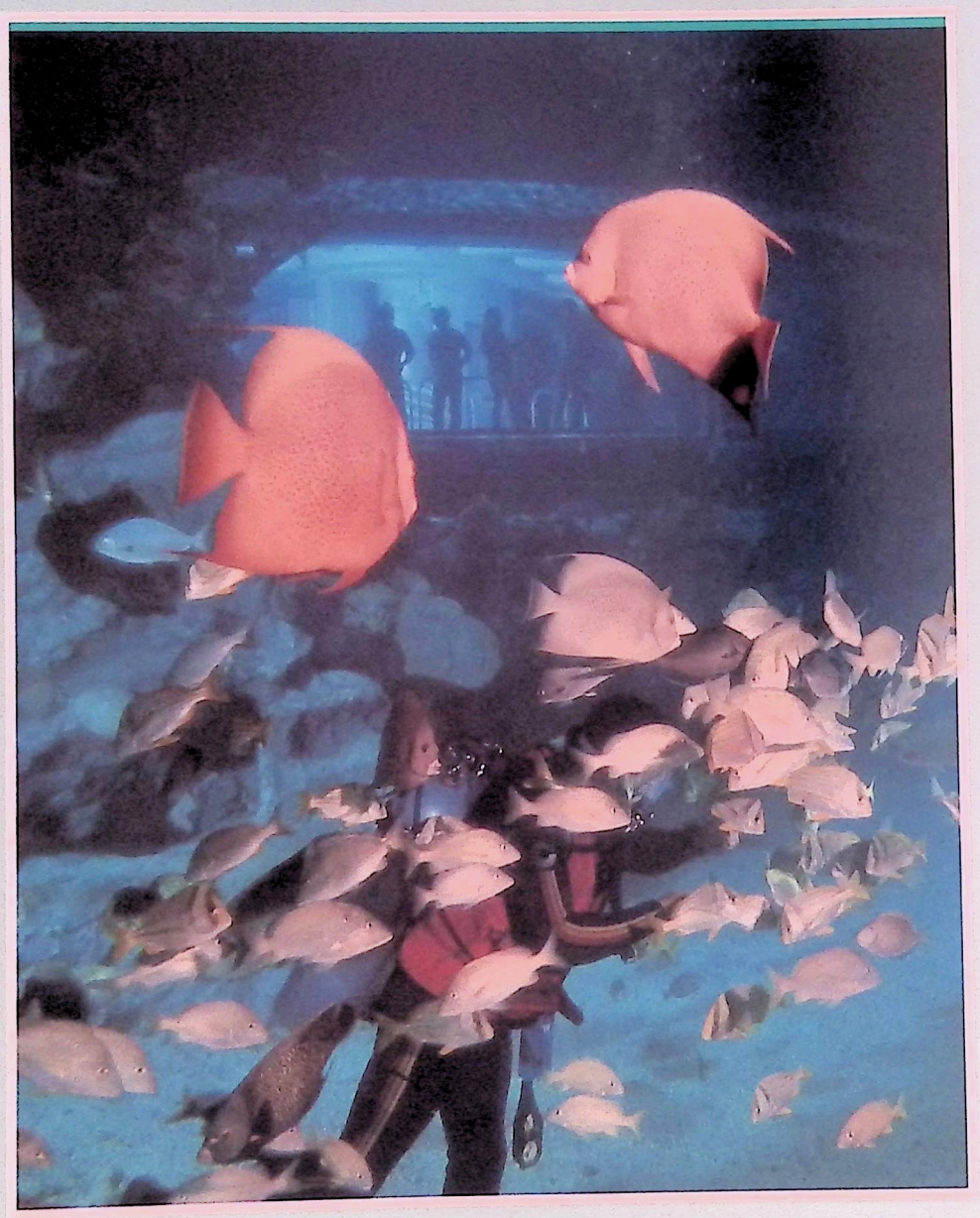
The Living Seas



presented by
United Technologies

Future World • EPCOT Center
WALT DISNEY WORLD

WALT DISNEY PRODUCTIONS

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(818) 840-1000 • CABLE ADDRESS: DISNEY

January 15, 1986

To all WED and MAPO Employees:

WED's business is the imagination, taking what is elusive and cerebral, and making it entertaining and accessible. Our introduction to WED involved much more than a review of current projects in development; we learned about the unique creative process and the individuals who practice it as we became familiar with the myriad projects WED was generating for Disney Outdoor Entertainment.

The Living Seas was the largest project in production at WED when we came to this company in the fall of 1984. At that time, the pavilion was in the early stages of construction; over the next year and a half we would spend many hours both at WED and at EPCOT Center learning more and more about this vast project.

Today we are celebrating the opening of The Living Seas, a project that, for many of you, represents years of hard work and dedication. You've provided the opportunity for millions of guests to journey through the depths of the ocean in the 5.7 million-gallon coral reef environment; to view rare sea creatures; and to become acquainted with the mysteries of this realm that covers nearly three-quarters of our planet.

The Living Seas is a testimony to WED's creative abilities and managerial skills, not only because of the high quality of the shows, but for the fact that the pavilion has opened on time, within its budget and with the full support and approval of the participant, United Technologies.

The wondrous ocean is that much more accessible to us all, thanks to your labors.

Michael D. Eisner
Chairman and
Chief Executive Officer

Frank G. Wells
President and
Chief Operating Officer

UNITED TECHNOLOGIES

Harry J. Gray
Chairman and
Chief Executive Officer

Dear WED Employees:

Since childhood, I have been a true fan of the Walt Disney organization, which has created so much magic for so many people. I've also been close friends with Disney management over the years, spent many happy hours at Disneyland and Disney World with my family, and I was privileged to be at the opening of Epcot Center, which presents the future as one of hope and opportunity to peoples around the world.

When United Technologies Board of Directors approved our participation in The Living Seas Pavilion, I was personally delighted. But I was even more pleased for our company because the new association made perfect business sense. We are a company on the cutting edge of technology, spending more than one billion dollars each year to find and develop products for the future. The Living Seas, with its extensive research facilities, as well as its great entertainment value, also is dedicated to finding ways to explore and develop the world's newest frontier — the oceans. The fit is a good one, for both parties.

Many UTC employees have worked closely with the WED organization to make The Living Seas the "jewel" of Epcot. I have been personally involved, including many visits to the site during construction, to WED itself to watch the superb creative process at work, and even to the Florida Keys to participate in the collection of fish that inhabit The Living Seas Pavilion.

I think the result of all these labors is simply magnificent. All of my expectations have been met, and I know The Living Seas will be enjoyed by millions of people in the years ahead, including shareholders, employees, and retirees.

There's nothing like it in the world, thanks to the creative genius and hard work of so many Disney people. United Technologies is proud to sponsor The Living Seas, and we thank everyone who made it possible.

Sincerely,

Harry J. Gray

United Technologies Corporation, United Technologies Building, Hartford, Connecticut 06101

The Living Seas

Covering three quarters of the world, the seas are a dominant feature of our planet, unique in our solar system. They are also a mystery, with an average depth greater than two miles, sheltering enormous gorges four times deeper than the Grand Canyon. Within this new frontier are life forms we are just beginning to explore.

The Living Seas is dedicated to the exploration and understanding of this vast realm. Among the dramatic surprises awaiting its visitors is a self-contained ocean environment, the largest of its kind in the world, containing over 200 varieties of coral reef sea-life—from infinitesimal zooplankton to large sharks.

The Coral Reef

Twenty-four feet deep and 200 feet in diameter, the man-made salt water environment has a life support system which recirculates and filters all 5.7 million gallons within 3 hours to maintain a naturalistic eco-system for the sealife of the coral reef.

Visions Of The Past

Rockwork at the entrance recreates the organic forms of a natural coastline, with waves cascading into tidepools. A curving wall with a 125-foot-long, stylized ocean mural draws us inside, where we pass through a showcase of man's historical fascination with undersea exploration.

Reproductions of Leonardo da Vinci's sketches of underwater breathing devices and submersibles, John Lethbridge's diving barrel and Frederic de Drieberg's 1809 breathing device are a few of the curiosities displayed here. The dive suit from the classic Disney film, "Twenty Thousand Leagues Under the Sea," and the actual 11-foot long Nautilus model are also showcased.

United Technologies

A formal welcome is extended by United Technologies, the pavilion's participant, in a 2 1/2-minute special effects multi-media presentation introducing the pioneers of modern ocean exploration. A high-technology company with worldwide headquarters in Hartford, Connecticut, United Technologies employs some 194,000 people. Among some of their best-known products are Pratt & Whitney jet engines, Carrier air conditioners, Sikorsky helicopters, and Otis elevators and escalators. Examples of United Technologies' interest in ocean exploration and the highly specialized equipment supporting these ventures are seen throughout The Living Seas.

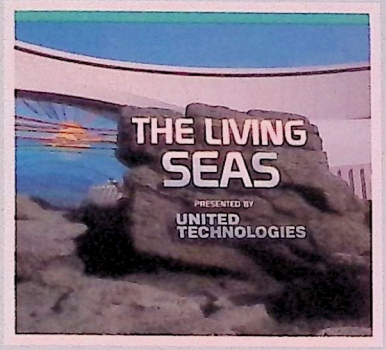
"The Seas"

The ocean's mysterious depths and its effect on our lives are the subjects of a 7-minute show which combines 35mm live-action film and computer animation to focus on the ocean's inextricable link to our survival.

Descent By Hydrolator To Seabase Alpha

After the show, theater doors open to reveal elevator-like capsules called "Hydrolators," which take us on a simulated plunge to the ocean floor. We arrive at Seabase Alpha, a prototype "21st century" undersea research and visitor center.

Boarding two-passenger "seacabs," we embark upon a 3-minute voyage that takes us through an underwater world, populated by sea creatures, divers and robotic submersibles darting among the coral, rockwork, and plantlife of a Caribbean coral reef environment. As our vehicles move through tunnels with acrylic viewports 25 feet below the water's surface, we look upon schools of tropical fish, sharks and other real ocean inhabitants



within their naturalistic eco-system. Some 200 varieties of sealife swim around us, including sharks and rays, sea bass, puffers, barracuda, butterflyfish and angelfish.

Within this environment, the diver crew of Seabase Alpha is testing new diving systems. The crew also conducts experiments in dolphin communication and monitors the chemistry and biology of the ocean environment.

Seabase Alpha

The Visitor Center of Seabase Alpha showcases current and future ocean technology in demonstrations, exhibits and interactive shows. These exhibits are housed within six modules, each dedicated to a scientific topic crucial to our exploration and understanding of the seas.

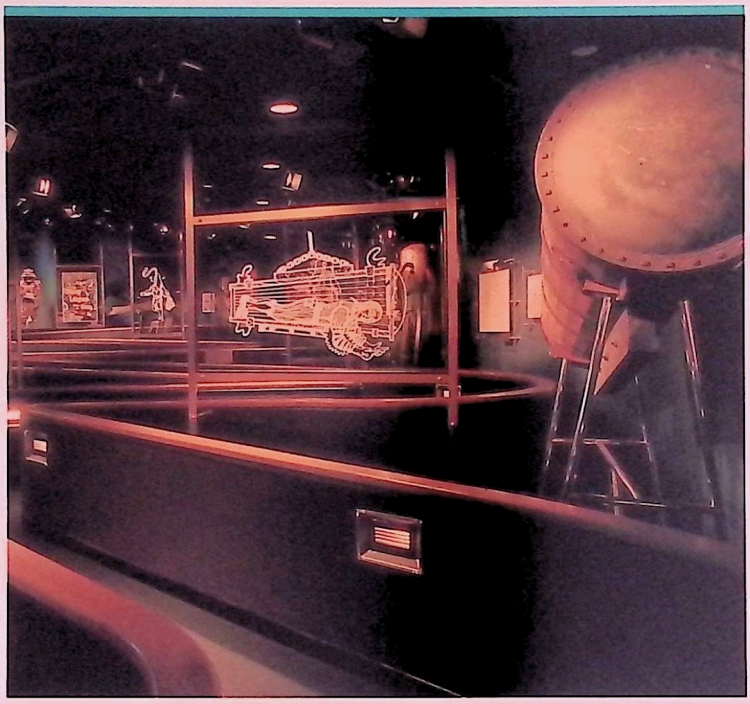
Seabase Concourse

A concourse adjacent to the six Seabase modules contains three displays:

The diver lock-out chamber: The seabase crew use this floor-to-ceiling acrylic tube to enter and exit the ocean environment. Divers enter the chamber, ascend, and disappear through the ceiling of the concourse.

Wave machine: This 24-foot long glass tank provides a dramatic visualization of the dynamics of wave motion. A paddle generates a series of waves which travel down the length of the tank, to be be viewed in cross-section. The tank contains a sand bottom which is affected by wave action in the same way as ocean beaches.

Deep Rover: A full-size mock-up of the latest one-man submersible vehicle, in a "readying" mode to enter the coral reef, is suspended from the mezzanine of the concourse. This submersible has the cabability of descending more than 3,000 feet.



A display focusing on man's historical fascination with undersea exploration sets the stage for guests entering The Living Seas.

Observation Deck

The sealife and activities of the coral reef environment may be viewed from the second-story Observation Deck, where huge acrylic windows provide a view into "limitless" ocean. Five video monitors track the movements of mini-rover submersibles in the sea environment, while a JIM suit performs maintenance functions within viewing range. Divers communicate their observations to guests via a two-way underwater microphone system, encouraging questions and guest interaction.

Module 1A—Ocean Ecosystems

Devoted to the living creatures of the sea, Module 1A showcases various forms of adaptation including camouflage, symbiosis, and bioluminescence. Five aquarium tanks display living examples of the ocean's "web of life," from tiny zooplankton to schooling fish. The 6,000-gallon predator tank contains species such as Bermuda moray eels, barracuda, and bonnethead sharks. Other displays in this area include:

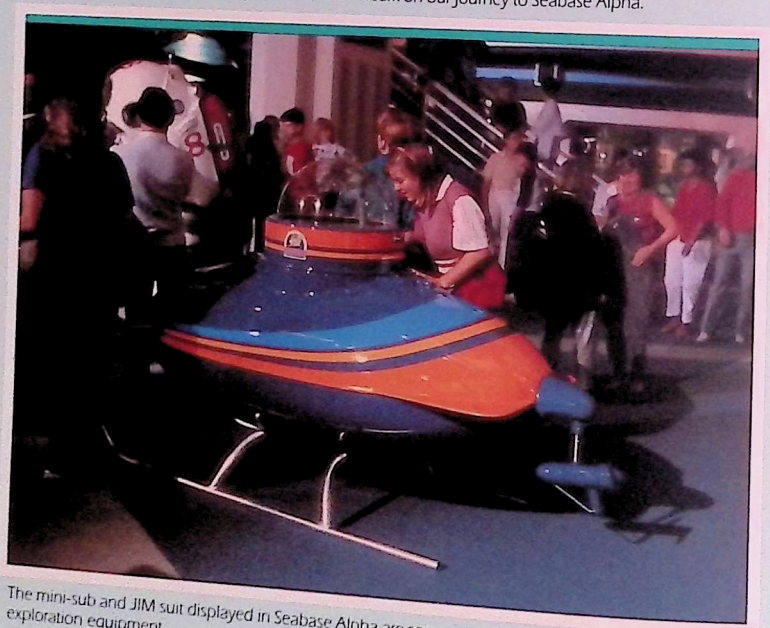
a **Pacific Coast Kelp Forest**, eight feet in diameter, providing a close-up look at the delicate ecological balance of kelp, fish and invertebrates that live among the kelp beds;

a **Pacific Lagoon Tide Pool**, teeming with creatures from the shallow coral reefs of the South Pacific. Here you may actually touch a sea cucumber or exotic starfish;

Seabase Challenge, a series of interactive video monitors, encouraging guests to test their knowledge of the ocean. Guests respond to a short multiple-choice quiz on the monitor by selecting their answer on a push-button key pad;

and **Sea Watch**, an on-going video presentation, consisting of two-to-three minute segments on the sea otter, the

In elevator-like capsules called Hydrolators, we embark on our journey to Seabase Alpha.



The mini-sub and JIM suit displayed in Seabase Alpha are some of the latest examples of ocean exploration equipment.

discovery of the USS Monitor, artificial gills and deep sea exploration.

Module 2A—Ocean Resources

The ocean's vast potential as a storehouse of food, energy and other valuable resources is explored in four displays. **Seabase Challenge** has eight information monitors in this area. **Sea Watch** video stories focus on space oceanography, ocean storms and hurricanes, strange forms of ocean life, and submersible robotics.

Nature's Buried Treasure, an ocean minerals display, contains examples of manganese nodules and other minerals obtained from the sea.

A working **mariculture laboratory** contains species such as lobster and shrimp in a controlled environment.

Modules 1B And 2B—Marine Mammals Underwater Viewing And Research Center

This two-story module is dedicated to the study of cetaceans—such as dolphins—and pennipeds like the sea lion. A large holding tank for these animals has viewing windows and a "step-in" port where guests can see the mammals at close range and observe the ongoing experiments conducted here by the Seabase crew. Research conducted in this module includes the dynamics of dolphin propulsion, echolocation, bio-acoustics, mating, and man-mammal communications. Video monitors detail the nature and findings of the research efforts.

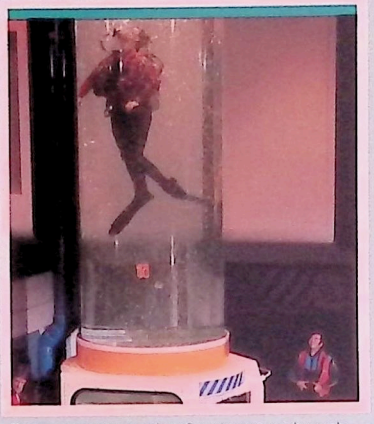
From the second-floor observation module, 50 feet in diameter, we observe the Seabase Alpha crew training cetaceans in a large open pool.

Module 1C—Earth Systems

The oceans are an essential part of the life support system for our planet. Atlas, the cartoon host of a film on the geological and meteorological aspects of the ocean, explains the basics of plate tectonics, tidal and weather patterns, waves and currents in **An Animated Atlas of the World**.

Seabase Challenge has four information stations here. **Oceanography from Space**, a satellite imagery display based on the new science of studying the ocean from outer space, showcases

A Pacific coast kelp forest and lagoon tide pool are two of the many aquarium displays in Seabase Alpha's ocean ecosystems module.



Divers enter the coral reef environment through this lock-out chamber in the Seabase Concourse.

Suspended from the ceiling of the Seabase Concourse is this Deep Rover, a one-man submersible.

computer-enhanced satellite and Space Shuttle photos of the ocean. **Anatomy of the Sea**, an acrylic cube featuring an illuminated display of sea water stratification, depicts typical ocean temperature gradients and explains how they determine the location of marine life. **Clues to an Age-Old Mystery** features actual core samples from the ocean floor, with a map explaining significant strata findings in the samples. **What on Earth?**, an interactive map display, encourages guests to select important geologic features such as the Ring of Fire or the Mid-Atlantic Ridge, and locate them on a large sea floor map.

Module 1D—Undersea Exploration

This module is dedicated to the tools of modern ocean exploration. An "Audio-Animatronics" submersible named **Jason** steals the limelight in a five-minute show. With the aid of two video monitors, Jason explains the potential use of robotics in underwater research.

Suited for the Sea, an animated video piece shown on two monitors flanking a single-atmosphere JIM suit, traces the evolution of dive suit technology from the early diving bell to the Deep Rover, seen in Seabase Alpha's concourse.

For those who are interested in "suiting up," two full-size, cut-away models of the JIM suit provide the opportunity to try performing simple tasks while wearing the high-tech suit. A **Human Physiology** display highlights the barriers of pressure, darkness, temperature, and lack of air that limit man's capability to explore at great depths.

Coral Reef Restaurant

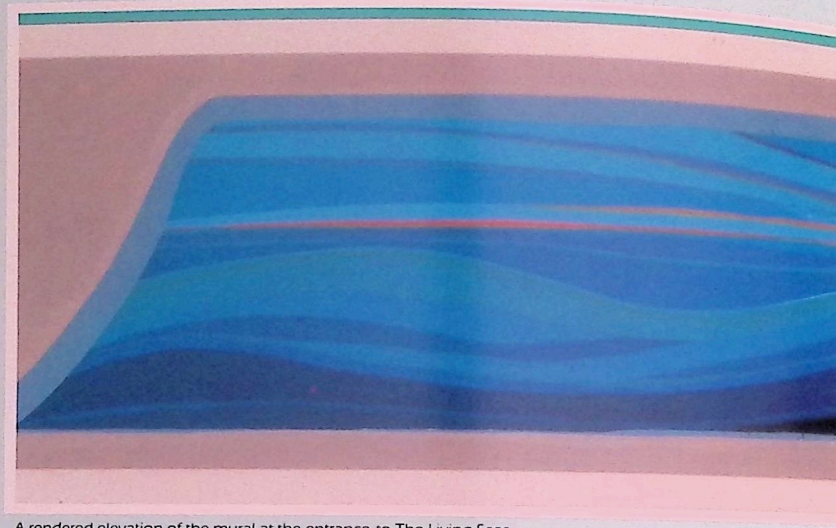
If your appetite has been awakened by the sight of all that sealife, the Coral Reef Restaurant is right around the corner. With 50 feet of viewing space into the Caribbean reef, everyone is assured of an ocean-front view through 8-foot-high acrylic windows. The decor of cool ocean blues and greens further enhances the illusion of being underwater.

The tastes of the ocean are paramount here. Appetizers include such bounty as baked clams, fresh oysters, and New England or Manhattan clam chowder. Fresh fish—baked, poached, grilled, sauteed, or broiled—is served with a variety of sauces and side dishes. Sea voyagers and landlubbers alike will enjoy the varied wine list and dessert menu.

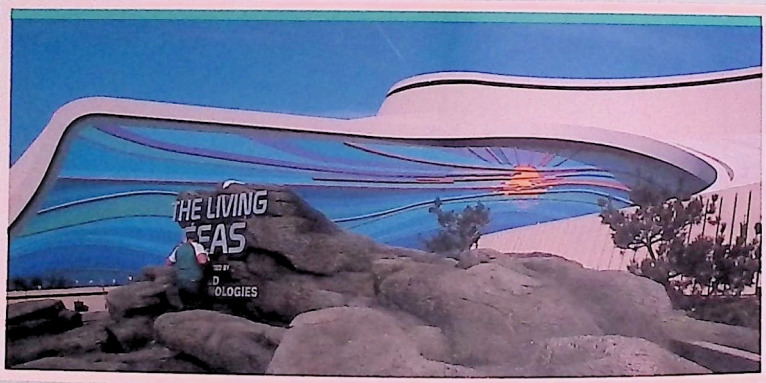
"Disney's Living Seas" Television Special

The festivities of the mid-January opening of The Living Seas will extend throughout the month. "Disney's Living Seas," a one-hour television special produced by Smith-Hemion, will debut on NBC. Including footage shot on-site at The Living Seas, as well as vintage footage from Disney films such as "Twenty Thousand Leagues Under the Sea," the special will focus on the latest developments in ocean research and exploration. Special entertainment segments will be introduced by celebrity guest hosts.

The Living Seas site plan indicates the building orientation, property limits and access, civil grading, utilities, and landscaping.



A rendered elevation of the mural at the entrance to The Living Seas.



Imagineering The Living Seas

Imagineering. It's a blank piece of paper, a rough lay-out, sometimes the glimmer of an idea carried to fantastic realities. It's the creative process developed to master-plan, design and engineer Disney attractions.

The Living Seas is the culmination of almost a decade of creative effort at WED. Many "Imagineers" contributed to the project, among them artists, designers, model-makers, engineers, writers, directors, marine biologists, architects, landscapers, planners, accountants, and producers.

Conceptual Development

Project show designer/producer Tim Delaney has worked on The Living Seas since 1978. With Kym Murphy, Tim has shepherded The Living Seas through many conceptual changes. "I've seen it go through so many permutations, at least five or six completely different concepts. What you see today is an amalgamation of the best of all of these concepts for the pavilion," says Tim. "One element remained constant throughout—we were committed to the idea of a 5 ¾-million gallon ocean environment, an idea Kym introduced. We were going to take you through the real thing or bust."

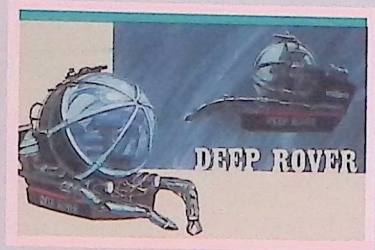
Tim introduced the idea of the Hydrolator, which appeared in every concept for the pavilion. "The illusion of traveling deep beneath the ocean's surface was an experience we wanted every guest to have. It makes the ride through the coral reef environment and the visit to Seabase Alpha that much more believable. In actuality, you're only descending an inch or so, with some sideways movement as well. For most of our guests, however, the ride in the Hydrolator will be a descent to a research center some 40 feet below the surface of the ocean."

"The Living Seas is the largest facility ever dedicated to exploring man's relationship with the ocean—I look upon it as the seventh wonder of Future World," says Tim.

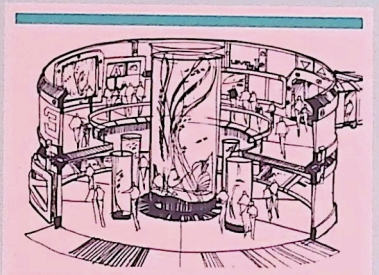
"The creative team drew from many sources for the pavilion," says Tim. "For Seabase Alpha, we wanted to go beyond the high-tech look you see in science fiction films. For the ride, we had to consider that fish, not "Audio-Animatronics" figures, would be the stars. Many of us worked together for over five years on this project—and it reflects the varied experience and expertise we brought to it."

Media Production

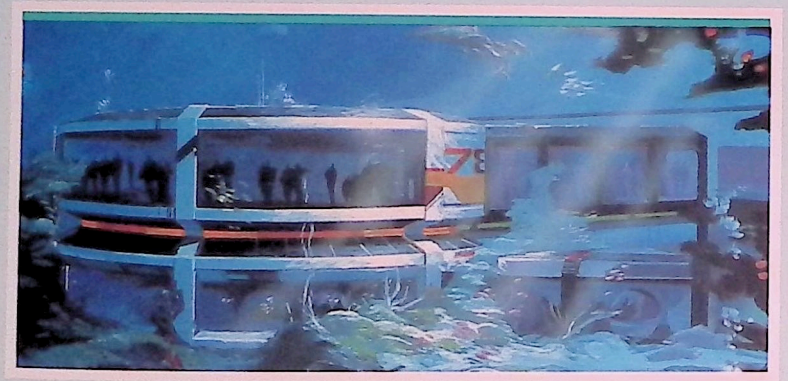
Filmmaker Paul Gerber, director of "Symbiosis" for The Land pavilion, traveled the world to gather footage documenting the mysteries of the deep for "The Seas" show. Locations included Iceland's southern coast, the Bahamas, Puerto Rico, New York's Niagara Falls, Los Angeles, and Arizona, where Paul

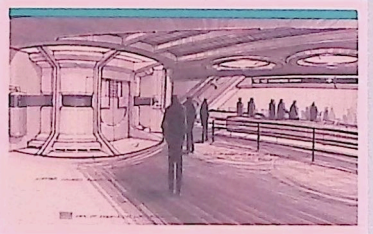


This rendering of the Deep Rover was the precursor of the mock-up displayed in the Seabase Alpha Concourse.



A cut-away drawing of the Ocean Ecosystems module in Seabase Alpha.





A marker sketch of the entrance to the ride.

filmed erratic summer lightening storms.

"We chose Iceland as a location because of the absence of vegetation," says Gerber. "We filmed scenes there simulating the deluge—lots of rainstorms and rocks." The torrential flow of water filmed at Niagara Falls was used as part of the same sequence.

"The film was cut on a new, computerized laserdisc editing system called EditDroid, developed by George Lucas" says Paul. "This is the first-time use of the EditDroid for film post-production, and it's worked out really well."

The music for this film combines synthesizer, a string quartet, and two choruses (the San Francisco Boys' Chorus and members of the San Francisco Symphony Chorus). The score and sound effects are, according to Paul, "truly otherworldly."

Seabase Alpha Media

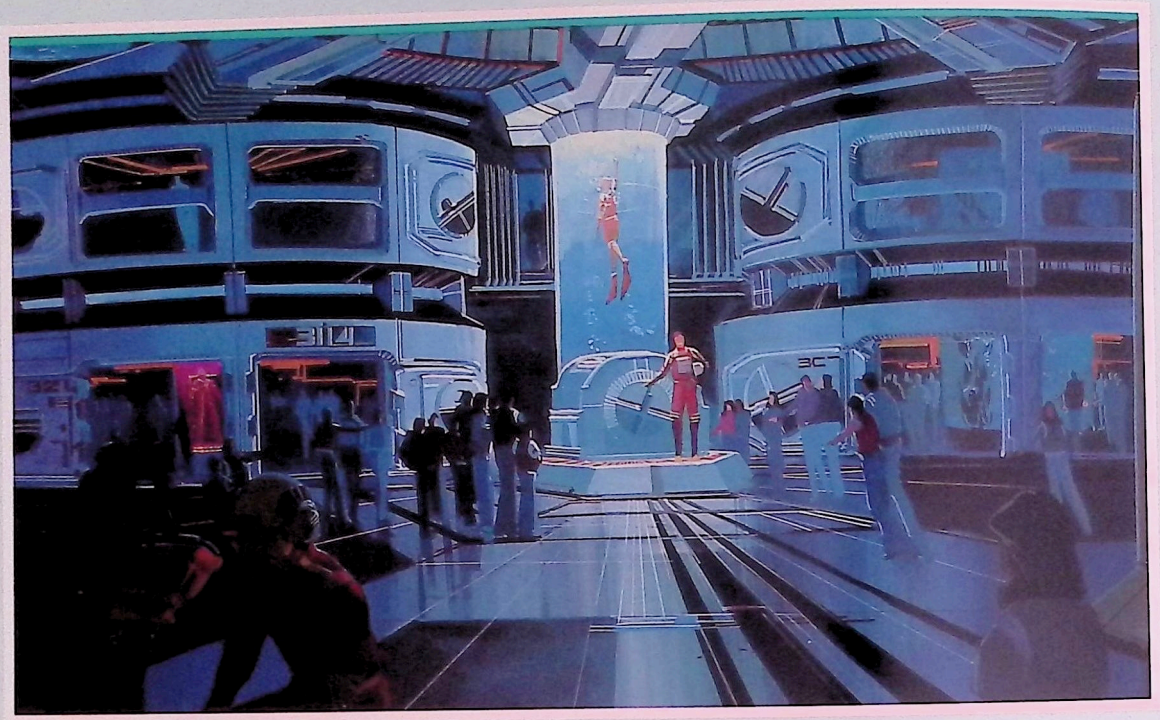
The seven media presentations displayed in Seabase Alpha's high-tech modules were written, directed, and produced by Bob Garner, Scott Hennesy and Mike West. "There's a total of 1½ hours of video in Seabase Alpha," says Garner. "That has the equivalent production value of a television special or feature-length documentary."

"I went through five complete revisions of "Jason" in fourteen months," says Hennesy. "Jason's an "Audio-Animatronics" robotic submersible who knows everything there is to know about his fellow submersibles. Believe me, I learned a lot about deep-sea robotics in the course of writing and writing and writing that show."

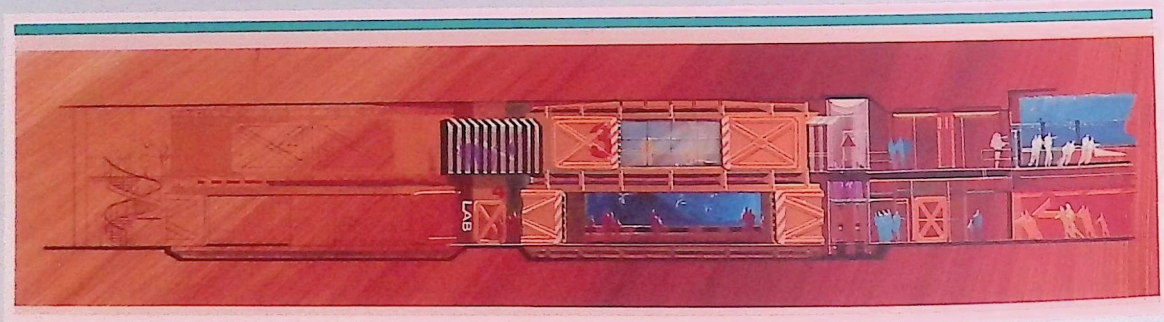
"Atlas was a lot of fun, once I figured out how to fit 4 1/2 billion years of earth science into a 6-minute show," says West. "Adding fun to the facts was imperative—the primary objective was entertainment."

Filming for the Seabase productions sent the WED Audio-Visual team to the ocean on several occasions, where they filmed aboard the Navy vessel Moctobi at Long Beach Naval Base, and also in San Diego.

In addition to the new footage shot for the shows, thousands of feet of stock footage and rare still photographs were acquired from the National Geo-



A rendered elevation of the Seabase Concourse.



The high-tech look of Seabase Alpha was established in this rendering of the "21st century" ocean research center.

Eric Gerber of MAPO makes adjustments to the "Audio-Animatronics" robotic submersible known as Jason.

graphic film library and other sources for the Seabase Alpha shows.

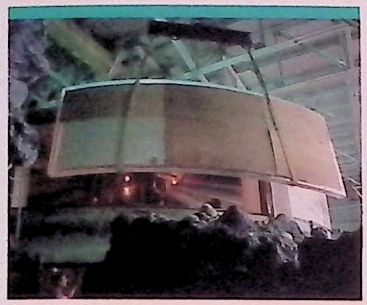
WED And MAPO Production

Special effects designed for The Living Seas include the projection effects in "The Seas" pre-show, the descent bubbles seen from the Hydrolators, and the water-ripple effects in the ceiling of Seabase Alpha. "These were all designed to enforce the illusion that you're underwater," says Jim Mulder of Special Effects.

The Hydrolator prototype took shape at MAPO. Innovations for the Hydrolator include the development of a "rock roller" device used to simulate the plunge to the deep.

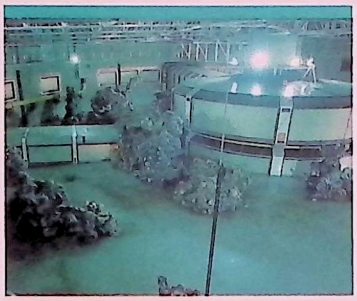
Realizing The Concept

Kym Murphy, corporate manager of Marine Technology and on-site director of The Living Seas, has been with the project since its genesis in the mid-seventies when he presented the "open ocean" seabase concept to the Disney

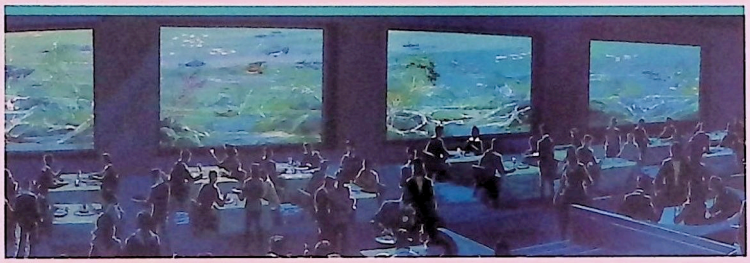


Acrylic panels, the largest of their kind in the world, are installed in the Observation Deck within the coral reef environment.

Construction on the Seabase mezzanine was well advanced by May of 1985.



By fall of 1985, the Observation Deck was completed.



A rendering of the Coral Reef Restaurant.

executive committee. Says Kym about coming to Disney, "Where else could a marine biologist work with so many talented people to bring this dream to reality?" With a background in marine and freshwater biology and water chemistry, Kym's experience prior to The Living Seas included the management and technical direction of Sea World parks in Florida, California, and Ohio, and Marineland of the Pacific in California.

One of Kym's many responsibilities was the search for and collection of the "critters" who were to inhabit the coral reef environment. "Fish are the stars of The Living Seas," says Kym. "Like all stars, we had to acclimate them to their new environment, make them comfortable before we send them out to perform. We leased Walker Island in the Florida Keys as an aquatic base and holding area for the animals until they went into the pavilion."

Then there was the "Great Dolphin Airlift," accomplished with the help of a United Technologies Sikorsky helicopter. This past November, when the pavilion was ready to receive sealife from Walker Island, Kym arranged for six dolphins to be flown to the heliport right next to The Living Seas. An animal behavior specialist and a marine mammal veterinarian accompanied the dolphins, who were kept cool and wet in foam padding for the two-hour trip. Upon their arrival at The Living Seas, the dolphins were hoisted on stretchers by crane into holding tanks. "If we'd sent them by truck, the trip would have taken at least ten hours," says Kym. "This way, the dolphins were out of water for a minimum amount of time—the three trips in two days were much more efficient for us, as well."

On a practical note, Kym refers to the feeding habits of The Living Seas' "cast": "Do you realize that collectively, these critters consume 500 to 700 pounds of food a day! I remember when I just had to worry about finding a place for them to stay."

Engineering The Living Seas

Allen Moyer, project engineer and in collaboration with Tim Delaney, the project architect, was responsible for guiding The Living Seas from architectural drawings through field engineering and construction. Among other engineering feats, The Living Seas facility required 900 tons of structural steel, in addition to the 12,000 cubic yards of concrete reinforced with 850 tons of steel that support the ocean environment.

Many problems, most of them related to Florida's hot and humid weather, called for ingenuity and experimentation on the part of Allen and supporting engineers. "In order to maintain the concrete at a maximum temperature of 70 degrees when it was being poured, we had to use liquid nitrogen instead of ice to cool the concrete," says Allen. "The ocean environment has a 3-foot thick concrete wall below the water level, an unusually thick retainer being necessary to contain the 5.6 million gallons of water in the ocean environment. We had a minimum of leakage problems when we filled the environment, due to our close supervision of the pouring."

Other engineering feats included the production of the poured acrylic panels for The Living Seas. Under the Seas team's close supervision, Reynolds and Taylor of Santa Ana manufactured 61 acrylic windows for the coral reef, ranging in thickness from 5 to 8½ inches. The 8 by 24-foot curved panels produced for the Observation Deck on the upper floor of Seabase Alpha are the largest poured acrylic panels in the world.

The Living Seas Advisory Board

The Living Seas Advisory Board was established to assist in the development of The Living Seas. Its eight members were culled from industries, academia, and institutions devoted to furthering the understanding of oceanic resources.

A series of meetings were held at WED during the pavilion's early conceptual development, where WED Imagineers presented ideas to the Advisory Board for their reaction and comment. One important contribution from the advisors is reflected in "The Seas" film. At their urging, the film script was rewritten to focus more on the ocean's subsurface wonders, rather than concentrating on man's forays on the ocean surface. The board also made recommendations on the treatment of the sealife who were to inhabit the pavilion's ocean environment; one of their concerns, the harmful effect of chlorine on dolphins and other fish, led to the development of a non-chlorinated filtering system for the environment.

The Advisory Board is comprised of:

Dr. Robert Ballard, a senior scientist at Woods Hole Oceanographic Institution in Massachusetts. Ballard, who has a Ph.D. in marine geology and geophysics, has acted as a consultant for many ocean-related ventures, and recently headed the sucessful search for the Titanic.

Dr. Sylvia Earle, curator of the California Academy of Sciences. Earle is also co-founder and vice-president of Deep Ocean Technology, Inc., and Deep Ocean Engineering, Inc., corporations devoted to the design and development of undersea technology to provide access and working capability in the deep sea.

Gilbert Grosvenor, president of the National Geographic Society. Grosvenor is also director of the World Wildlife Fund, and has affiliations with many ocean-related foundations and industries.

Dr. Murray Newman, director of the Vancouver Public Aquarium in Stanley Park, British Columbia. In addition to several memberships in zoological associations, Newman has participated in expeditions to the Canadian arctic, the South Pacific, Africa, and South America.

Dr. William Nierenberg, director of the Scripps Institution of Oceanography and vice chancellor for Marine Sciences of the University of California, San Diego. Primarily known for his work in low-energy nuclear physics as professor of physics at Berkeley and at the University's Lawrence Radiation Laboratory, Berkeley-Livermore, he has established himself as a leading expert in the field of underwater research and warfare.

Dr. David Potter, retired vice-president, Public Affairs, General Motors Corporation. In addition to serving as Under Secretary of the Navy, Potter is the author of over 37 publications, and has extensive affiliations with major scientific organizations.

Dr. John Ryther of the Harbor Branch Foundation in Fort Pierce, Florida. Since 1951, Ryther has been associated with the Woods Hole Oceanographic Institution as a senior scientist, investigator, and for the past two years, as director of the division of Applied Biology.

Robert Wildman, deputy director of the Office of Sea Grant, NOAA, U.S. Department of Commerce. Wildman has authored a number of publications on the ecology, culture, and use of marine algae, aquaculture, radioactivity in aquatic environments, and the Sea Grant College Program.

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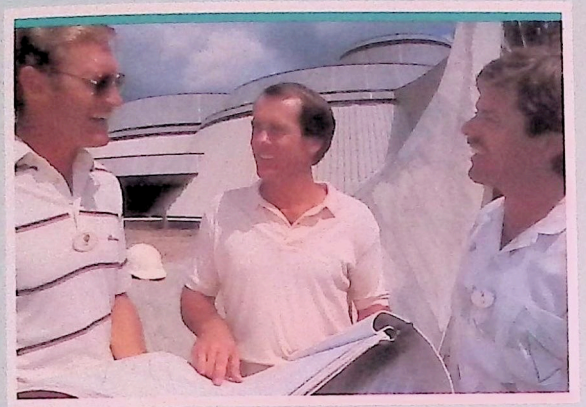
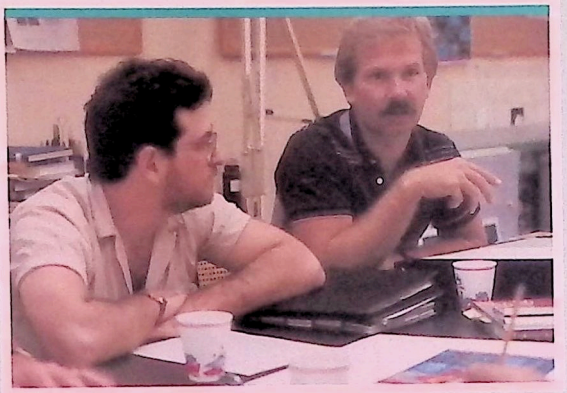


(L. to r.) Kym Murphy, Allen Moyer, and Tim Delaney review blueprints in front of The Living Seas.



(L. to r.) Cory Sewelson and Greg Wilzbach discuss concepts for Seabase Alpha.

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On-site director of The Living Seas . . . . . Kym Murphy
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"The Seas" film line producer . . . . . Patricia Foulkrod
"The Seas" film composer . . . . . Patrick Gleeson
Seabase Alpha media producers . . . . . Bob Garner, Scott Hennesy and Mike West
Film research associate . . . . . Carol Rotundo
Seabase Alpha media cameramen and editors . . . . . David Jones and Bob Zalk
Audio staff . . . . . Midori Barnes, Don Lewis, and Ken Lisi
Sound effects . . . . . Joe Herrington
Composers . . . . . Russel Brower and George Wilkins
Special effects . . . . . Jim Mulder
Mechanical designer for "Jason" . . . . . Larry Sheldon
Hydrolator fabrication . . . . . Stan Abrahamson, Marcel Aubard, Jim Baird, Russ Bakken, Butch Borcherding, Bill Casey, Dick Chanowski, Tony Cruz, Bill Curry, Chico De Ruise, Eric Gerber, Tom Hogsett, Steve Kennedy, Gene Leasure, Art Lehman, Don Miller, Joe Quick, Gary Smestad, Lou Tonarely Jr., Dave Wagoner, and Don Wirth
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Electrical installation . . . . . Pedro Flores and Don Prock
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The WED and MAPO Imagineers invested their abilities—and more than 650,000 hours from concept to reality—to create The Living Seas. The opening of this pavilion is a tribute to the talents of each and every member of the WED/MAPO team.

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