Electrifying Shakespeare:
Modern Day Technology in a Renaissance Museum

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Playing With the Stars

Have you ever dreamed of acting Shakespeare with the stars, of striding the boards of the National Theater with Vanessa Redgrave, or perhaps of playing an intimate little scene with Laurence Olivier in Hamlet? If plans work out, you may be able realize those dreams in a Shakespeare museum due to open soon in London.

Here's how it would work. You would be asked, in a computerized exhibit, to choose your favorite actor or a character in a specific Shakespearean scene. Then, a filmed image of the character or actor you chose would appear on a large wall screen and begin addressing his or her lines directly to you. When your turn to speak comes, all you would then do is to read out the lines scrolling by at the bottom of the screen. As you acted your heart out, your performance would be recorded by a hidden video camera.

Now, for the magic! Once the scene is completed, a computer takes both films, of you and of the actor, and cunningly combines them on one screen. We film the actor doing the scene both from the front, in a full-face view, and from the side. We leave space on the image for the character to whom he talks. It thus appears that you and Sir Laurence are working together on the same stage! Finally, you can leave the museum with a taped record of your glorious thespian moment safely tucked under your arm.

Possible? Not yet, but it is on the drawing board as one of the forty or so designs for interactive exhibits at the museum created last year for the International Shakespeare Globe Centre (ISGC) for use in their proposed Shakespeare museum. Hopefully, these exhibits will create a world as alive, as unexpected, and as user-friendly as that of Shakespeare's own plays.

What is the International Shakespeare Globe Centre? The International Shakespeare Globe Centre (ISGC) will be a formidable theater, museum, and research center located on the south bank of the Thames, on the site of Shakespeare's original Globe theater. At the center of the planned complex will be a new version of the Globe reconstructed in authentic detail. After a hiatus of three centuries, it will be possible to perform and see Shakespeare's plays in the setting for which they were designed.

This project is the brain child and obsession of Sam Wanamaker, American actor and expatriate. Wanamaker was astounded that no attempt had ever been made to reconstruct the theater on its original site. With characteristic American bravado, he dreamt of building not only a theater, but a great center for Shakespearean studies and learning. He has spent the last eighteen years making his dream a reality.

Design Concept and Process

This was a tremendously exciting chance to rethink what a museum is and should be. As a multimedia designer, I had worked within the limitations of the computer workstation. The Globe project was a challenge to break out of the computer box into a sensually alive three-dimensional environment, and to integrate the newest technology and its machines into a historical decor. Here, technology might engender a new kind of space, one that dissolved traditional boundaries between education, exhibits, information, and research.

Adapting such technology to a Shakespearean museum was not easy. My background had been in working with interactive educational programs such as the Shakespeare Project, and other programs which assume a quiet and concentrated environment such as a study or classroom, where one or two people sit facing computer and video screens. Such designs would be lost in the crowded, swirling, public spaces of a museum. On the other hand, aggressively modern, spanky-new technology would be terribly jarring in the elegant Renaissance space architect Theo Crosby was planning. He had devised for the visitor a stroll through a miniaturized Elizabethan England of great variety and charm, with the highest degree of accuracy and attention to detail that modern scholarship could provide. With this emphasis on historical accuracy and the exact theatrical conditions that shaped Shakespeare's craft the task was to exploit a wide range of technical options without overwhelming the delicate atmosphere. Thus in 1988 the ISGC asked me to advise them on how modern computer and multimedia interactive technologies might be used in the museum. As the full complexity of their task became apparent, the museum's designers began to realize that the best way to present the past would involve innovative technologies of today.

I believed it would be possible to create a museum environment that blurs such categories as exhibit and user, past and present, entertainment and education. My goals were the following:

Create a magical junction of time and space

In thinking about what distinguished this museum from others I realized that though the museum does not own any genuine Renaissance artifacts, it does have one great strength: it occupies the actual site of the Globe theater. Here, four centuries ago, Shakespeare's plays were performed; now, the visitor stands beneath a reconstruction of that same theater.

This wonderful junction of time and space, of the old and the new Globe, of 17th century London and the contemporary city looming across the river, should resonate for visitors.

Somehow they should realize," I am standing in London on the actual place where Shakespeare created his plays! All is the same, and yet all is different." Perhaps, here, technology could help.

As the museum is underground, the visitors enter through a lobby at street-level before descending via stairs to the museum level. Why not make this entry way a descent into the past?

Let visitors enter in a hall with large windows through which they can see the view of contemporary London: the Thames, St. Paul's, the modern skyline, firmly reminding them of the presence of the modern city. As they descend the stairway, the windows turn into window-like film projections, featuring the same view of London from the Globe but now going back in time. For example, at the first turning they view Edwardian London, at the next Victorian London, and so on. When they reach the floor of the museum proper, and the exhibits of 17th Century England, the windows show them Renaissance London. They are still in London, but have moved miraculously backward in time and space.

Now build on this experience with interactive displays that help our visitors to identify with the Elizabethans who, as they are now doing, also made a journey to the Globe. On the wall, our visitors see filmed projections of Londoners travelling to the theater: rich burgers arriving in coaches, apprentices ambling over the London Bridge, noblemen in ferries being rowed over the Thames. Large electronic maps trace the various routes. Visitors can press buttons to choose a type of theatergoer -noble or worker- and watch each route light up on the wall, and perhaps see a short film of the home and the neighborhood from which they journey. Workstations scattered about could supply more detailed information about the sociology of London; its neighborhoods, its class distinctions, its transportation technology.

This melange of real objects, simulations, and workstations seems to me a powerful way to transform the uses of space, to make the experience of the space itself functional - guiding, teaching, and entertaining.

Exploit the experience of space

This entry hall design illustrates a fundamental difference between computer and museum exhibits. In a computer workstation all of the information and functionality is stored in one place. The designer's chief task is to provide clear and simple guidelines to help the user navigate through the system, and to help users explore subject matter in ever-increasing complexity.

By contrast, in a museum, information is deployed spatially: the visitor's experience is not intensive but extensive, and the visitor's impressions accumulate as she/he wanders through the space.

This means that in a museum we introduce a subject or piece of information, then repeat, enlarge, or deepen the information as the visitor moves along. Just as in the entry

area, throughout the museum the visitor might first encounter information in a large wall display, then explore some facet of the subject in a small workstation, then play with the information in an interactive exhibit.

So, for example, this notion of the junction of time and space can now be repeated and extended in small-scale playful workstations, such as the "Fly Over London" workstation. Facing a small screen, the visitor chooses a century; a film of London in that period seen from the air appears on the monitor. By moving a joy stick, the visitor seems to 'fly' over the city at will. At certain points she or he can 'descend' and enter a site or building. Clicking, for example, on the dome of St. Paul's will result in a film about the building appearing on the screen. The visitor can choose another century, and see the same scene altered by time. The visitor's sense of the mystery of time and history is deepened. London becomes a palimpsest of places and forms stacked on one another, the past informing the present and the present, the past. Thus we achieve the magic of place, of change within continuity.

Get Programs out of "Boxes"

Forget the passive, machine-dominated computer workstation. Instead, find formats that suit the public, sensual, and tactile world of the museum. For example: playful visitor-participation exhibits, such as the "Act In Shakespeare" I described above, where the computer is totally invisible; large-scale wall and room installations that mix three-dimensional constructions with overpowering images to dramatically illustrate subjects such as Renaissance world-views; "magic boxes," where hidden projectors help transform ordinary objects in surprising ways.

Mix styles

While keeping the planned authentic recreations as the heart of the museum, why not create surrounding areas in distinctive and contrasting styles? Such "islands" of contemporary space would add drama, surprise, and focus. In them we could play with scale, color, texture, without worrying about the restraints imposed by strictly Elizabethan style.

The exit area, for example, could feature eye-catching multimedia and electronic displays. Moving upwards out of the museum you would also move forward in time, from the Renaissance to the present, through twisting tunnel-like spaces that dramatically present the history of Shakespearean productions through a mix of large-scale film projections, paintings, sculpture, recordings, texts, and real objects such as costumes.

Even standard 'utility' areas could be made quite exciting with imaginative use of technology. The activities space, intended for lectures and group projects, could be enlivened with an immense interactive wall with multiple display screens. In the research area, scholars could work directly with filmed performances on special multimedia editing stations. Students might receive electronic design kits to create their own sets. Visitors could enter information about their home-town Shakespeare groups into a common database in the shop area.

Depend Upon Collaboration

People find it strange that someone with my background in theater should work with computers. But computer design is very like directing a production; both the director's and the computer designer's task is to coordinate details of design, technology, movement, and artistic interpretation to create a unified whole that guides, teaches, and entertains. It is a quintessential collaborative task. The director depends on the talents of many.

Working on the museum design was even more like theatrical collaboration, for the museum is like a staged performance that has to endure for many years. Accordingly, I sought the help of The Apple Multimedia Lab in San Francisco. Kristina Hooper, the adventurous head of the Lab, invited me to work with a team of her bright young people such as Rob Semper, then acting head of The Exploratorium, and Michael Naimark, a pioneer in the field of interactive film, to devise a set of prototypes for the museum. It was splendid to collaborate with people at the Multimedia Lab. Both the lab and its personnel were rich mines of information about museum and interactive film installations.

At the Globe, I worked mainly with chief of research Andrew Gurr, who was responsible for the scholarly accuracy of the design, and with architect Theo Crosby. Theo, on whose shoulders rests the final responsibility for the entire complex, functioned as a benign but severe critic, forcing the groups' plans into the procrustean bed of consistency and practicality. He had a strong vision of what the museum needs to look and feel like, and a firm grip on such considerations as ventilation, crowd control, and lavatory-access that are often fatal to my high-flown ideas.

Spaces and Exhibits

Within the context of these four goals numerous design concepts emerged. I felt that the exhibits should change and vary in conformance to the style and function of the varied spaces of the museum. Following are some of the ideas that were proposed.

The Main Space

Within the main traditional space, we could "sneak in" discreet interactive exhibits, disguised as closets and tables and statues. These exhibits will be hidden in cabinets or under furniture, and only the guides will know where they are and how to activate them. For example, a display of an Elizabethan dining can become interactive. The guide begins by asking the group whose dinner they would like to see: the king's the merchant's, the apprentice's, the yeoman's? When they have chosen, she lifts the cover from a plate and, lo and behold, the appropriate food appears. The trick is simple, a projector is hidden directly underneath the plate and connected to a computer. When the guide presses a hidden button, a computer program finds the appropriate visual images on a video disc, and projects them onto the plate from below.

Such exhibits also allow the guides to sensitively respond to the daily visiting conditions. When the museum is full and people need to be moved through as quickly as possible, the guide does not alert the group to the presence of the interactive exhibits.

Large-Scale Theatrical Pieces

From the discreet guide activated exhibit we move to the other extreme, exhibits whose whole point is their eye-catching and hopefully show-stopping visibility. For a section on Renaissance world images, I designed a huge electronic skyscape, stretching over three dimensional rooftops. The sky will be interactive: when the guide turns a renaissance model of the universe, the stars in the sky are replaced by images of the heavens current in the period, Ptolmeiac or Copernican, Platonic or Kabbalistic, providing the audience with a graphic display of the variety and imaginative versatility of 17th century cosmology.

Similarly, a wall screen will feature a changing flow of images of woman and man drawn from Shakespeare's plays: mankind as angel and devil, courtier and saint, cowering under the approach of death or striding across the furthest reaches of the cosmos. These images will be accompanied by recordings of illustrative quotes from the plays, such as Hamlet's "What a piece of work is man." A nearby workstation can offer more detailed information on the source and implications of these images in Shakespeare.

Playspaces

Certain areas will be frankly playful. The 'Performance Playground' will be a kind of open, carnival space, a lively unstructured area with game-like interactive exhibits centering on theatrical performance. After earnestly studying the densely detailed sections featuring London and court life, visitors can here relax and "fool around." For example, visitors choose a costume from a large archive and then see themselves dressed in it. They design lighting for a scene on a simulated stage, watch scenes done by different artists, wander through an multimedia gallery of great actors and performances. (The "Act In a Shakespeare Scene" exhibit would be in this section.)

In another such area, "Backstage Alley," designed to present the working life of the Globe, visitors will look through peepholes at actors making-up, at props and scenery being built, at rehearsals. They will be able to see the theater from the actors' point-of-view, looking at the audience from the vantage point of the stage. These peepholes, while seeming to give onto deep and wide perspectives, will actually be projections from small monitors controlled by mirrors which give the illusion of deep space.

Small Workstations

Small, stand-alone workstations will be scattered throughout to give information on specific and limited topics, preventing visitors from spending too much time in one place.

Some workstations might focus on scholarly and conceptual problems. For example, the final shape of the reconstructed Globe reflects a series of speculative choices about the

original theater, its architecture, decoration, and staging practices. Almost every choice could have been different, eighteen sides instead of twenty-four, fake marble instead of hangings,and so on.

"Design the Globe" is a workstation that allows visitors to deconstruct the theater in order to comprehend the process of choice and decision that led the designers to this particular shape.

Visitors choose from a list of the major choices facing the designers: the shape of the theater, the shape of the stage, the decorations, facade of the 'tiring house,' etc. For each choice, they can browse through the evidence available to scholars, then choose an option. Bit by bit, they build up their version of the Globe. Then they can place scenes on the stage they have created and compare it to the way the same scenes look in the reconstructed Globe above their heads.

For another workstation, we filmed Andrew Gurr talking with his usual urbanity about Shakespearean history and theater. Using this footage, we created "Ask the Globe." On the video screen people can browse over detailed drawings of the exterior and interior of the Globe. If a visitor sees any detail that interests or puzzles him, he clicks on it with the mouse. A film of Andrew appears in the upper corner of the screen and chats interestingly about the detail. If they have selected the picture of a woman in the audience, for example, they will learn that she can be identified as a merchant's wife by her dress and companions. Andrew then will go on to discuss briefly the social and domestic life of such a woman, and if the visitor chooses, will conduct them through a filmed tour of the interior of a bourgeois house.

Activities and Research Area

The activities area would be a large multi-purpose space, which can be re-configured for different uses. Here groups could assemble for special educational programs. Individuals could do research, special exhibits could be mounted, and school children could experiment with designing and performing Shakespeare.

The heart of the space will be a large wall screen capable of projecting images from multiple sources. A lecturer, for example, could show different versions of a play simultaneously, or students could look at stage designs from many sources, choose details from each image and combine them into an integrated image. Then, having thus built up a set for a play, they could perform a scene in front of the wall, which would be recorded on video and which they could take back to their school.

The research area would accommodate serious scholars who want to work with Shakespearean performance. A special editing program, called the Living Variorum, will provide a fully annotated multimedia guide to a play or performance, modelled on the text-based guides that are central to Shakespearean scholarship. Its editing program would allow scholars to view multiple films, photos and text, and to assemble multi-media editions of a play on the computer screen. This program would be connected to a Shakespearean Ar-

chive, which would be constantly updated to provide the latest findings of scholars and critics.

Shop and Information

To help visitors assimilate and organize their experience, we might have electronic cards which they could insert in exhibits. Once the visitor leaves an exhibit, the cards can be run through stations in the information area, which inform him where he can get printed information on specific areas of interest.

The shop might also have information kiosks, offering the latest news about productions, ticket and seating availability, plus glimpses of productions, interviews with the casts and sample reviews.

The Design Portfolio

This portfolio is written in MacroMind Interactive Director, a new program that enables one to make color animations fairly quickly. The program can also call up other programs such as Hypercard, and can control a videodisc player. With Interactive Director, I could create an animated interactive simulation of the museum, divided by sections. By clicking on any section the user can travel to that area and look at animations of the different interactive exhibits it contains. By clicking on an animation, the user can go to a working model of the design and actually try out what the exhibit would feel like. In some, as in the "Act In Shakespeare" for example, there is a film showing the model we created.

As the Globe was still in the process of exploring its options and had not yet produced a final design for the museum, I decided not to create finished programs. Instead, I sketched out a large number of ideas, some as working models, some as detailed animations, and some as briefly noted "conceptual" pieces. Thus the Globe could explore a whole range of options before it had to make the hard choices dictated by money, time, visitor usage, and other practical considerations. Most probably, only a small number of the wide range of exhibits I designed will be included in the actual museum. But by designing the whole group of models as an interactive animation program, The Design Portfolio, I gave the Globe a usable resource as well as an exemplary application of interactive multimedia.

