

## A MONSTROUS AFFAIR

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Lighting And Video Join Forces To Create Dramatic Environments For The World Premiere Of Grendel

Designing a new opera can be tricky business, especially when considering the short amount of time allotted to purely technical rehearsals on stage, and the frequent complexity of operatic décor. This was certainly the case for the world premiere of *Grendel*, a new opera by composer Elliot Goldenthal, which made its debut at the Los Angeles Opera in June and was subsequently seen in July at the Lincoln Center Festival in New York City.

Directed by Julie Taymor, with sets by George Tsypin, lighting by Don Holder, costumes by Constance Hoffman, puppets by Michael Curry and Julie Taymor, and projection design by Karin Fong, *Grendel* (sub-titled *Transcendence Of The Great Big Bad*) is based on the ninth-century Old English poem, *Beowulf*. The opera tells the story from the point of view of Grendel, a misunderstood monster estranged from humanity, who uses brute force to express his dark emotional battles.

"The original concept for the set was to be able to move fluidly from one world to another," explains Holder, noting that the opera is set in two distinct environments: the dark, earthy, cave-like underworld of Grendel, and the cold, icy world of the king and his court. Tsypin designed one large, complicated set piece that revolves to transport the audience from one place to another. "We experimented with making the set glow from within, like a Japanese lantern, but there was too much going on, in terms of people, motors, and winches," Holder notes. "The set is not a closed box. It's not meant to be magical or mysterious. It is what it is."

To propel the action, Taymor wanted to indicate a progression of seasons. "We move from the inner depth of winter to spring," says Holder, whose palette reflected these seasonal changes, adding green in the light for spring, as the projections add crevices and melting ice, then a layer of green foliage to the massive set which measures approximately 50' long and 30' high, weighs 18 tons, and was built by R.A. Reed Productions. Unfortunately, the complexity of the rotating wall caused technical difficulties that resulted in a cancelled performance and postponed premiere in Los Angeles (a rare event in the opera world), but once the kinks were worked out, the set behaved properly, both in LA and NYC, after being shipped across the country to Lincoln Center.

For the winter scenes, the set revolves to the "ice" side, with molded fiberglass applied to the steel frame of the set. "It has a lucidity, like mother of pearl, and transforms nicely as a projection surface," Holder points out. In contrast, the earthy side of the set is dark and heavily textured to look like tree roots and dirt that evoke a weathered mountainside, peppered with the remnants of war, broken weapons, and pieces of old tools from former civilizations. "The opera is timeless but says a lot about our world today and the ongoing struggle of good versus evil," comments Holder.

His challenge was to light this large, rotating, mechanical set piece while helping move the action from place to place. "The lighting is heavily textured," says Holder, who treated the set as a large kinetic sculpture. "There were 26 positions to the set," he explains. "In the beginning, I did my due-diligence and laid it all out, scene by scene, to figure out the angles in the best interest of the storytelling." Holder's initial approach was very specific, but his process became less specific as the rehearsal period progressed, and the production continually evolved.

"The light is organized to carve out the environment, with high angles that graze the décor from above and the sides," says Holder, who also opted for a color temperature that has the natural feel of sunlight and moonlight, as he molded and shaped the tall walls in interesting ways. To create side slashes of light that grazed the set properly, a portion of the rig was hung on ladders in the wings.

One of the fixtures that provided Holder with the cold color temperature he wanted was the VariLite VL1000 with an arc source and shutters. Holder used them with templates as slashes on the walls and to graze sidelight on the set, also taking advantage of the zoom optics on the VL1000. His rig also included Martin MAC 2000 Profile and Performance automated luminaries, some of which were pulled from the opera's in-house inventory, while additional units were rented, including an additional 18 VL1000s that were used as low sidelights, much in a dance lighting position.

The cold, severe color temperature of the VL1000s is what Holder found appropriate for *Grendel*'s winter landscapes, the cold underground environment, and night scenes. He also used six ARRI 4kW HMI Fresnels, with Wybron Coloram II scrollers and Eclipse doublers; three hung overhead and three on stage as rovers on a rolling cart. "These were moved in the wings according to where the set was," says Holder, who liked that the ARRI fixtures had "the same cold source and piercing white light as the automated luminaries," he says. "They worked well together."

Midway through the project, Holder added another 20 MAC 2000s to the rig, hanging them on ladders. "The lighting had to be fluid in terms of how the set works and was more fluid than I expected when we started the process," he points out. In the long run, the set is lit by the moving lights, primarily the MAC 2000s and VL1000s. In Los Angeles, two consoles were used to program and run the show: a PRG Virtuoso for the moving lights and projections, with DMX running to the projection system and PRG Mbox Extreme media servers (see diagram, p. 30) and the opera's in-house Strand 500 series console for the conventional fixtures and strobes. Trevor Stiirin Burk and Erin G. Powell served as assistant LDs, with Matt Cotter serving as automated lighting and video programmer.

To light a large snake puppet carried on rods by several puppeteers, Holder created an alley of light in midair, using 19° ETC Source Four ellipsoids just above head height of the performers to light just the snake. Several MAC 2000s from upstage left and right created diagonal back light for the scene. "The idea is that the snake is floating in space," says Holder.

"*Grendel* is very moving and very demanding," he adds. "I think it has a real future as an opera, but a company needs a large infrastructure to mount a production like this. We didn't have a lot of physical time with the set alone. As a result, I couldn't have done this production without the moving lights."

### Monsters On Display

Karin Fong of Imaginary Forces, a design firm based in New York City and Los Angeles, designed the projected images, which work hand in hand with the lighting. She had collaborated with Michael Curry in the past and jumped at the chance to work on an opera with Julie Taymor (much of Imaginary Force's work is in feature films). "The projections enhance certain scenes in the opera," says Fong.

For a scene with a soothsayer called "The Shaper," the projections add magical rays of light that emanate from a harp with fiber-optic strings and then morph into a three-dimensional spinning vortex that becomes the king's mead hall atop the set. "I like the three-dimensional, curving, decorative lines that are also architectural," Fong notes. The projections are seen on the set piece, as well as a black scrim that covers the front of the stage in certain scenes. "As the light goes through the scrim, it carries the images onto the set."

Projected images also create a water effect in a dreamscape and another spinning vortex as Grendel falls into a dragon lady's lair, with the projections animating the patterns that Curry designed on the dragon. Another effective use of projection is a horrifying version of Grendel's face as he rages out of control. "We filmed the singer with different kinds of make-up and warlike paint," explains Fong. "When the projected image of his face is on the scrim, he is singing behind the center of his own face, and the singer becomes a larger than life version of himself. We also jump-cut different scenes with different make-up variations and added combinations of paint splatters, paint on glass, stop motion animation, and pencil scratching, as well as some computer-generated images.

Fong worked with a number of software programs, including Maya, Adobe After Effects, Photoshop, and MAXON Cinema 4D to achieve her design goals. "I use whatever makes sense aesthetically and conceptually," she says. "I try not to design based on technology." Once in the theatre, she had the chance to see how the projections looked on stage, as compared to monitors and storyboards, and found it interesting to watch the singers relate to the projections. "The live interaction is great, and the timing is not the same every time as it is in film. There is a little push and pull in opera."

The video gear, supplied by PRG in both Los Angeles and New York, included the Virtuoso DX2 console for media control, two Mbox Extreme media servers, two Digital Projection, Inc. Lightning 35HD projectors (for front projection), one Barco Folsom Image Pro signal processor, one 23" Apple HD cinema display for tech table viewing, Extron DVI splitters, and one DMX Opto splitter and cables. "At the tech table, we had a single Mbox Extreme for myself, Julie, and Karin Fong to view during testing and programming sessions," says programmer Matt Cotter.

One Mbox Extreme was located at the tech table so that Julie and her team could see what was going on; the other was in the booth next to the projectors. "We opted for DVI rather than computer VGA, as we had a pure digital signal, with HD content and HD projectors. We didn't want to lose any of the quality," explains Cotter, who notes that the projector output in New York seemed brighter due to the fact that video monitors in the orchestra pit in LA shed light onto the screen there.

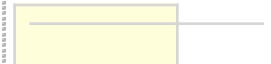
"In the booth, an Mbox fed the Folsom Image Pro via DVI [digital video interface]. The Image Pro provided for keystone correction and image manipulation of



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one of the projectors, allowing them to be edge-blended together. The Image Pro output then went to one of the Lightning 35HD's, and the pass through of the Image Pro went to the other projector," Cotter explains. "With the two projectors aligned, we were then able to use the capabilities of the Mbox to shift the projection around on different scenic elements and keystone the image as a whole." Cotter was also impressed by the new Virtuoso Beta Software V5.5. "The guys in Dallas did an amazing job with it," he says.

To coordinate the lighting and video, there were moments of working hand-in-hand. "When the monster's shadow glows on the surface behind the actor, the projected shadow echoes with a front light shadow that mimics the video," notes Cotter. The projections and lighting fixtures would also shift color at the same time, and the color in the lighting was balanced to that of the projections for a seamless look. In the dragon lady scene, some of the effects, such as a starburst pattern, were generated directly in the Mbox Extreme, and the media server also allowed such features as zooming and special effects that were easier to create on site than go back and re-edit the video.

### The New York Story

After several performances in Los Angeles, where the opera was considered a big success, *Grendel* appeared at the New York State Theatre as one of the highlights of this summer's Lincoln Center Festival (bass singer Eric Owens is exceptional in the title role), with some changes to the lighting and video systems.

"Due to the sophistication and complexity of the video sequences, we decided to tech the opera in New York with two programmers and two PRG Virtuoso consoles: one for video, and one for moving lights," says Holder. "This gave Julie Taymor the ability to work with Matt Cotter, the dedicated programmer/technician, when tweaking the video/projections. Once we got into performance mode, both elements were controlled by a single Virtuoso system, MIDI-linked to the in-house ETC Obsession 600 console." The second programmer was Rich Tyndall for the moving lights, while Cotter programmed the projections.

There were also some changes to the lighting rig. "By the time we finished work in Los Angeles, the lighting rig had been through at least three major revisions," Holder points out. "Most of the conventional specials for each scene were no longer in use. I anticipated that conditions would be similar in New York. I'd have very little time to move or make focus adjustments to fixed specials, and most likely, the position of the scenic elements — the wall, in particular — would continue to change. As a result, I eliminated many, but not all, of the conventional specials for each scene and added some additional moving lights (MAC 2000 Performance and VL1000 AS luminaires) that would allow me to make critical adjustments to the scene-by-scene lighting on the fly.

"Working with a much better understanding about the opera and what's really needed to tell the story, along with a lighting rig specifically tailored to the piece, I was able to revisit each scene and shape the light more carefully, moment by moment," notes Holder. "I feel the production in New York is much tighter, fluid and even more potent from a visual and musical perspective."

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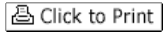
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