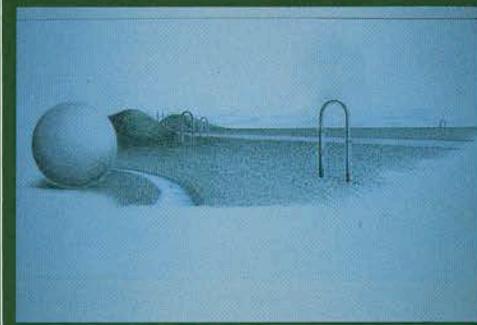
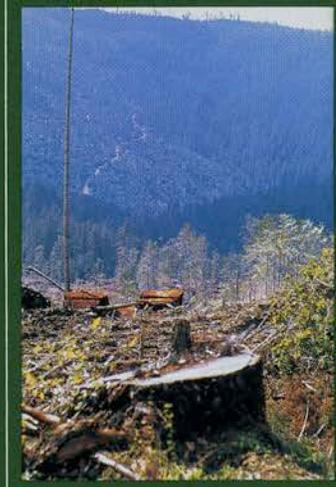


CREATIVE SOLUTIONS TO ECOLOGICAL ISSUES



GAIL GELBURD

Foreword by
Vice President Al Gore
Preface by
Nobel Laureate Roald Hoffmann

CREATIVE SOLUTIONS TO ECOLOGICAL ISSUES

by GAIL ENID GELBURD

with foreword by Vice President Al Gore

Preface by Roald Hoffmann

An exhibition organized and circulated by the Council for Creative Projects, New York

FOREWORD *

by Vice President Al Gore

The edifice of civilization has become astonishingly complex, but as it grows ever more elaborate, we feel increasingly distant from our roots in the earth. In one sense, civilization itself has been on a journey from its foundations in the world of nature to an ever more contrived, controlled, and manufactured world of our own imitative and sometimes arrogant design. And in my view, the price has been high. At some point during this journey we lost our feeling of connectedness to the rest of nature. We now dare to wonder: Are we so unique and powerful as to be essentially separate from the earth?

Many of us act -- and think-- as if the answer is yes. It is now all too easy to regard the earth as a collection of "resources" having an intrinsic value no larger than their usefulness at the moment. Thanks in part to the scientific

revolution, we organize our knowledge of the natural world into smaller and smaller segments and assume that the connections between these separate compartments weren't really important. In our fascination with the parts of nature, we forget to see the whole.

The ecological perspective begins with a view of the whole, an understanding of how the various parts of nature interact in patterns that tend toward balance and persist over time. But this perspective cannot treat the earth as something separate from human civilization; we are part of the whole too, and looking at it ultimately means also looking at ourselves.

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ACKNOWLEDGEMENTS

... society faces crucial decisions about its way of life. Art has always reflected the questioning of a society by itself and often takes an active role in the search for answers to those questions...¹

-- Alan Sonfist

This book and accompanying exhibition are an attempt to analyze three issues and responses that affect our society: Reforestation, Land/Water Reclamation, and Refuse Management. The goal of this exhibition is to present those artists who, for more than a decade, dedicated their careers not only to commenting about ecological problems but to formulating constructive solutions to those problems. We have eliminated negative commentaries and emphasized positive inspirations.

We would like to take this opportunity to thank those individuals who are similarly concerned about the plight of our environment and helped make this collection possible. First of course are the artists who have dedicated their lives to finding ways of directly addressing these issues -- Herbert Bayer, Joseph Beuys, Agnes Denes, Helen Mayer and Newton Harrison, Nancy Holt, Patricia Johanson, and Alan Sonfist. Their work will not only affect our lives but also those of future generations. Numerous other artists similarly embrace these concerns and have contacted me over the years. While their work did not fit the parameters of this exhibition, I do want them to know that their work should be encouraged and that they too are the socially conscious artists of today. Scientific commentary by several leading scientists was invaluable. Roald Hoffmann, Richard Andrus, and Theodore Davidson all graciously gave of their time, their insights, and their unique creativity.

One of the greatest inspirations for saving our environment today is the commitment and writings of Vice President Al Gore. We graciously acknowledge his permission to reproduce text from his recent book *Earth In The Balance* as a preface to this catalog. His efforts help bring ecology, art and politics together for the betterment of our society.

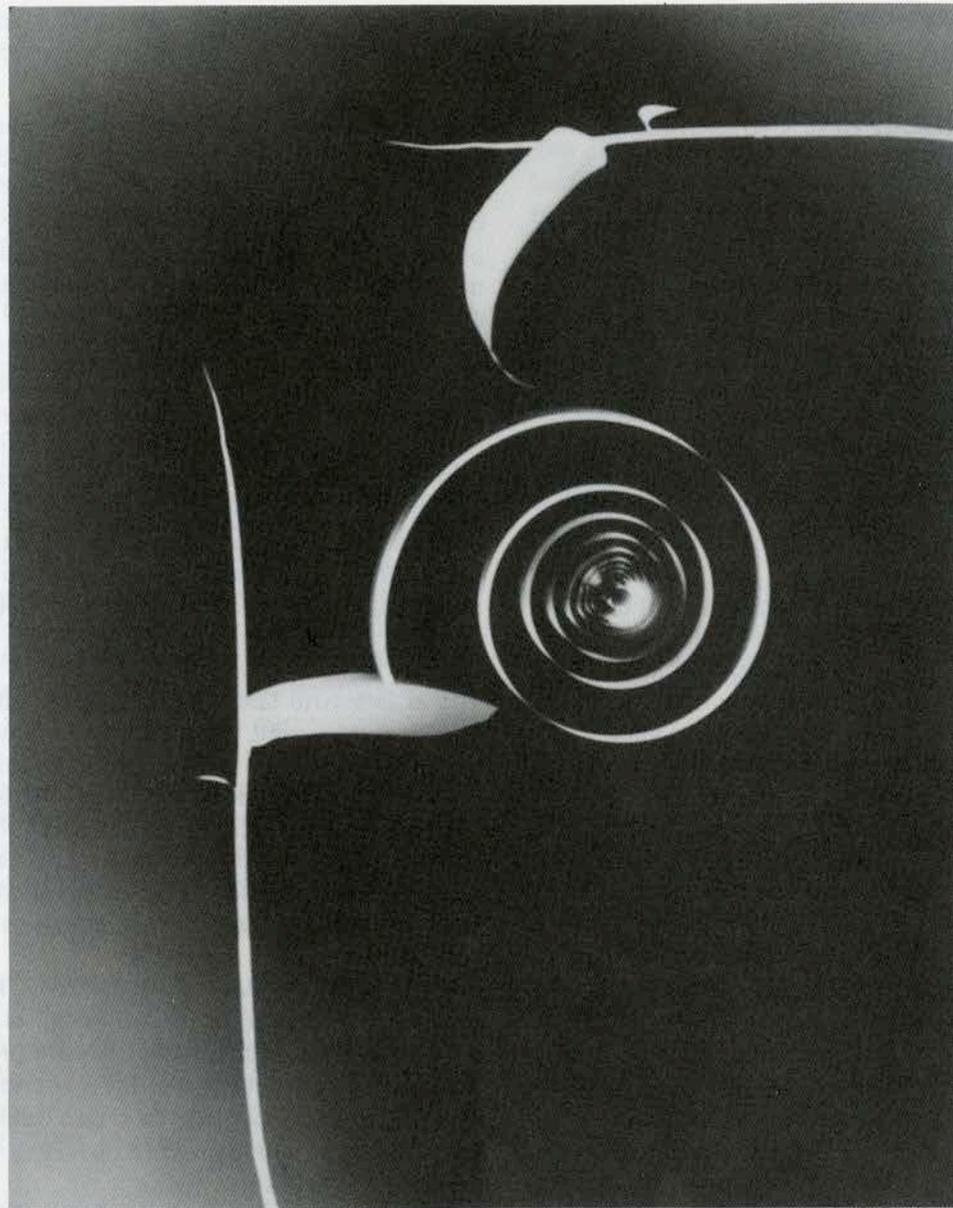
The staff of the cooperating institutions: Walt Davis, Evelyn Luciani and Henry Schulson at the Dallas Museum of Natural History; Beej Nierengarten Smith at the Laumeier Sculpture Park; Dilys Winegrad and Lucia Dorsey at the University of Pennsylvania; Susan Fillin-Yeh at the Douglas F. Cooley Memorial Art Gallery, Reed College, graciously gave these voices an outlet. CCP staff, past and present have also been tireless in their efforts, including Geri DePaoli, Andrea Schwartz, Joel Meyers, Dorothy McIntyre, and Sally Moses. Our board member Anneke Van Waesberghe has also been of assistance. Despite the lack of cooperation from more traditional sponsors willing to bridge the gap between art and science, it is the efforts of all of these individuals that have made this project such a success.

We would like to acknowledge Turner Broadcasting, Barbara Pyle and Dan Gottlieb for making Captain Planet an integral part of this exhibition. Their assistance and contribution of materials has helped us bring the plight of the environment to children all over the country.

The Council for Creative Projects exists to make the difficult statements, to bridge gaps, be they inter-disciplinary, multi-cultural, or inter-generational and to do so with or without the more traditional sources of sponsorship. We are particularly proud of this effort which demonstrates that by unifying and cooperating, the exceptional rather than the mediocre can become the norm.

GAIL GELBURD

1. Alan Sonfist, "Introduction", *Art In the Land* (N.Y.: E. P. Dutton, 1983)



GYORGY KEPES, *Untitled*, ca.1979

CREATIVE SOLUTIONS TO ECOLOGICAL ISSUES

INTRODUCTION By Dr. Gail Enid Gelburd

There is a tree that grows in Brooklyn; it stood there before my house or the Victorian one down the block. It was there before the street lamps and sidewalks, before the town had a name. And now some disease is overwhelming it, choking it, cutting the life from its roots. Beyond the tree is the ocean in which the children used to swim. Now the oil slicks and hypodermic needles wash along the rapidly depleting shore as the trees are cut to make way for another housing development, or parking lot. There are no quick and easy solutions to these misfortunes but cumulatively these concerns constitute one of today's most pressing issues; our ecological imbalance and our increasing adversarial relationship with nature.

Indeed, a growing concern for our environment has escalated over the last two decades, but as we approach the twenty-first century, society faces critical decisions. The arts are perhaps the last place that most would look for answers, but throughout history, Art has been the conscience of society. Art can take an active role in finding solutions to these issues by utilizing some of the most innovative minds of today. Several artists have made their life's work and goal to balance these seemingly opposing forces. They have nurtured the earth by balancing art with

caring for the water, tending to the trees, allowing the soil to breathe and all the while working in a sewage plant, toxic land fill or polluted water. To destroy may be easy but to create takes extraordinary efforts, involving revitalization, nurturing and progress. The artist must be cognizant of the inter-relatedness of all things and bring the science of ecology into the art. Even scientists now use the term *Gaea* to refer to the inter-relatedness of all things on earth. The artists in this study are the *Gaea* pioneers who realize that the universe is a tightly woven network and eliminating but a single strand, cutting into the fabric of our existence will only unravel it all.

Leonardo Da Vinci was a Renaissance visionary or *Gaea* pioneer. He realized the importance of the *Gaea* hypothesis before it had a name. His notebooks, re-discovered in 1967, (a critical time in the development of contemporary environmental art), reveal the extent of his studies of science and technology, nature and progress. Unaware that art and science were "incompatible", his flying machines sat next to anatomy drawings and paintings of the Madonna and Child. Other artists have sought to strike a balance between art and technology, be it Turner's *Fighting Tenaire* in which the modern steamship wistfully

leads a sailboat off into the sunset, or art that uses the technology of the steamship to preserve the sailboat.

Artists of the last few decades have continued to search for an alternative form and a relevant spiritual or philosophical base. They went beyond the existential quest to one that championed a "Totality of the Universe", a Unity, and found it manifest itself in black paintings, white paintings, rooms of white light, rooms of black. The artists searched for answers in every corner of their mind and the earth. They wanted to create art that was not about structure or color or merely depicted nature, but rather to create art that epitomized the macrocosm -- Art which presented the ontological argument of nature. Their Art would use the grass, the trees, the rocks, the water, the air, to create an Art that highlighted and enhanced the landscape -- not to own it or possess it, but to enhance it, save it, restore it. It is Art that reflects the whole earth and its inter-relatedness. It is Art, not about science or nature but *of science, of nature, of aesthetics*; Art about an outward vision of the world, coupled by an inner vision which merges primary sensory experiences and intellectual evaluation.

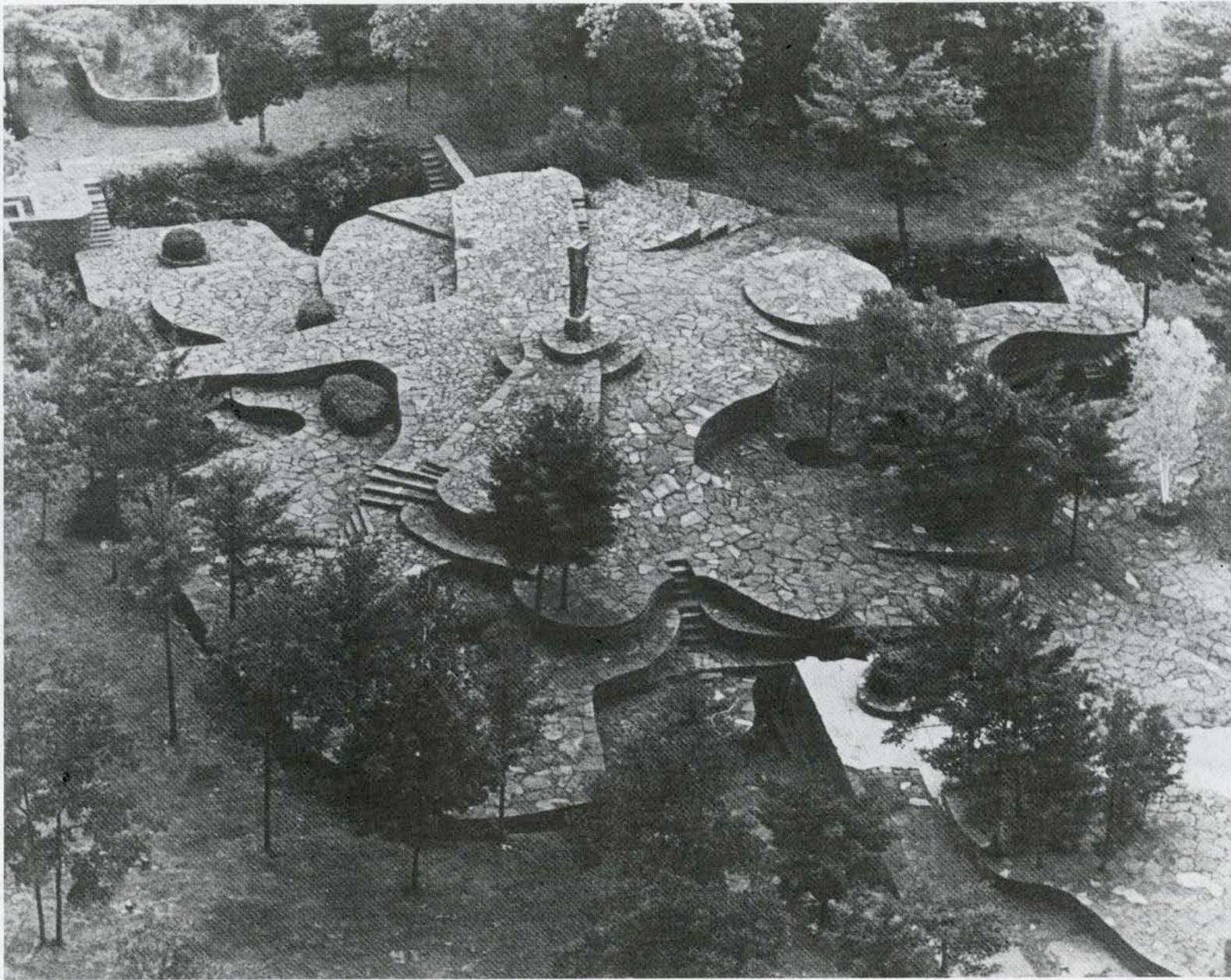
Ancient precedents in art history offered suggestions for alternative forms. Contemporary artists studied the Mayan structures, the Nazca line, Japanese rock gardens, and Stonehenge. They presented the land as the palette, the canvas, the tools. By suspending the Space/Time continuum and eliminating the sacred object, a few visionary artists, writers, architects, and scientists began, in the 1960s, to reformulate ancient

forms with modern technology in order to find their own creative solutions to ecological issues.

~ ~ ~

Gyorgy Kepes was the mentor for many of the artists included in this study. He wrote, "Symmetry, balance, rhythmic sequence express essential characteristics of natural phenomena: the connectedness of nature -- the order, the logic [of] the living process. Here science and art can meet on common ground. The challenge of scale can be met only if we broaden the base from which we view and live the world ... Through our scientific knowledge we are aware of the biological and psychological requirements of men, and so can begin the restructuring of the man-made world and restore the balance between men and their surroundings."¹ In 1951, Gyorgy Kepes demonstrated this by organizing an exhibition at the Massachusetts Institute of Technology called the *New Landscape in Art and Science*. This exhibition demonstrated that science could help the artist see a world unknown before through micro and aerial photography. In Fall 1967, Kepes provided a more extensive forum for these ideas when he opened the Center for Advanced Visual Studies at MIT. Here Kepes brought together scientists and artists in an active dialog. "Close, ongoing contact with the man who sees the vista, that's what we are beginning to develop; so that the artist makes friends with more than a man; an idea."²

The Center at MIT echoed Marshall McLuhan's "Understanding Media" (1964), and Buckminster



1. HARVEY FITE, *Opus 40*, Saugerties, N.Y.

Fuller's book *Nine Chains To The Moon*. Their popularity in the sixties reiterated the premise that technology carried with it radical social and economic implications. Fuller went so far as to proclaim that if technology were used properly we could rid the world of spiritual and physical poverty! The artists' response to the men who saw "the vista" was that the Art became larger, grander; it used lasers, and air currents, light, sound machines, epoxy, and fiberglass. Art was environments and performances, light, earth, sound waves; the universe was the canvas. Art was in the air, on a TV screen; it was the artist itself, it was the land. By the 1970s a few artists began to see their role as one which could actually nurture and revitalize the earth.

The earliest projects were created in fairly remote corners of the United States -- away from the centers of technology. From 1939-1968, in Woodstock New York, (over 100 miles from New York City), Harvey Fite transformed an abandoned 6 1/2 acre bluestone quarry by using only traditional tools -- a hammer, pick axe, and crowbar; interspersing the stone with trees, pools of water and natural amphitheaters. Fite culminated the site with a nine ton megalith taken from a nearby river. But Fite's original intentions were not to restore nature. He saw the quarry as a source of stone for his more traditional sculptures, and then as a place to exhibit his more traditional art. Gradually the site grew to become a sculpture in its own right. Influenced by the Mayan stone work he had seen during a 1938 trip to Honduras, Fite transformed the stone site into an environmental art project he called *Opus 40*. (figure 1). After working on the site for

almost thirty years, he had come to realize by the early 1960s that he could not place his other sculptures on what he had already created because it already was a sculpture. The abandoned quarry now had a use--a way to appreciate the stone by using the quarry itself. ³

Herbert Bayer, a part of the Bauhaus generation, was invited to Aspen Colorado in 1946 and began planning to shape a community into an environment. In 1955 he created a "balanced community where livelihood, sports, culture and art could be pursued amidst the beauty of nature" ⁴. Bayer created a total environment -- he designed the land, the buildings, even the signs (figure 2). Bayer began the environment with a mound that was forty feet in diameter and then added circular earth depressions, birms and a marble garden which used marble from a nearby quarry⁵. In 1973 he added Anderson Park to the site. Bayer called the Aspen Institute Project an "Environmental Design"; it gave Bayer the opportunity to apply Utopian Bauhaus ideals to a real situation. Architecture, graphics, sculpture, and Nature all merged harmoniously for the betterment of society in this early project.

Bayer was also one of the early visionaries who was able to transform art for art's sake into art for society's sake. In 1979 in Kent County Washington (outside Seattle), Bayer was provided a unique opportunity to turn a naturally devastated site into Mill Creek Canyon park. Working alongside artists such as Robert Morris, Richard Fleishner, Mary Miss, and Dennis Oppenheim, Bayer was one of the few to truly



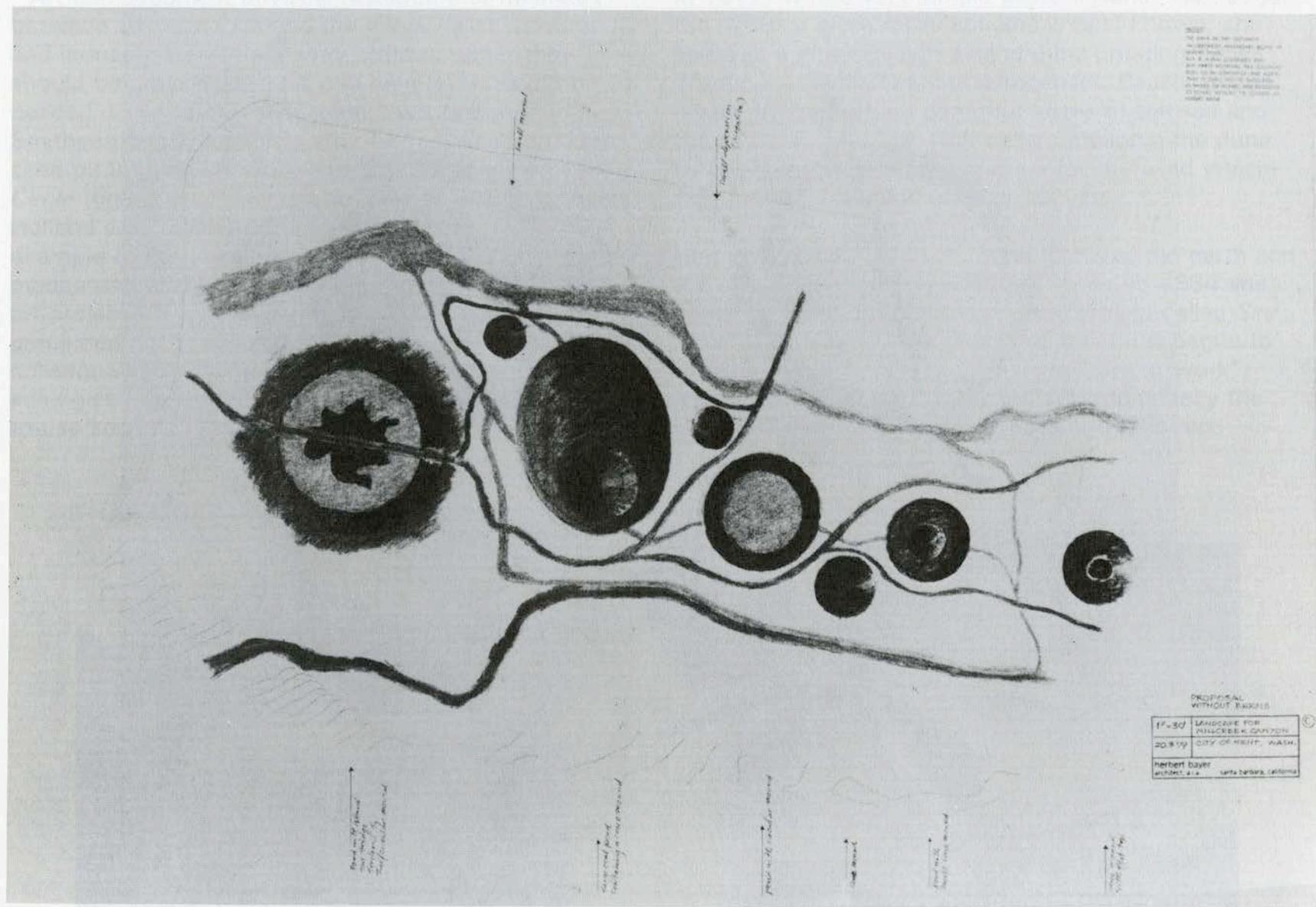
2. HERBERT BAYER, *The Grass Mound, Aspen Institute* 1955, Aspen Co

understand the notion of creating a total environment as reclamation art. His was one of only two proposals to be realized and he transformed a flood plain into an active thriving park (figure 3). His system of hollows

and dams provided an ecological solution to the devastation that over 460,000 cubic feet of water can bring to an area.

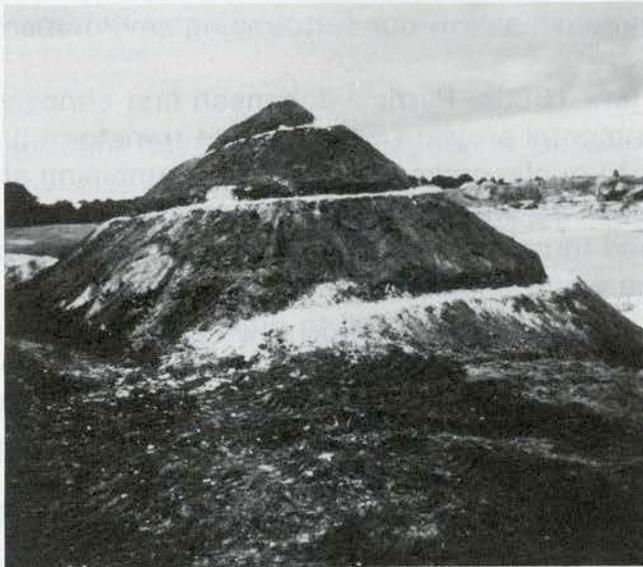


3. HERBERT BAYER
Mill Creek Canyon Earthworks, 1982, Seattle Washington



4. HERBERT BAYER, *Landscape for Mill Creek Canyon*, blueprint ink on paper, 32 x 261/2",

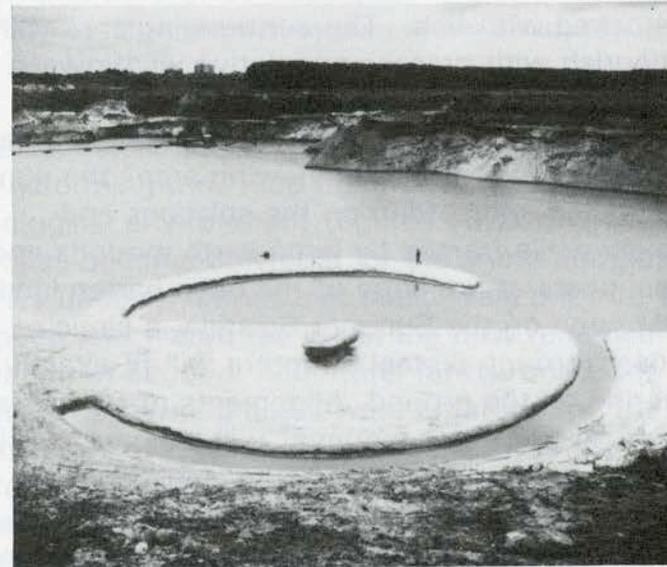
"Art can become a physical resource that mediates between the ecologist and the industrialist. Ecology and industry are not one way streets, rather they should be cross-roads. Art can help to provide the needed dialectic between them," wrote Robert Smithson in 1971 shortly after he reclaimed an open sand pit into his art work entitled *Spiral Hill/Broken Circle* (figure 6). This large devastated area in Emmen Holland was reconstituted and represents an early example of Earth Art turned Ecology Art. Although he made numerous proposals for additional reclamation art projects, Smithson's early death at age 35 precluded his continuing in this way. However, his colleague and wife Nancy Holt continued to address ecological issues and has become one of the pioneers to use society's technology to restore damaged sites.



6. ROBERT SMITHSON, *Spiral Hill/Broken Circle*, Emmen Holland, 1971, Estate of Robert Smithson, Courtesy of John Weber Gallery

In 1972, with a very simple gesture Nancy Holt began the type of work for which she is best known; she installed a pipe through a sand dune creating *Views Through A Sand Dune* in Narragansett Beach, Rhode Island. While framing beautiful vistas of the sea and the sky and the sand, Holt helped preserve the dune by providing an alternate avenue for the wind which was eroding the dune (figures 11,12).

Holt's work continued to frame vistas of the earth and the sky while restoring damaged lands. In 1984 she began to work on her monumental project called *Sky Mound* (figures 14-18). Here the artist has begun to transform a 57-acre landfill into a "park/artwork". Indeed, our waste materials are not traditionally the materials that an artist uses, but during the past



decade the landfill has become the canvas upon which this artist creates as she transforms it into art.

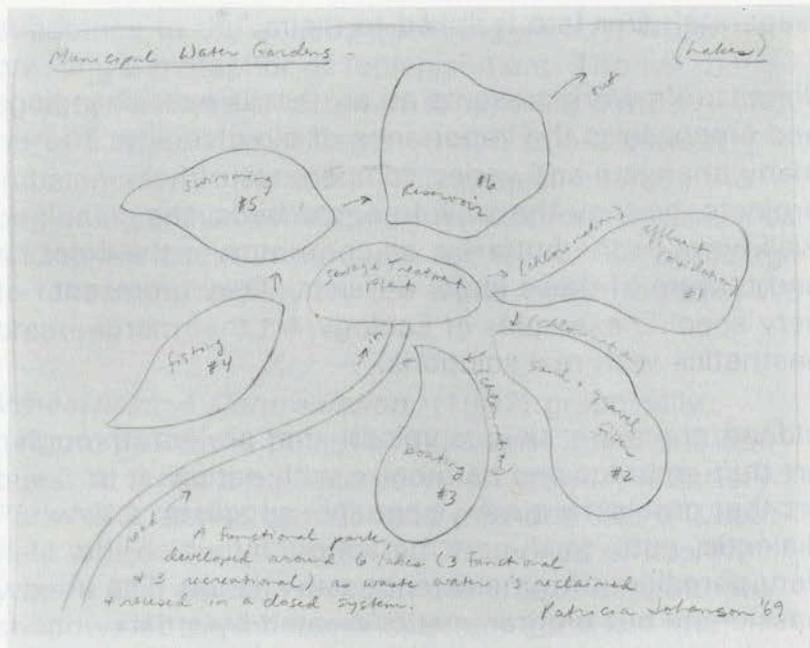
Landfills are the result of the success of modern technology -- as recently as a century ago the average American produced little that could not be recycled or decomposed back to its original components. But now the two tons of solid waste that each of us produces each year become the contents of the landfills. As the waste materials decompose they create methane gas and leachate (rainwater mixed with decomposed matter).

Nancy Holt has incorporated the latest technology of landfill closing and leachate collection systems to ensure that the new park/artwork will be functional and safe while creating a thriving eco-system. A pond for *Sky Mound* has already been completed and has been stocked with fish. The surrounding area will soon flourish with grasses and native wildflowers. The park/artwork will also house a naked eye observatory with sun, moon and star-viewing areas. From the center of the "sun viewing area" the sun will be seen rising and setting on the solstices and equinoxes while framed by large earth mounds and tall steel posts at the edge of the once barren landfill. At solar noon on the Summer Solstice, a circle of light, cast through a steel structure will fit exactly into a steel ring on the ground. Alignments of tunnels and stairways in two "star mounds" will indicate the rising and setting of the two stars, Sirius and Vega. Spinning ventilators will give visibility to the wind. Rising arched pipes from the methane collection system will indicate the extreme positions (major

standstills) of the moon. Indeed, as land near our cities becomes increasingly scarce, it is critical that we find ways not only to utilize the open spaces that remain (even if it is a garbage dump) but at the same time to reconnect ourselves to the larger universe of which we are a part (figures 15-18).

In order to experience the larger totality of which we are a part, we might climb a mountain to view the celestial bodies or follow a stream to watch the water run through the arteries in the land. Nancy Holt takes the basics -- land, water, sky -- and transforms them into an art that evolves out of and is an essential part of the site. Projects such as *Catch Basin*, *Dark Star Park*, and *Sky Mound* or *View Through A Sand Dune* connect the earth, the sky and water in ways that restore a problematic site. Moreover, each project uses art to communicate issues about ourselves and our relationship with our surrounding environment.

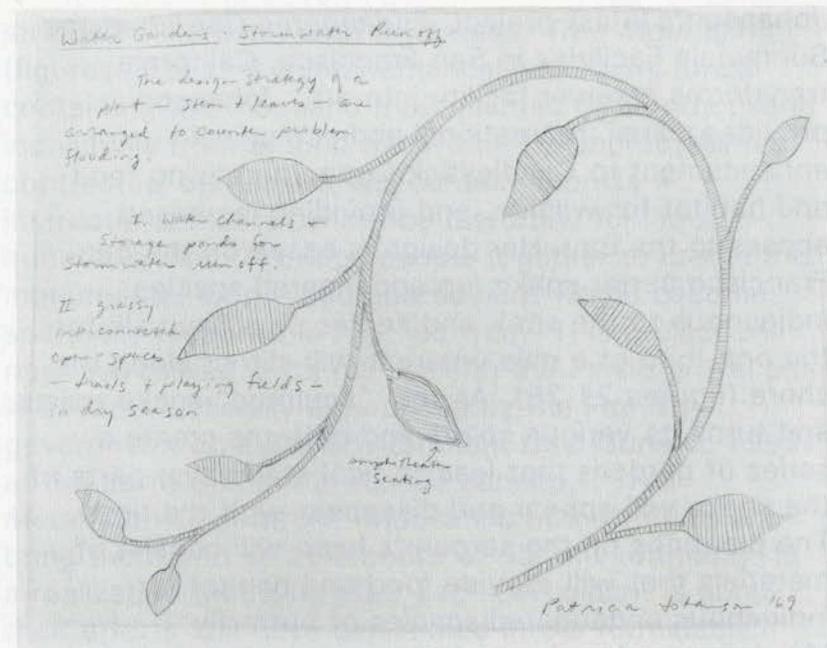
In the late 1960s Patricia Johanson first conceived of environmental projects which would transform barren sites into public parks (figures 7-8). Combining art with functional infrastructure, plant shaped sculptures were designed to control flooding. Stem and leaf-like forms became water channels and water storage areas while in dry times they reverted to grassy fields. In *Municipal Water Gardens* (1969), Johanson first conceived of transforming a water sewage treatment plant into a park. As water passed through a series of natural filtering systems each would form a lake increasingly accessible for human consumption. These early abstract proposals have come to fruition in two of Johanson's most important major realized projects.



7. PATRICIA JOHANSON, *Water Gardens: Storm Water Run Off*, 1969
8 1/2 x 11", Pencil

Her gardens have restored a lagoon in Dallas, Texas and will also become a sewage treatment plant in San Francisco. These works follow the objectives of her earlier projects.

In 1981 Johanson was invited to design an environmental sculpture for Fair Park Lagoon, using a murky body of water that was more than five blocks long and in the middle of Dallas' largest park. The shoreline was eroded, its great depth at certain points made it dangerous, fertilizer from lawns washed into it every time it rained, and there were few birds, plants, animals or fish in residence. Plant forms indigenous to



8. PATRICIA JOHANSON, *Municipal Water Gardens (Lakes)* 1969
8 1/2 x 11", pencil

Dallas, Texas became the aesthetic base for transforming the "mud puddle" into a thriving ecological environment (figures 19,20). Graceful leaf shapes became bulwarks for the shore and passage ways upon which visitors could walk out into the lagoon and watch the life in the now renamed *Leonhardt Lagoon*. Sculptural forms broke the wave action, spawning areas were created, and the replanting of diverse indigenous species allowed the site to naturally rejuvenate itself into a thriving environment which can now bring human activity into a humble reflective relationship with nature; the art teaches about the earth as well as about our own inner being.

Johanson's latest project, *Endangered Garden* at the Sunnydale Facilities in San Francisco, California transforms a sewer facility into art. Johanson provides visual, recreational and ecological enhancement to Candlestick Cove, increasing food and habitat for wildlife, and providing increased access to the Bay. Her design is based on the San Francisco garter snake (an endangered species indigenous to the site) and serves as a Baywalk for the one-third of a mile where it will slither along the shore (figures 21-25). As the "sculpted" snake twists and turns its various colors and patterns create a series of gardens that lead to tidal stairways; parts of the snake will appear and disappear with the tides. The plantings on the serpent's head will consist of materials that will provide food and habitat for indigenous endangered species of butterfly. Ms. Johanson's original design also included the restoration of shell fish substrate, once plentiful in the region. The restored shell fish substrate would have attracted Little Neck clams as well as the fish and crabs that eat them, it would have been a food source for birds and wildlife. Johanson best sums up her attempts to balance art and nature in service of society and ourselves. She writes, "The design is as simple as watching a bird gauging the rise and fall of the water against the tidal steps, or walking over the mudflat on a living path. It can also be as complex as the eye and mind of the beholder, or nature itself with its sense of transition, transformation, cycles and continuance. Since it is the continuance or survival that is endangered, it is hoped that by bringing people into contact with community/environments that function as a "whole", it will be seen that we are not

'separate'. Our fate is linked to theirs." ⁶

Johanson's work presents an art that is ever-changing and emphasizes the importance of bio-diversity. The many changing and varied components of her projects, be they the sculpture, the birds, the walkways or the butterfly, all contribute to the color and texture of these large art sites. They represent very specific examples of Ecology/Art that merge aesthetics with real solutions.

Indeed, there are unique voices that project through art that embrace and harmonize with nature. It is art that proclaims a new language, suggests a new dialectic, puts forth new metaphors by which the very paradigm of our existence can change. The art is passionate but programmatic, created by artists deeply committed to changing not just one space on earth but to changing our attitude toward the world and our place in it.

The work of Agnes Denes similarly presents an alternative approach to life today so that life tomorrow might improve. She challenges our very value system which is based on economic institutions. She, is one of a small group of artists who before it became fashionable to embrace the land, performed a three part ritual with the land in her early 1968 piece entitled *Rice Tree Burial/ Exercises in Eco-Logic*. The work was re-enacted on a large scale in 1977 when she planted a rice field in abandoned contaminated soil at Art Park, Lewiston NY (near Love Canal). The rice, a universal substance that nourishes much of the world, was planted to give

substance to the abused earth (figure 27), while creating a metaphor of replenishment. The act of sowing rice was an attempt to fertilize, conceive and nurture while also calling attention to our current imbalance with the earth. This project marked the beginning of her commitment to environmental issues and to her quest to motivate her fellow human beings to take responsibility for the world which together we create.

Wheatfield: A Contradiction (1982) graphically demonstrated the polarities that exist in life and our quest to strike a balance between them. At Battery Park NYC, Denes transformed a landfill into a Wheatfield which would harvest 1000 pounds of healthy wheat. The wheat waved in the breeze beneath the shadows of the instruments of our society -- the World Trade Center, the Statue of Liberty, and Wall Street (figures 28-29). Today the bulldozers, and cranes have transformed the site into a billion dollar luxury building complex -- but now we can see and perceive of society, as one built on farmland rather than on a landfill. By creating this powerful metaphor Denes changes our perception of our environment; draws us to the paradoxes that exemplify our society, and thereby effectuate the world; they are images and experiences that suggest solutions while motivating people to re-examine their own relationship with the earth. Out of the remnants of our society the artist's vision can still create a new world.

Denes' projects are global in concept if not monumental in scale. For years Denes has proposed "Tree Mountains" in order to re-populate an Earth,

stripped of forests, with new trees. *Tree Mountain* (figures 30,31) is a mathematically spiraling forest containing ten thousand trees planted by ten thousand individuals from around the world. Its unprecedented contractual agreement will contain express instructions that it cannot be disturbed for four hundred years. It brings people together to create this monumental work-- each participant would become spiritually responsible for their tree. This project will now be realized in its full scale in the Pinizio gravel pits in Finland. Officially announced by the Finnish government on Earth Environment Day (June 4, 1992) at the Earth Summit in Rio De Janeiro,⁷ *Tree Mountain* will confront thousands of individuals and bring them into an awareness of our environment, to a realization that long after each participant is gone their efforts will have blossomed into a formidable artwork that will last for centuries.

Many of Agnes Denes' scientific and technological innovations come together in her recent project -- a *Masterplan for North Waterfront Park*, Berkeley, California. This project will, when completed, transform a 97 acre municipal landfill on San Francisco Bay into a sustainable natural ecosystem; an island of garbage will become a park, an artwork, a habitat for diverse species of plants, animals and humans. While methane eating microbes eat the toxins, she proposes that the landfill be transformed into a bird sanctuary and a fresh water lake. As wetlands and brackish marshlands disappear all over the world, Denes proposes to create one in this new park, then bring in fish, sea life, birds and snails to re-populate the site with indigenous and diverse species.

Digging wells and dropping a harmless chemical into the landfill will allow the landfill to produce pink smoke every time the landfill needs to vent itself and thereby producing what Denes calls "Rising Pink Clouds". The pink clouds are contrasted by her "Luminescent quicksand". Part of the landfill would be quicksand treated with phosphorescent materials that glow at night. Each time any small object was thrown in, it would swallow it up and emit an eerie glow to remind us of our squandering of resources. A *Spiral Tree Mountain* on this site will help stop land erosion through its strong roots, while shallow rooted trees could be planted which would not reach down to the contaminants. She proposes to plant sunflowers, alternating with wheat crop in order to avoid depletion of the soil. Interspersed with the crop would be artificial sunflowers that spin with the wind and pump fresh water from beneath the landfill into the field. She would add tidal pools, amphitheatres and sculptures, as well as lighthouses powered by methane gas or solar energy. Sculptures would change with the tides; as the tide goes up some of the sculptures would emit sounds. Two amphitheatres would explicate the continuity of the earth; a soft-form amphitheater would be defined as it is used while a pre-formed amphitheater would slowly decay with use. Others would contain carvings and petroglyphs giving the whole site a sense of history as well as a new future (figures 32-37).

Denes is always concerned about what role art can play in society not only as a personal expression but also as a "benign problem solver". The "artist as prophet" is a member of a unique discourse where

they can sense a problem and plan to solve it. "Balance and perspective are key concepts for the future."⁸ As we seek to encourage bio-diversity we realize that homogeneity is not the solution rather our goal should be to appreciate that each individual is but a part of the whole. As Denes creates an environment she is re-creating an eco-system while defining new values and perspectives. In order to assure the survival of her new environments, it is linked to the cycle of life; of birth and death, replenishment and nourishment, changes that respect that life is always in a state of flux. This is art that moves with the tides, nurtures with the tilling of the soil, and preserves species.

For Alan Sonfist simplicity is the key; art that does not disturb or disrupt the land but restores it through reforestation. Art that at its best is invisible as art; art that is living and will evolve. In 1965 Alan Sonfist first began to work on his *Time Landscape* by creating sketches that would return fifty sites around New York City to pre-Colonial marshes, streams and woodland. In 1977 the concept came to fruition on a selected tract of land located at the corner of LaGuardia Place and Houston Street. *Time Landscape, NY*, rediscovered the natural past of New York City (figures 38-40). This 45' x 200' site, which was owned by the city and had originally been slated for a highway, was repopulated with species of maple and oak, sassafras, bentwood, nightshade vines, wildflowers, grasses, chicory, goatsbred, dandelions, prickly lettuce, wormwood, thistles, yarrow, oxeye daisies, coltsfoot, cheat, homegrass, sheep sorrel, quackgrass, beard grass, mustard, black cherries,

beeches, dogwood, and white ash; a bio-diverse population that extensive research indicated had originally been part of that conglomeration of concrete we now call Manhattan.

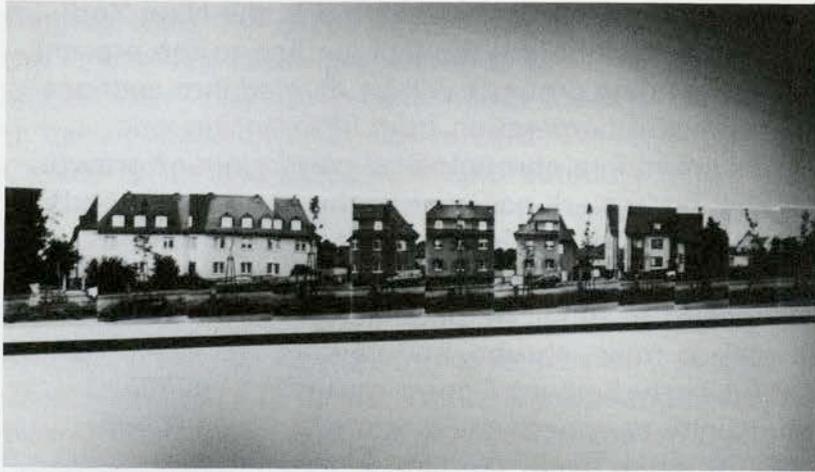
Sonfist wrote that, "My work deals with the idea that the world is always in a state of flux. My art deals with the rhythm of the universe. The pieces are part of the rhythm. A plant grows in cycles -- a man moves in cycles -- my work tries to bring about awareness of those movements. My works are transitions -- they provoke associations. One has to mediate with my work to gain understanding. It is not the beginning or the end that I am concerned with, but the energy that is given or received through communication with my art." At Art Park in 1978, near the infamous Love Canal, Alan Sonfist took an area that the authorities CLAIMED was not dangerous and revitalized a small portion of it. Barren and oozing with metallic substances he dug a six foot deep circular area and had the soil removed. In order to avoid any leaching he coated the crater with clay and then put in non-toxic "virgin" soil. He left it to the birds and bees to re-pollinate the virgin soil and thereby complete an art piece in the middle of a toxic, barren wasteland. Within one year this small space within the barren landscape was flourishing.

Similarly, Sonfist is now creating a project for Jersey City on a much larger scale (figures 41-43). To be completed this spring, twelve feet of soil will be removed and species native to the area, going back to the ice age will be replanted. This *Narrative Landscape of New York Harbor* will consist of seven acres of

diverse vegetation that has existed in the New York City region from before the last ice age to the present. The surrounding grounds will be divided into sections that represent vegetation from different historic periods creating a chronological continuum of growth. This will be in stark contrast to the barren soil nearby. Off the shores of the Hudson river this art site explicates the changes that occurred in the shore lines and species of trees. Re-populating the site with indigenous trees, shrubs, and flowers will allow visitors to the Liberty Science Center museum a unique opportunity to experience a primeval virgin forest.

Joseph Beuys wrote in his *Manifesto for a Free International School for Creativity and Interdisciplinary Research* that, "... it is no longer regarded as romantic but exceedingly realistic to fight for every tree, every plot of undeveloped land, every stream as yet unpoisoned, every old town center, and against every thoughtless reconstruction scheme." A member of Germany's "Green Party", Beuys staged what he called "Forest Actions" as early as 1971, in Dusseldorf. Beuys' strong propensity for science was frequently reflected in his art; he was not necessarily interested in beauty or aesthetics but rather the materials of our culture and of our society.

As an active participant of the Fluxus movement Beuys' "Actions" were related to performances but also regarded by him as therapy. As early as 1962 he proposed an "Action" for the south side of the Elbe in Hamburg. A highly polluted area where dumping had occurred had destroyed the entire village of Altenwereder, leaving only the church extant; even



9. JOSEPH BEUYS, *7,000 Oaks*, Installation

the orchards were buried beneath toxic mud. Beuys suggested that the site be planted with trees and bushes. The foliage and shrubbery that he proposed to plant would "Bind the toxic substances in the soil and prevent them from leaching into the groundwater."⁹ In the central area he planned to place a basalt block. Unfortunately, the project was never realized. The mayor of Hamburg failed to see "the artistic character of this undertaking."

On June 19, 1982 at *Documenta 7* Beuys began his most successful environmental "Action". The first of seven thousand oak trees were planted for an "Action" entitled *7,000 Oaks*. In *7,000 Oaks* (1982 - 1987) Beuys worked with students (and anyone else who wanted to donate a tree) to rebuild the trees lost

in war torn Kästle Germany (figures 9-10). Beuys proposed that during the course of five years numerous individuals would purchase trees at a cost of \$210.00 each. As each tree was planted a large basalt column, four feet high, would be placed along side. The \$210.00 would cover the transportation and planting. Each purchaser would receive a certificate and a "tree diploma" signed by Beuys with the stamp of the Free International University. When Beuys died on May 12, 1986 only 5,500 trees had been planted, but adhering to the original plan, Beuys' son carried the plan forward and planted the seven thousandth tree in 1987, at the opening of *Documenta 8*.

For Joseph Beuys the Free International University was a means to translate his visions into actions, and, "the vehicles that will travel the new road are ready to go. There is room and work for all."¹⁰ *7,000 Oaks* was a realization of that vision to create "Social Sculpture" and improve the quality of urban life. The "Action" set up what he called "super time" so that the world could now be measured by the life span of an oak tree (about 800 years) and draw attention to the need to conserve the global environment.

Helen and Newton Harrison also seek to mediate between politics and economics, technology and art in order to create a more sustainable future. In the 1960s Newton Harrison participated in the Art and Technology projects initiated by Los Angeles County Museum. His works bridged art and science in the technological and natural sciences arena. He sought to grow a lily from a cell while also creating "glow discharge tubes". Gyorgy Kepes selected him to



10. JOSEPH BEUYS, 7000 Oaks, 1984 Kassel Germany, Halftime Installation, Photo-documentation of Beuys planting Oak Tree

participate in his important exhibition at The Smithsonian Institution which brought art and science together. As early as 1971, Newton began, with his wife Helen Mayer, to create a series of "Survival Pieces" which focused on growing plants, farming brine shrimp; creating a "Portable Fish Farm" (which harvested catfish); or transforming twenty acres at Artpark, (Lewiston, New York), into a meadow. These projects sought to bring human beings into an awareness of their role in the eco-chain. Later in the 1970s they began to work more directly with issues of watersheds and bio-diversity; most recently they have created a proposal for Reed College concerning the temperate rain forest of the Pacific Northwest.

Collectively, the world has already depleted its rain forests by about 50%, while the Northwestern temperate rain forest has been depleted by about 93%. Forests absorb the rain and help prevent flooding and erosion. Deforestation each year releases 1/3 of the world's carbon dioxide, a gas bearing major responsibility for global warming. As much as 90% of all of the different species of plants and animals live in the forest; when we seriously disrupt the forest we destroy their homes and upset the balance of nature. In their recent project the Harrisons have taken on these monumental problems--the issues, the realities, the politics, and the economics.

The Harrisons begin with a dialog. Socrates always believed that the best way to learn was to ask questions. One question leads to another and we begin a dialog which is not based on assumptions but on curiosity, on creativity and active discourse. As

artists, Helen and Newton Harrison saw the desecration of the forests, they felt the abandonment of many species and began to ask questions about the consequences. Invited by the Cooley Art Gallery of Reed College they began to do research, to speak to the region's biologists. But they also asked questions of the lumber-jacks, the ecologists, economists and the lawyers. The dialog they created for the piece, out of their research and questioning, is an integral part of the art which continues to ask questions, answer others, and proposes new actions. Their statements can be read from the text on the wall, the catalog, or as voices echoing inside your head. It becomes a performance in which you participate by posing more questions, (Figures 44-50)

Susan Fillin-Yeh, in her catalog to accompany the original installation of "Serpentine Lattice", wrote that, "Their dialogue is Socratic in its shifting viewpoints, owes to Talmudic discourse in its reversals and constant shifts of ground, and even takes on aspects of feminist consciousness raising as a tactic for enlightenment".¹¹ Entitled *The Serpentine Lattice*, the Harrisons proposal evokes a poetic response to a form that undulates up and down 2,000 miles of the Northwestern North American Continent; *Serpentine* implies it can shift and change like nature. This proposal suggests a solution that will use a lattice or serpentine form as the framework to create a network of forests (not tree farms) and watersheds that will undulate, grow and change with nature-- not being overwhelming or controlling but nurturing.

The conversation begins with the premise that the

forest is dying. The dialog reads in a serpentine, flowing but in a seemingly random escalation to "its total destruction." They then provide a solution by introducing a network of watersheds, re-introducing species and expanding the dialog so that the viewer/participant is invited into the conversation. Like other performance and conceptual art projects the viewer is not permitted to just stand back and look into an encapsulated vision. The multimedia environment envelops the viewer and presses him/her to become a participant -- not just in the art but in the conversation, in the dialog, in the solution. The viewer will emerge from the darkened gallery space with the images of the destruction and the quest to restore the Northwest coastal temperate rain forest. The dialog accompanies simultaneously flashing slides which move along the coast in a "serpentine" fashion and reveal the sublime and then the decimation of the forests, the heroic beauty of the small areas that remain against the ravaged clear cuts (figures 45-46). The 7 1/2 minutes of photographs move progressively from beauty to destruction. These images conceptually overlay on a map of the territory which abuts the wall of images. On this map the Harrisons have overlaid their plan to restore the forests; their dialog suggests that we can make it economically feasible (figure 44).

"... what if", states Susan Fillin-Yeh in her catalog text, "the projectors were to be run in reverse? We would have a new metaphor, a vision of an evolving ecosystem described in images of regeneration and growth. Reversing the projectors suggests what it might look like to 'reverse the ground' of settlement

(see Text). Then the images we see on the screens would return us to the great green gesture of the map, with its contours describing 'an emerging ecological field' and suggesting ways to reorganize national and international priorities." ¹²

Their final conversation addresses the means to economically support "human existence" looking towards the regeneration of not only the forests and the rivers but also the jobs. They propose a "new history" wherein "the gross national product, which is produced at the expense of the gross national ecosystem, pays a 1% reparation tax." The system and the conversation come full circle so that the politics mediate between the destruction it has endorsed and the future it has the power to change.

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Each of the artists presented here has sought to find a way to harness nature without enslaving it; to realize the inter-relatedness of things, so that they can create a cohesive unit. They can re-create Gaea -- the ontological argument of nature. These contemporary artists realize that both artists and scientists base their work on intuition and imagination, they use creativity and assumptions. Both art and science are about process, they are a series of experiments learning from one experiment to the next, building upon each. Each has used scientific consultants, but each has gone beyond a cursory knowledge of the sciences -- Alan Sonfist was at MIT with Gyorgy

Kepes; Nancy Holt has a degree in biology and heard a part of the Kepes lecture series at MIT in the 1950s; Patricia Johanson has a degree in architecture. Those experiences helped them bridge the gap between art and science. Tomorrow's artists must be well versed in both art and science. Through mutual understanding there is a dialog going on now between the man of the arts and the woman of science, between nature and technology. While seeking the equilibrium that will allow the earth to keep rotating on its invisible axis, the creative minds of our culture are breaking the boundaries between art, science and technology so that we can also bridge the gap between bio-diversity and progress. This is science in service of art; art in service of science and the final product is in service of society. This is not art merely about art or the relationship between man and nature, it is Art in service of Nature. This is a profound deviation from traditional Western art which heralded nature or used art to change nature or used art to alter nature. This is the maternal side of the relationship between humanity and the landscape because this art nurtures. It does not use and abuse.

Kepes wrote, perhaps in response to Marshall McLuhan that "The medium, in this case technology, is not in itself the message; it becomes a message when it is in a vital dialogue with our most authentic contemporary needs." ¹³ And indeed one of our most dire needs is to correct the destructions and imbalances in our environment, to be cognizant of the ontological argument of nature (Gaea), or what Kepes referred to as the concept of homeostasis, "wherein

the organism adjusts itself to this or that excess in order to preserve its physiological equilibrium. This process, which exists on a physiological level, must now be developed on the social and cultural levels. In this development the artist's sensibility will play an immense role. The artist of the future must read our broad environmental needs and create large scale forms that will help satisfy individual needs." ¹⁴

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Our current technological age is usually referred to as having begun with our exploration into space. We reached out into new frontiers physically and found the technology to accompany the explorations. Born of this adventure were digital, lasers, computers, and satellites; we obtained a new vision of the planet earth. Space explorations expanded our vision of the world and helped propel many of the already working earth artists into an expanded awareness of ecological concerns. The satellite photographs that came back to us have reiterated the Gaea hypothesis -- we are not separate entities but one globe unified by an ozone layer and the water. We now realize that the breeze of a butterfly is felt across the continents; the air I breathe today is shared by a New Zealander tomorrow. The tree we cut yesterday will affect our atmosphere tomorrow; the volcano that blew in the Philippines affects the weather in New York. How can we see the world as disparate parts when it is but one entity? The planet earth is the object; and these artists stroke, nurture or revitalize in order to find creative solutions to our ecological concerns.

The artists raison d'être today is beyond the cause of aesthetics; it has a morality and a purpose in today's society. These are the socially conscious artists of today, forming a new movement in art (call it Ecoism, or Proto-Gaea if we need a term) but it is not romantic

landscape painting -- these are subtle gestures that mimic and echo the natural processes of the environment, re-defining art, nurturing nature as Gaea pioneers and other visionaries of the twenty-first century.

ENDNOTES

1. Gyorgy Kepes, *The Visual Arts Today*, (Ct.: Wesleyan U. Press, 1960) p. 12.
2. Douglas Davis, *Art and the Future*, (N.Y.: Praeger, 1975) p.73
3. Unfortunately Fite never had an opportunity to complete the project he died dramatically when his bulldozer fell into a large pit in *Opus 40*.
4. Gwen F. Chanzit, *Herbert Bayer: Collection and Archive*, (Co.: Denver Art Museum, 1988) p. 9
5. As of late 1992 plans were being made to add to and re-arrange the Aspen Institute. Changing the totality of the environment Bayer created in any way will completely destroy the work for this early contemporary environmental work was created as a total entity and is a sum of its parts. The destruction of one part will destroy the entirety.
6. Patricia Johanson, "Patricia Johanson" *Gallerie*, (VanCouver, BC) 1989 Annual , p. 27.
7. As of April 1993 work had already begun in the Ylojarvi sand pits and completion is planned for 1994
8. Notations in quotation marks are derived from discussions with the artist in December 1992.
9. Heiner Steichelhaus, *Joseph Beuys*, trans. by David Britt, (N.Y.: Abbeville Press), p. 146
10. Steichelhaus, p.124
11. Fillin-Yeh, Susan, *The Serpentine Lattice*, Reed College, (Oregon: 1993)
12. Fillin-Yeh.
13. Douglas Davis , *Art and the Future*, (NY: Praeger, 1975), p.119
14. Davis, p. 119