THE MAKING OF A MUSEUM

A Reminiscence of the Early Days of the Science Museum of Virginia

by Bill Lee, Board of Directors Member, 1978-1984

A Bit of Background: Repeatedly prodded by a group of civic-minded residents of Virginia’s capital city, in 1970 the Virginia General Assembly established The Science Museum of Virginia (SMV) as a state agency to promote education associated with life and physical sciences. For the next few years, that creation was more of a concept than a reality. Ambitious plans to build a suitable facility went unfunded…and unrealized.

In November of 1975, the last passenger train departed from Richmond’s grandiose Broad Street Station. The owner of that landmark building, the Richmond, Fredericksburg & Potomac Railroad moved its principal business offices elsewhere in the city. For about a year the building sat abandoned. Then, the Commonwealth purchased the building for a ‘give away’ amount, with the intent of demolishing it and then creating bland government offices on the multi-acre property.

Prominent, persuasive Richmond community leaders serving on the museum’s original Board of Directors had a better idea. Against all odds, they managed to save the Broad Street Station and have it designated as the ready-made home for a science museum.

In cooperation with the Commonwealth, the museum’s Board developed a master plan for a phased approach to financing and creating a suitable museum. The Virginia General Assembly agreed to provide funds for a small staff and building maintenance, if private monetary sources could be found for renovation work and exhibits.
A Campaign for Expanded Support: To say that the founders of the museum were ambitious would be an understatement. Not only did they aggressively plan for numerous ‘hands-on’ exhibits to be created and housed in the railroad station building, they ‘looked to the stars’ and envisioned a planetarium addition. Due to Richmond’s overly-illuminated urban atmosphere, the idea of creating a planetarium was soon discarded. Instead, building a state-of-the-art, multimillion dollar IMAX theatre was substituted.

As shown by this scale model, plans for a large annex were developed. It would feature a dome to facilitate a huge, curved screen and to compliment the railroad station’s crowning architectural feature.

A three-phase, multi-year $15.6 million capital development program was established. Roughly 40% of that amount was earmarked for construction of the new addition. The rest was slated for exhibits and ‘adaptive reuse’ building modifications.

A one-time state grant, augmented by generous donations from private individuals and corporate contributions from Richmond-based firms almost immediately resulted in $4.6 million being made available. In discussions about how to raise the remainder, Board members noted that their project would require state-wide interest and support in order to assure success. Appeals were made across the Commonwealth. Numerous personal and business-to-business contacts were exploited for this purpose.

Getting Volunteered: In late 1977, Stan Ragone, SMV Board Chairman and the president of VEPCO contacted Ralph Cousins, president of Newport News Shipbuilding. Ragone did not ask for a contribution. Instead he asked if Cousins would consider becoming a SMV board member. Cousins suggested that he nominate someone in his organization that had an interest in such things, and more time to devote to the cause.

At that time Newport News Industrial was doing work for VEPCO. An employee of NNI, I was pursuing additional work at the utility’s nuclear power plants. In early 1978, the president of NNI unexpectedly asked if I was interested in helping create a science museum. I knew nothing about the project. Not sure if…or why…I should get involved, I asked for more information. When told that Ralph Cousins had ‘strongly suggested’ that I participate, I suddenly developed a heightened interest…and made the commitment.

Soon thereafter, I called Ragone. We arranged to meet on a Saturday morning. He suggested doing so at the railroad station, combining a tour with a briefing on the plans outlined above, plus meeting with the museum’s director. On a bitterly cold January day, off I went to Richmond to learn more about the Science Museum of Virginia.
A Tour of the Past Under Arctic-Like Conditions: I had been in the Broad Street Station when it was an active railroad terminal. I remembered that it was a big, imposing building, but little else. So before going to Richmond, I did a bit of homework, using the best pre-Internet source available to me; a 1950’s vintage *World Book* encyclopedia.

I learned that the building had been designed by noted architect John Russell Pope and completed in 1917. He also designed a number of more famous structures, such as the Jefferson Memorial, the National Gallery of Art and the National Archives. The Broad Street Station, originally called Union Station was Pope’s only major commercial design.

The front portion of the ground floor of the southward-facing structure [to the left, below] provided public spaces for passengers. Built in the segregated South, separate…but decidedly not equal…facilities were provided for ‘colored folks’. A long, narrow concourse at the rear of the building provided covered ramped access to open-air platforms alongside eight railroad tracks that passed beneath that part of the station. Offices were located on three upper levels, plus a basement for storage and utilities.

Built on a slight knoll, a circular drive allowed for vehicles to drop passengers off at the main entrance, which was sheltered by the overhang of the building’s front portico. Street cars frequently stopped on West Broad Street, at the foot of the rise. Cast iron and glass canopies flanked and wrapped around the building on both sides, providing weather protection for accessing the dining room on the west side [left in above vintage postcard image], or the entrance to the segregated facilities on the opposite side of the building.
The station’s exterior looked abandoned, unkempt and forlorn when I got there. When Stan Ragone arrived, we ventured inside. Unheated and unlit, except by Winter sunlight barely penetrating grimy windows, the cavernous center section echoed our every step. Dust, dirt and debris were everywhere. Water stains on the walls pointed to a leak in the dome. It was a far cry from scenes like these, made when the building was in its prime.

Ragone excitedly shared a vision for future use. What I saw was a deteriorating structure with possible structural damage. The rotunda’s terrazzo floor was badly cracked. Ragone stated that the building had been recently checked, and found to be structurally sound. He thought that the cracks were superficial; caused by vibration from trains passing nearby.

He offered to take me into the basement area to see for myself. It was dark, damp and dismal down there. Illuminated only by flashlights that Ragone had wisely brought along, evidence of hurried abandonment was everywhere. Raw asbestos hung like lethal stalactites from steam pipes in the overhead. There was a coal-fired boiler that had seen better days and a truly antique electrical distribution board. It was not at all encouraging.

But the structural columns supporting the floors above were…to use a favorite phrase of mine…built hell for stout. Close-spaced, numerous and thick, they supported a massive slab of concrete on which the cracked terrazzo had been placed. So there we were…an electrical engineer trying to convince a mechanical engineer of the structural soundness of our surroundings. In the dark…which I guess was comically appropriate.

Resurfacing, we went up to the second floor to the museum’s temporary offices. In the largest room there, Dr. Paul Knappenberger, the museum’s first director, was waiting for us. His excitement was equal to, if not greater than to that of Ragone as he described future plans, using sketches and drawings pinned to cracked and dirty plaster walls.

Knappenberger’s enthusiasm was infectious. His specialty was astrophysics, but in my opinion, he could have been a great salesman. Or, in retrospect, I guess he was…by the time we left to have lunch, I had agreed to attend a Board meeting later that month.
**A Room Full of Movers and Shakers:** At my first Board meeting, I was introduced as the newest member; never mind that I had not yet accepted any such position. As I recall, there was about 12-15 people present. I was given a list of the Board members, which I consulted as each member, in turn, introduced themselves to me.

It was an eclectic group; most of whom resided in the Richmond area. They included several corporate vice-presidents, a few lawyers and bankers, two college professors, a physician and two elderly ladies. I soon learned that the latter were major benefactors and were treated kindly, regardless of some impractical ideas they offered. On more than one occasion, they wrote out checks that had six significant figures. Nice ladies, I decided!

Based on some further physical inspections, it was apparent that repair of the structure and replacement of utilities was the highest priority. The museum director wanted to fund exhibits first. I joined forces with a cadre of Board members, including Stan Ragone, who thought it best to put the facilities’ horse before the exhibits’ cart. We prevailed.

One particularly urgent matter was the necessity to have the copper-sheathed dome repaired. The interior of the dome and the surrounding walls were plastered, including elaborate friezes also made of plaster. Months of accumulated water damage had resulted in the friezes flaking off, plus occasionally large chunks would break loose and splatter on the rotunda floor.

Those movers and shakers were certainly resourceful. They found a local contractor to repair the copper sheathing at cost. Another local firm erected scaffolding inside the rotunda at no cost at all for our use. When no firm could be found that had the ability to repair/replace the water-damaged plaster friezes, a Board member called a retiree he knew that had the requisite skills. Over eighty years old, this fella, readily agreed to help.

He made molds from undamaged sections of the friezes in order to cast replacements for missing or damaged sections. He deftly incorporated these new parts into the building’s décor, using a ‘secret’ glue to affix them. Wet plaster, applied by hand, made the transitions invisible. It was a work of art, and one I wanted to see up close.

Learning that he was going to be working at the museum on the day of a Board meeting, I drove to Richmond early, wearing old clothes. When he prepared to ascend, I said I’d like to go along. He was dubious; warning me of the shaky conditions one hundred feet above the terrazzo. I was not afraid of heights, and told him so. He consented, but told me I’d have to help him if I went up there. No problem, said I; I’d been apprenticed before!

Later, at that day’s Board meeting, I reported on the good work I’d seen, proudly displaying my plaster-smeared clothing as evidence. The other Board members were suitably impressed. I didn’t tell them how scary it was up there…nor did I ever go back.
A Decision Between Preservation and Political Correctness: One of the early exhibits developed had to do with the aquatic life of Tidewater Virginia. Several shallow, open tanks of water were placed in a room just off the rotunda. Each tank held living examples of turtles, shellfish and small finny creatures indigenous to Virginia. Large posters providing background information were installed on the surrounding walls. It was a very popular exhibit with all the human small fry that came to the museum in 1978/1979.

But when the exhibit was almost ready to be opened, someone pointed out that above the entryway to that room, was the following inscription: COLORED WAITING ROOM

Predictably, preservation ran headlong into political correctness. Some Board members, including me, wanted to preserve that historical feature. Others felt allowing that sign to be visible would offend many in the predominately black community of Richmond.

Happily, but only after a lengthy discussion, a mutually acceptable solution was found. Some SMV banners were strategically placed so as to mask the potentially offending inscription. That was done, and no one seemed to notice. Nor could they…they’d have had to climb up on something and stick their heads up close behind those banners…we were not taking any chances! As far as I know, that inscription is still in place, although no pictures of it appear on the museum’s web site…

A Spectacular Projection Project: Admittedly, I initially thought the IMAX theatre addition was overly ambitious. But there was no stopping the rest of the Board. Their fund-raising efforts were wildly successful, aided by promising brochures featuring this logo. Several million dollars was raised in a remarkably short period of time.

When it became apparent such a venture was economically feasible for the SMV, the entire Board voted to proceed. Informal working groups composed of Board and museum staff members were formed to handle various elements of the project.

One such group was assigned the responsibility of determining which technology to select. In the late 1970’s, large screen, high resolution projection using over-sized film and ‘surround sound’ was in its infancy. Stan Ragone and I were asked to be members of that group, along with the two college professors. Only the museum director had actually been in an IMAX theatre, so the rest of us had to first get educated about the process.
At the time, there were two such operating systems in use in this country. I forget the name of the competing technology, but it was European. I remember much more about the Canadian-developed IMAX system, which we ultimately chose to use. It was more capable, we had been told by people who had experience with it. But it cost more…

To make sure our selection was based on an unbiased comparison, visits to the IMAX theatre at a Minneapolis museum and the other location were arranged. NNI business priorities kept me from making either trip. The working group members who made those trips came back convinced that IMAX was our best choice.

They brought back an exhaustive technical and economic comparison that had been provided during their Minneapolis visit that saved us considerable time and effort. They also acquired invaluable operational and maintenance experience feedback. Similar information from the competing firm did not measure up as well to our perceived needs.

One thing they saw in Minnesota changed our preliminary building design. The projection booth visited had been created as a ‘behind glass’ scientific exhibit, situated so people in line for the next showing could be entertained and educated by it. We copied that design. Last time I was at the SMV, I observed visitors peering intently at the projection system as they waited for the next showing.

A Bittersweet Ground-Breaking: On October 12, 1980, a gala celebration was held at the IMAX Theatre construction site. It was a day of great satisfaction for the numerous people who had worked diligently for years to see that dream begin to become a reality.

Unfortunately Stan Ragone was not there. The preceding summer, he and his wife had been killed in a traffic accident. Of course, he was well remembered on that and subsequent landmark occasions at the SMV. Still is, I’m told. A number of contributions to the museum were made in his memory, including a substantial one from NNS/NNI.

In April, 1983, 10,000 people attended a grand opening of the theatre. It was the busiest day in the museum’s history. This addition to the SMV resulted in a tripling of annual attendance. Even today, the IMAX Theatre remains the museum’s biggest attraction.

The first presentation, appropriately, was a simulation of a trip through space and time. Projected on a 76-foot high screen that curved over the audience, the visuals were augmented by a hundred speakers pounding out 13,000 watts of power. When the film was not running, the screen featured a stunning image of a clear, starry night.
**A Balance of Wants and Needs:** Between 1978 and 1984, I probably attended half of the monthly Board meetings. After Stan Ragone died, a Senior Vice President at VEPCO took his place on the Board, and the two of us often discussed utility business prospects for NNI before or after our Board meetings.

In many of the Board meetings, we struggled to find adequate funding for a growing professional museum staff and the cascade of interesting and educational exhibits they constantly dreamed up. In many cases, we had to give priority to such mundane things as building maintenance for a structure over sixty years old, wholesale utilities’ replacement and costly and complete refurbishment of exhibit, office, workshop and storage spaces.

Once I understood the Board politics, I became somewhat of a devil’s advocate. Frankly, the museum’s original director occasionally irritated me and some others by bringing up half-baked ideas and asking for a blank check. At such times, before a call for ‘the question’, I’d ask to discuss concerns I’d jotted down during the director’s presentation.

For example, once the museum director wanted to remove the classic cast iron and glass canopies on the main building and replace them…in his words…with something more modern to compliment the theatre’s dome. I was aghast. One of our goals was to preserve the building as much as possible. That time, I didn’t wait, but immediately reminded everyone that the building was on the National Register of Historic Places, and stated that such a change would destroy that status.

I did really know if a change like that would have affected the building’s historic classification, but after I brashly spoke out, the majority present quickly agreed. The idea was tabled…forever. Those charming canopies are still there, I’m happy to report.

The other members of the Board always patiently heard me out, and on more than one occasion, they sent the museum director ‘back to the drawing board’. Over time, he learned to do his homework beforehand, and even thanked me, years later for the ‘education’. My self-assumed role as devil’s advocate also led to an amusing exchange.

One of the museum director’s proposals was pretty simple. Try as I might…and I did…I could find no fault with what he was presenting. When it came time for ‘the question’ I was uncharacteristically silent. Then, one of those well-heeled, elderly ladies quietly asked: “Before we vote, can we ask Mr. Lee what he thinks of this?”

I had arrived.
A Reluctant Departure…and Happier Return Visits: At the end of 1984, I left NNI and moved to Charlotte, NC to start a new chapter in my career. Driving six hours each way to attend monthly SMV Board meetings was simply out of the question. Reluctantly, I tendered my resignation from the Board. But I continued my yearly contributions to the cause, and received annual reports, which I read with insider interest.

About 1990, I received a call from one of the museum staff. They were planning to take advantage of a forthcoming exhibit’s grand opening to organize a reunion of sorts, and were inviting former Board members and staffers to attend. Part of the festivities was to ‘sit in’ on a Board meeting. I went, thoroughly enjoyed seeing former associates, some of whom had become friends during my tenure there. I was delighted to find that the SMV had a newly hired museum director, a fellow I admired, who had been on the Board when I was a member. The warmest greetings I received came from those little old ladies…

The changes I saw just astounded me. The rotunda, which once had been a plaster bombing range, had been completely renovated. A pendulum hung from the center of the dome, leaving fascinating trails in a bed of multi-colored sand, artfully arranged to resemble a world map. This device lazily swung back and forth, its only motive means being a visitor’s occasional push.

The original wooden benches, works of art, actually, had been retained and refinshed. A full-sized replica of the Wright Brothers Flyer [a glider that served as a test model for their powered flights] was suspended overhead, near the open vestibule leading to the concourse.

Several areas of the building had been remodeled and numerous, fascinating ‘hands-on’ exhibits had been installed. The concourse had been renovated, in preparation for installation of a future exhibit. I inspected one of that area’s unique features with engineering interest.
The station’s designers had placed a structural support down the middle of the concourse floor. It was positioned above the floor, to provide clearance for railroad trains passing directly beneath. The huge riveted steel beam they used had been cleverly concealed inside back-to-back wooden benches strategically situated for passengers’ use.

When I was there, the beam had just been cleaned and repainted. The benches were in a basement workshop, being refinished. When the benches were later reinstalled, the beam was hidden again.

**An Ever-Expanding Science Museum:** Periodically, Janie and I return to the Science Museum to see what has been added. The staff always affords us VIP status and a guided tour, including the non-public places. That once-dismal basement is now pulsing with activity. The second and third floors have been renovated and filled with exhibits. Larger and more modern offices for a greatly expanded staff dominate the fourth floor. Static displays of railroad equipment now sit on the tracks beneath the concourse.

During our last visit there, several summers ago, Janie and I were astonished to see the ultimate heavyweight, interactive exhibit. Earlier that year, in front of the building, a 29-ton Grand Kugel had been installed [Kugel is German for ‘ball’]. Over eight feet in diameter, it floats on a film of water just 3 mm thick. But that’s enough to let any inquisitive child rotate the ball by hand.

Speaking of kids…

I always enjoy seeing how much the Science Museum of Virginia has grown. ‘Baby’ has come a long way. The sampling of memories I’ve provided, plus several others, are often rekindled during such visits. My role in ‘the making of a museum’, was relatively minor, but it remains a proud part of my past.

**Bill Lee**
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~ APPENDIX ~

THEN: 1920

NOW: 2010
Since its inception, the Science Museum has become a multi-site operation. Currently, in addition to the main museum housed in Richmond’s historic Broad Street Station, a branch museum has been opened in Danville, along with the Virginia Aviation Museum at the Richmond airport.

Last year, they attracted over 300,000 visitors, collectively. Out-reach programs added an additional 200,000 students exposed to a wide variety of traveling educational exhibits. The museum’s staff, augmented by volunteers, now numbers several hundred people.

Revenues from all admissions that year totaled three-quarters of a million dollars. Even in today’s tough economic climate, during that same period of time the SMV attracted $2.7 million in contributions.

The museum’s assets are valued at over $15 million. The old railroad station is now over 90 years old, but is being well maintained. The replacement value for such things as the building’s extensive and exquisite exterior facades simply defies calculation. The entire building…priceless.