



We the People...

Philadelphia's National Constitution Center is dedicated to fostering a better understanding of the United States Constitution. Project manager Hill International was charged with ensuring that this new national treasure would open on time and on budget.

By Jim Christopher



Photo Courtesy of National Constitution Center. (Scott Frances LTD)

It is difficult to suppress the pride and sense of patriotism you feel as you enter the National Constitution Center in Philadelphia, Pa. After all, this is the Cradle of Liberty, home to Independence Hall and the Liberty Bell. And now, enshrined at the northern edge of Independence Mall, is a beautiful new building

dedicated to the history – and the future – of the U.S. Constitution, the document that is the basis for the democratic way of life in the United States of America.

While the construction and location of the National Constitution Center (NCC) was a national bid that could just as well have been placed in Washington, D.C., Philadelphia was selected because of its historical significance. It was here that the founding fathers signed both the Constitution and the Declaration of Independence, establishing our unique form of governance. And although many Philadelphians and Pennsylvanians had a hand in the design and construction of the NCC, it was indeed a national effort with contributions from individuals across the country. And proudly, Primavera and its software played a major role in its construction.

THE TEAM

Hill International Inc., with headquarters in Marlton, N.J., was charged with overseeing the project management for the building and all of its contents, including the exhibits, meeting rooms, educational halls and restaurant. Hill Project Director

David Rupp and his team worked closely with Emily Bittenbender, vice president of Design & Construction for the NCC, to make sure the Center would open on time and on budget.

“It was the NCC’s job to raise the \$185 million needed to construct the building and endow it,” explains Bittenbender. “There were multiple funding sources: city, state, and federal agencies, along with private contributors. The NCC handled spending the money and everything we spent was reimbursable to one of these ‘pots.’ Funding agreements with each grantor had to be broken down into what was being spent for concrete, toilets, parking, exhibit space, etc., depending on what each grantor was offering as specified in the agreement.”

Assigning the costs was, in some cases, extremely complex, according to Rupp, who is also an architect. For example, the concrete that was poured for the underground parking garage, funded by one organization,



The American Experience is the Center’s permanent exhibit that brings the story of the Constitution to life through more than 100 interactive and multimedia exhibits, photographs, text, film and artifacts.

Photo Courtesy of National Constitution Center.

also served as the basic support for the building, which was funded by another. So the way costs

project, it would have been extremely difficult, if not impossible, to have managed such an undertaking and

“We just couldn’t afford to stop and wait for full resolution of utilities issues, expanded archeology, and exhibit redesigns. If we did, we knew we wouldn’t make budget or schedule.”

— David Rupp, project director, Hill International

were assigned was of paramount importance.

“Because of the complexity of the

meet our deadlines without a tool like Primavera,” says Rupp. “We initially set up the software with specific cost codes and funding sources so that it automatically broke out the costs and determined who to bill. Each invoice was broken out for every one of our 19 contracts. With the documents approved and residing in Primavera, we could control any spending issues.”

Rupp says there were a couple of challenges when the National Park Service changed the budget by making additions to the project at bid. “The scope of the work was increased and, at the same time, costs came in higher than expected. So we had two things to contend with without letting the schedule slip. One, to consolidate and deal with the increased scope of work. And two, to value engineer the building, all while starting construction. At the same time, we had utility and site [archeology] issues to deal with. Any one of them could have stopped the job, blown the budget and thrown us off schedule. So we had to deal with them individually and yet continue construction. We just couldn’t afford to stop and wait for full resolution of utilities issues, expanded archeology, and exhibit redesigns. If we did, we knew we wouldn’t make budget or schedule.



Making history: Emily Bittenbender, vice president, Design & Construction, National Constitution Center, and David Rupp, project director, Hill International, in the Center’s Grand Overlook. Photo Linda DiBiasio

Primavera allowed us to keep those balls up in the air and continue on the mark.”

WEB-BASED SOLUTIONS

The project controls solution gave everyone easy access to the database due to its Web-based ability, says Rupp. “We decided at the outset to make Primavera available to everyone connected to the construction of the Center. The initial cost of purchasing the software and setting up the server was shared among Hill, the NCC and general contractor Turner Construction.

“We had so many things going on at one time – invoices, issues,

Content and Collaboration

The National Constitution Center (NCC) is a learning experience, not just a place for tourists, and it touches on every walk of life in the United States. Its theme “Enter as a visitor, leave as a citizen,” is evident throughout its comprehensive content and presentations.

And the Center doesn’t avoid controversial subject matter.

According to Emily Bittenbender, vice president, Design & Construction, NCC, “The NCC made it clear to all the content contributors, which included scholars, historians, writers, and dignitaries, that the Center was not designed to be about politics. It was about the Constitution.

“Our job was to tell the story and we didn’t back away from sensitive issues, including slavery or some of the scandals that have occurred over the years. The issues are presented head on because that’s what the Constitution is about, that balance that makes our country what it is.

“We provided the information and it’s up to you to interpret it from your own point of view.”

— JC

scheduling, change orders and budget – and the web-based access allowed us to lay it all out in real time. No matter where you were, if you were connected to the project, complete access to the information you needed was available via the Internet.

“Spending the money and knowing how it gets spent, having a hands-on of your cash flow, that’s one of the most important things you need to know,” says Rupp. “And, we knew up to the second, where we were with the whole project, especially with the money.”

the most special projects that any of us will ever be a part of. And with public funding, everyone knew that this project was not about us. It was about something that is greater than any one individual. It was about doing something for our country.”

A PERMANENT ARCHIVE

Of course, you can’t just credit the tool with getting the project done, but Primavera certainly was phenomenal, especially when it came to budget and document control, Bittenbender says. “We didn’t need to tie the project to an enterprise

Did You Know?

The National Constitution Center was built with workers and products from the United States. Here’s a quick look at the Center:

- Established under the Constitution Heritage Act in 1988 during President Reagan’s term of office. It is the only museum in the United States dedicated to the Constitution.
 - President Bill Clinton presided over groundbreaking ceremonies on September 17, 2000, 213 years to the day the U.S. Constitution was signed.
 - Dedicated July 4, 2003, opening with the presentation of the Philadelphia Liberty medal to Supreme Court Associate Justice Sandra Day O’Connor.
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- Capital Budget: \$185 million
 - Architect: Harry N. Cobb, Pei Cobb Freed & Partners
 - Exhibition Designer: Ralph Appelbaum, Ralph Appelbaum Associates
 - Project Manager: Hill International Inc.
 - General Contractor: Turner Construction
 - Exhibit Fabrication: Maltbie Associates
 - Total Public Space: 160,000 square feet
 - Exhibit Space: 67,785 square feet
 - Building Materials: 85,000 square feet of Indiana limestone, 2.6 million pounds of U.S.-made steel, and a half-million cubic feet of concrete, also made in the U.S.

MANAGING IT ALL

Because everything connected with the project was managed through Hill, from the pouring of concrete to signage to content installation and review, Rupp was constantly on the lookout for any slippages.

“[This project] was about something that is greater than any one individual.

It was about doing something for our country.”

*– Emily Bittenbender, vice president,
Design & Construction, National Constitution Center.*

“Slippages, or even a threat of one, are very seldom caused by one incident because there are always so many different contributing factors. It was our job to analyze issues and decide where we thought the responsibilities lay. The key is that we had to build trust and develop a relationship with everyone on the project. That way, when we laid out the issues, the facts as presented, everyone was on board and shared in that responsibility.”

Bittenbender adds that the honor of working on this history-making project made life easier. “From the very beginning, everybody knew that the opening date was set for the Fourth of July and that we had to meet it. This was something we talked about over and over with everyone concerned. This is one of

system like SAP or ORACLE, or even a separate financial system, because the Primavera solution gave us everything we needed to build this Center,” she says. “And as we leave, it’s an operating museum and everything we’ve done has been archived; agendas, meeting minutes, costs, tracking of issues, so that that information is always available if needed in the future.”

Hill believes that its investment in the software was money well spent. According to Rupp, “It’s now a permanent tool that we sell as part of our services, so we’ve committed ourselves to Primavera as our project management tool.”

POSTSCRIPT

The National Constitution Center opened on July 4, 2003, on time

A New Home for the Liberty Bell

The Liberty Bell has been a symbol of freedom in Philadelphia since it was purchased by the Pennsylvania Assembly in 1751 from Whitechapel Bell Foundry in England, and placed in what is now Independence Hall to celebrate the 50th anniversary of William Penn's Charter of Privileges.



Photo Linda DiBiasio

For the past 27 years, the Liberty Bell has resided in a pavilion on Philadelphia's Independence Mall. But in October, the bell will be getting a new home. The three-foot-tall, 2,080-pound bell will be moved 200 yards – a daunting task given the bell's age and frailty – into the newly constructed Liberty Bell Center, part of a \$314 million renovation of the historic Mall.

Construction of the Liberty Bell Center is being managed by Hill International, Inc., Marlton, N.J.

According to Dan Bosin, project manager, the new

museum will have expanded exhibition space and other visitor amenities, and also includes expanded security measures.

"The new Liberty Bell Center – constructed on the Mall close to the National Constitution Center – is an important part of the renovation," says Bosin. "In addition to providing a better visitor experience, it also brings the bell closer to Independence Hall, its original home." – LD

and on budget. During construction, the NCC had a cooperative design and construction agreement with the National Park Service. Ownership has now been turned over to the National Park Service, Department of the Interior.

As we go to press, Bittenbender says the NCC is in the process of negotiating an operations agreement to run the Center as a non-profit organization dedicated to increasing awareness and understanding of the Constitution, its history and its role in our lives.

"We the People" is alive and well in Philadelphia. •

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