



TRANSFORMA SIGN GOING FORTH BY DAY

At first glance, the scene seems ordinary. Everyday events unfold outside an urban building. Immersed in private lives, people traverse the sidewalk. But this ordinary afternoon turns extraordinary when a torrent of water gushes from the building's entrance, carrying humans and their possessions swiftly away. The flood's force bursts the building's windows, and the structure appears to weep. When the deluge ends, the empty street is washed clean.

More than 100 extras, dozens of stunt people, and 96,000 gallons of water made this as complicated to shoot as any major movie scene. But this production couldn't be further from Hollywood: "The Deluge" was designed to play not in a conventional multiplex but at the Deutsche Guggenheim Museum in Berlin, where it's the centerpiece of a high-definition video installation by American artist Bill Viola called "Going Forth By Day." Produced by S. Tobin Kirk, the show, which runs from February 9 to May 5 in Berlin and then travels to other Guggenheim Museums, marks a milestone in Viola's 30-year career as a video art pioneer. Even with a resume that includes honors from the MacArthur



DIGITAL CATHEDRAL

Bill Viola Goes Forth With HD

By Ellen Wolff

Foundation, the Rockefeller Foundation, and the Getty, along with installations in museums worldwide, Viola says his latest work "is by far the largest, most complex thing I've ever done."

"The Deluge" is actually one of five 34-minute pieces in "Going Forth" that are projected 7 feet high on four walls of an 80-foot by 28-foot gallery. Running simultaneously, accompanied by a wash of ambient sound, these pieces play like motion-picture versions of the fresco paintings that adorn cathedrals. As Viola explains, "I conceived this as a walk-in movie. It's the movement of the viewer *in* the space that unfolds the narrative, which is what goes on in fresco cycles. People are free to linger where they want. When you liberate the image from fixed seats and the proscenium arch, you engage the viewer's body, and the relationship to the image becomes much more personal."

The size of these projections and their proximity to viewers led Viola to shoot in high-def for the first time. "HD is a medium for projection," he notes. "I couldn't shoot this even on DigiBeta cam, let alone DV cam, and have the images hold up when they're blown up so large." Although Viola

has been widely recognized for experimenting with low-light techniques to create enigmatic, "nocturnal" videos, he says that by contrast, "This piece is about being in the light of day. It's about going forth into the light, towards a confrontation with final things. You can't hide with high-def. Every detail is visible. So aesthetically, HD is totally appropriate."

Viola says his movement to HD evolved naturally. "In the course of going to NAB and InfoComm during the last few years, I really saw the market change. I thought 'HD seems like it's really here. It has the kind of quality that's right for this piece.'" HD also enabled Viola to capture the 34-minute uninterrupted shots that comprise each "moving fresco." DP Harry Dawson, who's worked with Viola for a decade, says, "We didn't use it because it's the latest thing. We used it because it was the right tool for this job."

A Walk in the Woods

Nowhere were the advantages—and challenges—of shooting HD more evident than at one location high above Los Angeles in the Angeles National Forest.



Viola had chosen a pine grove there to shoot “The Path” section, a panoramic piece designed to stretch 36 feet along one gallery wall. To capture such a broad swath of forest, Dawson positioned three Sony 24p HD cameras, allowing for 15% overlaps between the center and side camera frames. While the action in the shot consists of people walking like dreamers among the trees, Dawson recalls, “The background was so interesting that we wanted it to be part of the

endless, beautiful encounter with humanity. You don’t know the details—why one person is crying or another person is angry. Most movies are about the reasons for the motivations of the characters. Well, I’m not that interested in that; I’m interested in perceiving people from an outside point of view. Being unencumbered by a plot, you’re allowed to have your own individualized relationship with them. The emotions they’re going through become yours as well.”



composition. We wanted to put the viewer *into* the forest, rather than looking at it from afar.”

Shooting with three Panavision 6-27mm zoom lenses (because fixed lenses weren’t yet available) Dawson pulled the background closer and captured a striking sense of depth. Although “The Path” represents the ultimate wide shot, the foliage on distant branches was also clearly apparent. “I wasn’t expecting that level of detail,” he says.

Of course, the camera crew sweated blood to get this. Huddled inside a black plastic tent as the heat rose each afternoon, they repeatedly had to check the focus of the lenses, which unfortunately changes when the air temperature rises or falls. “With HD you’ve got to be ultra-critical about focus,” observes Dawson. “Even with the big monitors we use in the field, you can’t always tell what you’ve got.”

One thing they *did* get, much to their surprise, was the interest of every flying insect in the forest. Viola notes that “the scanning frequency of an HD camera isn’t audible to us, but those frequencies *are* audible to animals.” Eradicating those buzzing critters from three camera frames would definitely present problems later for Viola during postproduction, but as he watched the shooting of “The Path” unfold, he saw that HD had also given him unprecedented richness. As 150 people streamed silently through the forest on their journey to the unknown, Viola could see all the small touches he had orchestrated so carefully—the faded design on an old woman’s parasol, the eyes of the teddy bear in the arms of a child. “It’s a whole new medium,” he says with a smile.

This aesthetic is particularly poignant in the fresco called “First Light,” which depicts emergency workers who’ve apparently failed to recover the body of a drowning victim. Although the piece was conceived long before the terrorist attacks on September 11, the resonance with current events is palpable. Played out on a desert set at Los Angeles’ Santa Clarita Stage, the actions of the silent actors are painstaking as they pack up their equipment in defeat.

Underscoring the emotions of this scene, the sky’s light



In “The Path” (upper left), a panorama shows a steady stream of people walking in the forest. In “First Light” (above), a “drowning victim” is raised above the stage.

A Sense of Mystery



Viola’s art rests on a belief that humans are inherently fascinated with other humans. “The reason why people never tire, generation after generation, of sitting in a café watching people walking by, is that it’s an

turned from darkness to dawn. The Hollywood motion-control company Image G orchestrated the sunrise, a 20K that streaked across the set on cue. Lighting technology from Vari-Lite, Dawson explains, “was used to light the backdrop, changing color and intensity over time. We also used it to

do a gobo effect that made the clouds seem to move. All of the other set lights were run through a computer-controlled dimmer board, Vari-Lite's Virtuoso."

Dawson, who shot the scene with a Bexel-provided HD camera and a Fujinon 20mm lens, recalls that "it was challenging to do these lighting changes because there were over 250 lighting cues. And people don't usually use motion control and Vari-Lite systems for 34-minute takes! Vari-Lite is usually used for flashy moves at Britney Spears' concerts, but we had to ask them 'How slow can your lights move?'" In the end, his overall impression of lighting HD onstage "was terrific, because we could see exactly what was happening."

The climatic moment in "First Light" arrives when the victim rises suddenly from the water where he drowned. Viola stops rolling tape just long enough for a performer from Cirque du Soleil to submerge himself in the stage's pool. Then, hoisted by a harness that will later be erased, this ghostly figure floats upward to the sky and rain begins to fall. Everything is choreographed to happen on set. There will be, asserts Viola, "no CG rain."



On the set of "The Deluge," Harry Dawson, DP, checks the lighting in the stairs, where water will flow into a huge pool in front of the building facade.

Navigating New Seas



Water figures prominently in Viola's work, and the central image of "The Deluge" makes that especially true in this show. To shoot the signature scene of the "weeping building," Viola pulled out all the stops. Production designer Wendy Samuels built a two-story building facade in a parking lot at Los Angeles' Long Beach Airport. The façade raised the set high above the pavement to accommodate the huge pool where the water would drain. Under the watchful eye of special-effects supervisor Robbie Knott (whose stunt credits include *Dances With Wolves*), a huge water cannon repeatedly propels stunt people down a long staircase and out the building to the pool below. Dawson captures the action using a Panavision 6-27mm zoom lens, remotely controlling a Sony camera that's rigged on a platform above the pool. Getting a non-stop, 34-minute shot of this scene is so complex that on a good day, Viola gets two takes.

As difficult as "The Deluge" production was, in some respects Viola saved his most complicated shoot for last. With "The Voyage," he envisioned a piece that would combine several planes of action, including a water scene shot at a remote lake outside Los Angeles. "The Voyage" depicts an old man's death, which takes place in a cutaway house in the foreground, while in the middle ground, the man's possessions are loaded onto a boat. He eventually boards the boat and sails, as Viola explains it, "to the distant Isles of The Blessed."

Viola likens "The Voyage" to an Oriental painting in which the same character appears at different points along a journey. He also cites as a source of inspiration older paintings where artists hadn't quite figured out perspective and had optically impossible situations. "I'm excited about this piece because I was able to take two completely different camera angles and focal lengths and put them in the same frame and have them coexist harmoniously. The house was shot on stage with a telephoto lens from far away, while the lake was shot with a wide-angle lens from a high platform looking down."

One of the things that made it feasible to attempt a 34-minute composite shot was the use of a laptop PC previsualization created by visual-effects supervisor David Blum at Catalyst Effects. Prior to shooting HD at the lake, Dawson shot Beta SP footage from several angles at the location, and Blum then combined that footage with a scan of Viola's concept drawings. He produced a choice of possible composites, so by the time Viola arrived lakeside, it was clear what they needed to shoot.

Capturing a wind-whipped lake in HD, however, was hardly trivial. Dawson again used a Sony camera, with Panavision's 6-27mm lens set at 6.25. Cold temperatures made it challenging to hold focus during such long takes, and Dawson also found that it was difficult to get detail in the water's highlights. "HD reaches into the shadows more than I expected, but when the highlights are gone, they're gone."

He's been called the Rembrandt of the video age, an artist who uses the moving image to create painterly, highly emotional pieces that have been seen at museums and galleries the world over. Since 1972, Bill Viola has used video to create environments that envelop viewers with visuals and sound. Electronic images, Viola believes, have particular power because they transform over time, fulfilling the perennial artist's dream of bringing paintings to life.

Viola focuses on depicting aspects of life that can't be codified into neat, narrative movies. Many of his pieces, like 1991's "The Passing" and 1992's "Nantes Triptych," explore themes of birth, death, and human consciousness. Viola is also known for videos that use slow-motion techniques to probe human perception, such as 1995's dreamlike "The Greeting," in which 45 seconds of action unfold over 10 minutes time.

Viola has always pursued new technologies, even building his own equipment. He was among the first artists to experiment with handheld and surveillance cameras, and he's pioneered projection techniques with unique configurations of LCD panels, plasma displays, mirrors, and rotating screens.

In 1995 Viola became the first video artist to represent the United States at the prestigious Venice Biennale art exposition, and a 25-year retrospective of his art organized by New York's Whitney Museum traveled Europe and the United States from 1997 to 2000. Working from his studio in Southern California, Viola continues to be involved in a striking range of projects, from a scholar-in-residence association with the Getty Museum to a collaboration with the rock group Nine Inch Nails.

E.W.

The Unreal World

Back from the lake, Viola turned his attention to the greenscreen shoot of the cutaway foreground house. Wendy Samuels had built a 10-foot structure on a 10-foot hill at Raleigh Studios in Manhattan Beach, which Dawson says made it more workable while maintaining its apparent height when it was married to the lake shot. Dawson credits the prototype Ultimatte Digital Cinema box with making the shoot go smoothly. "It arrived from Japan through Panavision to our set just in time. With the Ultimatte, we could key the background plate of the lake behind the studio set and see the boat action with the hill and the house. It showed us that the hill needed to be modified slightly, which we never could have seen without the combined shot."

VFX supervisor Blum was equally impressed with Ultimatte's prototype box. "It was able to pull such a beautiful key that we could triple the size of the greenscreen without adding additional lighting. One of its big strengths was that it allowed us to get the color correction that Bill wanted. I found that as I adjusted the RGB levels, the master levels reacted in a proportional manner. That's great intuitive software. It was the first time this box was used on a production, and it enabled us to eliminate the risk of this shoot completely."

The Days After

While Viola was still shooting, postproduction supervisor Michael Hemmingway camped out in LaserPacific's HD online suite, working with editor Brian Pete. Hemmingway had advised Viola to post "Going Forth" in a realtime environment and noted that Bill's 34-minute takes precluded scanning the material into an Inferno. "You can't really afford to take half-hour clips into a digital nonlinear environment. Most people work in frames—Bill

works in *seconds*. We've been previewing 30- to 50-second dissolves. You couldn't do that in anything other than a linear environment and still keep your wits about you."

An essential part of their assignment on "The Path" was orchestrating the flow of walkers through the forest. Pete removed gaps between some walkers and even combined people from different takes, all the while making the shot appear continuous. "We'd keep the treetops at the upper end of the frame the same and just crop and matte in the bottom part where the people were," Hemmingway explains. "We could get away with that because these shots were done with locked-off cameras, and we didn't have to deal with tracking." Viola signed off on 17½ minutes of "action," which would be stretched out to around 34 minutes to make the walkers move at a dream-like pace.

Pete also faced the job of removing the hundreds of bugs that had flitted around the cameras. This proved especially difficult with the three-camera panoramic shot, since bugs darting across the "seams" between adjoining frames created distracting doppelganger effects. Pete applied countless dissolves and soft wipes to eliminate the most annoying critters, one by one. "It's like playing 'Space Invaders,'" he says with a laugh.

A hallmark of Viola's style has been slow-motion effects, and he shot the pieces for "Going Forth" at 60i, which provided more images-per-second to play with. In post, however, this created problems for removing the rig that had raised the drowned man in "First Light."

"Shooting at 60i, we have 60 interlaced frames. Unlike the 30 interlaced frames of standard video, we were dealing with twice as many frames and twice as many field interlaces," observes Hemmingway. Blum and artist Shauna Steiner came up with an approach to de-interlace the frames, treat the fields separately, remove the rig, and then re-interlace the frames—all 440 of them.

For his part, Viola admits to being frustrated by several aspects of working in HD. It wasn't a matter of HD not producing a film look because that's never been Viola's benchmark of quality anyway. It's more a matter of having fewer tools than he's had in the past. For example, Hemmingway notes, "Bill is used to working with a digital disk recorder that you can dial up from 3 frames to 30. But those things don't exist yet with HD."

"It's shocking, actually," Viola says, laughing, "to be working with cutting-edge technology but at the same time be working with more primitive tools. In some ways, this feels like the early days of video—with a hundred times the budget! You couldn't edit too well then, either, and the lenses and cameras didn't really work together. But fighting technological limitations also gets me going. It's what I do—I've squeezed blood out of stones for years!"

The Next Steps

Viola's work on "Going Forth" doesn't end at LaserPacific, of course. He's also designed an ambient sound palette (with Mikael Sandgren at Soundelux) and mixed multi-channel sounds for each piece (with Mitch Dorf at POP Sound). As he assembles these synchronous projections on the walls of the Guggenheim at press time, Viola will learn if his ambitious digital "fresco cycle" hangs together in the end. (For this part of the story, see the April 2002 issue of *Video Systems*).

Regardless of how close Viola gets to his original vision for this piece, the creative process confirmed his instincts about

where digital technology can take us. "We're now in a new mode. The entire edifice of filmmaking has been based on light, but in the digital world you don't need light to make images. Creatively, that's like the 'mystic light' of fresco paintings because those painters didn't have to shine light on objects either. They could bathe objects in any kind of light, without having to justify where it was coming from. I think in the digital age this is going to be even more profound. The benchmark for what's 'real' is shifting from the eye to the mind and that's a great liberation, because the mind can do more than the eye ever could." **mm**



In "The Voyage," Bill Viola directed several planes of action, including a cutaway house shot with a telephoto lens from a distance (top) and a lake shot with a wide angle lens from a high platform (left).