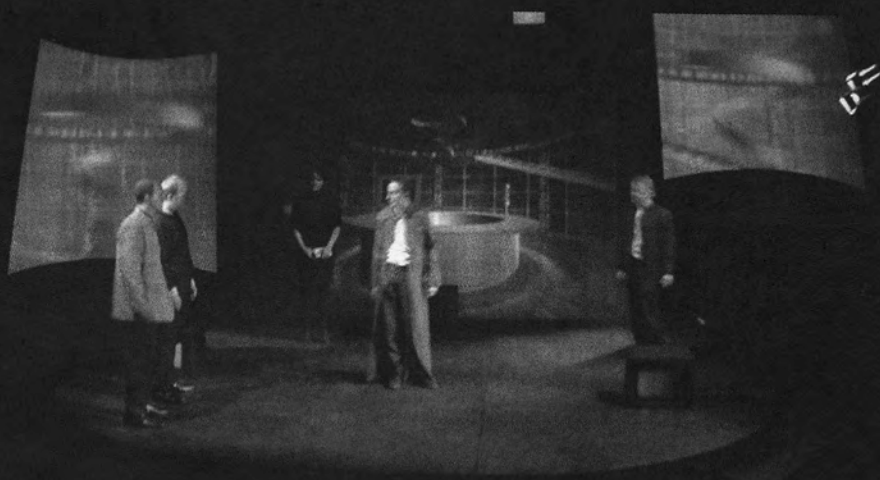MARK REANEY

A Midcyber Night's Dream

In late June, 2000, an exciting, new treatment of Shakespeare's masterpiece, A Midsummer Night's Dream, was performed in the Lumley Studio Theatre at the University of Kent at Canterbury. The Y2K production of A Midsummer Night's Dream marked collaboration between the Institute for the Exploration of Virtual Reality (i.e.VR) at the University of Kansas and the Kent Interactive Digital Design Studio (KIDDS), a group developing the use of computers in theatrical visualization, with both historical and practical ends. i.e.VR director Mark Reaney was awarded a Leverhulme fellowship from the University of Kent. While there, he teamed up with producer Gavin Carver, director Josephine LeGrice, and scenic designer Michael Gold. Costume were designed by Beth Collins, lighting by Adam Owen and sound by Kirree Seddon. Other UKC staff and students that comprise KIDDS pitched in to create an exciting new rendition of this time-honored classic.

For this production it was decided that the fantasy world of the fairy forest would be updated to a modern fantasy realm of computer games, cyberspace and science fiction. There were several reasons behind this choice. First, we desired a production esthetic that would match the computer generated images that would be employed in creating the various scenes, thereby making the medium not just a conveyer of the concept but an essential part of that concept. We were also attempting to use digital technologies to make the long-established story more accessible to a modern, media-savvy audience. This would be done by creating the type of multi-layered, information rich, new-media setting made possible with new digital and video technologies. By creating a computer-based world inhabited and controlled by fairies, we also sought to create a humorous rendering of the mysterious mechanical processes inside computers. Finally, it was our intention to draw attention to the interesting manner in which people conceive of electronic communication and computer interfaces as a form of geography. In our production, we gave physical form to cyberspaces, replacing the more abstract notions of chat «rooms» and web «addresses» with visible three-dimensional constructs.

Mark Reaney : *A Midcyber Night's Dream*

The virtual environments were created with Sense8 Corporation's WorldUp software. This virtual reality software allowed us to maneuver the audience's viewpoint through the virtual worlds in real-time. As in most of our past experimental productions, the focus was on live manipulation of the scenic elements rather than using pre-recorded animations. Once again, VR technology allowed us to have a dynamic scenic medium that could be controlled simultaneously with, and in response to, the performances of the live actors. The live aspect of the theatrical event was augmented, not hampered by, the environment, making for a truly "live" event.

The shape of the playing space was designed to maximize the effectiveness of the digital images. It also provided a simple, nonspecific space that would fit with each of the varying virtual scenes. A circular platform was backed by a rear projection screen. On either side of the stage, smaller front projection screens were hung. The computer and video operators for the center screen worked behind curtains upstage of the platform. The operators for the side screens were tucked into cramped positions on either side of the audience seating, their projectors hung above their heads near the ceiling of the theatre.

The images on all three screens were projected stereoscopically. We had made good use of stereo projections in the past but Midsummer marked the most extensive use of the technology so far. The center screen images were produced with a pair of matched data projectors polarized in opposition to each other. Each side screen image was created by splitting the beam of a single data projector with a series of mirrors. The halves of the split beams were also oppositely polarized. Our computer images were all generated in split-screen stereo pairs and even our backstage cameras were equipped with mirrors to render split screen stereo images. Finally, each audience member was given a pair of polarized 3-D glasses on entering the theatre so that they could see the many virtual scenes stretching into the distance of protruding from the screens.

In order to maximize the amount of material covered by the experiment, many different approaches were used throughout the play to test their effectiveness. Cosmetic steps were taken to develop a unified production style, but in some cases that style was strained in deference to testing a new idea.

The first scene of the show opens with King Theseus and Queen Hippolyta planning their wedding. Traditionally, and as described in the text, this scene is set in Theseus' palace. In our production, the rulers of this ancient country became the executive officers of a high-tech, multinational corporation. The throne room was similarly updated to become a corporate boardroom, austere and imposing. To reflect the gravity of the situation, and to contrast the scene with those to follow, we used a monochromatic palate of grey and blue. The textures used in the computer model for the boardroom were very subtle, consisting mainly of steel and concrete. The coldness of the atmosphere helped to convey the inhuman situation the characters found themselves in. Only a heartless corporate entity could conceive of executing a young woman who would not marry the man of their choosing.

In order to make the idea of a dynamic, computer-generated fairy world more plausible, we decided to set this corporate world in the future, when such technologies might exist. To illustrate this idea, two staircases in the boardroom magically gently raised and lowered of their own accord and three large decorations rotated, unsupported above the scene. A futuristic computer screen adorned the center desk, indicating the nature of the corporation and also making an allusion to the nature of our production.

The following scene provided a comedic contrast to the first. As the VR viewpoint in the virtual scenic environment drops through the floor of the boardroom, we found ourselves in the executive washroom where the young lovers, Lysander and Hermia, had gone for a moment of private plotting. When Helena enters, Lysander ducks into a nearby toilet stall which opens for him with the help of the offstage operator. After Lysander and Hermia exited, Helena moved to the stall for a monologue. The audience's viewpoint shifts with her as she sits on the toilet to deliver her speech. By moving the viewpoint in this manner we demonstrate that virtual scenery can be used to present a play in a cinematic style, smoothly segueing from one scene to the next, pending, tilting, and zooming to narrow and direct the audience's focus.

The third scene introduces the characters of the mechanicals as they planned their production of *Pyramus and Thisbe* for the royal wedding dinner. In our production the mechanicals were portrayed as low-level employees of the corporation; janitor, window washer, and clerks. In order to find a place of

privacy for their discussion they joined the window washer on his mechanical scaffolding and begin rehearsing above the city streets. Once again, you cinematic style, the audience is able to follow the players on the scaffolding as it rises up the side of the building. That one point, the mechanicals nearly fall from the scaffolding and the audience's viewpoint rotates above and behind them, looking down to the street many stories below, as the workers shriek terror. Here another unique feature of virtual scenery is illustrated, the ability to suspend our viewpoint outside a building in blatant disregard for physical laws of gravity. On each of the side screens more scenes from high above the city were presented. From the stage left screens a number of pigeons watched the rehearsal of the pitiful players shaking their heads in dismay.

At this point we left the more « realistic » scenes and jumped into the more fantastic cyber fairy world. The first scene in this cyber world was the crossroads, a representation of a « root directory » from which we could travel to any of the other scenes to come. This was rendered as a vast plane of intersecting grid lines over which hung a sky filled with seemingly infinite electronic screens representing the many facets of the computer world. But, Puck explains that Oberon and Titania are fighting and, correspondingly, the world has been pitched into chaos. The ground cracks. Chunks of ground are heaved up and objects are flying violently from the screens.

At first, the production team was worried about this abrupt jump from the realistic world to the fantastic fairy world. We were not convinced that the audience would follow the logic and recognize the conditions of the new reality. At one point we even constructed a segue scene in which the audiences viewpoint traveled down into the heart of the corporate complex, into a secure room containing a monolithic computer and continued on into the circuit boards and processing chips where the fairy world would reside.
In the end we decided against slowing the pace of the show with an additional scene. Instead, we trusted the audience to distinguish the rational connections between the locales. Many times in past productions we found that audiences are easily capable of making such connections provided we create earnest visible evidence and avoid internal contractions.
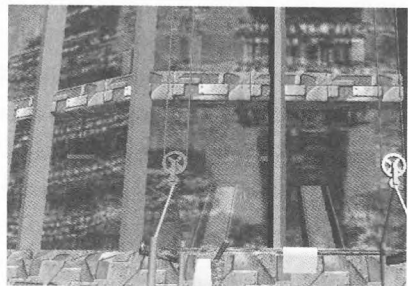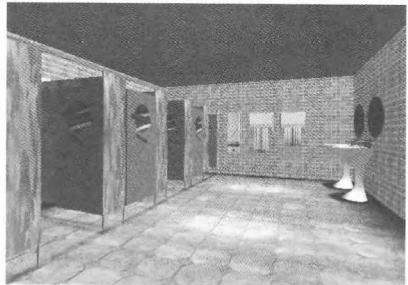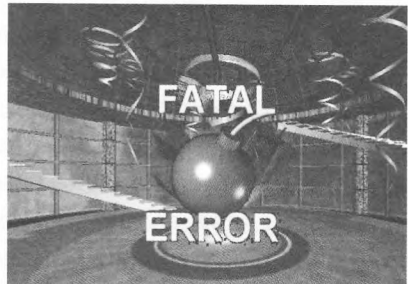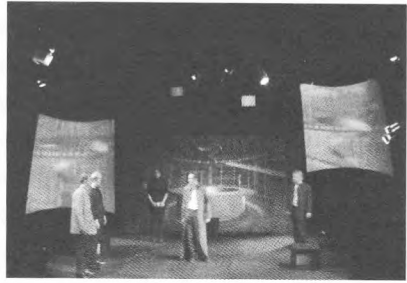
Mark Reaney : *A Midcyber Night's Dream*

After Puck delivered the exposition regarding the battle between the king and queen, the virtual scene zooms into the nearest and most disturbed of the electronic screens at the crossroads, transporting the audience into a new location of the cyber fairy world. By traversing this first portal, the scene changes to a version of a computer « chess game ».

By doing so, the logical relationships between the various aspects of the world are explained. Each setting was a separate and distinct 3D rendition of easily recognized computer application and was accessed through these « portal » screens in the crossroads scene.

The « chess game » locale was one of the most effective scenes in the show. The conceptual underpinning was to symbolize the competition between Oberon and Titania through the use of the game metaphor. The actors playing the fairy royalty performed off-stage in front of stereoscopic cameras. Each was then projected onto one of the screens on either side of the stage. At the same time, a virtual environment featuring an oddly distorted chess board and pieces appeared on the center screen. Puck and a fairy of Titania's court played in front of the center screen while a computer operator manipulated the chess pieces. The combined effect was a scene in which the large 3-dimensional heads of the Fairy king and queen argued over a giant chessboard. With each line of argument a chess piece moved, either on the screen or as represented by the live actors onstage. As the intensity of the argument increased, the effects of the ill will on the fairy world could be seen. The chessboard began to disintegrate and chess pieces fell into the abyss below.

This scene serves as an excellent example of how virtual reality-aided scenography can be used to create a strong and innovative interpretation. Rather than simply create a new style of backdrop to frame a more or less traditional staging, we created an entirely new situation in which to set the action. The actors were given specific business with which to illustrate the motives of their characters. The audience was able to hear the fight and see the violent emotions at work in the context of a unique visual metaphor.

The dynamic nature of the virtual scenery made it possible to draw a parallel to the effects of the conflict on the larger world of the play. Furthermore, by projecting the actors and the chess paraphernalia at enormous size, we were able to visibly illustrate the dramatic importance of these characters and establish their relationship with their fairy minions.

The following series of scenes track the young lovers as they wander, lost, within the cyber fairy world. The first of these was a maze in which the walls were comprised of pages found at sites on the world-wide web. It was our intention that a media-wise audience would be able to directly empathize with characters wandering through web pages looking for illusive information. This maze not only provided a digital analogy for the action of wandering in the woods, but gave a menacing atmosphere to the digital universe. It was interesting to discover that by moving the virtual viewpoint within the maze-world, an illusion traveling great distances was created although the actors shifted their position only a few meters at any time.

In another scene, the lovers stumble into a 3D translation of a computer painting program. This eerily beautiful, brightly colored environment contained floating paint brushes, buckets and other tools. Other 3D objects, such as menu bars and palettes, represented computer screen interfaces. It was here that Puck cast her spells on the sleeping lovers, confusing the targeted objects of their love.

Later, the lovers confront each other with all the malice provoked by Puck's cruel joke. To underscore the comedic violence of the scene, the environment chosen was a land of violent video games. Beginning with an empty arena, the environment gradually filled with belligerent space ships, shooting guns, slashing swords and finally a pair of combatants, kicking and punching in a boxing ring. In addition to presenting a symbolic parallel to the action of the scene, the increasing density of the visual field helped to amplify tension and suspense.

The mechanicals also find themselves in a corner of cyberspace when they met in our version of the enchanted forest to rehearse their play. Befitting their status as dim-witted, low level employees of the corporation, the space they select is an odd burial ground for old, malfunctioning, classic video games. As they plan their masterpiece, Pac-Man figures aimlessly roam the area, Pong paddles move up and down and Alien Invaders hover about. Abandoned PCs and video game consoles litter the area.

When Puck appeared and transformed Bottom into an ass, an unusual technique was employed to create the necessary illusion. Our production concept and the attributes of the production experiment presented several requirements that needed to be met. The transformation needed to reflect the digital style of the production and virtual reality technology should be used to create the illusion. However, early trials with a computer generated ass did not provide a character capable of portraying the complex emotions required in the scene. The solution was to use a highbred character comprised of both a virtual and a live actor.

When the actor playing the transformed Bottom re-entered the stage, a robotic ass-head appeared on the center screen behind him. The backstage operator could move the head around in the virtual setting, control its facial expressions and move its mouth to mime speech. At the same time, the live actor was wearing a mask that mimicked the appearance of the robotic ass-head. Using this method, we were able to experiment with a virtual character and simultaneously allow the actor to remain on-stage and play the more subtle aspects of the character. Again we relied on the audience to understand that the matched versions of the robotic ass were meant to represent a single character, not two. And once again, the audience had no trouble making this distinction.

Another very effective environment was the bower in which Titania falls in love with Bottom after his transformation into an ass. This world was patterned to mimic a word processor application. The segue into the scene began with Oberon's famous soliloquy « I know a bank where the wild thyme blows...» Simultaneously, the text of the speech appeared on the center screen. As the text scrolled down, Oberon left the stage and his voice transferred to a recording that played through speakers surrounding the audience. The viewpoint of the center screen continued down and swooped into a bower, in the center of which stood a huge weeping willow.
The fronds of the willow consisted of lines of text taken from famous speeches in Shakespeare's plays. These fronds moved slowly as if in response to a gentle wind. The actors played the scene speaking the Bard's poetry and completely surrounded by the beautiful words.

As bottom entered the scene, the virtual avatar also re-entered. But, this time the size of the robotic ass-head had been greatly enlarged. Increasing his size created the illusion that the attending fairies were very small by comparison. This illusion was used again later in the production just before Puck restores Bottom to his human self.

This ability to manipulate scale is another cinematic effect achievable in live theatre through the use of VR technology.

Before releasing the lovers from his spells of misdirected love, Puck leads them on a merry chase through the cyber-forest. In our production, a mysterious gloom was created by the simple yet elegant means of filling the stage with smoke and raising the center projection screen. Now unobstructed, the upstage projectors cast beams of light through the smoke creating shifting corridors of light. Puck and the lovers then appeared and disappeared in the murkiness as if by magic.

The last scene in the cyber-fairy realm returned the drama to the crossroads from the beginning of the show. But, later, after the play's conflicts had been resolved, the crossroads had become peaceful; the quiet computer screens seen floating in a beautiful blue sky. All was well in the fairies electronic realm.

Upon returning to the mortal, corporate world, changes could be seen there as well. The grey, sober boardroom has taken on more color and gay decorations for the coming nuptials hung from the ceiling. The mechanical's performance of their play within our play provided more color and festivity to the closing moments of the show. Furthermore, it gave us an opportunity to satire our own efforts.

As the players described the setting for the Tragical History of Pyramus and Thisbe, those dressed as « Wall » and « Moon » stepped forward to play their parts. But in our high-tech corporate world this would not suffice. The courtier, Philostrate, stepped up to a nearby computer console and quickly programmed a virtual setting to accommodate their play. As he typed, a virtual castle appeared in the middle of the boardroom, complete with garden wall. An evening sky also materialized, with moon aglow. Just as Midsummer contains a « play within a play » our VR treatment contained a virtual setting within a virtual setting.

But just as the amateur players were becoming aware of the splendid scenery provided for them and were acutely embarrassed at their own feeble efforts, the computer console exploded in a shower of sparks. The virtual scenery spun around madly, disappeared and was replaced by a huge « FATAL ERROR » warning. Their own humble costumes were brought back into play with a flourish and they finished their performance in high spirits. This self-parody of virtual scenery served to poke fun at the incredible misadventures that go on behind the scenes of our VR productions. If all goes well, the audience is unaware of the amount of trial and error that goes into the creation of these experimental productions and sees only a seemingly effortless performance. But Philostrate's frustration as he pounded the short-circuited console was very familiar to the show's creators. This scene also served to remind everyone of the essential elements of live actors and play script. After the virtual scene « failed » the players forged ahead in the spirit of « The show must go on » and, in the end, prevailed.

The final scene brought the audience momentarily back to the cyber-fairy world. As Puck bid goodnight and farewell, the projection screens revealed misty visions of the many fantastic places that had been visited during the performance, ending in the bower. As the Shakespearean willow filled the screen, Oberon and Titania appeared in passionate embrace, silhouetted against the scene. The tableau then faded slowly to black.

The various scenes of the production resulted in varying degrees of success. Those environments that most closely resembled conventional scenery contributed the least to the realization of the production concept. Those scenes that provided the most unique solutions to the problems of staging, also seemed to be the most effective in conveying the meaning of the scene. Scenes in which the scenery and actors worked together to create a dramatic action were much more exciting than those that used the virtual environments as backdrops, regardless of their symbolism. The combination of VR technology and live video was successful not only in maintaining the real-time quality of the action, but in presenting the actors in a way that deepened our understanding of the scene. The unique hybridization of a virtual avatar Bottom and a live Bottom was so valuable that it inspired our next VR/theatre production Dinosaurus in which large virtual dinosaurs were similarly paired with live actors.

The University of Kent's virtual reality production of *A Midsummer Night's Dream* was enthusiastically received by the audience. It showcased a variety of new media in the service of the production concept. It has an important place in the growing body of work of live theatre enhanced by digital technology. After borrowing from past experimental productions, techniques discovered or refined during this production will play an important role in future productions.

The Production Team:
Josephine Le Grice - Director
Mark Reaney - Production Designer
Michael Gold - Scenic Designer
Beth Collins- Costume Designer
Adam Owen - Lighting Designer/Modeler
Kirree Seddon - Sound Designer
Ethen Maltby - Composer
Gavin Carver - Production Manager
Cat Fergusson - Stage Manager
Matt Napleton - Deputy Stage Manager
Computer Modelers
Bronia Housman, Jenny Taylor, Helen Stewart, Rachel Woolley

The Cast:
Theseus - Dougie Boyd
Hippolyta - Anna Rogakou
Egeus - Chris Decon-Jones
Lysander - Andy Hawkins
Demetrius - Jamie Garbett
Hermia - Nina Wigfall
Helena - Gemma Soave
Philostrate - Gav Jones
Oberon - Dougie Boyd
Titania - 'Anna Rongakos
Puck - Charlie Dobson
Mustardseed - Vicky Aspden
Cobweb - EJ Boutwood
Peasblossom - Stavroula Dramoglou
Quince - Karen Moore
Bottom - Amy Oliver
Flute - Spencer Noll
Snout - Sarah Waterman
Starvling - Becca Coles
Snug - Kirsty Stark