TOUCH THIS...
THE IMMERSIVE EXPERIENCE OF VALENTINE RIVERSIDE

By Jennifer Willis

The word "museum" holds certain deeply ingrained connotations for us all. "Quiet." "Behave yourself." And most especially, "Don't touch that!" Opened to the public in May 1994, Valentine Riverside is a completely different proposition. Dedicated to the life and history of the city of Richmond, Virginia, Riverside is located on the grounds of the old Tredegar Iron Works and is a totally immersive experiential environment where the visitor is set free to explore and interpret for himself.

Funded by Richmond corporations and individuals and by the largest challenge grant ever awarded by the National Endowment for the Humanities, Valentine wanted to create a "user friendly," hands-on atmosphere, a center which would at once be both engaging and educational for all of its visitors, who come from all walks of life and from all over the country. Housed inside the historic Tredegar Iron Works, Valentine Riverside sought to establish itself as a living archive on the cutting edge of technology, and museum director Frank Jewell entrusted Richmond-based Pyramid Studios with that mission.

The museum's purpose was not necessarily to be "high tech," as the rich history of the city at the Falls of the James River had to remain at Riverside's core. The real challenge, then, was to use the medium as a means of enhancing the story, rather than allowing the technology to become the story itself.

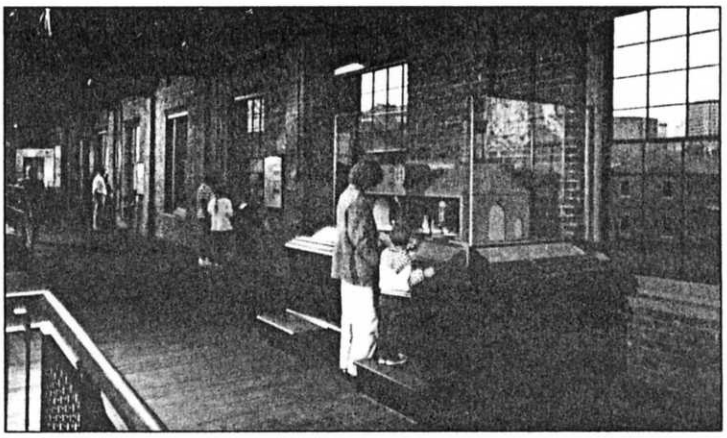
The ultimate goal was to create a cohesive and coherent whole, and Pyramid's influence can be felt throughout, as its Riverside projects range from immersive media -- including a powerful, trademark multi-image presentation, larger than life multimedia events, a working hands-on model of the Tredegar Iron Works Gun Foundry, and interactive exhibits – to more traditional exhibit spaces, historical site models, and signage.

The result was the merging of art, scholarship, and technology to create a genuine educational and entertaining experience in an environment which delivers the promise of real interactivity. "We are dealing in reality, as opposed to virtual reality," says Pyramid Systems Director Bill Humm.

When he first gazed out through the third floor windows of the Pattern Building on the Tredegar site, Frank Jewell had a vision. From this place, with this 360-degree view of the city from the banks of the James River, Jewell could see where this city and this nation began. Thus, the idea of the "Windows on Richmond/Reflections of a Nation" exhibit space was born.

Stepping onto the third floor of Riverside's main building, visitors find themselves in the midst of "Windows on Richmond/Reflections of a Nation." The panoramic view of the city as a living artifact was designed specifically to allow visitors to explore the area's history from its earliest settlements up through the present day -- to experience this cradle of a nation.

To make each museum visit a real journey of discovery, Riverside offers an interactive approach to history, and this is perhaps nowhere better seen in "Windows" than in the "time machines." Five interactive touchscreen panels, each running a separate program, are located in the windows on this top floor, and are themselves "windows" on the city's history.



At the hands-on model of the Tredegar Gun Foundry, visitors watch a cannon being built.

Located in several of Valentine Riverside's windows, the time machines offer visitors access to the city's history through a touchscreen interface.

In harmony with the focus of Riverside, the time machines are guides to assist visitors in interpreting the current and historical perspectives of Richmond's history. As the views through the windows themselves are the center of the "Windows" concept, the delivery media of these time machines needed to be as unobtrusive as possible -- an ideal scenario for an integrated, interactive media system. Customarily, such systems tend to be bulky and somewhat cumbersome, as evidenced by the kiosks increasingly common in airports, hotels, and shopping malls. However, as all non-interactive elements are housed in a remote location, museum visitors encounter only the touchscreen video display -- Sharp's LCD panel, providing a slim and attractive profile. This departure from the more conventional CRT-based display yields a system which is largely immune to traditional problems of bright-lighting conditions and phosphor-burn.

The touchscreen was custom designed for this project. Through this interface, users journey through time to access detailed historical and personal accounts of city landmarks, significant events, and the changing face of Richmond via both a visual display and accompanying audio. At its heart, then, the time machine is a storyteller.

Requiring a durable case for sen-

sitive electronic equipment in a high-traffic area, the time machines are housed in modified industrial electronic enclosures with photo-etched designs and titles. An industrial paint finish creates an archaic mechano-industrial presentation.

Essentially a hardware only system, the low-profile time machine is capable of running an infinite number of software programs and presentation.

Commanding immediate attention at the core of "Windows" is Riverside's Central Presentation – a multi-screen media delivery system which combines the accessibility and scale of an open-air theatre with the intimacy of a stand-alone multimedia exhibit.

Providing a chronological sampling of the evolution of the city, the presentation features a 6' x 8' high-gain rear-projection screen which delivers a central image to the audience via a high-resolution CRV video laserdisc. This Map Screen provides the geographical framework of the show as well as a time-line indicating where the show has been and where it is going.

For viewers seated in the theatre, a primary 13" RGB monitor is shared by every two individuals, and those standing along the back row are provided with three ceiling-mounted 32" RGB monitors. These Content Screens present the social and cultural development of the city, with video imagery originating from a second CRV laserdisc player, running in synchronous operation with the first. The CRV format delivers and distributes a high-resolution RGB image without degradation.

The environment is completed with stereophonic headphones equipped with individual volume controls. This allows the audience to more fully experience a dynamic soundtrack, free from potential interruptions from surrounding exhibits, while the open-air construction of the theatre itself lets viewers come and go easily, though visitors typically choose to stay put.

A dangerous and frightening piece of multi-image! *Sons of Vulcan* is a visitor's first introduction to Valentine Riverside.

Featured in a more traditional theatre environment on the first floor, "Sons of Vulcan" may be the most conventional of Pyramid's Riverside projects, yet it is a far cry from an ordinary presentation. This nine-projector multi-image show is a visitor's first exposure to what this non-traditional museum has to offer. Conceptually part of the upstairs "Windows" exhibit, this is an extremely powerful and purely visceral experience, a vision of the industrial revolution in the American South, brought to the screen by British director Kevin Oldcorn, who considers the show "further proof of the power of medium, for this dramatic story could not have been portrayed in any other way."

Pyramid's custom-designed, acoustically-isolated theatre creates a full-frequency audio environment which is an excellent complement to the rich, multi-layered visuals of the show, all merging to create an intense emotional experience. "The Tredegar Iron Works in the mid-nineteenth century was a dangerous and frightening place," says Oldcorn, "and 'Sons of Vulcan' is quite simply a dangerous and frightening piece of multi-image!"

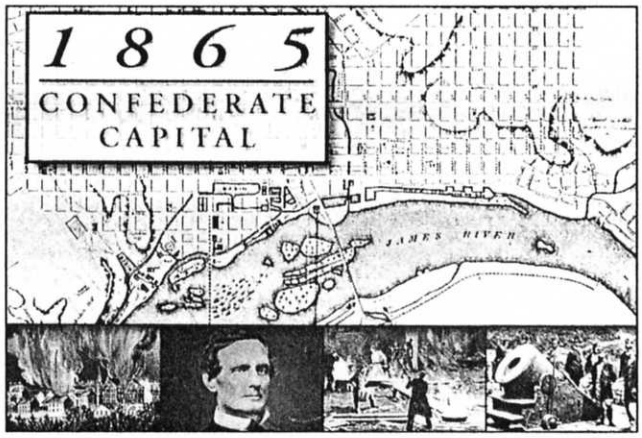
As the show closes, with hearts pounding and adrenaline running high, visitors are ready to explore the rest of the museum.

Probably the most exciting feature of Valentine Riverside is the museum's nightly Sound & Light Show. This ground-breaking, outdoor multimedia event delivers a dramatic and emotional overview of 400 years of Richmond history. At the core of the presentation are 60 by 80 foot images projected onto the side of Riverside's Pattern Building, supplemented by a fifteen-projector multi-image system generating rear-projected visuals in the building's windows.

Shown in an open-air plaza and running approximately 25 minutes, the Sound & Light Show's major thematic highlights include the rise of slavery, Richmond's evacuation fire at the close of the American Civil War, and the development of the city as a powerful industrial core. A custom four-channel soundtrack, composed by Nick Bardoni and Steve Warr and recorded by members of the England Chamber Orchestra, adds significant dramatic punch to the presentation. Four subterranean subwoofer systems, built into the show's courtyard, lend additional power, literally shaking the ground as cannon fire and as heavy industry reigns.

The immense, front-projected visuals are delivered via two 6000 Watt Pani scenic projectors. These Austrian-built projectors are more typically

used in theatre and Broadway productions are also found increasingly in business theatre. The Panis use 6-inch square transparencies to produce bright, clear images with little loss of resolution or contrast, even when projecting on a surface four stories high. Most Pani-based presentations are limited by the projector's standard 32-image capacity, so that multiple projectors are required to deliver high volumes of images. In Valentine Riverside's Sound & sight Show, however, Pyramid increased this capacity to eighty-five images per projector in the first permanent installation to employ new scrolling media technology under direct computer control. The system's one-touch operation has yielded unfailing performance.



The multi-screen Central Presentation provides a chronological sampling of the evolution of Richmond in an open-air theatre.

Another unique element Pyramid introduced with the Riverside system is the full synchronization of all presentation elements through SMPTE time code. This precedent-setting configuration integrates control of multiple Pani projectors, image scrollers, a conventional multi-image system, and theatrical lighting to create a totally immersive, emotionally charged show which visitors will not soon forget.

With the opening of Valentine Riverside, Pyramid had met quite a formidable challenge; in only six months' time, the company's nine-person team had brought this singular center from concept into reality. But scale was not an issue for this small company. Pyramid's real accomplishment was the effective use of both technology and personnel. Pyramid producer and president Bruce Hornstein believes that this triumph depended upon three basic factors: the company's strategic use of technology, its multi-disciplinary team, and a willingness to explore viable alternatives to accepted off-the-shelf solutions.

One inherent strength of the company is its integrated Macintosh system. Early in its own history, Pyramid mastered technological elements that became the backbone of its problem-solving arsenal. As a member of the Apple Developer's Group, Pyramid's greatest resource was found in the arrival of the matured Macintosh computer, coupled with the second generation of Adobe's Photoshop software for image enhancement and manipulation. A powerful visual and graphic tool, Photoshop is key in all of the work which Pyramid produces, including images and artwork for all of the Riverside projects – from the four-story high images of the Sound & Light Show to more traditional print and display pieces. Bruce Hornstein believes that this application evokes the greatest creative potential from his staff.

A critical resource was Pyramid's use of Kodak's Photo CD technology. By transferring archival visual materials supplied by the Valentine Museum onto Photo CD media, Pyramid was able to both store and efficiently organize huge volumes of visuals for use by multiple production teams. This extremely convenient and near-permanent electronic storage solution allows immediate access to needed materials with minimal interference between projects pulling from the same source.

Pyramid recognized early that Riverside required a focused, total immersion team approach; in a hugely ambitious undertaking with time at its most precious, inefficiency had to be kept to an absolute minimum, and everyone on board needed to be intimately involved in the work at hand. With each team member heavily involved in many projects, effective communication was key at every stage of the game, and Pyramid found that this multi-layering of projects and personnel was a strategy that brought out the best in everyone.

To describe the new applications Pyramid designed for existing systems as merely innovative does not do justice to the ingenuity and plain old-fashioned hard work which were the cornerstone of the company's work for Valentine Riverside. To create this exciting center of experiential learning, a new approach to technology and its applications was required, calling upon Pyramid's avid interest in exploring the real potential and limitations of different systems, taking them far beyond their immediate and intended uses. In an effort to remain true to Valentine's vision of "Transparent technology," Pyramid was uncompromising in going beyond the accepted limitations of programs and equipment, in some cases designing new systems by combining technology which had never before been used together.

Hopefully, Valentine Riverside visitors will never know the difference.