PARK AS LIVING LABORATORY
a concept for a 21st century park

Goal:
ENVIRONMENTAL & SOCIAL SUSTAINABILITY

an experimental place where new ideas can be investigated and tested
an evolving place where issues of our time can be expressed
an experiential place where sustainability is made tangible
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THE ORANGE COUNTY GREAT PARK
VISION

The Sustainable Oasis

In the middle of Orange County in southern California a new kind of park is being conceived - a sustainable oasis that will be a place that creates a series of bonds between the built environment and the natural world, our history and our current needs and between the varied communities of this area with each other. These bonds will ultimately provide the working connections between our past, the present and the future. The citizens of Orange County will be key participants in making this area a leading force in creating a new paradigm for a sustainable future.

The Oasis and Health

As parks have long been, the Orange County Great Park is an oasis, a place of pleasure, activity and reflection. It will be a place where the senses – the experiences of sight, touch, taste, sound and smell – provide visitors with a visceral connection with their immediate environment. It will be a place where they can come for physical, spiritual and mental renewal. In this sustainable oasis, moreover, these aspects of health are a major focus: the health of the individual becomes a means of understanding the social and ecological health of the region and the world.

Sustainability and the Park as Living Laboratory

A primary concept of the park is that it will be a place of experimentation and change over the years as aspects of social and environmental sustainability are studied. The Great Park is where new ideas and opportunities can be investigated, tested and built over the next 5, 10, 50, or 100 years. The complexity of the issues makes it impossible for representatives of one area of expertise to understand all the problems or imagine the most effective solutions. For this reason, from its inception the Great Park has been developed through collaboration. This mode of working will remain at the core of the Park’s vision. Artists and designers will work in collaboration with scientists, historians, hydrologists and others to implement The Park as a Living Laboratory.

The role of the artists and designers will be to make sustainability a tangible experience, to arouse the interest and curiosity of visitors - and more, to invite their participation in finding solutions for the pressing problems of the 21st century. Instead of signboards full of dull facts, the Great Park will pioneer a new experiential form of interpretation. Together, artists, performers, scientists, and educators will collaborate to tell the stories of cultural heritage, the site’s history, ecological restoration, and building a sustainable future in a new way. Orange County is composed of many communities of diverse cultural backgrounds. Park programs will celebrate the different histories and experiences of these groups, and explore how aspects of each culture can help build a healthier and more sustainable future.

Sustainability Goals

To help the park succeed in its goal of creating a new balance between meeting human needs and promoting environmental health we must come to understand the consequences of our actions and the effectiveness of potential solutions. Is it possible to grapple with the negative consequences of development in a rapidly growing region such as Orange County at least in part by restoring and linking disappearing natural habitats? What are the best ways to design buildings in this region that do not degrade the land? Are there better ways to deal with our trash or treat our sewage? The park becomes a lens focusing on problems of our times and their solutions. In this way it has the potential to affect the whole region by exporting new ideas to surrounding communities. In order to accomplish these goals the park will implement and embrace a set of sustainability indicators, which will be tracked by a series of performance standards. This will make it possible to understand the effectiveness of the projects and programs that are undertaken.

Conclusion

The most important component of the Great Park will be the people who come here. It is in their direct experience of the place – what they see, touch, feel, and come to understand – that the possibility of transformation lives. The park will be a place where individuals are encouraged to reflect on the great issues of our times and to participate actively in the creation of a healthier future. It will draw attention to our immediate environment, its problems and pleasures. Only a place and present sense of great richness can allow individual visitors to become conduits toward a future of great optimism. The transformation of this former airbase into a beautiful space - a sustainable oasis - can be the beginning of a new vision that restores the balance between ourselves and our environment.
The Orange County Great Park is located in southern California near the center of Orange County in the city of Irvine. The park will be developed at the site that was most recently (1942 - 1999) the El Toro Marine Corp Air Station.
PARK AS LIVING LABORATORY - WHAT IS IT?

The Park as Living Laboratory is a vision for the Great Park - a place where new ideas about environmental and social sustainability can be investigated, tested and built as the park is developed over the next 5, 10, 20, or 50 years.

**SUSTAINABILITY MADE TANGIBLE**

Our goal is to create a place where sustainability becomes a tangible experience. Through the Park as Living Laboratory concept, sustainability can be explored in many ways, not only technological but also experiential, educational and interpretive. To turn this goal into a reality, artists and designers will create projects which address critical issues of our time - such as water or energy - reveal the site's history or provide meaningful social spaces within and beyond the park. These projects are intended to arouse visitors' interest and curiosity to make these pressing issues of the 21st Century accessible to all.

**EDUCATION**

Educating the public about environmental and social sustainability is an important part of the park's mission. Whether focusing on environmental issues or learning about the history of the site, the citizens of Orange County will be able to enjoy a kind of public space where education is approached in a very unique way. Rather than the conventional use of interpretive signage, the park will provide educational experiences by engaging visitors with the creative work of artists and designers. This work will cover a broad range of topics - Who were the earliest occupants of the area? How can the Veterans who used El Toro be acknowledged? How do we acknowledge the Native Americans who once occupied the site? The Park as Living Laboratory forges new ways of thinking about how to address these questions and many more.

**COLLABORATION**

This Park as Living Laboratory will be implemented through the establishment of a Research and Residency Center. This will be a place where artists and designers can collaborate with scientists (ecologists, botanists, hydrologists, biologists etc.) and social scientists (historians, sociologists, anthropologists etc.). Through these collaborations artists will have the opportunity to investigate and research in detail an issue such as storm water run-off or alternative energy uses within the park; social projects might involve making connections between the park and its surrounding neighborhoods; other opportunities include investigating the archaeology of the area, major structures in the park, hydrological systems or communications. The work might take the form of prototypes, temporary installations, permanent works or theoretical investigations. The idea is to design a process to engage artists as thinkers to address these important issues that will define our future.

**EXPERIENTIAL EDUCATIONAL INTERPRETIVE**

**ARTISTS & DESIGNERS**

The ongoing presence of artists and designers in the park over the years will create a place where something new is always expected. Their work will invite the public to look at the natural environment in new ways or use sensory experiences such as sound, sight, taste, touch and smell to inspire visitors to engage with otherwise abstract issues about energy or the environment. The Park as Living Laboratory will ensure that the Great Park is a place rich with visual experiences and where a new awareness of the relationship between the built environment and the natural world is forged.

**MICRO TO MACRO**

Rather than acting only as a relief to the built environment, the park will generate new ways of thinking about sustainability that have the potential to affect the whole region. At the local scale, the relationship between individuals and the park is the immediate focus, where personal health and well-being is encouraged and ties between humans and their natural environment are revealed or intensified. These ideas can then be exported to a macro level through regional scale projects involving mass transit, stormwater infrastructure, schools etc.

**ADDRESSING CRISIS**

Through the Park as Living Laboratory, the park can also serve as a place where current day crises can be addressed, educating citizens about how to deal with the unexpected, whether it be severe water shortages, an energy crisis, flooding, fires or hurricanes; it can become a testing ground for innovative solutions to problems that have been occurring more frequently in recent times as a result of the unsustainable practices that have taken a toll on our urban environments. The Great Park can be a place to turn when crises arise.
As an organizational strategy, various components of the research for the Park as Living Laboratory (such as precedent studies and identifying opportunities) have been structured around a series of workgroups: Program, Infrastructure, Natural Systems and Social, all of which fall under the heading Sustainability Made Tangible. These categories are based on the workgroups established for the masterplan design. The following chart maps out the organization of these workgroups in relation to the critical issues categories upon which this preliminary masterplan document is based.
OPPORTUNITIES - IDENTIFYING POSSIBILITIES

Based on the overall goals for the park and the current work being undertaken, we have identified a number of opportunities for artists and designers. Many of these would be collaborative projects involving a wide range of groups and individuals with varying fields of expertise. The projects, while focused on the Great Park, could take place within the park itself or beyond its boundaries. These opportunities have been organized according to the five workgroups we have established for the park masterplan, with sustainability made tangible being the main heading under which the others fall. This list is intended only as a point of departure - to present examples of issues that might be addressed. in the future, the list will expand in scope, ideas and type of project beyond the framework of the current masterplan.

1. Vital Signs Kiosks – Distinctive structures designed to provide personal health and nutrition information (heart rate, calories burned, nutritional needs).

2. Acute Care Spaces – Relaxation and exercise areas dedicated to those with special needs.

3. Get Well in the Park - A series of indoor and outdoor rehabilitation areas allowing patients to progress through different levels of fitness as they recover.

4. People Power – Exercise bikes and treadmills that convert human energy into electricity which is then used to light up surfaces revealing fitness/health facts.

5. Pedal & Pump – Great Park bikes which charge batteries used to pump water for cooling stations along bike path.

6. Lights on Bikes – Great Park bikes that power their own lights at night using a generator.

7. Sports Center Info Stations - Kiosks used to see scheduled game times and reserve sports fields; these could also be installed in community centers outside the park.

8. Story Telling Rooms – Distinctive spaces throughout the park used for scheduled storytellers including historians, poets, ecologists etc.

9. Audio Tours – Listening devices (or iPod downloads) that tell stories or provide information about the park or particular installations within it.

10. Harvest Cafe – Eating places within the park which celebrate harvest season by serving foods grown and harvested in the park.

1. Agua Chinon Storm Water Lab – Exposed waterways with added vegetation to study its effects on storm water runoff within its own sub-watershed

2. Agua Chinon Observation Stations – Spaces designed to observe and experience the restored creek, vegetation and habitat changes over time.

3. Alternative Energy Display – An exhibit of PV panels, solar disks, wind turbines, etc. to show energy production on a large scale and how the energy is used throughout the park.

4. Energy Measuring Devices - Instruments which measure the amount of energy used for specific functions, making people aware of energy consumption throughout park.

5. Energy Meter – Oversized electrical meter measuring amount of energy created and its source (wind, pv disk, biomass etc.).

6. Windmill Trails – Show connection/effect that off-site windmill farm has with/on the park through a series of trails along power line right-of-way.

7. Sustainable Habitat Surveillance – Solar powered cameras used to document ecological change throughout the park or areas off limits to humans (wildlife corridor); images obtained could be used to create artwork.

8. Solar Comfort Stations – Notable display of PV panels or disks on the roof of shade structures for comfort stations and other public buildings.

1. Park as Non-Static Entity – Collaborative project with scientist to reveal ongoing physical changes of the park and relationships between the changes.

2. Run away Runway – A strip of vegetation along runway left to remain and grow unaltered and unmanaged to see what happens.

3. Plan & People Growth Monitoring Project - Designed area where camera takes photos at scheduled intervals to document park plant growth; park users can get into the photos and print copies to follow growth of family from one year to next.

4. California Friendly Plants – A series of lenses (windows) to observe habitats.

5. Native Species Patches – Experimental planting zones using native species to create specific habitats throughout park; public viewing areas allow visitors to observe habitats.

6. Fisheries at Agua Chinon – Fisheries as visual features.

7. Soil Microscope – A series of lenses (windows) along a path to visually amplify the microscopic world of soils.

8. Materials of the Earth – An installation of different structures which can be made from the earth (brick, stone etc.)

9. Wetland as Habitat – Visual strategies to show water cleaning properties of wetlands and reveal life forms within.

1. Community Kiosks - Kiosks located in underserved communities where public transportation is inadequate; users would be able to review park activities and request pick-ups.

2. Recycling Suction – Recycling bins w/vacuum system take the material in and send it through clear pipes to the proper site for recycling in the park.

3. Transplanted Gardens – Wetland gardens, wildlife habitats and edible gardens seen at the Great Park become features at local schools.

4. Seed Sharing – Project based on seed share program where partnerships with home gardeners and community gardens are created throughout Orange County for exchanging seeds.

5. Seed Bank - A repository of seeds for the future.

6. Learning Gardens - A series of educational gardens based on various programs: Harvest to Home – project to inform gardeners about proper vegetable preservation techniques (canning, preserves etc.), Master Gardener Program and Nursery Certificate Program.

7. Vertical Gardens – Small spaces, using climbing vines to grow vegetables on the sides of buildings, fences etc.

8. Casitas – Casitas designed within community gardens to create social spaces.

9. Casita Kitchens – Special kitchens designed for cooking demonstrations in garden area to promote good health and improved nutritional options.
11. Kitchen Garden Restaurant – A restaurant within an organic garden which supplies kitchen with food used in dishes; spaces for cooking demonstrations and food events are integrated into the garden.
12. Agriculture at Your Doorstep – Visual materials (such as packaging or graphics on vehicles) for home delivery service of fresh crops sent weekly to ‘subscribers’ for a monthly fee.
13. Organic Vegetable Garden Pavilions – Spaces created within organic vegetable gardens to generate public interest in this type of gardening with activities such as recipe exchanges and tasting hours.
14. Edible Landscape Room – A series of landscape rooms, each featuring different edible plants; food events take place in rooms when plants are in season.
15. Fresh Food Stands – Rest stops throughout park where fruits and vegetables grown in park and fresh squeezed juice can be purchased.
16. Solar Smoothies – Blended fruit drinks made using blenders powered by photovoltaic panels on a cart that can wheeled around the park.
17. Ethnic Learning Gardens – Gardens featuring plants associated with particular cultures including visual displays/installations about how those plants are used within each culture.
18. Historic Agriculture – Project exploring Orange County’s agricultural history.
20. Cell Carts – Electric carts designed with photovoltaic cells on top.

10. Bioswale Section – Sectional cut along a bioswale to create a space for experiencing storm water from below grade.
11. Wetland Features – Strategies to call out and make connections between the wetlands throughout the park and other parks in the community.
12. Natural Treatment Tower – A vertical structure for visitors to experience areas adjacent to wetlands from above, below ground and at eye level.
13. Storm Water Revealed – Water pipes become large scale devices measuring different aspects of water (flow rates, linear feet traveled from origin, quality).
14. Hydro Hiking Trails – A system of trails exposing the many hydrologic systems of the park and how they are linked through a system of trails.
15. Pipes and Paths – Exercise/hiking paths along water piping systems with distance markers (big rulers) to show how far the user (and the water) have traveled.
16. Pumping Power – Visually engaging measuring devices to show how much energy is needed to pump potable water into the park.
17. Purple Pipes – Strategies to show the origins of purple water and its movement through the system to its final use (home-treatment center-park-irrigation).
18. Potable Water Tracker – Water features throughout park to show where multiple sources of potable water originate.
19. Micro climatic Rooms – A series of outdoor rooms of varying micro climates to produce different habitats; monitoring devices designed to make people aware of relationships between micro climates and habitats.
20. Cell Carts – Electric carts designed with photovoltaic cells on top.

10. Phytoremediation Gardens – Landscape revealing how plants remove different pollutants.
11. Map the Soils – Ground markers and/or plantings revealing the different soils in the park.
12. Soils Section – A sectional cut through an area of soil to reveal depth, horizons and percolation rate; changes monitored and documented.
13. Stormwater Habitat Creation – Strategies to monitor and reveal habitats created in areas of the park where storm water would be treated.
15. Wildlife Kiosk – Interpretive kiosks designed for identifying wildlife habitats, vegetation and animals.
16. Vegetated Timeline – A physical timeline to show growth rates in meadows planted and observed yearly; new meadows planted every year for five years.
17. Seasonal Celebrations – Events celebrating the seasons, migration patterns, harvest, changes in weather (for instance, rainy season) throughout the year.
18. Migration Markers – Areas in the park marked as appropriate to draw attention to where insect or animal migration occurs.
19. Composting Education Area – Public viewing area for composting plant located within park or adjacent to it.
20. Cell Carts – Electric carts designed with photovoltaic cells on top.

10. Soils Sample Station – Area designed to conduct soil sample analysis for homeowners; alternatives to fertilizers and chemicals for soils amendments provided.
11. Recycled Material Sculpture – Artworks by artists and park visitors created using recyclable items.
12. Cultural Exchange Program – Festivals, cultural events, performances, workshops, holiday celebrations etc. to create cultural awareness.
13. Native Communities – Project exploring Native American communities - which ones were present, how they functioned, their experiences, systems (agriculture, land use, dwellings etc.), sustainable practices and respect for the ecosystem.
14. GP documentary – Project that documents the transformation from air base to park.
15. Youth Engaged in Sustainability (YES) – Project to get young people involved in the environment through collaborative projects involving gardens, sustainability and technology.
16. GP in Your Park – Project about making connections between Great Park and natural areas to the west and surrounding neighborhoods.
17. Trail Connectors – Distinctive trail markers to make connections from park to regional trail systems.
18. Composting Education Area – Public viewing area for composting plant located within park or adjacent to it.
19. Composting Sites – A series of distinctive community composting sites.
21. **Sustainable Circulation** - A series of installations along main circulation route through park designed to reveal issues of sustainability.

22. **Permeable Pathways** – Paths of varying scales and purposes designed to call attention to methods of decreasing runoff.

23. **Bike and Burn** – Calorie counting devices on bikes calculate mileage and calories burned; bike rental and food discounts the more you burn/ride.

24. **Mass transit** – Shuttle buses designed with moveable displays/artwork to promote the use of mass transit as well as direct visitors to Park and Ride facilities and sustainable points of interest.


26. **Sustainable Transportation** – Visually distinctive bicycles, pedal carts, pedal boats, and rowboats available at various points throughout the park.

27. **Ecological Footprint** – A demarcated area showing spatially the amount of resources used annually by a person based on certain lifestyles.

28. **Walkable Historic Diagram** – A physical time line informing users of the historic context of Orange County from past to the present to possible futures (one sustainable, the other would be based on the current pattern of resource use).

29. **Alternative Energy Rooms** – Spaces in park which highlight methods of using alternative energy and display data in visually engaging ways.

19. **Aquifer Action** – Sectional cut through a portion of the site showing the actions of the aquifer.

20. **Geology of Place** – Installation to show the geology of the park at a condensed scale.

21. **Water in the Park** – Strategies to reveal and make notable water requirements in different areas of the park (canyon, the ball fields, agricultural fields etc.).

22. **Rain water Structures** – Structures designed to capture rain and show use of rain water for irrigation.

23. **Moisture Measuring Posts** – Visually engaging measuring devices to monitor soil moisture throughout park.

24. **Bridges of the Elements** - A series of bridge designs that reveal aspects of the elements and different weather conditions in Southern CA. For instance, a fog bridge, wind bridge or fire bridge.

25. **Medicinal Gardens** – Installations showing the use of plants with medicinal purposes throughout history (Native Americans-Settlers-Today)

26. **Geology of Place** – Sectional cut through a portion of the site showing the actions of the aquifer.

27. **Craft Plants** – Plant and craft exhibit revealing direct relationship between plants and their functional uses, for instance, palm fronds for baskets, fibers for cloth and guards for musical instruments.

28. **Historic Plant Installation** – Installation featuring California plants from past to present (a landscape timeline)

29. **Plant Personalities** – An installation featuring plants that humans can interact with (the sensitive plant, plants that open and close based on sun or shade etc.)

30. **Low Maintenance Plant Plots** – An area featuring plants that require low maintenance, less water, no fertilizer or organic fertilizer options

31. **CA Local Plots** – An area featuring plants that support local plant communities, wildlife and ecology designed at the scale of a home garden.

32. **Sensory gardens** – Gardens that engage all senses and create awareness of the human/natural system connections.

33. **Exotics** – Visual display of exotic plant materials with a focus on the dangers of their use.

34. **Easy Access to Plants** – A series of mobile and permanent spaces in park to serve as classrooms for educational programs, youth groups and science clubs.

35. **Neighborhood-Park Transitions** – Interventions which create connections between park and surrounding neighborhood (blurring boundaries), as well as elements that clarify transition between private and public space (creating distinct boundaries).

36. **Light of Southern CA** – Project to bring awareness to the quality of light in Southern CA.

37. **Runway Mirage** - Create an optical phenomenon on the runway.

38. **Reflections** - A project about creating reflections to draw attention to ephemeral qualities of the site.

39. **Marking Time** – Plant carts designed as floats or mobile gardens featuring plants from the Botanic Garden for sale.

40. **Bike and Burn** – Calorie counting devices on bikes calculate mileage and calories burned; bike rental and food discounts the more you burn/ride.

41. **Ecological Footprint** – A demarcated area showing spatially the amount of resources used annually by a person based on certain lifestyles.

42. **Walkable Historic Diagram** – A physical time line informing users of the historic context of Orange County from past to the present to possible futures (one sustainable, the other would be based on the current pattern of resource use).

43. **Alternative Energy Rooms** – Spaces in park which highlight methods of using alternative energy and display data in visually engaging ways.
OPPORTUNITIES - ART INTERVENTIONS

A Boundaries
Neighborhood & Park Permeability

B Circulation
Hierarchy & usage

C Utilities
Hydrology and Energy

D Canyon
Microclimate & Biofiltration

E Wildlife Corridors/Ecosystems

F Programs
Hydro Hiking Trails
A system of trails exposing the many hydrologic systems of the park and how they are linked.

Pipes and Paths
Exercise/hiking paths along water piping systems with distance markers (big rulers) to show how far the user (and the water) have traveled.

Permeable Pathways
Paths constructed out of permeable materials to allow water to pass through the paved surface rather than run off.

Regional Trail Markers
Distinctive trail markers to make connections from park to regional trail systems.

Bridges of the Elements
A series of bridge designs that reveal aspects of the elements in Southern CA. For instance, a fog bridge, wind bridge or fire bridge.

Sustainable Circulation
A series of installations along main circulation route through park designed to reveal issues of sustainability.

LEGEND
- Program
- Infrastructure
- Natural Systems
- Social

OPPORTUNITIES - CIRCULATION
Windmill Trails
Show connection that offsite windmill farm has with the park through a series of trails along power line right-of-way

Energy Measuring Devices
Instruments which measure the amount of energy used for specific functions, making people aware of energy consumption throughout park

Supersized Energy Meter
Oversized electrical meter measuring amount of energy created and its source (wind, pv, disk, biomass etc.)

Alternative Energy Power Plant
An exhibit of PV panels, solar disks, wind turbines, etc. to show energy production alternatives

Solar Smoothies
Blended fruit drinks made using blenders powered by photovoltaic panels (or by pedaling stationary bikes) on a cart that can wheeled around the park

Solar Comfort Stations
Notable display of PV panels or disks on the roof of comfort stations and other public buildings

People Power
Exercise bikes and treadmills that convert human energy into electricity which is then used to light up surfaces revealing fitness/health facts

Pedal & Pump Site
Great Park bikes which charge batteries used to pump water for cooling stations along bike path
OPPORTUNITIES - SUSTAINABILITY

Youth Engaged in Sustainability (YES)
Project to get young people involved in the environment through collaborative projects involving gardens, sustainability and technology.

Organic Vegetable Garden Pavilions
Spaces created within organic vegetable gardens to generate public interest in this type of gardening with activities such as recipe exchanges and tasting hours.

Recycled Material Sculpture
Artworks by artists and park visitors created using recyclable items.

Sustainable Circulation Stops
A series of installations along main circulation route through park designed to reveal issues of sustainability.

Mass Transit Information Center
Shuttle buses designed with movable displays/artwork to promote the use of mass transit as well as direct visitors to Park and Ride facilities and sustainable points of interest.

Vital Signs Kiosks
Distinctive structures designed to provide personal health and nutrition information (heart rate, calories burned, nutritional needs).

Get Well in the Park
A series of indoor and outdoor rehabilitation areas allowing patients to progress through different levels of fitness as they recover.

LEGEND
- Program
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OPPORTUNITIES - MAJOR VEGETATION

**Map the Soils**
Ground markers and/or plantings revealing the different soils in the park.

**Soils Section**
A sectional cut through an area of soil to reveal depth, horizons and percolation rate; changes monitored and documented.

**Native Plant Birth & Re-birth Garden**
Native plant growth allowed to exist unmanaged.

**Run away Runway**
A strip of vegetation along runway left to remain and grow unaltered and unmanaged to see what happens.

**Roaming Nursery**
Plant carts designed as floats or mobile gardens featuring plants from the Botanic Garden for sale.

**CA Local Plots**
An area featuring plants that support local plant communities, wildlife and ecology designed at the scale of a home garden.

**Vegetated Timeline**
A physical timeline to show growth rates in meadows planted and observed yearly; new meadows planted every year for five years.

**Micro climatic Rooms**
A series of outdoor rooms of varying microclimates to produce different habitats; monitoring devices designed to make people aware of relationships between microclimates and habitats.

**Plant & People Growth Monitoring Project**
Designated area where camera takes photos at scheduled intervals to document park plant growth; park users can get into the photos and print copies to follow growth of family from one year to next.

**Soils Section**
A sectional cut through an area of soil to reveal depth, horizons and percolation rate; changes monitored and documented.

**LEGEND**
- Program
- Infrastructure
- Natural Systems
- Social
**Opportunities - Hydrology**

**Stream Restoration**
Habitat creation and stream bank restoration project.

**Agua Chinon Storm Water Studies**
Exposed waterways with added vegetation to study its effects on storm water runoff within its own sub-watershed.

**Agua Chinon Observation Station**
Spaces designed to observe and experience the restored creek, vegetation and habitat changes over time.

**Stormwater Habitat Creation**
Strategy to monitor and reveal habitat created in areas of the park where storm water would be treated.

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**Storm Water Revealed**
Water pipes become large scale devices measuring different aspects of water (flow rates, linear feet traveled from origin, quality).

**Natural Treatment Tower**
A vertical structure for visitors to experience areas adjacent to wetlands from above, below ground and at eye level.

**Bioswale Section**
Sectional cut along a bioswale to create a space for experiencing storm water from below grade.

**Bioswale Markers**
The use of specific markers to delineate bioswales in and outside the park.

**Moisture Measuring Posts**
Visually engaging measuring devices to monitor soil moisture throughout the park.

**Wetland Habitat & Phytoremediation Garden**
Landscape revealing how plants remove different pollutants.
OPPORTUNITIES - MACRO PROGRAM

- **PV Powered Educational Features**
  - Interpretive and experiential projects to engage young people

- **Stirling Engine Demonstrations**
  - Solar energy creation

- **Ecological Monitoring Stations**
  - Monitoring stations used to document water quality

- **Audio History Driving Tours**
  - File downloads for learning history of Orange County

- **Edible Gardens at Schools**
  - Vegetable gardens at schools provided with curriculum on nutrition

- **Water Infrastructure Markers**
  - Reveal the location of water throughout the region

- **Shared Sustainable Parking Lots**
  - Using permeable paving and sharing parking lots of local businesses

- **Wind Farms Supplying Energy to GP**

- **Native Plantings at Community Centers**

- **Composting Facilities**
  - Green materials used for compost can be sold to gardeners as a soil amendment

- **Connections - Cleveland National Forest**
  - Trails from the Great Park will link to larger systems

- **Ethnic Community Food Festival**
  - Celebration of diversity through the expression of food

- **Interpretive Wetland Gardens**
  - Visually engaging display of functional wetlands

- **Kiosks & Orange Shuttle Buses**
  - Used to transport people to the Great Park in communities underserved by public transportation

- **Interpretive Wetland Gardens**
  - Visually engaging display of functional wetlands

- **Audio History Driving Tours**
  - File downloads for learning history of Orange County

- **Program**
  - Infrastructure
  - Natural Systems
  - Social

- **Composting Facilities**
  - Green materials used for compost can be sold to gardeners as a soil amendment

- **Connections - Cleveland National Forest**
  - Trails from the Great Park will link to larger systems

- **Community Recycling Centers**
  - Local recycling stations for easy access located throughout the county

- **Transit Stop Interpretive Features**
  - Sustainability information provided at transit stops

LEGEND

- Program
- Infrastructure
- Natural Systems
- Social
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<td>Lake</td>
<td>People</td>
<td>Listening devices that tell stories and provide information about the park</td>
</tr>
<tr>
<td>Organic Vegetables Garden Pavilions</td>
<td>Installation</td>
<td>Regional (Macro)</td>
<td>Materials</td>
<td>People</td>
<td>Spaces for community located within organic vegetable gardens</td>
</tr>
<tr>
<td>Sustainable Circulation</td>
<td>Event</td>
<td>Regional (Macro)</td>
<td>Energy</td>
<td>People</td>
<td>Several modes of transportation made available to park users (bike, cart, boat)</td>
</tr>
<tr>
<td>Community Recycling Centers</td>
<td>Event</td>
<td>Local (Micro)</td>
<td>Water</td>
<td>People</td>
<td>Recycling centers located throughout the community</td>
</tr>
<tr>
<td>Mass Transit Information Center</td>
<td>Event</td>
<td>Local (Micro)</td>
<td>Soils</td>
<td>People</td>
<td>Mass transit and shuttle bus information provided in movable displays</td>
</tr>
<tr>
<td>Ethnic Learning Gardens</td>
<td>Event</td>
<td>Local (Micro)</td>
<td>Nature</td>
<td>People</td>
<td>Gardens featuring plants associated with particular cultures with visual displays</td>
</tr>
<tr>
<td>Sustainability Stops</td>
<td>Installation</td>
<td>Event</td>
<td>Utilities Plan</td>
<td>Social Systems</td>
<td>A series of installations in the park along circulation routes</td>
</tr>
<tr>
<td>Get Well in the Park</td>
<td>Installation</td>
<td>Event</td>
<td>Soils Plan</td>
<td>Social Systems</td>
<td>Indoor and outdoor rehabilitation areas allowing patients to work towards recovery</td>
</tr>
<tr>
<td>Solar Smoothies</td>
<td>Installation</td>
<td>Event</td>
<td>Granting Plan</td>
<td>Social Systems</td>
<td>Portable smoothie stations using solar power</td>
</tr>
<tr>
<td>Pedal and Pump Recharge Site</td>
<td>Installation</td>
<td>Event</td>
<td>Social Systems</td>
<td>Social Systems</td>
<td>The use of bikes to charge batteries which are used to power park amenities</td>
</tr>
<tr>
<td>Geologic &amp; Climatic History Display</td>
<td>Educational</td>
<td>Event</td>
<td>Social Systems</td>
<td>Social Systems</td>
<td>A display describing the earth's composition and elements which alter it</td>
</tr>
<tr>
<td>Hydro Hiking Trails</td>
<td>Installation</td>
<td>Event</td>
<td>Social Systems</td>
<td>Social Systems</td>
<td>A series of exposing the many hydrologic systems throughout the park and beyond</td>
</tr>
<tr>
<td>Natural Treatment Viewing Tower</td>
<td>Installation</td>
<td>Event</td>
<td>Social Systems</td>
<td>Social Systems</td>
<td>A structure for visitors to experience wetlands at several levels</td>
</tr>
<tr>
<td>Pipes and Paths</td>
<td>Installation</td>
<td>Event</td>
<td>Social Systems</td>
<td>Social Systems</td>
<td>Exercise hiking paths along water pipes with distance markers showing distance</td>
</tr>
<tr>
<td>Wind Farms Supplying Energy to GP</td>
<td>Installation</td>
<td>Event</td>
<td>Social Systems</td>
<td>Social Systems</td>
<td>A windmill farm located off site providing energy to the Great Park</td>
</tr>
<tr>
<td>Stirling Engine Demonstrations</td>
<td>Event</td>
<td>Event</td>
<td>Social Systems</td>
<td>Social Systems</td>
<td>Energy saving demonstration projects throughout the community</td>
</tr>
<tr>
<td>Windmill Trails</td>
<td>Installation</td>
<td>Event</td>
<td>Social Systems</td>
<td>Social Systems</td>
<td>Trail off site leading to the Great Park along utility corridors</td>
</tr>
<tr>
<td>Bioswale Substation</td>
<td>Installation</td>
<td>Event</td>
<td>Social Systems</td>
<td>Social Systems</td>
<td>A sectional cut along a bioswale to reveal its functions</td>
</tr>
<tr>
<td>Bioswale Markers</td>
<td>Installation</td>
<td>Event</td>
<td>Social Systems</td>
<td>Social Systems</td>
<td>The use of specific marker to delineate bioswales in and outside the park</td>
</tr>
<tr>
<td>Moisture Measuring Posts</td>
<td>Installation</td>
<td>Event</td>
<td>Social Systems</td>
<td>Social Systems</td>
<td>Visually engaging moisture measuring devices throughout the park</td>
</tr>
<tr>
<td>Solar Comfort Stations</td>
<td>Installation</td>
<td>Event</td>
<td>Social Systems</td>
<td>Social Systems</td>
<td>Public buildings outfitted with pv panels in engaging ways</td>
</tr>
<tr>
<td>Stream Restoration</td>
<td>Installation</td>
<td>Event</td>
<td>Social Systems</td>
<td>Social Systems</td>
<td>Daylighting of previously channelized stream</td>
</tr>
<tr>
<td>Agua Chion Stormwater Studies</td>
<td>Event</td>
<td>Event</td>
<td>Social Systems</td>
<td>Social Systems</td>
<td>Addition of vegetation to newly restored stream, study its effects on runoff</td>
</tr>
<tr>
<td>Supersized Energy Meter</td>
<td>Event</td>
<td>Event</td>
<td>Social Systems</td>
<td>Social Systems</td>
<td>Oversized electrical meter measuring amount of energy created by alternative sources</td>
</tr>
<tr>
<td>Alternative Energy Power Plant</td>
<td>Event</td>
<td>Event</td>
<td>Social Systems</td>
<td>Social Systems</td>
<td>Solar disks, pv panels, wind turbines etc. to show energy production</td>
</tr>
<tr>
<td>Energy Measuring Device</td>
<td>Event</td>
<td>Event</td>
<td>Social Systems</td>
<td>Social Systems</td>
<td>Devices to measure the amounts of energy used for specific functions</td>
</tr>
<tr>
<td>Agua Chion Observation Station</td>
<td>Event</td>
<td>Event</td>
<td>Social Systems</td>
<td>Social Systems</td>
<td>Spaces designed to observe and experience the restored creek and habitat</td>
</tr>
<tr>
<td>Bridges of the Elements</td>
<td>Event</td>
<td>Event</td>
<td>Social Systems</td>
<td>Social Systems</td>
<td>A series of bridges designed to reveal aspects of Southern California weather</td>
</tr>
<tr>
<td>Transit Stop Interpretive Features</td>
<td>Event</td>
<td>Event</td>
<td>Social Systems</td>
<td>Social Systems</td>
<td>A series of visually engaging informative elements at transit stops</td>
</tr>
<tr>
<td>Program</td>
<td>Project Type</td>
<td>Scale</td>
<td>Sustainability</td>
<td>Critical Issues</td>
<td></td>
</tr>
<tr>
<td>-------------------------</td>
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<td>--------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Sustainable/Shared Parking Lots</td>
<td>Installation/Outreach/Program</td>
<td>Regional (Macro)</td>
<td>Energy/Water/Soils/Grading/Key</td>
<td>Parking lots using 'Green Streets' principles beyond the parks borders</td>
<td></td>
</tr>
<tr>
<td>Composting Facilities</td>
<td>Education/Outreach/Program</td>
<td>Local (Micro)</td>
<td>Nature/Boundaries/Circulation</td>
<td>Composting facilities located within the community</td>
<td></td>
</tr>
<tr>
<td>People Power Plant</td>
<td>Event</td>
<td>Regional (Macro)</td>
<td>Environment/Climate/Neighborhood Integration</td>
<td>Exercise facilities using stationary bikes and tread mills to supply energy</td>
<td></td>
</tr>
<tr>
<td>Seasonal Celebration Festivals</td>
<td>Event</td>
<td>Local (Micro)</td>
<td>Education/Medicine/Social</td>
<td>Festivals and celebrations coordinated with seasonal changes</td>
<td></td>
</tr>
<tr>
<td>Ecological Monitoring Stations</td>
<td>Event</td>
<td>Local (Micro)</td>
<td>Environment/Climate/Neighborhood Integration</td>
<td>Stations throughout the community used to monitor air and water quality</td>
<td></td>
</tr>
<tr>
<td>Edible Gardens at Schools</td>
<td>Event</td>
<td>Local (Micro)</td>
<td>Education/Medicine/Social</td>
<td>Vegetable gardens at school focusing on environmental stewardship</td>
<td></td>
</tr>
<tr>
<td>Connection with Cleveland National Forest</td>
<td>Event</td>
<td>Local (Micro)</td>
<td>Environment/Climate/Neighborhood Integration</td>
<td>Wildlife habitat and vegetation extended to the national forest</td>
<td></td>
</tr>
<tr>
<td>Fisheries at the Canyon</td>
<td>Event</td>
<td>Local (Micro)</td>
<td>Environment/Climate/Neighborhood Integration</td>
<td>Fish habitat developed in watercourse throughout the canyon</td>
<td></td>
</tr>
<tr>
<td>Migration Makers</td>
<td>Event</td>
<td>Local (Micro)</td>
<td>Environment/Climate/Neighborhood Integration</td>
<td>Areas in the park where migration of animals and insects occur</td>
<td></td>
</tr>
<tr>
<td>Wetland as Habitat</td>
<td>Event</td>
<td>Local (Micro)</td>
<td>Environment/Climate/Neighborhood Integration</td>
<td>Visual strategies to show cleansing properties of wetlands &amp; wildlife</td>
<td></td>
</tr>
<tr>
<td>Wildlife Kiosk</td>
<td>Event</td>
<td>Local (Micro)</td>
<td>Environment/Climate/Neighborhood Integration</td>
<td>Interpretive kiosks designed for identifying wildlife, vegetation &amp; animals</td>
<td></td>
</tr>
<tr>
<td>Wildlife Viewing Pavilion</td>
<td>Event</td>
<td>Local (Micro)</td>
<td>Environment/Climate/Neighborhood Integration</td>
<td>A structure dedicated to the inconspicuous viewing of wildlife</td>
<td></td>
</tr>
<tr>
<td>Hidden Wildlife Viewing Station</td>
<td>Event</td>
<td>Local (Micro)</td>
<td>Environment/Climate/Neighborhood Integration</td>
<td>Camouflaged wildlife viewing pavilions</td>
<td></td>
</tr>
<tr>
<td>Sustainable Habitat Surveillance Site</td>
<td>Event</td>
<td>Local (Micro)</td>
<td>Environment/Climate/Neighborhood Integration</td>
<td>Surveillance cameras focus on habitat and vegetative growth</td>
<td></td>
</tr>
<tr>
<td>Mico Climatic Rooms</td>
<td>Event</td>
<td>Local (Micro)</td>
<td>Environment/Climate/Neighborhood Integration</td>
<td>Varying micro climatic rooms with different habitats</td>
<td></td>
</tr>
<tr>
<td>Plant &amp; People Growth Monitoring Project</td>
<td>Event</td>
<td>Local (Micro)</td>
<td>Environment/Climate/Neighborhood Integration</td>
<td>Photo project to document vegetative growth as well as human changes</td>
<td></td>
</tr>
<tr>
<td>CA Homeowners Gardens</td>
<td>Event</td>
<td>Local (Micro)</td>
<td>Environment/Climate/Neighborhood Integration</td>
<td>Gardens of local plants homeowners can easily grow</td>
<td></td>
</tr>
<tr>
<td>Vegetated Timeline</td>
<td>Event</td>
<td>Local (Micro)</td>
<td>Environment/Climate/Neighborhood Integration</td>
<td>Plots grown over a period of time to show changes in growth patterns</td>
<td></td>
</tr>
<tr>
<td>Soils Fieded Map</td>
<td>Event</td>
<td>Local (Micro)</td>
<td>Environment/Climate/Neighborhood Integration</td>
<td>Markers to delineate the different types of soils and their locations</td>
<td></td>
</tr>
<tr>
<td>Soils Sectional Cut</td>
<td>Event</td>
<td>Local (Micro)</td>
<td>Environment/Climate/Neighborhood Integration</td>
<td>A sectional cut in soils to expose the differing horizons</td>
<td></td>
</tr>
<tr>
<td>Native Plant Birth &amp; Re-Birth Garden</td>
<td>Event</td>
<td>Local (Micro)</td>
<td>Environment/Climate/Neighborhood Integration</td>
<td>Native plant growth allowed to exist unmanaged</td>
<td></td>
</tr>
<tr>
<td>Runaway Run Way Strip Preservation</td>
<td>Event</td>
<td>Local (Micro)</td>
<td>Environment/Climate/Neighborhood Integration</td>
<td>Preserve a strip of land next to runway and let it grow un-altered</td>
<td></td>
</tr>
<tr>
<td>Roaming Nursery</td>
<td>Event</td>
<td>Local (Micro)</td>
<td>Environment/Climate/Neighborhood Integration</td>
<td>Plant carts designed as floats or mobile gardens with plants for sale</td>
<td></td>
</tr>
<tr>
<td>Storm water Habitat Creation</td>
<td>Event</td>
<td>Local (Micro)</td>
<td>Environment/Climate/Neighborhood Integration</td>
<td>Create habitat based on storm water</td>
<td></td>
</tr>
<tr>
<td>Wetland Habitat Phytoremediation Garden</td>
<td>Event</td>
<td>Local (Micro)</td>
<td>Environment/Climate/Neighborhood Integration</td>
<td>Wetland plants used for water cleansing properties</td>
<td></td>
</tr>
<tr>
<td>Regional Trail Markers</td>
<td>Event</td>
<td>Local (Micro)</td>
<td>Environment/Climate/Neighborhood Integration</td>
<td>Distinctive trail markers to make visual connections to larger systems</td>
<td></td>
</tr>
<tr>
<td>Recycled Sculpture</td>
<td>Event</td>
<td>Local (Micro)</td>
<td>Environment/Climate/Neighborhood Integration</td>
<td>Artworks by artists and park visitors using recycled materials</td>
<td></td>
</tr>
<tr>
<td>Youth Engaged in Sustainability</td>
<td>Event</td>
<td>Local (Micro)</td>
<td>Environment/Climate/Neighborhood Integration</td>
<td>Project to get youth involved in sustainable practices</td>
<td></td>
</tr>
<tr>
<td>Light of Southern California</td>
<td>Event</td>
<td>Local (Micro)</td>
<td>Environment/Climate/Neighborhood Integration</td>
<td>A project to bring awareness to the quality of light in Southern Cal</td>
<td></td>
</tr>
<tr>
<td>Native Communities</td>
<td>Event</td>
<td>Local (Micro)</td>
<td>Environment/Climate/Neighborhood Integration</td>
<td>Project exploring Native American communities and their practices</td>
<td></td>
</tr>
<tr>
<td>Cultural Exchange Program</td>
<td>Event</td>
<td>Local (Micro)</td>
<td>Environment/Climate/Neighborhood Integration</td>
<td>Festivals and cultural events, performances and workshops</td>
<td></td>
</tr>
<tr>
<td>Community Kitchen</td>
<td>Event</td>
<td>Local (Micro)</td>
<td>Environment/Climate/Neighborhood Integration</td>
<td>Kitchens designed for cooking demonstrations</td>
<td></td>
</tr>
<tr>
<td>Program</td>
<td>Infrastructure</td>
<td>Natural Systems</td>
<td>Social</td>
<td>Opportunity</td>
<td>Project Type</td>
</tr>
<tr>
<td>---------</td>
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<td>-------------</td>
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</tr>
<tr>
<td></td>
<td>Audio History Driving Tours</td>
<td>Installation</td>
<td>Regional (Macro)</td>
<td>Local (Micro)</td>
<td>Event</td>
</tr>
<tr>
<td></td>
<td>Kiosks and Orange Shuttle Buses</td>
<td>Installation</td>
<td>Regional (Macro)</td>
<td>Local (Micro)</td>
<td>Event</td>
</tr>
</tbody>
</table>

Project Description:

- Audio History Driving Tours: Downloadable historic audio tours used in car or on bike with iPod
- Kiosks and Orange Shuttle Buses: Kiosks throughout the community to provide rides to the park
- Ethnic Community Food Festival: Festival to bring together diverse communities around food
HOW CAN THE MOVEMENT OF WATER THROUGH THE PARK BE REVEALED?

Water systems in the Great Park

Give visual expression to natural treatment systems and to exposed infrastructure.

MAPPING STUDIES - MICRO
In the future GIS studies will be developed at macro and micro scales to reveal information about existing conditions, points of interest and possible areas of study.
How can park visitors view wildlife habitat?

Through a series of camouflage viewing stations, observation towers and walkways.
Population Density and Transportation Systems

**Legend**
- **Water**
- **Population 2000 Census**
  - 0 - 79
  - 80 - 236
  - 237 - 515
  - 516 - 1006
  - 1007 - 2743
- **Public Transit System**
- **Great Park**

**MAPPING STUDIES - MACRO**

**HOW CAN THE GREAT PARK BE MADE MORE ACCESSIBLE IN AREAS UNDER-SERVED BY PUBLIC TRANSPORTATION?**

Artist designed kiosks will be placed in neighborhoods where visitors can get information about events in the park, and request a shuttle bus ride.
By exporting projects throughout the region with a focus on edible schoolyards, composting projects, and wetland projects.
MILL CREEK CANYON EARTHWORKS, Seattle, WA (1982)
Herbert Bayer

This project was commissioned by the King County Arts Council and the Kent Parks Department as a solution to urban runoff problems in a storm water retention basin in suburban Seattle. Bayer’s design includes a high berm to prevent erosion and a series of five geometric earth forms to control runoff into Mill Creek Canyon. The earthen forms include a round mound, an oblong mound, a cone supporting a bridge over the creek, a ring mound and pond (see Figure 1), and a ring mound bisected by the creek. During the dry seasons the forms provide a grassy park for community recreation. The project continues to be maintained and is a popular local park.
As part of the development of the new San José City Hall, the City's Public Art Program commissioned artists Anna Valentina Murch and Douglas Hollis to design artwork for the plaza. The artists' design is a water sculpture inspired by the natural geological and artesian conditions underlying the San José region. Equally important is the intent to create a symbol for the future, one that celebrates innovation and change as an ephemeral experience. The specific design of Waterscape is composed of two dimensional topographic fields of monumental granite slabs. The fields slope from Santa Clara Street toward the new City Hall plaza. Water flowing down the surface of the field laps onto the plaza in subtle ripples, and flows over the vertical stone on the fountain edges, disappearing beneath the plaza, creating walls of water that define the perimeter along Santa Clara Street. The water within the field is programmed to respond to changes in time of day, temperature, season and/or availability of water to create different visual, sonic and atmospheric qualities.
Moving Poems connects poetry to campus through a collaboration commissioned by the Arizona State University Office of Public Art. Regents Professor Alberto Rios and his creative writing students submitted short poems or phrases with themes suggesting movement or transportation. Winning selections were “published” on a new, mobile medium -- campus utility carts. Each work is accompanied by an image of the poet. It’s not uncommon to see poetry such as “Do not let the desert bloom without you,” and “The slower you go, the less you lose,” displayed on the sides of the white carts, which will be refreshed periodically.

MOVING POEMS, Tempe, AZ (2005)
Diana Cripe
The cistern collects roof watershed from the 81 Vine Street building. Water is directed from the roof via downspout then through the extended index finger of an outstretched hand and into the 6x10’ tank “cuff” before eventually making its way down Vine Street to the Cistern Steps. While the sculpture is symbolic, it is also functional. Roof runoff flows from the downspout to the outstretched index finger and divides, some cascading over the thumb into a water garden and series of pools, and some flowing into the cistern to be stored for later use, such as watering the garden. The Beckoning Cistern is a 10-foot high, 6-foot diameter blue corrugated cylinder constructed of galvanized aluminum (the sleeve) with a green metal hand emerging from its top. The entire structure is placed on a tilted concrete slab set in the water garden. The water garden with its three cascading planters is, in turn, set in lush native plantings of ferns, shrubs, and woodland plants. A smaller, companion garden nestles against the building; the sidewalk passes between the two.
In this project, the artists create sculptures that enhance habitats for hummingbirds. The title Isla de Umunnum derives from the Ohlone Indian words for "Island of the hummingbirds"; it is located near Moss Landing at Elkhorn Slough National Estuarine Research Reserve, one of California’s last remaining wetlands. The artists wanted to use art to encourage the survival of native plants and animals. They collaborated with the Elkhorn Slough Foundation and sanctuary park rangers in order to determine how to best realize this goal. Inspiration came during an early visit to the site, where the artists witnessed the mating of two hummingbirds during an elaborate aerial dance. After researching the natural and archeological history of the site, they found that the birds, native only to the Americas, were revered by native peoples, who believed they were part bird and part insect. Fascinated by the scientific and mythological significance of the hummingbird, the artists dedicated their project to its preservation. One of the sculptures in the project is the Mound, conceived as a half-excavated Native American refuse mound with a semicircular pond. The side of the mound facing the pond is sliced open to reveal multiple strata of oyster shells, lava, and coal. From the opposite side, the sculpture disappears into the landscape as a small hill covered with native grasses and California poppies - bright orange flowers that bloom through the spring and summer months.
A science and art project utilizing an 8’ parabolic disc made of aluminum and stainless steel. Park visitors are encouraged to sit on the “x” shaped bench in front of the disc. Wind driven obsidian chimes suspended inside a US Navy fog horn broadcast from the top of a 20’ radio tower in a small wetland bog a hundred yards away. If viewers listen carefully or have a conversation sitting on the bench the parabolic disc captures and re-sculpts the sound.
Paths lead the viewer to multiple ways of seeing this place. A walkway overhanging the edge of the pond makes it possible to move out over the water. Proceeding around the water’s edge a ramp disappears into the water after getting the visitor down to the level of the pond. The line of this ramp extends in a long arc across the pond marked first by wood pilings and then by a concrete-lined trough cut into the water. Adjacent to this arc, on the land the walkway continues around the edge of the pond past a series of structures, including a pavilion, a mound and a curving wood trellis to form the other side of the ellipse. A leaf-shaped space is outlined by these structures affirming and making palpable the connection between the land and water. The covered pavilion with a seating area inside is built up against the curving mound, which rises almost to the height of the pavilion and seems to wrap it into the landscape. Continuing around the edge of the pond a small bridge pavilion allows the viewer to descend to the water once again in an area filled with water lilies. Proceeding further there is an entrance down into a concrete trough where one is able to sit at eye level with the surface of the water; having been kept to the edge, at a distance, the visitor is able to actually enter the pond. One feels the protection of the concrete walls holding back the pressure of the surrounding water. Above the trough, on the other side of the path, is a series of stone terraces, on a hillside filled with prairie grass. The limestone used for this terracing is seen regularly in walls and buildings around the museum as well as in the landscape of the area. This interweaving in the project of elements from the surroundings as well as remembered images and uses that surfaced in conversations about the place. These images have been preserved, added to and altered to be accessible to future generations who use this park. Next to the terraced hill different types of wetland grasses are planted along the edge of the pond. Further on at the far side of the pond, the path steps down to a steel grate walkway that moves over shallow water through tall grasses to a platform where it is possible to ascend to an elevated view over the wetland. Here in this wood and screen pavilion one can sit and observe birds and other wildlife without being noticed.
PRECEDEENTS - SELECTED PROJECTS

Innovative road-surface milling system that adapts existing CNC technology used for grinding highway rumble strips to engrave musically-encoded, acoustically-precise strip patterns in driving lanes. There are three main objectives: to improve highway safety, to enhance driving experiences and to orient drivers to their surroundings.

The latest techno-savvy vehicles promise to keep us safe, entertained and on the go as we zip along our nation’s vast roadway network. With GPS systems, lane-changing sensors, surround-sound AV, and smart dashboards, nature comes televised in a back seat console, automated voices bark safety warnings, and getting lost is practically impossible. These advanced systems also disconnect us from the surroundings through which we move, pulling our senses inward and injecting an unsettling form of domestic comfort into our driving experiences. The automobile’s technologically overloaded interior invariably deprives us of a spatially engaged driving experience, rendering our driving spaces meaningless and, ultimately, our will to cultivate them trivial. Collaborators on the project represent the fields of urban design, industrial design, acoustics, cognitive sciences, musicology and transportation planning. This network of disciplines explores the implications of one scale of inquiry with another to tighten the feedback loop between rumble strip, driving experience and environment.
Cocoa mat was cut in the shape of leaves taken from different plants found in the Cleveland Flats historic industrial area. The railroad that passed through the area spread seed from a wide range of locals, causing an unusual diversity of plants to grow there. These plants were considered invasive weeds by local botanists. The artists stenciled the scientific names of the plants onto the mats. Seeds collected from these plants were planted in Ericson and Ziegler’s Viaduct Gateway Park project, also in Cleveland.
INFRASTRUCTURE III | 1982
This project was a comprehensive study of storm water runoff on the campus of the University of Colorado, Boulder. The project included field investigations, hydrologic modeling, and construction of a storm water retention basin in a specially selected site. The design is based on the principles of geomorphology and aesthetics, and incorporates a series of geometric earthworks to control storm water runoff and create a natural, landscaped area.

MILL CREEK CANYON EARTHWORKS | Seattle, WA | Herbert Bayer | 1982
This project was commissioned by the King County Arts Council and the Kent Parks Department as a solution to urban runoff problems in a storm water retention basin in suburban Seattle. Bayer's design includes a high berm to prevent erosion and a series of five geometric earth forms to control runoff into Mill Creek Canyon. The earth forms include a round mound, an oblong mound, a cone supporting a bridge over the creek, a ring mound and pond (see Figure 1), and a ring mound bisected by the creek. During the dry season, the forms provide a grassy park for community recreation. The project continues to be maintained and is a popular local park.

THE LAGUNA CANYON PROJECT - THE CONTINUOUS DOCUMENT | Laguna Canyon, CA | Jerry Burchfield and Mark Chamberlain | 1980- | jerryburchfield.com
In 1980, Mark Chamberlain and Jerry Burchfield initiated an ongoing, multi-faceted project in Laguna Canyon, to provide documentation of change over time and to create a broader awareness of both regional and environmental issues. Laguna Canyon is the last natural corridor to the Pacific Ocean in Orange County and one of the largest natural open spaces in Southern California. Local residents see it as a greenbelt buffer, while others view it as virgin territory ripe for development. Burchfield and Chamberlain felt it imperative to call into question prevailing conceptions of progress and used photography, video, sculpture, performance, installations, and collaborative events to address their concerns. The first Phase of the project took place in 1980 with the contiguous “daylight” and “nightlight” photographic documentation of both sides of the entire nine-mile length of Laguna Canyon Road from Interstate V to the Pacific Ocean. Since then, a total of fifteen separate Phases have been completed, including redrawing the “daylight” and “nightlight” documentation of Laguna Canyon road in 1990 and 2000. The largest and most dramatic Phase of the project was Phase VIII, The Tell Mural, a 366 foot long, site-specific sculpture comprised of over 100,000 photographs. The Tell became a catalyst for community interaction, environmental activity, and served as the inspiration for a walk of 11,000 concerned citizens on November 11, 1989 to protest the development of a major housing development and toll road planned for the area. As a result of these efforts, the housing development was abandoned and the area was subsequently saved as a wilderness park. Realizing the need to be ever vigilant, Burchfield and Chamberlain have continued the project, protesting the development of the San Joaquin Tollroad, documenting the flora and fauna, and continuing to work in the Laguna Wilderness to address quality of life and environmental issues.
OCEAN LANDMARK PROJECT | continental shelf 50 miles from New York City, NY | Betty Beaumont | 1980
Beaumont created an underwater sculpture reef for fish in her Ocean Landmark Project, an artwork that helps to counter the damaging effects of over fishing the oceans and dumping waste into coastal waters. The artist investigated a variety of reef-building methods used in Japanese fish harvesting that could be incorporated in her sculpture. When bricks are placed on the ocean floor, their open spaces attract particular species of fish according to the size and shape of the brick. As a result of this research, she fabricated 17,000 blocks from 500 tons of recycled coal ash to construct an artificial reef. Each solid block measures 8x8x16 inches. This stabilized fly ash is now part of a thriving 150-foot-long ecosystem colonized by vegetation and fish. Submerged under 70 feet of water and invisible to the public, the reef and the new life it has attracted have been recorded by the artist in underwater photography and acoustic imaging. In order to execute this project, Beaumont collaborated with many people - scuba divers, biologists, chemists, oceanographers, engineers - at Columbia University, the State University of New York at Stony Brook, and Bell Laboratories in New Jersey over a period of two years.

OCEAN LANDMARK PROJECT | continental shelf 50 miles from New York City, NY | Betty Beaumont | 1980

THE GIFT OF WATER | Grossenhain, Germany | Jackie Brookner | 2001
Brookner’s Biosculptures™ are sculpted wetland ecosystems that function ecologically, aesthetically, and metaphorically to filter water as parts of natural water remediation systems for wetlands, rivers, and urban stormwater runoff. Brookner works on site analysis in collaboration with ecologists, bioengineers, hydrologists, and landscape architects to ensure that ecological function is optimized. This biosculpture™ was commissioned by the town of Grossenhain, near Dresden, Germany. Water, as a symbol of renewal, figured prominently in the town plan to build a remarkable new municipal swimming complex where the water is filtered entirely by wetland plants, without the use of chlorine or any other chemicals. It is used by 1500 people a day. The Gift of Water is part of this constructed-wetland filtration system and helps people understand the filtration processes. Two mossy cupped hands reach from the bank into the pond. As water flows into the hands a misting fountain aerates it and moistens the mosses which, in turn, purify the water. The intimacy of the mosses growing over the hands immersed in water exemplifies how all life is interconnected.

REVIVAL FIELD | St. Paul, MN | Mel Chin | 1990
Mel Chin’s first ecological artwork, this project is an attempt to demonstrate a safe, natural means to clean up toxic waste from the soil of the Pig’s Eye landfill in St. Paul. The project’s success depends upon the capacity of a unique group of plants to absorb heavy metals through their vascular system. Chin became involved in the process of using plants to detoxify waste sites after researching the work of Rudolf L. Chaney, Senior Research Scientist at the U.S. Department of Agriculture. For over ten years, Chin has been collecting seeds and determining their potential in the laboratory; none of his work, however, had been tested in the field. Chin contacted the agronomist and inquired whether he would be interested in testing his work on a large scale. After months of negotiations with public officials, the artist, supported by the Walker Art Center, was granted permission to implement his artwork on a 300-acre landfill that has been designated a state superfund priority.

FOOTBRIDGE-TUNNEL | Lancy, Switzerland | Georges Descombes | 1988
Located on the outskirts of Geneva, the Tunnel-Footbridge serves as a hybrid solution for linking an existing renovated park with an adjacent residential area. Both had been separated by a recently widened heavily trafficked road and a small brook running beneath it. By creating a tunnel beneath the road and a footbridge over the brook, Descombes created a pedestrian infrastructure that makes reference to the ecology and topography of the historical landscape. The previously rural area of groves, brooks, marshes and winding lanes has now been transformed into an industrialized market-gardening region. Any variation in topography that had once existed in the landscape has been erased by massive drainage, leveling and sanitation of the land, resulting in water buried in concrete pipes. His intervention maps the preexisting landscape, such as the buried brook, and recalls traces of its formation by identifying and measuring a territory, engaging visitors within a context where pedestrians have not been considered. Light filters into the tunnel through a circular skylight that projects up through the area between two roads. The length of the bridge and the diameter of the tunnel are intentionally oversized to stimulate an awareness of scale that is normally non-existent in most suburban landscapes. The purpose of the oversized elements is also to recall a personal childhood past of hiding and traversing through a hidden tunnel below the ground.

FOOTBRIDGE-TUNNEL | Lancy, Switzerland | Georges Descombes | 1988

FURTHER READING:
- "Revival Field," Mel Chin. (1990)

PRECEDENTS - ARTISTS & DESIGNERS
This project provides a platform to imagine a 21st century space for people to interact with the natural environment on a piece of land laden with history, politics and the possibility to be a model for sustainable land use. It is a critical enquiry into the future land use of this former military base. The project was conceived for the 2004 California Biennial at the Orange County Museum of Art and Orange Lounge. The Great Park Project Field Guide to Surveying Open Space in Urban Areas invites artists, inventors, architects, urban planners, gardeners and citizens to contribute.

This multi-disciplinary art installation was created by students in their senior year in the Humanitas program (sponsored by the Los Angeles Educational Partnership). Working with video artist, Gaulke, students studied and filmed the life along the Los Angeles River and the dramatic collision between humans and nature. The video documents the river flowing through an artificial concrete channel constructed in the 1930's to prevent flooding of new developments nearby. Despite stretches of barren wasteland where the river is reduced to a mere trickle or polluted by garbage and debris, there are oases where plant and animal life tenaciously thrive. The video installation consists of a twelve-monitor “video river” that poetically reveals a section of the river with a bottle drifting in the rapid flow of water, accompanied by natural sounds. A separate monitor, showing the “River Chronicle” traces the students’ explorations along the river’s course and features interviews with local politicians and activists who envision and advocate an alternative future for the river. The L.A. River Project provided students the opportunity to become involved in new issues through an interdisciplinary approach that integrated history, literature, politics, natural science, and art. The program and the art that evolved is a prototype for other educational institutions that seek to stimulate creative and critical thinking.

This project addresses the re-use of an old hydropower station on the Arizona Canal. The Canals of Phoenix are a public utility providing essential water supply and irrigation. The Generator Room was the site of the generator for the power plant. A new exterior Water Room has been created. Some of the water is diverted from the canal into two new aqueducts framing each side of the Water Room. The aqueducts release the water back into the canal on both sides of the Room creating a pair of waterfalls. At the rear of the room a curtain of water falls over the remaining gears and shafts from the old generator. At the sides of the room a concrete and stone wall releases small trickles of water that flow down the wall, run into a pool and drain back into the canal. The path leading into the Water Room takes visitors directly under the waterfalls, then continues across the island, ramping up among the riparian terraces to a new pedestrian bridge that crosses to the north bank. The Water Room is a magical space, lined with desert-stone walls and water; a Generator Room for water sensations, ideas and community energy. The entry is through a 10’ water pipe flanked by pillars topped by a water scraper and an electric insulator. Along Indian School Road a series of entrances to the canal bank are marked by the Eyes on the Canal to announce the water that cannot be seen directly.

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Moving Poems connects poetry to campus through a collaboration commissioned by the Arizona State University Office of Public Art, Regents Professor Alberto Rios and his creative writing students submitted short poems or phrases with themes suggesting movement or transportation. Winning selections were “published” on a new, mobile medium — campus utility carts. Each work is accompanied by an image of the poet. It’s not uncommon to see poetry such as “Do not let the desert bloom without you,” and “The slower you go, the less you lose,” displayed on the sides of the white carts, which will be refreshed periodically.

As part of the development of the new San José City Hall, the City’s Public Art Program commissioned artists Anna Valentina Murch and Doug Hollis to design artwork for the plaza. The artists’ design is a water sculpture inspired by the natural geological and arsienal conditions underlying the San José region. Equally important is the intent to create a symbol for the future, one that celebrates innovation and change as an ephemeral experience. The specific design of Waterscape is composed of two dimensional topographic fields of monumental granite slabs. The fields slope from Santa Clara Street toward the new City Hall plaza. Water flowing down the surface of the field laps onto the plaza in subtle ripples, and flows over the vertical stone on the fountain edges, disappearing beneath the plaza, creating walls of water that define the perimeter along Santa Clara Street. The water within the field is programmed to respond to changes in time of day, temperature, season and/or availability of water to create different visual, sonic and atmospheric qualities.

Waterworks Gardens is an 8-acre public garden that naturally funnels, captures and releases filtered stormwater collected from more than 40 acres of impervious surface at the South Treatment Plant through the use of 11 ponds and enhanced existing wetlands. The plant opened in 1965 and now serves a population of more than 600,000 people in south and east King County. Built by Metro, the agency that handles water treatment for the Seattle region, the project was part of an ongoing expansion of the regional sewage treatment plant. The garden demonstrates a level of in-depth research into the fields of gardens and indigenous plant material, water treatment technology and recycled materials. Five garden “rooms” tell the story of water’s cycle through the chain of human use and disposal. Stormwater flows under a grate below “The Knoll,” a paved overlook dominated by a basalt column colonnade. “The Funnell” consists of a series of terraced leaf-shaped ponds connected by the path, or stem. At the bottom of a hill, stormwater cascades into “The Grotto,” which is shaped as a seed pod. Undulating short-trunk walls covered with a richly patterned mosaic provide a place for repose. “The Passage” provides a calming experience as the path passes by a row of Lombardy poplars and three circular ponds that symbolize the fruit of the plant. In “The Release,” cleansed water flows from the last stormwater treatment pond to the ribbon-like islands and channels of a wetland and then to Springbrook Creek. A path meanders through and connects to a regional trail system. When Jordan joined the project through Metro’s 1-percent-for-art program, she helped to convince the community that “it would be good for people to understand why the plant was there and take responsibility for it.” Although the project started with a small budget, the artist strategically brought part of the storm water treatment design budget into the “art” budget.
Innovative road-surface milling system that adapts existing CNC technology used for grinding highway rumble strips to engrave musically-encoded, acoustically-precise strip patterns in driving lanes. There are three main objectives: to improve highway safety, to enhance driving experiences and to orient drivers to their surroundings.

RUMBLE STRIP TRIP | New York NY | Petia Morosov | 2005

The artist worked with a design team to integrate artwork into the Vashon Transfer/Recycling Station at two locations: the scale house and the recycling area. The latter uses porcelain enamel for the scale house and the second is an aluminum frieze for the recycling area. In the scale house, porcelain enamel on steel panels, patterned with plant, bird and vessel forms was overlaid with newspaper text. This was the process used to create Bird News. This juxtaposition of newsprint over images is a brief and decorative comment on the overlay of humankind on the natural world. Through the artwork, the artists are asking what parts of our world are untouched by human contact, a question that resonates for Vashon Island. The title of the recycling area artwork, Echo Wall, refers to the after-life of plants, animals and refuse. The artist explains, “Whether it is through continued use, re-use, abandonment, or decay - everything possesses an echo.” The artwork features imagery from the Vashon Island environment, including kelp crab, starfish, anemone, black-tailed deer and raccoon. In an effort to represent the community cosmologically, the artists incorporated images from the water, land and sky. The vessels portrayed in the work speak about containment, a core aspect of the Transfer/Recycling Station.

BIRD NEWS & ECHO WALL | Vashon Island, WA | Deborah Mersky | 1999

In this project, the artists create sculptures that enhance habitats for hummingbirds. The title Isla de Umunnum derives from the Ohlone Indian words for “Island of the hummingbirds”; it is located near Moss Landing at Elkhorn Slough National Estuarine Research Reserve, one of California’s last remaining wetlands. The artists wanted to use art to encourage the survival of native plants and animals. They collaborated with the Elkhorn Slough Foundation and sanctuary park rangers in order to determine how to best realize this goal. Inspiration came during an early visit to the site, where the artists witnessed the mating of two hummingbirds during an elaborate aerial dance. After researching the natural and archeological history of the site, they found that the birds, native only to the Americas, were revered by native peoples, who believed they were part bird and part insect. Fascinated by the scientific and mythological significance of the hummingbird, the artists dedicated their project to its preservation. One of the sculptures in the project is the Mound, conceived as a half-excavated Native American refuse mound with a semicircular pond. The side of the mound facing the pond is sliced open to reveal multiple strata of oyster shells, lava, and coal. From the opposite side, the sculpture disappears into the landscape as a small hill covered with native grasses and California poppies - bright orange flowers that bloom through the spring and summer months.

ISLA DE UMUNNUM | Moss Landing, CA | Heather McGill and John Roloff | 1989

PLEASE, PLEASE, PLEASED TO MEET’CHA | Bronx, NY | Nina Katchadourian | 2006

Please, Please, Pleased to Meet’cha consists of sound systems, installed into six trees on the Wave Hill grounds, with human voices vocalizing birdsong. In choosing the human voices, two things became important: the artist wanted to work with people who knew nothing about birds. She also wanted them to have a deep engagement with translation, so she put out a “Call for Participants” to the translators and interpreters at the United Nations. None of the “voices” she worked with had previously heard the particular birds they were vocalizing. Their performances were interpretive, generative acts: spot translations that were performed without prior familiarity with the materials. A birding guide, available at each tree, reproduced the materials that the voices had worked from so that a listener could compare interpretations.

PLEASE, PLEASE, PLEASED TO MEET’CHA | Bronx, NY | Nina Katchadourian | 2006
The cistern collects roof watershed from the 81 Vine Street building. Water is directed from the roof via downspout then through the extended index finger of an outstretched hand and into the 6'x10' tank “cuff” before eventually making its way down Vine Street to the Cistern Steps. Water is then directed into the sidewalk, gardens, and woodland plants. A smaller, companion garden nestles against the building; the sidewalk passes between the two.

**BECKONING CISTERN** | Seattle, WA | Buster Simpson | bustersimpson.net | 2003

In this project Simpson modified the typical downspouts that run along a building exterior. A downspout carries rain-water from the roof through vertical pipes and releases the water into a garden, to the sidewalk, or into a storm-pipe system below the street. In this project Simpson modified the typical downspouts that run along a building exterior. A downspout carries rain-water from the roof through vertical pipes and releases the water into a garden, to the sidewalk, or into a storm-pipe system below the street. At the Pike Place Market in downtown Seattle, Simpson grew ferns in plumbing pipes attached to the side of a building. These “vertical landscapes” functioned as a water-retention system for rain run-off from city rooftops. They also improved the water, which had become increasingly acidic from industrial pollutants, before it entered the storm-sewer system. After rain was trapped in the elbows of the pipe, Simpson sweetened it with limestone to neutralize its acidity. While enhancing water quality, Downspout provided an ideal habitat for plants and a cost-effective means to solve the problems of storm-water overflow. However, one modification of one pipe on one building won’t significantly impact the municipal storm-water discharge, but if Simpson’s rather low-cost idea was implemented for a city-block or a neighborhood, the reduction in water overflow into a storm system may be significant.
The Wind Screen is a piece of infrastructure designed as both sculpture and landscape. It is composed of a system of freestanding concrete slabs and earthen dikes that enables navigation on the Caland Canal in the harbor of Rotterdam's Brittanniehaven. As the perimeter of the plant, The Wind Screen serves the important function of security. It is made up of gates and fences ranging from 10 to 25 feet in height, which control access to the building as well as keep the building free from graffiti. Third, The Wind Screen was designed to soften and landscape this industrial complex situated in a residential area. The problems of a large sewage treatment plant in a residential area are obvious. This design uses lower cost, industrial chain link fence, but at the same time, disguises it through form and planting. The fence, where visible, always takes on the narrative image of water. Otherwise, plants obscure the fence as natural landscaping, islands or vine covered water forms. The idea is that if the observer drives, walks, or lives in front of the sewage treatment plant, he will see green: growing trees, bushes, grasses, flowers, and vines. The project protects and gives meaning to the complex, while serving as a buffer between this invaluable industrial mechanism and the surrounding population.

WAVEWALL IN GREEN | Brooklyn, NY | Ned Smyth | 1995

Wavewall in Green is an art project which functions on three levels. First, it is a sculpture that is a symbol of the relationship between water, life, and the life of our planet. Directly influenced by the function of this site, the artist felt very strongly that the content of this environmental work should relate to the important role that this plant performs: the cleaning and protection of our water and environment. Second, this art piece forms the perimeter of the Coney Island Water Treatment Plant. As the perimeter of the plant, Wavewall in Green serves the important function of security. It is made up of gates and fences ranging from 10 to 25 feet in height, which control access to the building as well as keep the building free from graffiti. Third, Wavewall in Green was designed to soften and landscape this industrial complex situated in a residential area. The problems of a large sewage treatment plant in a residential area are obvious. This design uses lower cost, industrial chain link fence, but at the same time, disguises it through form and planting. The fence, where visible, always takes on the narrative image of water. Otherwise, plants obscure the fence as natural landscaping, islands or vine covered water forms. The idea is that if the observer drives, walks, or lives in front of the sewage treatment plant, he will see green: growing trees, bushes, grasses, flowers, and vines. The project protects and gives meaning to the complex, while serving as a buffer between this invaluable industrial mechanism and the surrounding population.

TIME LANDSCAPE: GREENWICH VILLAGE, NEW YORK | New York, NY | Alan Sonfist | 1978

In this project, Sonfist reclaimed an urban wasteland, the site of a tenement building reduced to rubble and engulfed by garbage and weeds. In its place grows a tangle of unspoiled vegetation, a glimpse of Manhattan before Europeans arrived on the continent. The location is La Guardia Place between Houston and Bleecker Streets. Sonfist's research at the New York Public Library and the New York Botanical Gardens helped him to determine how the site might have appeared over 300 years ago. His findings led him to select indigenous species of oak, sassafras, wild roses, red cedars, grey birches, among others. But Sonfist does not simply attempt to create an idealized ecological model of a forest; instead, he creates a historical, living artwork, a monument to nature's cycles of growth and decay. The work focuses on the process of nature rebuilding itself, which ultimately asserts control over the project's design and appearance.

WETLAND LISTENING POST | Atlanta, GA | Sound Collective (Seth Rogers & Evan Levy) | 1997

A science and art project utilizing an 8' parabolic disc made of aluminum and stainless steel. Park visitors are encouraged to sit on the "x" shaped bench in front of the disc. Wind driven obdian chimes suspended inside a US Navy fog horn broadcast from the top of a 20' radio tower in a small wetland bog a hundred yards away. If viewers listen carefully or have a conversation sitting on the bench the parabolic disc captures and re-sculpts the sound.

WIND SCREEN | Rotterdam, the Netherlands | Maarten Struijs | 1985

The Wind Screen is a piece of infrastructure designed as both sculpture and landscape. It is composed of a system of freestanding concrete slabs and earthen dikes that enables navigation on the Caland Canal in the harbor of Rotterdam's Brittanniehaven. The Caland Canal serves to transport container shipments from the outer sea into the port of Rotterdam. The long and narrow site borders the canal on its western, windward, side. A bridge for rail and automobile traffic stands perpendicular to the site at its midpoint. South of the bridge, the site is a narrow spit of land containing mostly access roads to piers along the shore; north of the bridge, the site forms the edge of a field of oil storage tanks protected from the surrounding waterways by dikes along its perimeter. The high winds on the site exert a lateral force on the ships that can cause them to crash against the vertical supports of the bridge. Working within wind tunnel research calculations which determined an optimum screen height of 81 feet and a permeability of 25%, Struijs configured his Wind Screen as a composition of concrete forms creating three distinct segments. South of the bridge, the wind screen takes the form of 80-foot-high semicircular hills; at the bridge itself, the wind screen changes to slim, pier-like semicircular hills, 6.5 feet in diameter; north of the bridge, the slabs are combined with a windbreaking earth dike, 33-foot square concrete slabs resting on top of a 49 foot high grass embankment. While varying in proportion, spacing and scale the three segments are also offset from each other and overlap. These aesthetic moves reassert the pieces as sculptural elements broken free from technical criteria despite the highly technical function of the infrastructure.

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Located at West 59th Street and the Hudson River, in midtown Manhattan, Flow City is an installation housed within the New York City Department of Sanitation Marine Transfer Station, where trucks deliver garbage for barging to Fresh Kills Landfill in Staten Island. Ukeles layers her refuse strata by material, color, and texture and incorporates moving mechanical parts from sanitation trucks. From the passage tunnel, the visitor approaches “Glass Bridge,” which offers rarely seen views of the disposal process - the transfer of garbage from truck to barge. “Media Flow Wall” is a 24-monitor video bank “floating” in a sculpted wall of glass, connecting the building and its activities to the world beyond. The primary source of imagery magnifies the connections between the flow of the mighty Hudson River and the flow of waste. Views up, down, and beneath the river reconnect visitors with this body of water that has shaped the destiny of New York City. Flow City heightens our consciousness about materials; and this is the first stage in effectively reducing urban waste, one of our most critical environmental problems.

Santa Monica Urban Runoff Reclamation Facility (SMURRF) | Santa Monica, CA | Richard Turner | 2001
Commissioned by City of Santa Monica Cultural Affairs Division, the project is a water reclamation facility designed to educate the public about water use. The city wanted to showcase the process rather than hide it away as most communities do. The artist combined architecture, equipment staging, development of educational program and landscaping in collaboration with CH2M Hill and Adolfo Miralles, Architects. Visitors have a complete view of all of the equipment and processes that are used to purify the urban runoff. The siting of the equipment and the technology used was considered equally with the need to make the process of runoff treatment understandable to visitors. The equipment is arranged in sequential order and oriented towards the viewer so that visitors can follow the technology and process visually. In several locations, the water moving through the system will be “daylighted”, or exposed to the open air to allow visitors to clearly see the water treatment process. The design also conveys other messages to visitors by placing the facility in the larger context of the Santa Monica urban watershed, and informing citizens as to what they can do to decrease or eliminate pollution in urban runoff and from the Santa Monica Bay; and increase or maximize the recharge of rainfall stored in underground deposits or aquifers. Programs like this are a strong reflection of the city’s commitment to sustainability, as well as an effective synthesis of progressive ecology and public education.

FLOW CITY | New York, NY | Merle Laderman Ukeles | 1983
Located at West 59th Street and the Hudson River, in midtown Manhattan, Flow City is an installation housed within the New York City Department of Sanitation Marine Transfer Station, where trucks deliver garbage for barging to Fresh Kills Landfill in Staten Island. Ukeles layers her refuse strata by material, color, and texture and incorporates moving mechanical parts from sanitation trucks. From the passage tunnel, the visitor approaches “Glass Bridge,” which offers rarely seen views of the disposal process - the transfer of garbage from truck to barge. “Media Flow Wall” is a 24-monitor video bank “floating” in a sculpted wall of glass, connecting the building and its activities to the world beyond. The primary source of imagery magnifies the connections between the flow of the mighty Hudson River and the flow of waste. Views up, down, and beneath the river reconnect visitors with this body of water that has shaped the destiny of New York City. Flow City heightens our consciousness about materials; and this is the first stage in effectively reducing urban waste, one of our most critical environmental problems.
In this project, Ukeles focuses on sanitation workers who she feels are stigmatized because we - the public - are generally unwilling to recognize that the individuals who take the garbage don’t make the garbage. In order to address this issue, she covered a sanitation truck with mirrored glass. As the vehicle moved through the streets of Manhattan, the reflection of city residents were beamed back to them. The people responsible for making garbage were cast squarely in the limelight.

CAR PARK | Vancouver, BC | Vancouver Design Nerds | 2005

The use of cars as garden spaces brings together two powerful symbols: car space and garden space. It also raises important questions. What should we do with our urban spaces? What are our land use priorities, and how do they reflect our values? Should we transform more urban space into car infrastructure, or should we infuse it with food production? Yet the primary response to the garden cars will be laughter. Humour is a remarkable tool for carrying people to new levels of consciousness in the blink of an eye.

Coinciding with the City of Vancouver’s Car Free Day, the Car Park attracted a great deal of attention. The designers gutted the car of all of its foams and liners, pulled out the engine and transmission, and removed the glass (to be remanufactured into a lamp). The roof became the engine compartment’s living, the trunk lid turned upside down to elevate the bottom of the trunk compartment, and the hood raised the bed of the passenger compartment. The whole thing was then lined with chicken wire and landscape cloth and filled with soil. A Master Gardener planted the car with kale, chard, a blueberry bush, strawberries, and an array of other ornamentals and edibles.

SHOP CREEK PARK | Aurora, CO | William E. Wenk | 1989

This project sets out to restructure an eroded and unstable river bed. The original plan was to channelize a stream in concrete, but the neighborhood protested, so other options were considered. Wenk Associates proposed a softer, ecologically friendly approach incorporating what have now become more conventional ideas: widening and deepening the channel, vegetating the slopes, and installing check dams that stabilize the streambed. The new plan met engineering criteria, and the neighborhood was happy with the final result. A succession of crescent shaped, soil cement drop structures mark the channel bed, the original meandering course of which has been preserved. These contoured drop structures also slowed the flow of water, creating better habitat, improving water quality, and controlling bank erosion. The residual sludge of the channel itself was used as the raw material for the soil cement, allowing visual integration of the new structures with the natural materials of the channel bed and, at the same time, preventing the growth of undesired vegetation. The ultimate effect is one of a strange visual combination in the prairie landscape: extensive areas of wetlands between sloping “craters” - semi-natural dams - which will create a new, significant wildlife habitat.

WEEDS OR WILDFLOWERS | Cleveland OH | Mel Ziegler and Kate Ericson | 1990

Cocoa mat was cut in the shape of leaves taken from different plants found in the Cleveland Flats historic industrial area. The railroad that passed through the area spread seed from a wide range locals, causing an unusual diversity of plants to grow there. These plants were considered invasive weeds by local botanists. The artists stenciled the scientific names of the plants onto the mats. Seeds collected from these plants were planted in Ericson and Ziegler’s Viaduct Gateway Park project, also in Cleveland.
The following are precedents for places with residency programs for artists; this research is important as we begin to figure out how programs within the proposed Research Center might be structured.

**ARTSPACE | San Antonio, TX | artspace.org**

Artspace serves as an advocate for contemporary art and a catalyst for production; it is a residency program as well as a site of exchange. It does this primarily through its International Artist-in-Residence program which annually invites nine artists to live and work in San Antonio for two months to conceive and create pivotal art projects. For each residency a guest curator invites three artists-one from Texas, one from elsewhere in the United States, and one from abroad-to live and work in the Artspace studios. Artspace provides each artist with a two-month residency, which includes a materials budget, a weekly living stipend, an apartment, and studio/exhibition space, as well as fully equipped wood, metal, and computer facilities, complete with technical and administrative support. The goal is to give artists a space in which to imagine new ways to work. The residency is followed by a two-month exhibition of the project created, which is fully documented and accompanied by a full-color exhibition brochure.

**THE ASPEN INSTITUTE | Aspen, CO | aspeninstitute.org**

Apen’s seminars, programs and leadership initiatives offer a chance for restorative reflection on the meaning of the good life, leadership, and sound public policy based on nonpartisan principles and timeless ideas. The endeavor is particularly relevant today. Having passed through a period in the 1990s when they saw the consequences, in both the business and political arenas, of becoming unhinged from underlying values. Today the biggest threat to nations and to communities, is a lack of tolerance and understanding. The core mission is to foster enlightened leadership and open-minded dialogue. Through seminars, policy programs, conferences and leadership development initiatives, the Institute and its international partners seek to promote nonpartisan inquiry and an appreciation for timeless values.

**HEADLANDS CENTER FOR THE ARTS | Marin Headlands, CA | headlands.org**

Located in the coastal wilderness of the Marin Headlands 15 minutes from San Francisco, Headlands Center for the Arts was conceived through a planning process conducted by the Golden Gate National Recreation Area after the transfer of former military property to the National Park Service. The Park Service engaged a number of nonprofit organizations as “Park Partners,” to assist them in restoring the historic buildings and developing interpretive programs for the public. Headlands was incorporated in 1982 by a founding Board of Directors comprised primarily of local artists. In 1994 they secured a long-term Cooperative Agreement for use of the buildings within the Golden Gate National Recreation Area. In creating Headlands Center for the Arts, the founders sought to reconfigure the role of the artist from a marginalized position to that of a central participant in our society. Since 1987, Headlands has developed this idea into an array of dynamic programs for artists and the public, including residencies, lectures and performances, Open Houses, community-based projects, publications and commissions.

**MONTALVO ARTS CENTER | Saratoga, CA | villamontalvo.org**

Montalvo is a non-profit organization dedicated to inspiring a love for the arts by presenting the best of the literary, performing and visual arts, supporting practicing artists in the major disciplines and providing significant arts experiences for children. Montalvo occupies a Mediterranean-style villa and the surrounding 175 acres, which were left as a gift to the people of California by Senator James Phelan in 1930 for the encouragement of art, music, literature and architecture. Established in 1939, Montalvo Artist Residency is the third oldest artist residency program in the United States and the oldest in the West. Collaboration is not only a cornerstone of the residency programs, but was key to the creation of the recently constructed new facilities themselves. Comprised of ten live/work studios and a commons building, the campus was designed by six distinct artist/architect teams who coordinated to build live/work spaces unique to the specific needs of artists.
The following are precedents for programs such as artist residencies, programs within institutions or community/school initiatives which serve as case studies for programs that might be affiliated with the Park as Living Laboratory.

**PRECEDENTS - PROGRAMS**

**inSite** | San Diego-Tijuana border | 1992 | insite05.org

InSite is a network of contemporary art programs and commissioned projects that map the liminal border zone of San Diego-Tijuana. Established in 1992, InSite is dedicated to the realization of binational collaborative arts partnerships among nonprofit and public institutions in the San Diego-Tijuana region. Operating through a unique collaborative structure that is based on the active participation of cultural and educational institutions in the US and Mexico, InSite is focused on promoting artistic investigation and activation of urban space. The distinctive character of InSite, understood as a cultural practice of intervention in the urban social weave, stems from a commitment to facilitate new works developed through a long-term engagement with the artists. The project revolves around a process of two-year periodic residencies that culminate in the realization of works sited in the public domain throughout the two cities. The flexibility to respond to the shifting interests of artists and institutions and, in turn, to test new structures of collaboration and venues for the presentation of innovative work, has been a fundamental characteristic of this project. The fifth and most recent exhibition, InSite_05, seeks to interweave situations of flux, mobility, and experiences of interconnectedness. InSite_05 will initiate processes intended to encourage novel, informal, and unexpected experiences and alternative modes of citizenship. Given that local sustainability depends as much on the region’s more subtle flows as on its more obvious forms of exchange, InSite_05 will attempt to stimulate urban situations that explore and unravel the social weave of the area.

**Arts/Industry**

Arts/Industry is an ongoing collaboration between art and industry. Conceived and administered by the John Michael Kohler Arts Center of Sheboygan, Wisconsin, the program makes industrial technologies and facilities available to artists through long-term residencies, short-term workshops, tours, and other programming so that they may further their artistic explorations. Major funding is provided by Kohler Co. and the National Endowment for the Arts. The primary component of Arts/Industry is a residency program at Kohler Co., the nation’s leading manufacturer of plumbingware. Artists have the opportunity to spend two to six months creating works of art utilizing the industrial materials and equipment. Participants are exposed to a body of technical knowledge that enables them to explore forms and concepts not possible in their own studios as well as new ways of thinking and working. The Arts/Industry residency program operates year-round to support approximately sixteen artists annually usually four in residence at a time. Participants may work in the Kohler Co. Pottery, Iron and Brass Foundries, and Enamel Shop to develop a wide variety of work in clay, enameled cast iron, and brass including but not limited to murals and reliefs, temporary or permanent site-specific installations, and functional and sculptural forms. Artists-in-residence are provided with studio space in the factory which is accessible to them 24 hours a day, seven days a week. In addition, they receive free materials, use of equipment, technical assistance, photographic services, housing, round-trip transportation within the continental United States from their homes to the site, and weekly honoraria. Hundreds of emerging and established visual artists have benefited from the Arts/Industry program at Kohler Co. since its inception in 1974.

**STUDIO FOR CREATIVE INQUIRY**

STUDIO is a center for experimental and interdisciplinary arts in the College of Fine Arts at Carnegie Mellon. Founded in 1989, the STUDIO connects artistic enterprises to academic disciplines across the Carnegie Mellon campus, to the community of Pittsburgh and beyond. The STUDIO’s mission is to support creation and exploration in the arts, especially interdisciplinary projects that bring together the arts, sciences, technology and the humanities, and impact local and global communities. It achieves this through artists residencies with stipends, commissions and facilities, maintaining a work environment populated by a broad range of practitioners, including resident fellows, Carnegie Mellon faculty and students, and other associates. The STUDIO also facilitates access to human and technical resources at Carnegie Mellon and throughout the Pittsburgh community and develops public venues for presenting innovative work. Within the broad framework of the STUDIO, a locus of activity has emerged which includes work in three intersected areas: biology, ecology and robotics. Artists in the 21st Century operate in a fascinating environment; unlike that of their predecessors. Advances in technology and science have made previously impossible concepts wholly possible. The STUDIO serves as a home to artists whose practices encompass this developing interdisciplinary approach—artists who imagine the future, who question the direction of humanity, who are able to synthesize the constantly changing technology, viewpoints and culture into their artistic vision. Artists who are STUDIO fellows frequently are risk-takers—challenging commonly held beliefs. With the support of the STUDIO, these artists are able to pursue their vision, communicate with targeted audiences and impact the global community. The STUDIO exists in the zone between academe and the community. It provides individual artists access to the extraordinary resources and technology of the university, enables them to operate at the highest level of effectiveness and insures that their work impacts the most important issues of our time.
The Edible Schoolyard is a non-profit cooking and gardening program initiated by chef and author Alice Waters and former school principal Neil Smith. More than an acre of asphalt parking lot had been cleared, a cover crop was planted to enrich the soil and the school’s unused cafeteria kitchen was refurbished to house the kitchen classroom. Garden classes teach the Principles of Ecology, the origins of food, and respect for all living systems. Students work together to shape and plant bed, amend soil, turn compost, and harvest flowers, fruits and vegetables.

THE EDIBLE SCHOOLYARD | Berkeley, CA  | 1997  | edibleschoolyard.org

The goal of the Artist-in-Residence Program at SF Recycling & Disposal, Inc. is to use art to inspire people to recycle more and conserve natural resources. The company provides selected local artists with the opportunity to create art using materials they gather from San Francisco’s refuse. This includes 24 hour access to a well-equipped studio, a monthly stipend, and an exhibit at the end of their residency, but artists seem most excited about having 24 hour access to the materials. The 2,000-square-foot art studio is located at SF Recycling & Disposal, Inc.’s Solid Waste Transfer and Recycling Center. The 44-acre site is where most of San Francisco’s garbage and recyclables are temporarily dumped before going to a landfill or recycling plant. Recyclable items are sorted before being shipped to recycling plants and manufacturing facilities. Throughout a residency, each artist talks to young students and adult tour groups about the experience of turning trash into treasures. At the conclusion of their residency, the company holds a reception for the artists, to show the artist’s work and invites the public. Many pieces of art from the program are exhibited in office building entries and public spaces in San Francisco. Many artists have made a permanent piece for the sculpture garden adjacent to the SF Recycling & Disposal, Inc. Transfer Station and the garden is a key stop for students on recycling tours.

SF RECYCLING & DISPOSAL ARTIST IN RESIDENCE | San Francisco, CA  | 1990  | sfrecycling.com/AIR/index.htm

CLUI is dedicated to the increase and diffusion of information about how the nation’s lands are apportioned, utilized, and perceived.

The Center for Land Use Interpretation is a research organization interested in understanding the nature and extent of human interaction with the earth’s surface. The Center embraces a multidisciplinary approach to fulfilling the stated mission, employing conventional research and information processing methodology as well as nontraditional interpretive tools. The organization was founded in 1994, and since that time it has produced over 30 exhibits on land use themes and regions, for public institutions all over the United States, as well as overseas. Public tours have been conducted in several states, and over ten books have been published by the CLUI. CLUI Archive photographs illustrate journals, popular magazines, and books by other publishers, and have been used in non-CLUI exhibitions, and acquired by art collectors. The CLUI exists to stimulate discussion, thought, and general interest in the contemporary landscape. Neither an environmental group nor an industry affiliated organization, the work of the Center integrates the many approaches to land use - the many perspectives of the landscape - into a single vision that illustrates the common ground in “land use” debates. At the very least, the Center attempts to emphasize the multiplicity of points of view regarding the utilization of terrestrial and geographic resources.

THE CENTER FOR LAND USE INTERPRETATION | Culver City, CA  | 1994  | clui.org
The theme of the expo is nature's wisdom, a discovery that we must alter the relationship between humanity and technology as well as the social relations among people themselves. Japan in particular is acutely aware of this imperative, for the contradictions of modern civilization are especially apparent in Japan. Thus it is that Japan wants to host this grand experiment in eco-compatible living and offers this modest site as a global laboratory. If all of humankind will show their experiments for the future here, we should be able to devise answers to our shared concerns. We want to embark upon wide ranging research here. We want to free technology from the unthinking pursuit of efficiency and economic rationality and from rigid social systemic constraints - to awaken the wisdom embedded in the technology and to enable technology to once again interact sensitively with life and nature. Technology is not inherently eco-destructive, and at its best it exists in a creatively complementary relationship with nature. This effort encompasses everything that humanity needs in the 21st century.

AICHI EXPO | Nagoya Eastern Hills, Japan | 2005 | expo2005.or.jp

The following are precedent events such as conferences, expos, and exhibitions which serve as case studies for events that might take place in the proposed Research Center.


Sustainable design, which balances environmental, social, economic and aesthetic concerns, has the potential to transform everyday life and is already reshaping the fields of architecture and product design. Beyond Green: Toward a Sustainable Art at New York's Museum of Arts and Design brought together 13 artists and artist groups from North America and Europe, all of whom use sustainable design strategies for metaphorical, practical, critical or even playful ends. It has become increasingly commonplace for architecture and design fields to consider environmentally and socially sensitive structures and objects, however, the idea of sustainability is relatively new to the fine art world. While “green” architecture has been widely explored, this is one of the first exhibitions to focus exclusively on sustainability in art and design. With projects ranging from whimsical to utopian, it is clear that each artist carefully considered the environmental, social, and aesthetic impacts of their piece. While “green” architecture has been widely explored, this is one of the first exhibitions to focus exclusively on sustainability in art and design.


Michael Rakowitz’s parasSITE (pictured, Bill S.) provides private and comfortable dwellings for the urban homeless; each parasSITE is cheaply produced using materials such as trash bags and packing tape and easily inflated by attaching to a building’s external exhaust fan.

Allora & Calzadilla's video Under Discussion, follows a resident of the environmentally devastated island of Vieques as he navigates the surrounding waters using a large table that has been recycled into a motorboat.

Allora & Calzadilla's video Under Discussion, follows a resident of the environmentally devastated island of Vieques as he navigates the surrounding waters using a large table that has been recycled into a motorboat.

“Do you know how long this orange has been off the tree?” asks Free Soil’s cheerful cartoon orange logo. If you don’t, Free Soil is happy to help you calculate just how far your fruit has traveled.

Connie & Tom Merriman’s installation “Hays Woods Project”

CMU students try Laurie Palmer’s “Oxygen Bar”

**PARADIGMS ON THE MOVE: THE GROUNDWORKS MONONGAHELA CONFERENCE** | Pittsburgh, PA | 2005 | communityarts.net/readingroom/archivefiles/2005/12/paradigms

The conference and exhibit concept began three years ago when artist Tim Collins arranged commissions for several artist residency projects to take place in the Pittsburgh area. Set on the Pittsburgh campus of Carnegie Mellon University in the Regina Gouger Miller Gallery, the environmental art weekend, October 15-16, 2005, featured a full schedule of artists’ presentations describing community-specific projects. Can artists create or manifest social change? The evidence presented in the exhibit answered that question quite clearly with a resounding yes. These artists have indeed demonstrated through their work that it is possible to inspire and incite changes in social visions. Much of the work represented is grounded in redefining relationships between communities and their respective built environments, including industrial waste, water-pollution, land-reclamation and common-green-space issues.
The symposium aims to create a transdisciplinary space for discussion of the fundamental issues bridging the fields of art and environment, and an opportunity to be inspired by the response of leading international artists to the challenge of sustainability. Presentations by artists will show how contemporary art might engage with the full implications of sustainability beyond visualizing ecological disasters and illustrating environmental campaigns. The innovative practices featured range from finding ways to foster cultural diversity, exploring new environmental notions such as sustainable pleasure, developing alternative concepts of wealth, and finding out new ecological uses of space.
# PRECEDENTS - ARTISTS & DESIGNERS

The following are artists whose work provide precedents for the Great Park. This is an ongoing list and will be regularly added to and updated.

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<td>McClellan</td>
<td>Robert (Legacy Project)</td>
<td>Tlof Photography</td>
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<td>McGee</td>
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<td>Miller</td>
<td>Robert</td>
<td>Alvarado Advanced Water Treatment Plant</td>
<td></td>
<td>San Diego, CA</td>
<td>J.Riddell</td>
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## PRECEDENTS - ARTISTS & DESIGNERS

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
<th>Project Title</th>
<th>Project Description</th>
<th>Project Location</th>
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<td>Rott</td>
<td>John (with Heather McGill)</td>
<td>Isla de Fluorinum (Island of the Hummingbirds)</td>
<td>ecological sculpture that enhances habitats for hummingbirds</td>
<td>Moss Landing, CA</td>
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<td>Smyth</td>
<td>Ned</td>
<td>Wave Wall in Green</td>
<td>fence and landscape design for Coney Island WPCP</td>
<td>Brooklyn, NY</td>
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<td>Rebecca</td>
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<td>Berkeley or oakland?</td>
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<td>Matt</td>
<td>Time Landscape</td>
<td>Greenwich Vill: community planting</td>
<td>New York, NY</td>
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<td>art/science project</td>
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<td>George</td>
<td>Waterfront Nature Walk</td>
<td>waterfront esplanade</td>
<td>Jackson Heights, Queens, NY</td>
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<td>Merle</td>
<td>The Social Mirror</td>
<td>mirrored garbage truck</td>
<td>New York, NY</td>
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<td>Wenk</td>
<td>Bill</td>
<td>Wetland from transfer station</td>
<td>Denver</td>
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<td>Willey</td>
<td>Claude (Legacy Group)</td>
<td>Moisture</td>
<td>Water garden &amp; retention project</td>
<td>Mojave Desert, NW of Hinkley, CA</td>
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<td>Wilson</td>
<td>Fred</td>
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<td>Wood</td>
<td>Luke</td>
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<td>Wolff</td>
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<td>Artpace</td>
<td>artpace.org</td>
<td>San Antonio, TX</td>
<td>1995</td>
<td>Residency program and site of exchange resulting in annual exhibition</td>
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<td>Headlands Center for the Arts</td>
<td>headlands.org</td>
<td>Marin Headlands (north of SF), CA</td>
<td>1985</td>
<td>Residency studios in former army barracks, part of Golden Gate National Recreation Area; relationship between human and natural systems explored through creative investigations</td>
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<td>Montalvo</td>
<td>montalvo.org</td>
<td>Saratoga, CA</td>
<td>1935</td>
<td>Nonprofit organization dedicated to forging connections between art, artists and communities; occupies a villa on 175 acres, donated by Senator James Phelan; residency program on architect-designed campus with 10 live/work studios</td>
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<td>Pond</td>
<td>muckeymuck.org</td>
<td>San Francisco, CA</td>
<td>2001</td>
<td>Educational nonprofit organization dedicated to providing a forum through which experimental artists may share ideas and foster a mutually beneficial relationship with the larger community</td>
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<tr>
<td>The Aspen Institute</td>
<td>aspeninstitute.org</td>
<td>Aspen, CO</td>
<td>1956</td>
<td>A gathering place for leaders from around the globe and across many disciplines to engage in discussion of ideas and issues of our time</td>
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<tr>
<td>The Banff Centre</td>
<td>banffcentre.ca</td>
<td>Banff, Alberta</td>
<td>1933</td>
<td>Arts, culture and educational institution and conference facility; a catalyst for creative thought, lifelong learning, the development and showcasing of new work, and advancement of applied research; thematic residency programs</td>
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<td>The LAB</td>
<td>thelab.org</td>
<td>San Francisco, CA</td>
<td>1984</td>
<td>Interdisciplinary arts organization which supports development and presentation of new visual, performing, media and literary art; interested in experimental art; focus on culture &amp; community of Bay Area</td>
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<td>The Lab Art + Ideas</td>
<td>belmarlab.org</td>
<td>Lakewood, CO</td>
<td>2004</td>
<td>Collaboration formed between developers, City of Lakewood and Denver Art Museum to envision how contemporary art could be integrated as a major feature in the new Belmar District, a mixed-use, residential and commercial urban neighborhood</td>
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<td>The Living City Campus</td>
<td>trca.on.ca/living_city</td>
<td>Toronto, ON</td>
<td></td>
<td>Facilities and programs designed to help the Toronto region become one of the most sustainable in the world; goal is to become one of the largest concentrations of green buildings in North America</td>
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<td>The MacDowell Colony</td>
<td>macdowellcolony.org</td>
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<td></td>
<td>Nonprofit multidisciplinary arts organization for multidisciplinary art; artist-in-residency program supports artists in developing unusual projects, and cultivate collaboration with other artists</td>
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<td>Yerba Buena Center for the Arts</td>
<td>ybca.org</td>
<td>San Francisco, CA</td>
<td>1993</td>
<td>Nonprofit multidisciplinary arts organization for multidisciplinary art; artist-in-residency program supports artists in developing unusual projects, and cultivate collaboration with other artists</td>
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<td>Polyforum Siqueiros</td>
<td>polyforumsiqueiros.com</td>
<td></td>
<td></td>
<td>Polyforum means multiple forum in which several cultural, political and social activities take place. It has a theatre, galleries, offices and the Universal Forum. “Polyforum Siqueiros” is a museum in itself. The purpose is to promote, diffuse and preserve the sculpture and pictorial work of David Alfaro Siqueiros.</td>
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<td>Groups/Organizations/Initiatives</td>
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<td>Project Title</td>
<td>Project Description</td>
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<td>Futurefarmers</td>
<td>futurefarmers.com</td>
<td>The Great Park Project</td>
<td>artists using El Toro site as a research platform</td>
<td>Irvine, CA</td>
<td>website</td>
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<td>Gardenlab</td>
<td>gardenlab.org</td>
<td>Edible Estates</td>
<td>replacing front lawns of suburban homes with edible landscapes</td>
<td>Los Angeles, CA</td>
<td>website</td>
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<td>Invisible-5</td>
<td>invisible5.org</td>
<td>Invisible-5 Audio Project</td>
<td>interstate audio tour off I-5, CA website</td>
<td>website</td>
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<td>Rebar Collective</td>
<td>rebargroup.org</td>
<td>PARK(ing)</td>
<td>transformation of parking space into temporary urban park</td>
<td>San Francisco, CA</td>
<td>website</td>
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<td>Students in LA</td>
<td>L.A. River Project</td>
<td>Fragile Ecologies</td>
<td>video river installation</td>
<td>Portland, OR</td>
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<td>Urban Alchemy</td>
<td>urban_alchemy.tripod.com</td>
<td>Urban Alchemy Gardens</td>
<td>organic backyard gardens for urban residents</td>
<td>website</td>
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<td>Vancouver Design Nerds</td>
<td>designnerds.ca</td>
<td>Car Park</td>
<td>rolling vegetable garden in car</td>
<td>Vancouver, BC</td>
<td>website</td>
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<td>Event/Conference</td>
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<td>Aichi Expo 2005</td>
<td>expo2005.or.jp</td>
<td>Nagoya Eastern Hills, Japan</td>
<td>March 25-Sept. 25, 2005</td>
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<td>Beyond Green: Toward a Sustainable Art</td>
<td>icl-exhibitions.org /Exhibitions/ BeyondGreen/ BeyondGreen.htm</td>
<td>Museum of Arts and Design, New York, NY</td>
<td>NYC February 2 - May 7, 2005</td>
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<td>Sustainability and Contemporary Art International Symposium</td>
<td>translocal.org/sustainability</td>
<td>CEU Budapest</td>
<td>March 30-31, 2006</td>
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</table>
Crossings
Large Water Storage Area
Runoff Water
Water Entrances
IRWD Domestic Plume Sanitary Sewers Storm Sewers
Piped Water In Park
Seeps
Natural Treatment Systems
Irrigation
Natural Treatment Systems
Domestic Water
Water Fountains
Hydrants
Bathrooms
Hose Bibs
Water/ Building
Permeable Paving
Waterfall/Grotto
IRWD Water
Irrigation Pump
Water Outflow

PRECEDE NTS - PROTO TYPES BY MARY MISS THAT RANGE FROM INTERPRETIVE TO EXPERIENTIAL PROJECTS
Water Entry Box Culvert

Tight V Channel - 15’ w top 5’ w bottom, 20’ deep, planted, earthen, usually dry. Between landfill on either side

Pipe from Lennar’s Natural Treatments System

Large area to store water - 100 year flood 5’-40’ deep

Small Pond

Low flow area 5’ w x 2’ deep Trails on flats

Constructed Areas/Crossings connecting trails

Large area to store water - 100 year flood 5'-40' deep

Pipe from Lennar’s Natural Treatments System Lennar NTS Marks - surface runoff street gutters into nts thru pipe into canyon

Small Pond

Pipe from Lennar’s Natural Treatments System

Constructed Crossings

Large storm water pond gives pressure to get water into culvert

Outlet 100 year channel under TOD
Plume Water: Water from extraction wells pumped top of canyon 1 million gallons per day available High salt content

End of plume water-water that has not percolated goes back to pipe taking water to top of canyon

Lake water used for irrigation of fields etc. Irrigate at night from lake during day refill from IRWD pipes. 14” drop in lake level at night

Show entrance of IRWD water

EXTRACTION WELLS: PRE-TREATMENT SITE

IRWD water source

Plume View/Section

Natural Treatment System

Wells holding extraction water

Pump

Irrigation Source Pipes

Irrigation Water Main Pipe

Extraction Well Return Pipe

Overflow Outlet

Pavilion

Waterfall

Small Lake 25’ lower no outlet pump to recirculate

Show different types of water IRWD Domestic Plume Sanitary Storm Drains

Show 4 Source of Water Track water Entry into park Appearance in park Use in park-Irrigation, buildings, pleasure Construction of Water Courses Drainage-Natural Treatments Systems bioswales, permeable paving Reveal artifice of constructed park

Runoff water kept separate from plume water

Succesion of Pond Beds become more porous as you go down canyon-water percs into ground

Seeps

What is this water? Why keep separate?
Show Different types of water
IRWD Domestic Plume Sanitary Storm Drains

Show how much water different plants need
Show Irrigation Points
Show Bioswales and drainage inlets Natural Treatment Systems Fountain Project (Domestic Water)

Pipe between NTS?
Bioswales
Extraction Wells

Large NTS
Wet 3 months of the year
Exit to culvert

Expose pipes in park
Pipes-water supply, sewer, irrigation
Show what's underground
Reveal pipes regularly (concrete boxes)

All buildings/structures
Each building where pipes enter
Bathrooms
Drinking Fountains
Hose Bibs
Irrigation
Storm Runoff
Paved Surfaces

Agriculture Fields-Water source and use

FIELDS, SPORTS, PARKING
**PROCESS - HOW DO WE MAKE IT HAPPEN?**

The Park as Living Laboratory is a vision for the park which will gradually evolve over an extended period of time. At this preliminary masterplan phase, we are beginning to design our **process**. This task will involve four types of work: **research**, **outreach**, **catalysts**, and **prototypes**. Each of these is detailed in the chart below.

<table>
<thead>
<tr>
<th>RESEARCH</th>
<th>OUTREACH</th>
<th>CATALYSTS</th>
<th>PROTOTYPES</th>
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<tbody>
<tr>
<td><strong>1. Precedents</strong></td>
<td><strong>1. Website</strong></td>
<td><strong>1. Institutional Partnerships</strong></td>
<td><strong>1. Prototype Projects</strong></td>
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<tr>
<td>Research case study projects, places, programs and events. This includes contacting artists for images and project descriptions. Research will be documented and organized on an ongoing basis.</td>
<td>Initially, a location on Mary Miss’ website will describe the Park as Living Laboratory project in detail. Contact information of interested individuals and their input will be solicited via email. In the future a dedicated website will be created and linked to Great Park website.</td>
<td>Establish partnerships with college and university professors who may be interested in supporting the Park as Living Laboratory idea through their teaching curriculum or academic research.</td>
<td>Identify possible projects by artists, designers, individuals, or organizations that can help launch and support the Park as Living Laboratory idea (e.g. The Legacy Group’s Great Picture or research at the Center for Land Use Interpretation).</td>
</tr>
<tr>
<td><strong>2. Site Data</strong></td>
<td><strong>2. Symposia</strong></td>
<td><strong>2. Organizations and Businesses</strong></td>
<td><strong>1. Mary Miss Projects</strong></td>
</tr>
<tr>
<td>Collect and document various findings about the site and its surroundings: historical, demographic, cultural, and ecological etc. as a resource for future use.</td>
<td>Develop ideas about how the proposed Research Center may be structured and funded. Organize a series of symposia to initiate dialogue about art, design, sustainability and interdisciplinary collaborations. Obtain feedback about the Park as Living Laboratory concept.</td>
<td>Establish connections with organizations and businesses who may be interested in supporting the Park as Living Laboratory idea through community programs, projects, or business ventures.</td>
<td>Mary Miss will develop a series of projects in the Great Park to be incorporated into the masterplan and implemented as part of Phase I construction. They are intended to serve as prototype projects which demonstrate how collaborations between artists and scientists (e.g. ecologist or hydrologist on GP team) will work. As permanent installations in the park, these projects will serve as precedents for future work by other artists.</td>
</tr>
<tr>
<td>Create a series of maps using GIS. These will show various combinations of data about the park and its surrounding region. The purpose is to expand our understanding of the site so that opportunities for intervention can be revealed. These maps will eventually become part of an information base for artists’ use.</td>
<td>As the project develops, press releases and publications about the Park as Living Laboratory program should occur regularly. Graphic material for this purpose will be prepared and updated on an ongoing basis.</td>
<td>Identify cultural groups, their organization and leaders to serve as a local resource for potential collaborative projects between artists and various cultural communities within Orange County.</td>
<td><strong>3.</strong></td>
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<tr>
<td><strong>4. Public Exhibition</strong></td>
<td><strong>4. Public Exhibition</strong></td>
<td><strong>4. Individual Expertise</strong></td>
<td><strong>4.</strong></td>
</tr>
<tr>
<td>Display work in progress in a temporary on-site studio. Explore different possibilities for engaging people with the future park and ideas about sustainability. Examples: large-scale 3D models, video, exhibition of precedents of artists’ and designers’ work as well as current student work, monthly forums, lectures, presentations etc.</td>
<td>Display work in progress in a temporary on-site studio. Explore different possibilities for engaging people with the future park and ideas about sustainability. Examples: large-scale 3D models, video, exhibition of precedents of artists’ and designers’ work as well as current student work, monthly forums, lectures, presentations etc.</td>
<td>Identify individuals with specific areas of expertise or knowledge who may be interested in supporting or contributing to the Park as Living Laboratory in some way.</td>
<td><strong>4.</strong></td>
</tr>
<tr>
<td><strong>5. Compiling Resources</strong></td>
<td><strong>5. Compiling Resources</strong></td>
<td><strong>5. Compiling Resources</strong></td>
<td><strong>5.</strong></td>
</tr>
<tr>
<td>Contact individuals, institutions, and groups who may be interested in the Park as Living Laboratory project. Compile a resource list of people that can be contacted for various purposes (e.g. symposium participant, researcher, professor, people with knowledge about site, local artists etc.) as the project develops.</td>
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<td><strong>5.</strong></td>
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<tr>
<td><strong>6. Develop Artist Database</strong></td>
<td><strong>6. Develop Artist Database</strong></td>
<td><strong>6. Develop Artist Database</strong></td>
<td><strong>6.</strong></td>
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<tr>
<td>Create a database of artists/designers interested in participating in the Living Laboratory Programs.</td>
<td></td>
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<td><strong>6.</strong></td>
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</tbody>
</table>
RESEARCH CENTER

WHO will be using the center?
Artists/designers working in collaboration with scientists, social scientists and others.
Academics, students and professionals participating in symposiums, lectures or presentations.
School and community groups conducting educational programs.
General public visiting exhibitions on display at the center.

WHAT is the purpose of the center?
To serve as an engine to generate collaborative experimental projects in the park as it evolves over time.
To be a growing repository of documentation about the Great Park and its development.
To provide resources for artists and others to fuel their research.
To provide studio and work spaces for researchers who will participate in the Center’s program.

WHERE will the center be located?
The Control Tower located within the Great Park.

WHY a center?
To promote the overall vision of the Great Park where environmental and social sustainability are given a notable form of expression
To make the concept of “Park as Living Laboratory” concrete as an ongoing endeavor.
To create an institutional activity node directly affiliated with the park.

HOW will the center be implemented?
1. Make local contacts with arts groups, organizations, artists, academics and others
2. Set up temporary on-site studio
3. Organize a series of symposia to initiate dialogue
4. Investigate institutions with similar mandates
5. Initiate catalyst projects involving artists and designers
6. Find collaborators and appropriate people to run the center
7. Identify long term funding sources
8. Develop organizational structure i.e. relationship of center to Great Park, how projects will be incorporated into the park, how a residency program might work etc.
<table>
<thead>
<tr>
<th>YEAR ONE</th>
<th>YEAR TWO</th>
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<tbody>
<tr>
<td><strong>september 2006</strong></td>
<td><strong>september 2007</strong></td>
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<tr>
<td>Framework definition, tasks outlined</td>
<td>Exhibition of large regional 3D model &amp; MM/GP team prototypes</td>
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<tr>
<td>Cal Poly students Park as Living Lab architecture studio begins</td>
<td>Park as Living Lab projects with professors &amp; students continue</td>
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<tr>
<td><strong>october</strong></td>
<td><strong>october</strong></td>
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<tr>
<td>Continue research &amp; outreach</td>
<td>Research Center executive committee established</td>
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<td><strong>november</strong></td>
<td><strong>november</strong></td>
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<tr>
<td>Initiate catalyst projects (e.g. documentation of pre-construction site) with invited artists and designers</td>
<td>Continue research, &amp; outreach</td>
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<tr>
<td><strong>december</strong></td>
<td><strong>december</strong></td>
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<tr>
<td>Add Park as Living Lab project to MM website</td>
<td>SYMPOSIUM #3 - setting up &amp; running the Research Center</td>
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<td><strong>january 2007</strong></td>
<td><strong>january 2008</strong></td>
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<tr>
<td>SYMPOSIUM #1 - structure of Research Center, relationship to park. Exhibition of student work.</td>
<td>Research Center building acquired &amp; setup begins</td>
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<td><strong>february</strong></td>
<td><strong>february</strong></td>
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<tr>
<td>Ongoing Design of MM/GP team prototype projects as part of GP Phasing Plan</td>
<td>Construction documents for Phase One MM/GP team prototypes</td>
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<td><strong>march</strong></td>
<td><strong>march</strong></td>
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<tr>
<td>Building of large regional 3D model in studio</td>
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RESEARCH CENTER - LOCATION IN PARK

PROPOSED PRODUCTION FIELDS

- Agrarian Land [44.1 acres]
- Lennar Adjustment [5.7 acres]
- Park Adjustment [3.7 acres]
- Park As Living Laboratory
- Natural Treatment System
- Agricultural Uses
- Park Production Nursery
- Preserved Hangers
- Orchards
- Maintenance Facility
- Pocket Park
- Natural Treatment System
- Organic Food
- Seeps
- Rockery
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