PERFECT GIRL

Sarah McLachlan's *Afterglow* design team sets the touring world on fire

By Kathleen Eddy and Michael S. Eddy

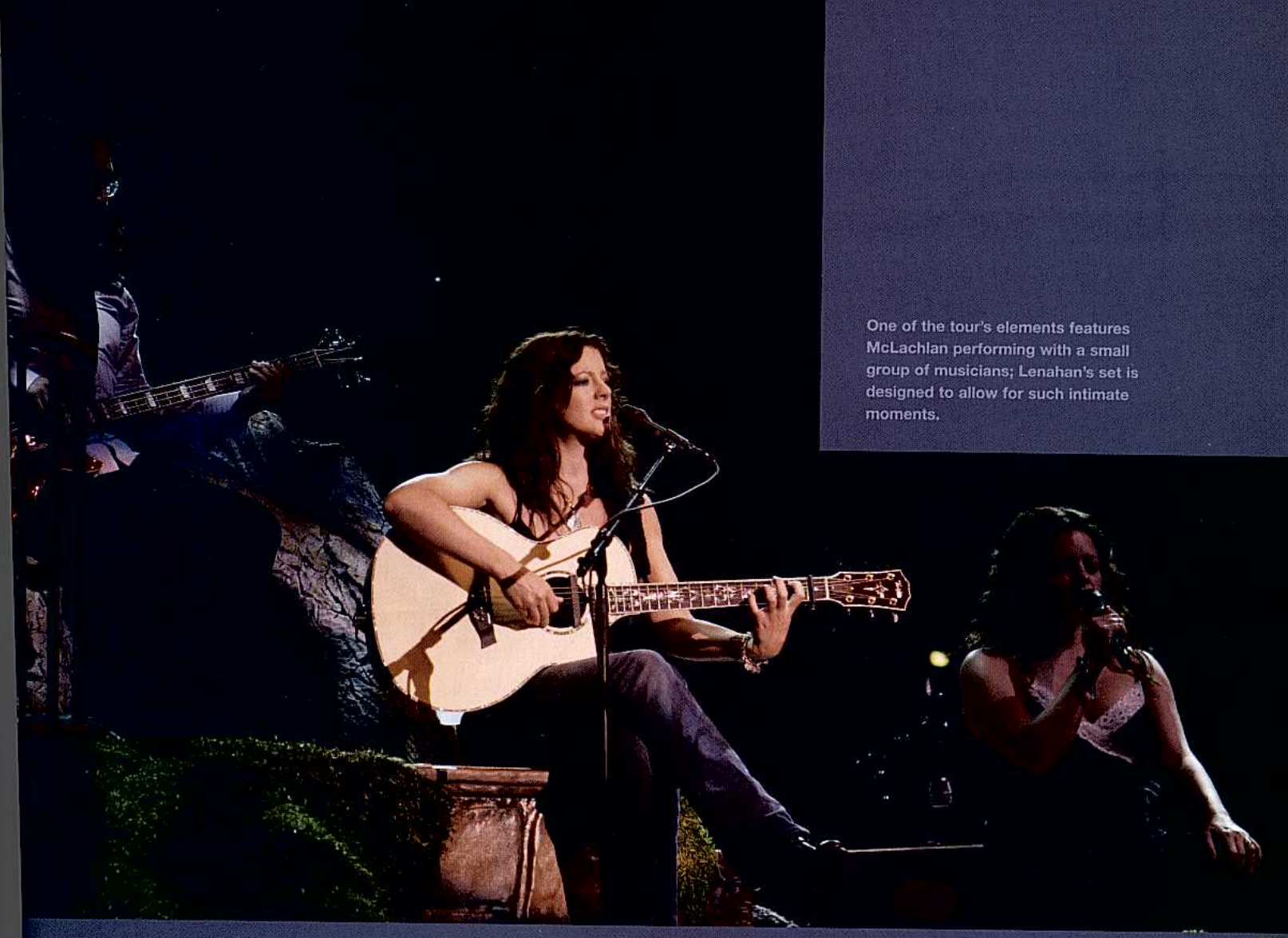
From the first moment, when the set and band are revealed by the plunge of a full-stage, floor-to-truss drop, one realizes this is something different. Sarah McLachlan is giving her fans quite a treat. After a sabbatical, she is back, in support of her double-platinum album *Afterglow*. (The *Afterglow* tour is currently in North America; the European leg concludes in November.) Given the efforts of lighting designer Graeme Nicol, set and projection designer Jim Lenahan, and FOH sound engineer Gary Stokes, the results are nothing short of spectacular. This is one of the most cohesively designed concert tours that we have seen and heard in some time. The opening reveal is just the first of many theatrical touches to come.

Lenahan's set resembles a columned stone ruin overgrown by a forest with a lush grass floor. "This is really a fantasy place," says Lenahan, "although the pieces are somewhat realistic. The trees morph into the column, but the tree is realistic and the column is realistic. I am influenced by really good production designs that I see. *The Lord of the Rings* was a beautiful design; it had a big influence on me. The way that nature was integrated with Art Nouveau ideas lent itself to Sarah's music. I showed her some Art Nouveau stuff and some designs that I had previously done. She particularly liked a set I had done for Tom Petty's Echo tour, which had a stained glass look, so I incorporated that, using LexJet," a 10-mil-thick Lexan material that can go through a printer and take ink. He describes the set as "*Lord of the Rings* directed by Tim Burton."

A tree grows onstage

The set is anchored upstage center by a massive tree that grows into a canopy of tangled bare branches. "We took digital art of tree branches," says Lenahan, "printed it out, and made a roof out of scenery netting. Then we glued the branches to the netting on both front and back, so they're really opaque when Graeme shoots light through them." He adds, "The trees are sculpted bead foam covered with spray-on pickup-truck bed liner built for me by [North Hollywood-based] Flix FX."

In addition, Lenahan has created multiple performance environment options onstage. "This is not an act with a lot of choreography," he says. "Basically, she sings and plays an instrument. Any Sarah McLachlan show has three elements—the whole band; Sarah at the grand piano; and a small group—a trio, perhaps. The set gives us three playing areas. Sarah doesn't need to be at center stage to take focus; even at stage left, she's close to the audience. It's a higher level at stage left, and we can make it an intimate space by separating it from the rest of the stage. The same idea works for the trio area, stage right.



One of the tour's elements features McLachlan performing with a small group of musicians; Lenahan's set is designed to allow for such intimate moments.

The drums there are handmade by American Indians, so, going with the natural elements already in use, we made the area a giant tree stump, with the drums sitting on a hydraulic lift."

A unique projection surface solution

Lenahan also designed the set's projection surfaces. "I didn't want to hang a big square behind her—my thing is, it's just a big TV set, so what is the point?" he says. "You have to integrate video into both the set and the light design. I thought I could do something with the Lexan material. I went to Photo Center Imaging; they print photos onto LexJet material, then glue it onto clear Plexiglas®. Even though you can't project though the LexJet—it's a perfect diffusion material, because of the way it scatters the light everywhere—it's great, because there are no hot spots when you rear-project on it. So I thought, what if I make a whole backdrop of it and rear-project IMAG on it? Each of our two rear screens are 18' tall and 20' wide, but Plexiglas units that big would be difficult to transport, so I thought, what if I made them into vertical Venetian blinds? They could swivel open and you could shoot light from behind or you could close them and project on them. Then I decided it would be a curved surface, with traveling blinds. [California-based] B+R Scenery built them. There are two hand-pulled traveler tracks on each side of the stage. Pull a rope and it travels across; pull another rope and it pivots. The Venetian blinds make the screens disappear."

Lenahan customizes the screen with Art Nouveau elements on the border. The challenge, he says, was to project an image on the white center of the screen without spilling on the decorated border. Similarly, at times, he wanted to project on the border without spilling onto the white screen. "This is where the new version of [High End Systems] Catalyst came in; with its multiple layers, you can add masking layers. I did a test at High End. I took the artwork for the blinds, printing up a piece that was 3' by 4' just on paper, then made a high-contrast black-and-white version of it on disk. At High End, we popped the picture into their server and loaded it in as a mask layer. Then we projected with a DL1 onto the piece of art." In this way, Lenahan was able to isolate the different portions of the screen for projection purposes. Four projectors were used for the tour, he says: "You have to have two projectors to do both at the same time, because of how their mask layers work; we are able to do that in this show."

The trick is in the lighting

Lenahan's theatrical design fueled his collaboration with Nicol. "At first look, there was nowhere to put the lighting," he says, adding, "I wanted to integrate the lighting into the set. I started putting lamps where I knew I could get good shots out of them. It's not a rock show—it's more theatrical than that—so you don't need to see truss lit up and lamps doing their fast moves. During the pre-programming in Australia, Jim kept saying, 'How do you want to light it?' and 'We'll put the Catalyst around that.' He let my lighting dictate the color scheme. I've been with Sarah for 11 years and a lot of the songs have specific colors; "Possession" is always a green song. Jim, Stan [Green], the Catalyst programmer, and I had a good, collaborative working relationship."

In Australia, Nicol and Lenahan worked the sets, projection, and lighting into a cohesive unit. "We started," says Nicol, "with a scaled-down rig of probably half of what we've got here. It allowed me to hone the lighting." Regarding the projections, he says, "Jim and I emailed a lot back and forth. We really clicked; we were able to get to one or two words" indicating Catalyst content for a song. One of Nicol's favorite cues stumps many lighting pros when they see the show: "The star drop is brought in behind while the screens are in; Stan found a bit on the Catalyst that emulates a star drop. When it comes on the screens at the same time, it looks like the star drop is bleeding through." He also notes the Venetian blinds give him the chance to do varied lighting looks and combinations on different surfaces, like the tree canopy.

Using moving lights for subtle effect

Nicol is selective about how he uses his lighting fixtures. "Just because they are moving lights; doesn't mean they have to move," he says. He chose Vari-Lite VL3000s for their smooth movement "They are far more subtle and Sarah is all about subtle. I have some 30-second cues which, with other moving lights, would be chunky and choppy. On other rock shows, I am fine using other lights; on the Avril [Lavigne] tour all I used was Martin. They're good for the rock-n-roll, but not for Sarah. I'm not one for using huge numbers of lights. If your hands are tied, you have to be more creative. I have 23 VL3000s and a dozen VL1000s and 14 VL 5s. I use 500W [Strand] Bambinos as the footlights. The [Martin] Mac 250s on the floor are used to bounce off the floor; they throw a lot of color up there. Also, I'm running the 3000s with a full CTO, because we're going for that warmer look."

In the end, Lenahan describes his set as "*Lord of the Rings* directed by Tim Burton."

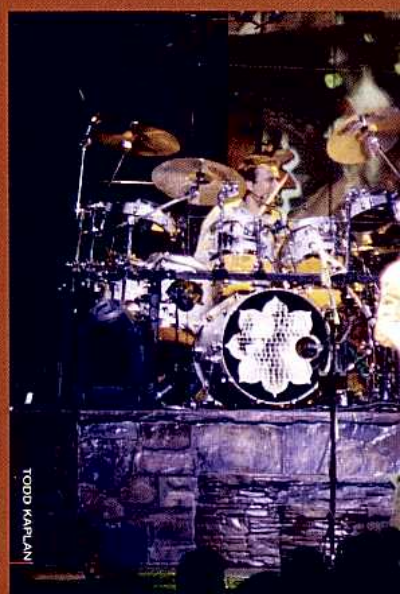
In addition, Nicol says, "The downstage right and left areas were a challenge; did I want to light them from the top, so they're always there and everyone gets sick of seeing them? Or did I want to allude to them, then really light them when needed?" He chose to create a theatrical feel; for example, in the song "World on Fire," he says, "I played with the VL1000s—which are on the front, with gobos—rotating them to suggest fire. I like to add more texture, rather than just have flat lighting."

His bigger challenge was more practical: "The most difficult thing was lighting the masking panels on the curved truss. We ended up using standard rock-and-roll truss warmers, which actually worked quite well. Sarah loves that stained glass look—also, strong, earthy colors. There are a lot of unusual colors we use, a lot of browns and ambers; they aren't really rock-n-roll colors but they work well in the vibe of the show. don't feel pushed into them; I go this way because it is what fits."

For control, Nicol went with an MA Lighting grandMA console. "The grandMA has real estate," he says. "I have the executor button; I've can do things on the fly. The [High End Systems] Wholehog seems a bit too small. I've never understood the drive t make consoles smaller; it's not like we're short of room out here. Audio consoles get bigger and bigger. I've argued for years that moving light consoles should have, like, 28 encoder wheels. The MA is a bit easier than the Hog; I've got a couple more wheels an room to lay things out. I don't have to go through pages to get to things." Lighting gear was supplied by Christie Lites Vancouver.

Sounds as good as it looks

Thanks to FOH engineer Gary Stokes, the warmth and unique color of McLachlan's voice and music come through crystal-clear. Stokes has been working with McLachlan since 1989. The singer's decision to play sports are nas on this tour shaped many of Stoke eqiupment decisions. "It made us look at linear arrays," he says, "to design a



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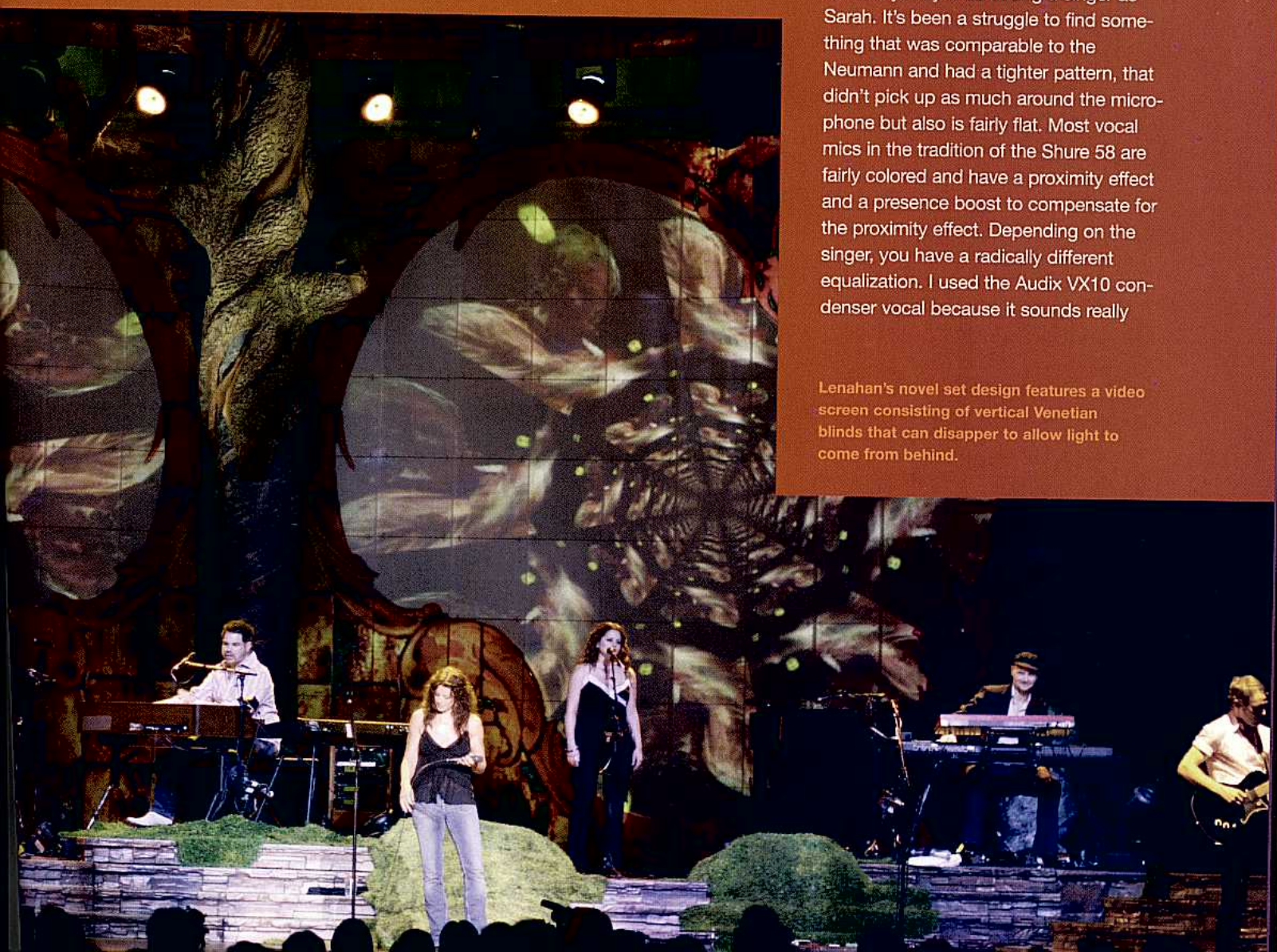
system that would allow us to do well in the vast majority of the venues. Line arrays aren't that suitable for a wide variety of flexible rooms, where you don't necessarily have access to ideal rigging. We're using the [Meyer Sound] MILO system. It's critical that it be tailored specifically to the room, in terms of inter-box angles. At the same time, you're changing the shape of the pattern, but the general coverage angles are similar. Depending on the night, the vertical changes within a 10-20% ratio. Every inter-box angle is calculated daily and changed. We hone what we do daily."

Stokes chose TRUE Systems microphone preamps, "the Precision 8 eight-channel and the P2 analog, were major choices. I've always been a fan of dedicated mic preams for the lead vocal and experimented with it in different locations; I ended up putting it onstage." He tested a number of preamps in similar conditions. "The TRUE preamp really won out for us. The microphones go straight to the preamps onstage and everything goes through sub-snakes, except Sarah's vocals, which go straight with one wire right from the vocal mic to the preamp. It's all high-quality cable with gold contacts. It gives us the one really solid and reliable first interface from the microphone element to a reasonable amount of voltage. We were really looking not for a colored sound, just the maximum amount of reality and immediacy in the live environment. The TRUE system was by far the best at that." The preamp systems were designed and built by Sound Art, which provided equipment for the tour. Audio Video Methods (AVM) of Toronto provided financing and project support. Ramtech Industries of Gainesville, Florida constructed the transformer systems.

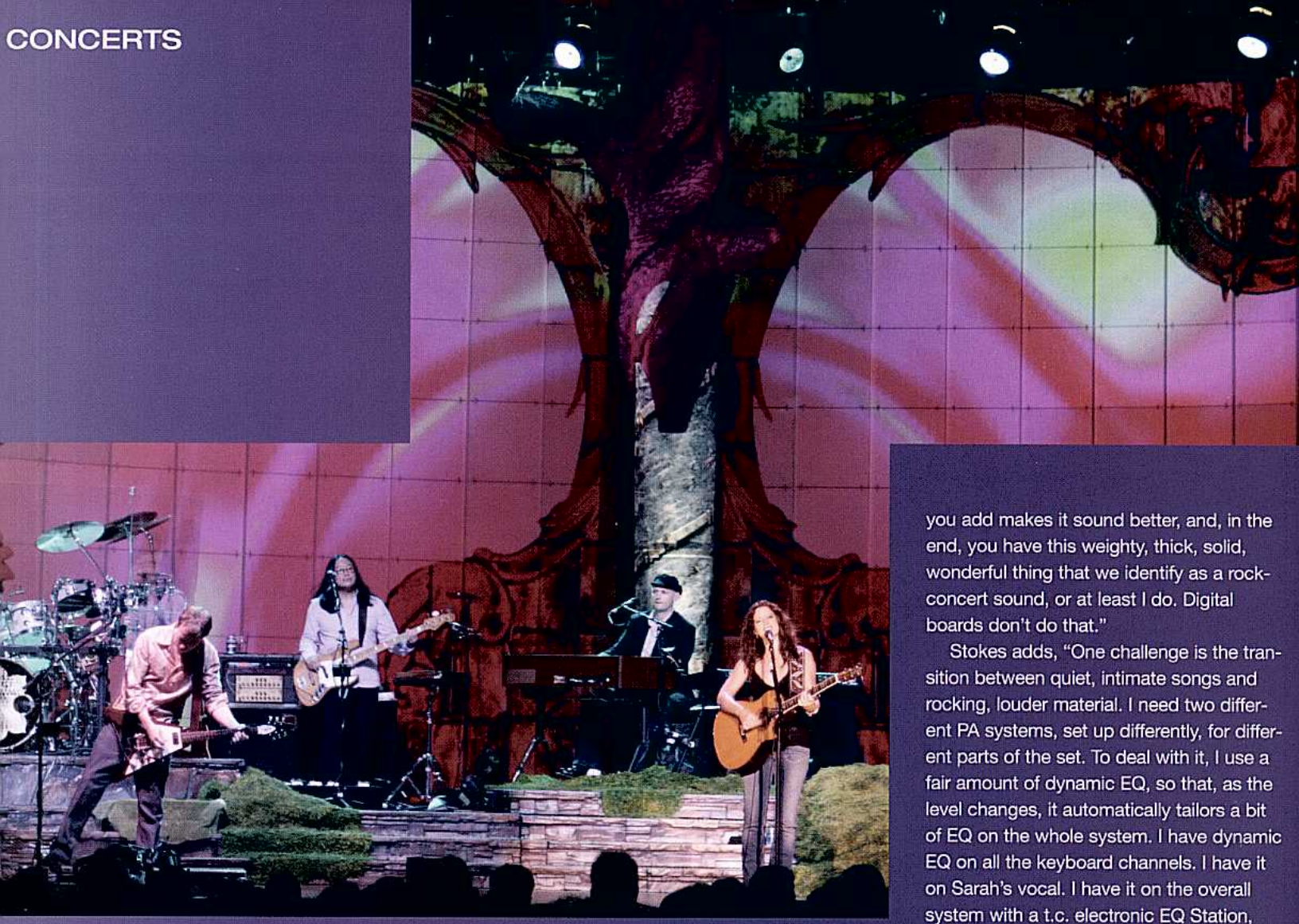
The right mic for the job

McLachlan's mic of choice is the Neumann KMS 150. "I was looking for something more true to her unique vocal, something with a less-colored bleed because she's a very dynamic singer and I didn't want to lose the studio-quality condenser vocal sound. The Neumann was a better solution." Stokes first encountered the KMS 150 with Rush, whose vocalist Geddy Lee is a longtime devotee. "When I first started requesting it from sound companies, hardly anyone had heard of it. Now Neumann mics are used widely for live performance."

However, he says, "I can't use the Neumann for everyone onstage because not everybody is as strong a singer as Sarah. It's been a struggle to find something that was comparable to the Neumann and had a tighter pattern, that didn't pick up as much around the microphone but also is fairly flat. Most vocal mics in the tradition of the Shure 58 are fairly colored and have a proximity effect and a presence boost to compensate for the proximity effect. Depending on the singer, you have a radically different equalization. I used the Audix VX10 condenser vocal because it sounds really



Lenahan's novel set design features a video screen consisting of vertical Venetian blinds that can disapper to allow light to come from behind.



Lighting designer Graeme Nicol took a theatrical approach to the tour, blending his lighting design into a seamless collaboration with the scenery and video. His gear includes Martin Professional Mac 250 Entours, which bounce color off the deck, and Vari-Lite VL3000s with a full CTO for a warm look.

nice, more comparable to the Neumann in the sense that it is an open, natural condenser-sounding mic but has a tighter pattern."

Another challenge: "When Sarah moves around the stage, the sound changes because her microphone still picks up a fair amount of everything. We used a bit of Plexiglas shielding in front of the drum kit. That certainly helps. To give her more mobility, we use a Sennheiser wireless with a Neumann KK105 capsule. There's such an emphasis on real high-frequency detail in her vocal that, when you get into the wireless mode, the effect of that compander circuit and noise reduction really wreaks havoc with anything above 12 to 16K. You don't really get that clear end. I wouldn't use a wireless all night on her but we go to it on a couple of the rock songs."

Analog versus digital

Stokes likes digital consoles, but for that traditional rock-concert sound he went analog, using a Midas XL4. "I was very gung-ho about going digital for this tour. Then I set up both an analog and digital board when we were doing the preamp tests. I put the same inputs into both and mixed the same songs on both consoles, switching back and forth. That made me a believer in analog live sound for this tour. Digital can be extremely open, natural, and revealing, but it doesn't get any better when you start putting more inputs into the busses. On an analog board, everything you add makes it sound better, and, in the end, you have this weighty, thick, solid, wonderful thing that we identify as a rock-concert sound, or at least I do. Digital boards don't do that."

Stokes adds, "One challenge is the transition between quiet, intimate songs and rocking, louder material. I need two different PA systems, set up differently, for different parts of the set. To deal with it, I use a fair amount of dynamic EQ, so that, as the level changes, it automatically tailors a bit of EQ on the whole system. I have dynamic EQ on all the keyboard channels. I have it on Sarah's vocal. I have it on the overall system with a t.c. electronic EQ Station, with dynamic EQ on the main system left and right. It allows us to have some level-dependent tone-shaping. That is probably the biggest challenge on a night-to-night basis."

An array of sound

The tour uses a system of 48 Meyer Sound MILO loudspeakers. Downfill for the system is provided by eight of the new MILO 120 expanded-coverage loudspeakers, while UPJ-1P and M1D cabinets are used for lip and stage wing fill as needed. "The line array really helps to reach every seat," says Stokes. "We've had good luck deploying small delay speakers just for the very high frequencies, which can really make the PA seem like it is 200' closer to the people in the back of the room. The line array can push that high frequency to the back of the room pretty well. But it's better if you don't have to compensate for the high-frequency

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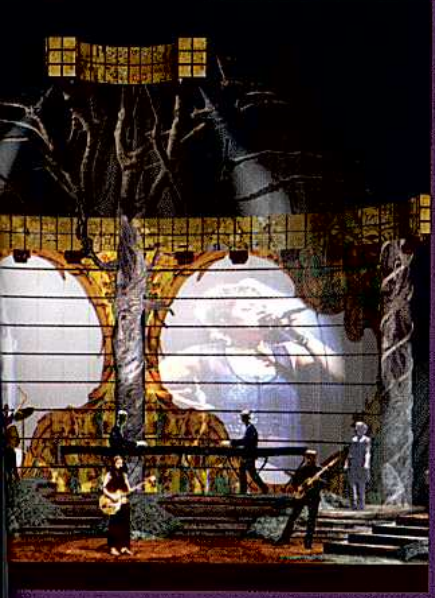

COURTESY OF JIM LENAHAN

Left: One of Lenahan's set designs shows the various scenic elements and how they interact with Nicol's lighting. Top left, FOH engineer Gary Stokes. Top right: Catalyst programmer Stan Green and Nicol.

s through the air by pushing a whole lot re SPL out through the top of the array. It rks better if you can pick up some of that h a delayed high-frequency speaker. It es you something easier to tweak in the dle of a show. To be able to turn up e delay horns in the back of the room— ring a little bit of high frequency to those hest seats—is a great advantage." Stokes says, "It is really about trying to erve the emotional content of Sarah's ic in a hockey arena. You want every nce and every detail to get to every ." When asked what he thinks of the cert, he says "I am never happy with ything. I think the only way you can do ob at a high level is to be constantly tisfied." He adds, however, "I am y happy with the way things sounds ll."

Sarah McLachlan
***Afterglow* Tour**

Crew List
Production Manager: Paul Runnals
Lighting Designer: Graeme Nicol
Lighting Director: Graeme Nicol
Projection Designer: Jim Lenahan
Set Designer: Jim Lenahan
FOH Engineer: Gary Stokes
Monitor Engineer: Dave Pallet
Catalyst Programmer: Stan Green
Lighting Crew: CC Darrell Magura, Stan Green, Jason Lewis, Ryan Kell
Sound Art Crew: Gord Reddy, Dave Retson, Rob Dolinski, Matthew Peskie

Lighting Equipment
(23) Vari-Lite VL3000
(14) Vari-Lite VL5
(12) Vari-Lite VL1000TS
(25) Martin Profesional Mac 250 Entour
(8) Martin Professional Atomic 3000 strobe
(8) Martin Professional QFX
(4) ETC Source 4 PAR
(30) ETC Source 4 PAR w/scroller
(4) Lycian 1271 1,200W truss spots
(2) Le Maitre Cold Flow
(3) MA Lighting grandMA console
(4) High End Systems Catalyst G5 with Black Magic Cards
(1) ETC 96x2.4kW Sensor Rolling Rack
(3) Main Light 20'W x 30'H Fiber Optic Star Drops

Sound Equipment
Midas XL4 console
Yamaha PM1D console
Meyer Sound Milo speakers
TRUE Systems Precision 8 and P2 mic preamps
Neumann KMS 150 mics
Audix VX10 mics
Earthworks Audio Products SR77 mics
t.c. Electronic equalizer

Lighting equipment provided: Christie Lites Vancouver (www.christielites.com).
Sound Equipment provided by Sound Art Touring (www.soundart.com) and Audio Video Methods (www.avm.org).
Scenery provided by B+R Scenery (www.bandrscenery.com) and Flix FX, Inc. (www.flixfx.com).