Saving the Lady

by Carol North Schmuckler

New York City workmen are a notoriously blasé lot. Nothing awes them. They've handled it all: the newest, the most expensive, the irreplaceable...except, once in a lifetime, there's a project so special it touches even these worldly veterans.

Maybe that's why the workmen erecting the scaffolding around the Statue of Liberty last summer astonished onlookers by having a race—to see who would be first up the scaffolding to give the lady a kiss.

Richard Seth Hayden, a 1960 graduate of SU's School of Architecture, loves to tell that story as just one example of the remarkable atmosphere of good will surrounding the project to save and restore the historic statue. And he should know. His firm, Swanke Hayden Connell Architects, bears ultimate responsibility for the success of the restoration.

Because the Statue of Liberty is a national symbol of almost unparalleled popularity—and because the extensive renovation will close it to the public for more than two years—the project has attracted an uncommon amount of attention.

The closing of the statue and the removal of the torch last July 4 was a major network news story. Members of the French-American Committee of architects and engineers—including Richard Hayden—have appeared on dozens of talk shows. There have been lengthy articles in many national magazines, including American Heritage (June/July 1984), Discover (July 1984), Geo (July 1984), Smithsonian (July 1984), and, of course, all the weekly news magazines.

Further interest has been spurred by the vigorous nationwide appeal for funds to restore both Liberty and Ellis Island, the original disembarkation point of most immigrants. Led by Chrysler chief Lee A. Iacocca, the $230-million drive mirrors the grass roots campaigns of a hundred years ago that raised money first in France for Liberty's construction, and then in the U.S. for her pedestal and installation.

With such close public scrutiny of every step, Hayden is well aware of the stakes. But he also points out that his firm is not tackling the project alone. There's the French-American Committee for Restoration of the Statue of Liberty. There's the National Park Service of the U.S. Department of the Interior, which actually "owns" the statue. And there are engineer advisors and associate consultants on both sides of the Atlantic. All of them have opinions and all offer advice. But on the bottom line it's Hayden, as chief architect, who takes responsibility for the project—whether it stands or, so to speak, falls.

Richard Hayden isn't fazed by that kind of responsibility. After all, his Park Avenue architectural firm usually has 70 or 80 projects going on at one time. They include everything from new highrise buildings such as Manhattan's Trump Tower to some of the nation's most visible restorations: the U.S. Capitol, Senate chambers, and Supreme Court chambers in Washington; and the University Club and the original Bowery Bank in New York City. In large part, it was because of these successes that Swanke Hayden Connell Architects were invited to join the Liberty team.

The Statue of Liberty was a gift from the people of France to the people of the United States. She has stood in New York City's harbor for 98 years, a symbol of freedom and hope, and for millions, embodying America's promise to weary and desperate immigrants. She is the one unmistakable image of America, a totem so unique that even a glimpse of her crown would identify this place to lost travelers.

But Liberty is a victim of time. Her creator, French sculptor Frédéric Auguste Bartholdi, thought she would last forever, but he didn't foresee the toll that water seepage, the salty environment...
"The statue was never designed for visitors. The stairs and ventilation system were built for two people going up and down to change the lightbulbs."

A Symbol Is Born

The Statue of Liberty is so American, it's hard to remember she was born in France.

First proposed in 1865 to honor America's fight for freedom, the idea for the statue was adopted by sculptor Frederic Auguste Bartholdi, an admirer of Egypt's colossal statues. He visited the U.S. in 1871 and found the perfect site: New York harbor. An early illustration (opposite, top right) erroneously placed the statue facing out to sea.

Bartholdi's four-foot-tall model was enlarged several times to full size (opposite, top left). Each time, up to 9,000 measurements were made to proportionately increase the statue's dimensions.

Workers then constructed large wooden forms exactly following Liberty's contours, laid copper sheets into them, and hammered the metal into the proper shape (opposite, bottom right).

To support the heroic lady, Alexandre Gustave Eiffel designed an iron skeleton that would allow the statue to expand and contract with changes in temperature and to withstand the violent gales of the Atlantic. Once disassembled and sent to the U.S., she was carefully reassembled (opposite, bottom left) and placed on a pedestal designed by Richard Morris Hunt.

Money for the base was raised by a public appeal led by newspaper publisher Joseph Pulitzer. He also published Emma Lazarus' famous poem, which would come simple. After all, it's an open structure—there's no hiding the problems.

Fortunately for its admirers, few of those problems affect Liberty's exterior. Her outer skin, consisting of 300 individually formed copper plates only 3/32" thick, will be repaired and cleaned, with only the worst ones replaced. The 20,000 new rivets needed for the job will be treated to match the statue's distinctive color. "When we're finished," Hayden says reassuringly, "she will look the same." The torch and flame are another matter. As the most exposed and vulnerable parts of the statue, they are in critical condition.

Bartholdi originally designed a solid flame, but in 1916 windows were cut in it so that inside lights would shine out. Unfortunately, the new glass inserts were never watertight, and for years water has leaked into the body of the torch and arm, corroding the iron supports.

Last July workmen cautiously lifted off the upper half of the torch and flame and moved them to a small building on the island. There the public is invited to watch craftsmen create a new solid flame, without windows, which will then be gold-plated to gleam under both sunlight and new nighttime lighting.

The statue's more serious problems are the result of the deterioration of its interior structure, and they are the ones Hayden and his team have found the most challenging.

When Bartholdi designed the statue he named "Liberty Enlightening the World" (using his mother as model for the stern face), he created a lady of epic dimensions. She stands 151 feet tall and weighs 100 tons. Her face is 10 feet wide and her waist an ample 35 feet around. Her index finger alone is 8 feet long.

To support her, Bartholdi called upon the noted structural engineer and bridge builder, Alexandre Gustave Eiffel (yes, the same one). Eiffel created an ingenious iron skeleton that Hayden likens to the hoops used by dressmakers.

"It's a system of vertical and horizontal ribs," he explains, "none of which is directly bolted to the thin copper skin. Instead, the ribs pass through U-shaped fittings called saddles, which allow for the different expansion rates of the copper skin and the iron skeleton. But they no longer work, and about one-third of the saddles and their rivets have pulled loose from the copper skin, leaving holes."

Other structural problems stem from the statue's installation. Although her various parts fit perfectly when she was first assembled in Paris in 1884, something went awry during her disassembly and shipment to New York. When workmen reassembled the statue, they had to make adjustments and drill new rivet holes, leaving the original holes open to the weather. The result has been corrosion of many supports and an overall weakening of the structure.

Despite its problems and its gradual deterioration, Hayden admires the design of the support system. "Conceptually it's brilliant. We would not do anything different today, except use more durable materials. We'll replace the entire rib cage with stainless steel," he smiles. "That's what you bring to a restoration—technical ability and a sensitivity to what's already there."

Making and installing the new stainless steel skeleton will be incredibly complex, according to Hayden. "The original workmen had wooden molds to follow," he explains, "but we don't. So we have to go up there and take a shape off every one of them, make them, and put them back one at a time."

In addition to treating Liberty's structural woes, Hayden is making changes that will affect every one of the two million tourists who visit the statue each year.

Liberty had never been a pleasant place for crowds, with as much as a 45-minute wait for the elevator to the top of the pedestal, internal temperatures sometimes reaching 120 degrees, and high carbon dioxide levels.

"Remember," Hayden points out, "the statue was never designed for visitors—it was planned as a lighthouse. The stairs and ventilation system were built for two people going up and down to change the lightbulbs."

To make it more suitable for visitors, Liberty will undergo some extensive renovations. A new glass-fronted double-decker elevator in the base will permit visitors to enter the statue on one level and leave on another, reducing traffic jams; and a new viewing level will be created in the base for those who want to see the interior without climbing the stairs. Both changes will help make the monument accessible to the handicapped for the first time in its history.

"At one point," Hayden recalls, "it was suggested that we eliminate the spiral staircase in the statue itself and substitute an elevator, but I was
against it. Without fail, people who write to the Parks Department talk about climbing those stairs—30 years later, that's what they remember."

In order to make those memories more pleasant, Hayden plans to add new resting platforms, as well as more places to cross over and go down, for those who change their minds about the climb. In addition, the ventilation system will be overhauled and new graphics systems will direct visitors throughout the statue.

Perhaps the most striking change will be that visitors will be able to see the newly cleaned interior of the statue, hidden for years by prison-like wire mesh encasing the stairways. "We'll remove the screens," Hayden says, "and direct new lights out into those magnificent interior spaces."

He also plans changes in Liberty's exterior lighting. "After spending several nights out there," he explains, "we decided to ring the island with blue lighting to give definition to the statue. We'll put in a graded wash of lighting with the lights increasing in brilliance as they rise, and that will emphasize her verticality. Liberty deserves the kind of lighting you give a sculpture."

Meeting Richard Hayden leaves you confident that Liberty has found a stalwart protector. This man is solid; he radiates a quiet assurance, which probably comes from always having had his sights set firmly on what he wanted to do. Growing up in Hoosick Falls in New York state's capital district, Hayden learned a great deal from his civil engineer/land surveyor father, and knew then that he wanted to be an architect.

He arrived at Syracuse University smack in the middle of a turbulent period of architectural change, when the Beaux Arts system of design was being swept away in favor of the more functionalist International Style. The emphasis had shifted to eliminating all needless ornament in favor of expressing the structural elements of buildings.

"When Kenneth Sargent became dean in 1958," Hayden recalls, "he brought the School of Architecture forward into the new thinking of the period. In retrospect, I see it was a time of turmoil in design, but Dean Sargent had a sure hand and was a real inspiration to his students."

His years at SU were frantically full, as they are for every architecture student. Nevertheless, Hayden found time to enjoy the campus, join a fraternity, and develop a great loyalty to the University—as well as learn his profession.

"College is the time you concentrate on design," he says, "but it's also when you learn a philosophy—and without it you're lost. One of the wonderful things about an architect's basic education is that morality and sensitivity to the human race are somehow built in—I don't quite know how," he muses.

After he graduated from Syracuse, Hayden spent a year and a half working for Sargent's architectural firm in Syracuse, but the itch to get to New York City was irresistible.

He took the plunge in 1962 and immediately landed a design job with the office of Alfred Easton Poor, the forerunner of Swanke Hayden Connell. Hayden himself has obviously done well, and is now a managing partner of the 360-employee firm, which has branch offices in Washington and Chicago.

He modestly credits his personal success to being a team player. "I love to work with people, to draw the best out of them," he says. "In a large firm, you must have those qualities. The whole idea is to trust people and give them the opportunity to show their best."

Some knowledge of finance and planning isn't a bad idea either, and Hayden credits partner Albert Swanke with teaching him about the business aspects of architecture. He also describes his relationship with partner Ed Connell as ideal, with Hayden serving as "Mr. Outside" in a classic inside-outside partnership.

In this role, Hayden is not only responsible for new market development, but for the firm's overall architectural design direction and long-range planning. That requires a dozen trips abroad every year, and a killing daily schedule in New York that may find him at the statue at 7 a.m., at two consecutive breakfast meetings, on the telephone for hours integrating project teams, reviewing designs, attending a board meeting at night, and back to Liberty at midnight to check her lighting.

He thrives on it, and at 47 is trim and vigorous. Although well-dressed, he wears his clothes casually, and in the world of impeccably tailored executives in which he moves, that's as much a personal statement as his unexpected black beard.

Hayden moves quickly—probably because he's often late. But once he's there, you have his undivided attention. He has the top flight administrator's ability to keep a firm grasp on the details without losing sight of the big picture. There's obviously nothing in his profession he hasn't mastered himself; he's as comfortable articulating philosophical goals as he is fixing the slide projector.

Finding Solutions “When we’re finished, the Statue of Liberty will last 1,000 years,” proclaims Richard Hayden.

To make sure that happens, Hayden’s firm is making dozens of changes that affect the lady from top to bottom and from inside out.

Just getting started was quite a challenge, since none of Liberty’s original drawings existed. The first step was taking painstaking measurements and feeding them into the firm’s computers to get needed data and a clear computer representation of Liberty’s spaces (far right, bottom). The firm also built a detailed model of the statue and pedestal (right).

In the statue itself, the torch is being rebuilt, the right shoulder replaced, the viewing platform in the crown repaired, and the entire structural framework reconstructed. The helical staircase, which spirals up the core of the statue from base to crown, is also being refurbished, and seven coats of paint are being removed from the interior surfaces.

Even greater changes have been planned for the interior of the base, which has been redesigned to provide greater comfort for visitors (far right, top). Besides a new double-decker elevator, new stairs will provide separate upward circulation. Several new viewing levels are being established, including a colonnade level accessible to the handicapped and a new mezzanine view of Liberty’s internal structure. A museum is being established in the base, and new lighting will illuminate the statue inside and out.

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Changing the Face of New York

Seventy-eight years ago, the architectural firm of Alfred Easton Poor was responsible for creating the look of Long Island’s Gold Coast by designing many of its famous mansions.

Today the descendant of that firm, Swanke Hayden Connell Architects, is just as influential in creating the look of New York City. They’re constructing high-rises, restoring valuable old buildings, and redesigning interiors for a client list that reads like a Who’s Who of corporate leaders.

One of their most innovative buildings is the Continental Center in lower Manhattan (below). In order to make the most of a cramped 1.07-acre site, the architects used an octagonal form and rotated the building a critical 45 degrees to pull it away from its neighbors. Its blue-green glass sides rise from a cathedral-like greenhouse space that serves as an indoor public plaza.

The atrium of Trump Tower (right) on Fifth Avenue includes a spectacular waterfall made up of 1,000 pieces of marble, no two of which are alike. The tower’s sawtooth design (far right, top) provides tenants with unparalleled views.

For Manufacturers Hanover Trust, Hayden’s firm created the interiors for two floors of executive dining facilities plus a corporate cafeteria. They also designed private anterooms for the chairman (right, below) and other executives, featuring deep colors and rich backgrounds.

Careful research preceded the restoration of New York’s original Bowery Bank (far right, below) to its remembered old world elegance.
"Now there's an attitude that the old is worth saving. I'm happy to be a part of this period—it's a wonderful time in the urban centers."

Hayden describes his firm’s work as being divided into three different areas: new highrise buildings, restorations, and interiors. "We usually have 70 or 80 projects going on at one time," he explains. "Some are as small as a 12,000-square-foot law office interior, and others are $100-million office buildings."

Each type of work plays its role in the firm’s business, Hayden says, and each has its personal appeal. Apart from such unique projects as the Statue of Liberty, however, it is the highrise buildings that are the most visible and the most exciting.

Four of Swanke Hayden Connell’s recent buildings have made significant additions to the New York City skyline. The Continental Illinois Center on Madison Avenue, Seaport Plaza in the historic South Street Seaport district, and the Continental Center near the financial district all make distinctive design statements. But probably the best known among the firm’s new buildings is the breathtaking Trump Tower on Fifth Avenue, the most revolutionary highrise constructed in New York in the last 50 years. A multi-use building, it combines 6 floors of retail shops, 13 floors of office space, and 38 floors of residential condominiums.

At 664 feet in height, Trump Tower is Manhattan’s tallest concrete structure, and at $150 million one of its more expensive. Its exterior is sheathed with reflective bronze glass and features a distinctive sawtooth shape that provides almost every apartment views in two directions. Inside is a stunning seven-story atrium that houses 50 of the world’s most elegant shops, along with an 80-foot-high marble-backed waterfall.

Trump Tower exemplifies a new shift in architecture, one Hayden calls as revolutionary as the changes that took place while he was an architecture student at SU.

"Today there's a need to put personality back into design, along with a sense of ornament and color. You see it in many things, not only architecture: fabrics, women’s clothes, industrial design products. This Post Modernism in architecture is a radical departure from the International Style.

"Architecture is always changing, always different," he points out. "It’s a response to what’s happening to people. Of course it’s the visual image of the technical ability of the time, but it’s also the social image of people of the time."

Hayden feels this longing for more embellishment also accounts for the increasing amount of restoration work in his profession.

"In the 1950s and 1960s it was ‘tear it down and build a new one.’ But now there’s a heightened awareness of our heritage and of the quality of the buildings that already exist. There’s also the attitude that the old is worth saving. I’m happy to be part of this period—it’s a wonderful time in the urban centers."

Considering Richard Hayden’s convictions about architecture and restoration, nothing could be more personally satisfying than the Statue of Liberty project. For Hayden and his team of designers, engineers, and craftspeople, working on her is more than privilege; it is a sacred trust. They are determined to contribute that extra effort that will restore the lady’s beauty in time to celebrate her 100th birthday in 1986.

"Whatever the problems—and they are monumental, because of the nature of the project—they are offset by the dedication of the people involved," Hayden says. "Everyone has an incredible sense of devotion and of patriotism. For them, Liberty represents what’s good about this country. "Of course it’s an awesome responsibility. But it's not just another job," he smiles. "It’s the experience of a lifetime."

As she has done for 98 years, Lady Liberty watches over another late afternoon in the New York harbor. With a little help, she'll watch over many more.