OZ

Elements of Oz:

There's an App for That

By: Catherine McHugh

The most noteworthy moment in 1939's *The Wizard of Oz* is undoubtedly when Dorothy opens the door in her black-and-white house and enters the Technicolor Land of Oz. *Elements of Oz*, produced by the theatre troupe The Builders Association, invites audiences into an interactive new world while also deconstructing the classic film and paying tribute to it via today's technology.

The company's artistic director, Marianne Weems, says *The Wizard of Oz* "is a very potent story because everyone has some relationship to it or some story about when they watched it as a kid. It seemed like a really apt subject for me, because Oz is a place where we escape to through our phones now—or our smart devices. We go through the bland door of reality into the Technicolor world of Oz. That's the idea behind using this form of media with this story of entertainment."

For the past 20 years, The Builders Association, which has won two Obie Awards, has pushed the boundaries of live theatre by incorporating the latest technological advances into every project; integrating augmented reality (AR) into this production seemed like a natural step.

"One of my collaborators, John Cleater, who is an AR artist, had been working on different projects for a while but never in theatre," Weems says. "This is the first show where we have used an app. I think it's really the first time that people have done this in theatre."

Audience members are encouraged to download the app before the show begins. At certain times during the action, it cues them to hold their smartphones or tablets up to the

stage, whereupon new layers of the show—not visible to the naked eye— emerge: The tornado that whips Dorothy's house away also features driving rain, poppies spring up on the way to the Emerald City, snow falls on the fields, and flying monkeys take to the air. In addition to the visuals, the app also puts forth clucking chickens for the Kansas scenes and giggling Munchkins in Munchkinland.

Cleater and the Builders worked with a group of technicians (often from Carnegie Mellon University) for two years to get the app right. Jesse Garrison did the interactive design/programming and Larry Shea and Kevan Loney were the augmented reality/network consultants. The identity and app design is by LeClair Lucas.

"We have a really amazing group of tech geniuses who gather around these projects," Weems says. "They had to design the network and set up the system and then we designed and published the app. One of the most radical aspects of what we did was to invent a way of cuing it so that we

could actually push information to people's phones throughout the show as if they were theatrical cues. That was a really big breakthrough for us and also something people don't really know how to do yet—being able to do it in real time."

One of the most amusing examples of this happens early in the show, as YouTube clips of various people singing "Over the Rainbow" appear when the app sends a command for everybody's phone to play an individual, random video. But Moe Angelos, one of the production's co-writers and a member of the cast of three, reveals that the Oscar-winning song almost didn't make it into the film at all.

Angelos and James Gibbs wrote the non-linear script, which is peppered with anecdotes, a few tangential re-enactments, and stories that emphasize the difficulties and dangers in the filming of the 1939 film so that it plays as sort of a seminar on the making of the movie and its pervasive influence on pop culture. Set up like a film set (down to the craft services table), the show's actors and techni-

cians all share the stage. The action begins with Angelos acting as a narrator, using a selfie stick to film herself as she outlines a bit of the history of the film based on L. Frank Baum's classic book. (Later, as she is playing Glinda, a selfie stick serves as her wand.)

From there, Angelos, Sean Donovan, and Hannah Heller switch roles and play scenes from the movie out of order. The action moves constantly around the stage as scenes are filmed and then reassembled in sequence. Video designer Austin Switser had to come up with the best way to make that work as seamlessly as possible.

"Originally, we were going to shoot this with multiple cameras but we decided to make it harder on ourselves and try to figure out if we could shoot it all on one camera," he says. "Instead, we decided to shoot it all out of order and come up with a system that would automatically edit the footage and play it back for us right away and in the proper order."

Switser notes that the single cam-

era was better for logistics and also added a sense of playfulness to the proceedings. "We think of what we're doing onstage as a really extravagant YouTube video," Switser says. "Like we're in the basement making our version of *The Wizard of Oz*. So all of that led to this idea of breaking it up and shooting all of the playback scenes out of order and seeing what we could come up with."

Switser uses a Blackmagic Design Cinema Camera as the primary shooting camera. "That's what is running on the dolly and everything is managed by Isadora," he explains. "We have three new Mac Pros that process all the video. There are about 15 channels of video going and five or six cameras that come in. We also have a series of little security cameras all around the stage for other effects."

For the RP screen, Switser uses a Panasonic PPDZ21K mounted into a special screen mechanism. "We call it Toto," he says. "It handles all of the backgrounds for all of the scenes we shoot. Everything you see in all the film sections was shot that night. And it's all done there and all the color correction is done that night within seconds."

There are a couple of exceptions, easily distinguished by the "prerecorded" label on the screen. "It's important to realize that everything else is actually from that night," Switser says. "We added those elements to speed up the show. But everything else is live, which leads to some pretty great moments."

Recording those scenes so that everything sounded good was perhaps the toughest challenge. "It's very bizarre how it works," Switser says. "Essentially, we had to get the recording of the performers when they're recording the lines and try not to

record any other sound that is going on. We also play back and edit that sound along with the video for those playback sections. The channel routing has to work, so that while we're recording, we get that sound but we lose the ambient sound. And then, when we play back, we get some of the other sound as well that is playing live. But you can always kind of hear everything that's happening.

"By now, we have written this whole software package and as well as patches to do all the shooting and editing," Switser continues. "So now we're at the point where we just shoot it and we're having fun. The computer does all of the re-edits and playbacks. Actually, it's really gratifying that we can change it up a little each night and see the results right away."

For the smaller monitors that hang from the ceiling, the trick was getting

content onto them. "We developed a completely different system for that," Switser says. "So at times, we could have independent content on each monitor, which added a whole other level of complexity."

Switser enjoys how the multi-layered performance challenges the audience members to be very intentional with their focus. "We want to get you to the point where you're almost overloaded because there is a lot to look at," Switser. "As an audience member, you need to decide want you want to pay attention to in all of those scenarios."

The video team also uses iPhone software called EpocCam that streams the camera wirelessly back into Isadora. "That's how we do Moe's self-ie stick," Switser explains. "There is a little camera that is actually attached to the screen that shoots back when we're recording—that's actually just

my iPhone strapped to the set. The EpocCam software was about $10 and it'll stream your camera back into Syphon, which is a video protocol, and Isadora will tape size it. And it's shock-ingly stable."

While the creative team was putting the show together through a series of workshops, they came up with a long list of possible scenes to shoot that referenced some of the larger ideas from *The Wizard of Oz.* "Then we just tried recreating some of these scenes to see what was interesting," Switser says. "Ultimately, we just kept the ones we liked the most. Working with the Builders, it's always a really close collaboration between what the script is doing and how the video is function-ing. So what each department is doing has a big effect on everyone else."

Other key members of the design team include scenic designer Neal

Wilkinson, lighting designer Jennifer Tipton, sound designer and original music composer Dan Dobson, cos-tume designer Andreea Mincic, and production stage manager Emma Sherr-Ziarko.

"Most of us have been working together for 20-plus years," Weems says. "The layering between media and performance and sound and light is something that is very specific to our company—an aesthetic we have developed over time."

No doubt this production will also continue to develop over time as plans are to take it out on tour, most likely in Asia. "It will have a whole life on the road," Weems concludes. No word yet on if that road will be made of yellow bricks—perhaps they'll travel by hot-air balloon? 🖎