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DISCLAIMER

A Final Report to U.S. Department of Energy Museum Science Education Program

From the Exploratorium on the Lagoon Restoration Project

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Project Description

The Exploratorium requested funding from the U.S. Department of Energy, Museum Science Education Program, to support Phase I of the Lagoon Restoration Project. The project is a multiyear effort focusing on energy flow in the Palace of Fine Arts lagoon just outside the Exploratorium. Phase I resulted in the creation of a living sculptural fountain inside the museum, composed of an articulated wall for aeration and clear-walled filtration tanks, that addresses the process and importance of energy flow to a healthy ecosystem.. The Exploratorium, a hands-on science museum, selected this project as one of the museum's continuing efforts to present engaging exhibits that allow museum visitors of all ages to explore environmental phenomena.

Phase I (August 1993 to December 1994) of this project, directed by Charles Carlson, Director of the Exploratorium's Life Sciences Department, was a pilot study to determine the feasibility of improving biological energy flow through the small freshwater lagoon, using the expertise and resources of an environmental artist in collaboration with museum biologists and arts department staff. The primary outcome of Phase I is an experimental fountain exhibit inside the museum designed by public artist Laurie Lundquist with Exploratorium staff. This fountain, with signage, functions both as a model for natural aeration and filtration systems and as a focal point for museum visitors to learn about how biological processes cycle energy through aquatic systems. Lundquist designed her piece for the 629,000 annual museum visitors of all ages to gain a deeper understanding of the environment, and wetlands in particular.

The specific objectives of Phase I were to:

1. Continue research begun in 1988 by Exploratorium volunteers

2. Study healthy freshwater ponds in the area

3. Fabricate an experimental aeration and filtration fountain that models a healthy wetland system

4. Familiarize the community in the Marina District with the project

5. Make plans for succeeding phases

Progress

All tasks planned for Phase I have been successfully completed by Laurie Lundquist and the museum staff.

- Volunteers continued biweekly testing of the lagoon water, and a chemist who is a volunteer on the project has outlined additional tests.

- The artist completed the working prototype exhibit that is installed on the museum floor. She also worked with the museum graphics and editorial staff to refine attractive and effective signage for the exhibit. The artist and staff plan to expand the original graphics concept to include the results of water tests performed by volunteers.

- The artist and staff learned about keeping the filtration plants healthy in the indoor environment. As a result of this study, they have planned a misting system to increase the humidity around the plants.

- As part of the study of the lagoon's health, volunteers continued a biweekly bird census from March through September 1994. The Palace of Fine Arts lagoon is located on the Pacific Flyway, and therefore hosts a large variety of birds during the year. The goal of the census was to find out whether the poor water quality of the lagoon is affecting the birds. The census was set up under the guidance of the bird expert Brett Woods, a former Alcatraz Park Ranger, and conducted by eleven volunteers, a cross-section of San Francisco residents. Lauren Nakagawa, an Exploratorium volunteer coordinator and aquatic biologist, organized the work of the volunteers. Most of the lagoon inhabitants are pigeons and ducks, however, others can be seen regularly, including night herons, red-tailed hawks, egrets, and cormorants. A far greater variety of birds pass through briefly on their migration routes.

The Lagoon Project has been very successful in creating interest in the lagoon ecosystem and Laurie Lundquist's installation among Exploratorium visitors, volunteers, staff, and neighbors.

Additional Work

Laurie Lundquist also published an article about her project in *Leonardo*, the magazine of art and technology published by MIT Press (article attached). The Exploratorium is also planning to post a page about the project on World Wide Web, a graphical interface on the Internet.

Future Plans

Plans for Phases II and III of the Lagoon Restoration Project—in which the exhibit is made permanent and remediation of the lagoon is begun—are currently on hold as the Exploratorium weighs its options for renovating its current home or moving to another site by 1999.

During the summer of 1994 there was considerable discussion in San Francisco newspapers about the poor health of the lagoon, which prompted the city Parks and Recreation Department to undertake limited dredging. However, a more permanent solution to the lagoon's ecological problems would require an ambitious redesign of the lagoon. Laurie Lundquist, Exploratorium staff, and volunteers are continuing work on a scientific study of the lagoon, which will inform future planning for the lagoon.

Project Funding

In addition to the U.S. Department of Energy grant of $22,835, the Lagoon Restoration Project received funding from the AT&T Foundation ($35,000), Dean Witter Foundation $10,000), and LEF Foundation ($4,000). The project has also been partially supported by the San Francisco Grants for the Arts of the Hotel Tax Fund and California Arts Council Organizational Support.

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DOE lagoon report attachments

narrative report

4 pages of forms by Charlie & Martha

color xeroxes