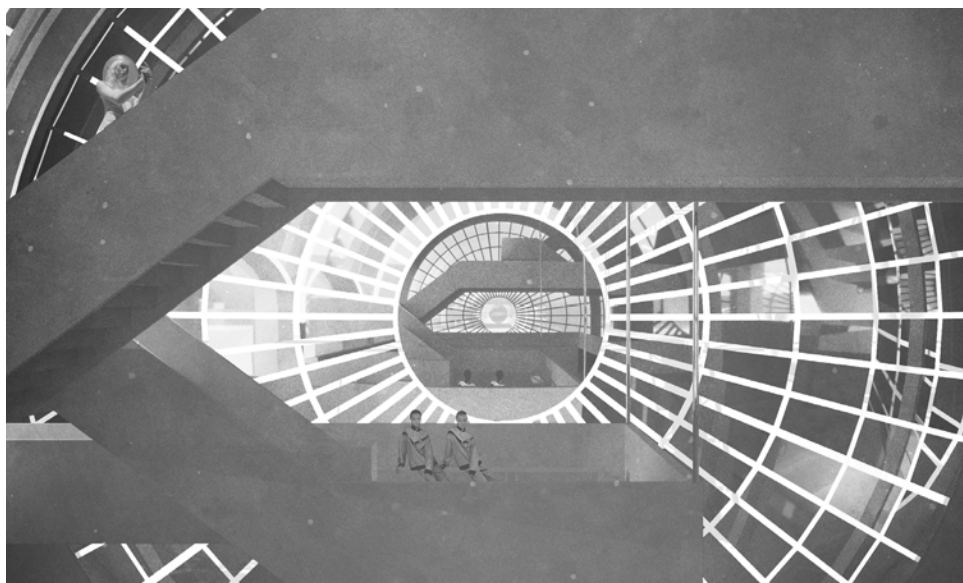


the watt center



spaces of light magic

Michelle Antonorsi
thesis/degree project
spring 2020

crits : Michele Gorman
Adam Elstein
Jeffery Hogrefe

dialectics

“The negation which dialectic applies ...is not only a critique of a conformistic logic, which denies the reality of contradictions; it is also a critique of the given state of affairs on its own grounds -- of the established system of life, which denies its own promises and potentialities.”

-- Herbert Marcuse

visit the blog

for updates and more information visit the
page at:

[https://commons.pratt.edu/degreeproject-
magic/michelle-antonorsi-dream-space-
up-side-down-manhattan/](https://commons.pratt.edu/degreeproject-magic/michelle-antonorsi-dream-space-up-side-down-manhattan/)

content

01	preface
02	concept
07	glossary
09	industrial productivity
17	effects of light in architecture
29	effects of light in film
41	optical defamiliarization
83	site and context
93	project
128	bibliography

dream | reality

The two terms are often thought to oppose each other, but in their juxtaposition, it becomes increasingly difficult to draw a dividing line. Where does the boundary lie between sleep and wake, fantasy and reality, dream and nightmare? If reality is a construct of our brain's interpretation of sensory input, then a dream is only different in its lack of physical stimulation. It is uprooted from the limitations of matter; liberated through its confinement to the mind. It is symbolic and literal, temporal and infinite, reflective and predictive. It is a collage of memories and an expression of desires. It is an isolated universe as much as an extensive network of space and time. It is everywhere and nowhere. As a world within a world, it is a heterotopia.

In a society that is increasingly replacing critical thought for automated perception and disengaged doing, the dream, or in this case, the daydream, provides a means of escape rather than a means of inspiration. It allows humans to tolerate the banality of daily activities; even though our bodies may be physically positioned somewhere for example, in a factory, performing a repetitive task, our minds frequently float elsewhere, generating fantasies which become a means for tolerating the dull activity. It is because of this absence of engagement that the daydream emerges, but rather than productive inspiration, it is a missed opportunity of the alienated labor process that

inhibits actual fulfillment. If our realities were not so detached, then the mind might not be so drawn to wonder and rather be encouraged to stay within a space and engage in actively perceiving, experiencing, creating and in this way fulfilling its desires. Alienation is a product of society's inability to satisfy our need for self expression and exploration of desires, that keeps our dreams as dreams rather than encouraging the collaboration of our imaginations and realities.

Dreams are beautiful phenomena, but they are inherently isolating. They are heterotopias abiding by the non-rules of unreality, disconnected from the physical stimuli that allow us to share and connect through experience. Dreams can become alienating when they are not feeding back to reality; to live within a dream or sleep through daily life is to miss the potential to materialize our fantasies and connect with others. Why should our dreams be confined to the world of our minds when they have the capacity to engage with and enrich our realities? If architecture is to address this alienation, it must engage with and synthesize these contradictions and encourage the imagination and reality to influence each other rather than be a means of tolerating unfulfilling activities.

concept statement

By architecturalizing industry through the integration of energy infrastructures and public spaces, architecture has the opportunity to design light to create dream spaces that encourage a more active engagement with experience as well as a more conscious consumption of energy through a total experience of light.

project statement

The industrialization of society has alienated humans from their modes of production, the products of their production, as well as themselves and each other. This can be attributed to the ultra commodification of environments and the absolute focus on efficiency and productivity that is experienced in many aspects of life. The resulting is an impoverishment of perception in which the human is generally disengaged from his/her environment. This diminishes the quality of the product as much as the experience of the human, resulting in the production and endless reproduction of empty objects, empty people, and empty spaces. The difficulty of this condition is that the fulfilment of human creativity, dreams, and desires opposes the efficiency and productivity of society. Dreams are not considered productive in a directly quantifiable sense and are therefore generally left out of the discourse. But juxtaposing the contrary objectives of dreams and productivity can expose their relationship and reveal a way to synthesize the two.

As the world is haunted by the lurking shadow of climate change, the subject of energy continues to be a central topic, and power plants continue to be key players. A focus on efficiency has led to a complete separation of energy industries from city infrastructures. This has pushed power plants to the countryside and allowed people to believe that they can simply flip a switch and the lights go on like magic. However efficient this may be, it has led people to forget the true work involved in the production of energy and therefore its true value. This dissociation begs us to reconsider the future of electricity and our

relationship with light. By architecturalizing industry through the integration of energy infrastructures and public spaces, architecture has the opportunity to design light to create dream spaces that encourage a more active engagement with experience as well as a more conscious consumption of light.

Famously known as the city of lights, New York was one of the early cities to be artificially illuminated. It now consumes an average of 11,000 Megawatt-hour per day and less than 1/4 of it comes from renewable sources. The historic Waterside Generating Plant, between 39th and 42nd St. on the East River, was one of its first steam power plants. What was once a center of energy, and a symbol of industry and technology, has now been decommissioned and completely demolished to make room for the development of what is planned to be more luxury residential towers.

However, the WATT Center suggests an alternative. Recalling the site's former function as a source of power and light, it proposes a center of solar energy, focused on the integration of public space, industry and art. As an anti-monument, it celebrates the non-celebrated; as a symbol of industry, it memorializes utilitarian design. Taking the form of a sundial, it changes constantly, allowing its guests to experience layers of time in a series of light space concentrators that integrate solar industry with public solitude. As a generator of dream spaces, it juxtaposes light and dark to create an upside down experience of the familiar city and awaken its guests from the pre-prescribed patterns of daily life through a total experience of light.

absence	[latin] : <i>abesse</i> : to be away from: : to be not present
alienation	[latin] : <i>alienare</i> : estrange : : a withdrawing or separation of a person or a person's affections from an object or position of former attachment :
defamiliarization	[latin] : <i>alienare</i> : estrange : : presenting common things in a strange and unfamiliar way : a re-contextualizing :
dialectic	[greek] : <i>dialegesthai</i> : converse with <i>dialektike tekhnē</i> : art of debate: : any systematic reasoning, exposition, or argument that juxtaposes opposed or contradictory ideas and usually seeks to resolve their conflict : : a method of examining and discussing opposing ideas in order to find the truth :
dream	[old english] : <i>dreame</i> : joy : : a series of thoughts, images, or emotions occurring most often during sleep but also in waking moments : something that fully satisfies a wish : to consider as a possibility : : to imagine :
heterotopia	[greek] : <i>heteros</i> : other <i>topos</i> : place : : is a concept that describe certain cultural, institutional and discursive spaces that are somehow 'other' : disturbing, intense, incompatible, contradictory or transforming. They are worlds within worlds, mirroring and yet upsetting what is outside :
inversion	[latin] : <i>invertere</i> : to turn in the opposite direction : : a reversal of position, order, form, or relationship : the condition of being turned inward or inside out :
light	[old english] : <i>leht</i> : brightness, radiant energy, that which makes things visible : : electromagnetic radiation of any wavelength :

mirror	[latin] : <i>mirare</i> : look at : : a reflective surface that reveals an inverted virtual image of the object being reflected
parallel	[greek] : <i>para</i> : alongside <i>allelōs</i> : one another : : something equal or similar in all essential particulars : to extend, run, or move in a direction parallel to : a counterpart :
photogram	[greek] : <i>phos</i> : light <i>gramma</i> : written character or letter : a picture produced with photographic materials, such as light-sensitive paper, but without a camera.
reality	[latin] : <i>realis</i> : relating to things : revealed and constructed through a process of synthesizing the subject object relationship in which they simultaneously influence and create each other :
reproduction	[latin] : <i>re</i> : again <i>producere</i> : bring forth : : revealed and constructed through a process of synthesizing the subject object relationship in which they simultaneously influence and create each other :
synergy	[greek] : <i>sun</i> : together <i>ergon</i> : work : : the interaction or cooperation of two or more organizations, substances, or other agents to produce a combined effect greater than the sum of their separate parts :
telecommunication	french] : <i>tele</i> : at a distance <i>communication</i> : the transmission of information of any nature by wire, radio, optical or other electromagnetic systems.
unheimlich (uncanny)	[german] : <i>un</i> : removal <i>beimlich</i> : sense of familiar : : uncanny, weird, strangely familiar, the act of revealing the concealed :

industrial productivity

Effects of industrialization from manufacturing to the office.

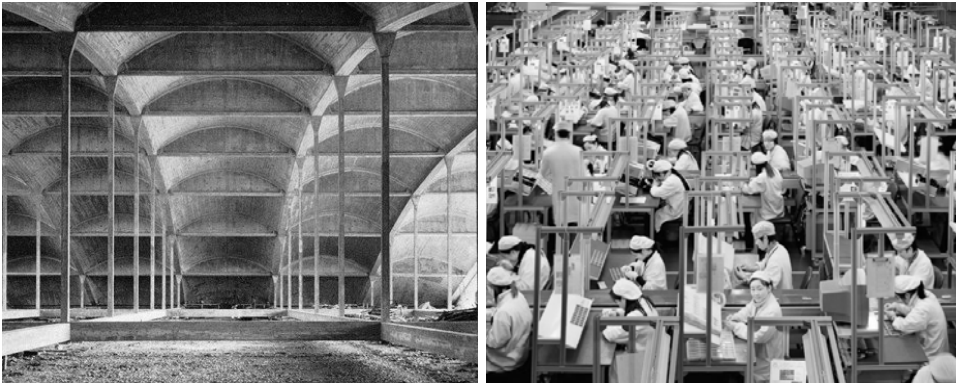
“Industrial revolution, coincided with an escalating mechanization and most often an impoverishment of human perception. By the late nineteenth century there were a diversity of responses in both art and philosophy to the general standardization and automation of perceptual response brought about by modernized forms of mechanical reproduction and communication.”

-- Johnathan Crary

design for production

the influence of industrialization in society

the factory



and reproduction

the office



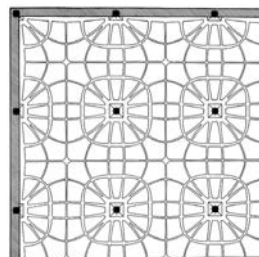
architecture of production

the influence of industrialization in society

the factory



Luigi Nervi's Gatti Wool Factory (Rome 1951-53) industrial open plan for machine production.

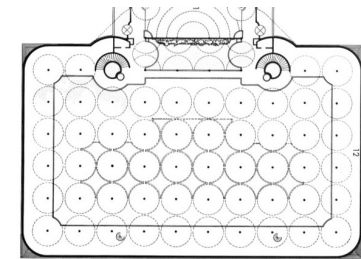


and reproduction

the office



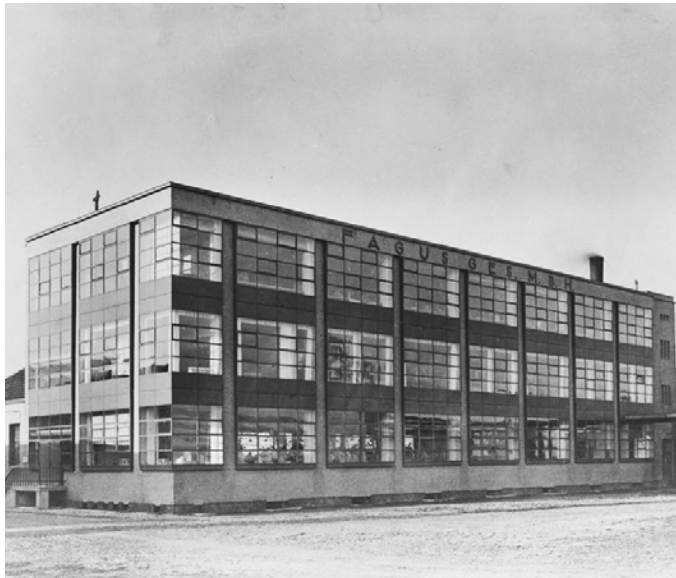
Frank Lloyd Wright's Johnson Wax Company (1936) building shows the direct application of the open plan in the office space.



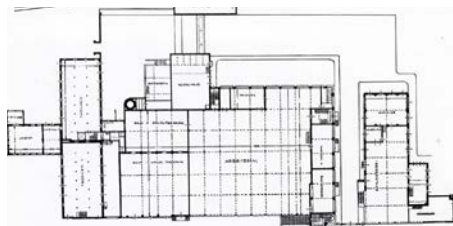
architecture of production

the influence of industrialization in society

the factory



The Fagus Factory
by Walter Gropius
and Adolf Meyer
(1911)



and reproduction

the office



Mies van de Rohe's
Seagram building
(1958) brings the
open plan and
repetitive modu-
larity of industrial
manufacturing to
the city.



effects of light in architecture

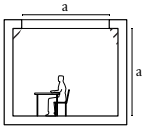
A lighting catalogue that explores standards
and anti-standards.

“From its beginning and as one of its most
potent talents, architecture stirs the brute
materiality of raw light into a poignant po-
tion.”

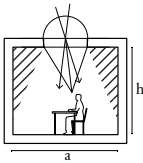
-- Jeffery Kipnis

light catalogue : standards

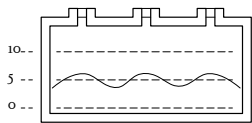
skylight design for maximum uniformity and productivity



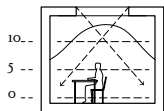
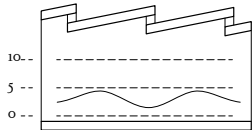
For the most uniform illumination, the size of the opening should equal the room height.



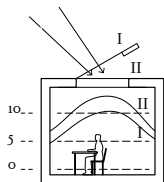
The proportions of the room will affect the way light from above enters.



Multiple openings will create more uniform illumination and less glare. Often used in industrial buildings.



Shallower and reflective shafts create the most even illumination



The roof pitch affects the amount of light let in; a horizontal roof allows the most light in.

light catalogue : standards

skylight design for maximum fluctuation of light

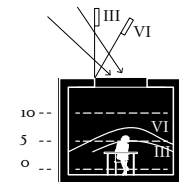
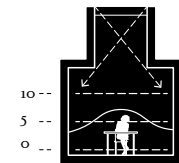
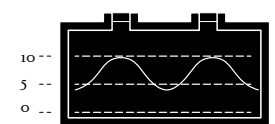
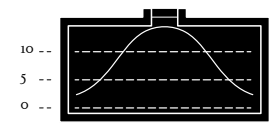
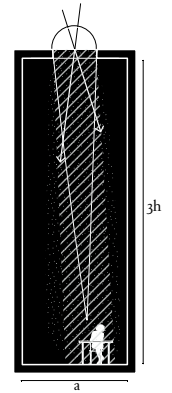
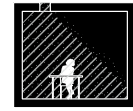
For the most fluctuation of light and shadow, the size of the opening can be smaller than the room height.

A cave like effect can be created by exaggerating the height of a room.

More space between openings will create more irregular illumination and allow the fall off of light to be more prominent by creating both brighter and dimmer spaces.

Deeper shafts allow less light in and allow more visible fluctuation in illumination.

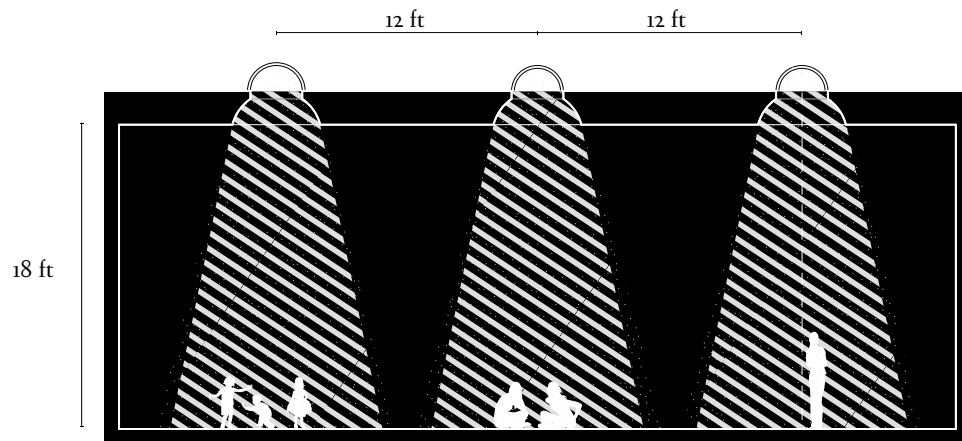
An angled roof also lets in less light.



light catalogue : anti-standards

skylight design for a defamiliarization of space

light as a divider of space



Increasing the space between skylights will create more differentiation in the lighting conditions of a space, dividing it through illumination.

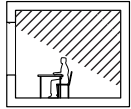
skylights for isolation



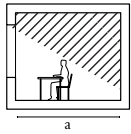
This can create an effect of isolation and privacy comparable to that of a spotlight.

light catalogue : standards

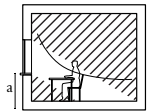
window design for maximum uniformity and productivity



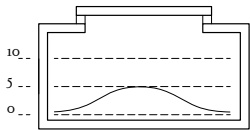
A window opening must be 5 times larger than a skylight to achieve the same level of illumination.



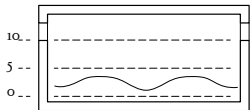
The proportions of the room will affect the distribution of light.



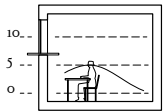
The distribution of daylight in a room can be controlled by the height of the window.



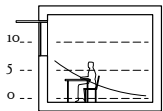
Vertical windows on the roof will provide brighter illumination.



Two sides of windows towards the ceiling will create a more even distribution.



A light shelf can direct the light further into the room for more uniformity.

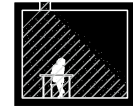


An overhang can be used to shade.

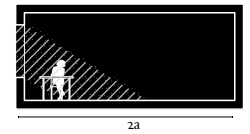
light catalogue : anti-standards

window design for maximum fluctuation of light

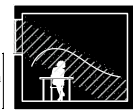
A skylight for the same illumination level as the window.



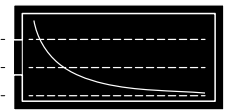
The lighting in a deeper rooms will fluctuate more and be darker in the back.



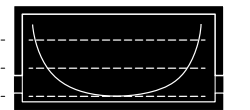
Lower window will provide shallower illumination.



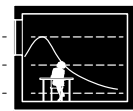
A single opening will have a wide range of light quality.



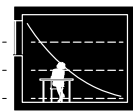
Two sides of windows towards the floor will be brighter on the sides.



No light shelf will create brighter conditions near the opening.



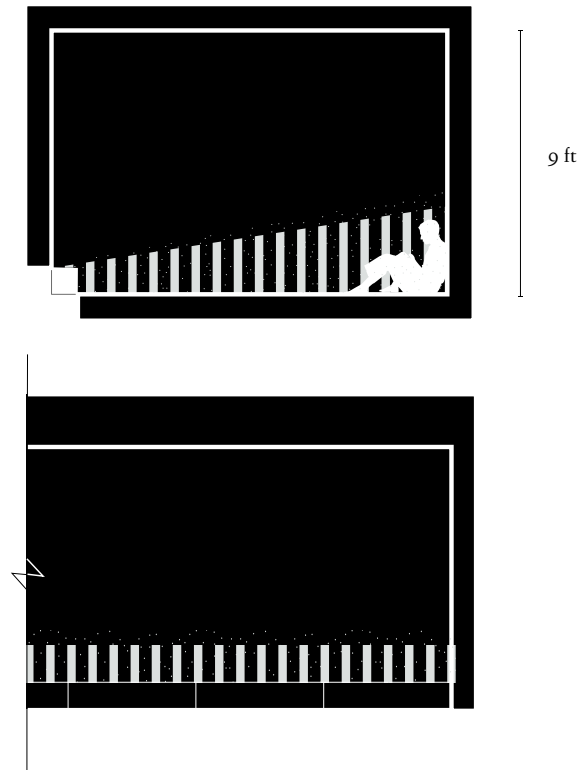
No overhang



light catalogue : anti-standards

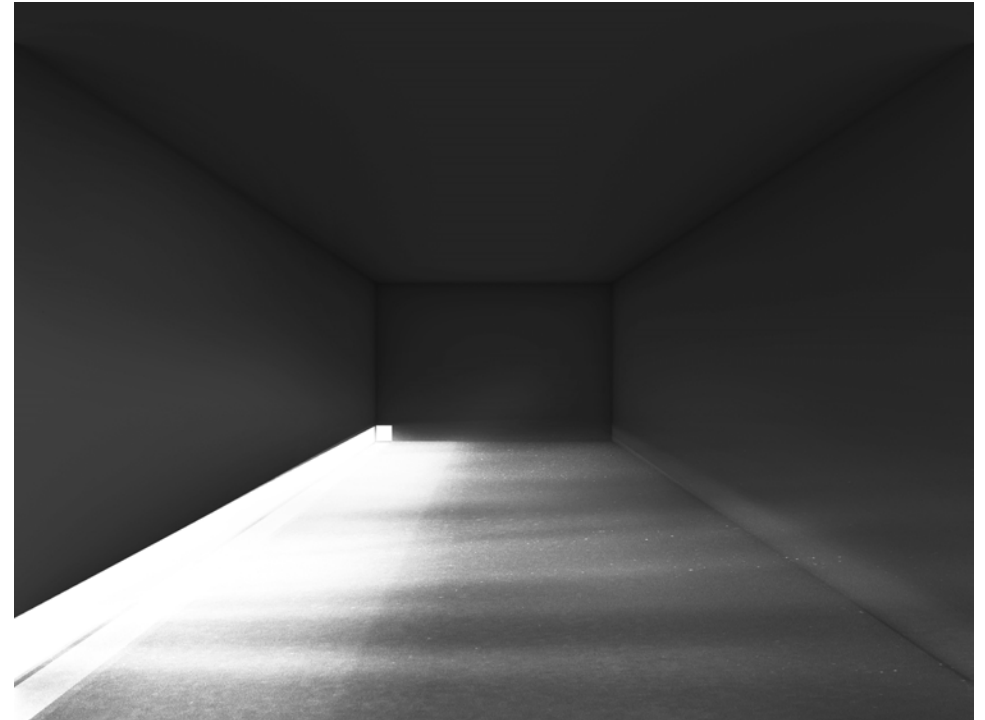
window design for a defamiliarization of space

light as a definer of space

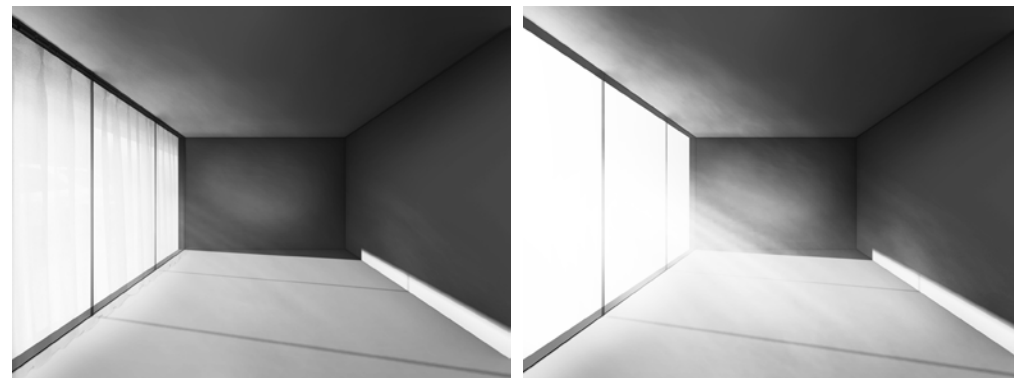
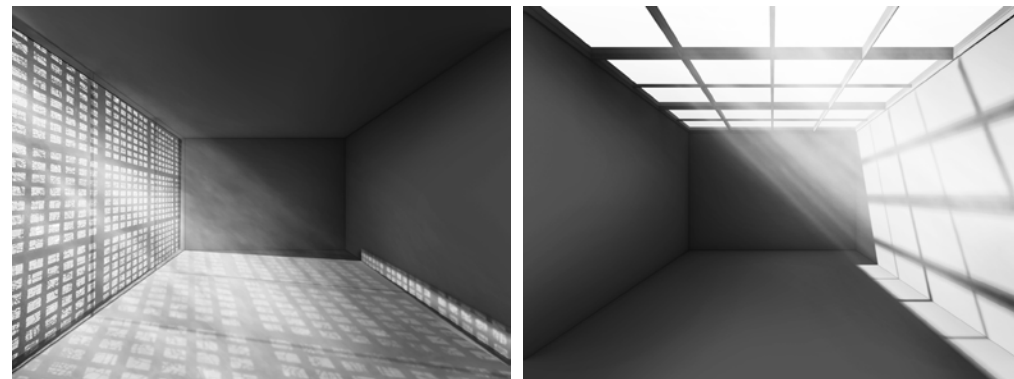
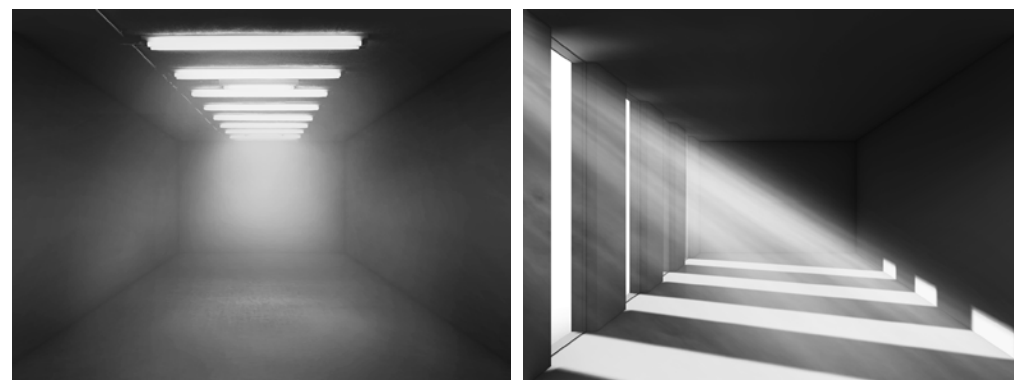
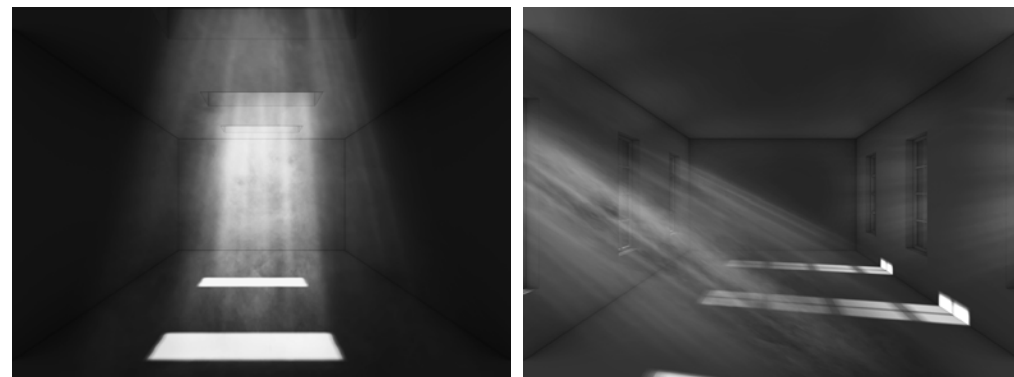
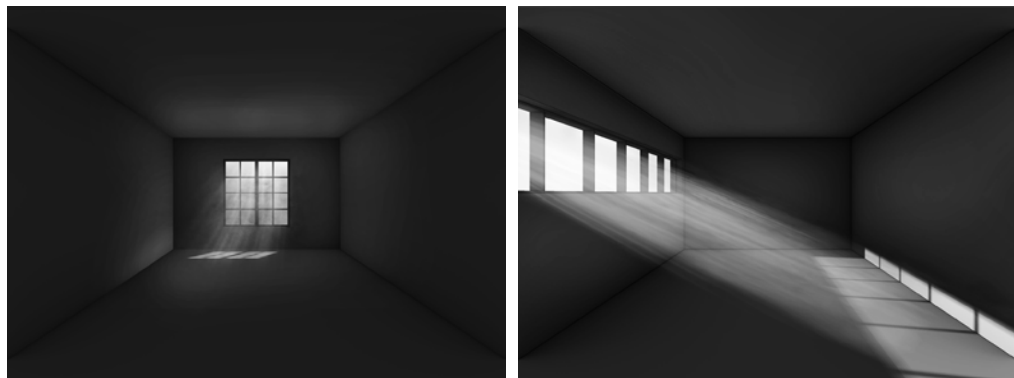
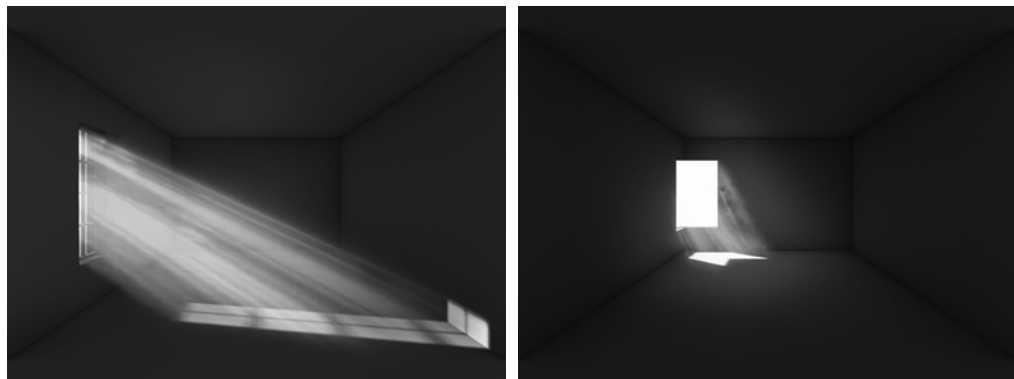
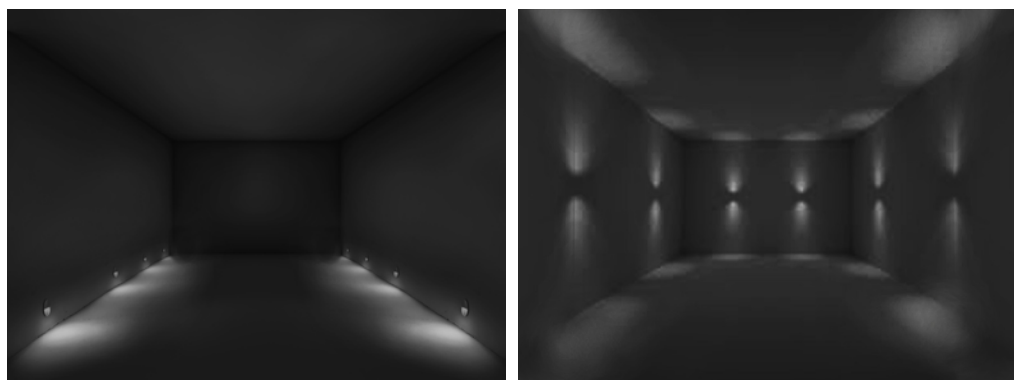
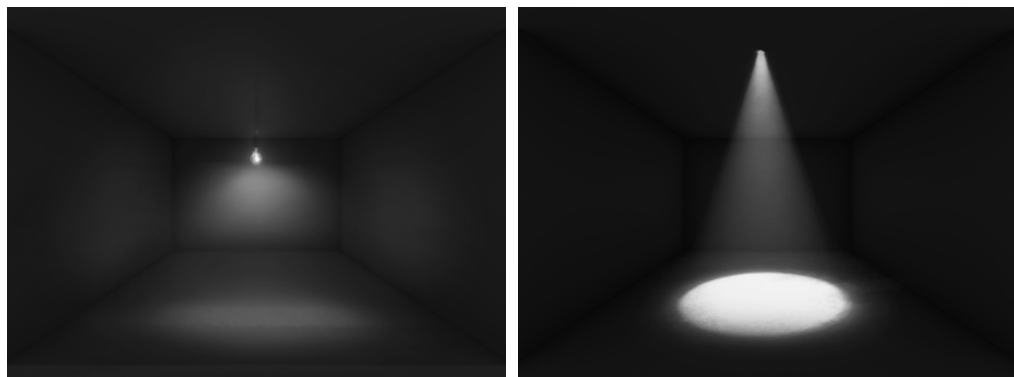


Lighting from below will be brighter when the sun is lower and brings attention to the perimeter of a space rather than the center.

windows for distortion



This can create a focus on the lower part of a space.



effects of light in film

Analyzing lighting techniques used to communicate emotion in film.

“With the close-up, space expands; with slow motion, movement is extended...[it] not only presents familiar qualities of movement but reveals in them entirely unknown ones ...Evidently a different nature opens itself to the camera than opens to the naked eye --- if only because unconsciously penetrated space is substituted for a space consciously explored by man... The camera introduces us to unconscious optics as does psychoanalysis to unconscious impulses.”

-- Walter Benjamin

key lighting

effects of key lighting

high key : low contrast, soft, bright, minimal shadows



[A Midsummer Night's Dream - Max Reinhardt + William Dieterle]

signals happiness, peacefulness, joy, and content-

low key : high contrast, dark shadows



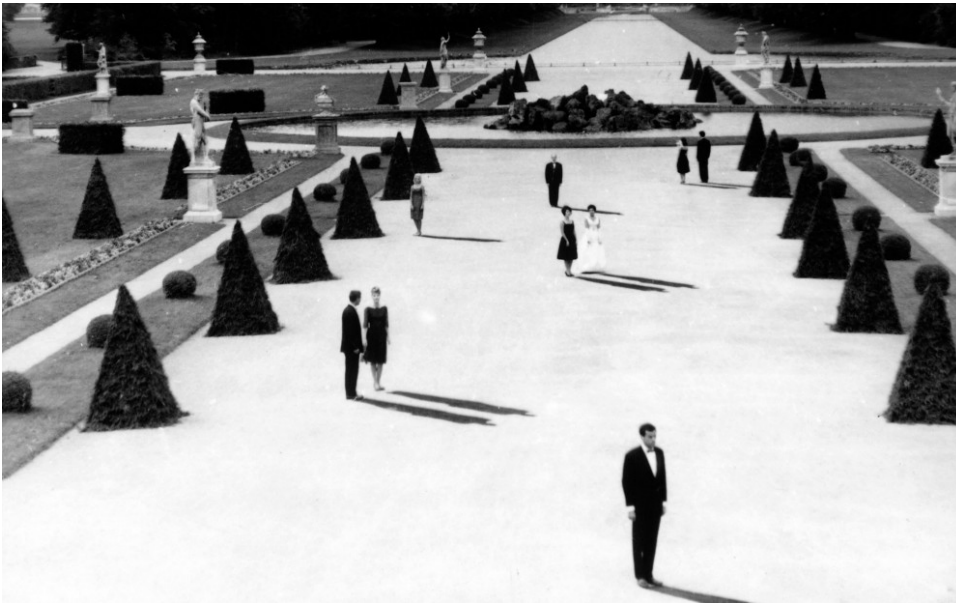
[Vertigo - Alfred Hitchcock]

signals fear, anxiety, distrust, and evil

intentional shadows

effects of shadows

inconsistent or unnatural shadows



[Last Year at Marienbad - Alain Resnais]

signals something dubious, untrustworthy, strange

silhouette



[The Wrong Man - Alfred Hitchcock]

signals isolation, danger

alternate reality lighting

light as an indicator of dreams nightmares

dream



[Metropolis - Fritz Lang]

signals happiness, peacefulness, joy, and content-

nightmare



[The Cabinet of Dr. Caligari - Robert Wiene]

signals fear, anxiety, distrust, and evil

heterotopias

A place within a place that inverts or mirrors its counterpart.

“Real places—places that do exist and that are formed in the very founding of society— which are something like counter-sites, a kind of effectively enacted utopia in which the real sites, all the other real sites that can be found within the culture, are simultaneously represented, contested, and inverted.”

-- Michel Foucault

heterotopias

inverted spaces of otherness

film | architecture



[film screen]

The film is a heterotopia that exists as two dimensional space within three dimensional architecture.

dream | reality



[Spellbound - Alfred Hitchcock + Salvador Dali]

The dream is a heterotopia that exists as an alternate reality within a waking reality.

optical defamiliarization

A series of studies that look at the optical effects of mirrors and the camera obscura to invert and defamiliarize light.

“The mirror is, after all, a utopia, since it is a placeless place. In the mirror, I see myself there where I am not, in an unreal, virtual space that opens up behind the surface; I am over there, there where I am not, a sort of shadow that gives my own visibility to myself, that enables me to see myself there where I am absent: such is the utopia of the mirror. But it is also a heterotopia in so far as the mirror does exist in reality, where it exerts a sort of counteraction on the position that I occupy. From the standpoint of the mirror I discover my absence from the place where I am since I see myself over there.”

-- Michel Foucault

kaleidoscope

the defamiliarizing effects of reflected light

iphone optics



kaleidoscope optics



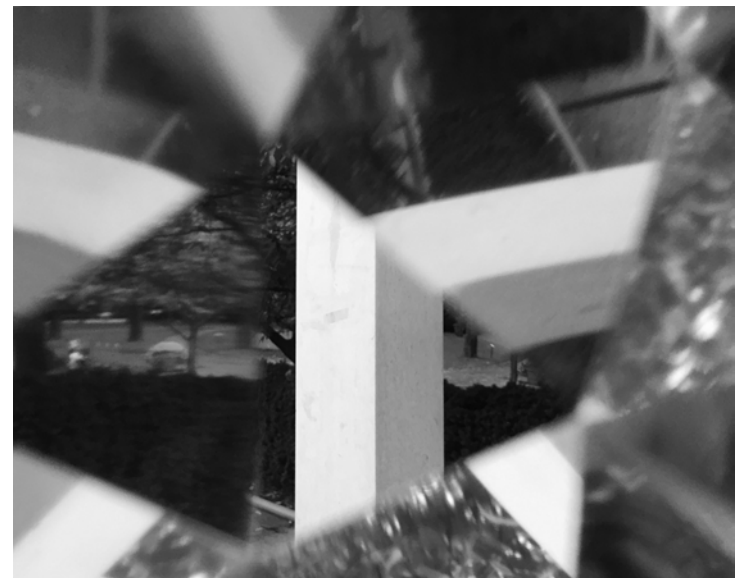
kaleidoscope

the defamiliarizing effects of reflected light

iphone optics



kaleidoscope optics



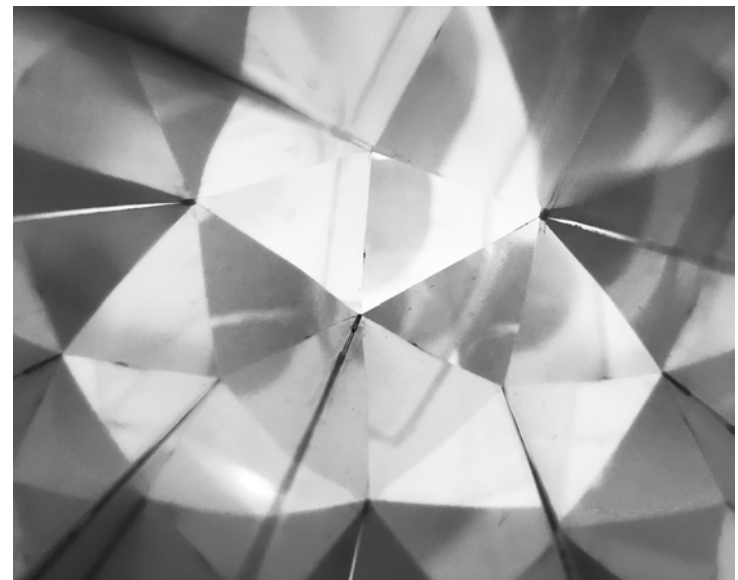
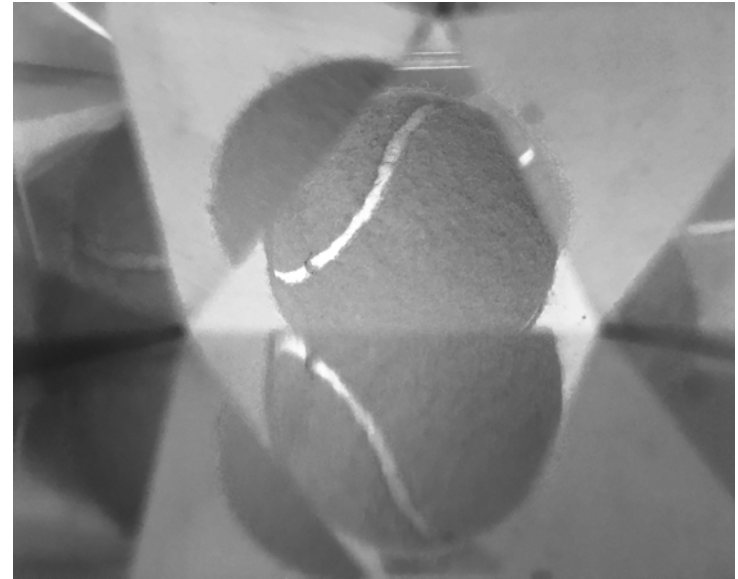
kaleidoscope

the defamiliarizing effects of reflected light

iphone optics



kaleidoscope optics



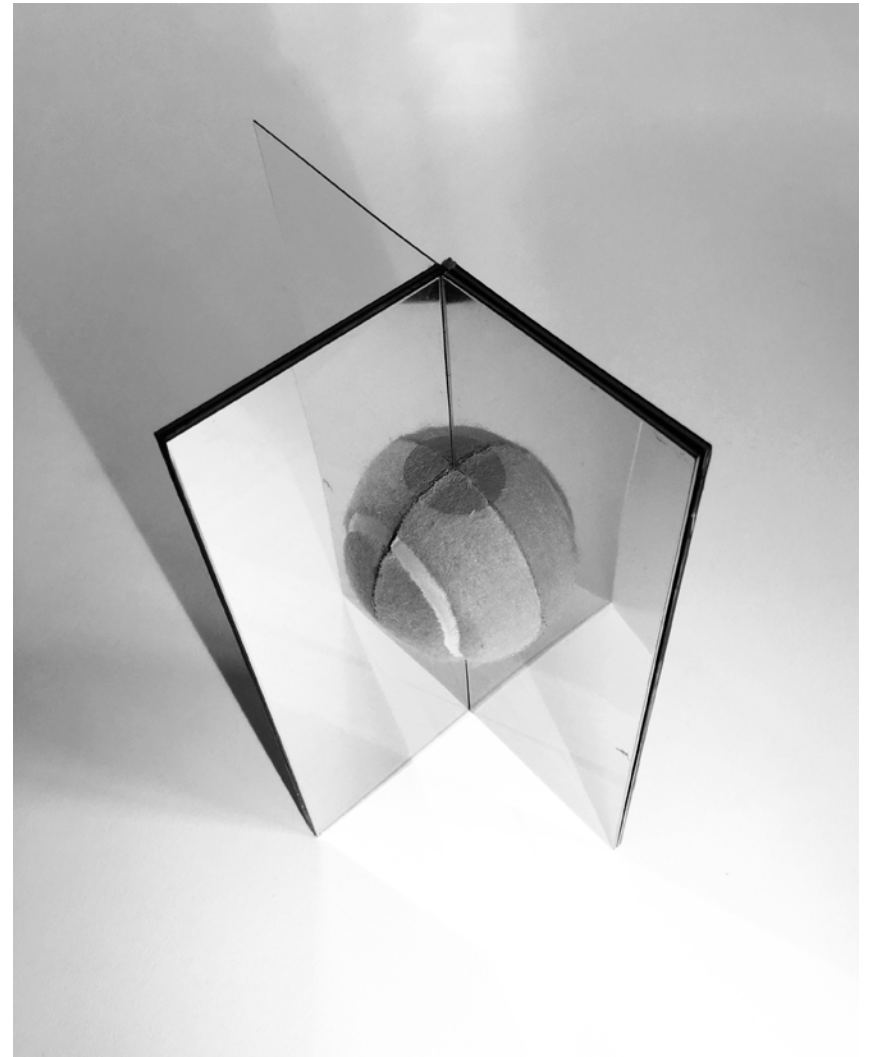
mirror illusions

the defamiliarizing effects of reflected light

fragmented



whole



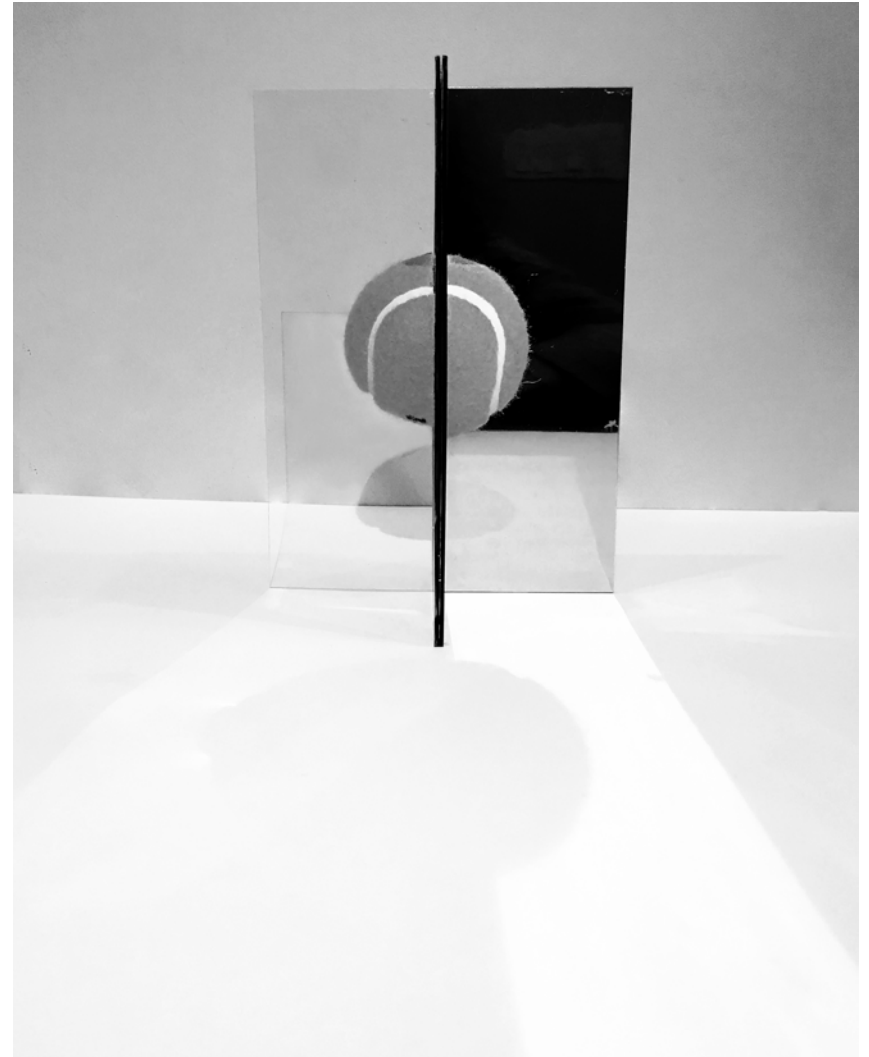
mirror illusions

the defamiliarizing effects of reflected light

fragmented



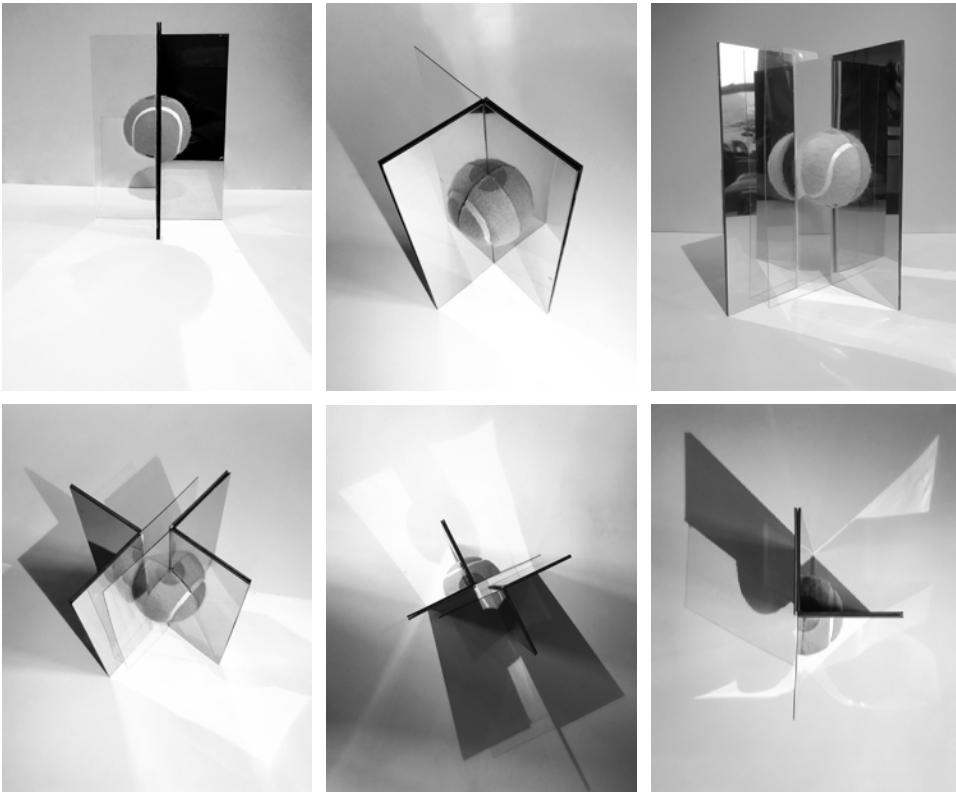
whole



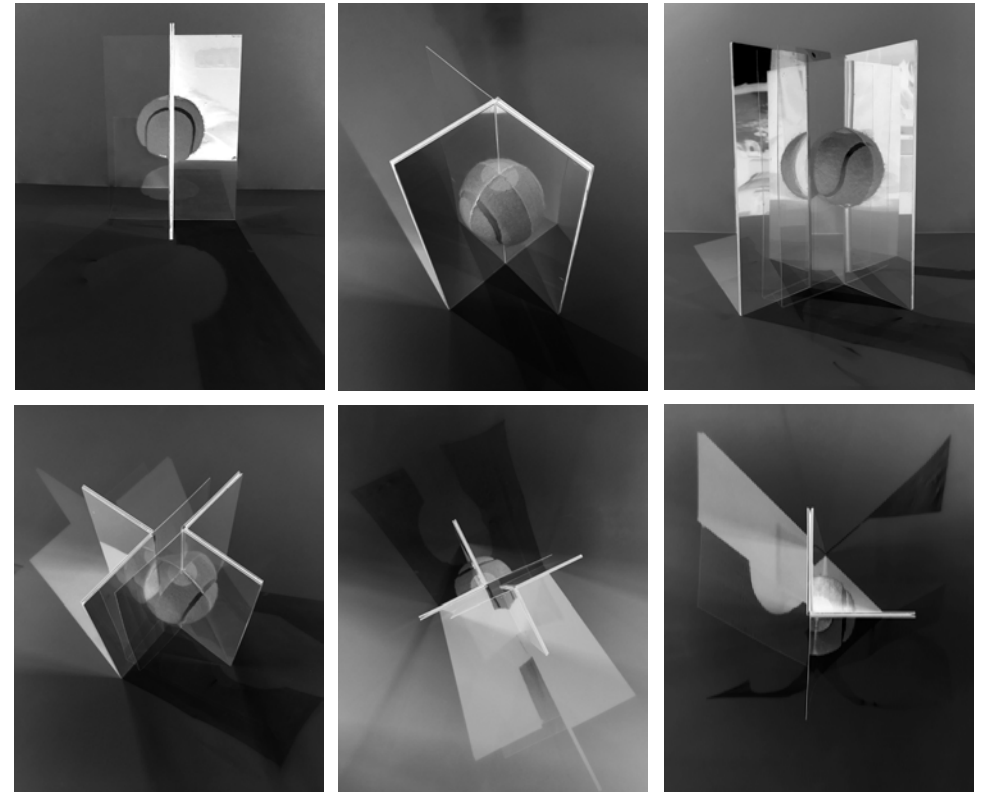
inversion

the defamiliarizing effects of alternate perceptions of light

positive



negative



photogram

the defamiliarizing effects of alternate perceptions of light

typical shadows



The human eye perceives shadows as the absence of light and renders them dark.

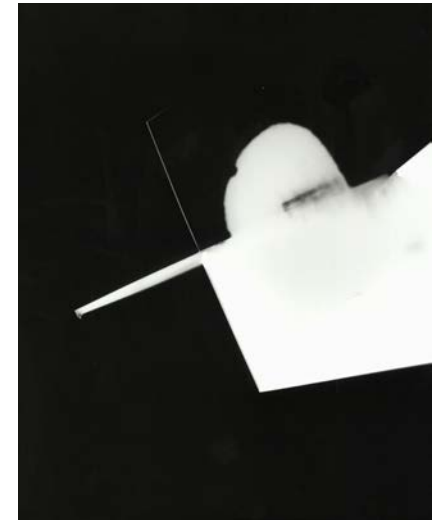
[+]



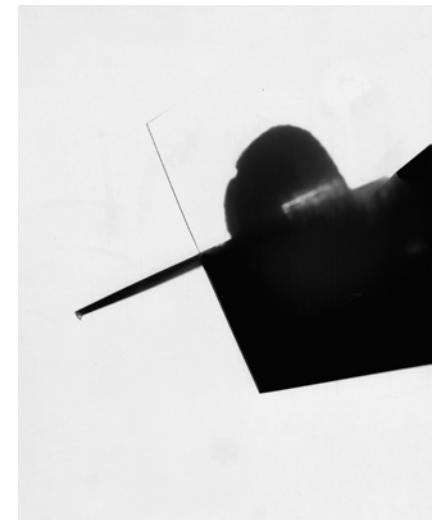
[-]

photogram as shadows

A photogram is an image produced by shining light on an object placed on photographic paper and then developed. It is essentially the negative of the way the human eye perceives shadows, instead of dark they appear light.



[+]



[-]

photogram

the defamiliarizing effects of alternate perceptions of light

light shadows



dark shadows



camera obscura

analyzing alternate perceptions of light

“If in all ideology men and their circumstances appear upside down in a camera obscura, this phenomenon arises just as much from their historical life-process as the inversion of objects on the retina does from their physical life-process.”

-- Karl Marx + Frederick Engels

camera obscura

projection of an outside scene in a bedroom camera obscura

view through pinhole



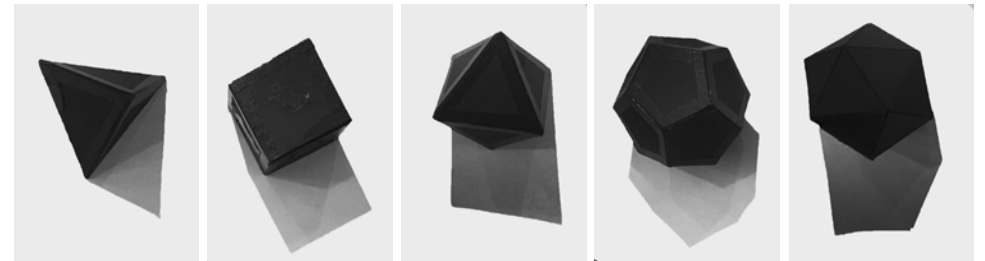
projection onto opposite wall



camera obscura

the process of producing pinhole camera images

Five geometric pinhole cameras were set up to capture images of space directly on photographic paper. They were placed outside and exposed to light for 10-15 seconds at mid day. The paper was then developed in a dark room to reveal unusual images of space.



site and process

the process of producing pinhole camera images

familiar images of the site

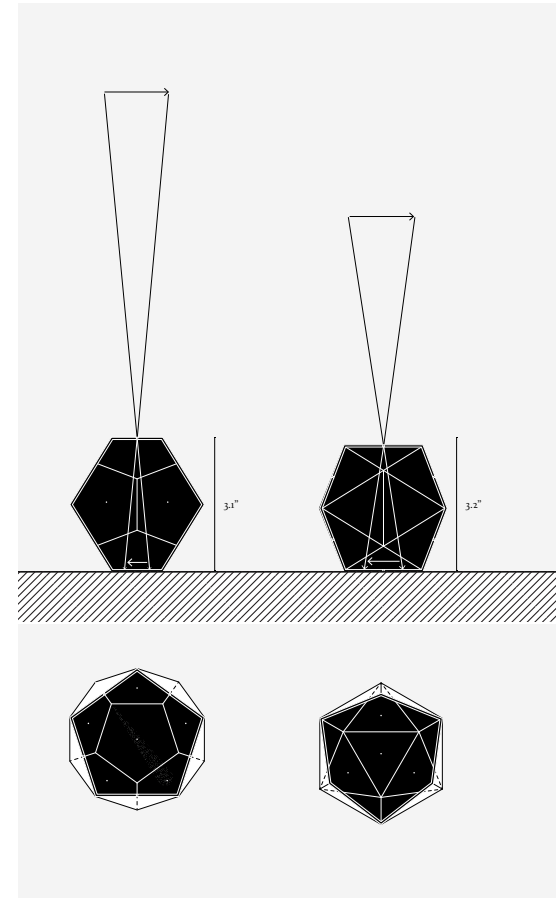
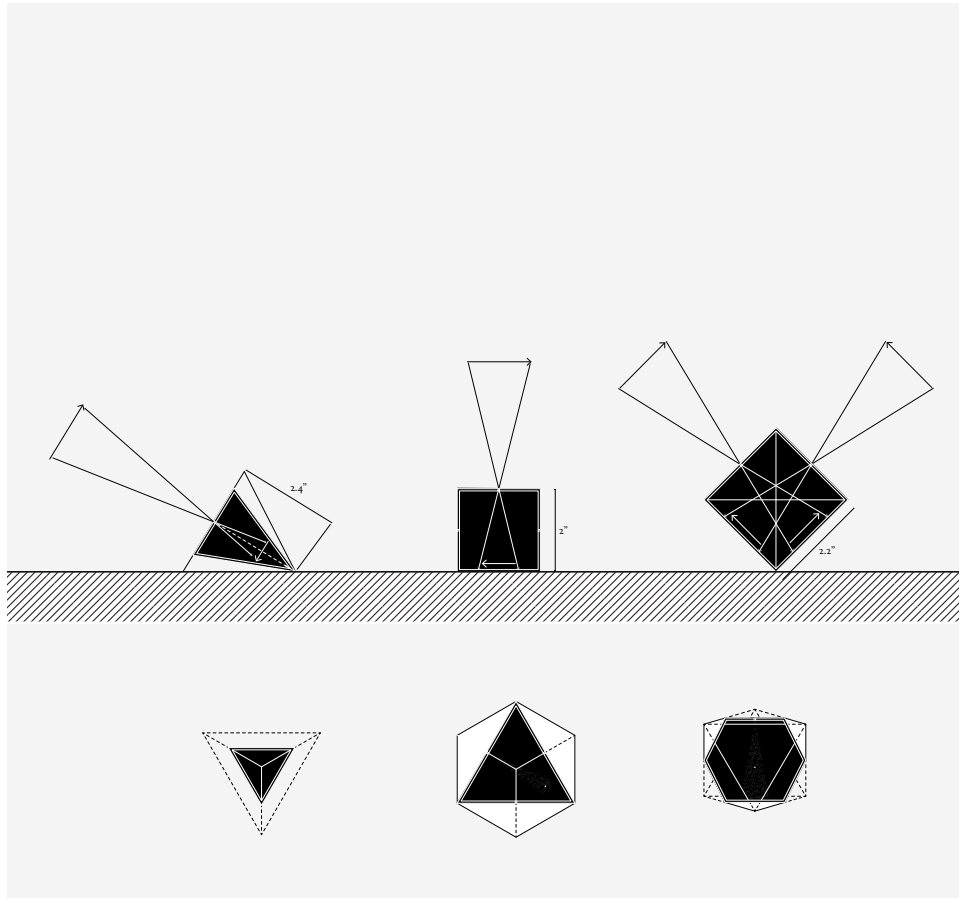


the set up



camera obscura

effects of the geometry

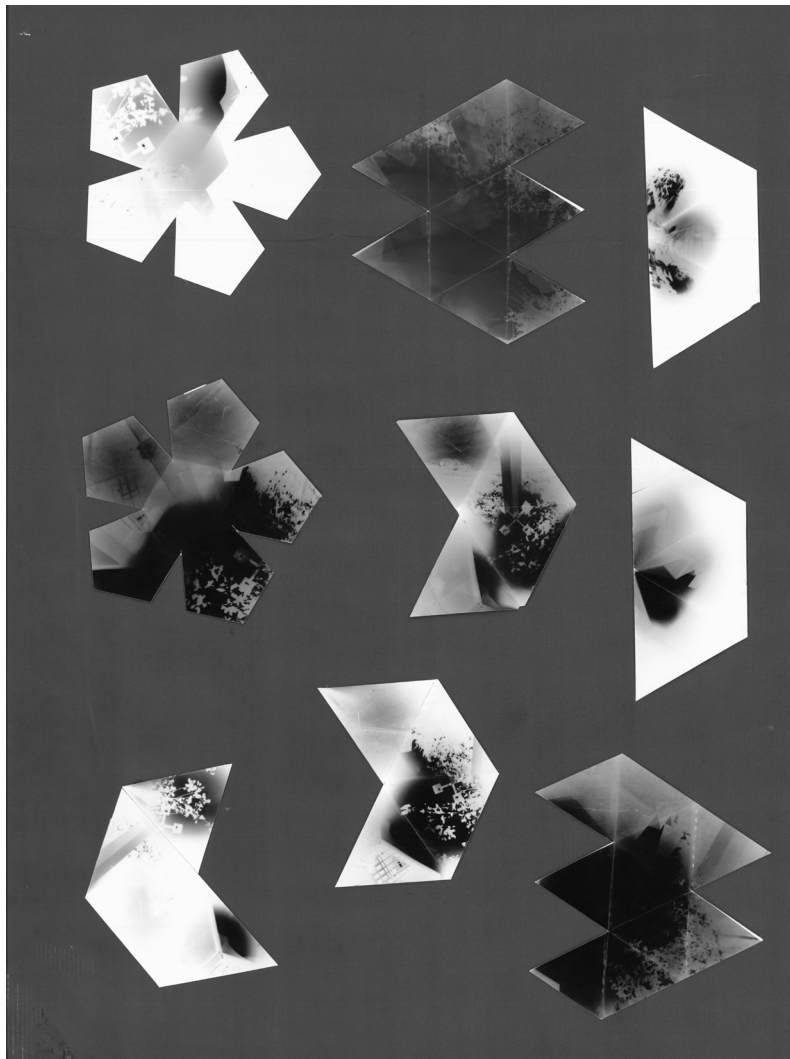


Each camera has a different focal length which produces differing degrees of telephoto to wide angle images.

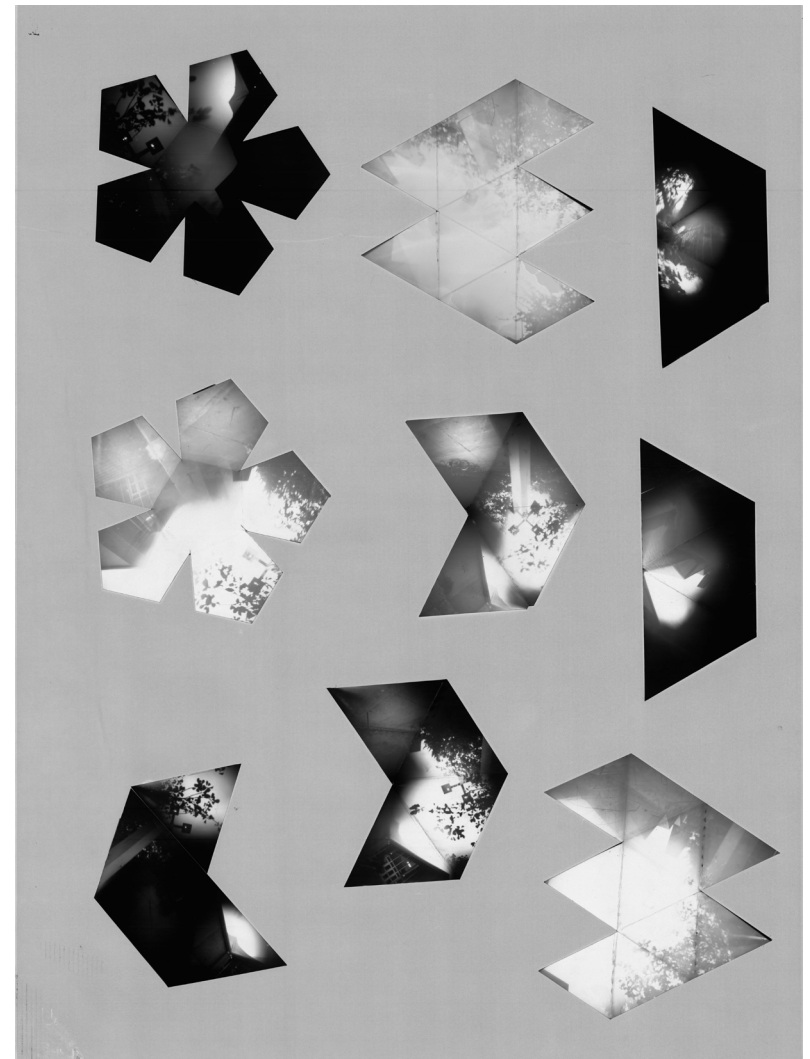
pinhole images

the defamiliarizing effects of pinhole photography

resulting negative images

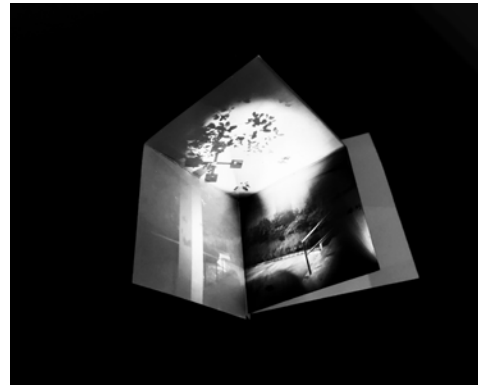
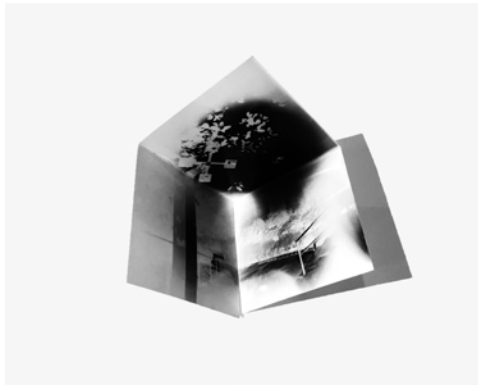


inverted positive images



cube

pinhole images



[-]

[+]



Cube pinhole camera

| faces : 6 | edges : 12 | radius : 2"

time of day : 2pm

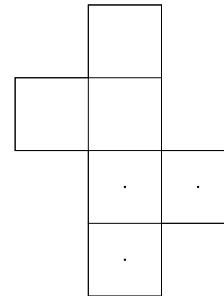
exposure time : 15 seconds

ideal aperture 0.26 mm

focal length: 2 in

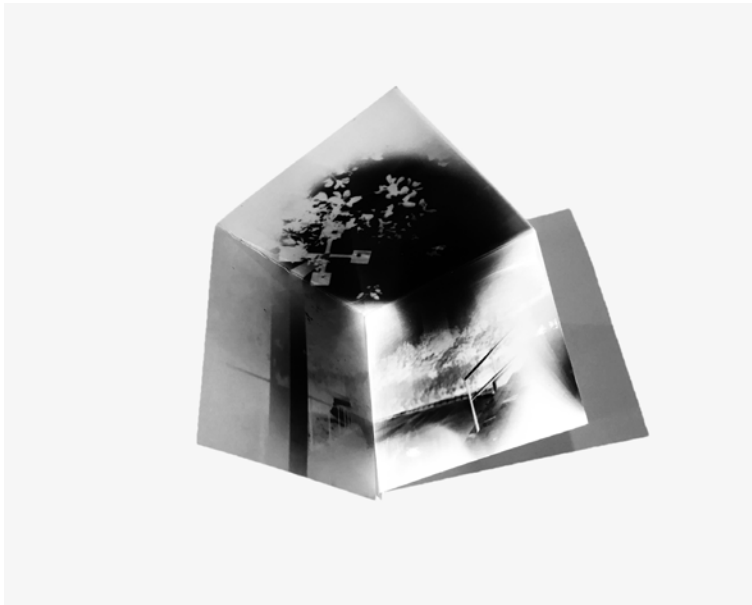
f-stop : 191

number of picture planes : 3



cube

the lamppost and the railing



[-]

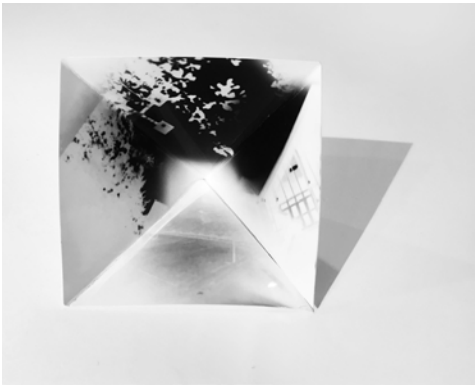
the lamppost and the railing



[+]

octahedron

pinhole images



[-]

[+]



Octahedron pinhole camera

| faces : 8 | edges : 12 | radius : 2"

time of day : 2pm

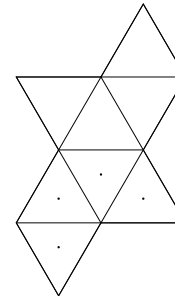
exposure time : 15 seconds

ideal aperture : 0.28 mm

focal length : 2.2 in

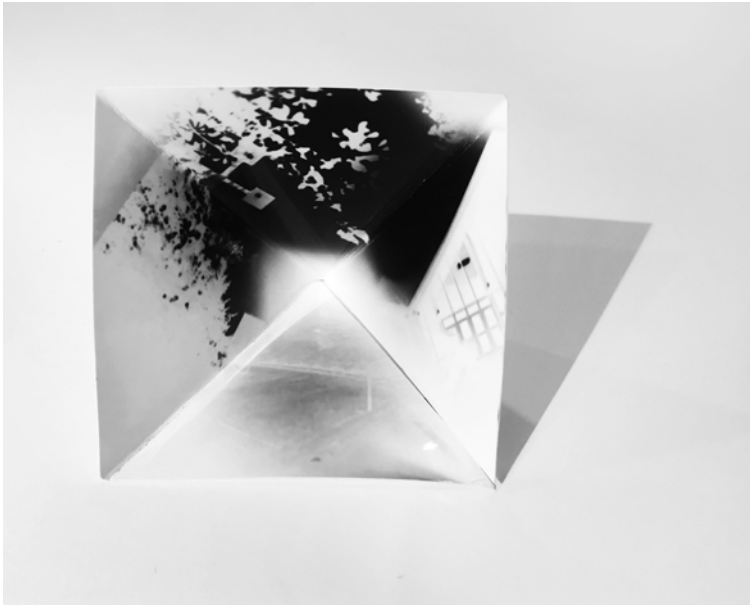
f-stop : 171

number of picture planes : 4



octahedron

the building and the lamppost



[-]

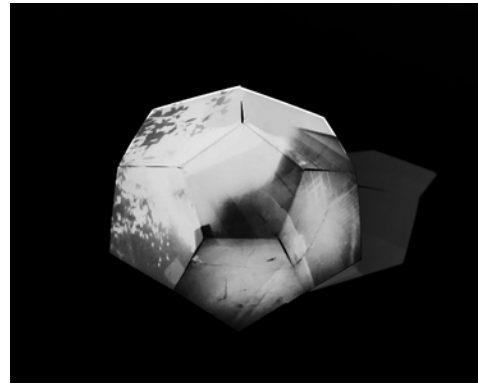
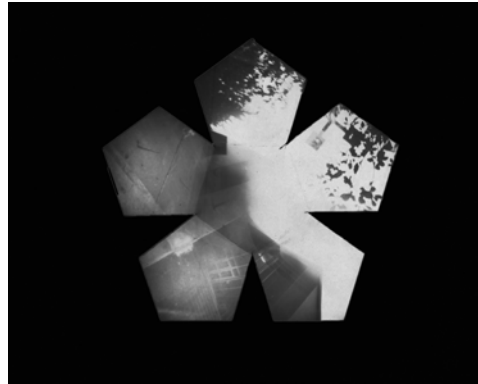
the building and the lamppost



[+]

dodecahedron

pinhole images



[-]

[+]



Dodecahedron pinhole

| faces : 12 | edges : 30 | radius : 2"|

time of day : 2pm

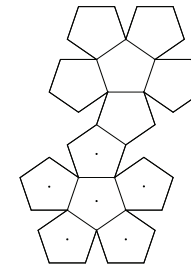
exposure time : 15 seconds

ideal aperture : 0.37 mm

focal length : 3.18 inch

f-stop : 226

number of picture planes : 10



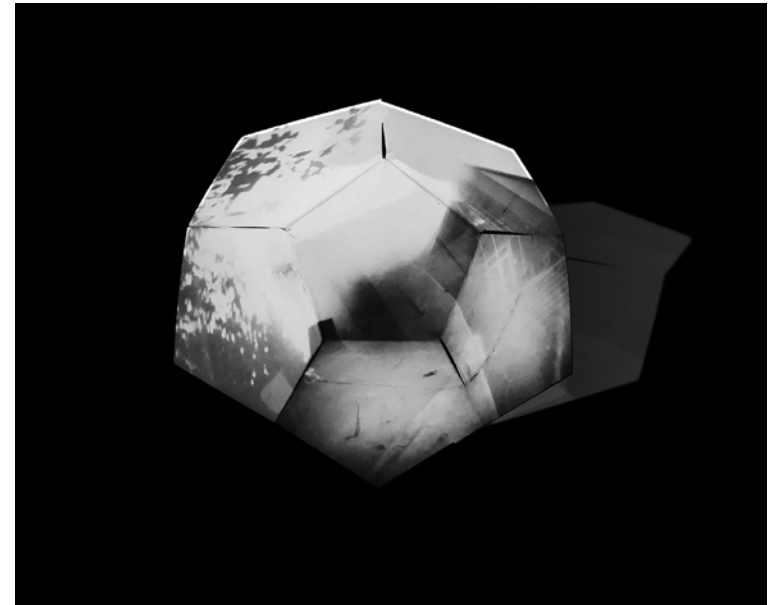
dodecahedron

the building and the tree



[-]

the building and the tree



[+]



site + context

"Among all these sites, I am interested in certain ones that have the curious property of being in relation with all the other sites, but in such a way as to suspect, neutralize, or invent the set of relations that they happen to designate, mirror, or reflect."

— Michel Foucault

The Waterside Generating Plant

original art nouveau style power plant

Located between 39th and 42nd St. on the East River, the historic Waterside Generating Plant was one of the first steam power plants to use alternating current to artificially illuminate Manhattan. What was once a center of energy, and a symbol of industry and technology, has now been decommissioned and completely demolished to make room for the development of what is planned to be more luxury residential towers.

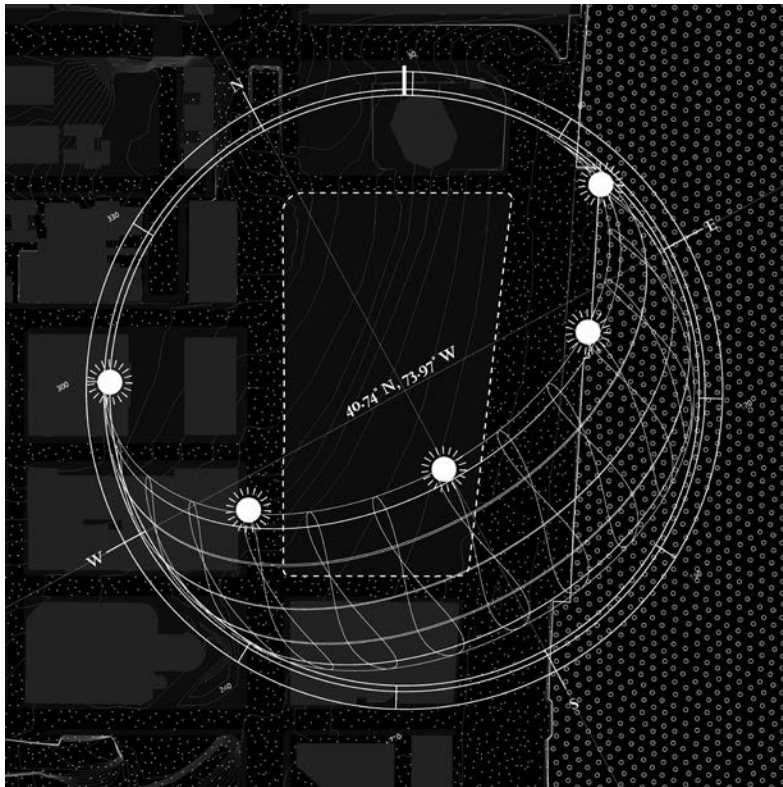


1903 - 2005



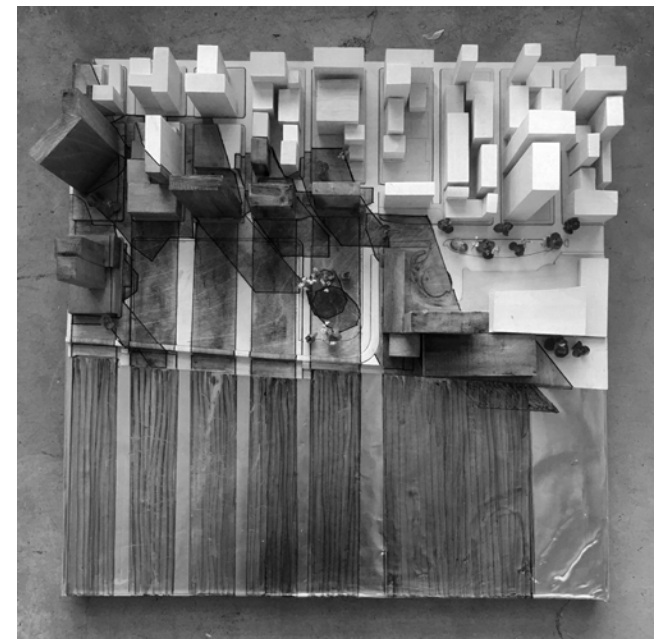
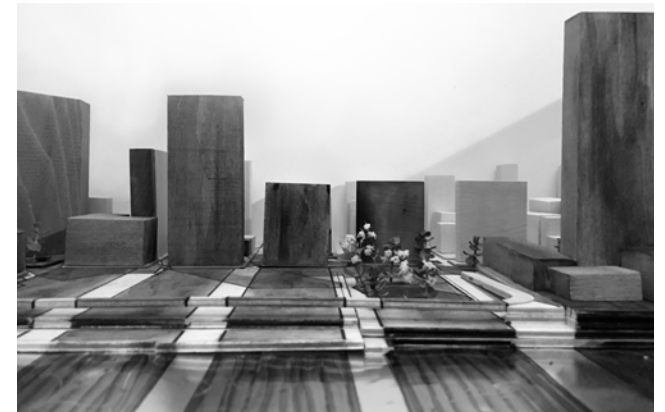
Manhattanhenge

original art nouveau style power plant



Since Manhattan's grid is rotated 28 degrees West of true north, the sun sets between the buildings on the summer solstice. This phenomenon has been called Manhattanhenge.

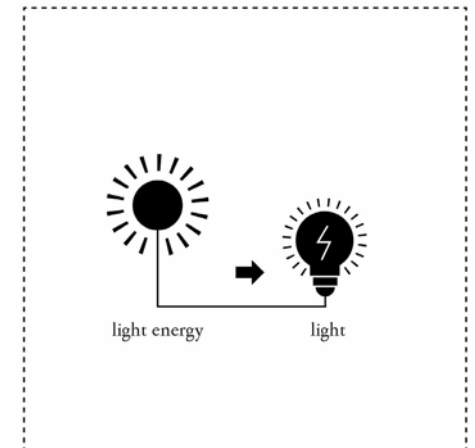
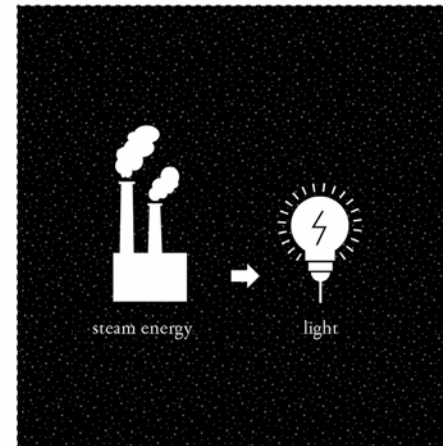
Model depiction of shadows on the side, with a focus on Manhattanhenge.



Energy Production

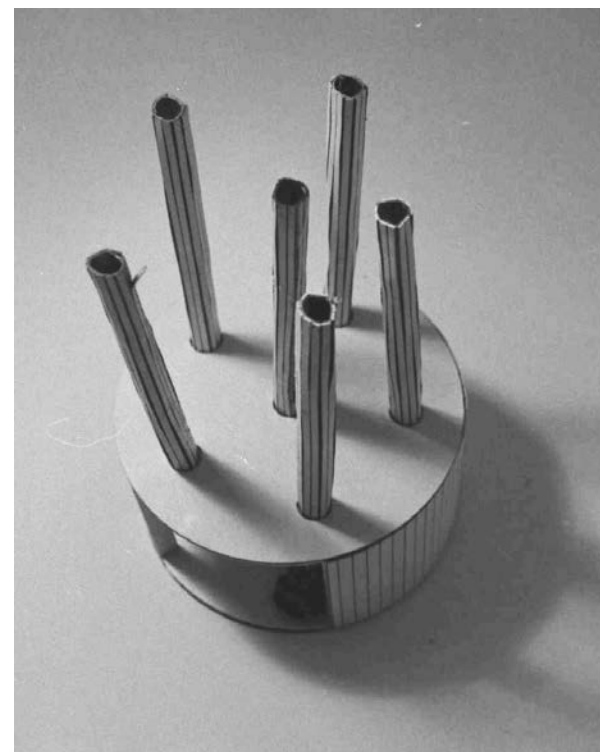
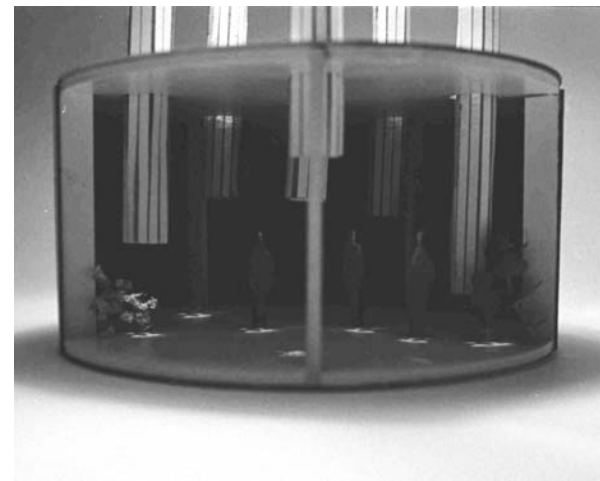
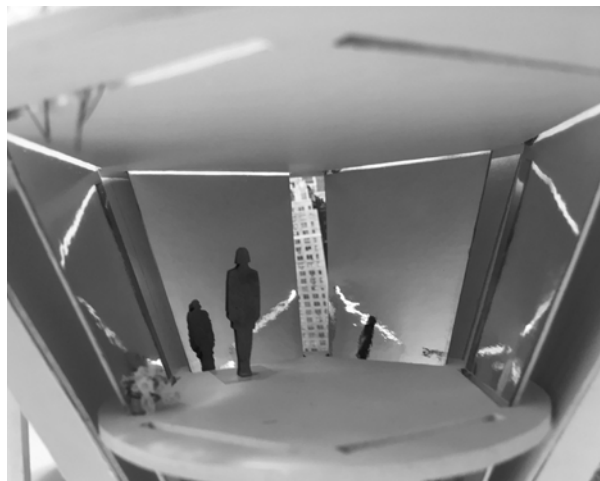
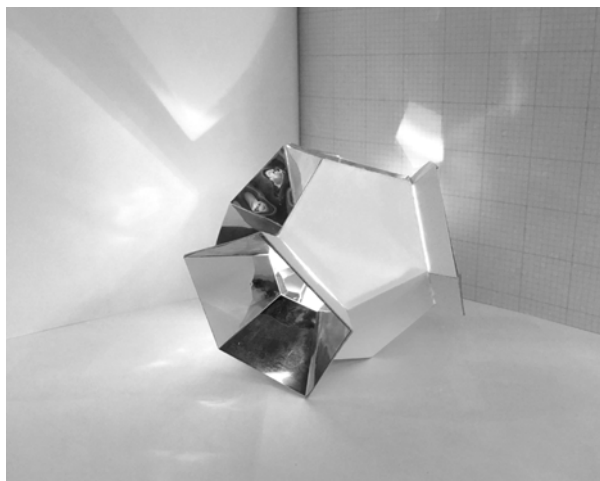
harnessing light

As the world is haunted by the lurking shadow of climate change, the subject of energy continues to be a central topic, and power plants continue to be key players. This begs us to reconsider the future of electricity and our relationship with light. The WATT Center recalls the site's former function as a source of power and light, proposing a center of solar energy, focused on the integration of public space, industry and art.



light concentrators

initial model studies



The initial models studied the integration of utilitarian design with the concentration and reflection of light to create uncanny visual effects. They became light concentrators.

The WATT Center

[spaces of light magic]

The WATT Center is a place to recharge and re-imagine. Located in the middle of the sleepless city, it takes the form of a sundial. Changing constantly, it allows the guests to experience layers of time in a series of light space concentrators that integrate solar industry with public solitude.

As a generator of dream spaces, it juxtaposes light and dark to create an upside down experience of the familiar city and awaken its guests from the pre-prescribed patterns of daily life through a total experience of light.

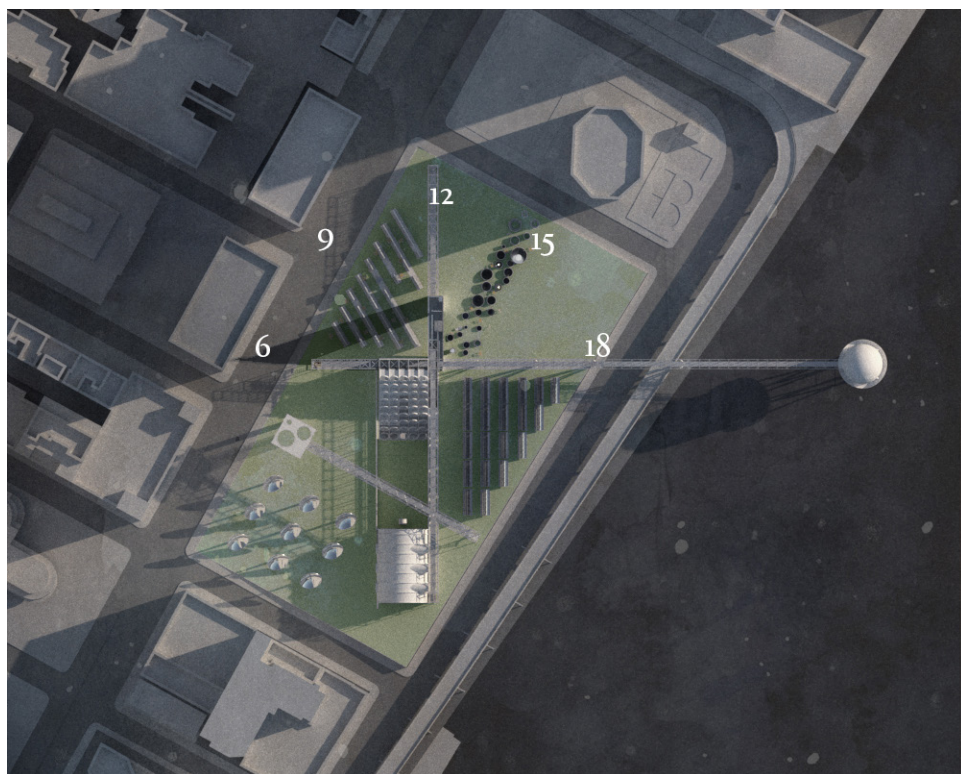
The Watt Center

spaces of light magic



Sundial

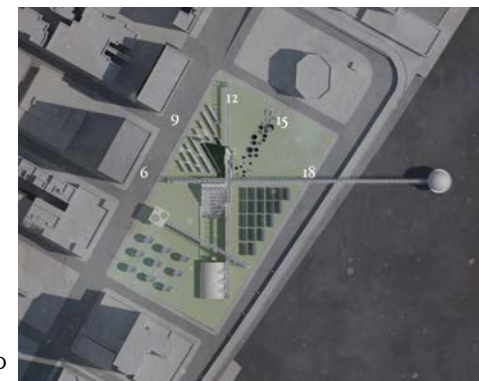
site strategy



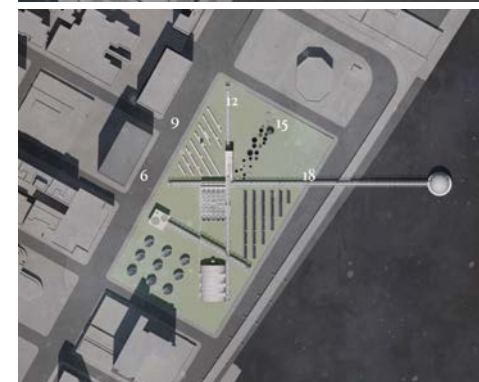
6:00

Since ancient history, sundials have mapped sunlight to record time. This becomes the strategy for deploying elements on the site. Each is positioned relative to the hand of a clock, marking each hour of the day.

9:00



12:00



15:00



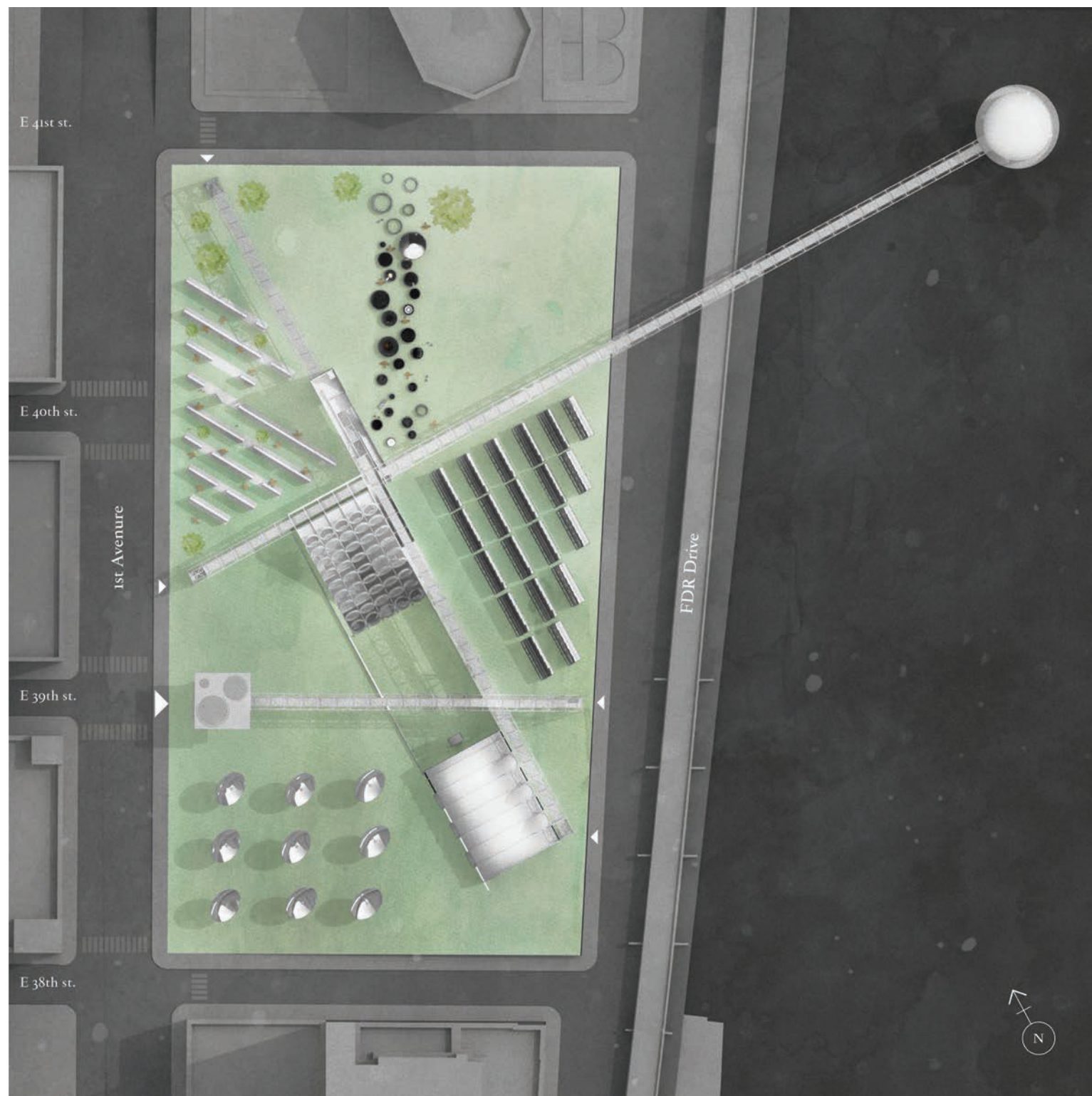
18:00



Site Plan

site strategy

The site plan allocates these elements. The WATT Center is accessible by many points. The elevated catwalks are reminiscent of city infrastructure and are accessible from five points, the main entrance is on the west side at 39th st.



light episodes

[centers of light magic]

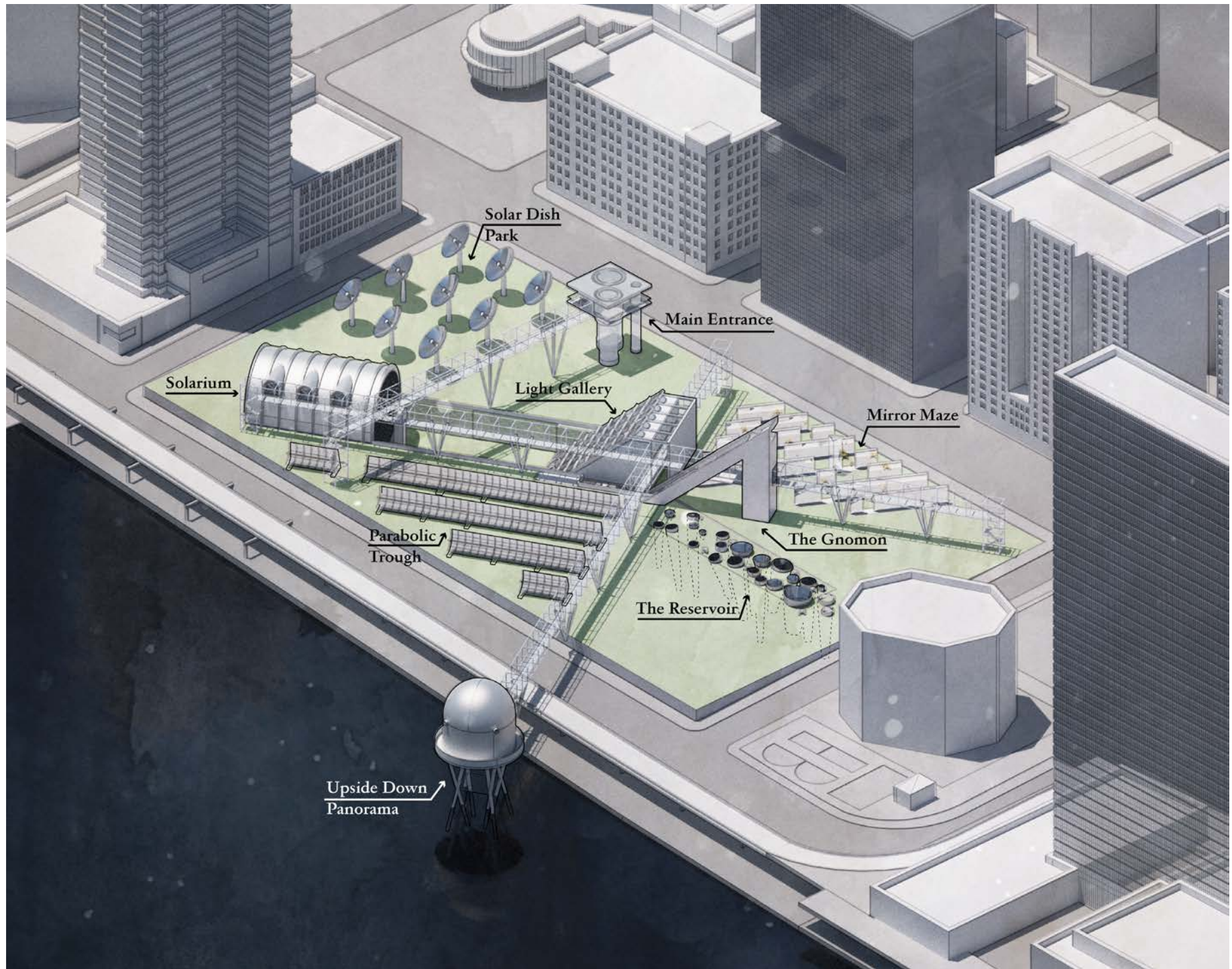
“Episode - an event that is distinctive and separate although part of a larger series.”

-- Merriam-Webster Dictionary

Location Diagram

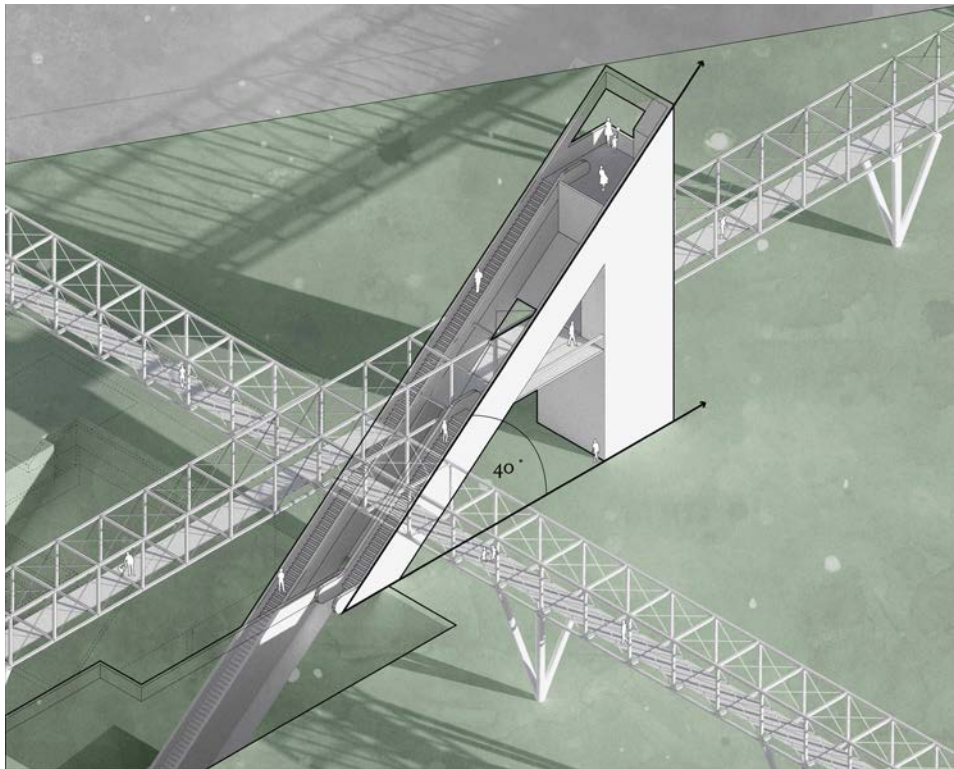
site strategy

Episodic spaces reflect and refract light to play optical tricks that reveal its special qualities while simultaneously generating electricity. As a spectacle, light and shadow become the main drivers for defamiliarization, they create an anthology of experiences that invert the city and engage the site from unfamiliar angles.



00:00 - The Gnomon

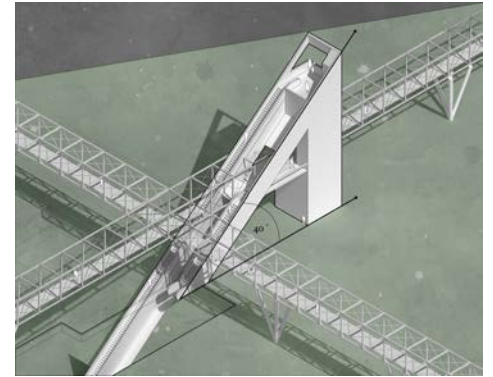
the defamiliarizing effects of reflected light



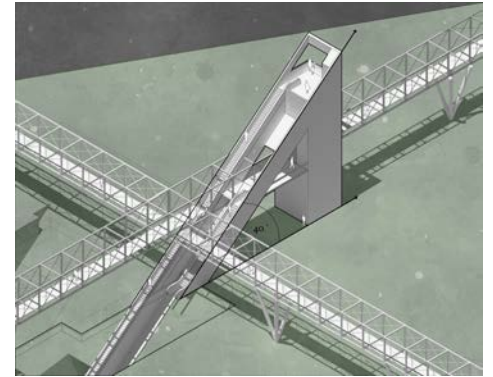
6:00

A gnomon is an angled structure that casts the shadow in a sundial. It is angled to match the latitude of its location in order to accurately tell time. It becomes the central point of the park and doubles as a lookout tower accessible by escalator.

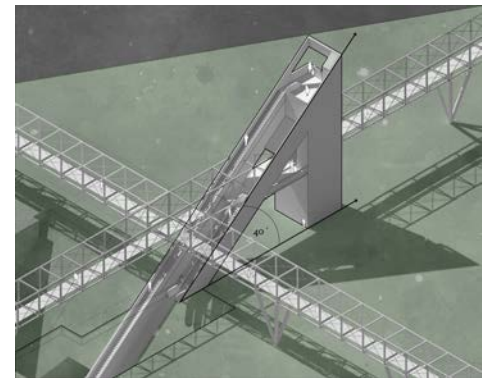
9:00



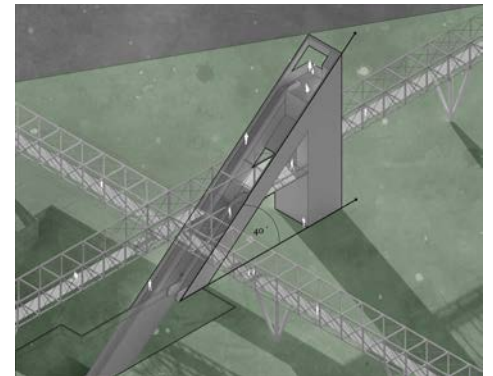
12:00



15:00

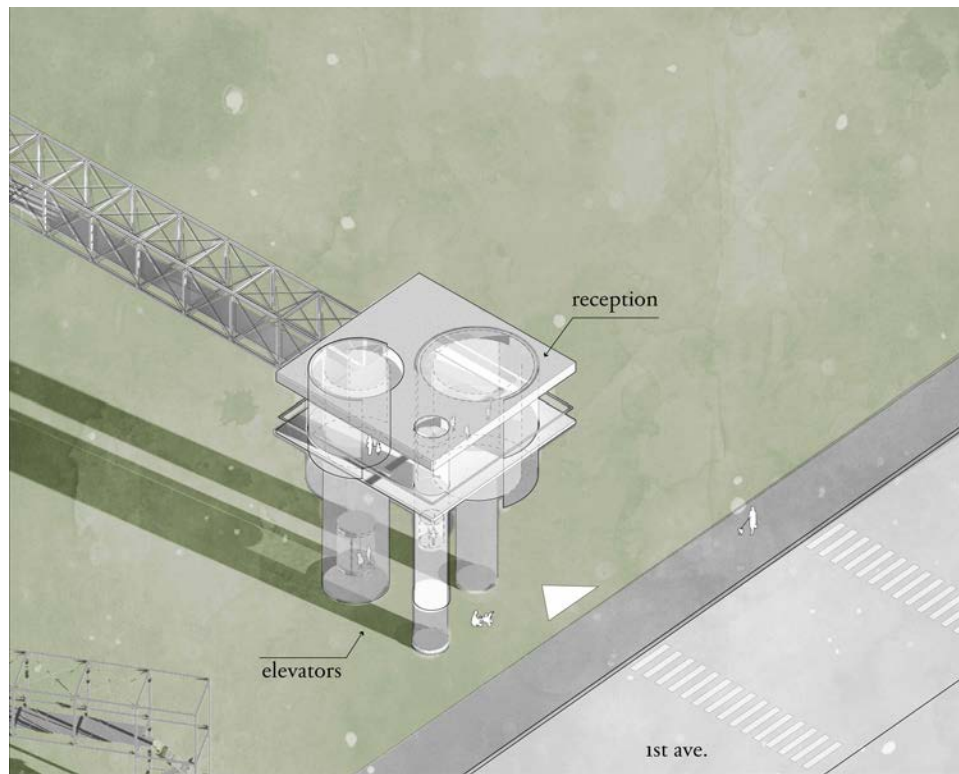


18:00

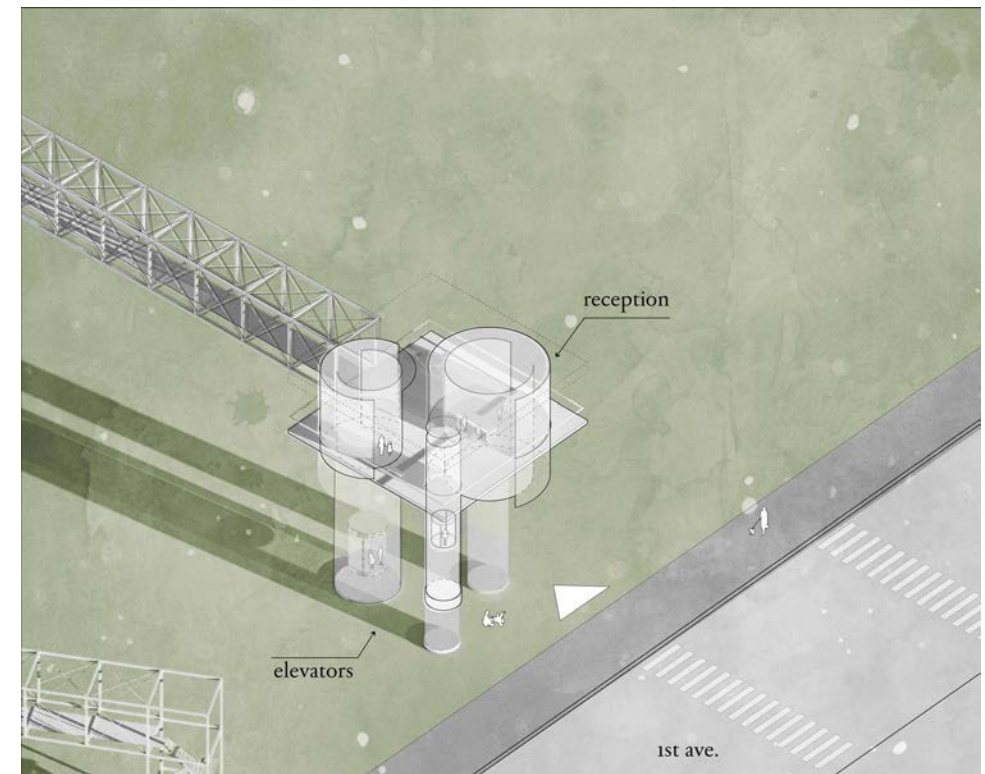


06:00 - The Reception Space

silhouettes



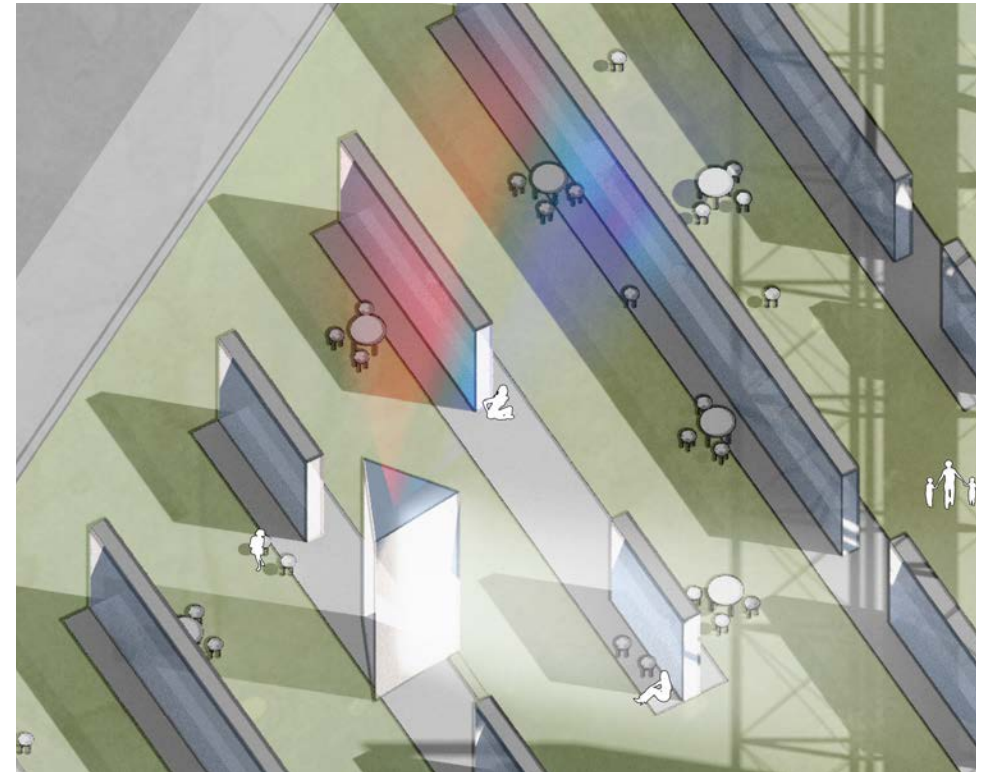
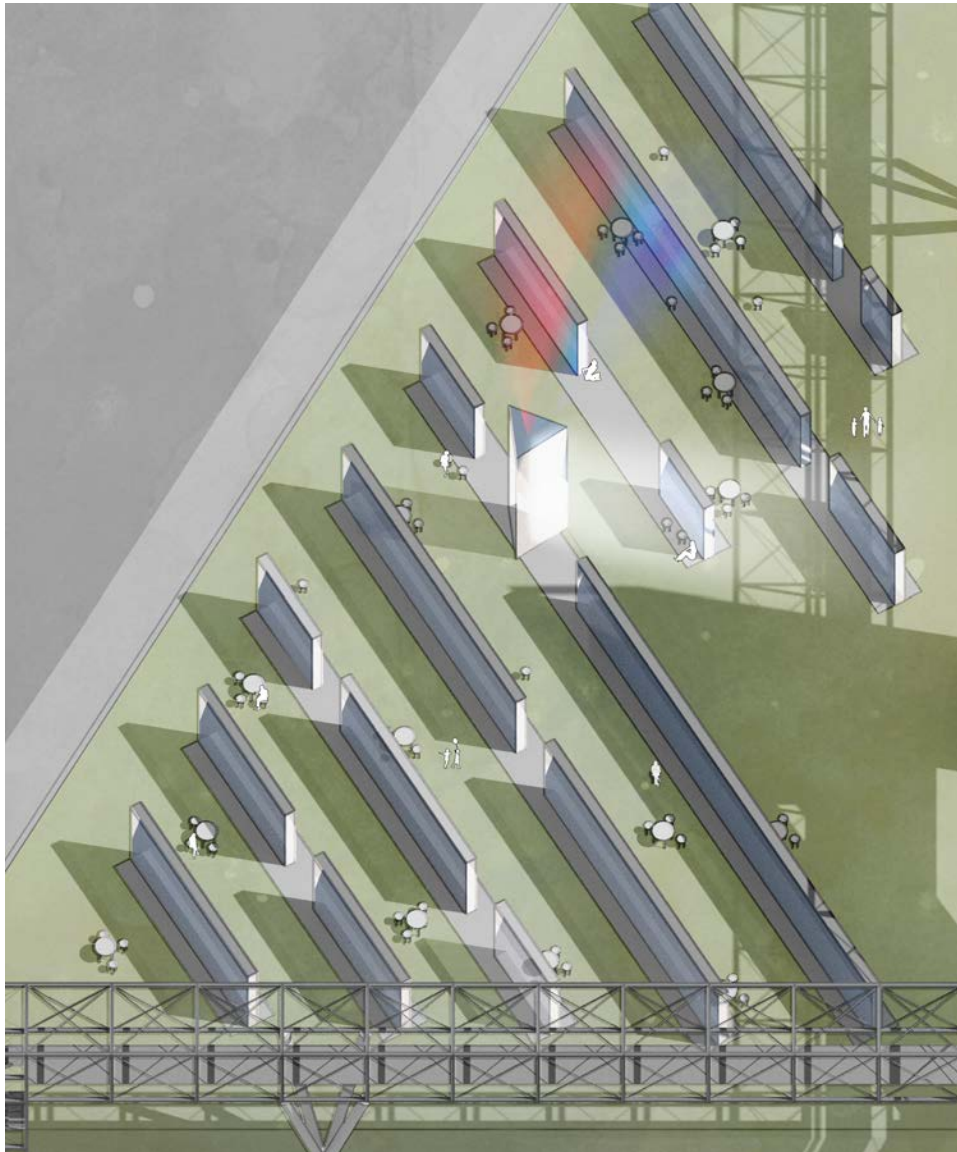
Located at the western edge of the site, the reception space shows a dynamic display of silhouettes in semi-transparent elevators.



The translucent cylinders provide physical isolation and a degree of privacy within the larger volume, while allowing for the display of motion.

09:00 - The Mirror Maze

an experience of reflection and refraction



The Mirror Maze produces a defamiliarizing effect that provides privacy and marks spaces for isolation. The infinite mirrors allow guests to keep themselves company. A glass prism refracts light to project a rainbow when the clock strikes 9:00.

12:00 - The Solarium

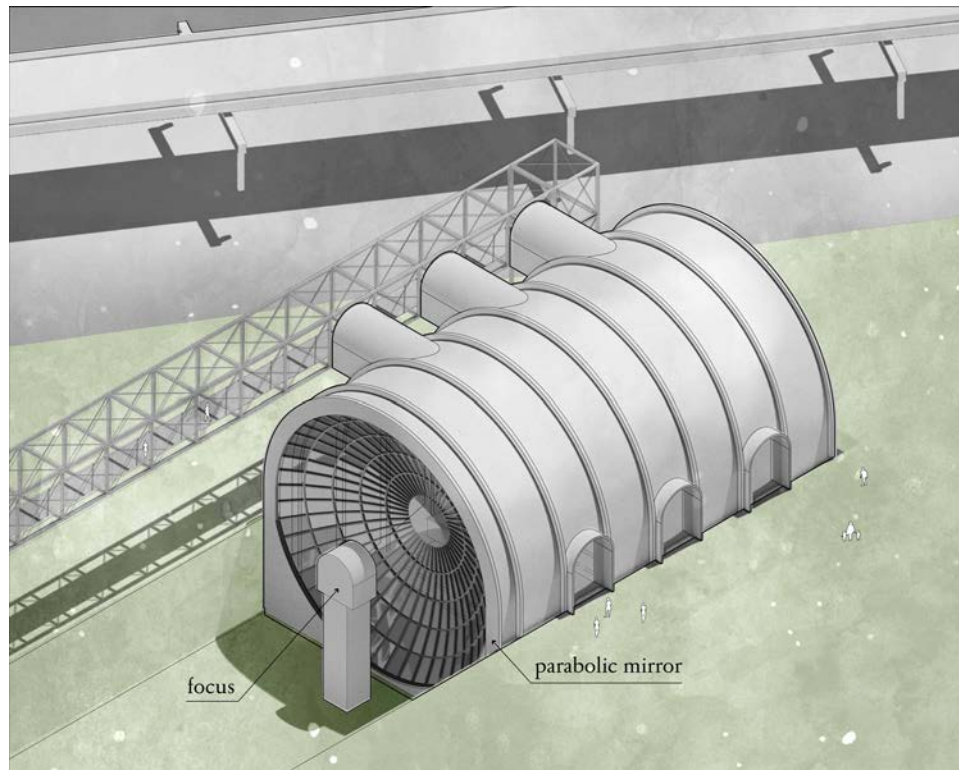
solar furnace and auditorium

The Solarium consists of a solar furnace, which is a parabolic mirror that concentrates sunlight at its focus to generate electricity. It doubles as an auditorium of infinite reflections. The back of the parabola becomes the backdrop for the stage.

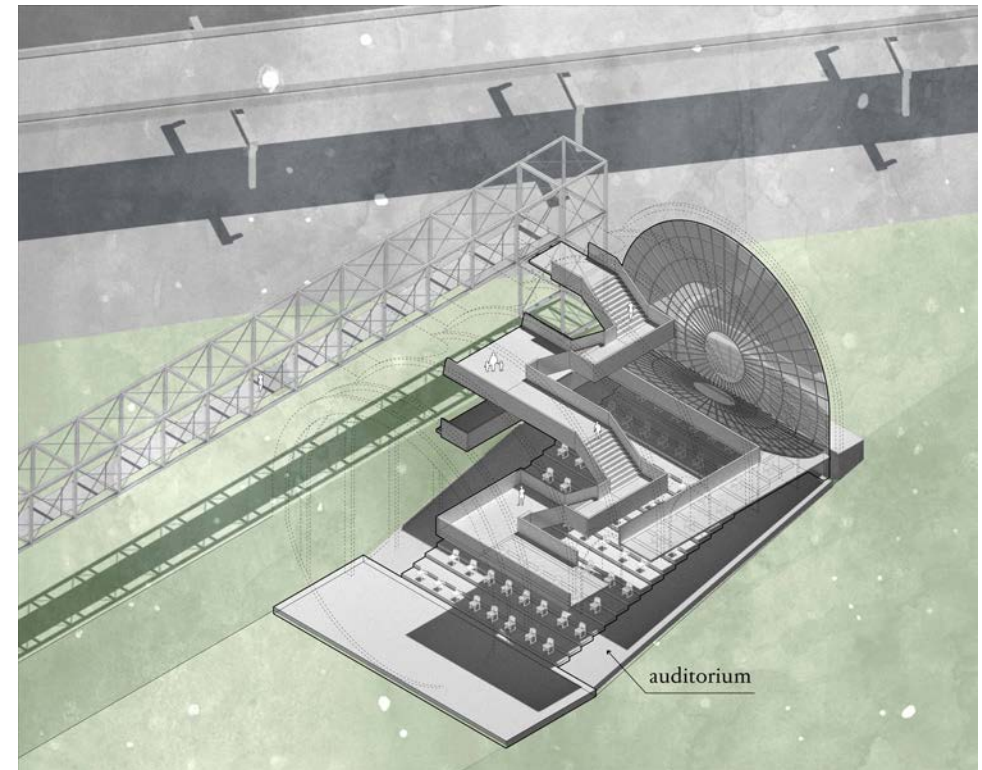
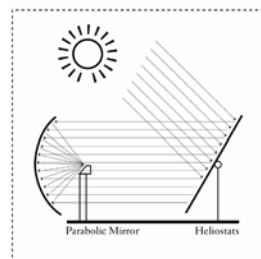


12:00 - The Solarium

solar furnace and auditorium



Light rays are reflected off of flat mirrors called heliostats and concentrated into the focus of a large parabolic mirror. This generates heat energy which is then stored as molten salt and transformed into electricity.



The balconied auditorium is a multipurpose public space

12:00 - The Light Gallery

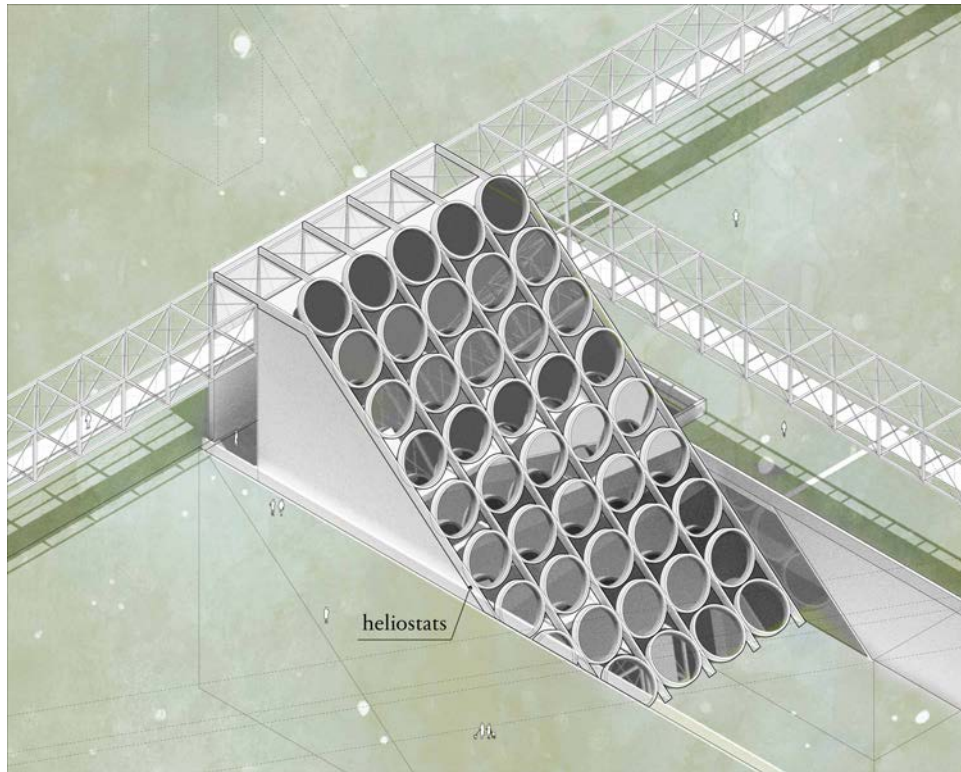
light art and technology

Balconied galleries of light art and technology explore the phenomenon of electromagnetic radiation. The heliostat facade is made up of flat mirrors that follow the sun in order to channel its rays into the furnace. An infinite escalator leads to the Gnomon lookout.



12:00 - The Light Gallery

light art and technology



The facade is made up of flat mirrors that direct the sun into the solar furnace.



The balconies allow sunlight to filter into every space.

15:00 - The Reservoir

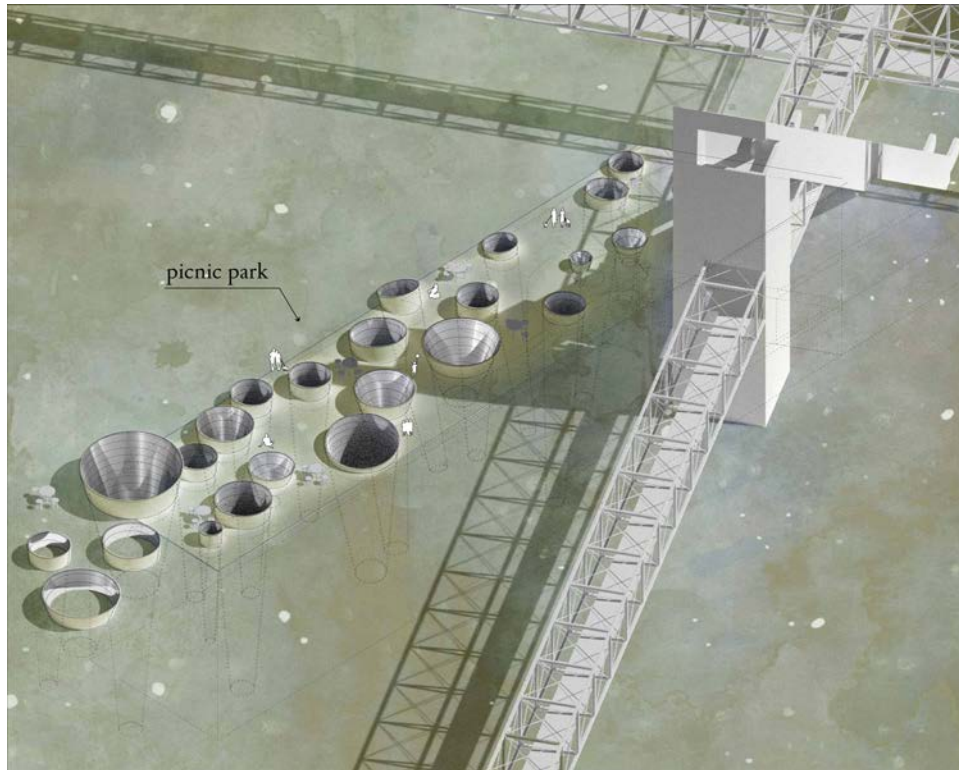
energy reservoir and subterranean salon

Light funnels channel light to the underground salon. This creates a sense of collective privacy though selective illumination. It contains molten salt tanks that store sunlight in the form of thermal energy.

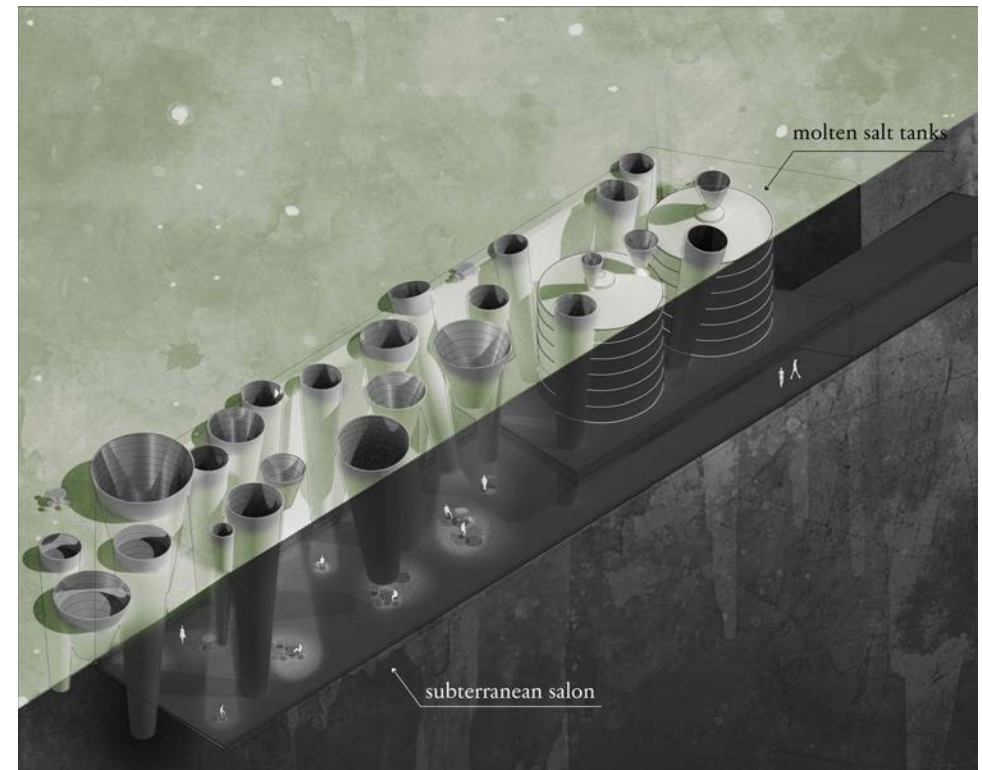


15:00 - The Reservoir

energy reservoir and subterranean salon



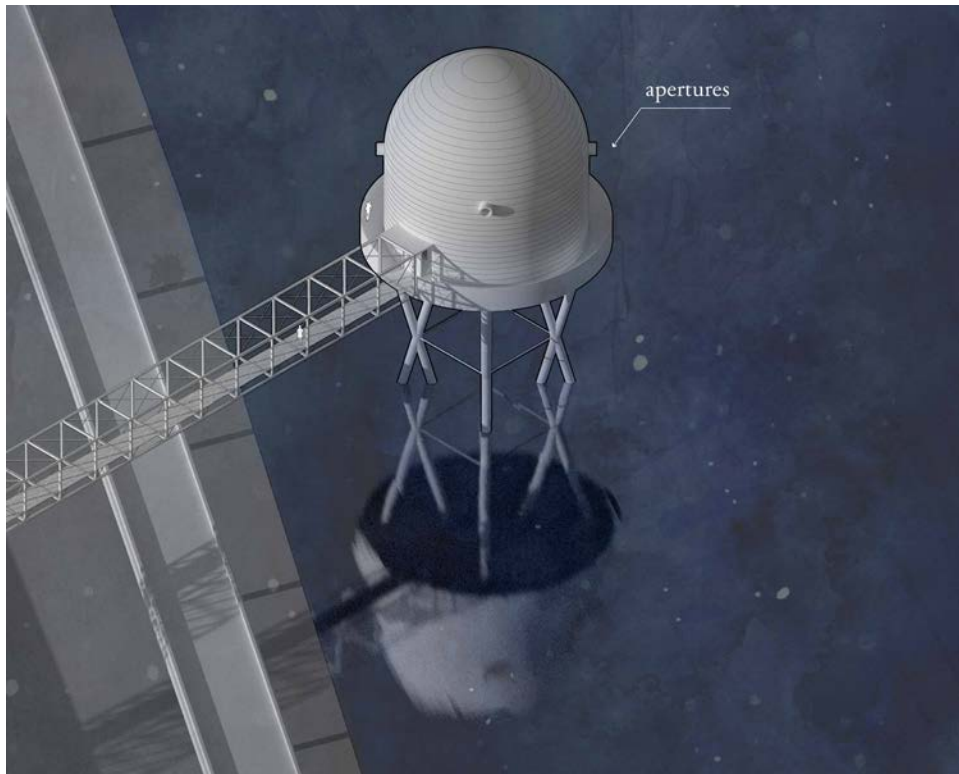
Above ground, the light funnels become landscape elements that create privacy and subdivide spaces in the picnic park.



The subterranean salon becomes a new type of public space where light becomes the main definer of space.

18:00 - Upside Down Panorama

camera obscura



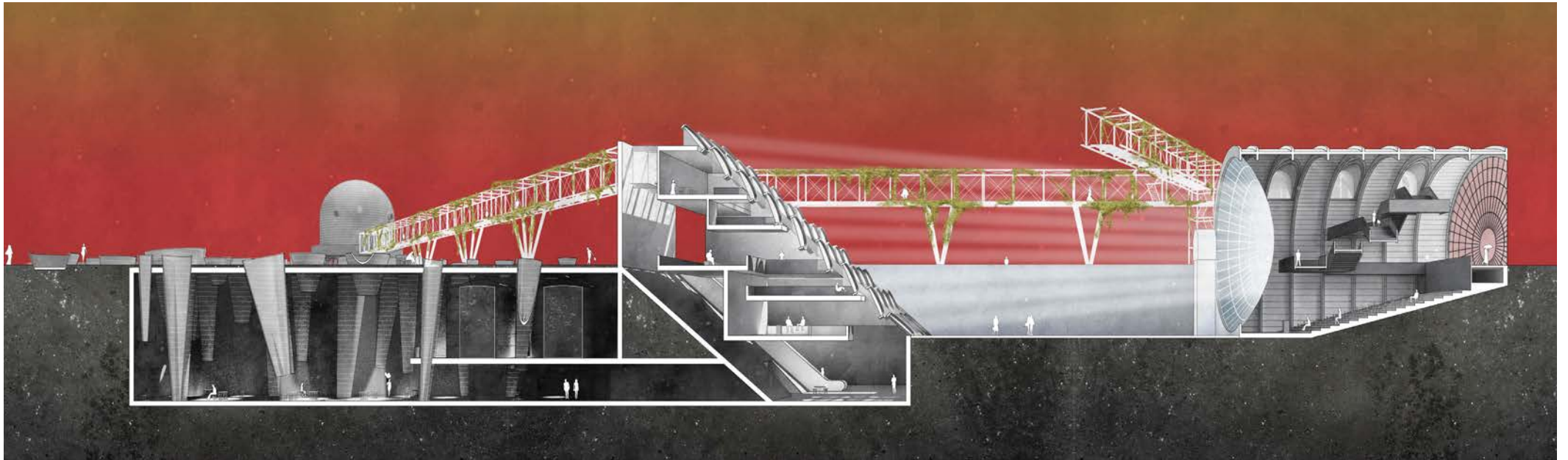
As a lookout, located above the East River, it provides a panoramic view of the city.



As a camera obscura, it produces an inverted panorama of the city.

The Solar Concentrator

section



bibliography

Benjamin, Walter. *The Work of Art in the Age of Mechanical Reproduction*. London: Penguin Books, 2008.

Carrier, David, and Rosalind Krauss. "Passages in Modern Sculpture." *The Journal of Aesthetics and Art Criticism* 36, no. 4, 1978: 55-61

Crary, Jonathan. "Olafur Eliasson: Visionary Events." In *Olafur Eliasson*. Edited by Kunsthalle Basel. Exhibition catalogue. Basel: Kunsthalle Basel; Berlin / Muttentz: Schwabe & Co. AG, 1997 Pages 60-66

David, Robert. *The History of the Waterside Generating Station 1901-2005*, n.d.

Dieterich, Robert, Erica Gies, Georgina Gustin, Lyndsey Gilpin, and Leslie Kaufman. "24-Hour Solar Energy: Molten Salt Makes It Possible, and Prices Are Falling Fast." *InsideClimate News*, April 10, 2019. <https://insideclimatenews.org/news/16012018/csp-concentrated-solar-molten-salt-storage-24-hour-renewable-energy-crescent-dunes-nevada>.

Foucault, Michel. "Of Other Spaces." *Heterotopia and the City: Public Space in a Postcivil Society*. 2008

Hays, K. Michael. "Repetition." *Architectures Desire: Reading the Late Avant-Garde*. Cambridge, MA: MIT Press, 2010.

Kuo, Jeannette. *Space of Production: Projects and Essays on Rationality, Atmosphere, and Expression in the Industrial Building*. Zurich: Park Books, 2015.

Marcuse, Herbert. "A Note on the Dialectic" *Reason and Revolution: Hegel and the Rise of Social Theory*. Boston: Beacon Press, 1970.

Marcuse, Herbert. "Some Social Implications of Modern Technology." *Zeitschrift Für Sozialforschung* 9, no. 3 (1941): 414-39.

Marx, Karl. *Economic and Philosophic Manuscripts of 1844*. Moscow: Progress Publishers, 1982.

Marx, Karl, Friedrich Engels, "Estranged Labor" *The German Ideology*. New York: International Publishers, 1963: 498 - 500

Neufert, Ernst. *Neufert Architects Data*. Oxford: Blackwell Science, 2000.

Shklovskii Viktor. "Art as Technique." *Theory of Prose*, Dalkey Archive Press, 2009. (original text from 1925)

Rueb, Emily S. "How New York City Gets Its Electricity." *The New York Times*. *The New York Times*, February 10, 2017. <https://www.nytimes.com/interactive/2017/02/10/nyregion/how-new-york-city-gets-its-electricity-power-grid.html>.

Riley, Terence. *Light Construction*. New York: Abrams, 1995.

"Solar Furnace." *Solar Furnace - an overview | ScienceDirect Topics*. Accessed May 12, 2020. <https://www.sciencedirect.com/topics/engineering/solar-furnace>.

Vidler, Anthony. "The Architecture of the Uncanny: The Unhomely Houses of the Romantic Sublime." *Assemblage*, no. 3, 1987: 10

watt center

Michelle Antonorsi
thesis/degree project
fall 2019

crits : Michele Gorman
Adam Elstein
Jeffery Hogrefe