot in people's lives. They exist to help give meaning to life and to bring people together. They also exist to improve culture. Churches as spaces rarely physically connect with the outside world, however. The way that they work is by creating an inner sanctuary that frees people from the cacophony outside (especially in the city). They can immediately cause a person to say, "ah." On the other side, however, is the constant awareness of a barrier around oneself, an awareness of the world outside and the tension between the outside and the inside. In conventional churches, there is little visual connection to the universe (although one's thoughts may take them there and this can be perfectly adequate).

³ John O'Donohue on "The Inner Landscape of Beauty," Speaking of Faith, NPR 2/28/2008, interview with Krista Tippett

“Stress is a perverted relation to time”--John O’Donohue

Gardens work by creating another world of nature within a foreign context. These are places where we can let our imaginations run free, and let our senses idly absorb our surroundings. Especially relevant here are the gardens in Kyoto, Japan, designed as miniature versions of the world. These are some of the few places that exist in modern society for the purpose of reflection.

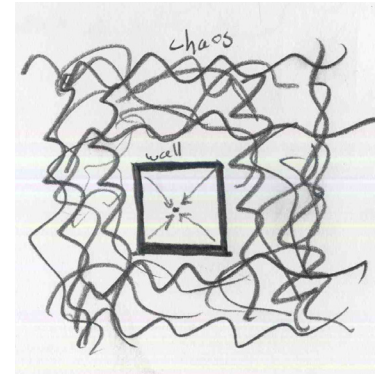
Indoor meditation areas are similar in nature to the above spaces, except that a meditation area is designed to completely isolate one from their surroundings.

The types of space described above are dependent on separation and the imagination of the individual. They are primarily *introspective* spaces. All of these types of spaces have similar environmental qualities. First of all, they offer relief from the violently changing sonic environment of the modern urban space (a space that may go from relative silence to complete chaos in rapid succession many times a day). They also create barriers to the city in order to create the psychological shift to another world.

Perhaps related to the conventional garden, church, and meditation area is the modern interpretation of this space: the Ipod. The Ipod isolates the user from the outside world and creates another world within the user’s mind that however small, seems infinitely deep. Even though the music comes from headphones, we feel completely enveloped in another world. Similar to the above spaces, the Ipod is an introverted space, a space designed to shelter from an unfriendly world as opposed to make the user feel part of the world. The opposite type of space also exists.

The Extrospective Space

Extrospective spaces involve direct connection with the world around oneself. These spaces are less conventional (particularly to western culture). These spaces include rural areas and other outdoor spaces where the influence of humans is diminished. One also finds that the way of life in these areas is generally slower, more in tune with the rhythms of the world as opposed to the rhythms of a mass of people. Spaces like these usually contain many expansive views to infinity. They place humans within a larger perspective and one starts to look at things on a bigger scale than day-to-day happenings. The earth, trees, and sky are more readily visible, and the focus becomes more on the scale



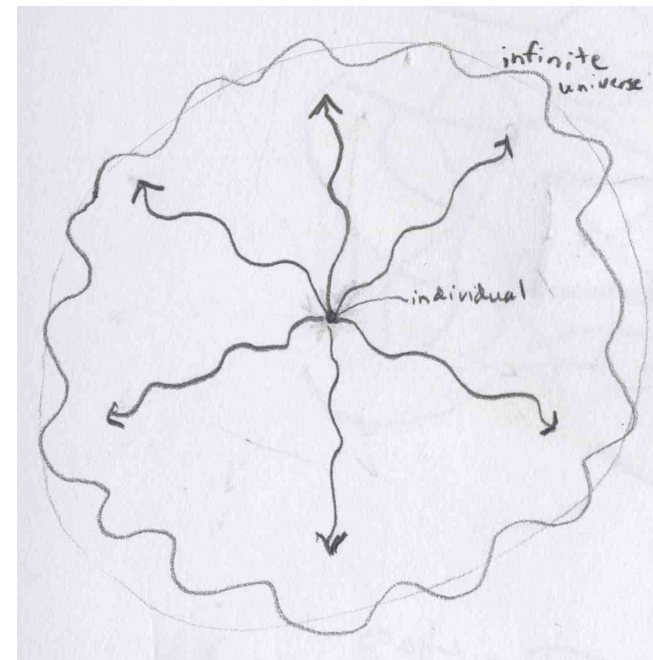
The introspective space: a wall against chaos.



The modern way of isolating one-self.

Image from: <http://www.flickr.com/photos/riotjane/2468214101/>

The extrospective space relates the individual to universe, linking the senses to a deep unfathomable infinity.





1.

Gradations of the Pace of Time



2.



3.

of millions of years, with importance placed on the beauty of the moment. On the level of an individual's experience, this is often manifested in the way that natural environments tend to soothe the mind. For whatever reason, historical spaces, those that seem old or have been through a lot, and show wear and tear, seem to inspire a meditative state of mind. Both old landscapes and historic manmade structures can have a similar effect. A weathered rock can be just as powerful an image as an old brick farmhouse.

Personal Narrative:

What do I personally define as a meditative space? I will take a personal example to describe this. I know that when I return home to rural Virginia after having spent months in Boston, I can feel my brain immediately relax upon driving away from the urban sprawl and into the historic woods and meadows of my hometown. The transition from quick thoughts to slower ones usually occurs over a 1 mile stretch of road spanning between a major rural highway, over a series of short hills, past some newer houses, and down into thick woods with a historic farm on one side. It is as if a chemical has been released in my brain and suddenly my thoughts slow down. This is the feeling of "ah," that I have mentioned above. Suddenly, I am more aware of the light, the air, the sound of the car moving through space, and the aged landscape outside my window. The car also moves a bit slower here, as there are more bends in the road. The transition continues to intensify as I approach the historic village which I live near. As I travel through town, I notice people on the street, but they aren't in a hurry; they are just out enjoying the crisp evening air with a loved one. The road is narrow, and when another car approaches, we pull over so that the car can pass. Ancient trees form a canopy over the road. Leaves cover the street and sidewalk in places. Neighbors chat on a front porch, very close to the street. I notice that someone has put up a new fence or changed a sign.

These feelings are in sharp contrast to those I felt on the highway, where I was in one of many cars hurrying over the pavement. I should also note that the meditative feeling I described above is less possible during rush hour, when I am usually traveling down curvy roads in a scattered line of cars, and feel more hurried because there is someone behind me.

Another personal example: It is midnight on a freezing January evening. I go outside into the snow, which crunches underneath my footsteps. The house lights are dim and soon the only light is coming from the stars as I walk into a silent, snowy meadow. Trees shelter the large clearing on two sides. A dog barks

in the distance, perhaps a half mile away. The wind hisses through the snowy branches of the trees, blowing a light mist across my face. It is a clear night, and my eyes adjust to the silvery starlight. I look up and take in a vast array of stars, all thousands of light years apart from each other. Here I am on Earth, and there is the universe. The starlight is reassuring, and tells me that no matter what happens here, all is well. I listen to the wind and think.

A big part of what I have described above is a feeling of relative contrast from one environment to the next. Time is relative, so meditative spaces can occur all along a gradient. In other words, one space may be considered meditative because time passes slightly slower in that space than the space a person has been occupying. When I pass from Boston to Virginia, that is a slight gradation of change. When I pass from the airport to historic village, that is a major change along the gradient. When I get home, I am in a special place, but there are even more special places if I go walk through the woods or wetlands near home. I can find more beautiful spaces within spaces that I would already deem special. No matter what, my appreciation of a space usually comes from a feeling of transition into it. The knowledge of how fragile such spaces are makes the transition that much more powerful. It happens that the area I am from is under assault by suburban sprawl, and one must pass through it to reach the sanctuary. One must pass by McMansion-covered hills that were once open meadows ten years ago.

Also important to my feelings is a sense of privacy and singularity. It makes me feel special to be the only human within a quarter mile radius (obviously this feeling also is relative, so one could feel special being the only human for twenty feet, depending on the situation).

Also described above is a certain amount of nostalgia, of a return to my childhood home. People always remember their childhoods, and for many, their childhoods hold their happiest memories. People often seek to rediscover things that they feel that they have lost. The sense of nostalgia is a very subjective measure and therefore will vary significantly from person to person. Nostalgia is also tied to idealization of the past. Far from being irrelevant, nostalgia can be a useful tool in determining what people want in their lives, and how to best do it in a completely evolved context.

Important to the feeling of slowing down is a physical slowing down. The winding of the road towards home forces the





The woods of Virginia.

car to slow down. The narrow street in the village again forces slow movement. With speed come sharp changes in scenery and agitation of the mind (car horns, fast movement of people and machines). Incidentally, it is interesting to note that this speed does not seem to apply when talking about nature. Storms can have a very meditative quality to them, especially if one is observing them from a sheltered place. Likewise, a quick-moving swallow does not agitate most people, but rather is a beautiful display. The difference here is that the swallow is usually just a slight solo performance on top of an environment that is very gradually changing. If one were surrounded by a flock of birds squawking uncontrollably, it is hard to think of this as a very meditative situation, and might in fact be compared to a busy urban street. Nature does not always equal meditation.

As already implied above, physically slowing down is something that affects all senses, not just sight. For example, a busy city street is characterized by a cacophony of noises that are constantly changing pitch, timbre, and amplitude.

It is also interesting that a person who is exercising may be able to meditate while moving quickly (may depend on scenery). This meditation while jogging or bicycling, however, is probably more connected to a psychological meditative state than a feeling of being part of an environment (and the subsequent feelings of relaxation and free thought). The jogger may be able to actively separate him or herself from their environment, but the person in the extrospective space will tend to passively shift to a meditative frame of mind.

Returning to the what creates a meditative space, descent into a space may play a role in creating a meditative feeling. It may also be closely related to feelings of embrace, protection, and privacy. When one is on a mountain top, there is a feeling of privacy, but that is not due to a feeling of embrace so much as the fact that few humans venture up that high. When traveling the stretch of road towards my hometown, there are the short hills, then the descent into the woods, which coddle and soothe the mind with a more sheltered light. One passes through a series of five sharp turns and then is let into the light again with meadows on both sides. A few newer houses poke over hilltops, but for the most part there is farmland and a few old farmhouses. Then you travel up a tiny hill and into a village of a few hundred people. There again, one is coddled by homes and thick greenery. One is compressed and held safely.

Likewise, near my childhood home, there are woods, meadows, marsh, and a creek. The gradation of meditative states begins at the house (least relaxed, but more relaxed than a city apartment), and ends at the creek. In order to get to the creek however, you must first pass through a series of environmental situations. First of all, you must leave the house, and then go into the woods. All of this time you are going downhill. You are also being surrounded by trees and are walking down a narrow path. You are compressed. You must avoid water by stepping on stones. Then you are released into a meadow/floodplain/marsh area. You are surrounded by the sounds of marsh creatures (insects, spring peepers, birds). You continue along, and hear the water before you get there. You pass out of the open and into more trees. Finally you reach the creek, with its reflections and gurgling sounds. The sounds of the main road have long since disappeared, and you are alone with the creek and the animals. This short 10 minute walk has been a constantly changing experience of different spaces, including multiple passages between compression and release.

Sound and smell are also vital to how one experiences a space. The village described above is very quiet, mainly because the cars travel under 25mph and there is little traffic noise. Depending on the season, the village smells differently. In the fall, it happens to smell like decaying leaves and old houses.

Also mentioned above is the absence of light pollution. One issue with cities is that they never turn off. There is no escape from electricity (although Marlborough St. and the North End of Boston do an exceptional job of allowing night to occur, through the use of dim gas lamps). One thing that I think would be really neat is if for one night, Boston decided to turn off all of its electricity.

Awareness of the “Soundscape”

In considering the need for spaces of contemplation within our society any discussion must consider the fact that we live in a sonic environment as well as a visual one. In the modern world, sight is perhaps the most relied upon sense for information gathering. This makes sense, because knowledge in the modern world is conveyed mainly through text, video, and photographs. The clamor of cars and trucks and jackhammers in our modern cities consists of high-bandwidth noise, which crowds out other crisper sounds (such as birds and voices) and take control of the environment. This is described by R. Murray Schafer in *The Soundscape* (1977) as a “lo-fi” soundscape.⁴ In

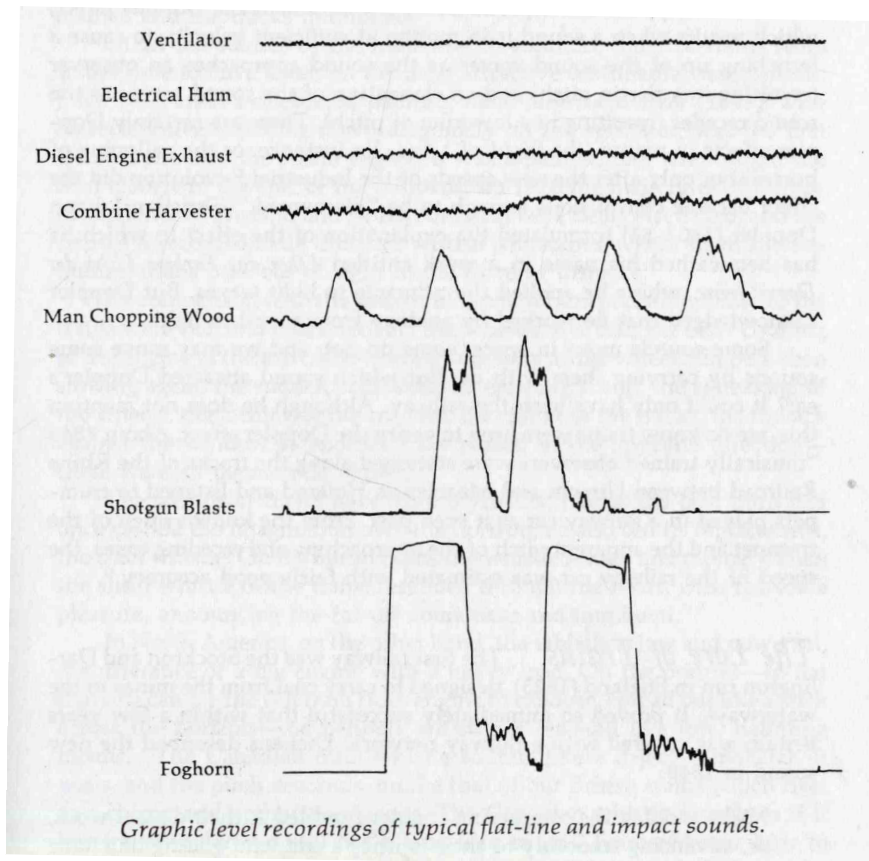
4 Schafer, 43



Image from <http://www.flickr.com/photos/vaeltaja/400592681/>



An extrospective view of the Virginia countryside.



Graphic from Murray Schafer's *The Soundscape*, p. 79
 Note the first three entries. These are sounds that characterize the urban and indoor environments. They are virtually inescapable in the modern world. This is a background hum of human energy. Why can't we hear or feel the background hum of the universe's energy?

cities there is always background noise, at any time of day. Sounds can only be heard from relatively short distances. This type of environment contrasts the crisp, clear, "hi-fi" environment of rural and wilderness areas, where sounds can be heard from miles away. A hi-fi environment is just as much about silence as it is about sound. Because it is possible to hear sounds from a great distance, it is possible to orient oneself in rural environments through the reading of the soundscape. In a city, writes Schafer, "perspective is lost."⁵ Additionally, because most of the auditory information in cities is unimportant, we learn to ignore environmental sounds as irrelevant. We also tend to substitute other sounds for those in our environment through headphones.

In describing features of the soundscape, Schafer uses three main terms: keynote sounds, signals, and soundmarks. Keynotes are like the fundamental tones in music, setting the key to a piece. We are aware of keynotes in environments on a subconscious level. Keynotes include any sound characteristic of an environment, including water, wind, and birds.⁶ Signals are focal points, things that we listen to consciously, and cannot help to be aware of them.⁷ Signals include sirens and warnings. Soundmarks are landmarks of the soundscape.⁸ According to Schafer, these sounds are what make particular communities unique.

In the fourteenth century, time became a sonic event with the invention of the mechanical clock.⁹ This marking of time by sending out a signal to the entire soundscape must have altered the way people perceived time. Every time an invention comes along that marks time more accurately, or allows people to use their time more "efficiently," people's lives become closer-wedded to the passage of time. As already stated, one of the reasons people find themselves so stressed out in modern society is the way that time is seen as a commodity that is limited and to be rationed wisely.

What we want to do in modern urban environments, in Schafer's words, is to "recover positive silence" (Schafer, 258). According to Schafer, silence generally has a negative connotation in our language. It is perceived as emptiness, without life, even boring. Schafer also introduces the term "Temple of Silence," (Schafer, 252), to refer to a building with no other purpose than meditation.

5 Schafer, 43
 6 *ibid.*
 7 *ibid.*
 8 *ibid.*
 9 Schafer, 55

This space is designed to create peace in the user, and one step in creating peace involves silence.

Schafer, 258: *“Today, as a result of increasing sonic incursions, we are even beginning to lose an understanding of the word concentration. The words survive all right, that is to say, their skeletons lie in dictionaries; but there are few of us who know how to breathe life into them. A recovery of contemplation would teach us how to regard silence as a positive and felicitous state in itself, as the great and beautiful backdrop over which our actions are sketched and without which they would be incomprehensible, indeed could not even exist. There have been numerous philosophies expressing this idea and we know that great periods of human history have been conditioned by them. Such was the message of Lao-Tzu: ‘Give up haste and activity. Close your mouth. Only then will you comprehend the spirit of Tào.’”*

The Human-Nature Merger

In 1984, landscape architect Anne Spirn wrote The Granite Garden, which showed how humans and urban landscapes are part of nature, just as natural as a piece of untouched wilderness. The notion of including humans within the ecosystem was revolutionary at the time, an idea that grew out of the rise of ecology during the preceding decades, including the work of Ian McHarg in Design With Nature. In this book, McHarg examined new ways of interpreting large-scale landscapes as ecological systems, using a large list of variables and a ranking system to determine how best one could develop a site. This type of large-scale thinking is what needs to go on when considering the relationship of the body to the universe. Although the local scale is what we are most aware of, there are also infinite scales big and small that one could be aware of.

Humans are indeed part of nature, and if we do not realize this, we are at risk of alienating ourselves from a vital part of what it is to be human. Virtually all landscapes have been touched by humans. The act of defining nature only in terms of *wilderness* areas¹⁰ (areas with little or no human impact) devalues the importance of the majority of landscapes that surround us. By

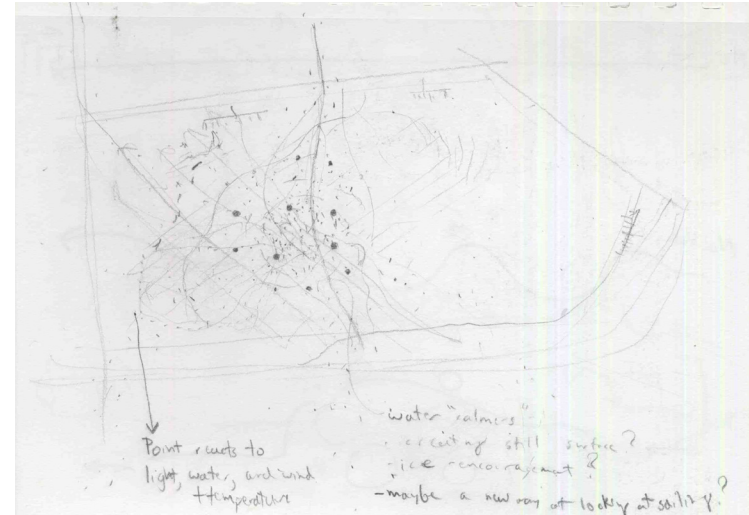
10 Nature can be defined as the entire physical universe, including everything that humans have created. Wild things are those that are not human or human-created. Wilderness is an area that is virtually untouched by humans. Most of what modern society sees as “nature” (wildlife preserves, etc.) can be redefined as “wild,” freeing up the term “nature” to include the human component.



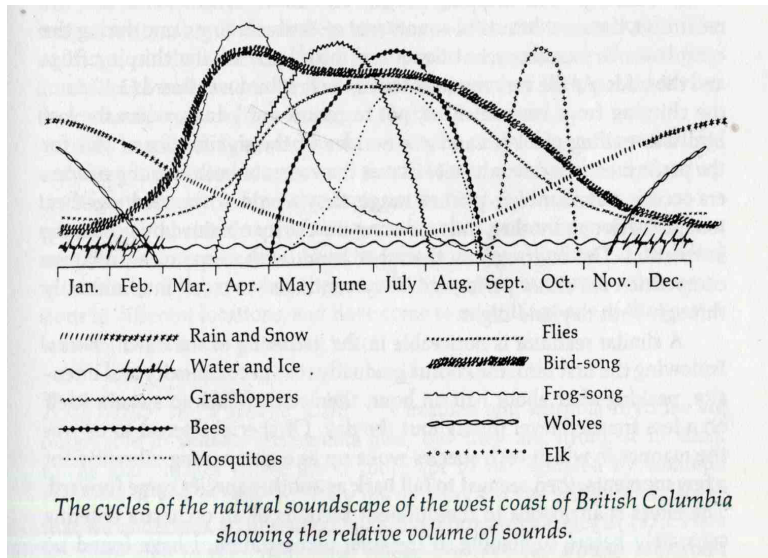
Central Park, NY. A virtual line between human and nature, between work and play, between “efficiency” and “waste.” One must be in one world or the other, but nothing in between.

Image by of Doru Daroczi. <http://www.flickr.com/photos/ddoru/271603459/>

Sketch: Considering the gradient from surface time to contemplation time.



An extrospective space that relates the individual to the rhythms of the universe. A conversation between individual and the whole.



Earth Rhythms and how they interact throughout the year. This is only one example from one year. Due to the infinite number of variables, the actual experience varies from year to year.

defining areas of strict conservation, or defining areas as pristine, we set up a hard line between human or urban areas and “natural areas.” This hard line exists today. The newly emerging field of landscape urbanism attempts to break down some of these barriers by viewing humanity as inhabiting one continuous landscape, with gradients from very wild to very controlled. All of these spaces have equal value, and all must be included within a future urban landscape.

This gradient is useful when thinking about how to create spaces of contemplation within cities. The notion of “parks” as urban blocks of green space perpetuates a dichotomy between the urban and the natural. One must “go” to the park, and must also “leave” at some point to go home. Alternatively, it is possible to reinterpret the notion of contemplation spaces over a gradient (as described earlier), from completely separating oneself from the fast pace of modern life to the opposite. This can be thought of as a “haze” of “contemplation” that fills the city, with some areas being very dense with haze, and others practically clear. In the densest areas of “contemplation” one loses track of the city and of the troubles of daily life. The individual is elevated to another plane of consciousness.

Earlier, this gradation of change was described in the conventional sense, over the distance between Boston and Virginia (or at least Boston to its rural surroundings). This distance is related to the modern invention of the car and the sprawl of cities. It is no longer possible to simply walk out of the city. Driving a car to a national park is also to our detriment because the act of driving can cause personal agitation by moving us quickly. Additionally, by isolating “nature” in national parks, we accentuate the seeming difference between man and nature. Ideally, however, every single person would have direct, immediate access to a contemplative space (perhaps this is an inalienable right of human beings). We need to be able to incorporate the gradation of change back into the urban situation so that we no longer need to drive to get someplace where our minds are able to relax. By rethinking the contemplation space in terms of the “haze” we can think of the fabric that would exist in a city between its most contemplative spaces and its most rigorous, rationalized spaces.

By allowing ourselves to view our human condition as part of nature, we relax tensions between technology and nature as well. We can start to see technology as something to work with nature. Our most contemplative spaces need not be areas of completely wilderness—they can just as easily be some of the

most technologically-advanced spaces that humanity has to offer. They can also include hybrids of technology and the wild, symbiotic relationships that enhance both the wild and the human.

Seeing ourselves as part of a larger ecosystem is only part of the solution, however. On top of this, it is the duty of the designer to reconcile the rationalities of science with the ambiguities of human emotion (art).

Earth Rhythms

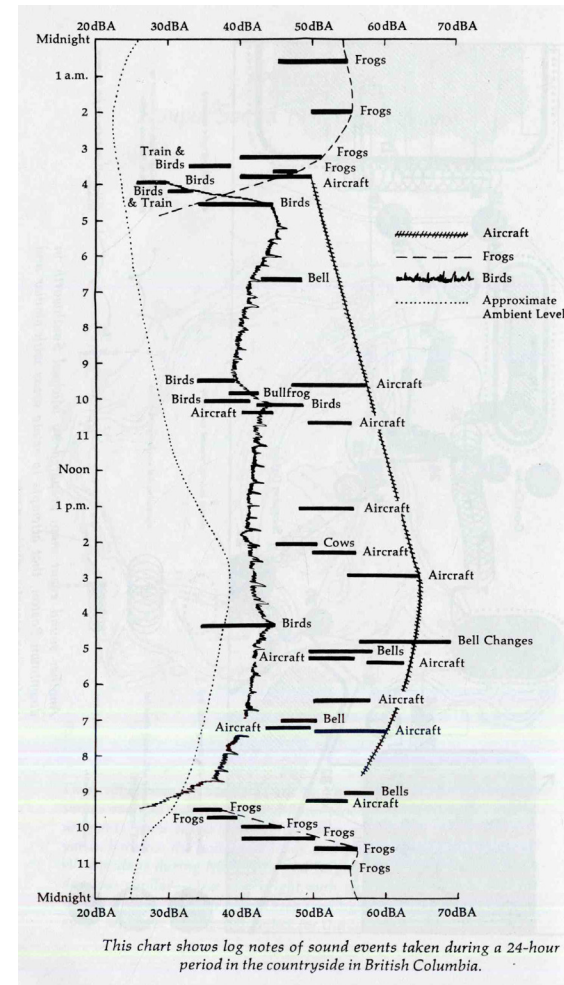
Nature works in cyclic, ever-modulating rhythm. Some cycles are very hard and unchanging, like the passage of the Earth around the Sun, and the resultant change in daylight and seasons. Other cycles are less predictable, like varying populations of frogs from year to year. No matter what, however, because of the infinite numbers of cycles happening simultaneously, each operating somewhat independently, our experience of the environment is forever in flux, each moment ephemeral and unique. While we may experience similar effects on multiple occasions, they are never exactly the same.

Take the interaction of the Sun and the Moon, for example. While the path of the Sun is extremely regular and is basically constant from year to year, the rhythms of the Moon occur on a cycle of 27 days, and because of this, moon phases vary in date from year to year. Factor in other astronomical cycles and the possibilities for finding new patterns over longer and longer time frames increases exponentially. Then bring in the other earth-cycles on these specific days, such as wind speed and direction, temperature, cloudiness, humidity, the presence of large crowds of people, whether or not the insects are having a good year, whether it is the year of the 17 year cicada, and so on, it is apparent that no single event has ever occurred before nor will ever occur again for eternity.

One who lives in a rural area may feel more connected to the natural world because of the obvious direct connection between landscape and their own existence. It is also easier to observe the changes that occur with the seasons, from day to day, from one weather pattern to another. Observing these systems forces one to think about things bigger than his or her own lives.

How does this relate to architecture? For this we turn to the notion of architecture as a responsive performance.

Why can't architectural drawings include these?
Why can't architecture be more improvisational?



Graphic from Murray Schafer's *The Soundscape*, p. 266.

Earth Rhythms and how they interact throughout one day. This is only one example from one day. Due to the infinite number of variables, the actual experience varies from day to day.

Architect as Earth Composer

The natural rhythms of the Earth and celestial bodies can be tied directly to structures, especially those designed to help us feel part of a larger whole. If we do so, architecture can be something that both responds to and contributes to the environment. Because these cycles vary infinitely, the reaction of the structure to the environment becomes a performance that varies infinitely, forever in flux, forever revealing new secrets. While responding to stimuli in the environment, the structure adds to the environment as well, carrying on a conversation with everything around it, including the people in the structure (sensors may detect the movements of people and cause responses, and people will subsequently respond).

In the Charles River site, there are numerous environmental factors that the structure is responding to, including the passage of the sun across the sky, varying light conditions, the Full Moon, wind speed and direction, the color of the water and sky, and the passage of people through the site. Because of the nature of the site, it is perfectly sited as a location for performance. The Esplanade on the Boston side of the river forms an amphitheater of sorts, from which people can observe the structure. On the other hand, one may walk out into the river to actually be part of the performance.

While the performance is a response to stimuli in the environment, it is also dependent on the designer for guidance. In other words, a performances responding to the same stimuli could vary greatly from structure to structure, depending on how design elements are “tuned” to respond. One structure might create a very lively, exciting performance, while the contemplative structure studied here is a more subdued, gradually changing performance. Here, emphasis is placed on relatively steady, fluid moves (both visual and musical), a background of energy tuned to gradual seasonal changes. Another environmentally-responsive structure might instead be tuned so that the underlying rhythm is tuned to cars moving by.

The site is laid out with primary ordering relating to paths of the sun across the sky, as well as ideal circulation paths through the site. Particular importance is placed on the solstices, which are special performances that each occur once a year. For example, on the winter solstice, the sun will set down a line through the site, activating a series of flutes that will play through the night. The site is also tied into a calendar system, such that lights glow brighter on the winter solstice, adding warmth to the long, cold night, and promising longer days to come.

Architecture as Unpredictable

Structure as Solo Performance

Structure as Internal Dialogue

Structure as Interactive Performance

Structure as Massive, Integrated Musical Instrument

This being mentioned, other environmental factors are much less predictable, and add melodic lines on top of the rhythm of the Sun. All the human senses are relevant in thinking about this design. While notions of light are strongly related to the Sun and Moon, sound can relate to the wind. Aeolian (wind) harps are positioned bordering the access paths on either end of the structure. When the strings of these harps vibrate in the wind, they produce a loud drone, a zone of energy that one must pass through on the way to the central sanctuary. Another example: people walking through the site step on pieces of glass that are spread through the water like lily pads. The pathway bobs up and down with the person.

Additionally, using technology, one can transform cycles from one form of energy to another. For example, sunlight can become sound that changes with times of day, seasons, and weather conditions. A singer’s music can be turned into the glow of lights that ripple through the site. The wind passing over the site can cause a slight glowing of the walls, like blowing on hot coals. These effects would not be possible if we did not live in the modern technological age.

This is a structure that is indistinguishable from wild nature (just as nature is to be indistinguishable from the structure). Nature follows logic and rules, but because it is infinitely complex, it holds infinite mystery, even to the most discerning eye. Why can’t a structure be the same way? The argument is not for a replication of the wild, but rather something that blurs the boundaries between human and wild. True, all of humanity has always been part of the wild, and because anything in the physical world is infinitely complex, our structures have always contained great mysteries. In modern civilization, however, we do not feel as if we are part of this larger system. That is where this design comes into play.

This space of contemplation becomes a place where people and nature are one, and people revel in the mutual experience of giving to an environment and also receiving from it. Of course, how

Continued on page 32

Just a few Earth Rhythms affecting this structure...

- Sun Paths
 - higher sun in summer vs. winter, and shadows that result
- Solstices
 - moment of great celebration over winter solstice
 - moment of rejoice in summer solstice, however bittersweet because the days will now get shorter
- Colors of Sun throughout the day
 - vibrant, bright colors in the morning
 - deep, rich colors in evening and twilight
- Reflection of Water, sky, walls
 - naturally change color with times of day
 - naturally change patterns with different wind conditions
- Colors of the night/twilight
 - blue, violet, silver
- Moonlight Reflecting off of surfaces
- Moonlight causing shadows
- Moonlight generating electricity
- Full Moon vs. New Moon
- Night vs. Day
- Wind Rustling Leaves
- Wind blowing glass or metal tiles compiling “wind wall”
 - generation of electricity from wind and transformation of electrical energy into other rhythms in the site
 - creation of rustling wind sounds
- Wind Passing over site in waves
- Wind causing glowing of surfaces at night
- Wind (Aeolian harps) creating pure, immersive, modulating energy
- Wind flutes
 - responding to the blowing of the wind
- Water flows
- Water Ripples changing over time
- Growth of biological elements
- Change of seasons
 - change of temperature
 - cycles of leaves
 - ice covering the winter river, or at least calm areas (would basically fill site, since there are lots of walls to calm the water).
- Movement of people
 - at night, sensors detect people nearby, glowing depending on how long people stand nearby
 - the fast movement of people through site causes instruments to become quieter, as if scared by their movement. When people slow down or have passed by, the sounds will resume. An exception to this rule would be the aeolian harps, which exist to separate a person from the city. This all-powerful energy should continue without interruption, except when the wind dies down.
 - a fast movement can cause the lights to dim slightly
- concentration of people (relates more to the sounds that a group could be creating)
- reaction to sounds created within the site
 - Microphones placed throughout site pick up on the sounds of people, specifically long, sustained notes. The sensitivity of the microphones, and how the site reacts is something that can be tuned.
 - Example: A cellist plays into the environment. The lights around the player glow gently, varying intensity with intensity of notes. Other sound-playing elements also respond, increasing or decreasing intensity. Similarly, the surfaces around the player glow slightly more brightly when a note is played. The delay between note decay and light decay is something that can be programmed.
 - The player does not have direct control over his or her surroundings, although can learn to “play the site” like learning to play an instrument.
 - Of course, the thousands of microphones also pick up on the sounds of environmental instruments, such as gigantic flutes tuned to the wind. Therefore, the site will literally “perform with itself.” One part will play, then the microphones will pick up the sound, and a reaction occurs. Theoretically, this could then feed into other microphones in the site, setting off a cascade of performances, initiated by just one flute. As a side note, unpleasant feedback would have to be prevented. Perhaps after a reaction occurs, there cannot be another reaction for a certain amount of time. The computer could also detect unpleasant feedback and prevent it.

(Interlude: Choosing a Site and Initial Design Process)

180 degree image of the Charles River between MIT (on left) and Boston (right). The site chosen was the area of water between the two pieces of land.



Choosing a Site

I was drawn to a site where one is able to experience the stars and silence. This seemed to suggest a remote location. This was one of the paradoxes that my project is trying to resolve. I wanted the space to be remote enough to be quiet and dark, with little crowding, but at the same time, I wanted the space to be easily accessible for city-dwellers. Most people have cars and can drive out of the city to the mountains if they want to on weekends. The point of this project is creating a space for day-to-day contemplation and healing, and also to remove the psychological barrier created by having to drive somewhere. I saw the Charles River and Boston Harbor Islands as strong candidates for the type of space I wanted to create. The Boston Harbor is an interesting location because it is

semi-distant from the city (nearest island is 4 miles from downtown Boston). It is also in a tidal zone, and being in this area could make one conscious of the Moon's effect on the Earth. It is, however, something that would only suffice for weekend or possibly evening trips (only if one lives within walking distance of a ferry port). A contemplation space in the harbor could encompass not only the island but the ferry paths to the island, and might actually span multiple islands, perhaps with the first island being a gateway to the others, which would be reached by pedestrian bridges over the Bay.

There is the Boston Commons, which is a sensitive location, given its current use for recreational purposes. Likewise, one could consider using the Public Gardens, but that is just as sensitive, in that one cannot very easily touch the landscaping,



which has historic, aesthetic, and spiritual value. Additionally, the contemplative qualities of spaces designed for these locations could be compromised by their usage as primary pedestrian thoroughfares for the city. These sites could be touched in a gentler manner, simply to help enhance their current features. Both would strongly benefit from noise control.

The Charles River, on the other hand, provides the advantage of being at the center of movement between Boston, Cambridge, and MIT, all high-power environments. It would be much easier to access than the Harbor, but not so easy as to be on everyone's walking route. The notion of contemplative space might be somewhat different here than in the harbor. A contemplative space could be as simple as a bridge that winds its way across the river and changes in width, perhaps outfitted with something that would catch the wind, like gigantic flutes. The bridge could even branch apart in places.

In the end, it was decided that the Charles River site was the most promising for a first attempt at designing a space of contemplation. This would be a place that people could go to in the evenings (or any time of day) or even just use as a special way to cross the Charles River away from car traffic. Once people discovered the special areas within the structure, they would be frequented by people who go there for the sole purpose of being alone or with a loved one in silence. It was hoped that people may be walking along the Esplanade or Memorial Drive might find themselves suddenly in a new environment, experiencing things that they had never felt before, or things they had forgotten were important.

Site Description:

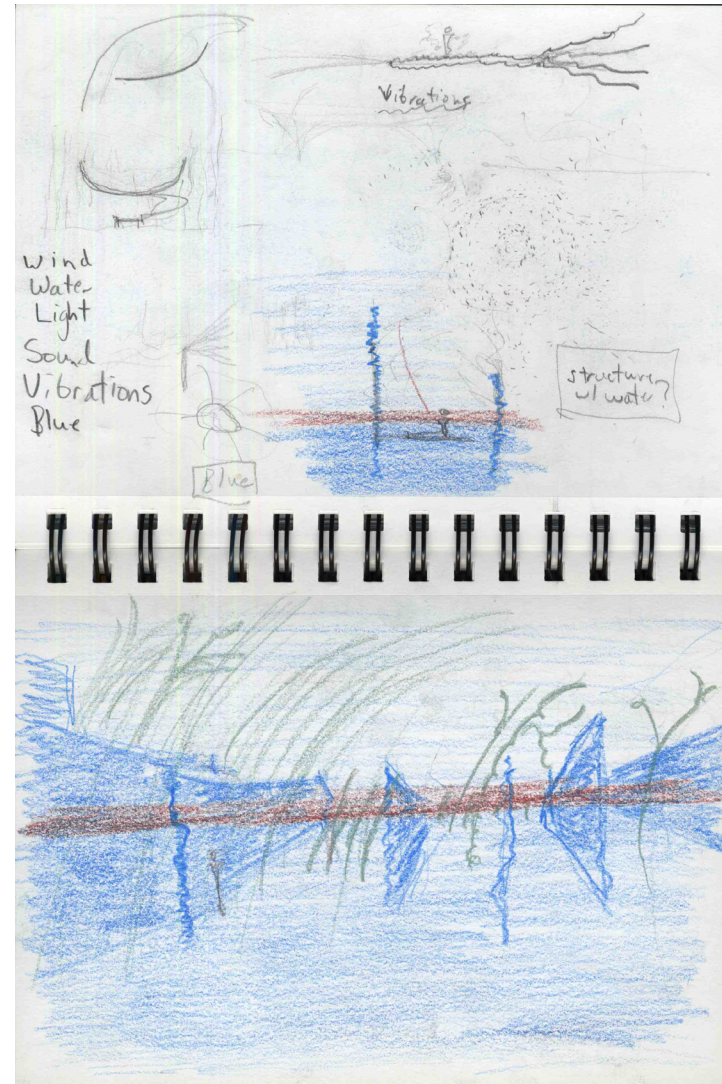
The site is bounded on one side by the Esplanade, a park that borders the river. This park would be the ideal location from which to observe a structure out in the middle of the river.

(Interlude: Choosing a Site and Initial Design Process)

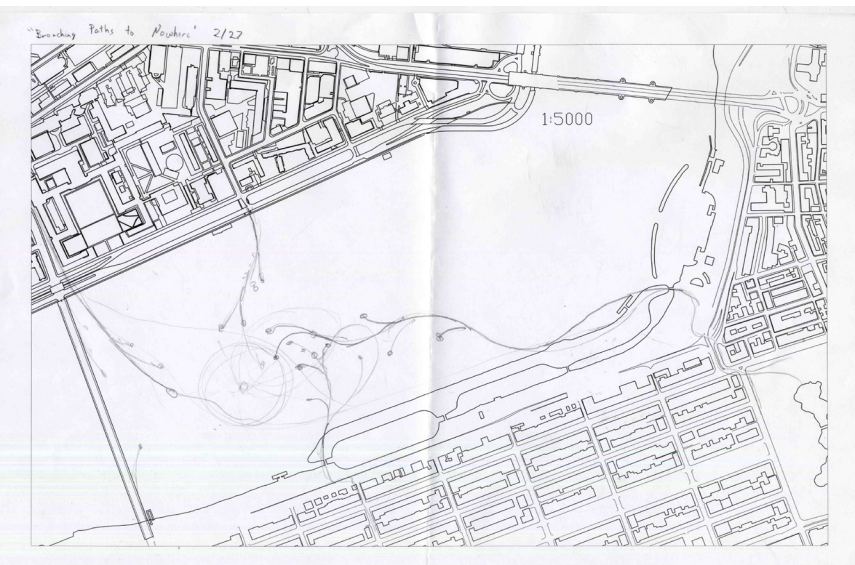
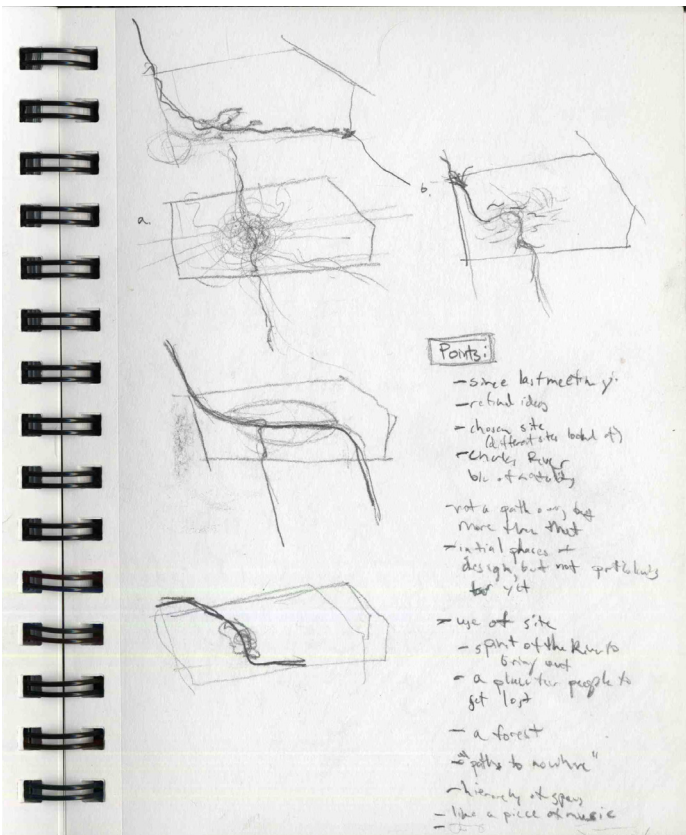
This area is also bounded by busy streets. In Cambridge is Memorial Dr. (four lanes). To the west is Massachusetts Ave., another four lane road. In the east is the Longfellow Bridge, which includes four lanes of traffic plus exposed subway lines. To the South is Storrow Dr. in Boston (six lanes). All of these roads are extremely busy and noisy.

In terms of environmental qualities, the center of the river would have fewer problems with sound and light pollution. There is also steady wind in this area that could be used to the designer's advantage. As will be discussed in greater detail later, most of the design elements relate back to physical phenomena in the world, including changes in wind speed and direction, temperature, light, and external aural stimuli. The extremely horizontal nature of the site creates an abstract image with large bands of blue above and below the narrow brown band of the city.

This space would bring out the spirit of the river and the earth. It would be a soft structure, in that it would not be resistant to its environment, but rather work with it, evolving. While the building could be permanent, the experience of the site would be forever in flux. Even permanent elements would not give off the impression that they were imposing upon the river. Everything would grow out of the river, and the river would grow out of the structure.



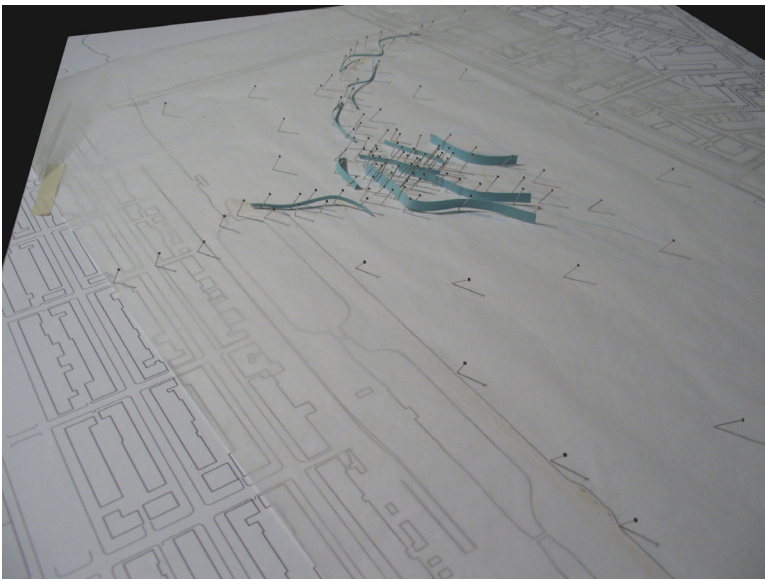
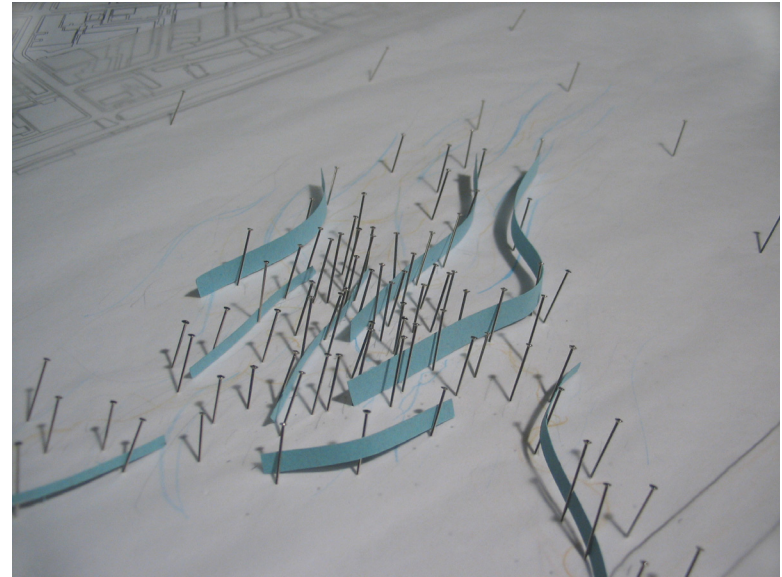
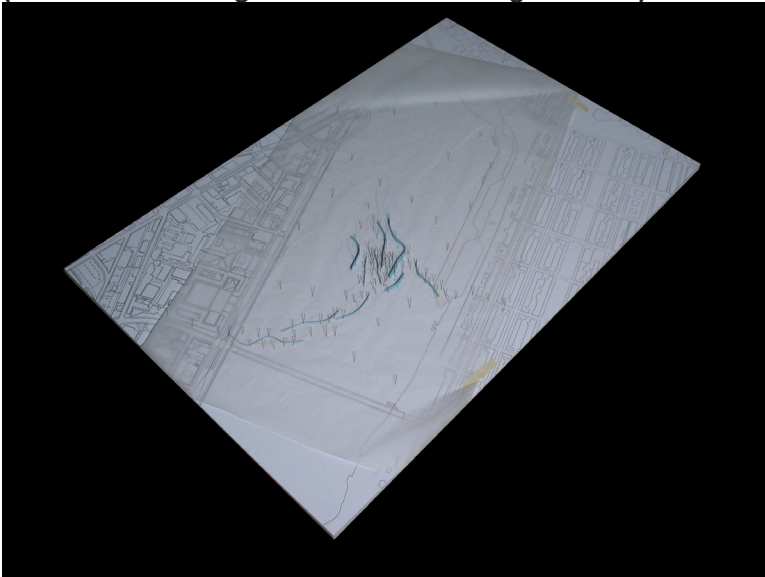
Sketches: The reflection of the color blue from the river and sky to create a structure that blends with its environment. Additionally, the bottom sketch considers the integration of this blue material with wind-blown plants.



Sketches: considering different paths across the river.



(Interlude: Choosing a Site and Initial Design Process)

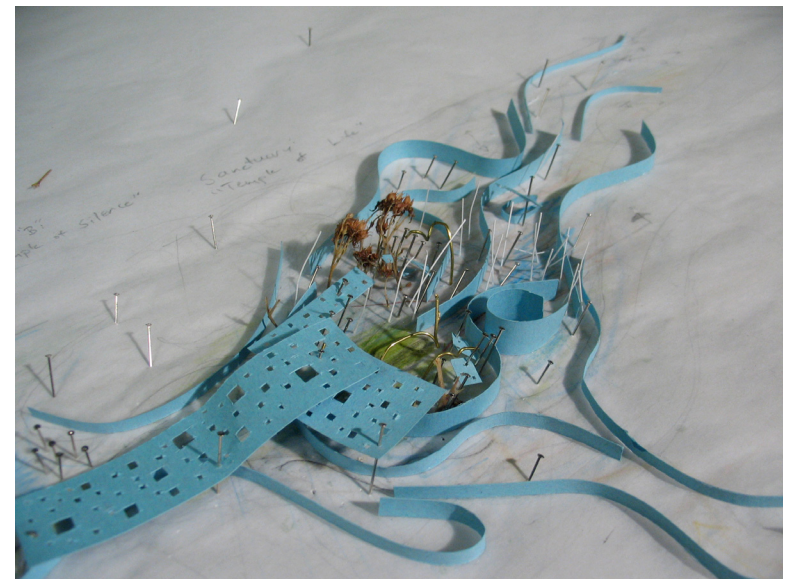
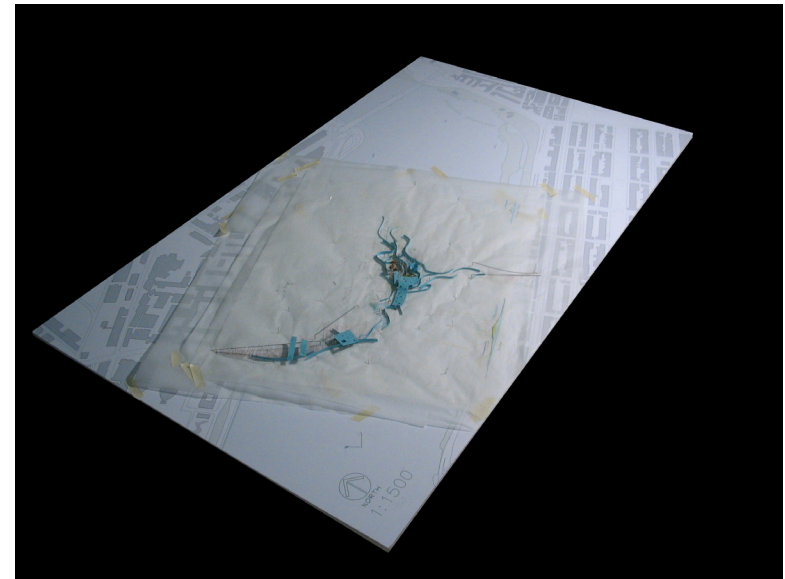
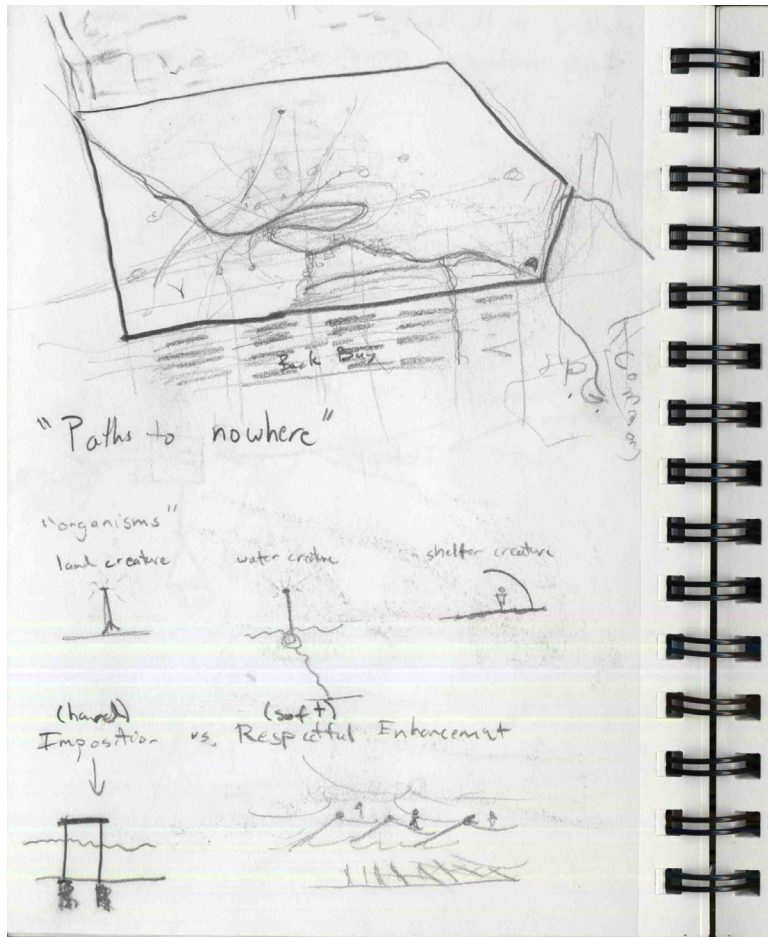


These are images from the first two sketch models. These models were first attempts to understand both site organization and how the structure would both react to and contribute to natural phenomena. The first sketch model (left), incorporated the idea of the “haze” of contemplation energy, with the haze its thickest at the center of the river, this being the place of deepest contemplation and separation from surface time. The model also stretched this gradient into surrounding blocks, including the area around MIT and into the Back Bay. The first model utilized two major design elements. The first was a sound-producing material (like a flute) that would bend in the wind, moving as waves of wind passed over the site. The second element was semi-transparent, semi-reflective glass, represented by blue (reflection of sky and water). Both elements were intended to gradually separate the visitor from the bustle of the city.

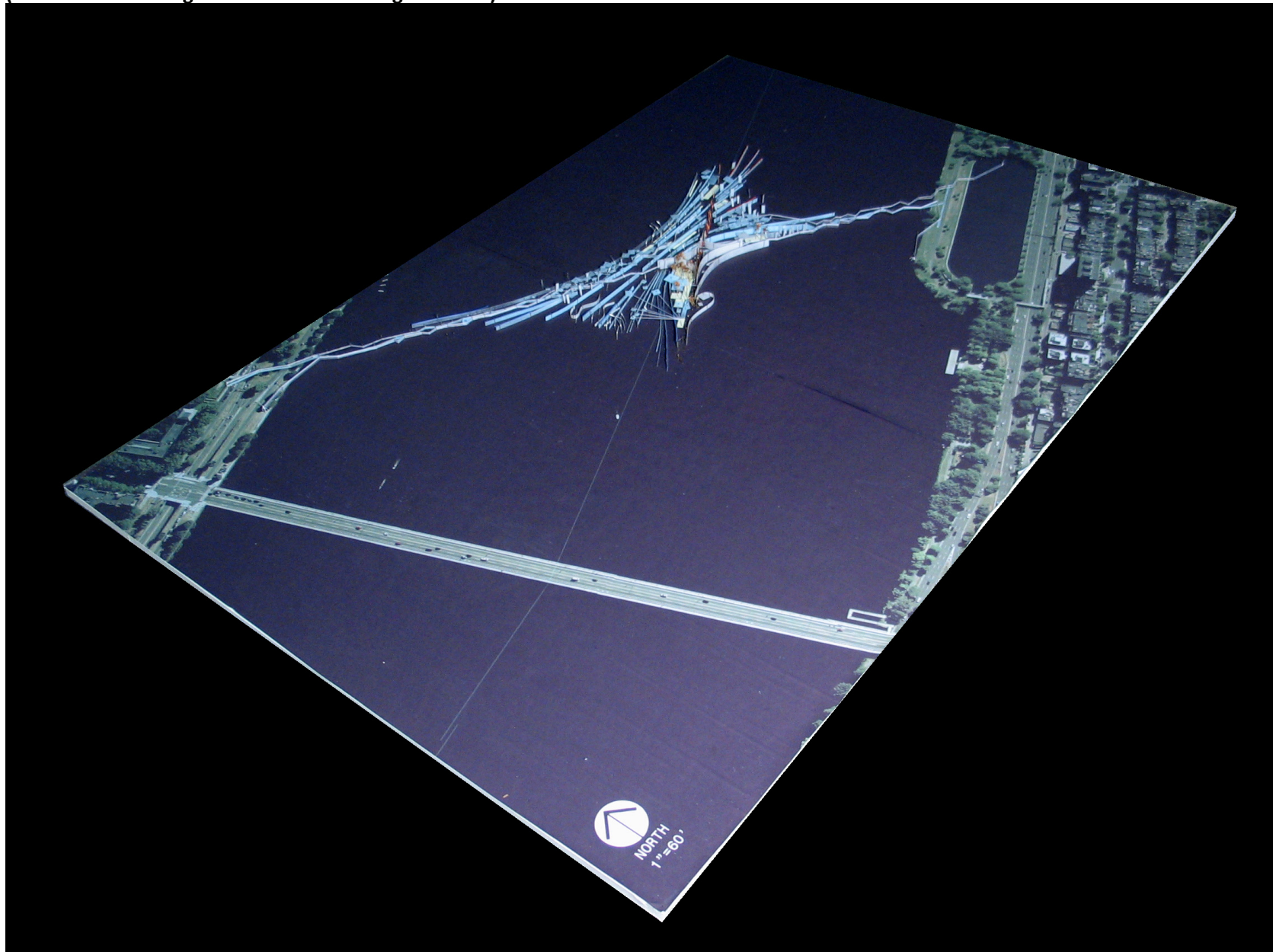
While the first model was relatively simplistic, the second (right) was the first attempt to create more of a symphony of various environmental variables that would create an infinitely-modulating performance. Both of these models introduced the idea of a general path across the river that would then split up into multiple less-defined paths. Both included an elongated zone stretch-

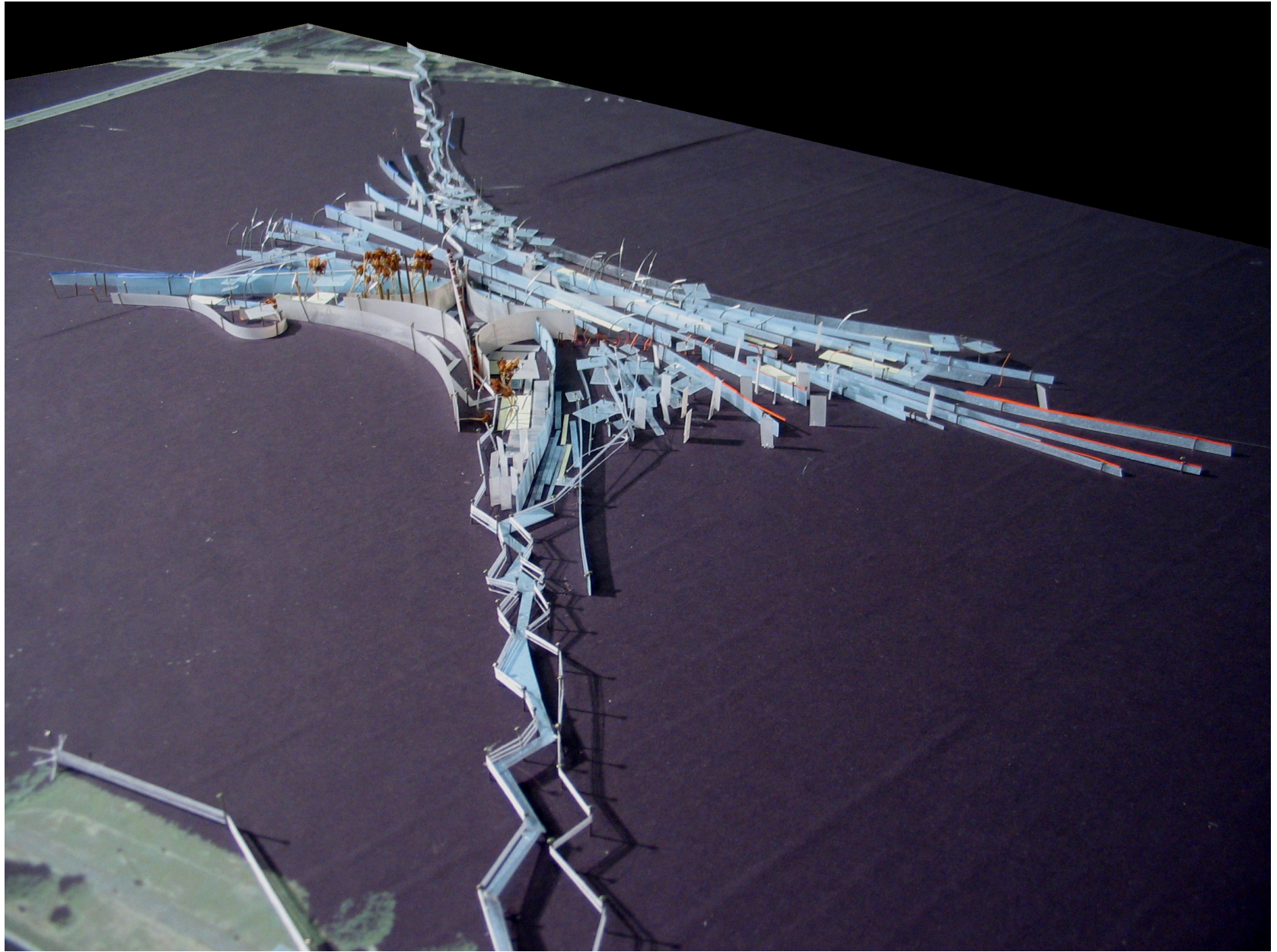
ing away from the center of the site, intended to isolate individuals in need of solitude. The second model also additionally strengthened the importance of a central sanctuary where one would be completely unaware of Boston.

These models were still inadequate for a space designed to work with the cycles of the earth, a space intended to be an ever-changing performance. There needed to be greater definition in how the structure would interact with the surrounding world.

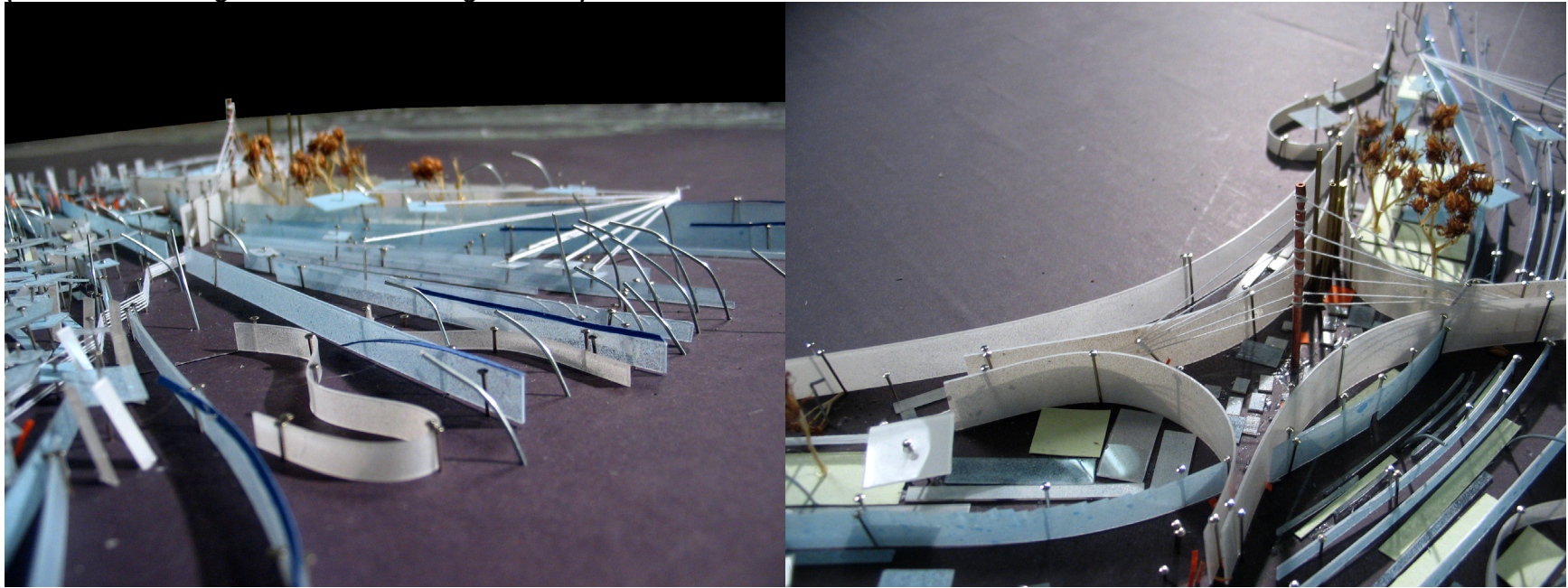


(Interlude: Choosing a Site and Initial Design Process)





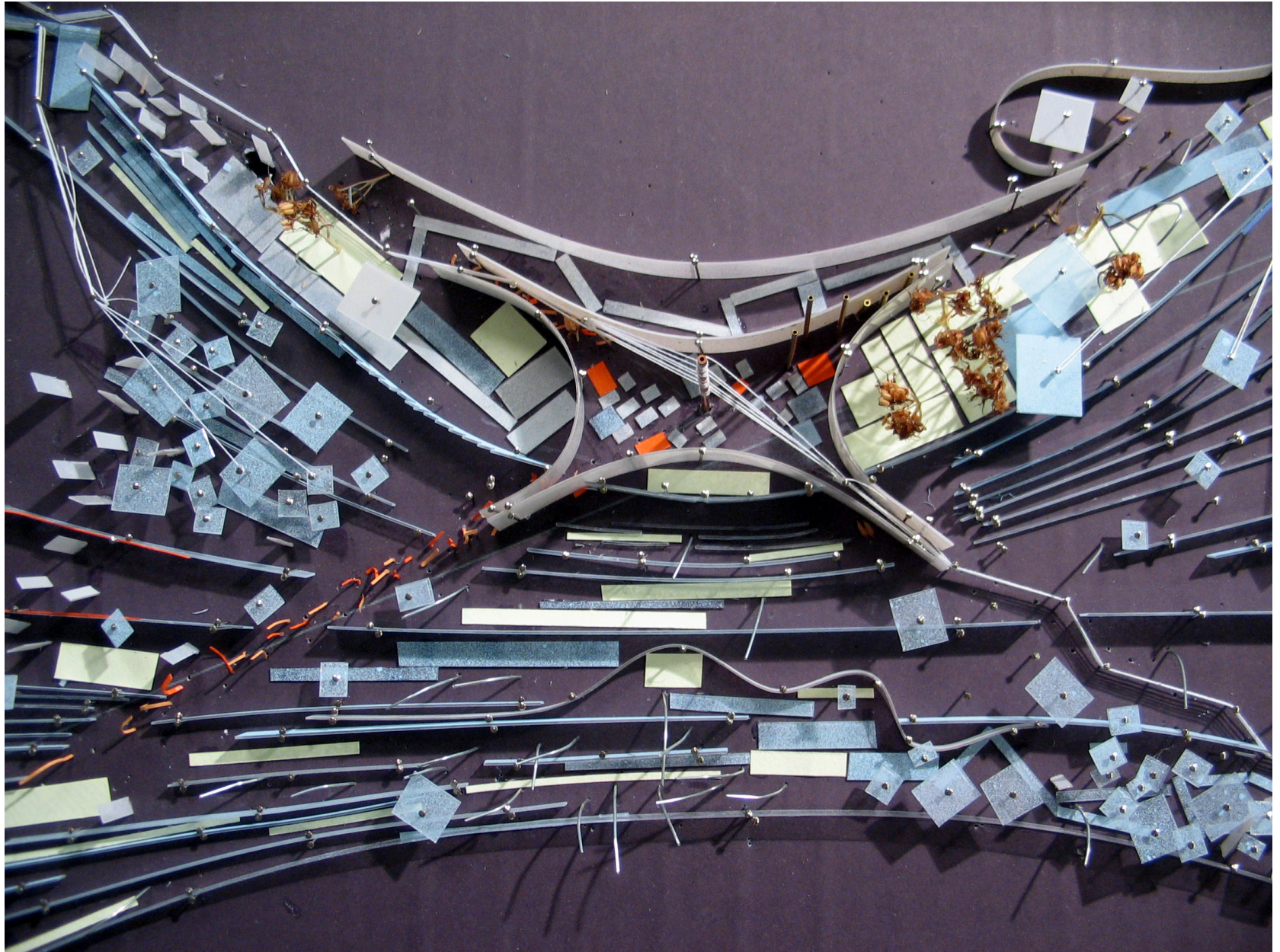
(Interlude: Choosing a Site and Initial Design Process)

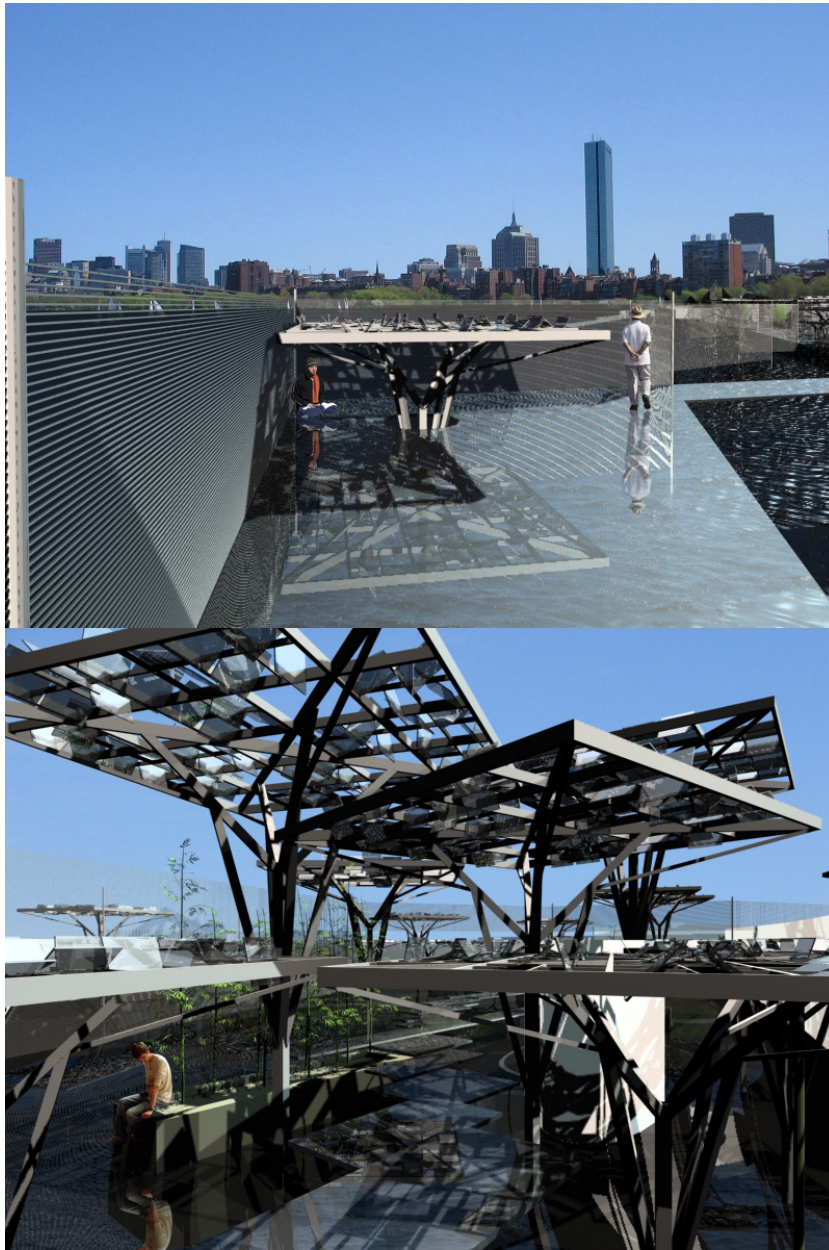


The third sketch model was an attempt to bring greater definition to the design. Major changes were implemented. The structure was reorganized around the cycles of the Sun, a very hard, unchanging Earth Rhythm that could set a tempo to the piece of "music." The design was tuned to a massive sundial, with glass walls placed based on a sun shadow paths throughout the year. The sundial mast itself was created by the tallest organ pipe of the "solstice organ," which would sound only on the winter and summer solstice. On the winter solstice it would provide a warm drone throughout the long, cold night. The structure was designed to allow light on the winter and summer solstice sunrises/sunsets to pass to the center of the site. Additionally, these sunrise/sunset lines created an interesting opportunity to organize the access pathway from the city. Associating these sunrises/sunsets with energy, it made sense to place an aeolian (wind) harp along these lines, which would drone 24 hours a day, 7 days a week, depending on wind speed. By placing the access path between two of these harps, one could effectively enter a zone of isolating energy as he or she passed into another world.

It should be understood that the organization of the site was far from scientific. While it incorporated scientific data, such as sun paths, the extent of human pathways and glass walls was purely a matter of creating an ideal experience for the visitor. It happened that the pathways of the sun's shadow by the sundial worked extremely well to organize the site. Because of the orientation of the river from east-west, with the city to the north and south, it made sense to reinterpret these shadow paths as glass walls that would isolate the visitor from direct views of the city. The location of the shadow paths was especially helpful when laying out the east-west extremities of the site. As these shadows stretched to infinity, they created long, nearly straight stretches that a person could walk down, creating solitude in the process.

Other design elements included and to be discussed later in the text included early versions of the pathway mosaic (containing glass and organic elements), wind flutes, glass trees, and moon walls.





Design Elements: Glass Walls, Electric Aeolian Harps, Glass Trees, Rustle Walls, Moon Walls, Glass Paths, Moon Paths, Bamboo, Grass, Wind Flutes, Solstice Organ, Piers, Sensors, Microphones, Lights

continued from page 20

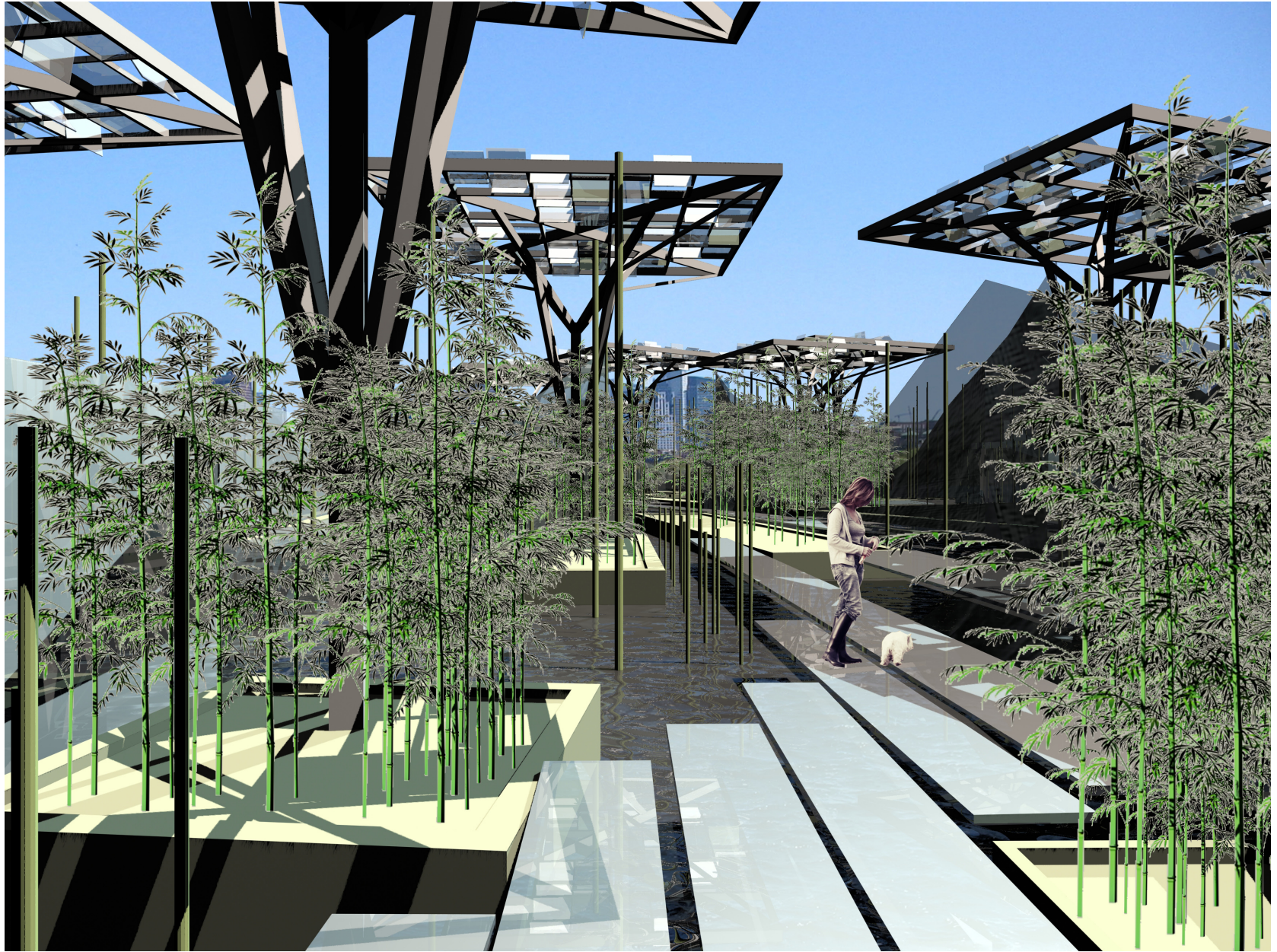
does one actually do this?

One important factor in designing the space of contemplation is how one draws on a framework of the wild (of physics, astronomy, and biological systems) as a jumping-off point for design, thus the earth rhythms described above. The design need not be completely reactionary. The design is a two-way conversation between the universe and the human. The universe provides, the human reacts, the universe reacts, the human provides. The following is a list of examples of some of the many environmental factors that the Charles River design would draw upon. Some of these elements are predetermined by the environment, and others could only exist with human intervention. They are called “musical elements” because one can look at nature as a magnificent, eternal, ever-modulating symphony. These musical themes can appear in different forms throughout the composition, but do not exist in the same form in any two places. They may be similar, but are still different. These musical elements are also determined by the designer. They can be related to any of the five senses. While the composition draws upon systems of nature, it is the responsibility of the designer to determine how to work with the system.

By integrating various systems in feedback loops, another level of complexity may be added to the design. Individual variables exist, and these variables are not only dependent on the environment but on reactions to each other. This is in some ways a recreation of a biological system, which will allow for infinite variations.

The Musical Experience

Perhaps it is easiest to think of the experience of moving through the site as a piece of music. There is an exposition, themes and variations, rising action, a climax, and a tapered *fin*. This piece of music is unique in that it incorporates all of the senses, and also exists as a physical space that one may move through. The



experience of the piece of music varies from person to person, depending on both the path taken through the site, and the time of day, season, weather, etc. This being said, however, the general parts of the piece of music remain stationary in location (exposition, etc.).

The beginning of this piece of music starts in the urban areas surrounding the Charles River, specifically the Back Bay and Memorial Drive/Massachusetts Ave. An aeolian (wind) harp begins its solo, gradually growing in size and intensity as one approaches the river. This is done through both increasing the number of strings and also by the fact that the wind is stronger along the river. This is an electric aeolian harp, built on the same principle of an electric guitar. The advantage of an electric aeolian harp is that it can be tied into the computer sensor system of the site.

One is drawn towards a path, made of semi-reflective glass, which seems to glide over the river. It gently touches the shore, then slides into a canyon created by the convergence of two aeolian harp walls. This path just happens to occur along the line of the summer solstice (sunset)/winter solstice (sunrise). The area between the aeolian harps is a zone of energy. This sound drowns out the noises of the city streets, easing the shift from city to river. The intensity of the drone depends on multiple variables, the most important being wind speed (the stronger the wind, the louder the sound). Additionally, the aeolian harp will react to loud noises in the environment, including passing cars, horns, and booms from thunderstorms (see included CD for examples of sounds). Finally, because this is an electric aeolian harp, sensors react to nearby people and will alter the sound of the harp accordingly. The path itself varies in width, from just enough for two people up to perhaps 30 feet (places to stop and absorb the sound of the harps). Gradually, glass "trees," also made of semi-transparent, semi-reflective glass, begin to appear, growing above the pathway, and reflecting the blue of the water and the sky. As one travels onward, the number of "trees" becomes denser, surrounding and bathing the visitor in bright, clean energy.

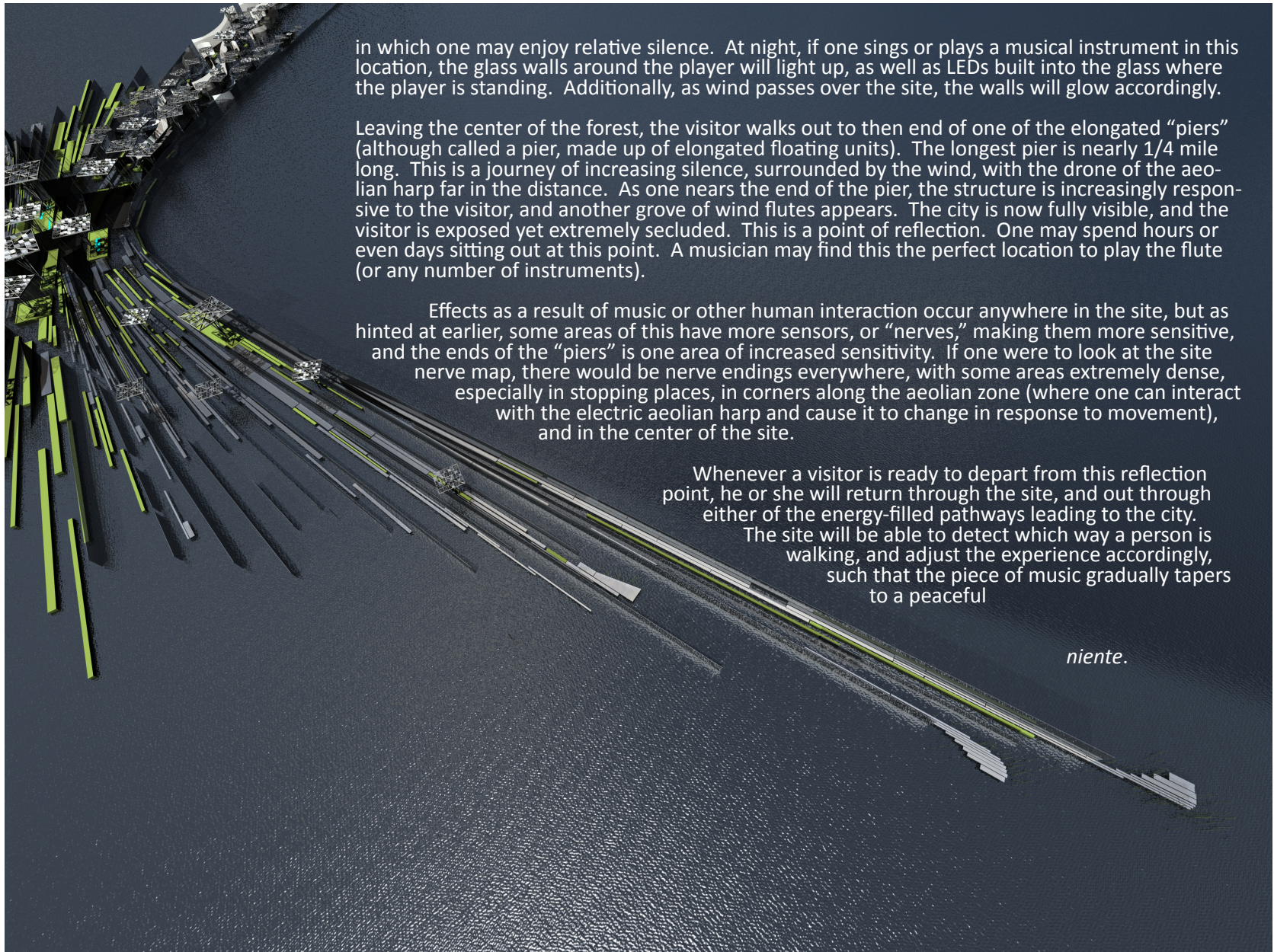
As one approaches the center of the river, the strings of the harps begin to disperse in various directions throughout the site. This marks a transition from the pure energy of the exposition to more dispersed, relaxed, nuanced energy. One enters the "forest." The glass trees become denser, but taller. Because the glass "leaves" of the tree constantly rotate in the wind, they are an indication of the wind passing over the site and also create an infinitude of reflections between water, sky, and pathway. At this

Hybridization of Technology and Natural Phenomena

point, one also starts to notice the inclusion of biological elements interspersed with the human-produced materials. At first, there are just patches of grass and moss, and then larger grasses, narrow meadows, bamboo, and even some smaller trees. By this point, the drone of the aeolian harps has faded to a dull hum in the background, an underlying keynote on top of which the rest of the music occurs. The hiss of the wind becomes more apparent, as there are walls that act as wind breaks made of thousands of pieces of metal that rotate in the wind, also reflecting light and generating electricity. At night, this electricity can be converted into energy to power lights in the site. Since there will be no batteries, light intensity will vary directly with wind intensity. During the day, the electricity can be used for sonic purposes.

As one leaves the zone of the aeolian harp, the path spreads out through the water, branching and asking the visitor to move freely and at his or her own whim. Pathways vary in size from as small as 2 feet to 6 or 8 feet. By following a less obvious path, the visitor can isolate him or herself and contemplate without disturbance. The surface that the visitor is walking on has give to it; it is floating on the water, anchored firmly in place, but allowed to bounce slightly with each step. The pathway has become broken into many of these floating islands. Some are large and wide; others long and narrow. Narrow ones naturally imply circulation, especially for the individual traveler. Squarer ones and dead-ends imply a place to pause and are enhanced with a greater density of sensors, making the space more responsive to the user and enhancing the interaction between the user and environment. Finally, some are only accessible during the winter, when the river surface freezes.

The center of the site is a zone of intersection between many different site elements. It is the intersection of the "forest," the "solstice organ," and the "piers." It is a hybrid zone incorporating both mechanical and biological elements. It is both the densest and the most open part of the site (in terms of the "lily pads," these are very large, allowing for multiple visitors to occupy them at once, but there are also numerous wind flutes and bamboo shoots that obscure quick, direct movement. This is one of the climaxes of the musical piece. The visitor has completely forgotten about the city surrounding the site. To the extremities of the site are pathways that seem to extend to infinity, separating those individuals who wish to be alone. Reaching the end of one of these "piers," the pathway widens just slightly, creating a stopping space



in which one may enjoy relative silence. At night, if one sings or plays a musical instrument in this location, the glass walls around the player will light up, as well as LEDs built into the glass where the player is standing. Additionally, as wind passes over the site, the walls will glow accordingly.

Leaving the center of the forest, the visitor walks out to then end of one of the elongated “piers” (although called a pier, made up of elongated floating units). The longest pier is nearly 1/4 mile long. This is a journey of increasing silence, surrounded by the wind, with the drone of the aeolian harp far in the distance. As one nears the end of the pier, the structure is increasingly responsive to the visitor, and another grove of wind flutes appears. The city is now fully visible, and the visitor is exposed yet extremely secluded. This is a point of reflection. One may spend hours or even days sitting out at this point. A musician may find this the perfect location to play the flute (or any number of instruments).

Effects as a result of music or other human interaction occur anywhere in the site, but as hinted at earlier, some areas of this have more sensors, or “nerves,” making them more sensitive, and the ends of the “piers” is one area of increased sensitivity. If one were to look at the site nerve map, there would be nerve endings everywhere, with some areas extremely dense, especially in stopping places, in corners along the aeolian zone (where one can interact with the electric aeolian harp and cause it to change in response to movement), and in the center of the site.

Whenever a visitor is ready to depart from this reflection point, he or she will return through the site, and out through either of the energy-filled pathways leading to the city. The site will be able to detect which way a person is walking, and adjust the experience accordingly, such that the piece of music gradually tapers to a peaceful

niente.

Satellite Image with plan view of site. Note the Extension of the Aeolian harp deep into surrounding blocks, in relation to the idea of contemplation spaces existing as an infinite gradient spread over the city, denser in some areas than others. Dimensions: shore to shore approx. 2300' x tip to tip (east-west) 1500'



Curves: Derived from path of sun and relation to central “solstice organ.” This “solstice organ” is 75’ tall at its highest, creating a massive sundial. The curves are further accentuated so that they optimize protection from the city and long views up and down the river.

Diagonal line:
Northwest corner is sunset on summer solstice, southeast is sunrise on winter solstice. Sunlight can pass through the entire site unobstructed along this line. This line also coincides with the aeolian harps (wind harps), which create a zone of pure energy that the visitor must pass through during the transition from city to contemplation space.

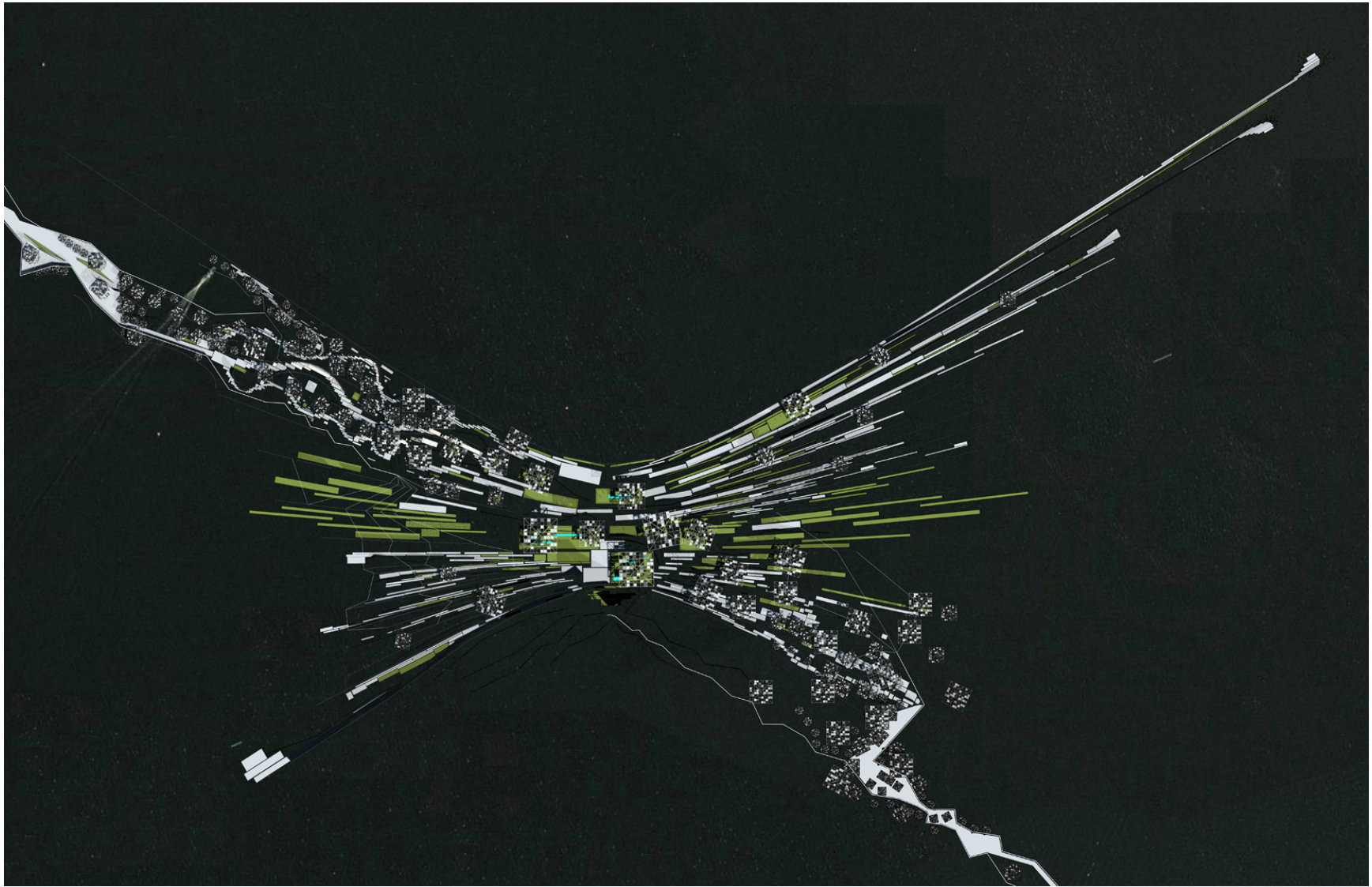
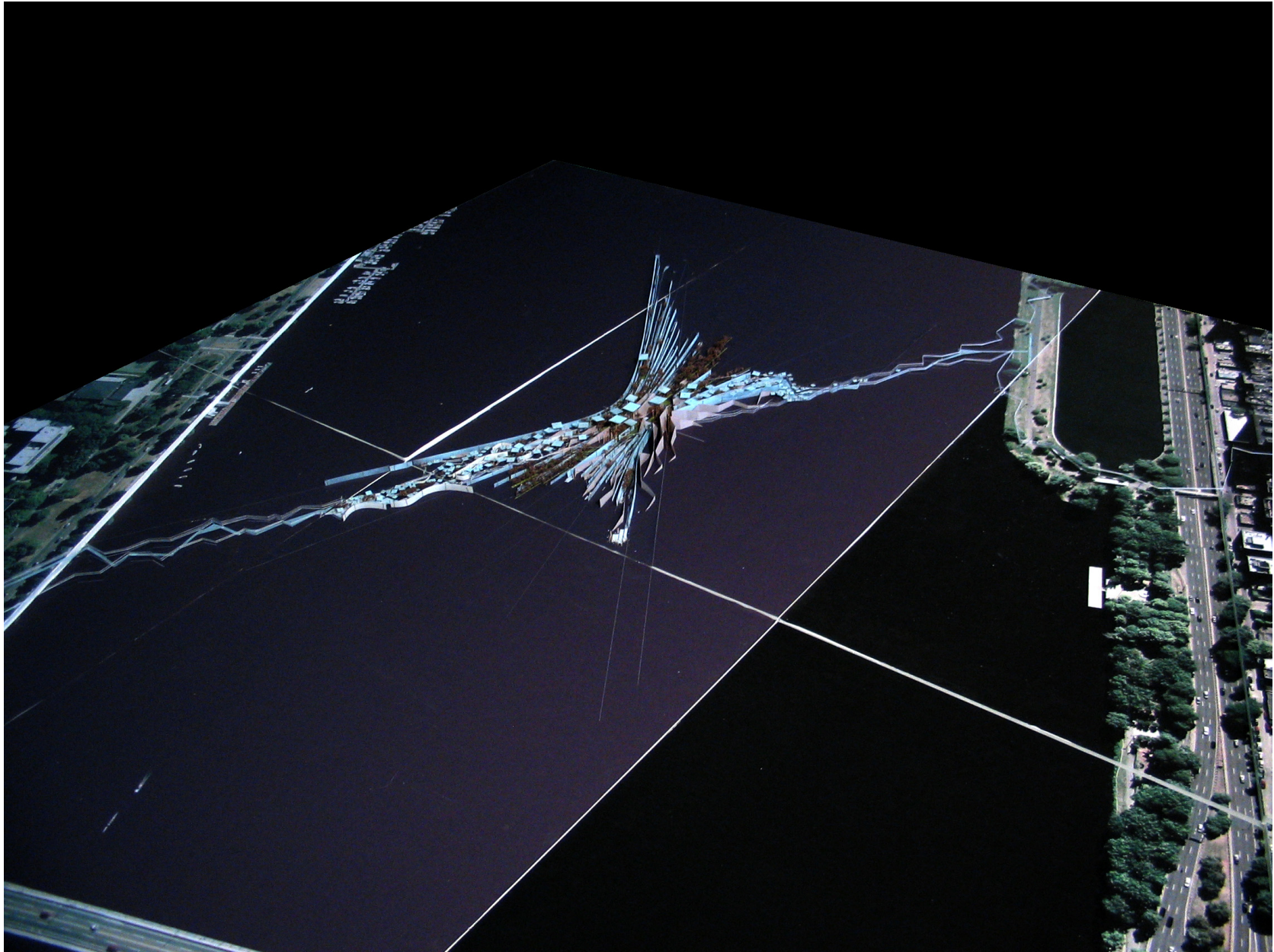
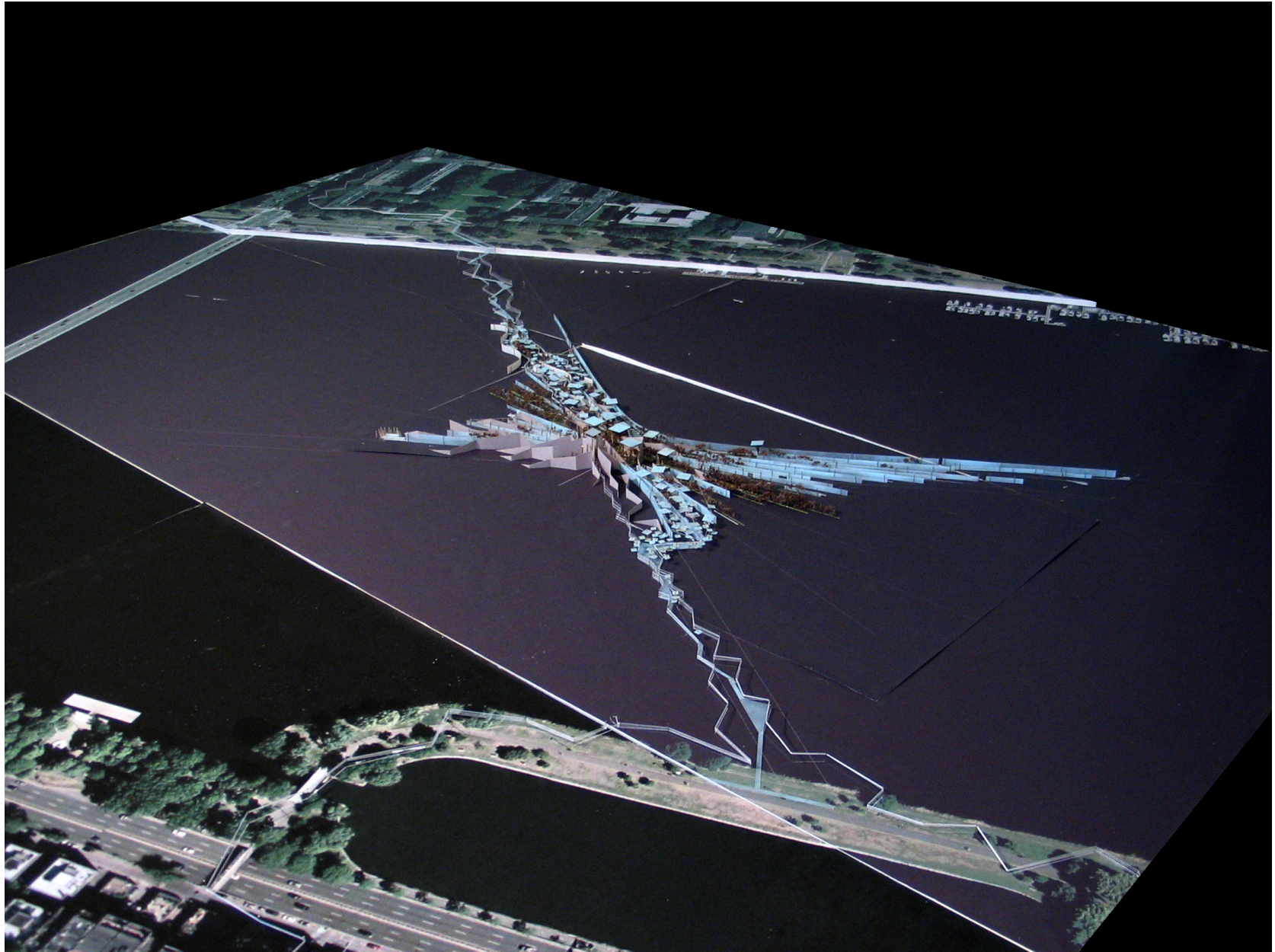
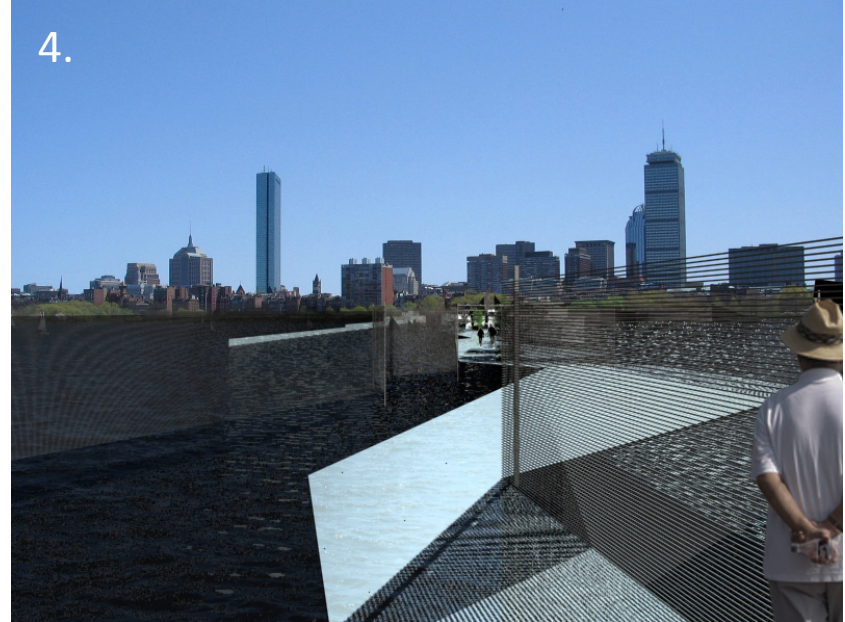
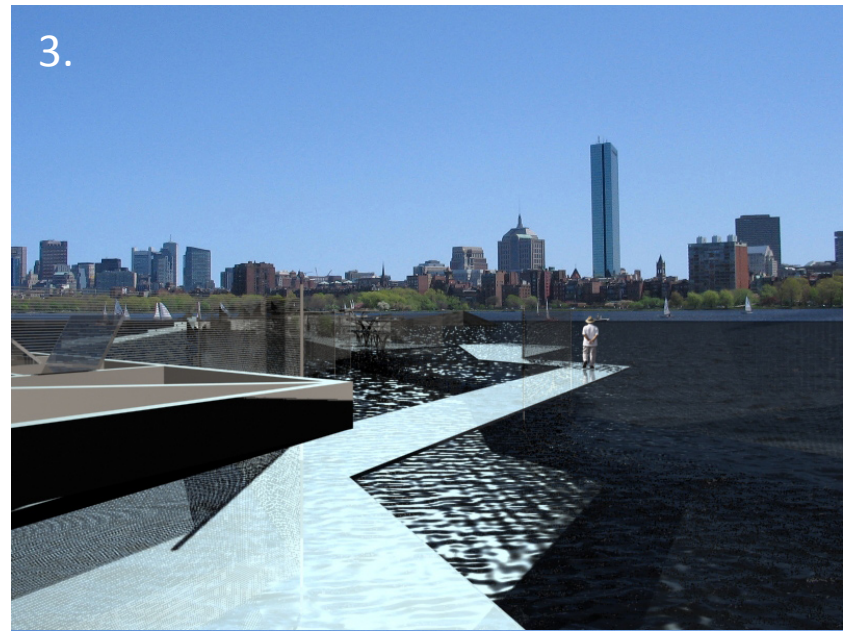
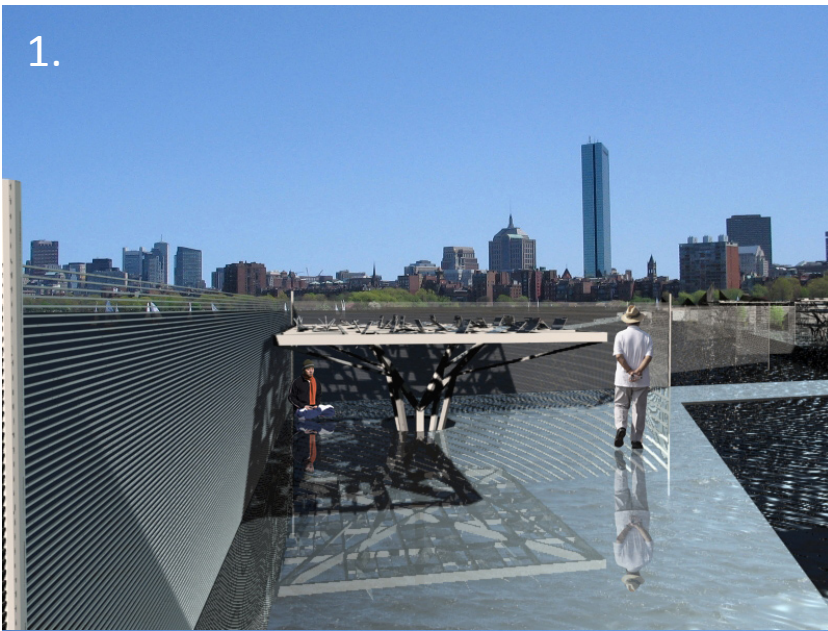


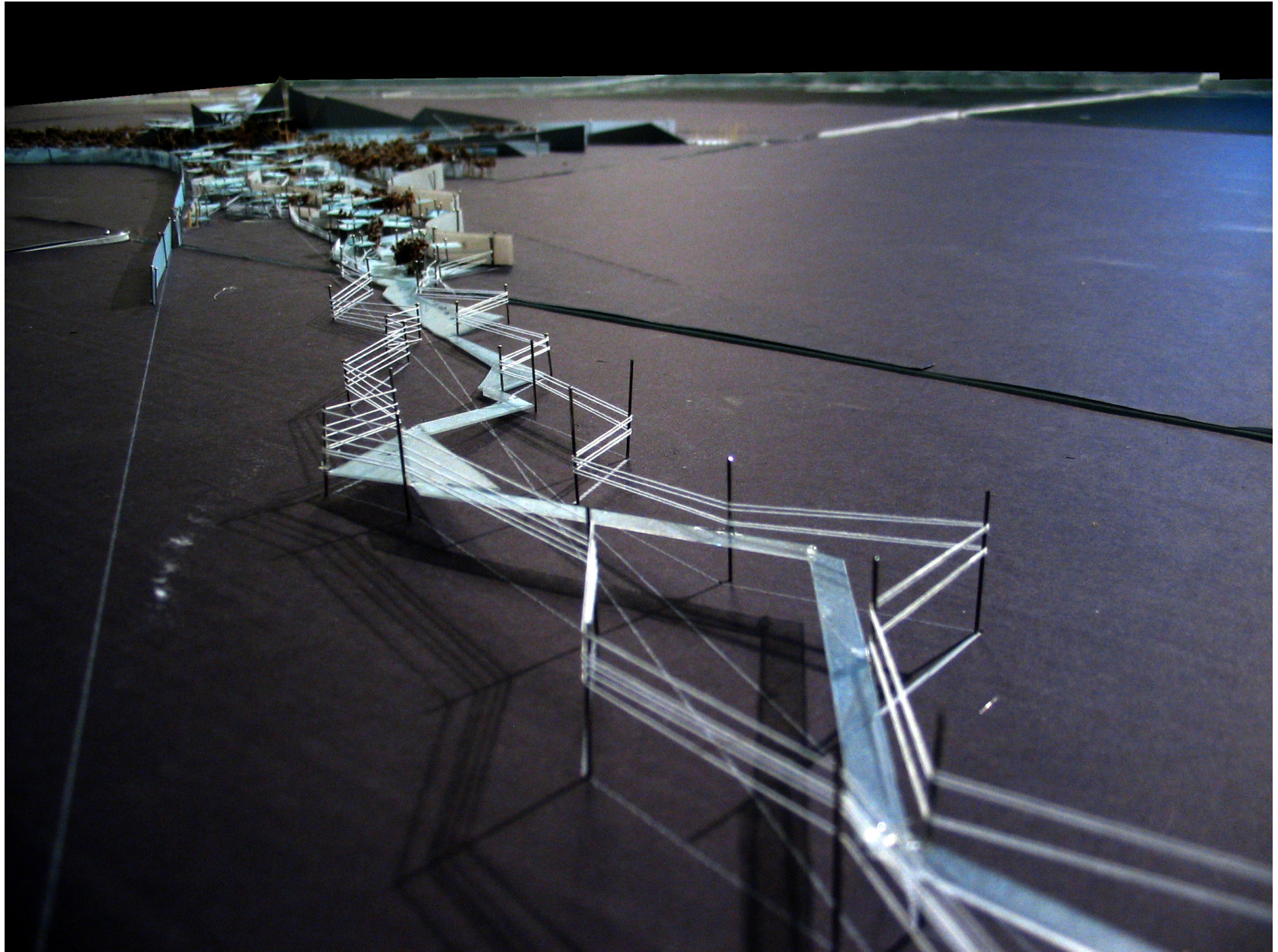
Image of the main portion of the plan, showing transition from the aeolian zone to glass tree “forest, bamboo/tall grass patches, and long, isolating “piers.”



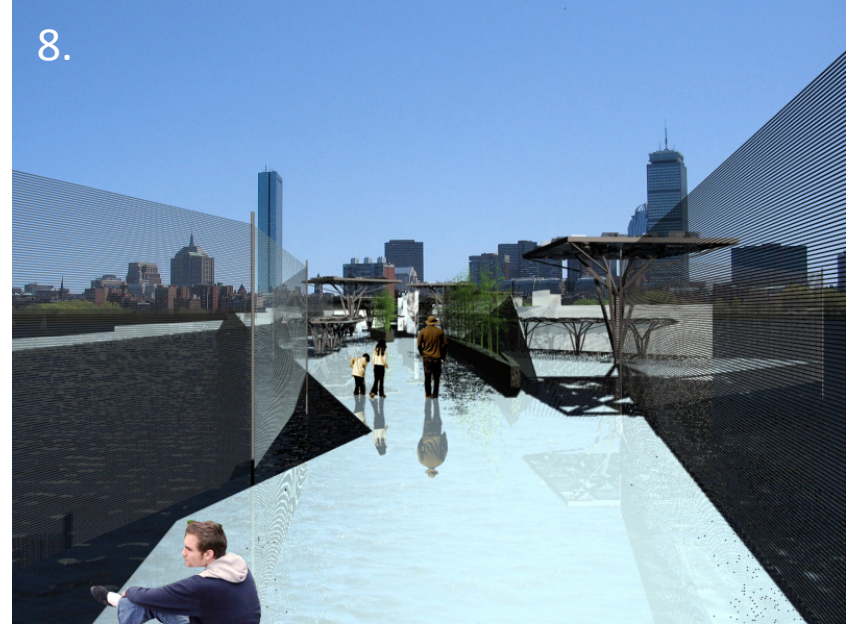
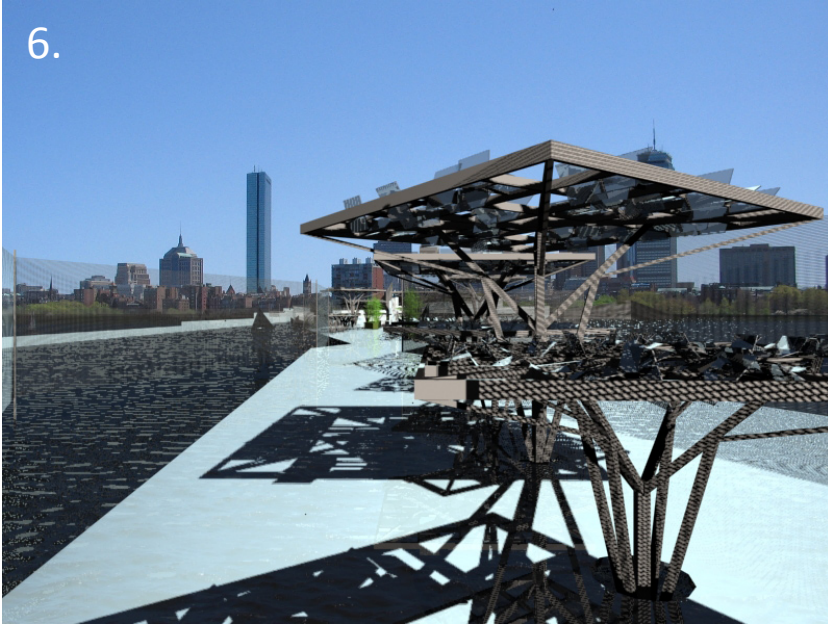
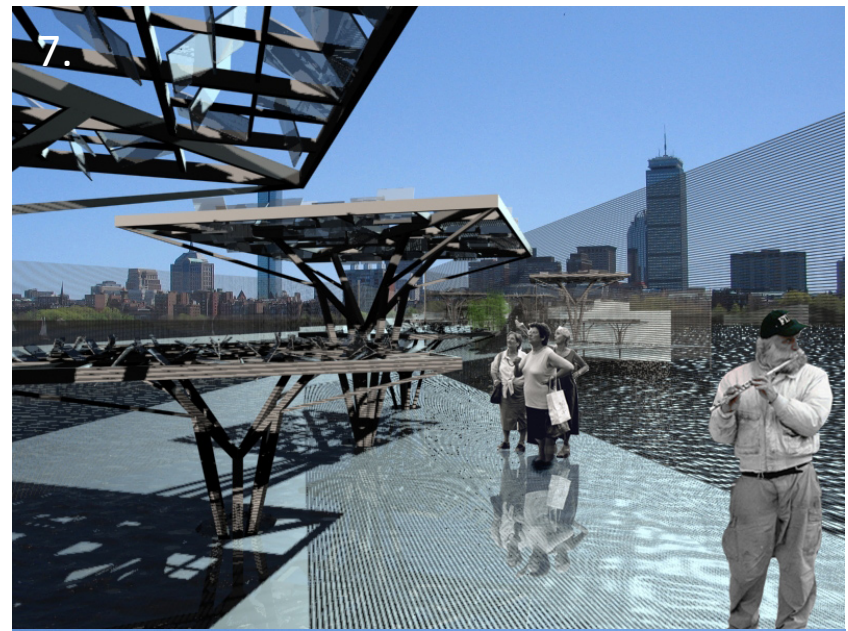
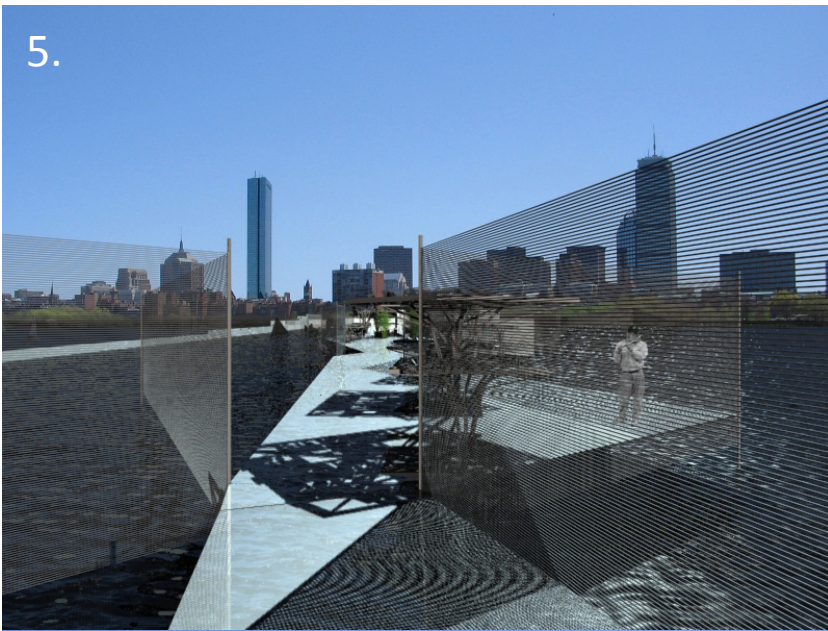


Visual Site Narrative





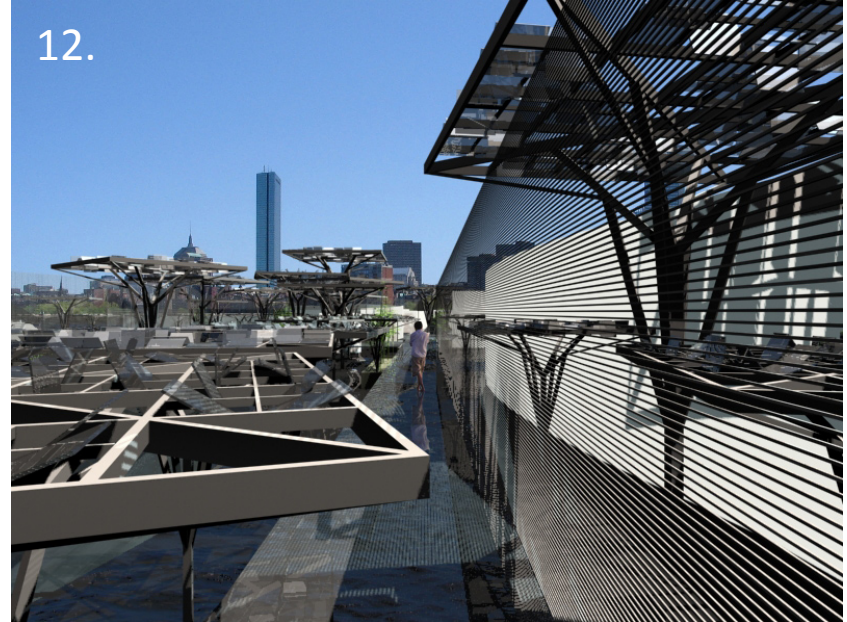
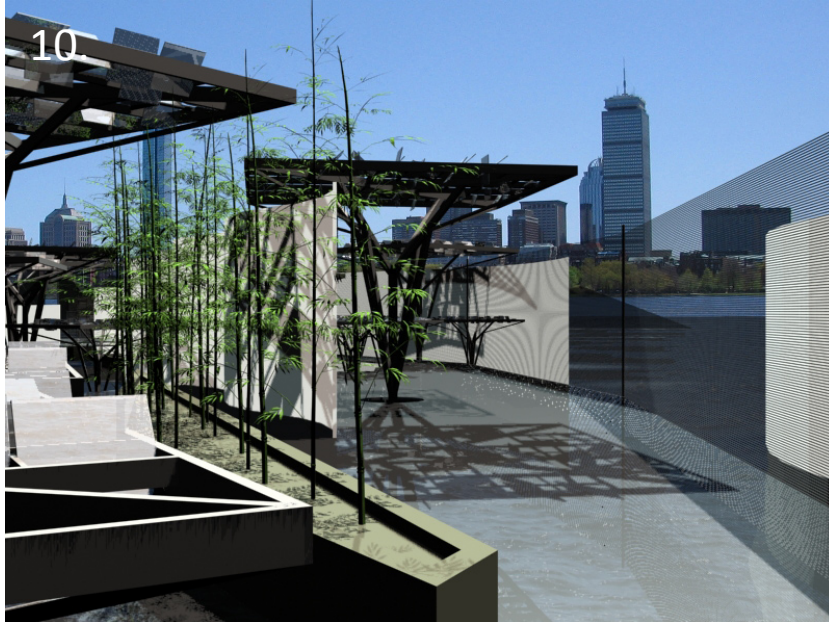
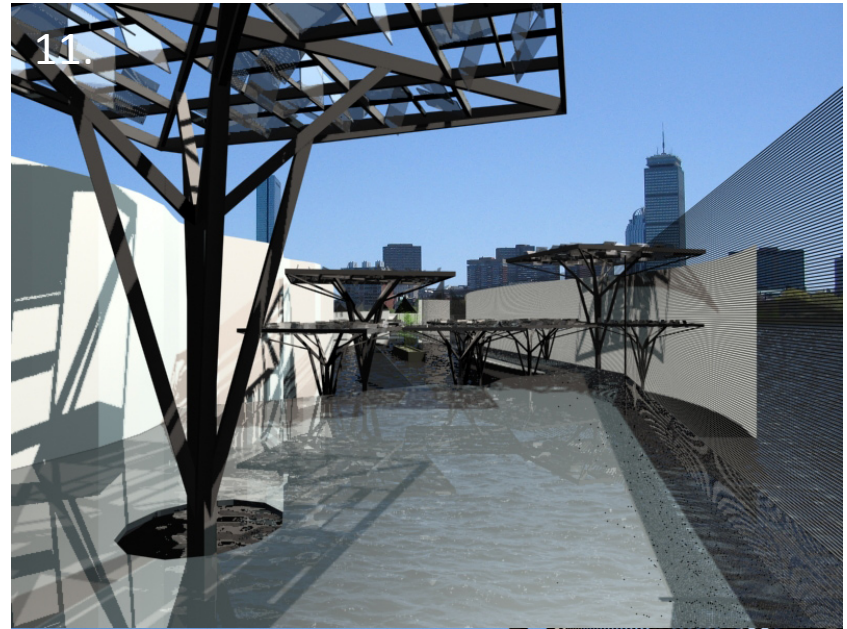
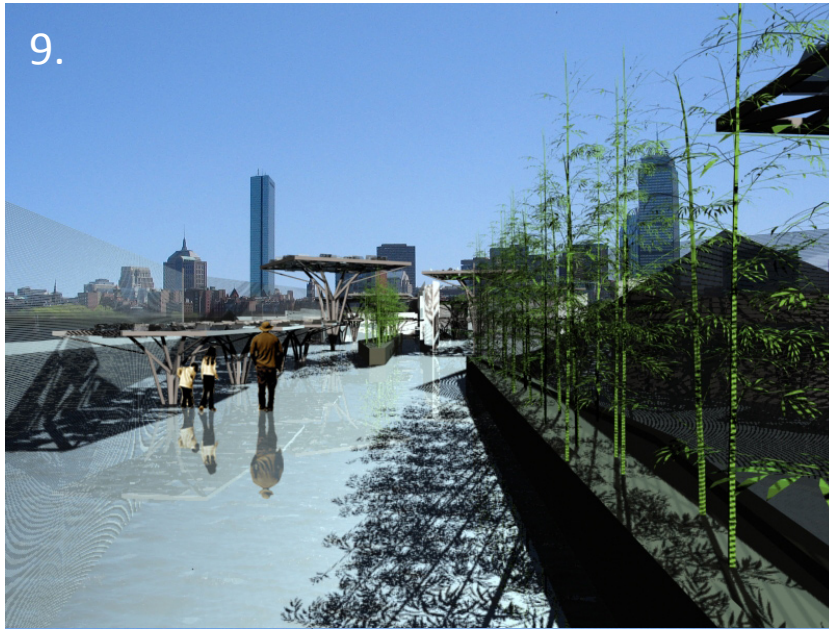
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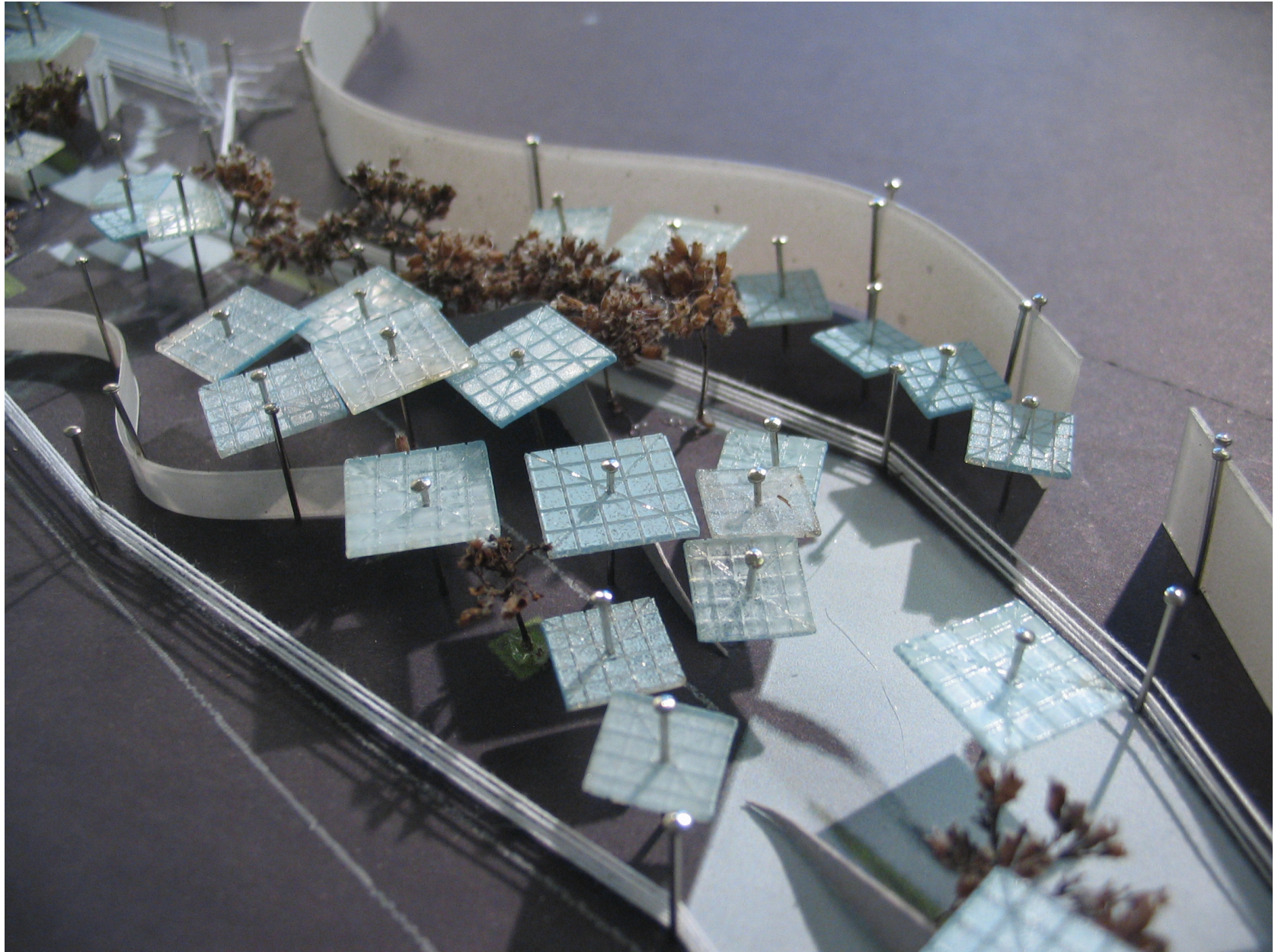


The first step in the journey through the site starts with the aeolian harp zone, a zone of energy created by an electric aeolian harp. Here one is surrounded by a drone of energy that responds to its environment as well as the visitor. Stopping in a corner by the harp, the visitor triggers a slight increase in the volume of the harp. A quick move silences the harp.

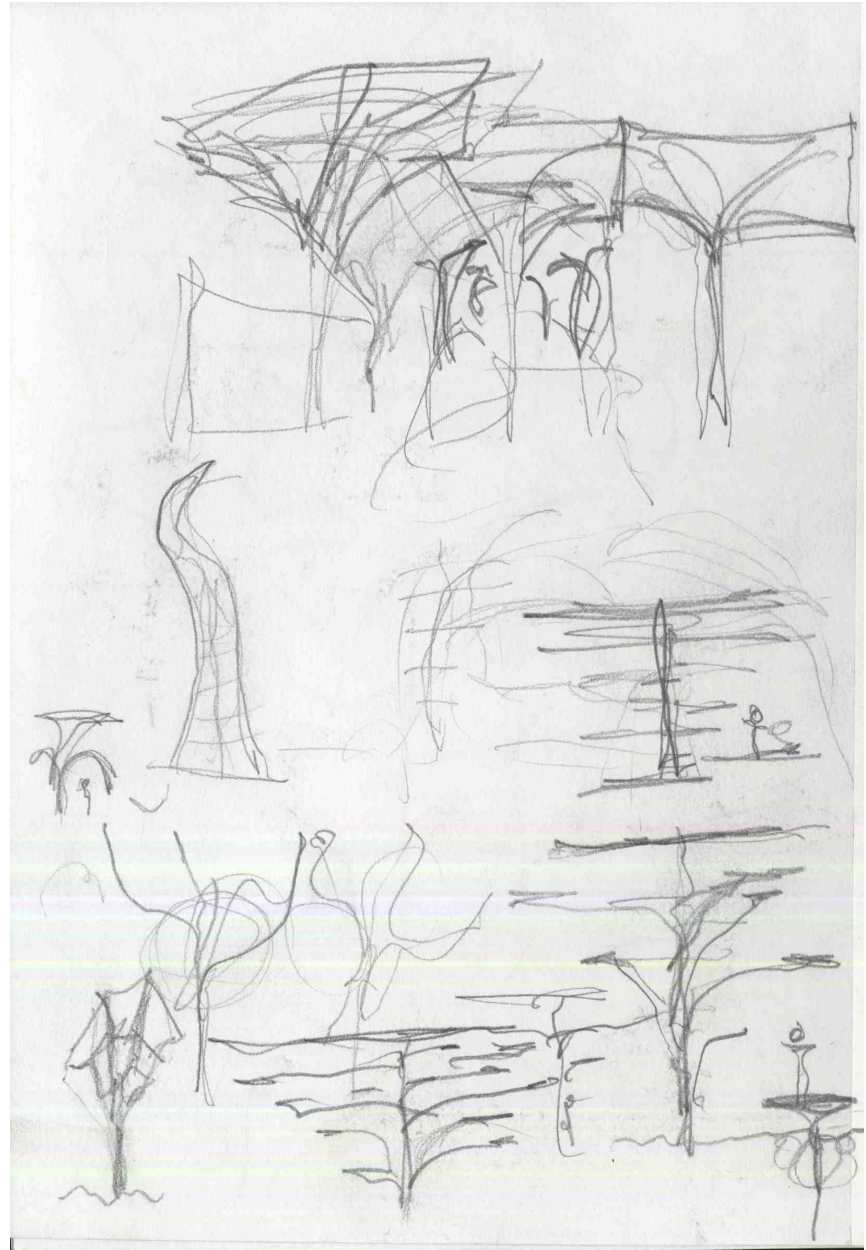
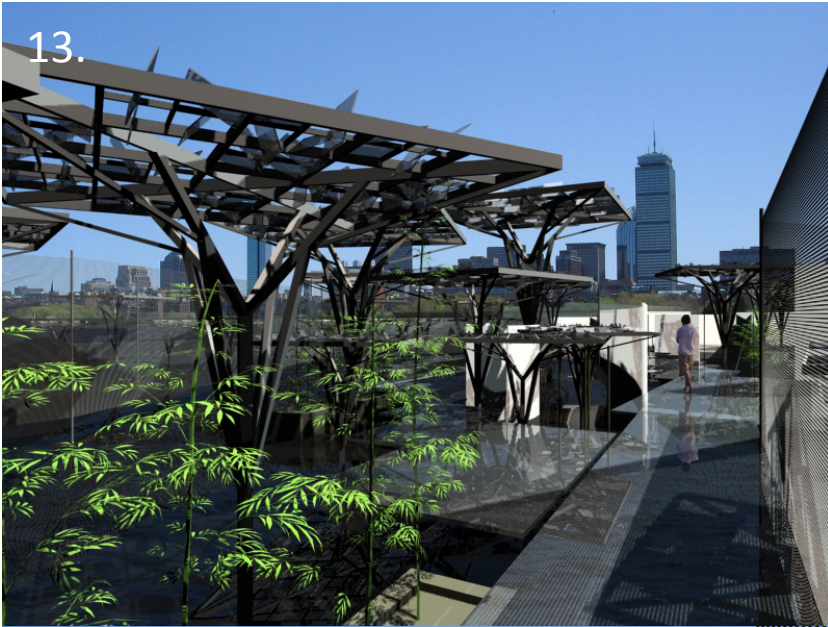


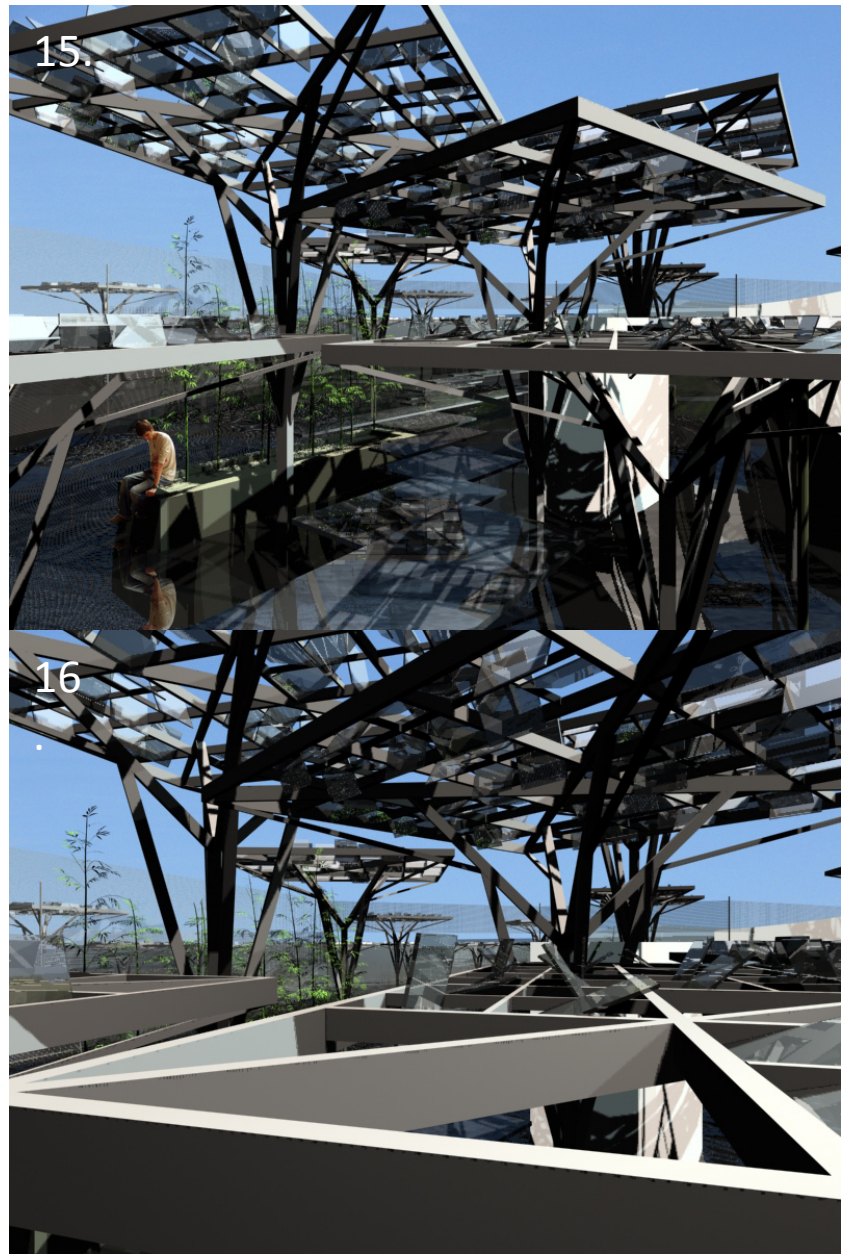
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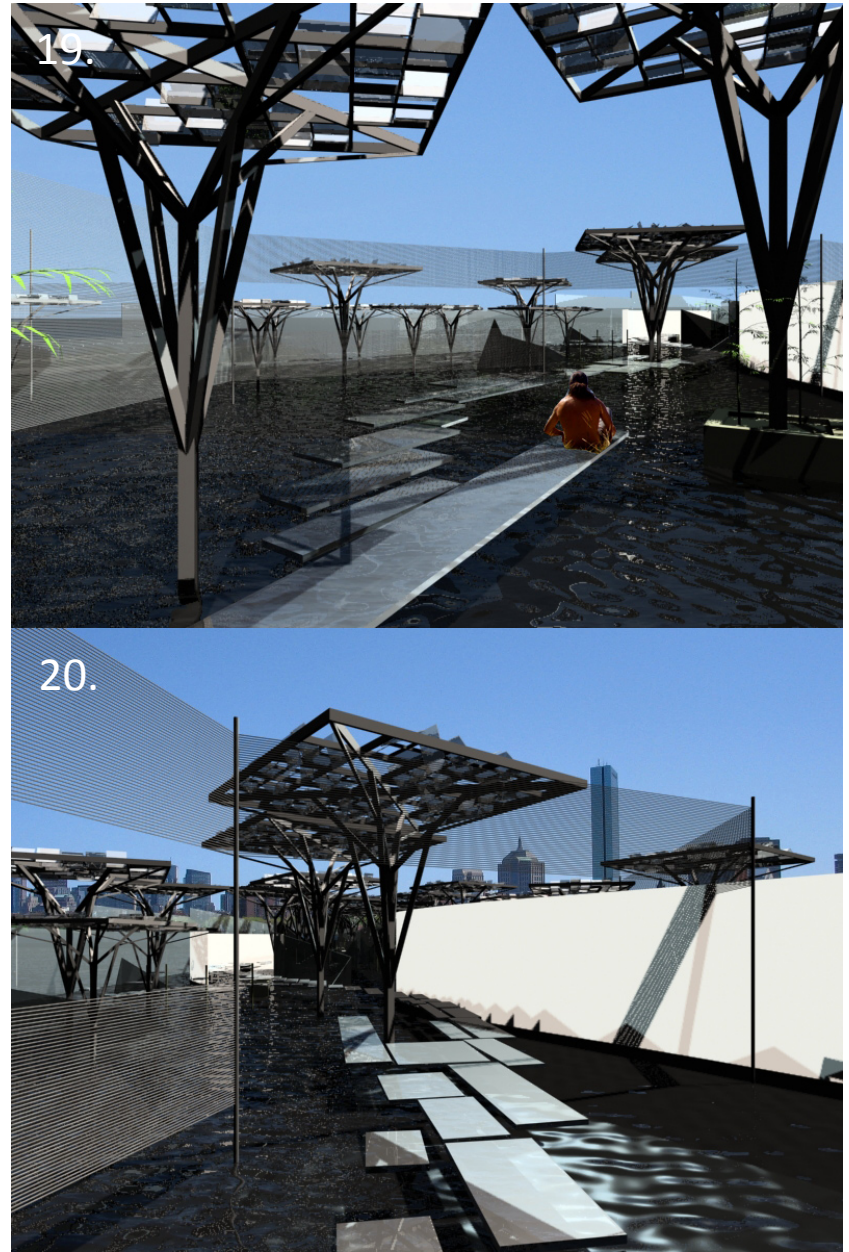
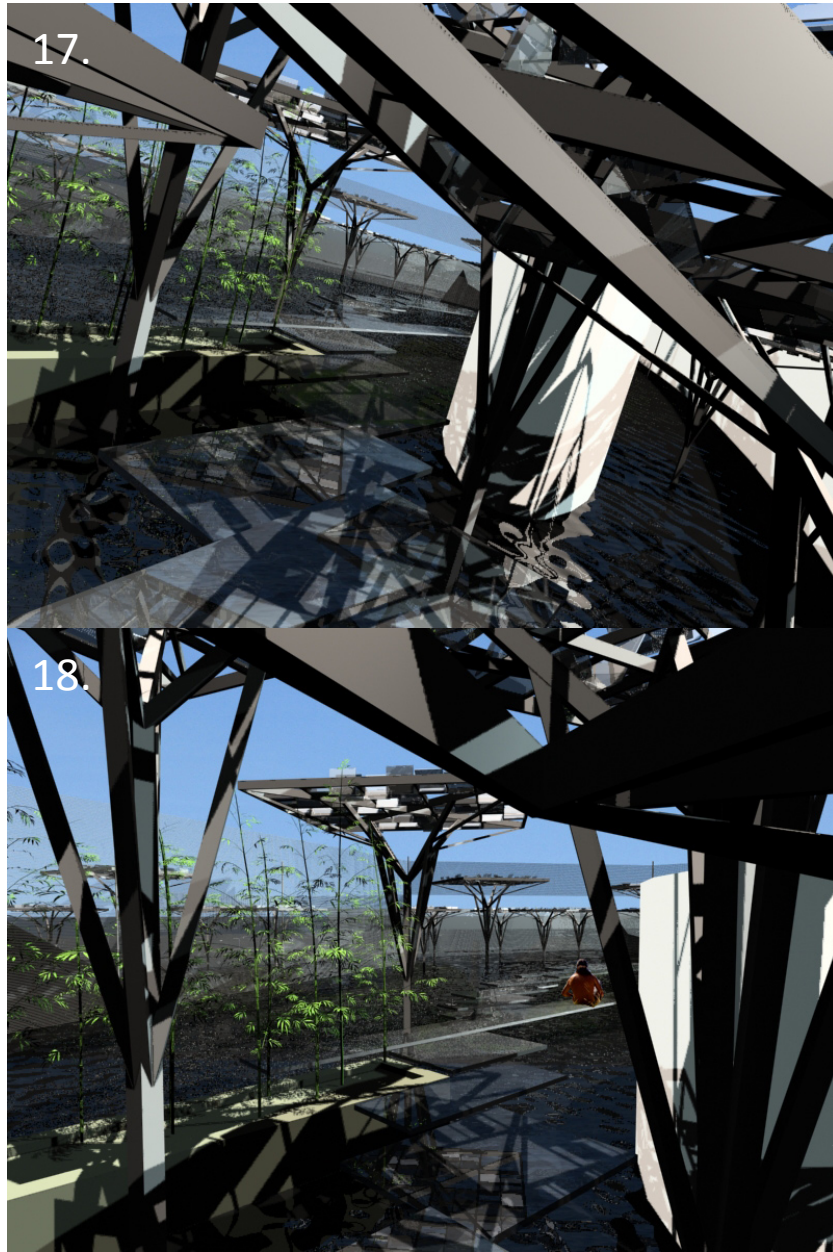


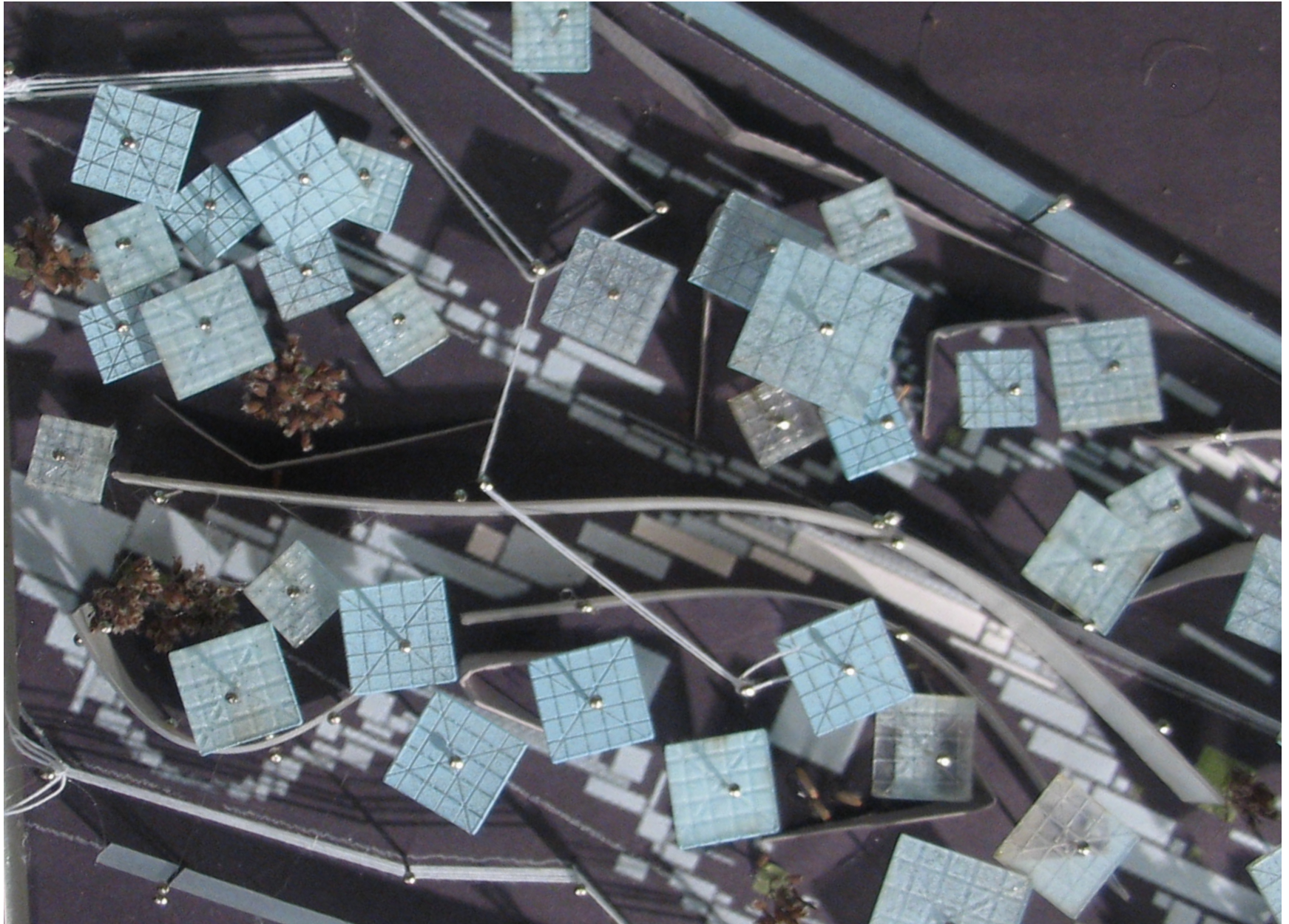
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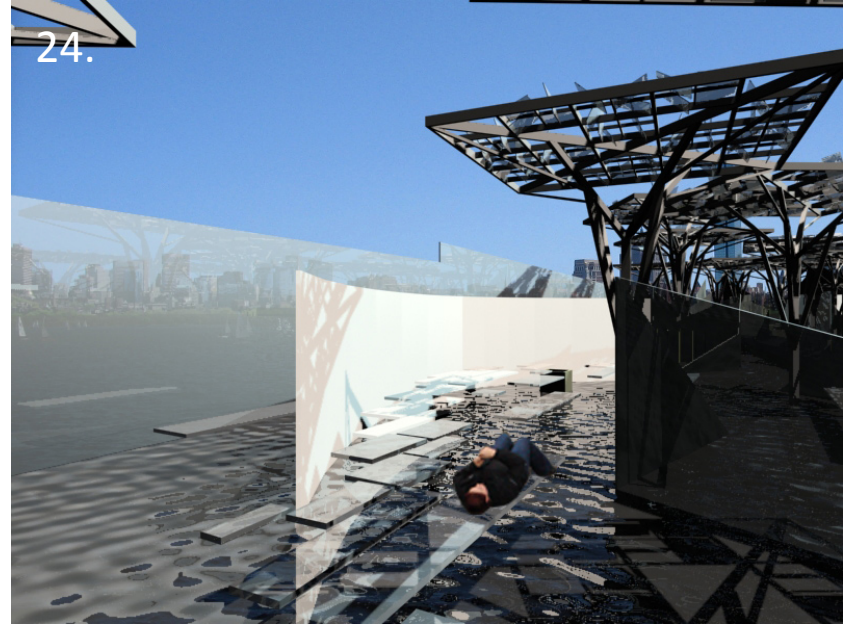
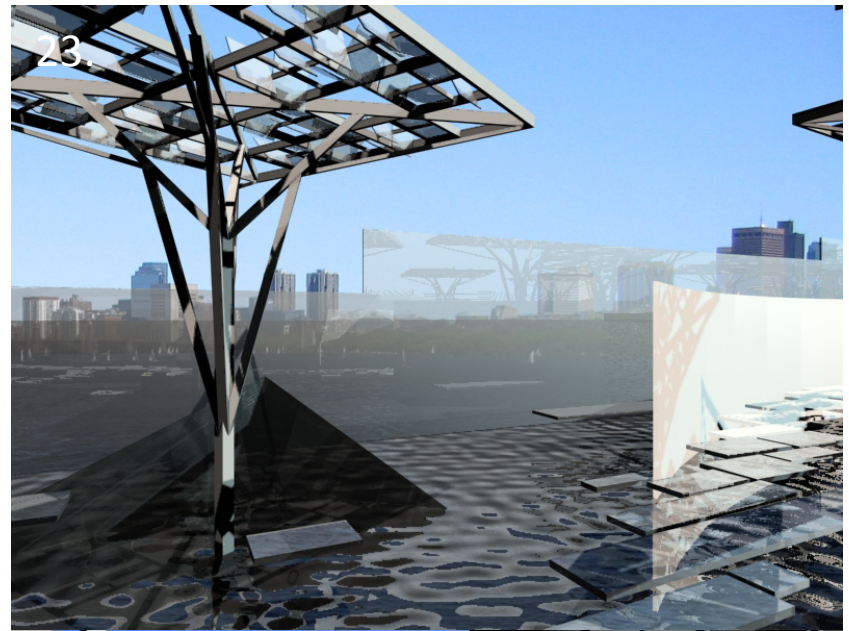
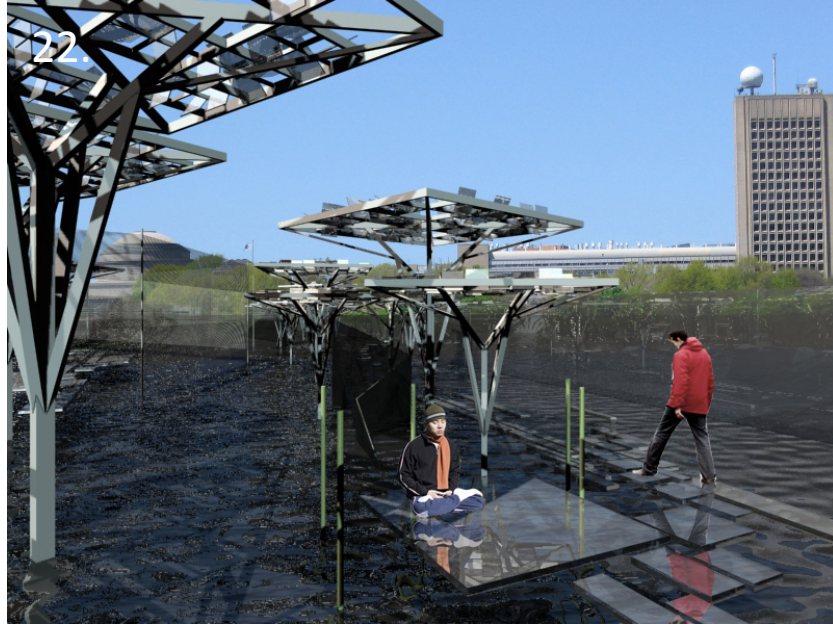
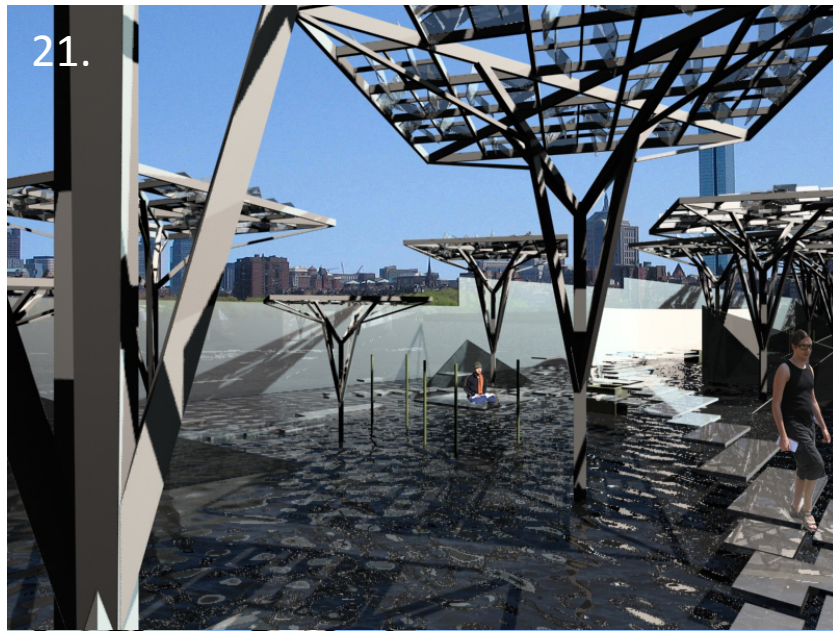


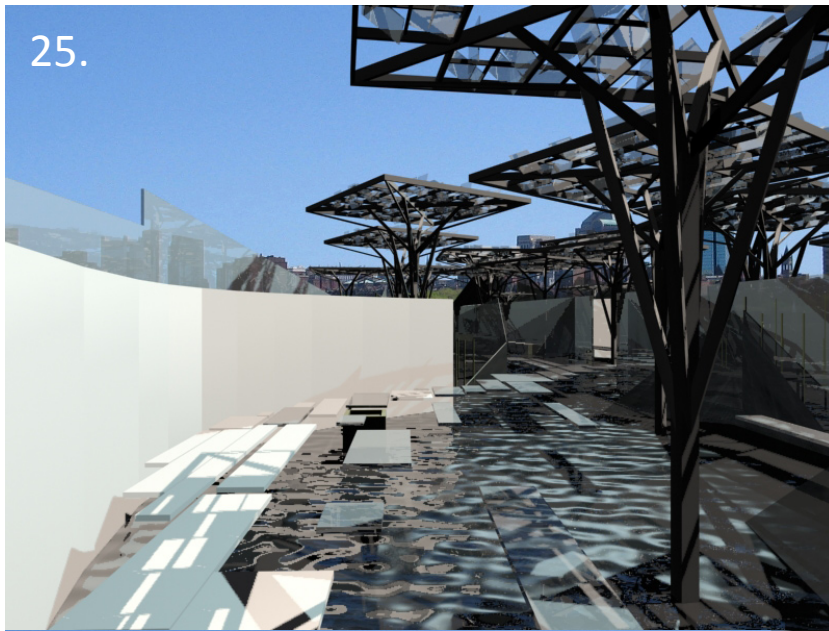
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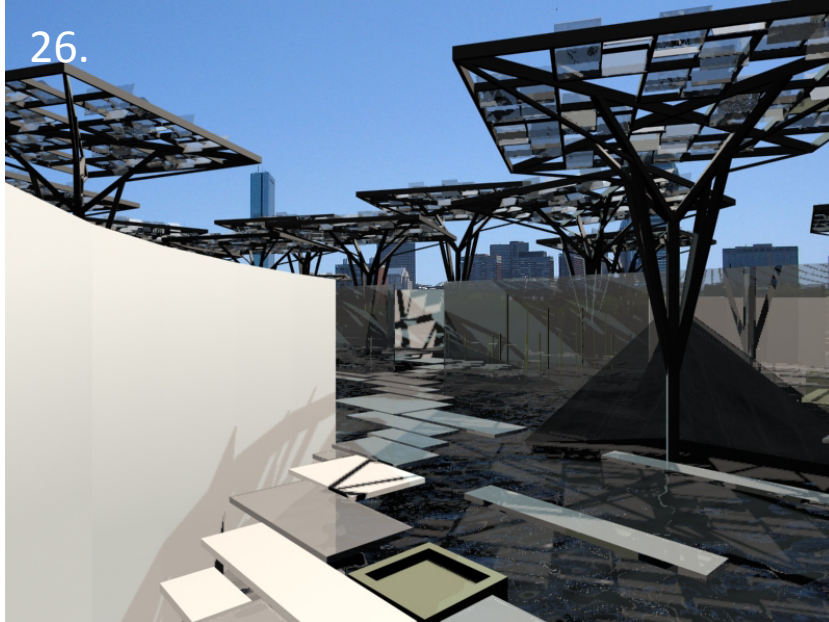


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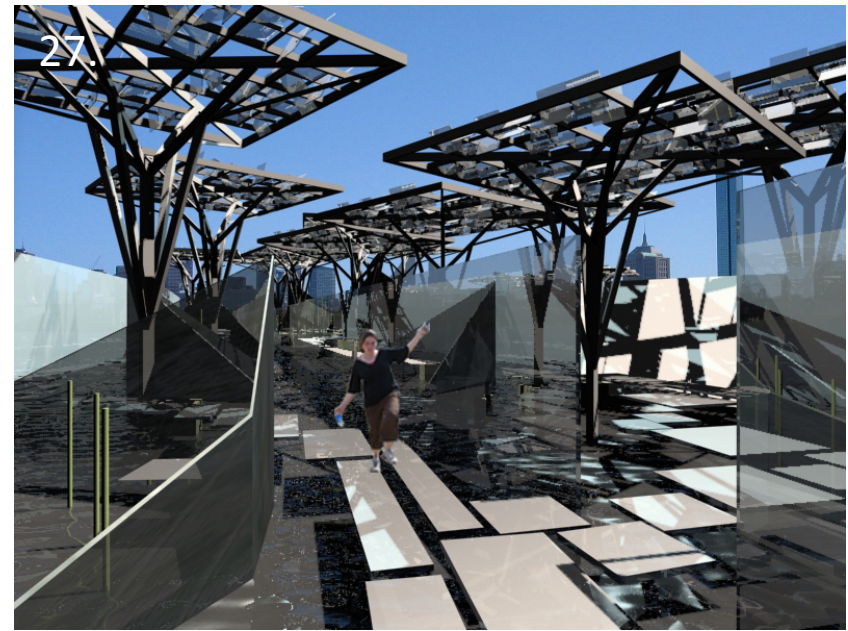




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26.



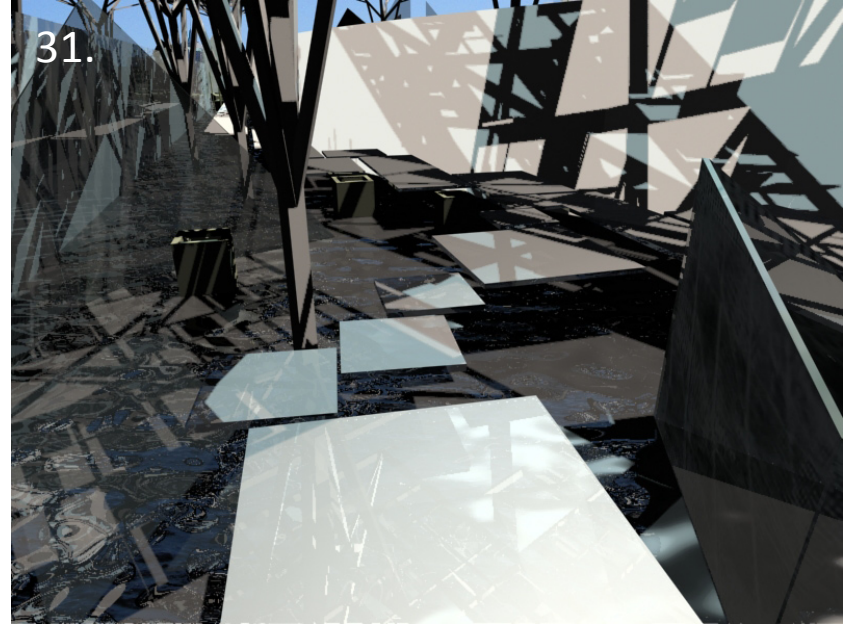
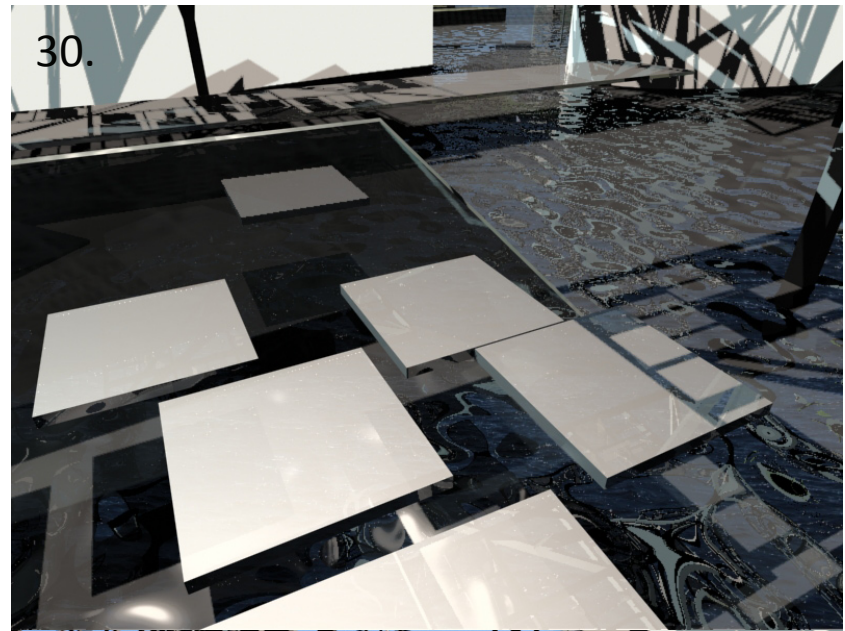
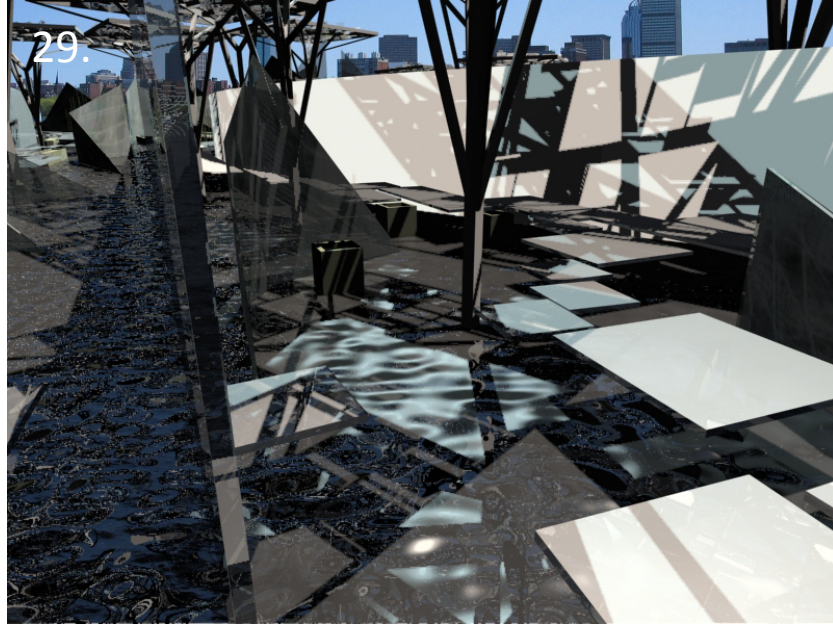
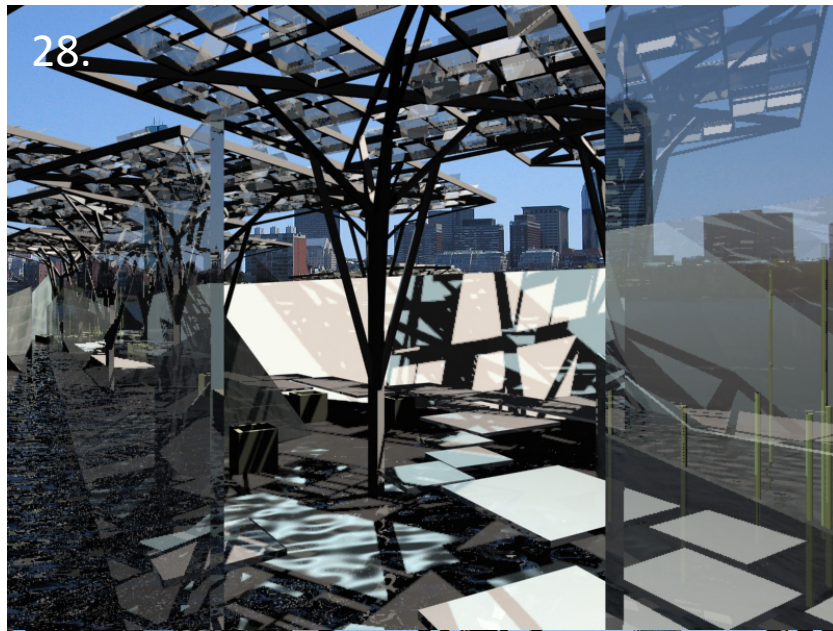
27.

The woods are becoming denser, but the trees are also growing taller, so the net effect is a feeling of release. In some places, “moon walls” and “moon paths” are built out of white translucent material to reflect moonlight. This silvery light will then be reflected by the glass tree “leaves,” water, and walls.

The so-called “rustle walls,” made of thousands of pieces of metal, are becoming larger and therefore noisier, accentuating the hissing of the wind.

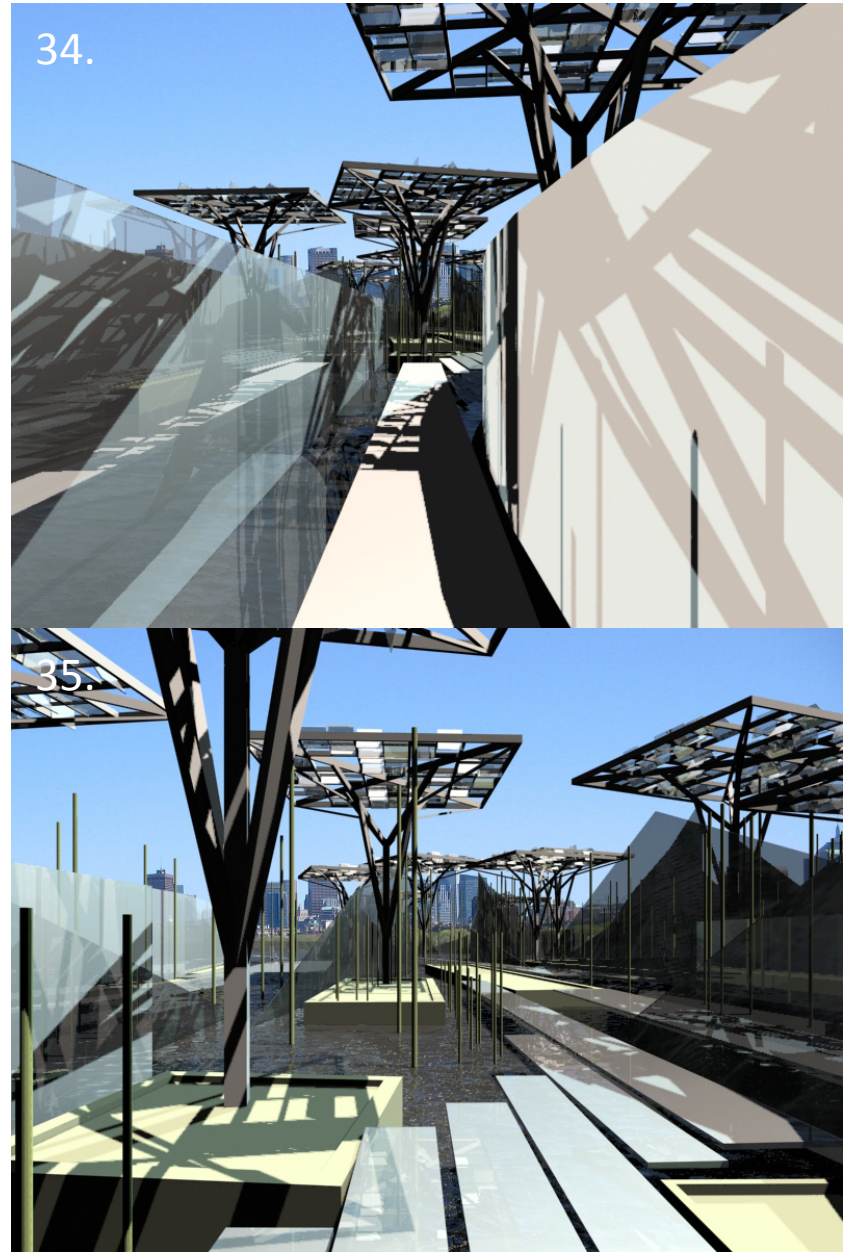
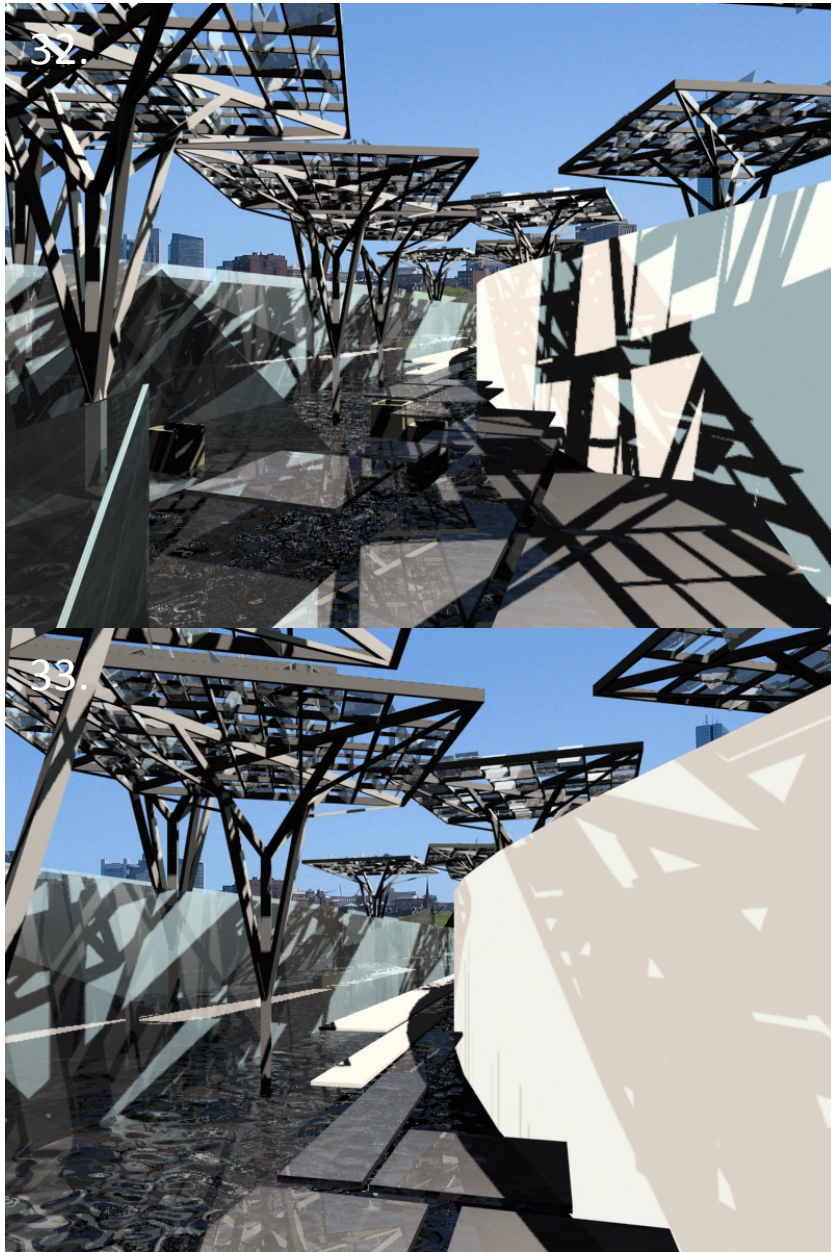
The pathway itself is made of floating pieces of glass (structure undetermined at this point in design process), that are like lily pads that one can step on. Some are larger and some are longer, creating places to stop. Image 23 shows one such pad in use by a person meditating. The wind flutes around him are reacting to his presence by giving low moans.

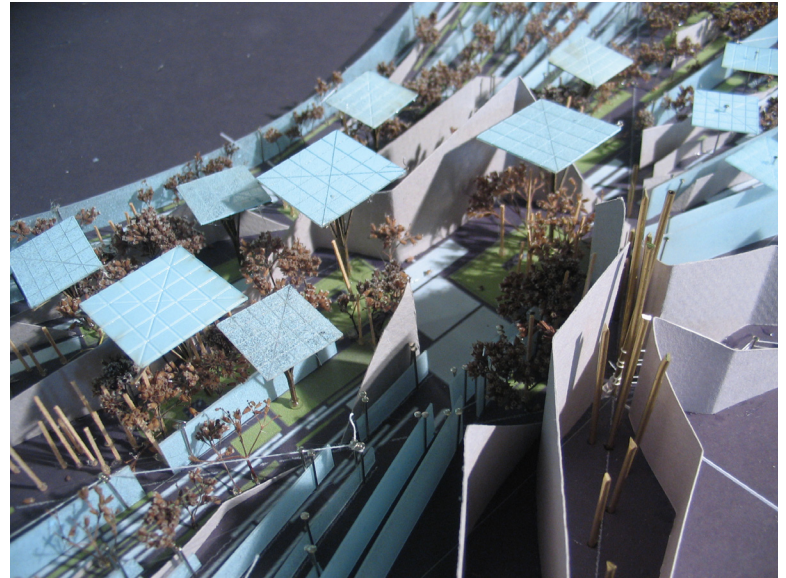
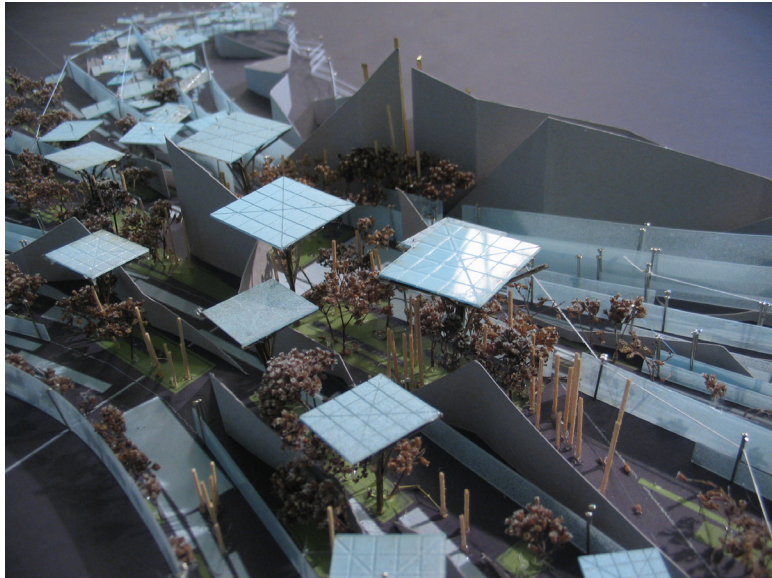
Visual Site Narrative



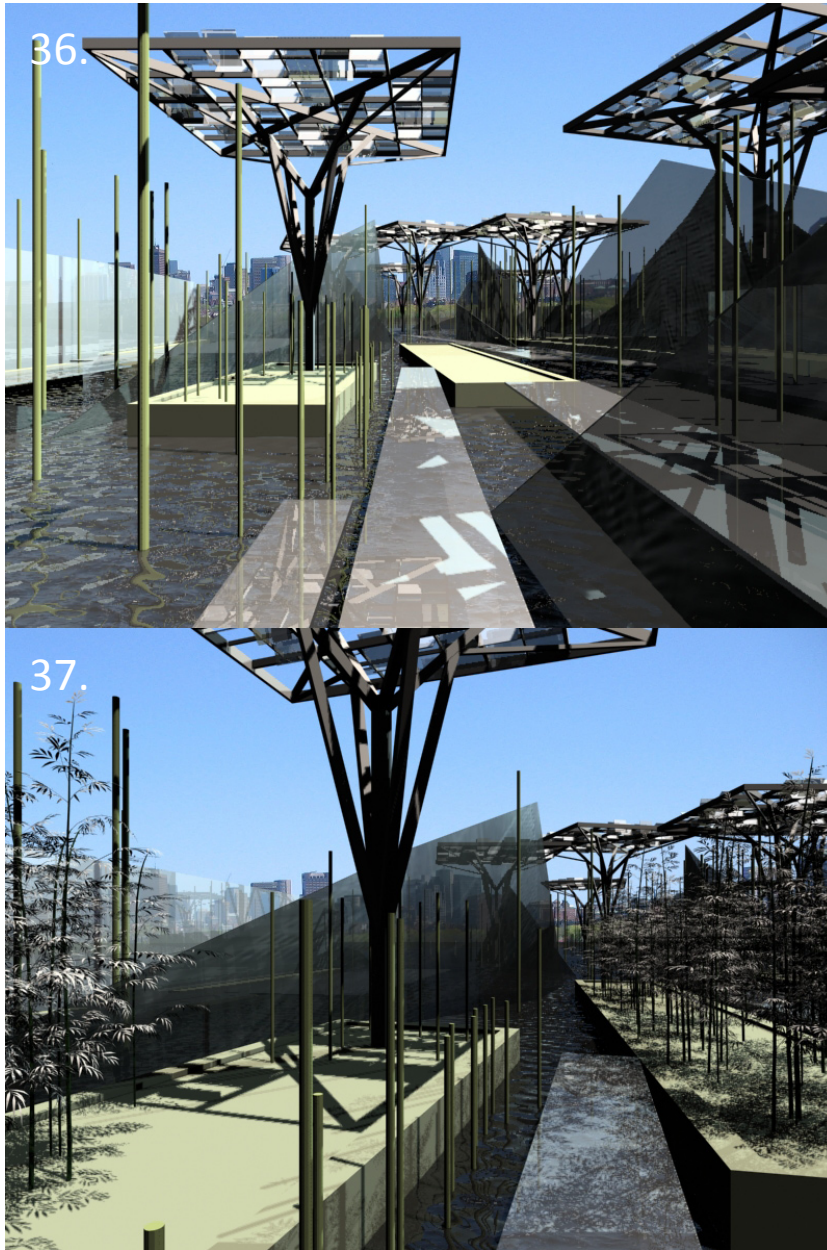


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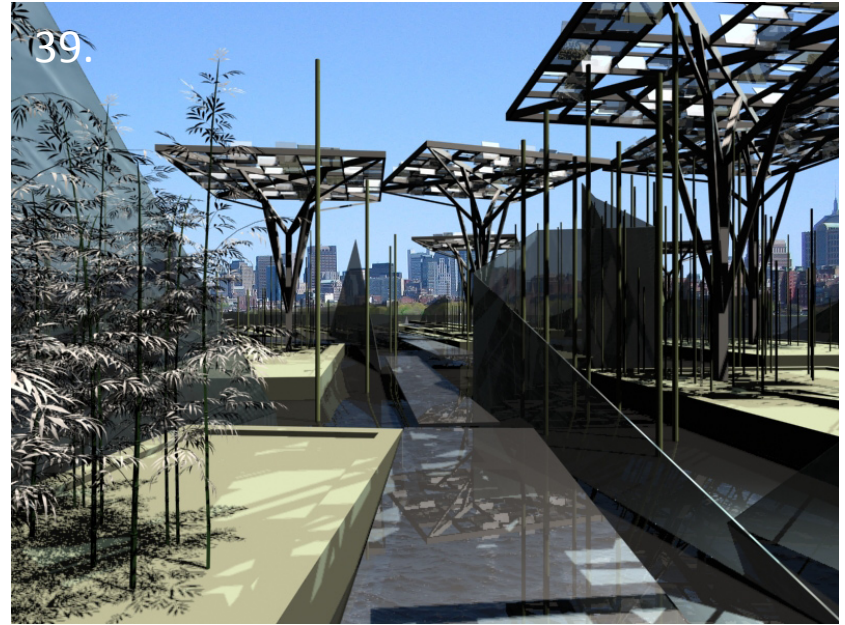
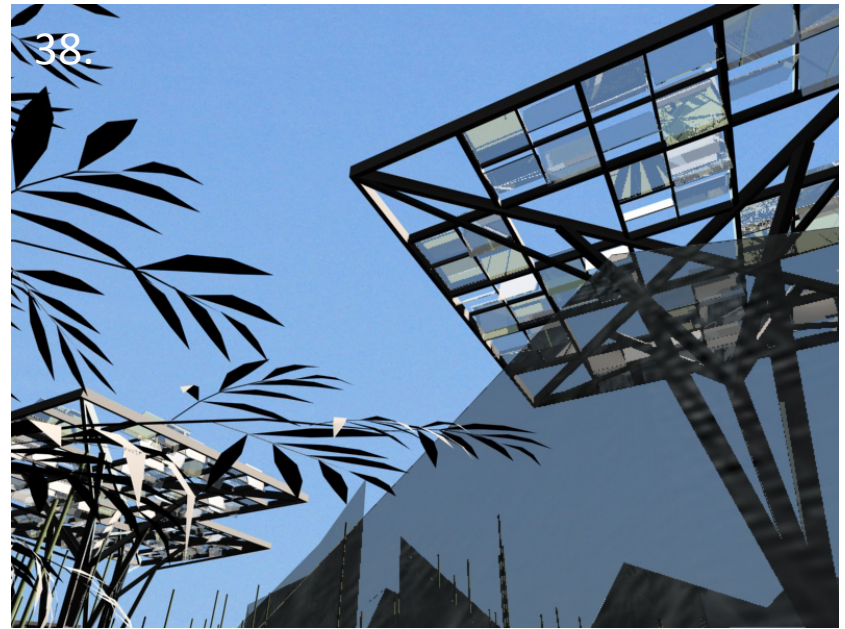




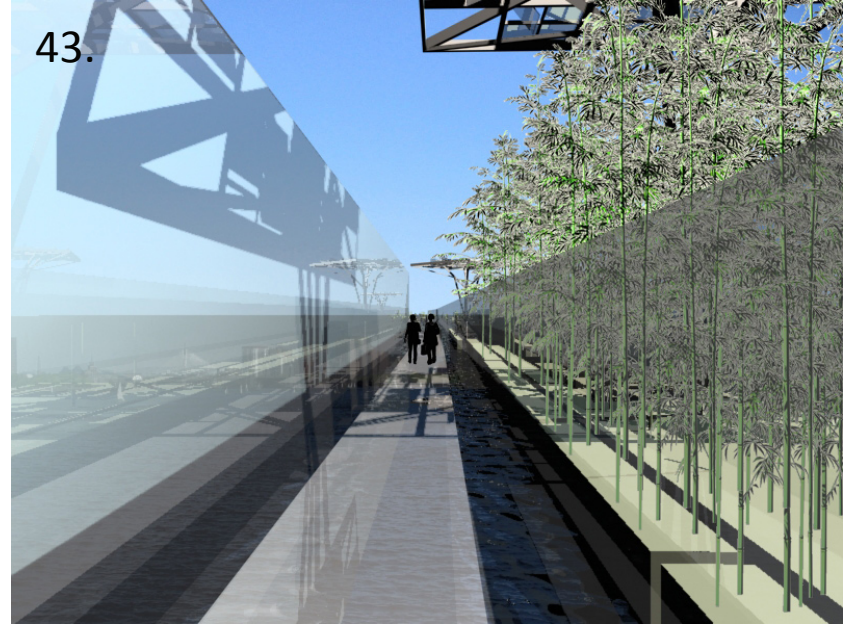
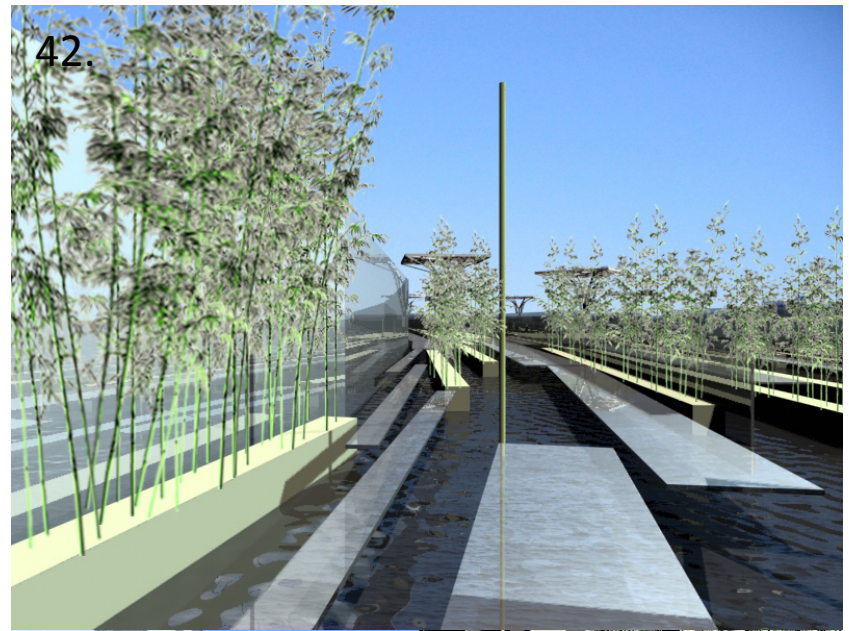
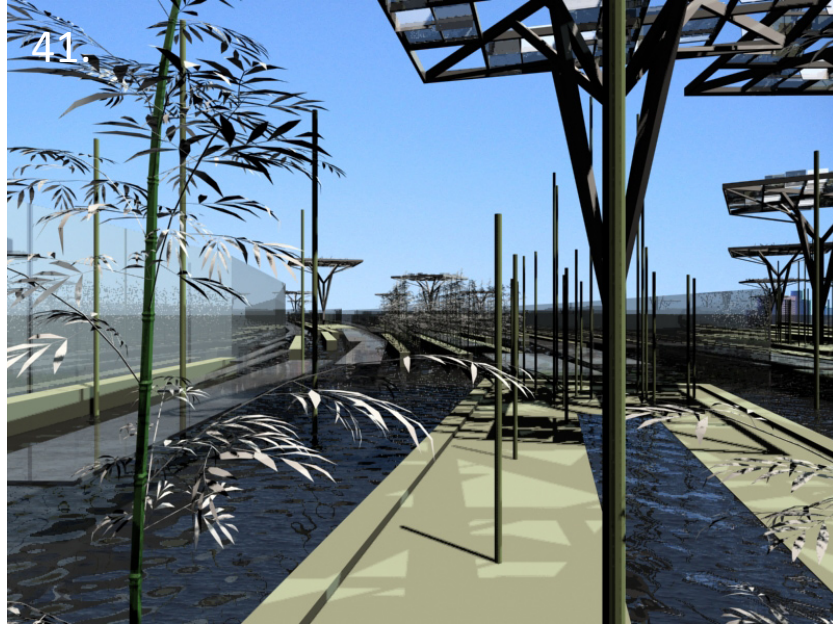
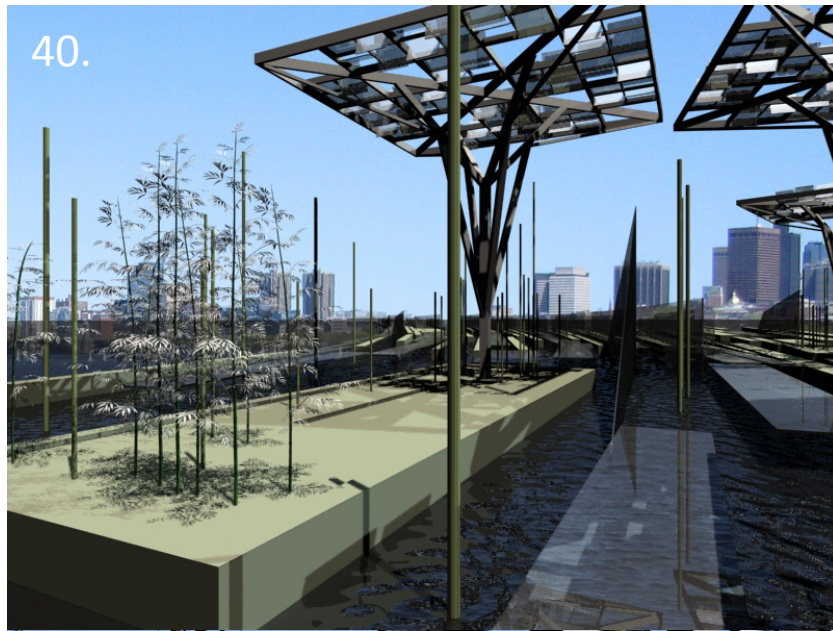
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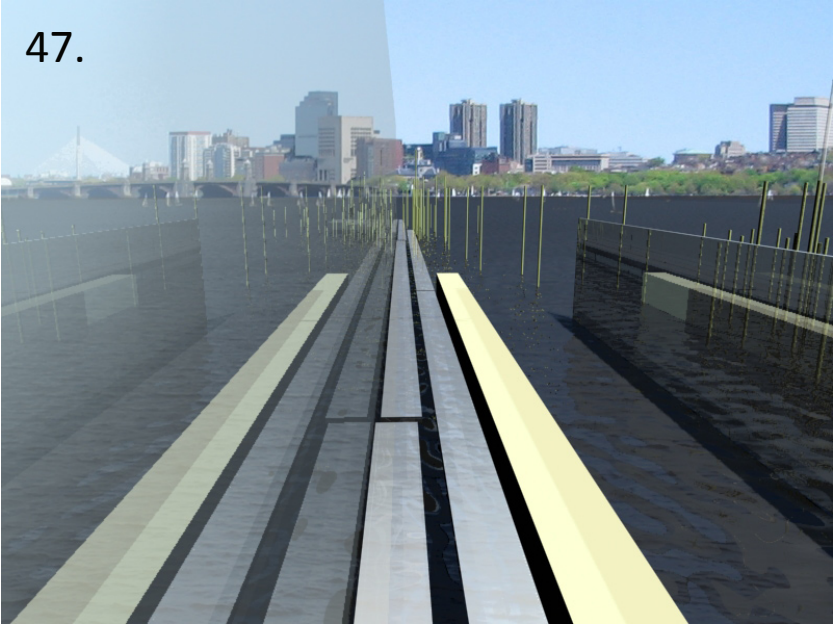
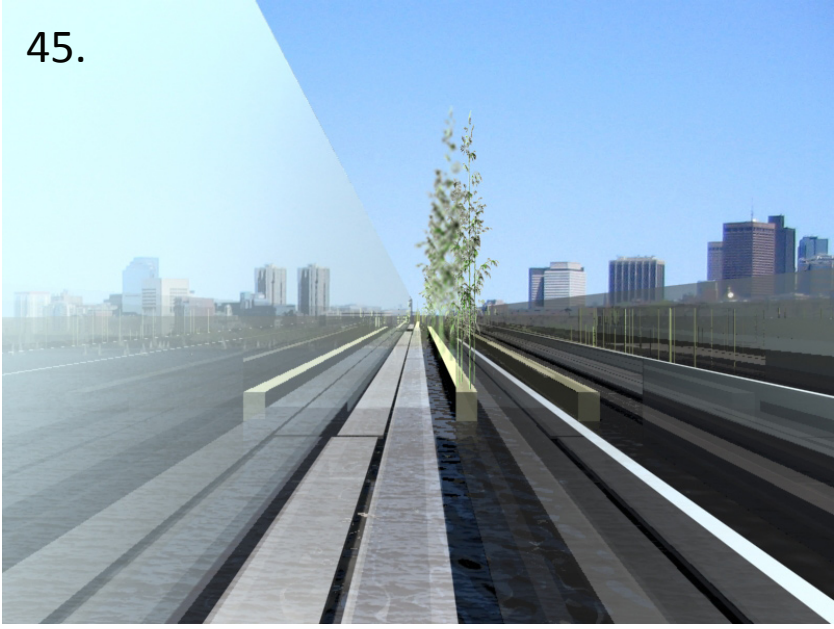
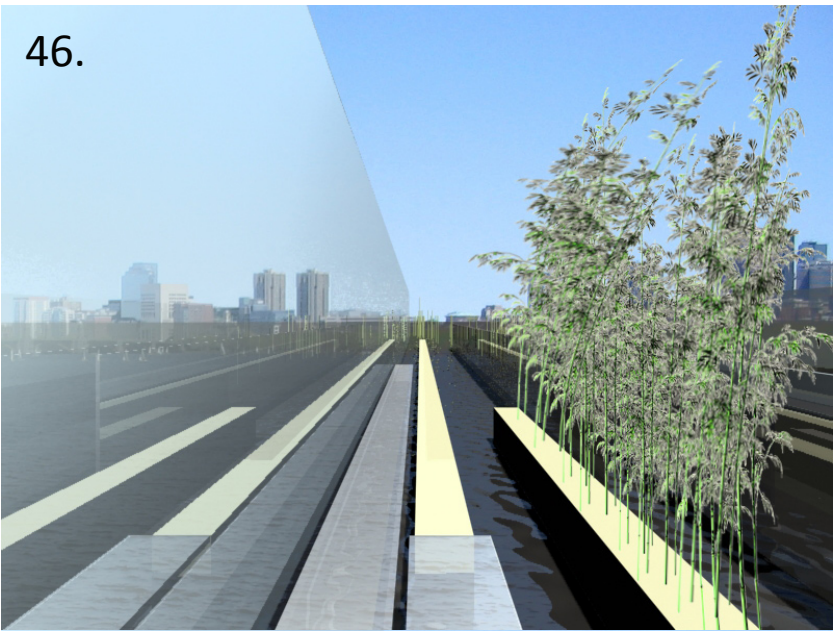
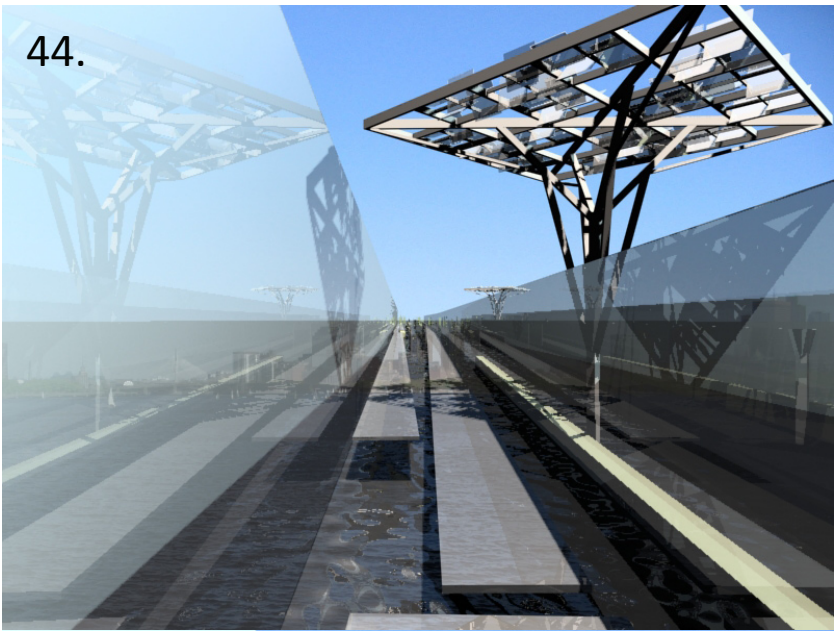


Nearing the center of the site, the visitor is surrounded by a forest of bamboo that sways in the wind. Interspersed with the bamboo are a profusion of wind flutes, reacting to the wind, to each other's notes, and to the visitor (both the visitor's movements and any notes sung by the person). Here, there are areas of very dense undergrowth, but also areas to simply lie down on the grass. The glass trees are very tall here (approx. 40 feet). Whereas earlier in the forest one was surrounded by light, here one is surrounded by light and sound. This is not an experience that agitates the visitor, but rather an experience of profound belonging to an ecosystem, an ecosystem partially designed by man, partially improvised by nature.



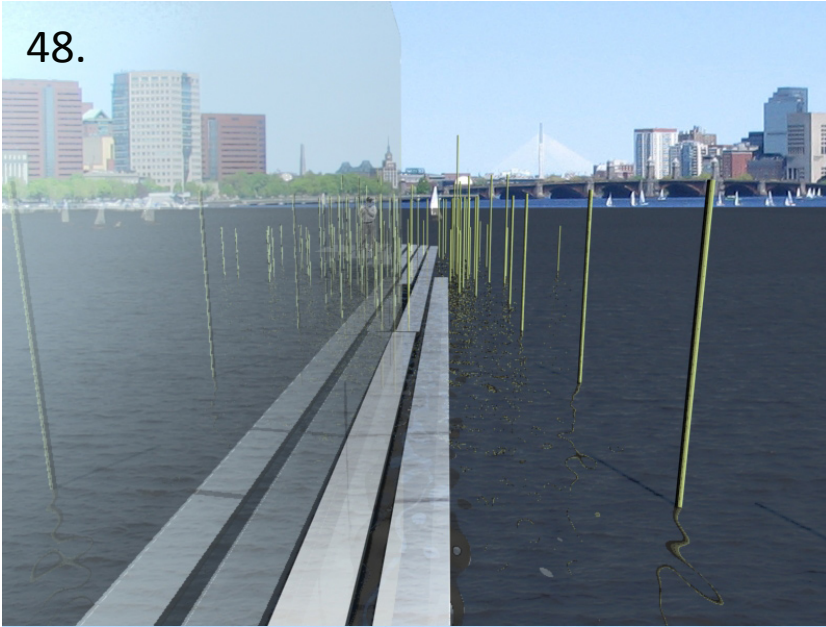
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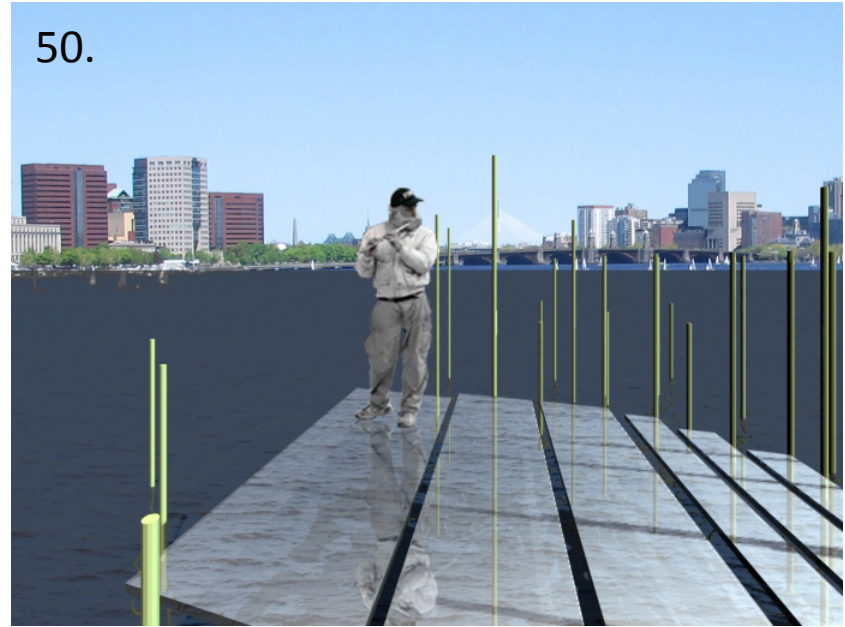


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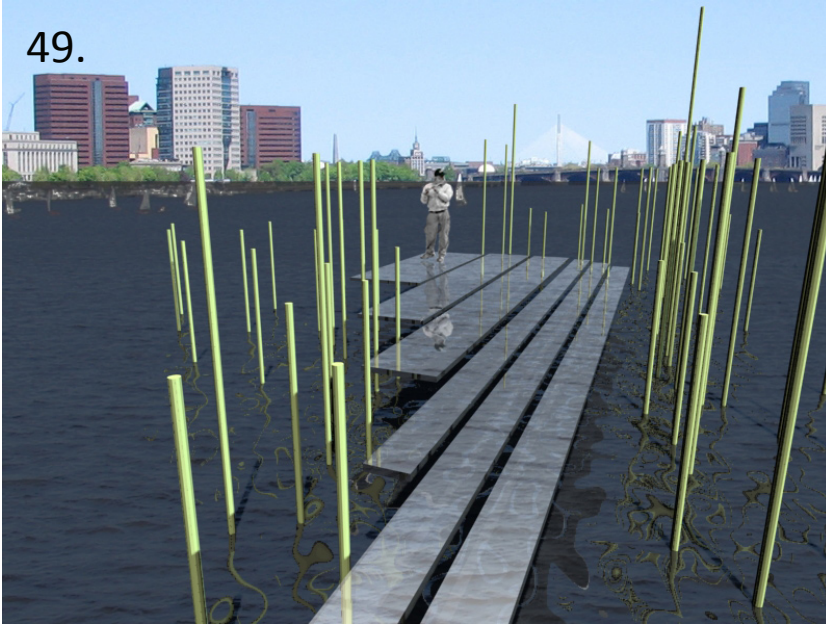
48.



50.



49.



Leaving the center of the forest, the visitor walks out to then end of one of the elongated “piers.” The longest pier is nearly 1/4 mile long. This is a journey of increasing silence, surrounded by the wind, with the drone of the aeolian harp far in the distance. As one nears the end of the pier, the structure is increasingly responsive to the visitor, and another grove of wind flutes appears. The city is now fully visible, and the visitor is exposed yet extremely secluded. This is a point of reflection. One may spend hours or even days sitting out at this point. A musician may find this the perfect location to play his flute (or any number of instruments).

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