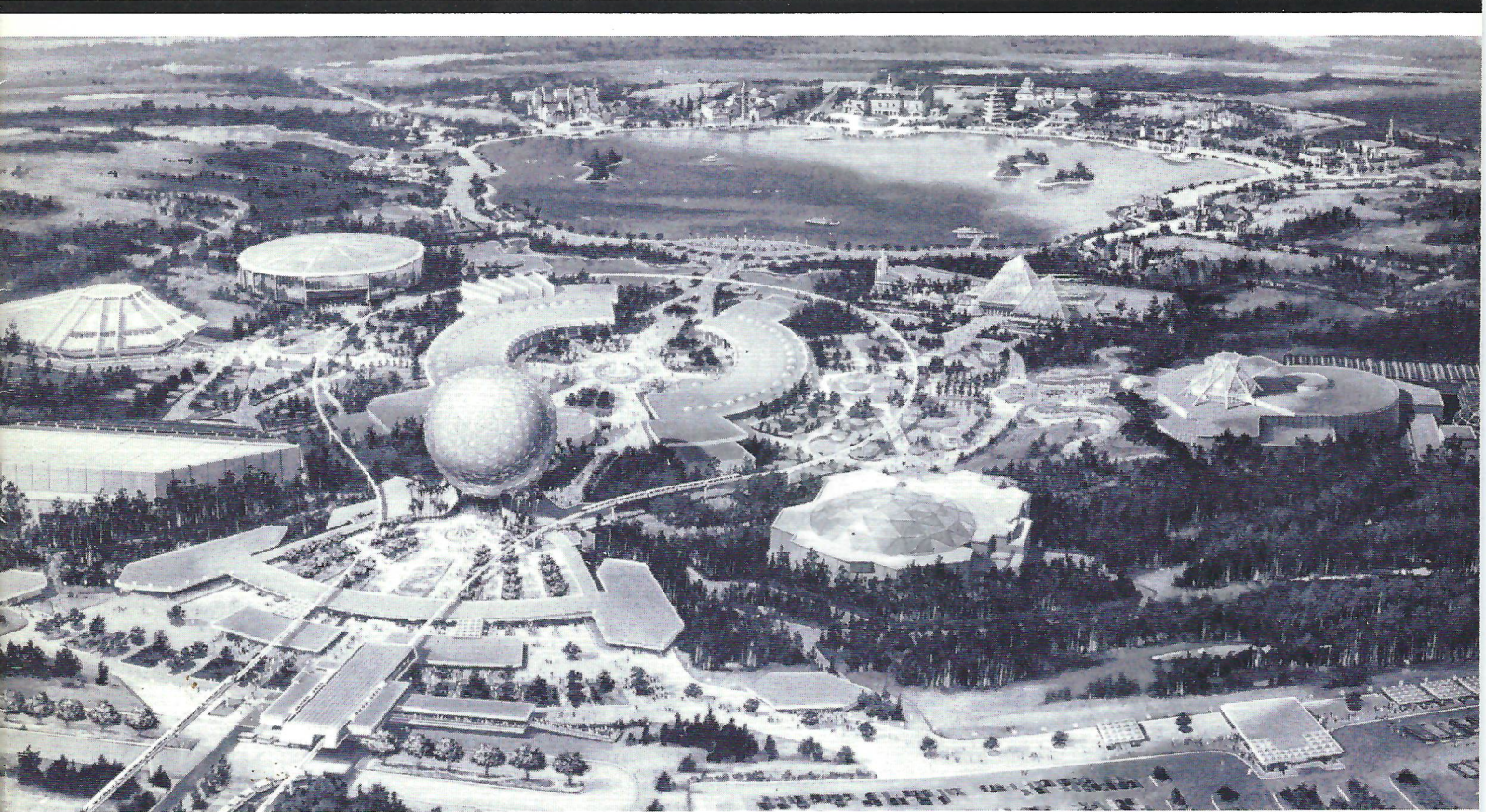


Orlando-land

JUNE 1980

EPCOT!

The full story
at last



© WALT DISNEY PRODUCTIONS

AN ORLANDO-LAND EXCLUSIVE: Complete details of Disney's fabulous \$800 million Experimental Prototype Community of Tomorrow are finally revealed after years of planning and development. Read the breathtaking account by a reporter just back from the realm of the Imagineers.

**REPRINTED BY PERMISSION FROM THE JUNE 1980 ISSUE
OF ORLANDO-LAND MAGAZINE.**



Frontlines

IMAGINE THE STREETS of Orlando brilliantly lighted by solar power. Imagine all our waste burned in a single huge incinerator and converted to usable energy. Imagine little cars that take you across town without any need to steer them or refuel.

Imagine a travel agency that gives you a video tour of the hotel where you're going to stay in Venezuela, even to the sounds of the surf. Imagine spending a weekend in an under-sea colony off Daytona Beach.

Imagine growing 18-inch cucumbers in a backyard globe that requires almost no care. Imagine a computer system in your kitchen that commands a robot to do your housework.

Imagine our city teeming with the great minds of the world, here from every nation, dining in our restaurants, strolling through our parks, sharing their expertise with community leaders.

Imagination—it's wonderful.

I have just come back from the realm of the Imagineers. I have come back with an imagination fired up with the limitless wonderful things that might be or could be.

At WED Enterprises in Glendale, Calif., I talked at great length with the remarkable men who are designing EPCOT. Imagination is their business. Their ideas and the things they are doing to bring them to reality are almost beyond belief. In this issue I tell you about some of them.

Among other things, I got a preview of one of the Future World pavilions which, appropriately, will be called Imagination. It spotlights dramatically the potential of imagination and challenges you to let your own imagination soar. Mine did.

I came back imagining the impact that EPCOT, this greatest of all wonders of the world, will have on us in Orlando-land after it opens on our doorstep. I saw the ideas and inventions and technological breakthroughs at EPCOT spilling over into the community and changing the lives of all of us.

The items at the start of this column are just a minute sampling of what might be or could be in the Orlando-land of the future.

—EDWARD L. PRIZER



Massive job of site preparation is still going on at this tract situated between the entrance boulevard to the Magic Kingdom and Walt Disney World Village at Lake Buena Vista. A lagoon about 15 feet deep is being dredged in the center of the 200-acre site. Ground will be broken this month for the first pavilions, Energy and Transportation. Out of this barren desert will rise spectacular structures like the Imagination Pavilion (inset). (Copr. Walt Disney Productions)

In the following article, an ORLANDO-LAND reporter describes a rare visit to the realm of the Imagineers and the marvels of ingenuity that are going on there. It is perhaps the most detailed account of the wonders of EPCOT Center ever published.

Inside EPCOT

YOU DRIVE DOWN a service road through pines and scrub oaks and palmettos and suddenly there it is in front of you. Hundreds of acres of raw earth and water, so vast that the big earthmoving monsters look like toys off on the perimeter.

This is the site of EPCOT Center.

Few of the millions who visit Walt Disney World have any idea it's here, almost within view of the Contemporary hotel. Work will go on for 2½ years behind a wall of pines in virtual isolation. Then in a blaze of glory, this marvel of imagination and ingenuity envisioned by Walt Disney will be revealed to the world Oct. 1, 1982. It's estimated \$800 million will have been spent by that time.

Today, as Charlie Ridgway steered the stationwagon over trails in the dry brown dirt, I got an inkling how large the project actually is. In statistics, it will cover 600 acres, of which EPCOT Center will occupy 200 initially.

The construction area seems much larger than the initial site for the Magic Kingdom (which seemed large enough when I looked across it 12 years ago). It's a good bet this project will go along more smoothly than the previous one. They've learned a lot from that undertaking.

For instance, they're not scooping out the lagoon with earthmovers as they did before. They're dredging up the muck. The process will produce the same sand bottom and clear water, but it apparently does the job more quickly and economically.

Looking across the wasteland of torn-up earth, I harked

back to what Walt Disney said, away back in 1965, when he first spoke of his greatest dream at the Cherry Plaza Hotel in Orlando:

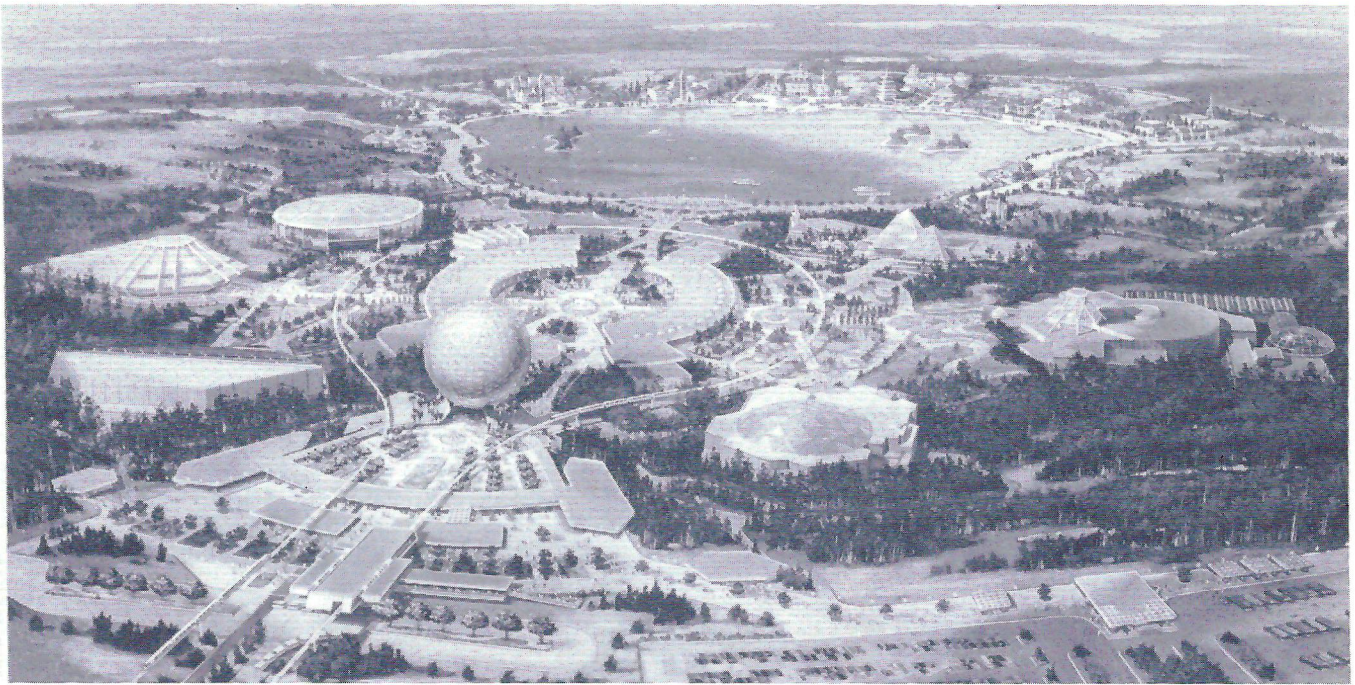
"It will be a community of tomorrow that will never be completed, but will always be introducing and testing and demonstrating new materials and systems. And EPCOT will always be a showcase to the world for the ingenuity and imagination of American free enterprise."

A pipedream. An outlandish fantasy. An impossible utopia. So they all said then.

Now it is happening, just a little over nine years after they opened the gates of Walt Disney World. The plan has come a long way since then. It has been reworked and revised and modified and fitted to the practicalities of economic life today. Whatever its final form, the ultimate achievement will transcend all the previous wonders of the world.

Up to now, I had only the general outlines presented to the press over a year ago. What was it really going to be like in all its infinite details? This secret was still largely locked up in a remote place in California where the legendary Imagineers wrought their magic. You heard little about them. They shunned publicity. And so, to truly know what was coming, to understand its meaning, to project how it might affect all of us, I had to go where they were.

And that is what I did, on the invitation of the Disney organization. Let me tell you about it.



EPCOT CENTER—Everything's now in place in the master plan (above and on the cover). Visitors disembark at monorail station in the foreground or park in lots on the perimeter. They begin their experience with an introductory show in the 18-story-high globe. From there they proceed to the pie-shaped Communicore and outward from this hub to Future World pavilions. These are, starting at lower left and going around clockwise: Energy, Century 3, Transportation, Imagination (double-pyramid structure), The Land and The Sea (the latter to open in June 1983). World Showcase pavilions around lagoon are (starting at left and proceeding clockwise): Mexico, Costa Rica, Equatorial Africa (coming later), Germany, Italy, American Adventure, Japan; Morocco, France, United Kingdom and Canada. (Copr. Walt Disney Productions)

California, here we come

THE DELTA JET skimmed smoothly above a thick layer of cloud. I sipped a martini and thumbed through a copy of *Commentary*. It was a strange feeling going back, after all these years, to the city of smog and palm-lined boulevards and mountains rising out of haze and nondescript urban sprawl stretching into infinity. The City of the Angels. Los Angeles.

College days seemed part of another lifetime.

The article in *Commentary* was dismal: national crisis in the wake of Iran and Afghanistan. Recession. Lack of leadership. The writer held out little hope.

I looked out across the wing and tried to get a glimpse of the earth that was slowly turning far below us. It was totally blotted out by the clouds. Good riddance. I finished the last drop of martini and handed the glass back to the flight attendant.

Soon we would be going in to land.

Somewhere in the night the melancholy mood dissolved in sleep. With morning came anticipation. My spirits rose as I sped along the teeming freeway out into the Hollywood Hills. Ahead: the WED studios and the secrets of EPCOT.

With Jack Lindquist, vice president-marketing, Disney outdoor recreation, I arrived at an unmarked building nestled beneath the hills that rise along the fringe of Glendale. WED enterprises, the design and engineering unit of Walt Disney Productions. Really an impressive building with tall white columns and neatly manicured landscaping in front and beautiful stonework on the exterior.

Inside, I walked into what can only be described as a

beehive of activity, if you'll pardon the cliché. Off the honeycomb of hallways, with their renderings of Disney projects, artists and draftsmen and designers were hard at work in glass-enclosed offices, oblivious of the steady traffic outside.

So, at last, I had come to the lair of the Imagineers. Out of these hidden rooms, out of the anonymous minds that functioned here, had blossomed the ideas that created Disneyland and later Walt Disney World. And now, within this maze of creative activity, EPCOT Center was in the making.



At WED headquarters, above, EPCOT was born and, since 1975, has been going through many design stages. This is the home of the Imagineers. (Copr. Walt Disney Productions)

Work has been going on here on EPCOT, without fanfare, since the original announcement in 1975. Ideas and plans and designs and techniques and scripts conceived, reviewed, studied, endlessly tossed back and forth by teams of Imagineers, discarded, started again, refined, elaborated, developed into models and blueprints. A long, involved, never-ending process where nothing is ever final until the last possible moment—a process that only the men inside WED really understand.

In the early stages, some 600 people were at work here. Gradually the number has been growing, faster and faster of late, to a current 1,200.

Joel Halberstadt, manager of concepts and communications, told me:

"We're going through continuous growing pains now. It's a problem to squeeze 1,200 people into the space we have. Offices seem to spring up overnight."

The project has spilled over into industrial buildings and offices elsewhere in the Los Angeles area. They're making dinosaurs at the staff shop of the Disney movie studios in Burbank. A sound stage at 20th Century Fox has been leased for the painting of a mural almost 500 feet

The grand design

THE MODEL LAY in front of us as we entered the big, high-ceilinged room. If WED headquarters is the temple of creativity, then The Model has got to be the altar. Men in shirtsleeves moved around the perimeter shifting miniature buildings and conferring on placement of landscaping.

The Model measures 44 by 32 feet. It is an exact 1/8 of an inch to 1 foot in scale. Progressively, as elements are completed in miniature, they are put in place.

In the center lies a blue lagoon, which represents a body of water almost a third of a mile across. I saw across the lagoon the exquisitely handcrafted models of some of the World Showcase pavilions set on carpets of green lawn.

At the center, on the far side of the lagoon, was the final design for the American Adventure Pavilion. Originally, the pavilion was to be located on the near side of the lagoon, at the point where guests would make the transition from Future World with its pavilions sponsored by American industry to the foreign pavilions of World Showcase.

"We decided we needed a focal point at the back of the setting," Mr. Halberstadt said. "Something to draw people around. So we moved it there."

I had no trouble identifying the pavilions of Great Britain, France and Italy. Joel Halberstadt ticked off the others quickly: Mexico, Japan, Canada, Morocco, Germany, Costa Rica. Only portions of some models were in place.

At this point the pavilions of Future World were represented by plastic blocks of various shapes. They were ranged like satellites around a central, circular building tentatively designated the Communicore.

Towering over the rest of the Future World structures, at the entrance to the complex, was a large globe, the home of the show Spaceship Earth. In full scale, it will be nearly 18 stories high. Behind it lay the Energy, Transportation, Land, Century 3 and Imagination pavilions.

Detailed models of the Future World pavilions were being displayed elsewhere in the WED building. For now the plastic blocks served very well to enable designers to determine relative elevations and positioning.

Between this lineup of structures and facades and the

long for the Energy Pavilion. Components of the Transportation Pavilion are being assembled in a plant out at the Tujunga Canyon. Other work is going on in a converted airport hangar. And down at Anaheim, the location of Disneyland, the thousands of costumes needed for the pavilion staffs and animated figures are being put together.

"We've been advertising over radio and in the newspapers for 600 more people for WED and our manufacturing and production arm, MAPO," Mr. Lindquist said. "We need artists, architects, dimensional designers."

"All kinds of creative people," Mr. Halberstadt said. "We're getting many graduates of top art schools, younger men and women 20 to 35 years old. They work with veterans in the organization. It's an interesting combination of the old and the new learning from one another."

Soon I was to meet face to face some of the key men who guided and controlled this massive outpouring of creative endeavor. I was to discover their unique way of working, individually and together. I was to get some insight into what kind of men they were—visionaries, perfectionists, workaholics. A breed apart, inheritors of the dream Walt Disney left behind at his death in 1966.

wonders that would lie within remained a vast gap which much of the creative activity at WED was now filling.

It was at this point that my voyage of discovery proceeded from the broad vista to the infinite components. And it was here that I began to meet and talk with the Imagineers.

They left me no time to dwell longer on the tragedy of Iran or the catastrophe of Afghanistan.



Architectural draftsmen prepare blueprints that will be shipped to Walt Disney World to guide contractors in construction of pavilions. (Copr. Walt Disney Productions)



Visions over salad

NOONTIME. Lunch time. And what a spread they had laid out at one end of the long conference table. Salads galore, and sliced meats, and pickles and cheeses, and a heaping bowl of big California strawberries.

My hosts were John Hench and Marty Sklar, the top men in the creative part of WED. (I'll use first names from here on since that's the custom at Disney. The nameplates they wear carry no surnames. Walt liked it that way.)

Officially, John is senior vice president of WED. He's tall, dignified, somewhat reserved, with gray hair and a crisp gray moustache. I immediately thought of Walter Cronkite. Others have found a resemblance to Walt Disney himself. Among other things, John personally approves all colors that go into the many parts of EPCOT.

Marty is shorter, younger, dark-complexioned. You might mistake him for an engineer or scientist in his dark blue shirt and glasses. But, as his title suggests, he is primarily an artist. He's vice president of creative development.

I soon learned that titles and rank and seniority have only limited importance here. Lines of authority are fluid and ever changing. They talk continually about the "team approach."

I was staggered by the range of their envisioning. Anywhere else it would have been termed fantasizing. Here it was the raw material of their product.

Their attention shifted like quicksilver from voyages into outer space to the interior of a molecule, from computers to the farming of shrimp and other creatures from the seas.

To try to put the substance of our conversations in logical order would be impossible. And even if it could be done, it would dilute the significance of what they had to say. I think it is far better to pass along a sampling of their comments approximately as they expressed them. You, too, will gain from them a feeling for what EPCOT is all about.

(Let me emphasize at this point that part of what was said was imagineering rather than a detailing of final plans. They spoke a great deal about things that might be done, or could be done, and at times they themselves were verbally shaping their own thoughts on matters of intense interest to them.)

So here goes:

JOHN: "The Transportation Pavilion is a step forward from Small World. We've learned how to control reverbs. In Small World, you hear the sound that is with you plus infinitely staggered signals with the same beat. The same signals slightly delayed give you a sense of space. We tried it on a sound stage. We walked around the stage and couldn't believe it. We kept working until we got the speakers just right. We're always building on whatever we know how to do, pushing a little further.

"In Transportation, we're using a different vehicle, a six-passenger vehicle. We have an open corridor. There's sound stereo close to the head and incidental sound off in the background. We've developed a new approach to



Draftsmen and model makers work out details of placement and proportion on this master model for EPCOT Center. It's here where major decisions are made affecting the project. Future World pavilions are represented by blocks in the foreground while several meticulously detailed models of World Showcase pavilions can be seen alongside the lagoon. (Copr. Walt Disney Productions)

sound—digital sound—that has remarkable clarity . . .

"Spaceship Earth tells you you're not alone on this earth. It takes you back and shows you how you've come to this point. It will give people a lot more appreciation of who they are. Ray Bradbury (the science fiction writer who wrote the story line) took the metaphor of a wall. It touches on the first recorded primitive experiences. Information on wild animals was recorded in paintings on cave walls. It was a matter of survival for succeeding generations. They became more elaborate. The Egyptians transformed information into hieroglyphics. The Phoenicians broke the walls up into clay pottery. With Gutenberg's invention of printing, the wall became a library wall. Now we have an electronic wall attached to the rest of the earth. Walt believed if people got the right information, they would take the right action. He envisioned a place where people could come and get the best information so they would have no trouble deciding on the best course of action. That was Walt's special ability. He could reach people. He had a deep understanding of people."

(This idea of providing, entertainingly, information on which people could make right decisions kept cropping up during my entire visit to WED. It is the essence, I believe, of EPCOT, a step forward from the more amusement-oriented Magic Kingdom.)

JOHN: "Guests will go to a Telcom Center (an extension of Spaceship Earth) from Spaceship Earth. We'll demonstrate new ways to present information, electronically, visually. It's an update of City Hall in the Magic Kingdom. Bell Labs is bring new technology to the information

plaza. Guests can make reservations, leave messages. In the Communicore there will be opportunities to get involved in communications systems. We'll have a functioning TV studio. We'll do interviews and opinion polling. A Future Choice theater will have buttons to push for audience reactions. Guests will go across and through this hub several times in moving between pavilions. We try to make choices as simple as possible. It's been found that anxieties are created at World's Fairs where people continually have to make decisions on where to go next."

MARTY: "We're starting work with American Express on a Future Travel Port for the Communicore. The name may be changed. It will be the travel agency of tomorrow. You can come in with your family, specify your vacation interests and actually experience the places you'd like to go. You may even get an information printout."

JOHN: "We asked ourselves why don't we push these services people need, push 'em forward. Guests can look at the dining room of a resort, hear the waves on the beach. They'll get a lot more information on what they're going to buy."

MARTY: "We hope to have a place in Communicore where people can find out about a career. We'll make it as close to real as possible, simulate experiences."

JOHN: "The Fantastic Flick Cinema will show predictions of the future as done by motion pictures over the years. The main thing is to reassure people about the future."

MARTY: "Show them there's a purpose for prediction. Many predictions set the tone for what is to follow. We're going to bring the DACS Center (the computer setup that controls a myriad of activities and communications at Walt Disney World) out of its hiding place. We'll put on a show. We have a special device to slow down the action of a computer and show how information is received. Another exhibit is called Solutions. It will present ideas being implemented by cities around the world to cope with problems. The basic premise of the shows in EPCOT is that the future is a moving target. You have to change."

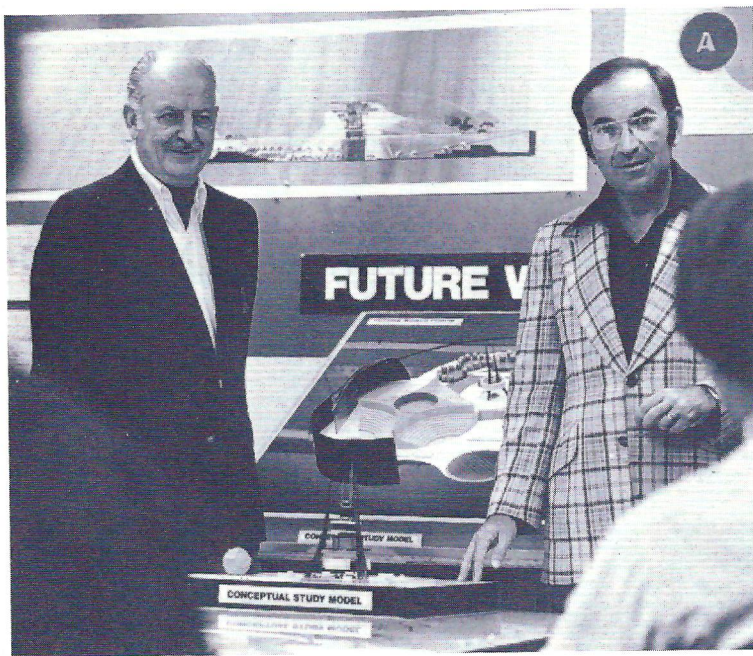
JOHN: "The AT&T communications center will show how a household can function with new communication techniques. We want to make the information relative to something. It will show the tremendous impact of communications systems on lifestyle."

"Then there's the Egghead Arcade. We're bringing a new attitude and new sophistication to arcade games. Games can be made more interesting and relevant. We'll devise engineered games. For a point: man's relationship with the machine."

MARTY: "The Land Pavilion is five acres—as big as Fantasyland in the Magic Kingdom. Guests will go through as a ride. They can go back on a guided tour. We'll have a large growing area behind the pavilion to demonstrate environmental control."

JOHN: "Plants have their own extraordinary odor which guests will experience. They'll see vegetables as they must have been intended to be. Eighteen-inch cucumbers. Lettuce growing in outer space."

MARTY: "We met Dr. Carl Hodges, consultant on the pavilion, when we were looking for people to invite to a conference on energy and agriculture. He's director of the Controlled Environmental Lab at the University of Arizona. We sent people to the university to see what he was doing. Their report was so glowing we couldn't believe it. So we sent two other people. Their report was the same. We got Card (Disney president Walker) and others and took the company plane to Mexico, where Dr. Hodges has a shrimp farming operation in partnership with Coca Cola and the University of Mexico at Sonora. He showed us a



Ever since Disney announced in 1975 that it was ready to go ahead with EPCOT, John Hench (left) and Marty Sklar have spearheaded planning and development for the project. Both Mr. Hench, senior vice president of WED, and Mr. Sklar, vice president of creative development, were close associates of Walt Disney and carry on faithfully the traditions he instilled in his creative people. (Copr. Walt Disney Productions)

continued

cylindrical tank and said there are 500,000 shrimp in there. Just hatched. They came out elegant, flawless specimens. On shrimp boats, time elapses before the shrimp get back to shore. It affects the flavor. Not these. The pavilion will show future steps for growing food both on land and water.

"We took a Kraft executive to Dr. Hodges' farm. After he'd seen it, he called his research people in and said to them: 'What have you guys been doing?'"

JOHN: "The whole philosophy of the pavilion is not to exploit the land but cooperate with it."

He handed me a sheet with a quotation from the book "Symbiosis Between Man and Nature" by Rene Dubos. It read:

"It is not true that 'nature knows best.' It often creates ecosystems that are inefficient, wasteful and destructive. By using reason and knowledge, we can manipulate the raw stuff of nature and shape it into ecosystems that have qualities not found in wilderness. Many potentialities of the earth become manifest only when they have been brought out by human imagination. Symbiotic relationships mean creative partnerships."

Clearly, this idea underlies not only the concept of the Land Pavilion but much of the rest of Future World. Could it counterbalance the violence and destruction of Iran and Afghanistan? Could EPCOT? It was a sharp challenge.

MARTY: "We have brought in experts from all over. We have advisory panels for the pavilions. Our function is to provide credibility, integrity and the ability to communicate through entertainment."

JOHN: "These people respond to Walt's ideas. They need a forum, somebody to communicate for them. This has got to be an ongoing thing. New people are coming in all the time. They're the kind of people who say things don't have to be this way."

MARTY: "Many people no longer trust government or

industry, but they still believe in Mickey Mouse. Our messages are very short in the physical sense. We have to get across an idea in a few seconds. There can be no ambiguity. We're doing what I call turn-ons, encouraging them to find out more about a subject, providing the way."

Our lunch over, we strolled down a hallway to a camera room where John wanted to show me some of the movie equipment they were developing.

"We're making cameras that never existed before," he said. "We're building two rigs, one master, one backup. Each has three cameras. We'll use them for filming for the Energy Pavilion this fall. The cameras are 70 millimeter and give us a field of vision of 220 degrees. The screen will be 30 feet high."

"We're doing a 3-D show for the Imagination Pavilion."

"For Spaceship Earth we have a styrofoam model to work out relationships. It shows where the track will come. The whole course of the show will be laid out in five-second increments. The first model is one quarter of an inch to a foot. The next is one inch."

Marty commented:

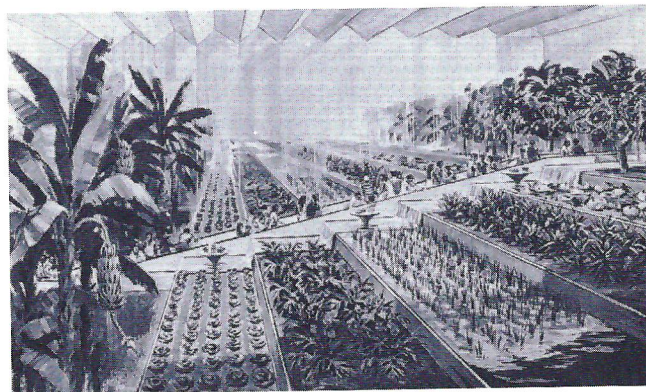
"Walt was a stickler. He didn't want to come around a corner and see a blank wall. There had to be a weenie down at the end of every street. We have to have a model on a scale where you can walk through, see everything you can see on a ride."

To demonstrate, they led me to a large black box about eight feet high with a narrow entrance.

"Go through and see what we mean," Marty said.

I started up a ramp which had shelves projecting on either side just above shoulder height. Your head could only move along the confined space between these projections. It was enough to give you claustrophobia, but it ensured that you would view each scene from the proper perspective.

This was a model of Spaceship Earth. I followed the sequence of the show, up and around, at each turn another finely detailed and lighted setting with figures and props, exactly as they would appear in the final version, except greatly scaled down. There was that family in the cave with painted walls about which John had spoken earlier, then the Egyptian scene with hieroglyphics followed by a group of Phoenicians with scrolls and clay pottery. I passed Gutenberg in his printshop and a library filled with books and other scenes in the story of the expanding wall until finally I emerged down a descending ramp into the present. Eventually, guests would ride in little cars along a track spiraling through the 18-story Spaceship Earth globe and see these same scenes in life-size scale. It was an ingenious way to lay out the parameters of the show.



Incredible results in plant culture will be demonstrated in a special exhibit at the Land Pavilion. (Copr. Walt Disney Productions)



Facial characteristics of Audio-Animatronics figures are developed in WED's sculpture studio. Above, Blaine Gibson creates a bug-eyed fellow who'll startle spectators in one of the shows under preparation. (Copr. Walt Disney Productions)

Ideas into substance

BLAIN GIBSON'S workshop was like an artist's garret, greatly enlarged. High windows let in a soft flow of natural light. Scattered about in no particular kind of order were easels and stacks of sketches on matte board and chunks of plastic material and sculptures in various stages of completion. On banks of shelves along the walls were heads of every description. I recognized the features of several presidents from the Hall of Presidents and the rogues from Pirates of the Caribbean.

It is here that the Audio-Animatronics characters are created in three-dimensional form.

One of Blaine's assistants, at a bench nearby, was molding a dainty figure of a woman about four inches high. This was one of hundreds of miniatures that would come from this room for placement in the models.

Blaine is a slim, gray-haired artist, quiet in manner and speech.

Before we entered, Joel had told me: "He is the first in

the world at what he does. He started sculpting as a youth after winning an Ivory soap carving contest."

For years he worked as an animator for Disney, sculpting as a hobby. Walt Disney saw his work and, when Disneyland was being planned, assigned him to make the figures for the Jungle Cruise. He has been at it ever since.

Figures are initially developed in a claylike plastic material from artist's sketches.

"Very rarely does the sketch idea have anything to do with the kind of character," Blaine said. "We develop character in here. We're responsible for the final pose and attitude of characters."

The miniatures go into the three-dimensional models of the various shows.

Later, a mid-sized mold is made of each head. This is called a maquette. Facial characteristics are worked out in detail. Blaine Gibson has a huge catalogue of heads from which he can draw, but each is individually designed to reflect a certain personality.

"We have to be sure the characters read instantly because the audience is constantly moving," he said.

The next step is creation of full-size molds from the maquettes. These molds are used to cast fiberglass shells. Then hot-melt vinyl is poured over the shells and, when cooled, is pulled off in a form that resembles a rubbery pull-over face mask. In the last step, the vinyl is painted in flesh tones and mounted over the machinery that makes the lips and eyes move in response to computer signals.

Designers do their own programming of movements as they put the finishing touches on a show.

Blaine never knows what creatures he'll be called upon to humanize next. I left him there in his cluttered studio working on the facial characteristics of a stalk of broccoli for the Kitchen Kabaret show of the Land Pavilion.

Back in the model shop, the big room where I started my tour, I found a young man named Eric Jacobsen putting together the elements of a musical group for the Kabaret. You never saw musicians like these. Mustard. Margerine. Chile. Kraft barbecue sauce. Parmesan cheese. Each held a tiny kitchen utensil.

This, said Eric, was to be the Kitchen Krackpots, one of several groups to appear in the Kitchen Kabaret, a variety show about nutrition in the Land Pavilion presented entirely by animated foodstuffs.

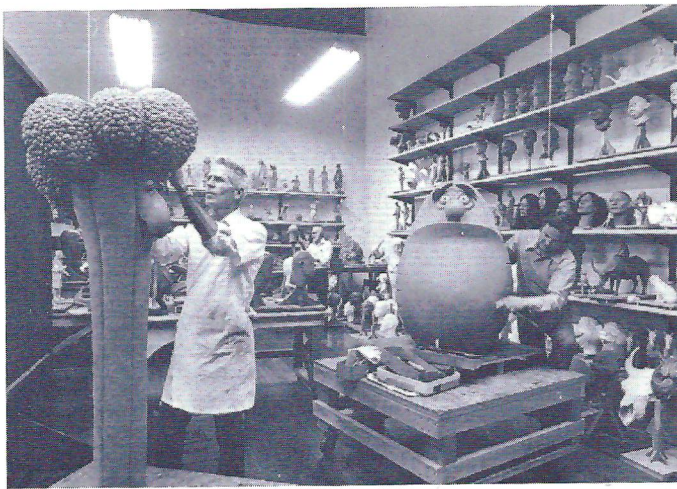
"This model has taken about a year to complete," Eric said. "Most of the show has been decided on before the model is started. At this stage concepts and preliminary designs have been figured out so they'll work out. Sometimes better solutions may come up as I'm working. Right now I'm working on colors and props and details."

The finished set will be taken apart so that draftsmen can take measurements and make blueprints. Then it will be sent to the shop to be built. It will come back in raw form and be finished off by the people in show production.

Meanwhile, the sculpture shop will have created the figures in full scale and sent them out to be cast for animation.

We found, in another corner of the big workroom, a giant eggplant about four feet tall in the process of being converted to a finished figure. Instead of hard fiberglass, they were using a soft sculpture material in the casting. Mr. Eggplant, Mr. Broccoli, Miss Swiss Cheese and all the other characters would be ready to plug in when it was time to put the whole set together.

Much as I regretted it, there was no time to peer into all the compartments and nooks and crannies where model makers were at work. I did take time to chat briefly with Susan McCauley, who was applying paint to a model of a building for the French Pavilion. Again I had to marvel at



Kitchen Kabaret characters for the Land Pavilion (upper left) take shape under the skillful hands of WED sculptors. Susan McCauley (upper right) adds colors to a scale model of the France Pavilion. Artists' sketches are turned into three-dimensional models in the Design Development section (above left). One of the models, that of the American Adventure pavilion, is painted by Marilyn Gage (above right). Below, Eric Jacobsen assembles a model of the Colander Combo, one of the performing groups of foodstuffs in the Land Pavilion. (Copr. Walt Disney Productions)

the fine details of the workmanship. It was an intricate reproduction of the rendering by Tom Gilleon that hung on the wall.

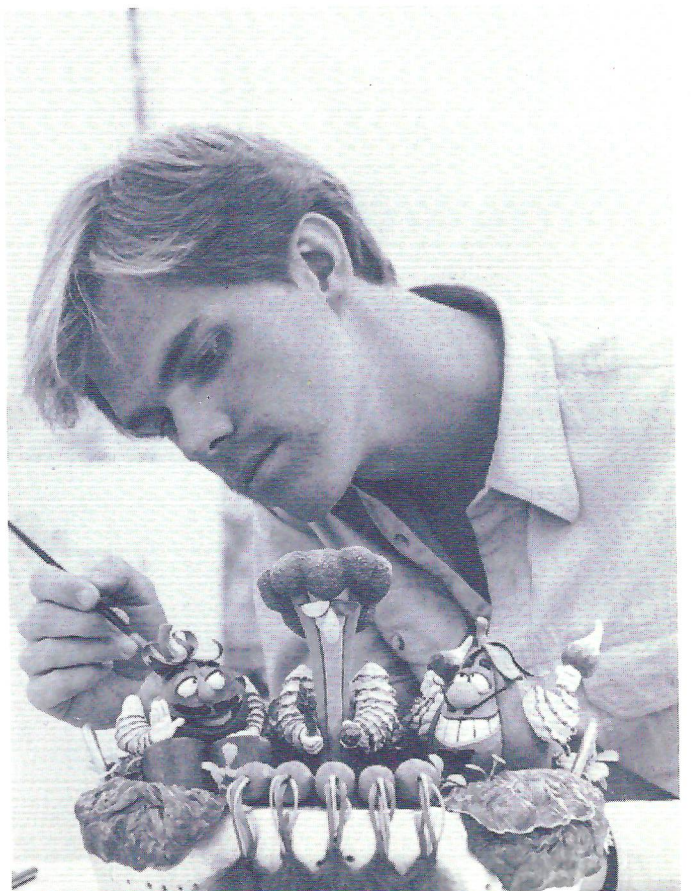
Here again I was witnessing, as I had at the sculpture shop, that crucial transition from artist's conception to three-dimensional form.

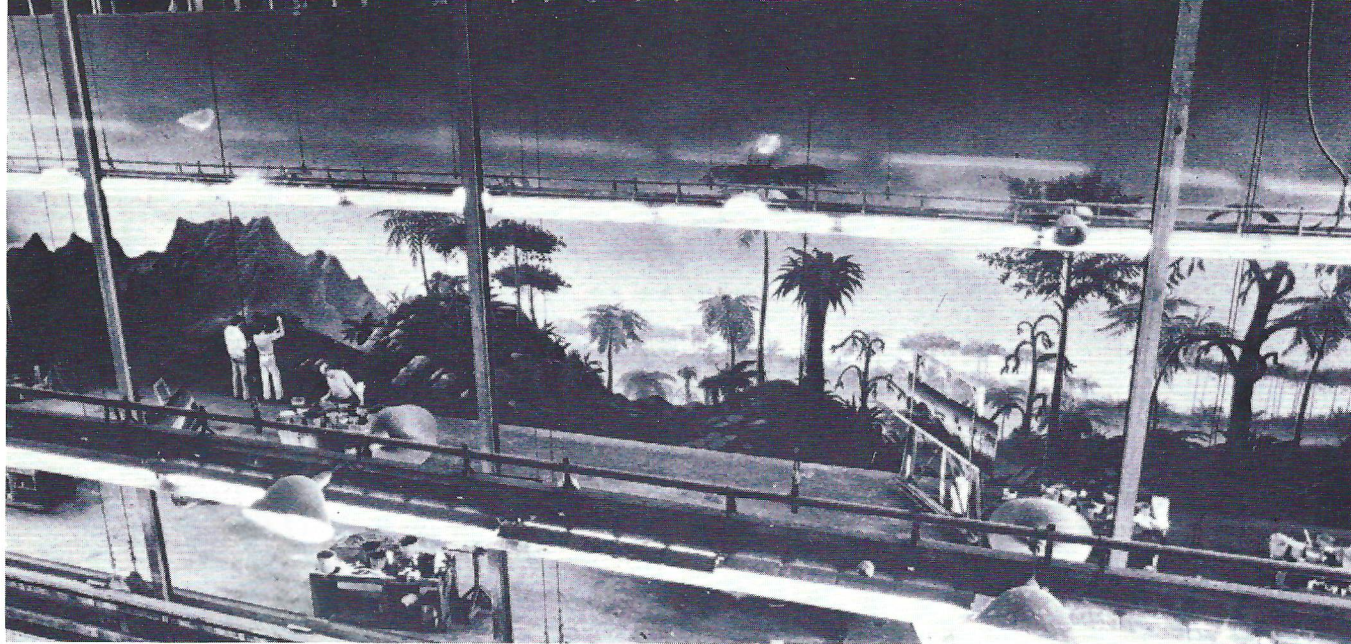
"When you get into three dimensions, a lot of things have to change," Susan said.

Color selection is treated with the greatest care. Each color must fit into its setting and harmonize properly. Before this model was finished, John Hench would have to pass on the colors Susan was applying. Beside her was a stack of color swatches matching those on the models. These would go to the construction site to be applied to the actual building—another example of the total control WED exercises over the final product.

After reposing in The Model—the big one in the center of the room—for the necessary length of time, Susan's model would, like those created by Eric Jacobsen, be broken down and converted into working blueprints.

"We go at it just the opposite from the usual way," Joel told me as we were leaving. "We make the models first—each one is a prototype—and then prepare the blueprints from them."





Disney obtained this huge sound stage at 20th Century Fox for production of a mural almost a tenth of a mile long. Mural will serve as a backdrop for the primeval dinosaur set in the Energy Pavilion. Artists add colors (above) to sections of the mural nearing completion. (Copr. Walt Disney Productions)

From script to show

ABOUT AS CLOSE as you can get to the real Future World at this point is a special room WED has set aside for models of the pavilions and renderings of various features that may become part of them. The display, I surmised, is used to explain the concept to corporate prospects.

It was here I met Randy Bright, a tall, articulate Imagineer whose collegiate appearance belied his status in the Disney organization. He is director of scripts and show development.

Randy had come down to tell me about the Exxon-sponsored Energy Pavilion, one of the projects for which he was directly responsible. (Later on I would meet him again for a preview of the American Adventure.)

At this point I should stress again that details of many of the projects I was being shown were still in the development stage. Changes would undoubtedly occur before they were translated into brick, mortar, steel and film. But the concepts were relatively firm.

Randy pointed to the roof of the pavilion.

"Those are banks of photovoltaic cells. They'll provide a portion of the power for the pavilion. Solar energy. The mirrored sides of the building will reflect the agitated water around it, giving the impression of energy in motion. The mirrors will also pick up the landscaping so that part of the building disappears.

"Inside, we're going to present a film experience that has never been seen before. Emil Radock has developed the techniques. Squares and triangles will be mounted on the wall so that they can rotate. Some are black and some reflective. You'll get a wavelike effect as you watch the film. It will be a general look at the principles of energy."

From this introductory show, guests will move into another theater in the center of the building and take seats on movable platforms. The theater is triangular, with mirrored walls. The seating area will rotate as the story of the creation of energy and fossil fuels is shown on a 160-foot screen.

At the conclusion, the platforms with the seated spec-

tators will move out of the theater and into a misty swamp. Behind real vegetation will be that 500-foot mural I mentioned earlier. The ride will take guests past huge snorting dinosaurs and on through what Randy called "a great geological enfoldment." The earth will tremble with volcanic eruptions and flaming lava will flow toward the spectators.

Out of this chaos, the seats will be transported into another theater. Here a 13-minute film on a 220-foot screen will show energy options for the future. The platform will move back into the central theater for a booming finale as all types of energy finally burst forth around the audience.

"The climax is a real visual thrill with all the energy effects we can put in," Randy said.

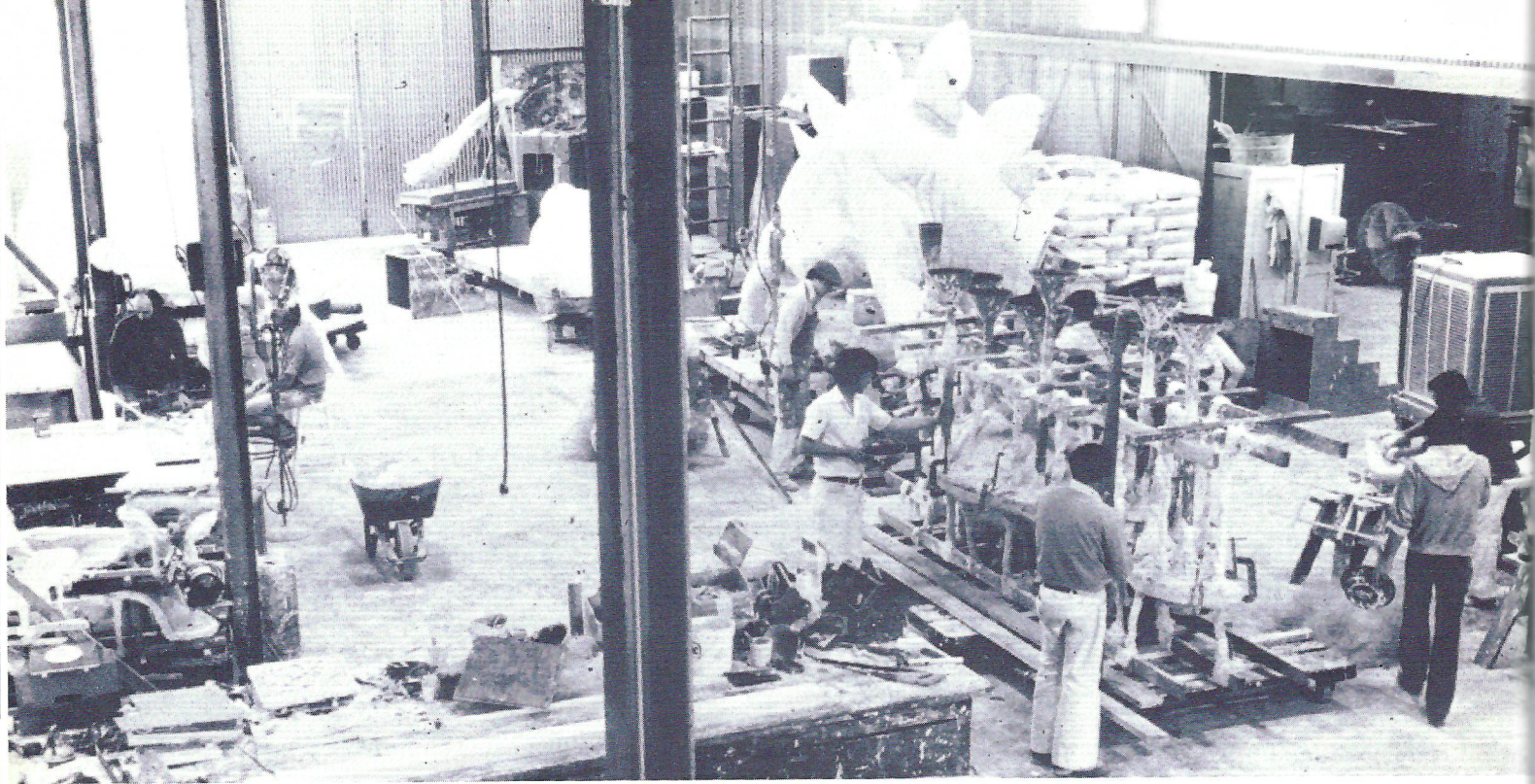
He invited us to his office on the other side of the building to see how the film for the show is being created. Resting against one wall was a stack of boards perhaps 8 feet long and 4 feet high. Color sketches were pinned on in sequential rows. These were the scenes of the show as they would appear. Under each was a bit of typewritten narration.

"We develop an initial script," Randy explained. "Then the artist makes sketches."

The narration script is broken up and mounted next to the appropriate scene. There were views of San Francisco harbor, a freeway, the search for oil in the arctic, nuclear power and scores of others.

"We will have a scouting crew go out and get the shots," Randy said. No small undertaking with locales all over the world. The crew will carry along those complex rigs John Hench spoke about.

"I'll be turning this over to a production crew and just monitoring from there on," Randy said. It was, I gathered, the way each of the show developers functioned.



One of the most massive projects in preparation for EPCOT is the creation of dinosaurs for the Energy Pavilion. Above, dinosaur bodies are assembled on frames that will contain complex machinery to make them thrash and roar. Sculptor (center left) puts finishing touches on teeth of one fiery monster. Spectacular energy storms, possibly resembling the one envisioned by an artist at center right, will burst out around guests riding through the pavilion. At left, Randy Bright goes over story boards for an energy movie that will be filmed in many parts of the world. (Copr. Walt Disney Productions)

Under all is the land

ONE THING that impressed me was the excitement that each show designer manifested for his project. Each one seemed to be totally engrossed in the theme of his pavilion, ready to talk on endlessly about all the elements going into it.

Rolly Crump was waiting by the Land Pavilion when we returned to the model room. He was another veteran Imagineer, one who had worked on the Small World show at the New York World's Fair before Walt Disney World was built.

"You'll come in at the upper level," he began. "Below you is a farmer's market. Fast food will be served here. We're doing menus with Kraft (the sponsor). Salads may be made from produce we grow. In the center will be a turntable restaurant where you can view the whole show from 14 feet up.

"Next is the Harvest Theater, where we'll show a film called 'Symbiosis.' We're sending crews around the world to film how man works with the land. Windbrakes. Controlling water. That sort of thing.

"Then there's the Kitchen Kabaret with performing foodstuffs. It will be like the bear band at Walt Disney World.

"We have a boat ride with a capacity of 3,000 an hour. On the trip you'll see projected illusions of seeds sprouting, plants flowering and fruits ripening in sequential manner.

Journey into imagination

THE AFTERNOON was passing quickly. In the course of one fascinating revelation after another, I had lost all track of time. We moved quickly to another part of the building, to a cramped cubicle where the Eastman Kodak Pavilion, Imagination, was evolving.

Tony Baxter had a projector set up and ready for us. He was the man who had designed the Big Thunder Railroad now nearing completion at Walt Disney World. A vibrant young fellow, the youngest of the Imagineers I had talked with.

"Eastman approached us last summer," he said. "We had nothing at that time which they felt fitted their image. So we tried to come up with something. They had been developing a show of their own called 'Journey into Imagination.' We used that as a starting point. You might think of this as the Fantasyland of EPCOT."

To me it seemed as he began to unfold the story line that this was the most typically Disney of all the shows, something in the tradition of "Pinocchio," "Sleeping Beauty" and "Fantasia."

The pavilion will have three parts. You start in a theater where a film introduces you to the world of imagination and its limitless potential. Then a ride takes you into that illusory world. At the end there's a 15-minute wrapup show in the Magic Eye Theater.

The show begins with a series of creations of the imagina-

tion. Background sounds will let you listen to the sounds of the land. The boat narrator will explain the different sections of the world before man. The rainforests. The deserts of Africa. We'll show how the desert can be cultivated with sand culture. You'll see a flight of locusts over the American prairie. This will demonstrate the need for pest control. And then you'll ride through a full-size, turn-of-the-century American farm. This will be the gateway to a theater showing a film 'Century of Farming.'"

Finally, at the back of the pavilion will be three separate buildings where actual growing takes place. One will show tropical fruits and vegetables under cultivation. Another is an aquacell where mariculture, including shrimp farming, is carried on. The third is a gigantic greenhouse where continual agricultural experimentation will take place.

After the shows, guests may go back for more detailed, technical information and guided tours.

I took time to look at the sister pavilion of The Land, one they call The Sea, which was just a few steps away. Kim Murphy, who spent 10 years with Sea World, explained the concepts they were developing. Since this pavilion will not be included on opening day (it doesn't yet have a sponsor), it is too early to go into the concept in detail. Suffice it to say they're proposing a full-scale sea base to which guests can descend and see the submarine world around them. It will open in June 1983.

tion floating across a screen—Mickey Mouse, the first airplane, the Eiffel Tower.

"We say, 'Let's take a journey into imagination,'" Tony explained.

Two characters accompany you on the journey.

"Dream Finder is a professor. He represents the spirit of imagination. His assistant, Figment, comes from the Land of Imagination and represents childlike spontaneity. These are the extremes of imagination.

"You meet the professor in an aircraft on the way back to the Imaginarium with wonders he's collected on his trip. Then Figment enters. He'll be the guide.

"At this point you break free of the theater and embark on a trip. You pass through the Dreamport, where raw material of dreams is arriving. Figment produces a jar of rainbows and they spill across the track. You enter a book and words and phrases spill out. In the cinema part, great scenes pass through a ribbon of film.

"Next comes a technology sector. You see a nutty clock. You're taken into the mysteries of chemistry. You get a look at aspects of power.

"The ride moves on to the Observatory. The theme here is that materials of imagination come through observation. In the Dream Incubator, ideas float in on a conveyor belt.

"The final thing is participatory. The Image Works. Here guests are programmed into a science fiction film."



Senior designer Rolly Crump (above) shows a couple of Imaginers three separate growing areas that guests will see on the trip through the Land Pavilion. Plans now call for individual buildings to house each one. At right, Barry Braverman and Tony Baxter study a site plan for the Imagination Pavilion. (Copr. Walt Disney Productions)



A 15-minute film on imagination in a new 3-D process follows the ride.

"It sends the audience back into the real world with an appreciation for looking at images in a new way," Tony said.

The Imagination Pavilion includes a hands-on section where guests can exercise their own imaginations at high-tech video terminals. You'll be able to create works of art of your own and get copies. You can put yourself in motion on a screen. Or try instant photography.

At the end, guests can exit onto a terrace 34 feet up and get a breathtaking view of the panoramic layout of EPCOT Center.

Tony's rapid-fire description of the show was too complex to record in more than this scant summary. It will be a tour de force in cinematic effects, with images and colors floating and dancing and dissolving like flashes in a dream. You will not be able to escape the realization that you've seen the stuff out of which EPCOT itself was created.

One hundred years ahead

ONE PAVILION, Century 3, is only in its early stages of development. A letter of intent has been received from General Electric for sponsorship, but the contract signing is still pending. (A contract is also pending with AT&T for Spaceship Earth.)

Just before closing time, we barged into Claude Coats' office and found him at a conference table covered with blueprints and drawings. Ideas for Century 3 are very much in the formative stage. There are hundreds of them, and the job now is to bring them down to a film sequence that can be shown in a reasonable amount of time.

Claude Coats, a veteran of 45 years with Disney (he started as a cartoonist), has been through this before in developing futuristic shows for the New York World's Fair and Disneyland.

Now he has embarked on the most ambitious undertaking of this type that he and Disney have ever tackled.

"It's like going to school all over again," he said, pointing to the science fiction type color renderings hanging on the walls all around the room.

"We're going to use a ride device with cars that hang from an overhead rail. It will move 1.8 feet per second. We'll make guests feel they're celebrating the nation's tricentennial, looking back over the last 100 years.

"You will make a two-minute ascent to Future House through thoughts about the future from the past. Then you'll enter a theater for a probe of the future. The screen is more than eight stories high—the biggest screen ever.

"It will curve over above the audience to give a planetarium effect. The audience will get views of outer space and inside the molecule. We're taking people to places they've never seen before. Like inside an electron microscope. Into living cells. Out to the rings of Saturn. Along the DNA life chain. There'll be many blowups of microscopic stuff.

"It's a celebration of the good times ahead of us. We'll show future urban development. A family celebrating their 100th wedding anniversary, which will be a common thing. We'll show a complete new lifestyle. And robot mining. An undersea habitat. Underground homes. Desert farming. Hobbies, cooking, music as they will be in the future.

"We'll end up going into a space habitat. We'll show work and health activity in space. Manufacturing. Mining of minerals from planets or asteroids.

"At the end of the experience, we'll tie the whole thing into the family unit."

Guests will leave the theater and go into a polling area. Lights on the dashboard of the vehicle will light up and guests will push buttons to indicate their feelings about what they've seen. These will be instantly tabulated so that each can check his reactions against those of others.

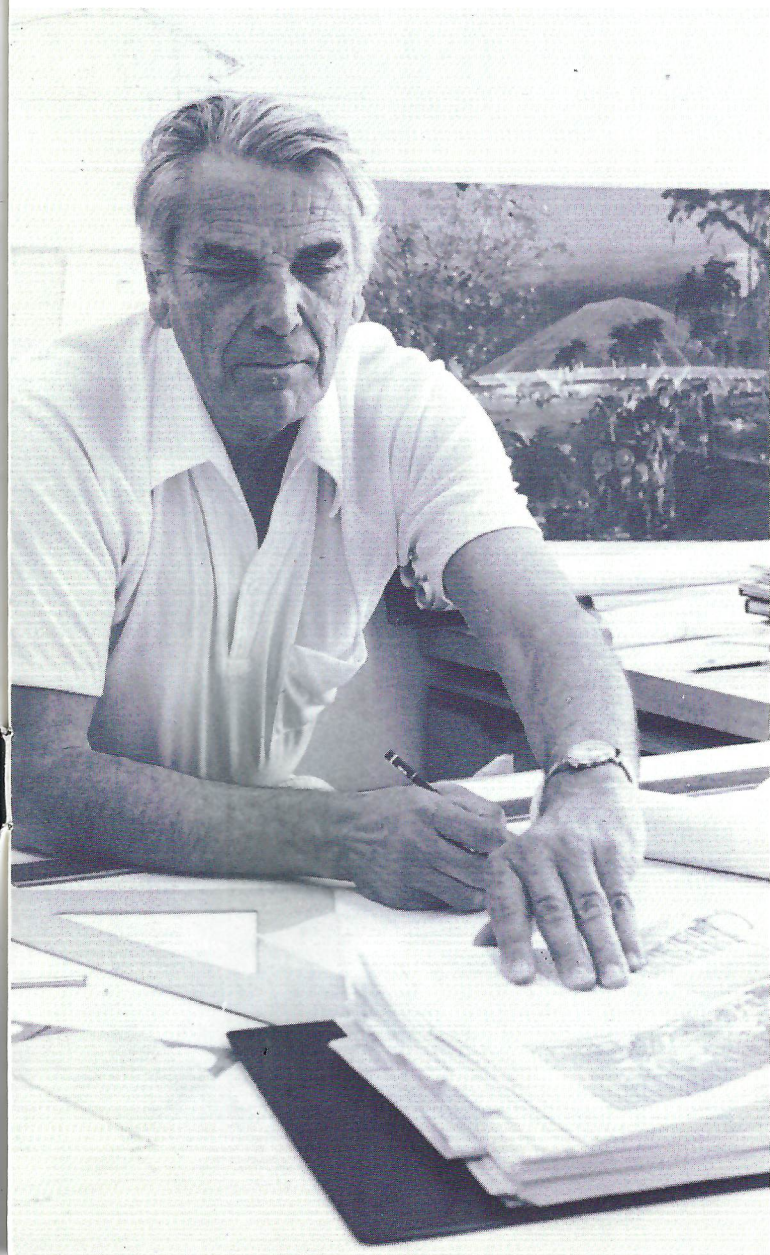
In less than an hour, I had been through the world of imagination and across a hundred years into the future that imagination had wrought. A fitting finale for an incredibly exciting day.

The great, smog-blanketed city of Los Angeles stretched out to infinity before me as I drove in late afternoon traffic, down from the bald hills into the chaos and congestion of urban life. I suddenly realized that here was the milieu in which Walt Disney had developed his fervent urge to guide all mankind to a better plane of existence. He had experienced the dirt and the grime, the violence and the desperation, the choking smog. Often people said, I recalled, that Los Angeles was a preview of the Orlando of the future.

Could EPCOT save us from this fate?

After today I had to believe.

Claude Coats combs a volume of technological information in search of more ideas for the Century 3 Pavilion. (Copr. Walt Disney Productions)





Working from concepts created by Ward Kimball (below), designer John Stone arranges vehicles at intersection in model of an early 20th Century American city. Collision between horseless carriage and produce cart creates what Ward Kimball figures may have been the nation's first traffic jam. The noise and action will be overwhelming as the ride in the Transportation Pavilion brings guests upon this scene after a journey through the tranquil 1800s. (Copr. Walt Disney Productions)

Jiminy Cricket

I F I CARRIED any forebodings about the future into the next day, Ward Kimball was just the medicine I needed. He was a droll, bouncy little man with shaggy white hair, horn-rimmed glasses and a green shirt with red stripes. For years he had been one of Disney's chief animators and a close associate of Walt. The Disney pixie dust had rubbed off on him profusely. There was a vague resemblance to the Jiminy Cricket character he had created.

He collected trains, he told me. Out at his three-acre place, he had built a full-size railroad. It was he who first got Walt interested in trains. He collected toys, too. Had a huge collection, gathered over the years. He had a collection of books on old trains and 19th century American architecture which had served as valuable source material for designers of Main Street.

With a range of interest as broad as Walt's, he had helped develop the Disney TV programs on outer space in the 1950s. Eisenhower once forced his generals to watch one of them, "Man in Space," to shake them out of their land-locked complacency.

Retirement had not slowed down Ward Kimball one bit. He was doing a book and working with his trains and collection of toys, and generally getting as much of a kick out of life as ever. Last January he got his old Dixieland band together and played with it at the head of the Rose Bowl parade.



continued/

Despite a drizzle of rain, he had come in from his place far out in the suburbs to show me the show he had designed for the Transportation Pavilion. We had to drive a dozen miles or more from WED to the big industrial plant which Disney had taken over to construct the pieces for the show and for the Tokyo Disneyland they were working on.

I could have spent all day in that building. There were tiers and tiers of shelves where molds for the Audio-Animatronics figures were stored. Some of the figures, with their intricate mechanical works showing through clear plastic bodies, were standing around awaiting their turn to step into the sets that were being fabricated.

I wish I'd had more time to examine the vintage automobiles parked on the concrete floor. There was a stagecoach with them, and an old buckboard from some frontier ranch. Half a dozen well-worn skiffs—the purpose of which no one seemed to know—lay beside the stagecoach.

All around the vast interior were separate working areas with lathes and power saws and buckets of paint, and craftsmen doing intricate jobs. At one corner of the building carpenters were creating full-size replicas of structures for a turn-of-the-century American town.

In the midst of all this sat Ward Kimball's show model—one of those big black boxes with ramps inside that you walk up and view the scenes in miniature.

"They asked me to come back and redesign the show (General Motors will be the pavilion sponsor)," Ward said. "They were planning to use 100% film and I said I had turned down a lot of film offers."

However, when it was decided to use Audio-Animatronics figures, that was enough of a challenge to bring Ward back part time to work on it.

The ride will take up the second floor of a two-story circular pavilion. On the ground floor will be an exhibit of new developments in transportation, which GM itself is designing.

"This is a tongue-in-cheek ride through transportation history," Ward said as we entered the model. "There are 23 stage sets."

In the first of the sets, you looked into a cave and saw a prehistoric family, back from a journey, blowing on their sore, tired feet. This kind of whimsical twist had been incorporated in each of the scenes I was to see.

Primitives on a wooden raft—early water transportation—were fending off an animated alligator that threatened to gobble them up. Desert travelers with camels and oxen—animal power—were arriving at a city gate to find themselves confronted with a toll booth. A magic carpet floated above them.

"I insisted we put that in," Ward said slyly.

The invention of the wheel was depicted in a scene at a Babylonian palace. Inventors were standing before the king with wheels of all shapes—square, triangular, oblong—while one man with a round wheel was getting the monarch's nod.

The sequence moved through Egyptian, Chinese, Grecian and Roman scenes. One I liked was a used chariot lot. To one side was a dazzling new golden chariot under an arch, and a Roman woman was urging her husband to buy it while he made an effort to ignore her.

"I came in here one day," Ward said, "and found them making the most beautiful, perfect chariots. I told them that that wasn't right at all, that these were used chariots. They had to beat them with chains to make them look dilapidated."

Ward had added one other whimsical touch in this scene: a used Trojan horse.

The three-dimensional story continued on through the time of early exploration by ship. We looked in on

Leonardo Da Vinci's studio, where a Mona Lisa model was scowling at the artist because he'd left his painting to tinker with a flying machine. The story of flight developed in a scene with balloons and later a barnstorming set.

Steampower was depicted on land and water. Then came the westward movement in stage coaches and buckboards. These were drawn up in a circle while Indians and cavalry charged across a screen in the background.

"They move in an endless circle, each chasing the other," Ward said. "We didn't want to give the impression either one was getting the upper hand."

Railroads are introduced in a train robbery scene. There are bicycles from the O. Henry era moving around a tranquil green park where a couple is picnicking on a Sunday afternoon.

The ride moves on through a bicycle shop where a man is tinkering with an early gasoline engine. And then the spectators are jolted out of the tranquility of those early days by a cacaphony of city noises.

"Every conceivable type of transportation is shown," Ward said.

A primitive automobile has collided with a farm produce wagon at an intersection and all hell has broken loose. The wife of the driver is beating him over the head with an umbrella. Vegetables are strewn across the street. A bus driver honks his horn. The bell clangs aboard a trolley coming around a car barn.

"It's the largest set piece we've used, and has the most movement," Ward said. "It dramatizes the problems cities are faced with."

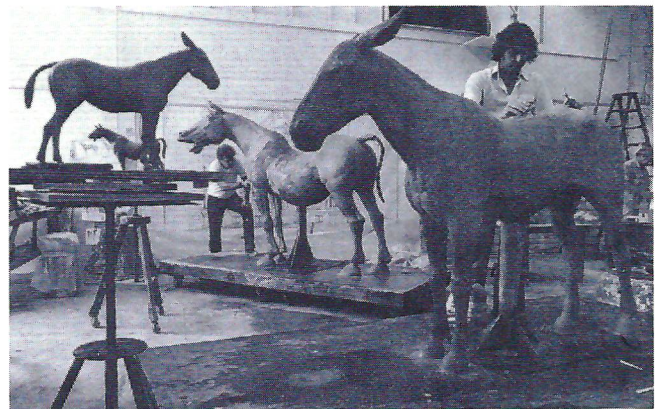
After a 1930s scene with a newly married couple in an old Cadillac, and another, more recent, with a family in a stationwagon, the guests are whisked into a tunnel for an encounter with modern-day speed. They finally exit on a roller-coaster descent that brings them out in the GM exhibit area below.

"The GM Transcenter will show a variety of things," Jack Lindquist told me later. "Things like engine styling, the testing of parts and materials. It is our future statement regarding transportation."

I've gone into somewhat more detail on this show than others because it was one of two where I was able to see the scenes in a walkthrough mockup. It illustrates the technique that will be used in most of the rides—scene after scene in storytelling sequence acted out by animated figures with cinema effects in the background and controlled sounds.

Ward Kimball has done his job well. He comes in now only once a week to oversee the actual production.

At Walt Disney Studios, sculptors add detail to horses which will appear in the Transportation Pavilion. Possibly these are the animals that will pull Ward Kimball's chariots. (Copr. Walt Disney Productions)





Harper Goff points out a new idea for the Italy Pavilion to graphic designer Bruce McCurdy. Mr. Goff, working in complete secrecy, created many of the original concepts for Disneyland, was called back to serve as World Showcase project director. (Copr. Walt Disney Productions)

Around the world in 3 hours

CAN YOU IMAGINE a trip around the world compressed into one long lunch period? This was my one opportunity to get the World Showcase story before I wound up my WED tour. I was fortunate to have two guys like Dave Baron and Harper Goff for my guides.

Again, the setting was a long conference room, this one on the second floor of the WED building. Around the walls were color renderings of each of the Showcase pavilions. And on the table was another of those overwhelming luncheon buffets that would certainly play havoc with my waistline.

Let me introduce my hosts:

Dave Baron is a young, easygoing executive who came from Orlando—where he directed the WED branch office—to direct World Showcase development.

Harper Goff, art director for the project, was a filmmaker whom Walt Disney hired to work on designs for Disneyland. He had been “trying to retire” when they interested him in tackling the Showcase 3½ years ago. With his white goatee, you mark him immediately as an artist. All that’s missing is the beret.

Mr. Goff won wide acclaim for the squid scene in the

movie “20,000 Leagues Under the Sea,” which he art-directed. It came out in 1954.

With Showcase, Dave and Harper have had the trying job of working with assorted committees of foreign nationals and representatives of governments and corporations overseas, sometimes changing in mid-project, and coming up with an assortment of shows and exhibits that have popular appeal in the Disney tradition.

“It’s been an education process,” Dave said as I savored a delicious helping of shrimp salad. “We have to listen to capture the essence of a country. They have to understand why people visit Disney—that magic.

“At first some of the countries wanted to show high-tech things. In one five-man committee there were as many ideas as members. The businessman in the group was proud of the Tommy guns they were making. He wanted to show that.”

Harper Goff commented that Morocco wanted to depict the royal dynasties in its history. Disney suggested this might not have great popular appeal.

Lengthy conferences were necessary to work scenarios

continued/

that (1) told the story each nation wanted to tell, and at the same time (2) provided an entertaining show.

"We have tried to inject as much variety as possible," Dave said. "All pavilions have the same dimensions along the front. We have to orchestrate architectural aspects so that each one complements its neighbors, yet each one must be completely different.

"We're after complete authenticity. Everything—buildings, landscaping, food in the restaurants, shops—must be completely authentic."

HARPER: "When the Japanese looked at the design for their pavilion, they criticized us for using Chinese-style buildings. We had to change them to buildings that were distinctly Japanese, like the seventh-century Horyuji pagoda and the Shishinden Palace in Kyoto."

Each of the pavilions allows guests to experience several regions of a country.

HARPER: "We start with the lagoon. The front has to be a water element. The pub in the British Pavilion has two aspects. On the lagoon side, it is a replica of a waterside pub on the Thames used by the boating population. On the street side it resembles a pub in Soho."

You can dine in the pub and then wander back into a London park like Grosvenor Square. One building has the feel of St. James Palace. The replica of Hampton Court houses a toy shop. The pavilion will also have a Royal

Doulton china shop, a gift shop and a biscuit and confectionery store. Farther back, you'll be able to stroll into an area like the Cotswold Hills.

DAVE: "Soon after opening we'll have a British music hall. A live show will be presented with dinner."

"We may also have a British historical facility," Jack Lindquist put in. "We're looking for anything we might add to embellish. We're looking to the cultural side."

It was mentioned that, to staff this and other pavilions, young people will be brought over from their native country on a combination work and education program. Courses with college credit will be conducted at Walt Disney World University.

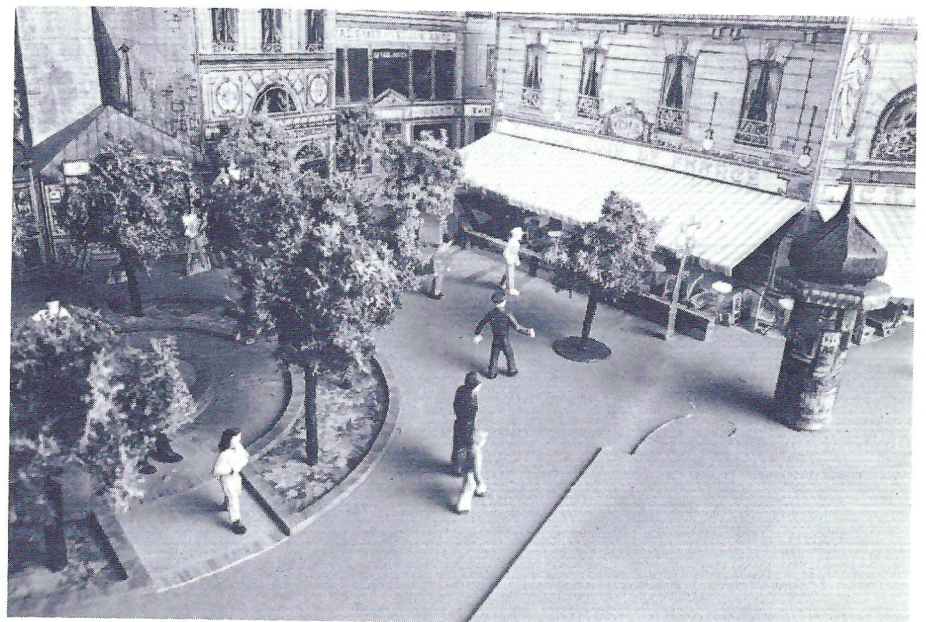
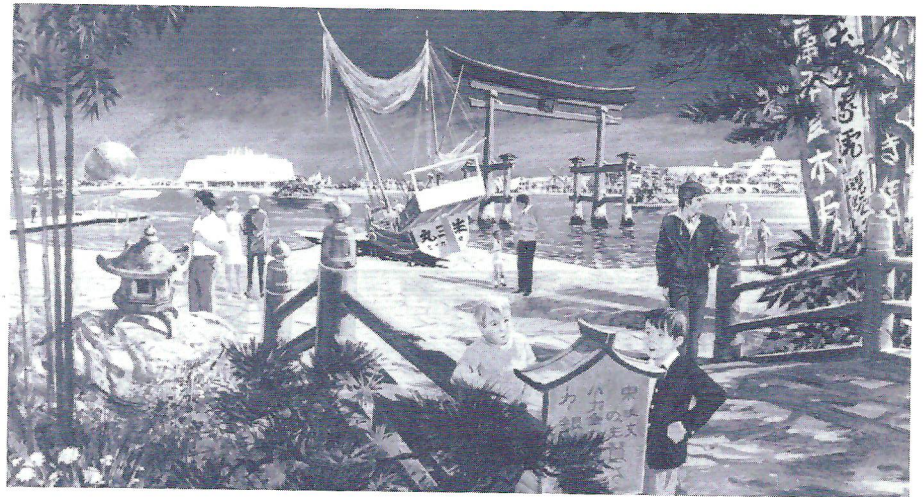
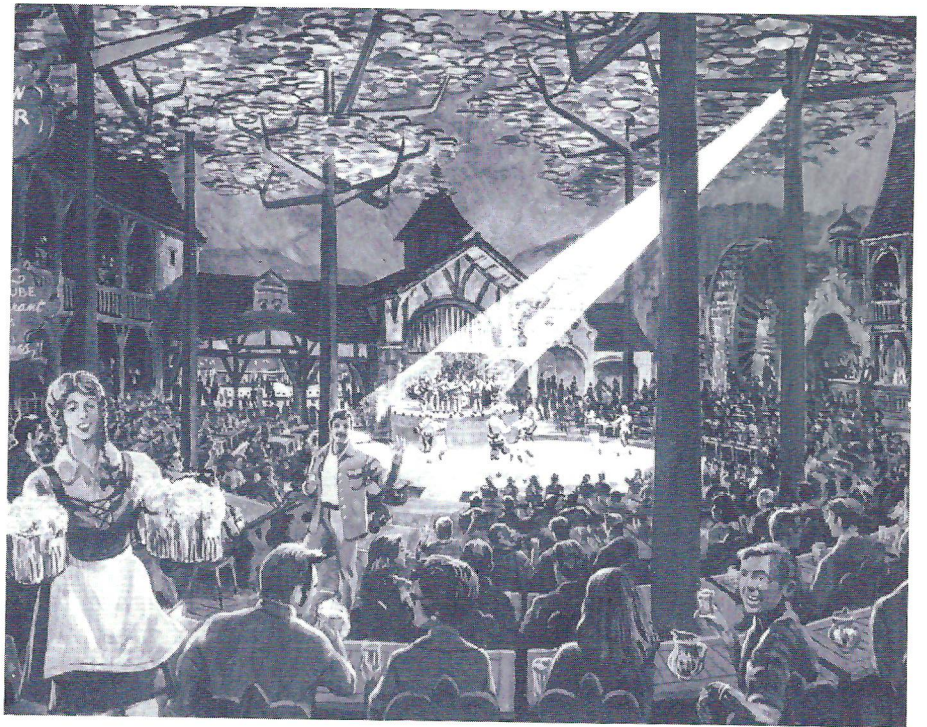
Harper Goff was particularly proud of the design of the Moroccan Pavilion. Judging from the color rendering, it will exude all the Mideastern mystery and magic we associate with the movie "Casablanca" (although that city is not part of the design).

HARPER: "We have placed a seaside pavilion in front. Behind it there is an enclosed pavilion. The interior is carved stucco, carved wood and exquisite tile work. We are bringing craftsmen and items from Morocco to create it.

"Guests will walk around Djemaa El Fna Square in Marrakesh. There's a gate modeled after one in Fez, and a replica of the Kautoubia Tower. We're using Marrakesh colors—warm earth tones and green tile roofs. Farther back you'll



Working sketches (right) used in developing concepts for Showcase pavilions seem to capture flavor of each nation in a small space. Top to bottom, they are: German Pavilion, Japanese Pavilion, French Pavilion. Numerous changes usually occur between original rendering and final architectural design. Below, pavilion renderings cover walls of conference room at WED headquarters, where Dave Barron, director of World Showcase Development (left) discusses placement of foliage in the Costa Rican Pavilion with draftsman John Penketh and designer Bob Mackichen. (Copr. Walt Disney Productions)



continued/

enter the medina, the ancient city. Here will be artisans making clothing, jewelry and items of brass and shops that sell native products."

Fast food will be served in the pavilion restaurant in the daytime. At night it will be transformed into a setting for elegant dining and entertainment.

The Mexican Pavilion will be immediately recognizable by a tall Mayan pyramid in front. By the lagoon, a cantina serving fast food will be located. From here, guests walk through the pyramid where Indian artifacts and other cultural exhibits will be shown. Beyond, you enter a typical Mexican town square. There's a volcano ready to erupt in the background. The main attraction in this pavilion will be a boat ride that takes you through Mexican history, showing Mayan and Aztec cultures and continuing on up to Mexico today.

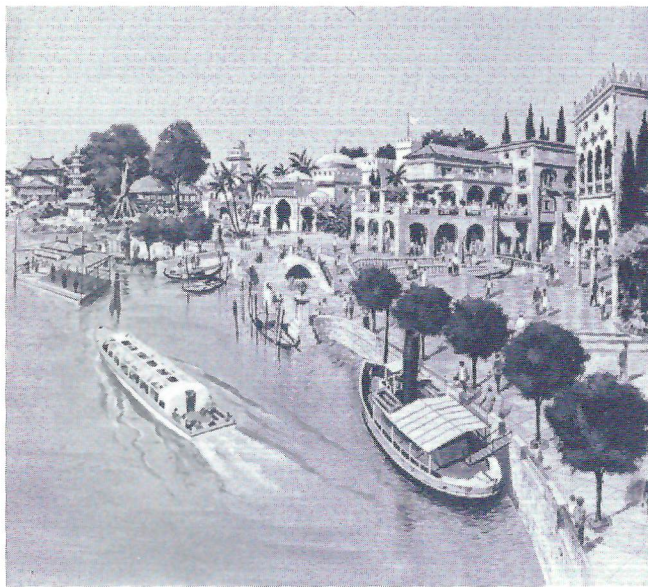
It's interesting to note that Schweizer and Associates of Orlando is doing architectural work on the Mexican Pavilion. (Another Orlando architectural firm, Helman Hurley Charvat Peacock, is working on The American Adventure.)

The Italian Pavilion, at the front, is a little bit of Venice. There's a canal off the lagoon. You go up the Adriatic and land at St. Mark's Square. Before you is the Doge's palace, with a fine art gallery inside. You quickly spot the famous bell tower. The restaurant on the second floor of the palace will be operated by Alfredo's The Original of Rome.

As you go farther back in the pavilion, the scene becomes progressively more classical—Florence, Sienna, Rome. There will be parts of ruins and then a traditional Italian garden.

DAVE: "We expect to have live entertainment outdoors. Maybe including a Punch and Judy show. You know, that started in Italy as a way of criticizing the government."

A beer garden will be the centerpiece of the German Pavilion. Here you'll find a continuous Oktoberfest going on, oompah band and all. Although the boat ride for the pavilion will not be ready for opening day, when it does start you'll have a chance to take a voyage down the rivers of Germany by night. You'll pass the great cities along the Rhine and other famous landmarks. It will go through the



This artist's concept gives an idea of what the busy waterfront at World Showcase pavilions may look like. Glass-roofed boats similar to those used on the canals of Amsterdam will shuttle guests back and forth across the lagoon. (Copr. Walt Disney Productions)

wine district and Heidelberg. At the end you'll step out at the beer hall.

A tourist area at the pavilion will contain shops selling clocks, wines, cameras, china and such while a glockenspiel tinkles in the background.

HARPER: "The French Pavilion has a Parisian interpretation. We found that most cities in France are like Paris. A sidewalk cafe faces the lagoon. Behind it is a typical Parisian building which will house a restaurant operated by three of the top French chefs. You can walk from the bistro along a typical provincial street with an art/book store, bakery, Limoges china shop and other places to browse. A leading perfume maker will have an outlet here."

A theater will present a cinematic tour of France on a 200-degree screen.

"It's more than a tourism show," Harper said. "There will be a separate tourism section with changing exhibits."

Of course, behind it all will be the Eiffel tower, with a beacon on top.

The Japanese Pavilion is totally supported by industrial firms and merchants, with no government participation. Upon landing on the shore, you cross a themed bridge and pass a torii gate. Inside, you discover a large department store on the ground floor of the palace. It's operated by Japan's leading merchant, Mitsukoshi. There'll be a restaurant in the store.

Moving on, you walk through a beautiful Japanese garden and on to a huge castle with moat. Here you'll find a museum in the gatehouse displaying armor, cannons and other cultural items. An art gallery will serve as a holding area for the theater in the castle. Once seated, you'll be treated to a show covering the evolution of Japan that will take you to historic places and into areas like the ginza. An industrial-commercial show will deal with products like Seiko watches, Panasonic stereos and cultured pearls.

It seems improbable that the vast expanse and diversity of Canada could be squeezed into one pavilion, but the designers have done a remarkable job of injecting the flavor of this nation into the space available.

As you enter the pavilion you look ahead at the massive rocks and waterfalls of the Canadian west. There's a log trading post presenting cultural exhibits. Nearby, you come upon a street in a French Canadian town, a replica of the rue St. Louis. The shops here reflect the traditional French Canadian architecture.

In a structure modeled after the famous Chateau Laurier hotel will be presented an 18-minute show. You can also see a display featuring the Mounties. Food will be served at a buffetaria designed like a country inn.

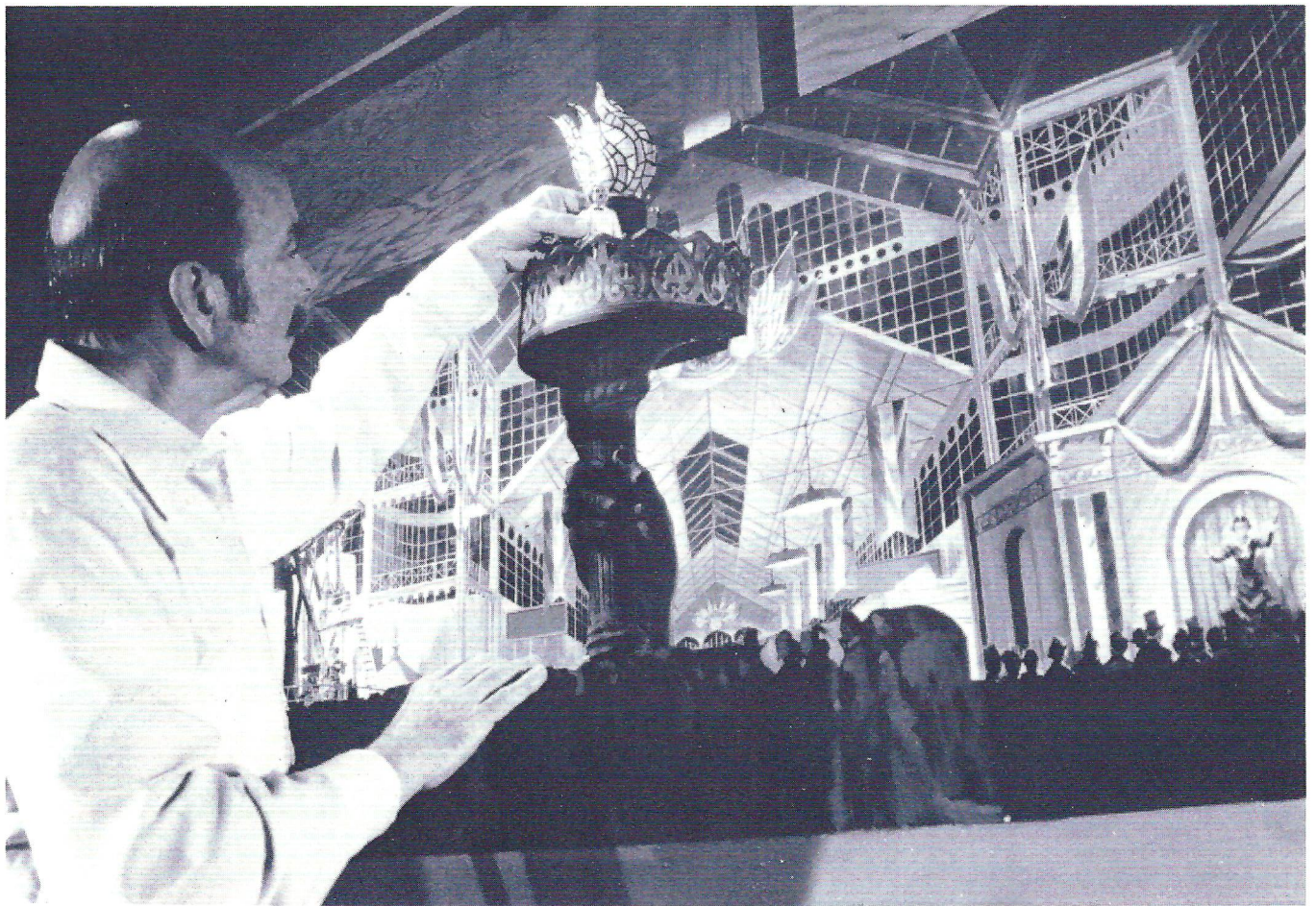
DAVE: "You'll exit through formal gardens patterned after the Butchart Gardens. Some parts of this pavilion are still going through approvals. Some names may be changed."

Smallest of all the pavilions is the Costa Rican.

DAVE: "We feel it's a jewel. The architecture is Spanish colonial. We've taken the liberty of creating a crystal palace containing tropical gardens of Costa Rica. There's an orchid show at the entrance. The conservatory covers a third of an acre. It has waterfalls, tropical birds—a very relaxing atmosphere. You'll exit through a tourism area. There'll be a snack bar serving seafoods and melons. Leather items, carved wood and that sort of thing will be sold in the craft and merchandise area."

Two pavilions in the early design stage—the Danish and Equatorial African—will come along sometime after the opening.

But from the wealth of detail I'd gleaned from Dave and Harper by the time we'd finished our coffee, it was apparent that there'd be more than enough in the Showcase to keep guests entertained and occupied when EPCOT opens.



Artist Clem Hall positions tiny figure of Mark Twain atop a stylized representation of the Statue of Liberty as he reworks his designs for the American Adventure Pavilion. Model in background shows exquisite detail that will go into this pavilion. (Copr. Walt Disney Productions)

An American Adventure

IGATHER THAT the American Adventure proved to be more of a headache at WED than any of the other pavilions. Randy Bright told me they'd reworked the concept at least six times before they finally got it right. The present version was sufficiently strong to attract Coca Cola and American Express as sponsors.

My tour of WED was almost over when I sat down with Randy and a couple of his assistants in a crowded workroom where they'd set up a kind of presentation model for the show. Although it will be housed in a colonial building at the center of World Showcase, it is not related to the pavilions that lie on either side. Nor is it organically a part of Future World. That's why it had originally been located in a transitional area by the lagoon.

Movement to the back was decided upon because, said Randy, "We wanted a major attraction to draw people around." And it opened up an unobstructed view across the lagoon.

The show as now constituted is entitled "We the People." It is the whole history of America in review, using techniques somewhat similar to although more advanced than the Hall of Presidents.

"We have divided the story into three parts," Randy

said. "Dreaming and doing. Pioneering. Meeting the challenge of the American adventure."

The stage setup is very formal. There is a red curtain, and on a ramp curving out on either side are statues of archetypical American thinkers and dreamers.

The action begins with a three-dimensional scene featuring Ben Franklin in his office chatting with Mark Twain. They talk about their visions of America.

Then the curtain rises. Images of ancient sailing vessels are seen on the 72-by-32-foot screen. You recognize the Mayflower.

"We try to maintain the art techniques of the day," Randy said.

He went on to recount the unfolding story.

"There are pilgrim scenes and then we go to a long Colonial street. The scene that rises up focuses on the Declaration of Independence. Franklin walks up some steps to Jefferson's office. Jefferson is working on the Declaration."

Randy uttered the dialogue between them, mimicking the irate voice of a Jefferson bothered by the interruption.

One fascinating feature in the technique for this show is

continued/

the combination of three-dimensional action on stage with action on the screen. Figures seem to walk right off the stage into the scene on the screen. I was not always sure, as Randy talked, whether the actors were on screen or stage.

For instance, at Valley Forge two soldiers are huddled in the snow grumbling over their lot. George Washington on horseback looms behind them on the screen, against a snowy landscape. It all melds into one visual impression.

"Next comes a river scene," Randy said. "The river is shot as if we're floating down it. Mark Twain comes out on stage on a raft. He talks with figures on the screen. People like Fredrick Douglas and Harriet Beecher Stowe.

"Then you hear the sounds of a family fighting. They are posing in a photo salon. Matt Brady is taking the picture. One brother is in uniform to fight for the North. The other one is getting ready to fight for the South.

"The picture of them develops on the screen. A Civil War ballad plays—'Two Brothers.' We see the Civil War through the eyes of Brady.

"Then Chief Joseph of the Nez Perce tribe delivers a soliloquy on native Americans passing the torch."

Mark Twain appears on the tower of the Philadelphia Exposition Hall to herald the new era of invention. You see Alexander Graham Bell, Thomas Edison and others. Susan B. Anthony appears to proclaim women's suffrage.

Now it's the 20th Century. In a wilderness scene at Yosemite, John Muir meets Teddy Roosevelt.

"That was the most important meeting on conservation ever held," Randy said. "It occurred in 1903 and it led to the establishment of the national park system."

Years later the nation is plunged into Depression. You are gazing at a rural general store with gas pump in front, the kind I recall in the North Carolina backwoods in those days. There are characters in overalls lounging on the slumping porch, one playing a banjo under a huge Coca Cola sign.

"Franklin D. Roosevelt comes on and gives a speech," Randy said. "That one about there is nothing to fear but fear itself."

He is followed by Will Rogers, who delivers his com-

ments in the style that was once so familiar to every American.

It is World War II, the time women entered the job market en masse. You see workers repairing a submarine in a shipyard. One says, "Sure am glad we don't have women working around here." With that, the person on his left raises her welder's helmet and, sure enough, it's a girl. The background music is "Rosie the Riveter."

At this point the film changes to a series of montages of great images of America from 1945 to today.

Randy paused to start up the tape on a nearby stereo set. I heard the song, "Golden Dream," that would accompany the images.

"We go to a dream sequence," Randy said. "We're floating through clouds. An American bald eagle floats by us. The narrator says, 'Dream with me what images might be.' Listen to the music."

Again he flicked on the tape player. The music now was in mellow rock style: "Spirit free, soaring through the clouds."

John F. Kennedy will appear at this point to utter his famous words: "Ask not what your country can do for you . . ."

And then Martin Luther King.

On screen the astronaut team is seen floating down onto the moon. Their return to earth is shown.

"Now we swing into a big production of 'America the Beautiful,'" Randy said. "You see two figures on the Statue of Liberty. New York Harbor is behind them. It's Franklin and Mark Twain on the statue. The statue is dramatically backlit. They talk about the challenges America has met and will meet in the future."

The show is over.

Even amid the clutter where we sat, with only the scanty props that were available in the model, I gained from Randy Bright's sincerely impassioned narration some degree of the emotion that will be so strongly conveyed by this new achievement in the audio-visual arts.

It was almost as if they'd planned this big scene as the climax for my EPCOT experience. And perhaps Joel Halberstadt actually had.



Blaine Gibson's patience is endless as he meticulously develops the posture and facial characteristics of figures for the shows. Here he adds detail to a bust of Mark Twain, from which the head for the American Adventure character will be cast. (Copr. Walt Disney Productions)

Nuts and bolts, bricks and mortar

YOU MAY BE wondering by now how all these flights of imagination soaring from the minds of visionary artists could ever be transformed into the mammoth showplace that they call EPCOT Center. It is one thing to give free reign to far-out dreams and even depict them in sketches and models. But the task of manufacturing hundreds of thousands of components and putting them together in actual buildings seems almost beyond the range of human power.

Yet it is getting done. And one man is largely responsible for seeing that it gets done right—with the involvement of 265 staff engineers and designers, a construction management firm and an endless list of contractors and subcontractors and suppliers and manufacturing firms.

He is John Zovich, vice president of engineering. You would know he was a construction man any place. He's tanned, muscular, forceful. A no-ifs-and-buts man, positive and direct in speech.

As soon as I sat down opposite him at his desk, I asked:

"What do you really do?"

He did not hesitate.

"Engineering," he said, "is taking creative ideas and melding them into brick and mortar, computer systems and hardware, facilities, shows and rides. Real things. It is putting them in a form that allows someone to bid them and build them. It is transforming ideas into documents and specifications."

Disney has engaged the Tishman Construction Corp. to act as construction manager. They place the separate projects out for bid. Only firms approved by Disney can enter bids, and Disney people are involved all the way in the awarding of contracts.

"We have a field staff of WED engineering people who



John Zovich (above) is the man who puts all the pieces together from designs created by the Imagineers. He oversees projects ranging from construction of a prototype incinerator to fabrication of seats (below) for the ride in the Transportation Pavilion.



continued/

act as liaison between the design office and the construction manager to assure that what we ask for we get," John Zovich said. "Everyone has to be responsive to the needs of the program. We staff projects with people who know the basic design. They're able to make decisions in the field."

The first concerns of the engineering department were site preparation and installation of utilities. I have described the massive job of earthmoving that is going on right now.

The Reedy Creek Improvement District—a quasi-governmental unit at Walt Disney World—contracted with WED to design the utility setup. Once it's in, the Reedy Creek Utility Co. will operate it.

"Site preparation is 60 per cent complete," John said. "The primary utilities are in. Contracts will be let by June for Spaceship Earth, the entrance complex, monorail station and Land Pavilion."

Ground will be broken in June for the Transportation and Energy pavilions, for which contracts have already been let.

"We're deeply involved in the early stages of Century 3 and Imagination," he said. "They're not in working drawings yet. Communicore is still in design development. We have let the contract for the monorail beamway (track). By June we will have let the bid for on-site utility distribution. There'll be a central energy plant that provides hot water, chilled water and compressed air."

He said a series of releases would be forthcoming on the World Showcase pavilions, where work will go on simultaneously with construction in Future World. They'll be tackled two at a time, starting with Canada and working counterclockwise, with the exception of Morocco, which will be started later.

The vacuum trash-gathering system installed at Walt Disney World will not be used at EPCOT. Instead, waste will be picked up by trucks and transported to a central solid waste compaction station. From there it will be hauled to an innovative pyrolysis (incineration) plant.

"This is a pilot plant that we're developing under the Department of Energy," John said. "It will provide data for a plant at Idaho Falls where waste from nuclear facilities will be burned."

The incinerator will operate at 3,500, so hot it will burn anything. Gases are continuously drawn off from the top and reinjected at the bottom to feed the fire. Either natural gas or diesel oil can be used to start the process. Once it's going, it runs 24 hours a day.

"We've had to contract to obtain waste from Orange County so we'll have enough to keep the plant running 24 hours," John said.

Another of the fascinating new technologies that John Zovich and his team will put into use is a guidance system designed by GM, for vehicles in the Energy Pavilion. They can move about, negotiate curves and reposition themselves without a driver or any attachments to objects around them. This is accomplished by sensors that respond to wires in the floors. The vehicles charge their batteries by induction at specified points without any electrical connections. The power comes from the photovoltaic cells on the roof.

"Doing that shows that we are really on the threshold of what our whole business is all about," John said.

I was beginning to realize by this time that John Zovich's part of the job was really a whole story within itself, one I hoped I would come back to more than once before the project was complete. But now I had only a few minutes remaining, just long enough to scoot over to the MAPO building next door.

MAPO stands for Mary Poppins. It was set up to create special devices needed in that movie, and it has been doing



One of the last steps before shows are assembled for the EPCOT pavilions is programming of Audio-Animatronics characters. Console above has knobs to adjust movements of limbs and face. (Copr. Walt Disney Productions)

the same thing ever since for other shows and projects. Here is where the Audio-Animatronics figures, among other things, are put together and wired for operation.

It was just like walking into Frankenstein's laboratory. Everywhere I looked stood plastic-clad robots brazenly displaying their mechanical innards. One was seated in a bright red antique car holding his head in his hand. I wondered if he was suffering from too much voltage the night before.

Each of the figures has a set of controls underneath. Electrical impulses activate air hoses which in turn activate the moving parts.

Among the robots I recognized some of my old friends, the musical vegetables, from the Kitchen Kabaret show. In this place, anything can be made to perform. And anything can be made to look real.

By some process they've developed a way to make eyes that you'd swear are staring at you. If the figure is an animal, they can arrange for a coat of fur that you can't distinguish from the real thing. And in one room they apply paint to the vinyl face masks that produces a disturbingly human flesh tone.

Just one more waystop in the route ideas take here toward ultimate reality. For us, that reality is EPCOT Center on Oct. 1, 1982.

See you there. □

