



“To Have the Apprentice in the Sun”

Concepts, sketches and notes by John Ingram 1969 -1979

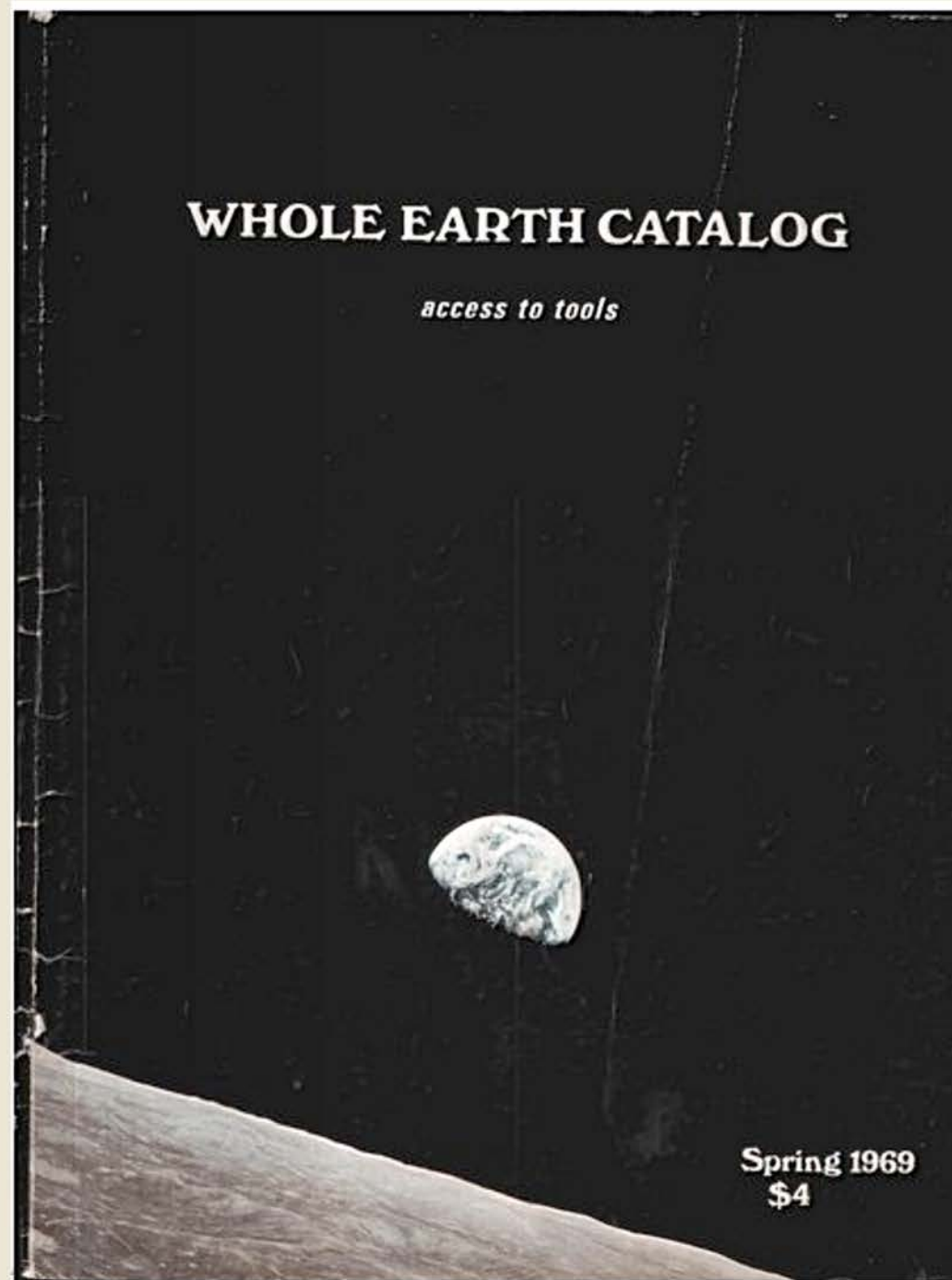


From 1969 to 1979 I intermittently thought about how emerging developments in passive energy technologies could realign our relationship with the environment. At first my ideas were to create a practical place to live, but progressively they joined with thoughts about Art. After an opportunity to build a sculpture for a small island on the Connecticut coast I began to imagine an architectural “Folly” that would challenge aspects of the belief that Art must be useless. This book traces the development of these ideas and the sculpture from journal drawings and notes.

Beginnings 1969 - 73

The initial impulse came from “off the grid” communal living as imagined by Stuart Brand through the Whole Earth Catalog. In these seminal documents 60's counterculture youth found a new voice in the revival of the Back to the Land movement.

Out of the industrial build up from the wars, large scale technologies and national power grids evolved as the primary means for the growth of urban and suburban living and the progressive distancing from nature. Brand's highlighting of local resources, tools, and passive energy systems to empower small groups in achieving sustainable independent lives within nature seemed like an important idea.



Between 1972 and '73 discussions with Sean Wellesley Miller at the Plough and Stars in Cambridge significantly advanced these beginnings. Working with Day Chahroudi at MIT, Sean was exploring ways that architectural function and building technologies could encourage new types of community and social freedom. In his view Architecture would become concerned less with inert symbolic shells and more with variable and environmentally responsive membranes.

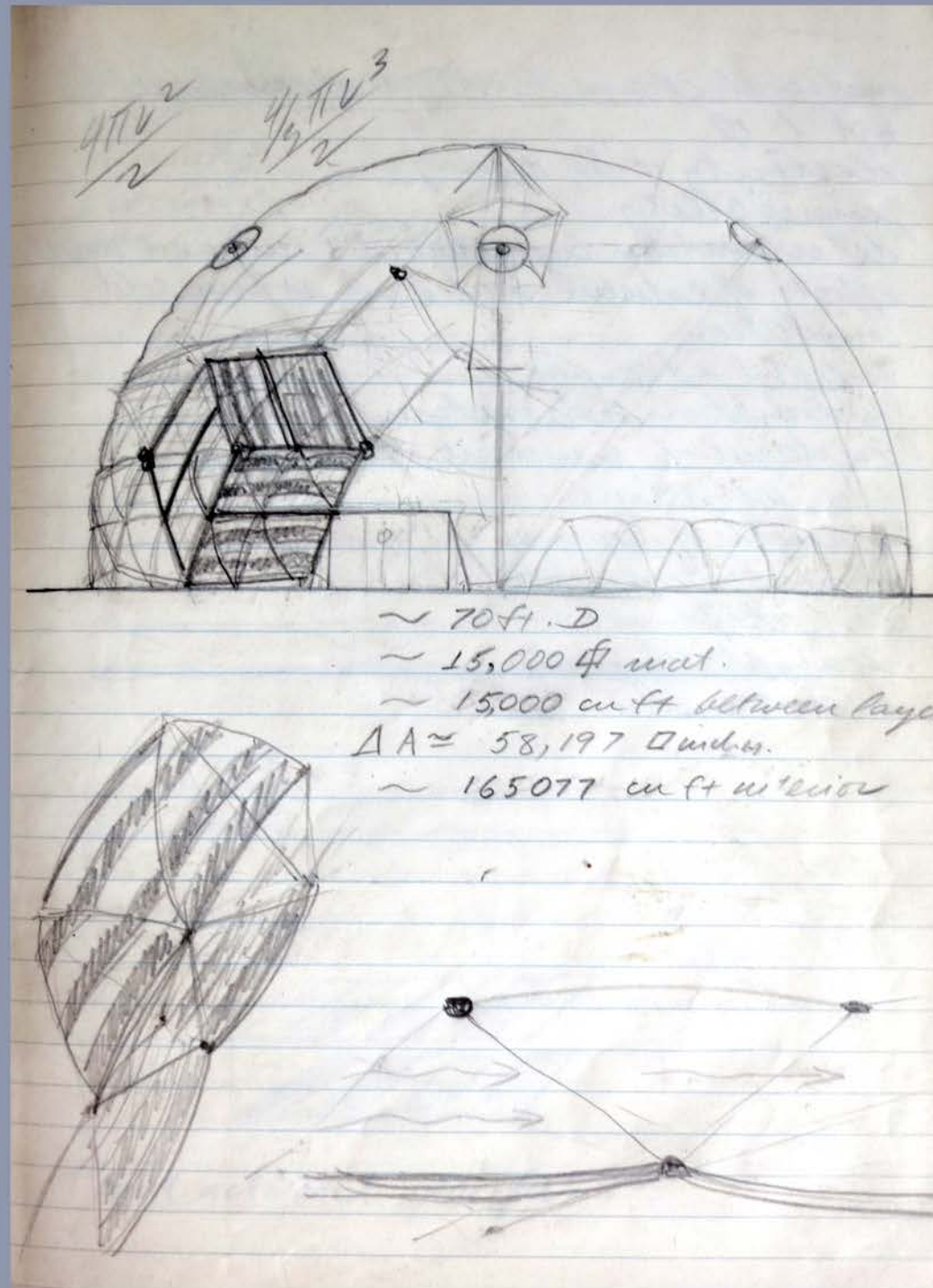
Sean came to MIT Architecture from a creative engagement with the Situationist Internationale movement in 60's Amsterdam where he was part of the Eventstructure Research Group with Jeffrey Shaw and Theo Botschuijver. The purpose of ERG was to devise an alternative to "museum art" by staging events in the street and at public festivals. The European Situationists were urban and collaborative whereas in the States the Back to the Land movement tended to be agrarian and transcendentalist. Nevertheless these radical communities on both continents had a common goal of transforming fundamental values and patterns of post war culture.

"The Society of the Spectacle", Guy Debord's Situationist analysis of the media's appropriation of cultural symbols to dominate social contexts was a radical critique of the commodity world that we were all moving into. There needed to be new approaches to the formation of society's guiding signs that evolved from basic human needs and desires rather than from the fantasies imposed by consumer capitalism. Pop Art found an indifferent irony in these fantasies, but there was no opposition.

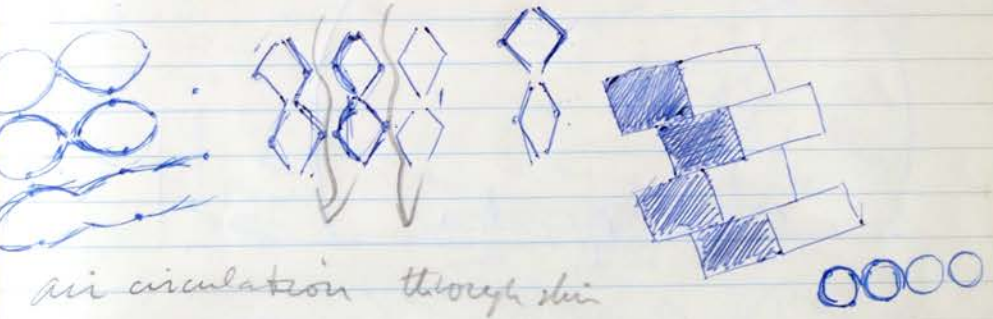
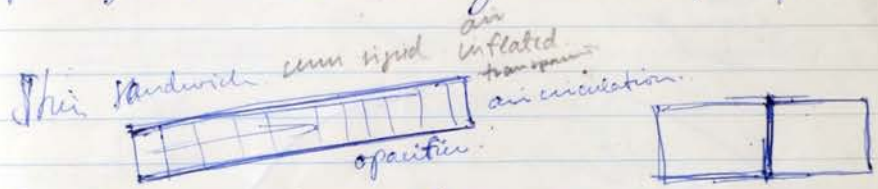
**First sketches of a typical communal dome
"home" with passive energy technology
emerged from these discussions.**

"Let us imagine an enclosure of virtually any scale that lets sunlight into itself and that prevents heat from escaping when the interior microclimate is too cool. It also reflects sunlight, and it dumps heat out into the night sky when its interior is too warm. Let us further conceive that, within this enclosure, sufficient heat could be stored in the ground to provide several days worth, even if the sun did not shine. We would then have a system that would maintain a very stable interior microclimate without requiring mechanical heating or cooling. Let us then also imagine a building that is designed not only to provide shelter from the weather, but also to provide some food; fresh water; liquid and solid waste disposal; space heating and cooling; power for cooking and refrigeration; and electricity for communications, lighting and household appliances."

**Sean Wellesley-Miller and Day Chahroudi.
"Bioshelter" Architecture Plus Nov/Dec 1974**



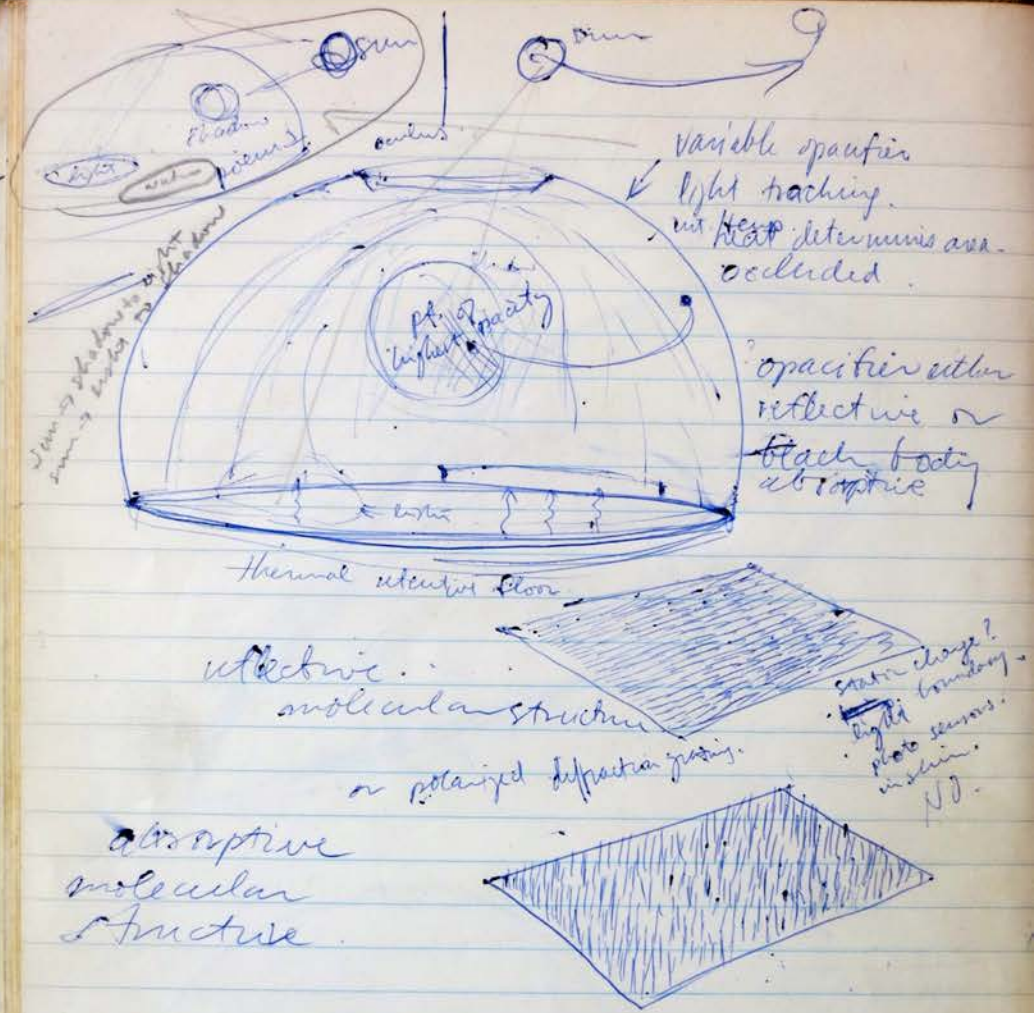
1. ~~Additional~~ sensor, whose sensitivity is inversely proportional to quantity of internal heat. producing a ~~change~~ change through skin variable totally in function of internal heat. ~~skin~~ Skin opacity variable locally related light quantity.



result of windmill connected directly to air pump (higher wind = higher pressure) ^{within} (poem).

Hot weather - air circulation high (pressure low)
 Cool air - air circulation closed (pressure high)

Some mechanical type of air circulation and containment that will open up when dark spot passes and close down afterwards.



Some method of moving solar heat absorbed into storage - heat sensitive cement or liquids beneath floor.

It seemed likely that out of the radical ideas of the 60's and early 70's that at least part of architectural education would move away from formalism and more into research for the development of dynamic interfaces between the environment and human needs.

Given the power of advertising to co-opt trends and shape desire around images it should not have been a surprise that this alternative future for architecture would lose support and is only now struggling to reemerge as humanity careens towards a crisis of sustainability.

But the trend towards the "MacMansion" that has rapidly become the global ideal for a family home is as much an extension of building technologies that failed to evolve as it is a construct of a popular culture that imagines a material world without limits.

In 1946 Frank Lloyd Wright designed and built the Solar Hemicycle, an environmentally responsive home that continues to provide low cost shelter for its owners. Although it is encouraging to see the wide range of new ideas for passive energy structures around the world, there are still few buildings that incorporate even these basic concepts by Wright.

2/3 of carbon energy in construction -- 1/3 wasted.



Bitten by the M.ad D.og

During my time in graduate school my interest in this direction pretty much died out, but reemerged three years later when I was offered the opportunity to build a sculpture on a small island in Short Beach (Branford), Conn.

Despite my student work in minimalist sculpture, I had also become engaged in the eccentric art of Marcel Duchamp as presented by Sheldon Nodelman, then an assistant professor at Yale. In developing this sculpture I was superficially influenced by Duchamp's coy references to mythological traditions and iconography. But on a deeper level I was also learning that Duchamp created a new kind of poetics that used objects, context, language, and an absurd process for connecting them....to reveal the world as one, and many, and nonsense.

An art that so fully played with the viewer's participation was new to me. For Duchamp intention, its transformation and disappearance was the humor of being human... a humor through Art that allows us to see an important aspect of the way things are. Through the body of his collective work he created an enchanting quantum puzzle while reminding us "There is no solution because there is no problem".

By rearranging its foundations Duchamp had at least momentarily returned Art to its epistemic status. And yet he also claimed that he would be an "End" of Art, another play on shifting meanings that can be seen as "true".

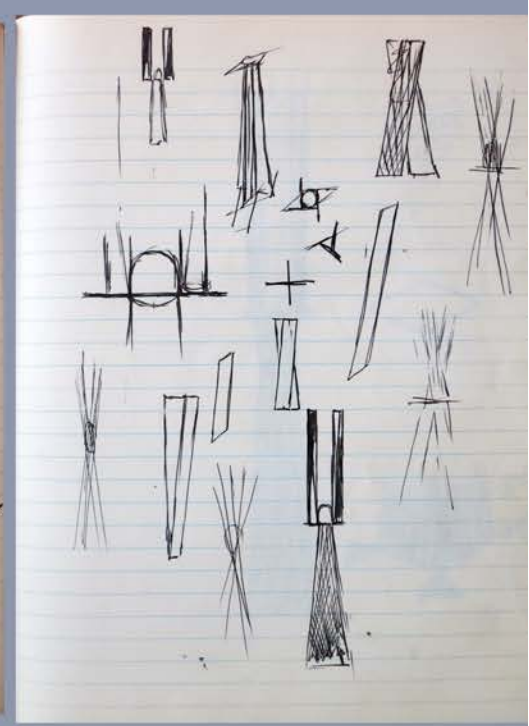
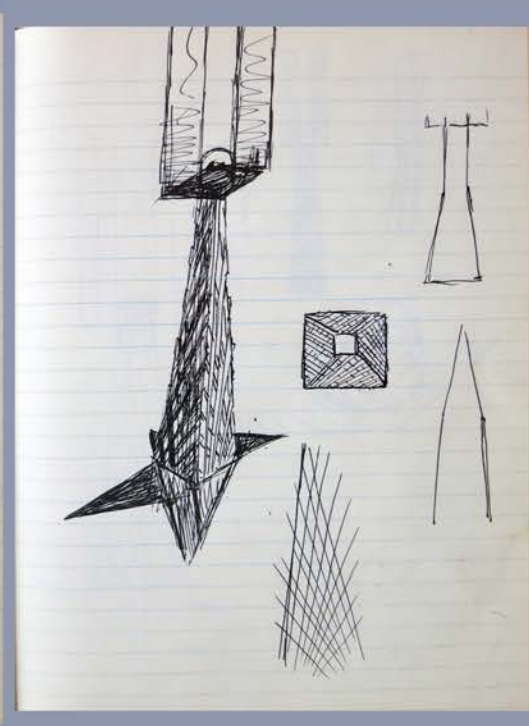
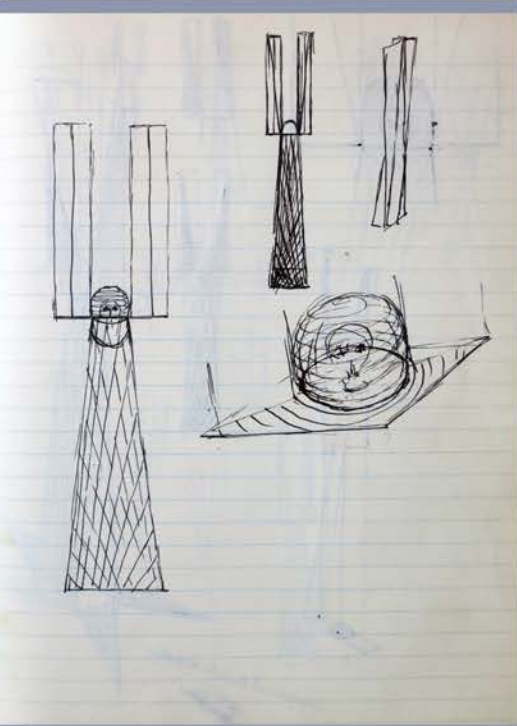
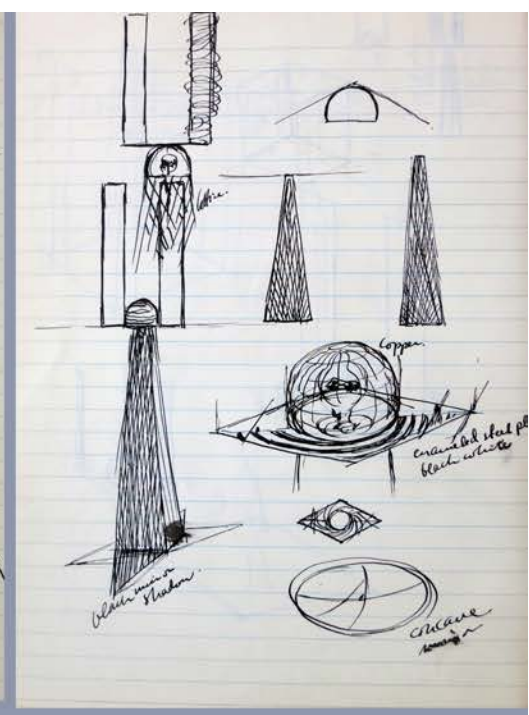
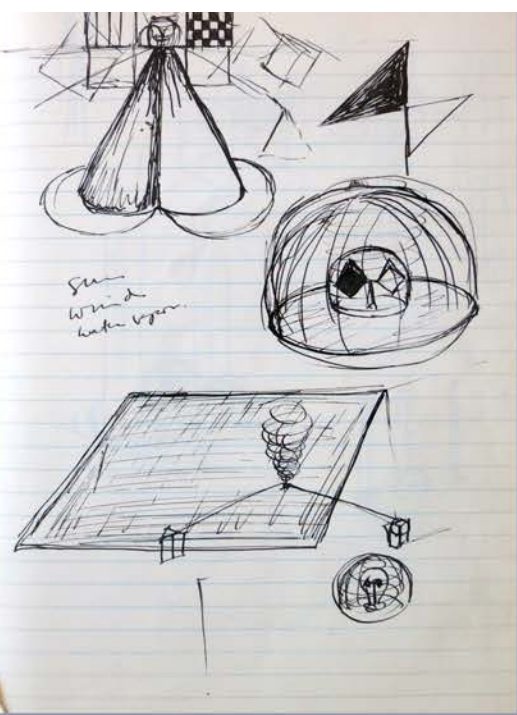


My vision of Duchamp's uniqueness is not represented as much by his work as by Irving Penn's photo of him backed into a dead end corner looking out with an enigmatic smile. For me, this portrait evoked the lighthearted, tricky irony of his creations as well as the generous smile of ancient art in many traditions.

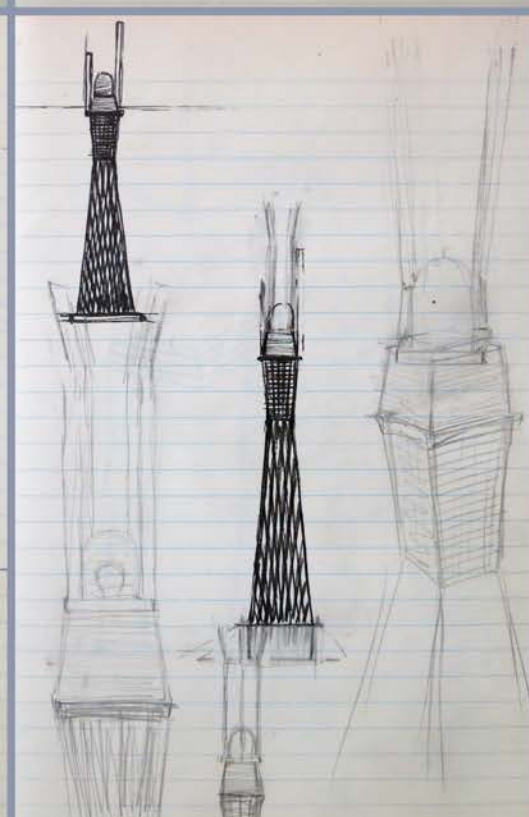
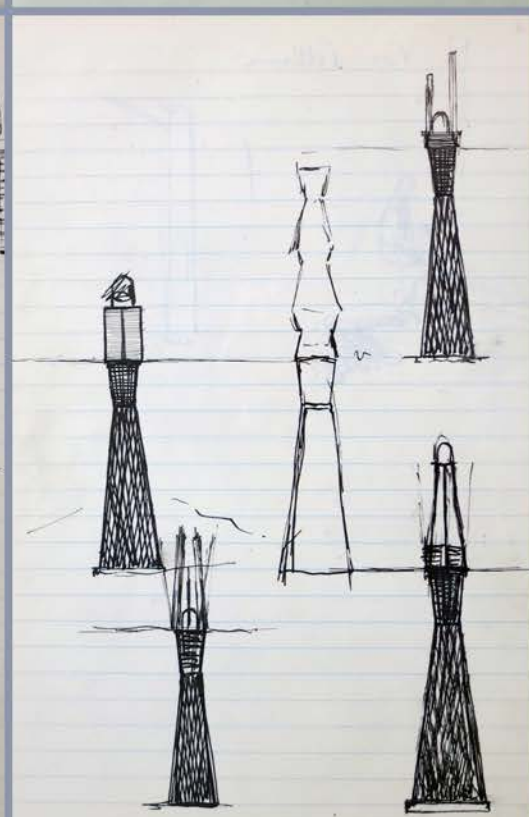
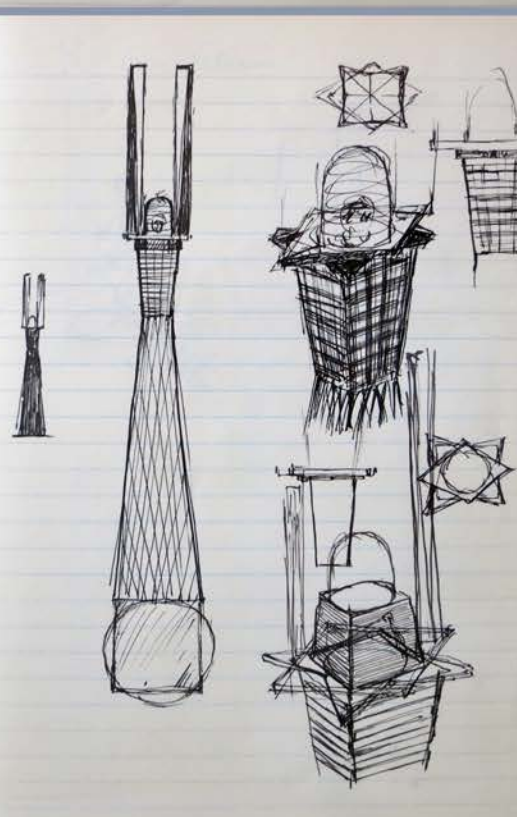
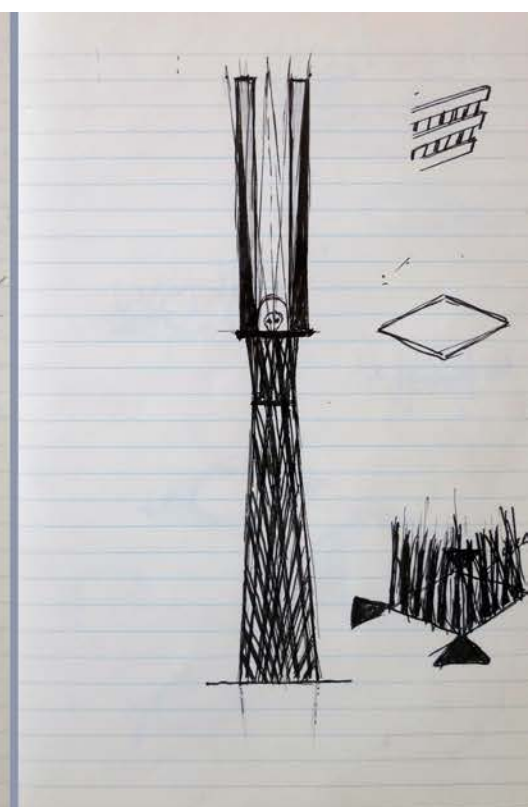
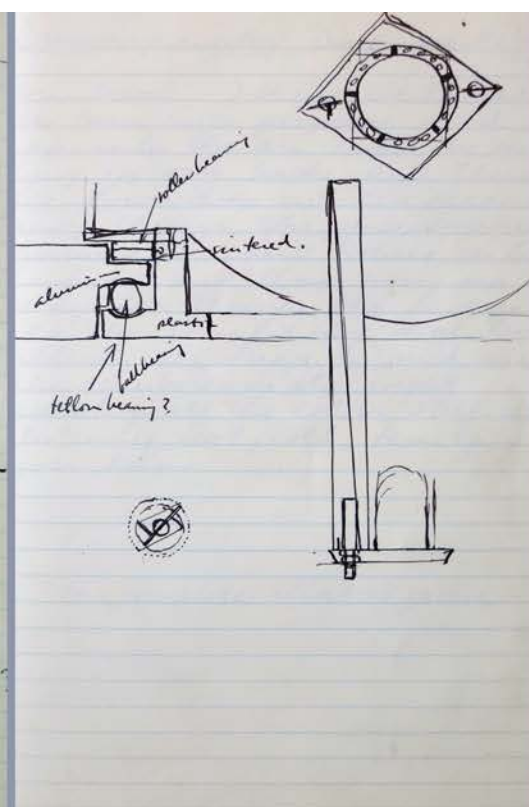
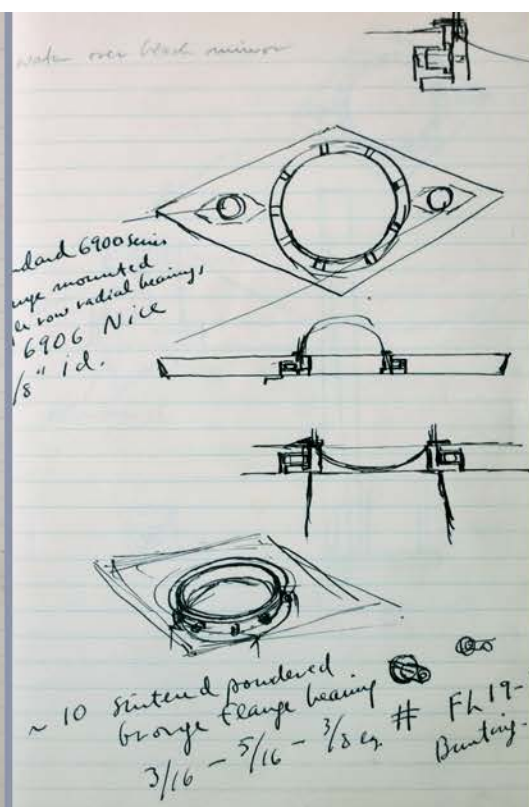
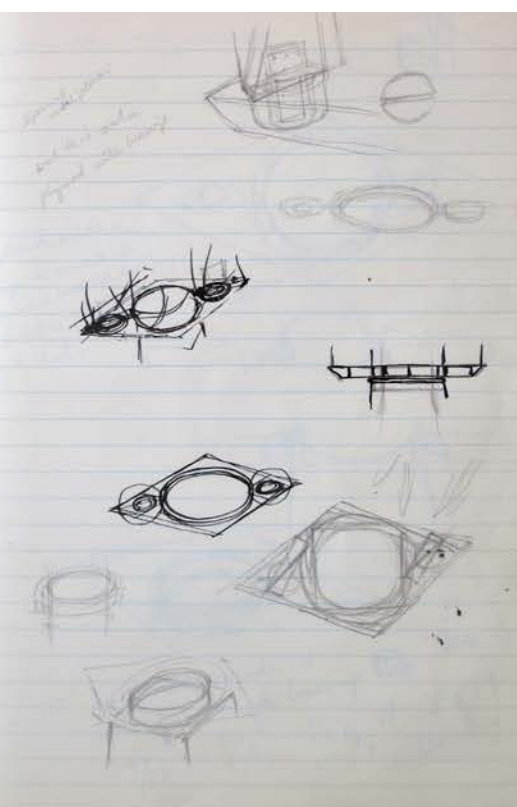
“To Have the Apprentice in the Sun” 1978-79

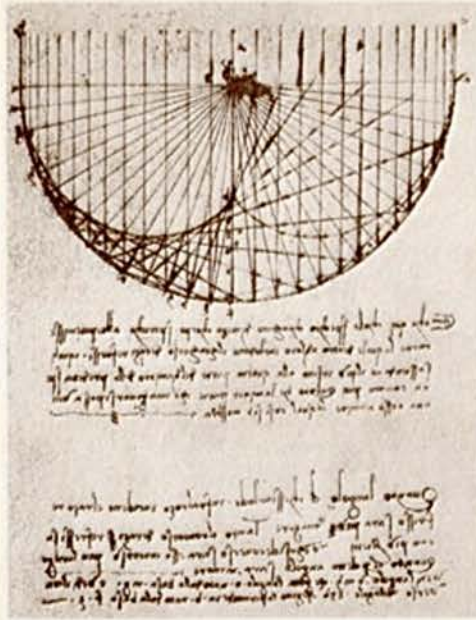
Given the site of an island connected by an isthmus to the shore my general desire was to mirror the surroundings in various ways. The starting point was to use a radiometer as a flickering focus and indicator of the primary subject: the light and heat of the sun. Its base evolved into a broom like lattice structure similar to the cedar porch lattices used in the surrounding shingle style architecture of Short Beach. The flickering of light through the openings would in turn suggest the shimmering light on the water and the skyward reaching branches of a small cypress tree that I saw as a natural counterpoint to the sculpture. The lattice base was covered in a thick coat of tar that would glisten and “weep” in the heat of sun. The Plexiglas dome covering the radiometer contained a copper wire spiral and a small pool of water that would condense and drip down the inside of the dome. There was a desire to make the piece appear juicy and sweaty. A turntable with vertical vanes would rotate erratically in the wind and a mirror in the base would reflect the interior into the ground as an anchor and reference to gravity. The overall structure would suggest a piece of local maritime equipment such as a bell buoy or signal tower. Yet the sculpture was intended to actualize the surrounding environment for the viewer rather than stand as a warning of its dangers. A friend suggested that the piece was the opposite of a lighthouse.

Other influences were Leonardo DaVinci’s workbook drawings on optics and some of his allegorical sketches. Also Duchamp’s readymade “Pulled at Four Pins” and a Giordano Bruno poem found in an article on Duchamp’s work made some Neoplatonic connections. A small sketch by Duchamp on a music sheet of a bicyclist riding up a spiraling line with the phrase “to have the apprentice in the sun” provided the honorary title of the piece.

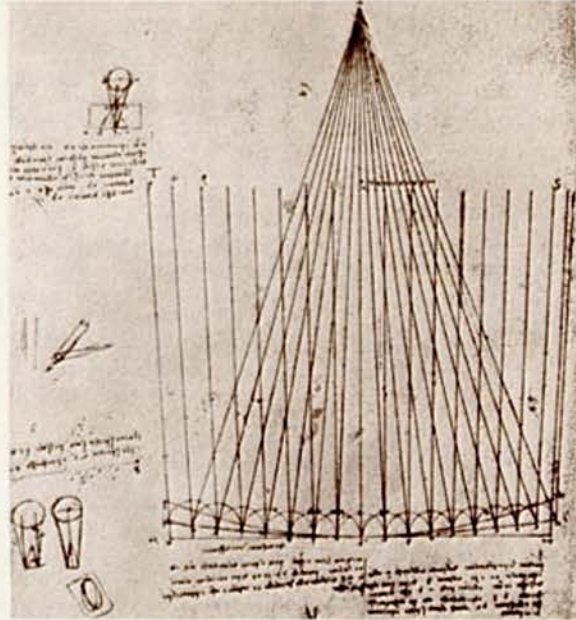


Preliminary sketches for the Short Beach sculpture





Leonardo da Vinci, ca. 1510-15



Left: Reflection of light in spherical concave mirror - Cod. Arund., fol. 87 r
Right: Paths of light rays in parabolic mirror - Cod. Atl., fol. 248 v-a



Bon à tout

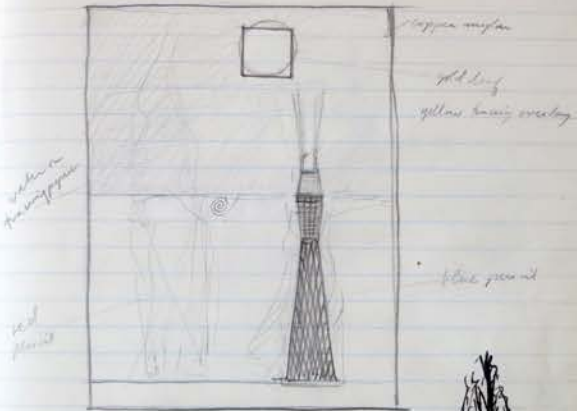
Reard Duchamp



4
I who bear love's light banner
Woe hopes frozen and desires boiling;
I tremble, I freeze, I burn, and I thrummer,
I am mute, and fill the sky with burning
cries:
From my heart I send sparks, and from
my eyes I drop water;
Both live and die, and I laugh and
lament:
The waters live, and the fire dies not,
So I have thine in my eyes, and
Vulcan in my heart.
I love another, I hate myself;
But if I put on feathers, the other
changes to stone;
I put the other in water if I put
myself low;
Always the other flees if I cease not to
follow;
If I call, he does not respond;
and the more I search, the more he hides.

Giordano Bruno.

Zorro Poem.
Deje Majorca Poem.
Obscure vision - doomed vision.
light + shade drawing
apparent drawing.
compare with.

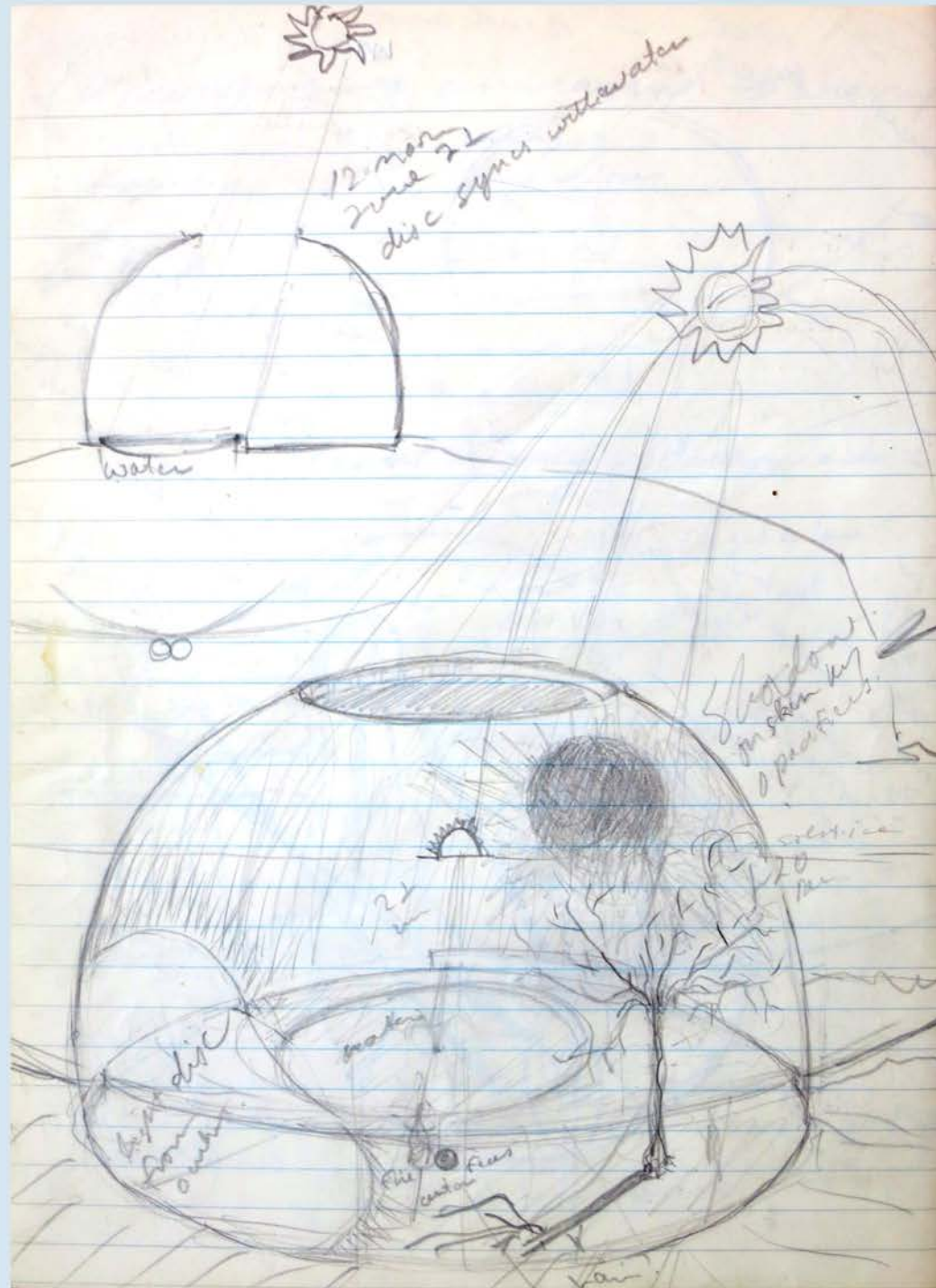


ccvllc



My work often enhances an awareness of surroundings as integral to its meaning, but in this eccentric sculpture I began to join formal design with symbolic suggestion about the invisible force of light. Then as the project progressed I started pulling in my previous thoughts about a habitable space.

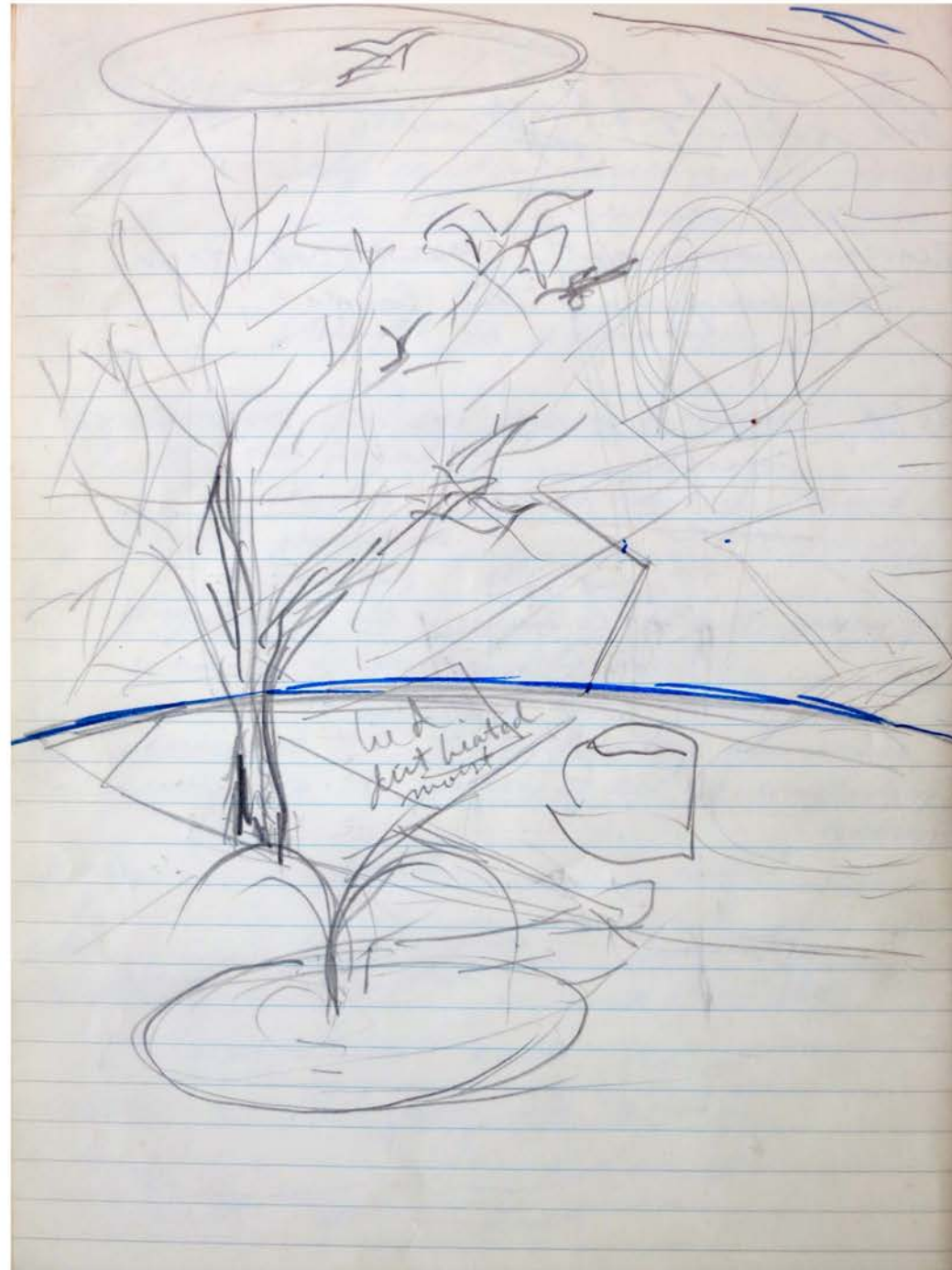
The possibility of imagining a type of pantheistic architectural complex on a larger island became an evolving idea. Like an element in Duchamp's "The Large Glass", the "Apprentice" sculpture would become part of a greater whole, a sort of temple to a new relationship between humanity and the environment. This relationship would be based on a growing intimacy with natural elements and forces from their transformation for our use.



“Fool on the Hill” 1973 -79

Several ideas coalesced around this imaginative impulse. I no longer saw my original hippy domicile as a home but a “Folly”, an architectural extravagance for aesthetic purposes that would be a place of temporary symbolic participation. The title “Fool on the Hill” was based on the Beatle’s song, but I also liked the early origins of the word “Fool”, a bag or bellows (Latin: Follis) blowing ironic and critical humor in the face of power while being part of it.

I also saw the overall complex as a “bustan” or “pardis”.... a return to The Garden with the technological knowledge that had pushed God out. I saw paradise as a microcosm of nature restrained to free and distinguish the human and social from the randomness, violence, and relentlessness of wilderness. The “Folly” would function like a tree maintaining a sheltering equilibrium out of its environment rather than against it.



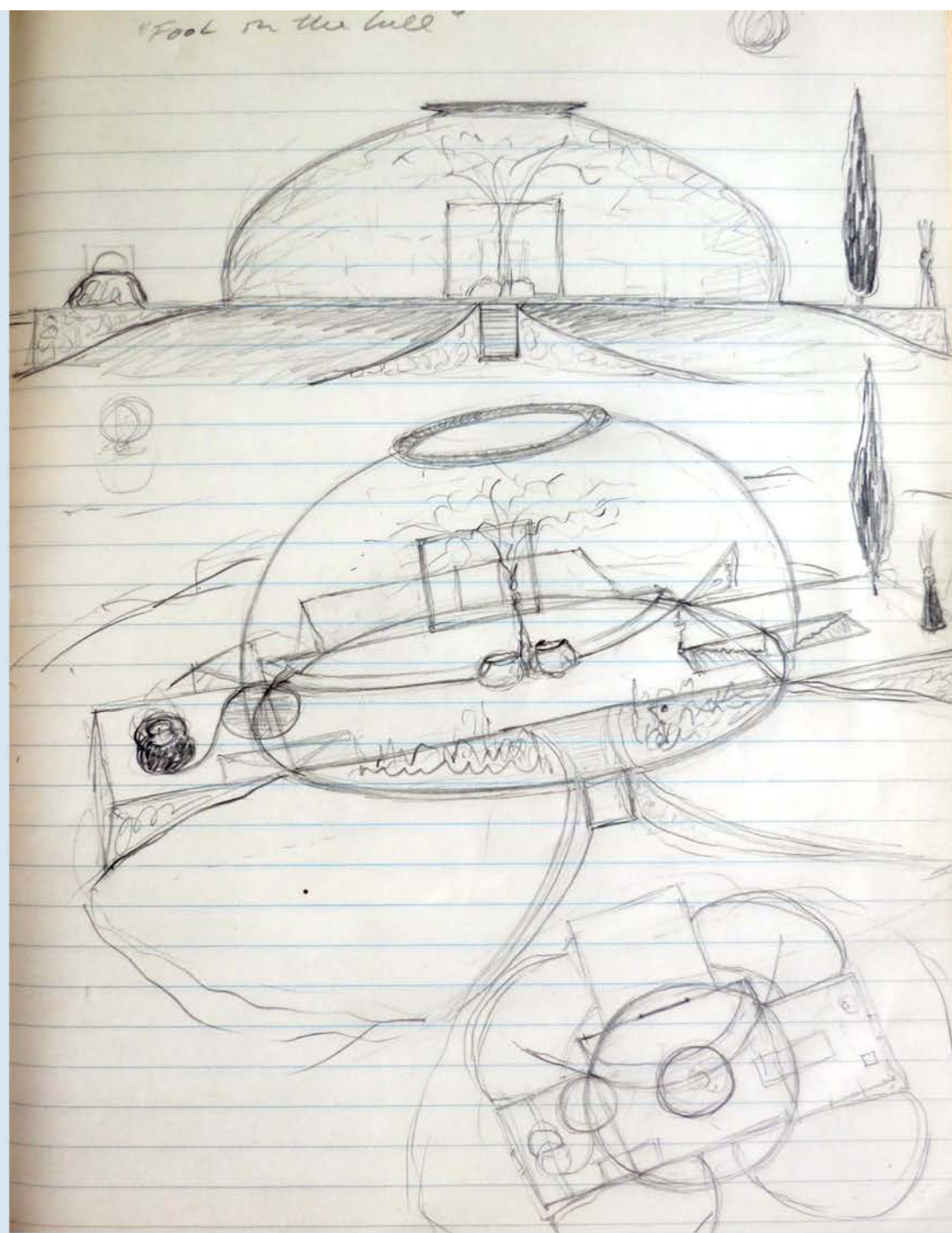
Egg Rock, Nahant



'Neath the shitting skies
O'er the billowy foam
The hardy fisher flies
To his island home.



Egg Rock island off the peninsula of Nahant to the north of Boston fulfilled the idea of a wild and romantic site for this project that would try to transform its surroundings a place where to thrive independently within nature would be almost impossible and a full challenge for technological solutions. Its distance would create a desire to reach it.



Last schematic sketch of the "Folly" 1979

Event Structure (C.1945)

Theory proposed by the British artist JOHN LATHAM which stresses the importance of process over product: structures in events (through time) are more valid than structure in art objects (in space).

In 1967 Latham's ideas were adopted by THEO BOTSCHIVER, JEFFREY SHAW and SEAN WELLESLEY-MILLER who formed the Event-structure Research Group (ERG) in Amsterdam. They proposed an alternative to 'museum art' by staging public events, encouraging physical participation, 'operational art' and 'art of real consequences'.

Source: J Latham 'Eventstructure', Studio international, vol. CLXXIV (September, 1967), 82

A Tree and Perception

We can will ourselves to see the form of a tree as a result of a bio-chemical and structural interaction with its environment, but we prefer to see it simply as its image, an independent object perhaps with imagined human qualities. But when we find shade from a specific tree, food from its fruit, and fresh air from its leaves our perception of this tree begins to change from a fixed image to a living system. I felt that if we could learn to see more readily in this way, use could align form with function toward a different type of aesthetic experience.

In the Folly, Place would be joined with Time as an "event structure": a weaving of 'metabolic poems' around Earth, Air, Fire, and Water - Food- Energy - Light and Heat. The "Events" would cycle through the time frames of day, seasons, and our human needs. Passive systems, tools, symbolic objects, and human participation would realize these poems. I saw the unusual use of the word "poem" in terms of its original meaning as "action" or "making"....the idea of transformation as being a kind of passive-action, a self perpetuating change without agency.

3 Metabolic Poems

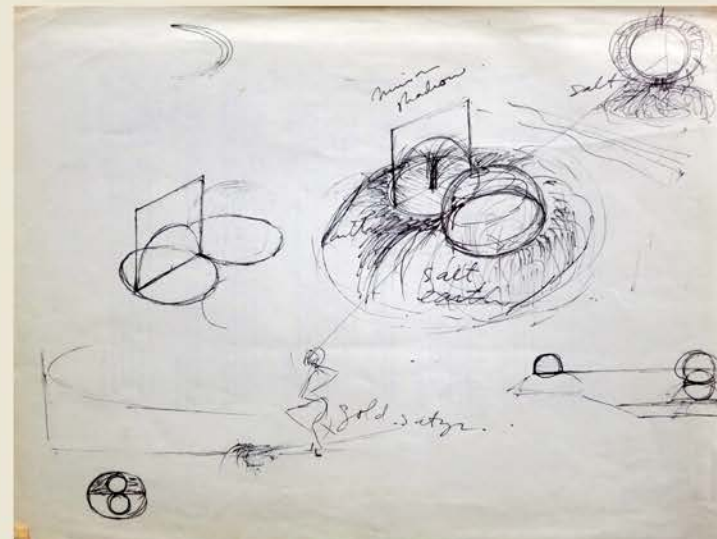
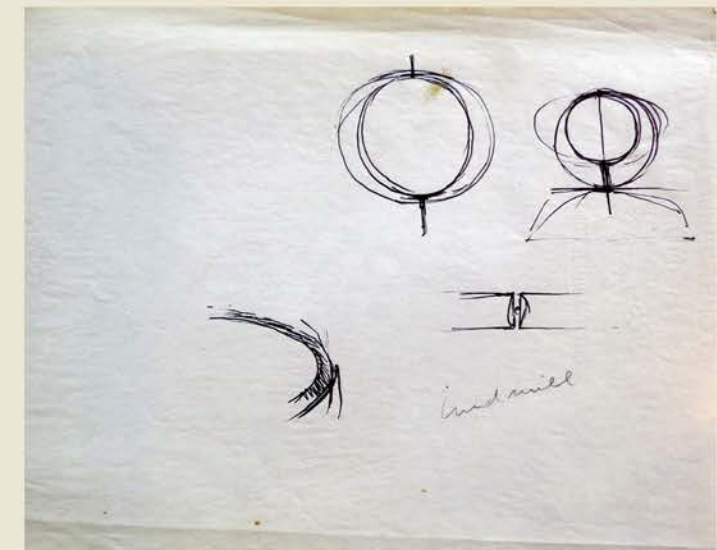
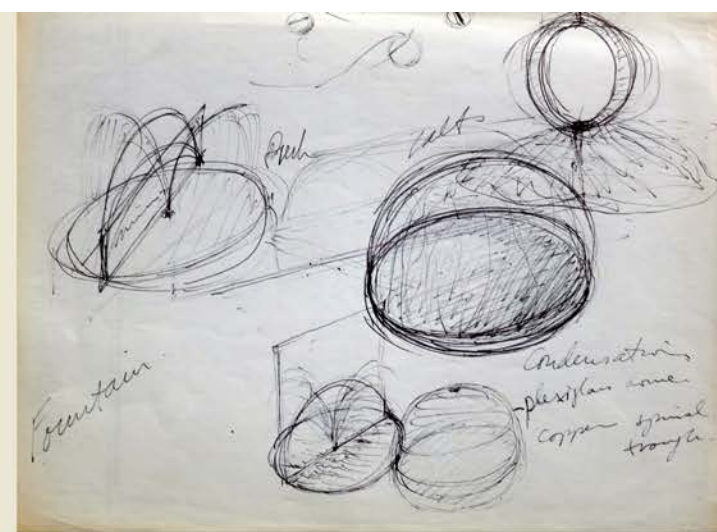
Symbolic and formal ideas for these functional sculptures were loosely conceived and many practical questions were not considered. But the general concept was that the transformations of elements would be visually represented by their mechanisms.

Fire into Air

The seasonal passage of the sun would be tracked in the morning through a golden "rise frame". As the day progressed the transparent Dome membrane would respond to the sun's light in relation to the heat of the interior with a varying gradient of opacity moving a sheltering shadow across the hemisphere. The underground chambers would have responsive insulation and state change elements to retain heat generated by the sun in the winter and cool the air in the summer. The oculus in the dome would expand and contract as an iris to mediate light and ventilation.

Air into Water

An off shore wind mill would pump salt water into a condensation dome to generate electricity as well as fresh water. The salt side of the system would be surrounded by a mound of white salt crystals onto which excess salt water would continuously pour and evaporate in the sun. The fresh side would be surrounded by a mound of dark fertile earth on which various herbs could be grown with a drip irrigation of fresh water from the cistern. A second cistern of fresh water would be both inside and outside the perimeter of the Folly.



Beehive

mountain changes light to dark with sun cycles less to more light as sun goes away maybe

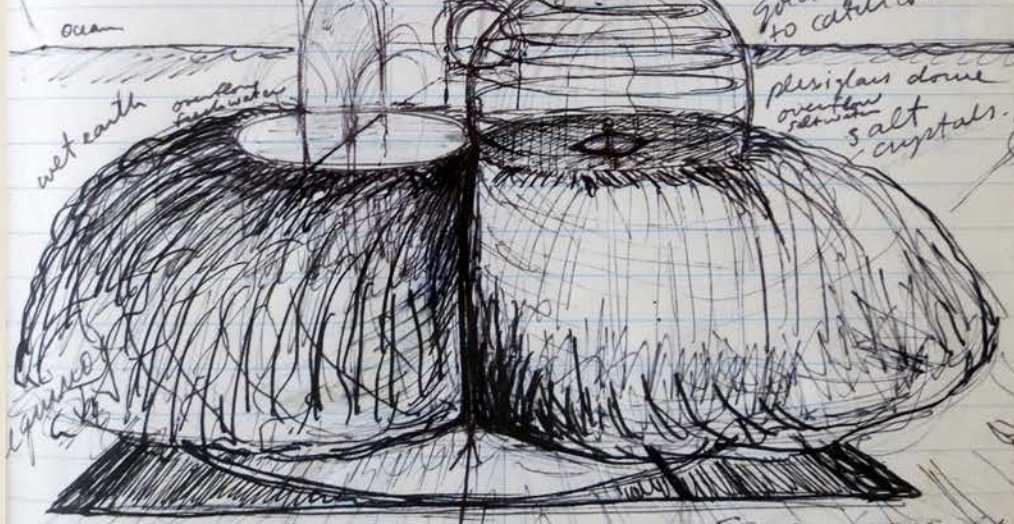


Mountain spews salt water under minor rain or spews randomly.



50%

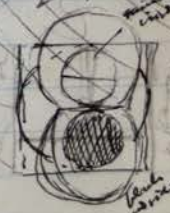
mountain spews salt water down
wind pump
clear pump
salt stand



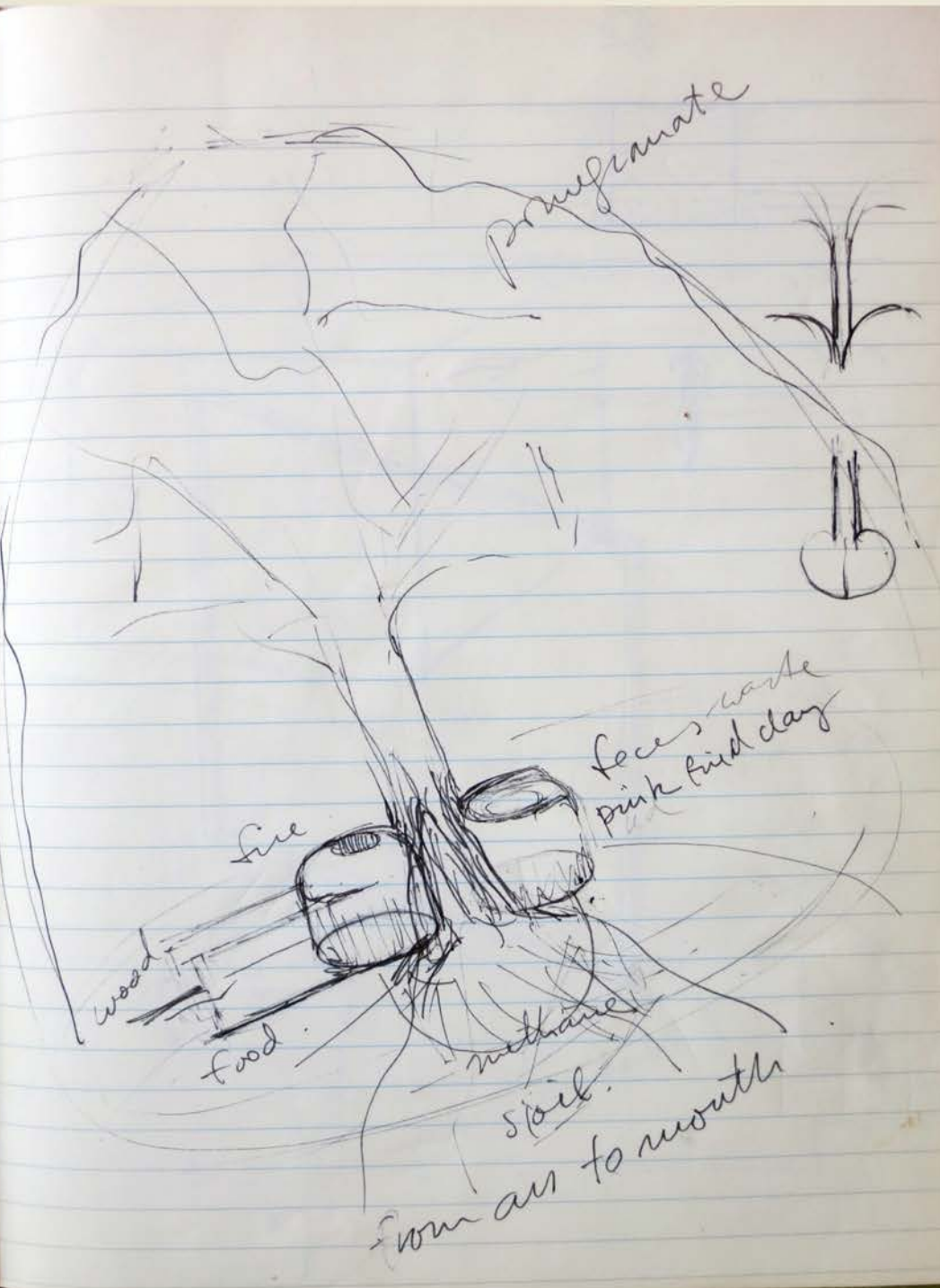
counter cloche
gold spiral tray
to catch condensate

plastic dome
over the
down
salt
crystals

left side smaller than salt side
mirrored to look as large
trans-
direction of heat
position
plate
side view



Sketches for a combined off shore wind pump and salt to fresh water distillation system.

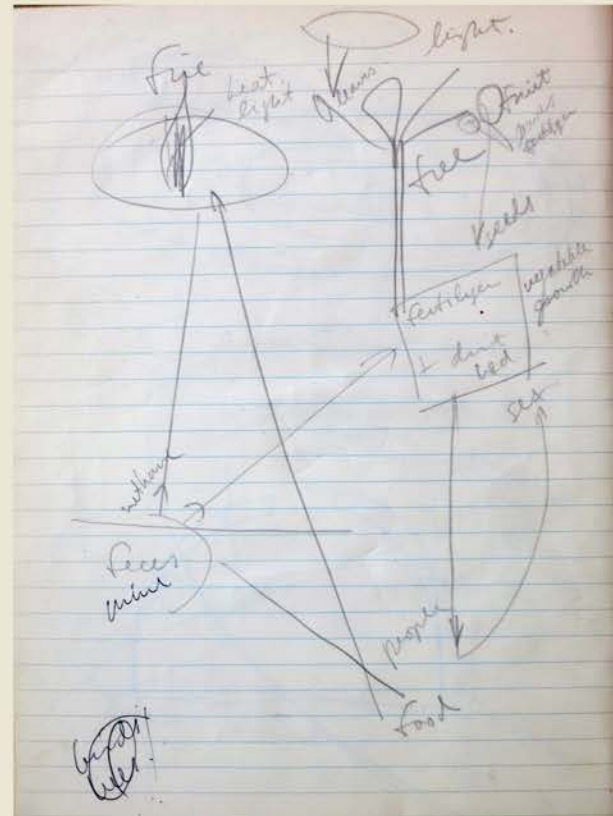
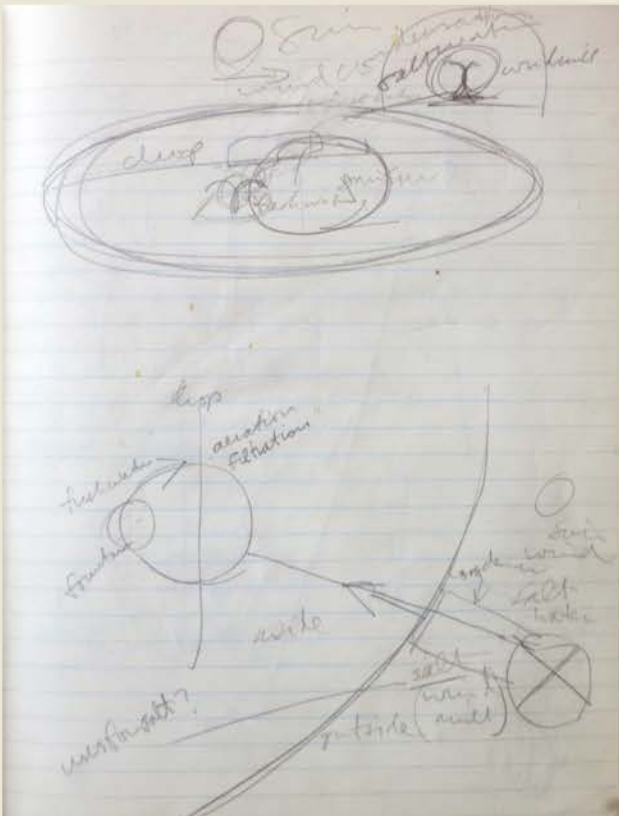
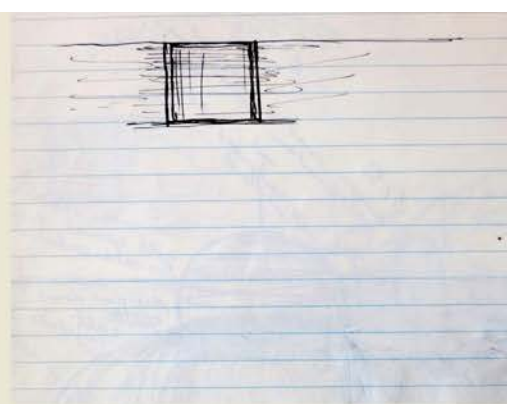
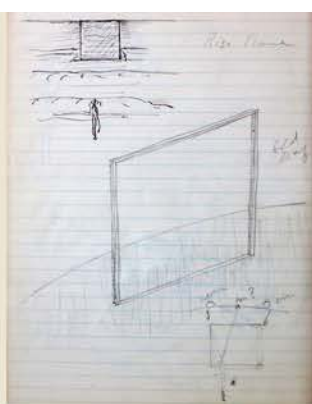
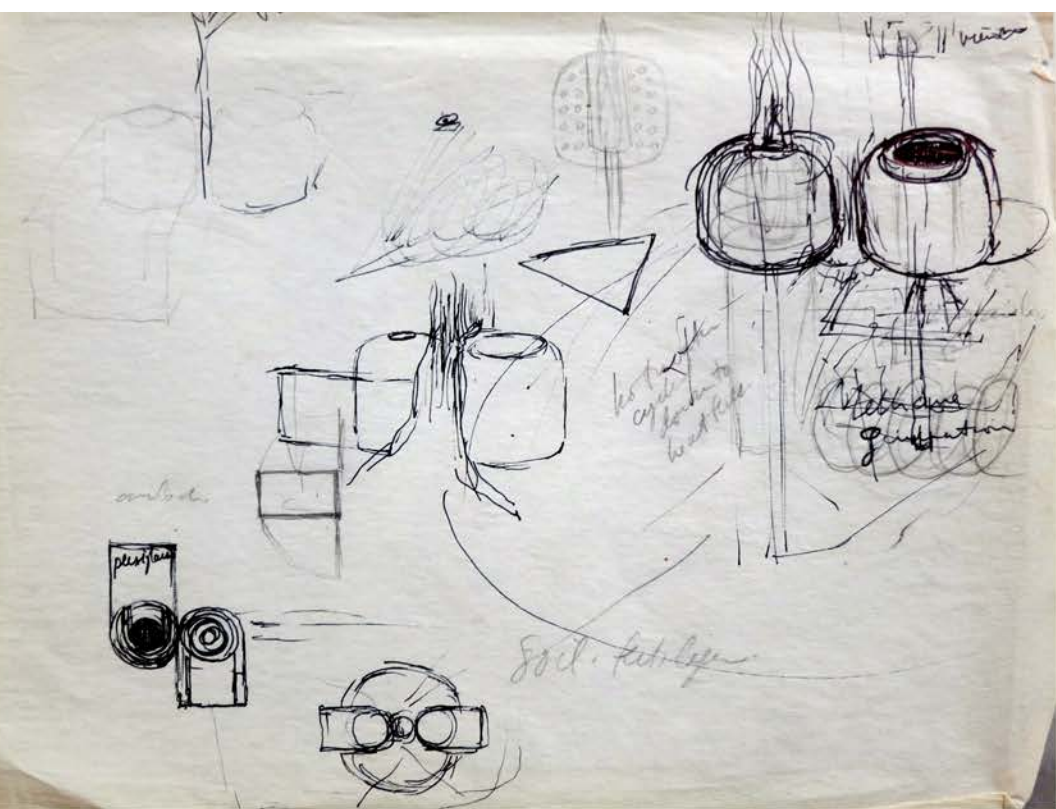


Earth and Water into Fire

This transgressive even blasphemous poem would be the accelerated disintegration and composting of organic waste (human and plant) into soil for growing food and fuel for cooking. I saw the tree dividing and joining the latrine and oven as a sexual image. On the East side of the tree would be an 'earthen' bed. On the West an interior garden in which the soil, water, heat and light would be used. Participants would be naked. Entirely impractical in everyday life this complex would be the hearth (heat and earth) of the Folly as a ritual space.

The symbolism of Eden would be both explicit and reconsidered: aligning the forces of desire and hunger with revulsion and alienation. The symbolic tension that Genesis sets between temptation, knowledge, clothing, self awareness, sexuality, expulsion, and wilderness seemed important to address in an attempt to reconsider our relationship with nature. Redefining architecture, not as an extension of clothing's repression and shame, but as a second skin.

There were other ideas for poems, but these necessities for establishing a place to live: shelter from the elements, drinkable water, fertile soil, and some electrical power are enough.



“Art must be Useless” Oscar Wilde

The “Apprentice” sculpture was conceived from its surroundings, but it was a useless object designed solely for aesthetic response . The Folly on the other hand would contain tools and systems whose use would become key to how perception was engaged. The design and juxtaposition of visual elements in these tools would heighten awareness of the transformations they performed. They would be a combination of form follows function as well as function as form.

The idea that “Art must be useless” is the foundation of aesthetics, providing the freedom from necessity and purpose that builds the pleasure in consciousness. I saw the usefulness of these tools, our participation with them, and consideration of their design not as the end but the means for shifting attention away from their objectness and towards the ‘ecology’ of place...the “study of the house” with us and our needs in it as part of a larger systemto see the ongoing events of this place as simply occurring, revolving, and changing, out of our use, for our use, but also independent from it. By engaging a work of art not as an object of attention but an instrument for attending, Art could become the means for revealing the garden within wilderness. If such a perception could be attained, then the Folly might in the end be seen as graceful, perhaps as humorous, and as useless as a Calder mobile.

“More, More is the cry of the mistaken soul, nothing less than everything can satisfy man” William Blake

My attempt to arrive at a representation of Place as Event through an ecological perception came from my readings at that time of Owen Barfield’s “Saving the Appearances”. His concept of “figuration” as everything in seeing that is not from the senses determines that what we see is largely constructed by how we learn to see and what we choose to see. He argues that there is a history and evolution of consciousness, and that given our growing powers within nature that we must now learn to consciously influence this process of figuration to once again “save the appearances” or lose everything. We must surprise ourselves to wake up from the “trauma of materialism” and its consequences.

“We are well supplied with interesting writers, but Owen Barfield is not content to be merely interesting. His ambition is to set us free. Free from what? From the prison we have made for ourselves by our ways of knowing, our limited and false habits of thought, our "common sense." These, he convincingly argues, have produced a "world of outsides with no insides to them," a brittle surface world, an object world in which we ourselves are mere objects. It is not only what we perceive but also what we fail to perceive that determines the quality of the world we live in, and what we have collectively chosen not to perceive is the full reality of consciousness, the "inside" of everything that exists. “ Saul Bellow

The Apprentice sculpture was removed from its setting in 1979 on the request of new owners of the property. Repairing the piece this past year revived these memories of the eccentric vision that had paralleled its making....a vision that at the time I understood was quixotic and impossible to pursue as a studio artist.

By the early 70's we were only just beginning to consider the possibility that human carbon emissions could change the climate. By the mid 70's the Back to the Land communal vision had failed, and recently in an extraordinary phenomenon of our time the world's population is moving en masse into cities. It is predicted that 80% of global population will be urban by 2050. In a 2009 Ted Talk Stewart Brand argues that this development of mega cities where growth is manifesting itself in large scale slums is good for a sustainable environment. In addition he argues that with the rapid advance of disruptive climate change, nuclear power, genetic engineering, and geo engineering have become necessities for the survival of civilization. Recently geo engineering, the most risky and controversial of these technologies, is rapidly entering the dialog on climate as possible tipping points approach. That this high risk future of large scale top down "solutions" is becoming inevitable is a bitter pill. Geo engineering is the complete opposite of the idea of local ecological intimacy.

In 1982 my wife and I moved to Manhattan and converted an industrial loft where we have lived simply and happily for 30 years. I have written this document for my family who know little about my youthful ideas, but also as a wistful paean to the utopian innocence that fueled the 60's in its belief that it could change the dominant culture.

And yet, in doing some research about the Whole Earth Catalog I came across an excerpt from the book "From Counterculture to Cyberculture" by Fred Turner which in part traces the extraordinary mix of people and ideas in Menlo Park, California in the late 60's. Menlo Park is the heart of what has become Silicon Valley and where Stanford University, the offices of the Whole Earth Catalog, and Xerox Parc, the origin of personal computing, were once neighbors. The resulting collision between radical back to the land hippies and technology nerds generated new ideas in surprising ways. The Whole Earth Catalog bridged both worlds as a model of grass roots networking and the potential of the unrestricted access and sharing of information. It was surprising to read how real, generative, and extensive this connection was. In some ways it is where and when the nerds became hip and the hippies eventually became hackers. Steve Jobs referred to this cultural nexus in his commencement address to Stanford graduates in 2005. In his conclusion he quotes Stewart Brand's parting words on the final Whole Earth Catalog. "Stay Hungry. Stay Foolish" .

There can be little doubt that the personal computer, internet, and smart phone, have transformed and will continue to dramatically transform our world. The sense of excitement, anxiety, and wonder in the information revolution is reaching everyone. It is also encouraging to see that technologies for independent and sustainable living are finally beginning to emerge. The possibility of a net-zero distributed power grid is becoming an important tool for engaging the energy crisis in "legacy" countries. But the dream of living "off the grid" still resonates with the ideal of personal freedom and makes more sense than expanding power grids in non legacy countries. High unemployment along with new agricultural methods are once again encouraging youth towards the possibilities of local farming as a fulfilling life as the regional food movement grows.

There is still a chance that with new technological innovations on a small scale we can sustain the kind of planet on which conscious life will wish to remain. Art still needs to realize its own revolution to "save the appearances" and evolve what it means to be conscious.

When I have occasionally set myself to consider the different distractions of men, the pains and perils to which they expose themselves at court or in war, whence arise so many quarrels, passions, bold and often bad ventures, etc., I have discovered that all the unhappiness of men arises from one single fact, that they cannot stay quietly in their own chamber.

Blaise Pascal: Pensees 139



"Where Man is Not Nature is Barren" William Blake