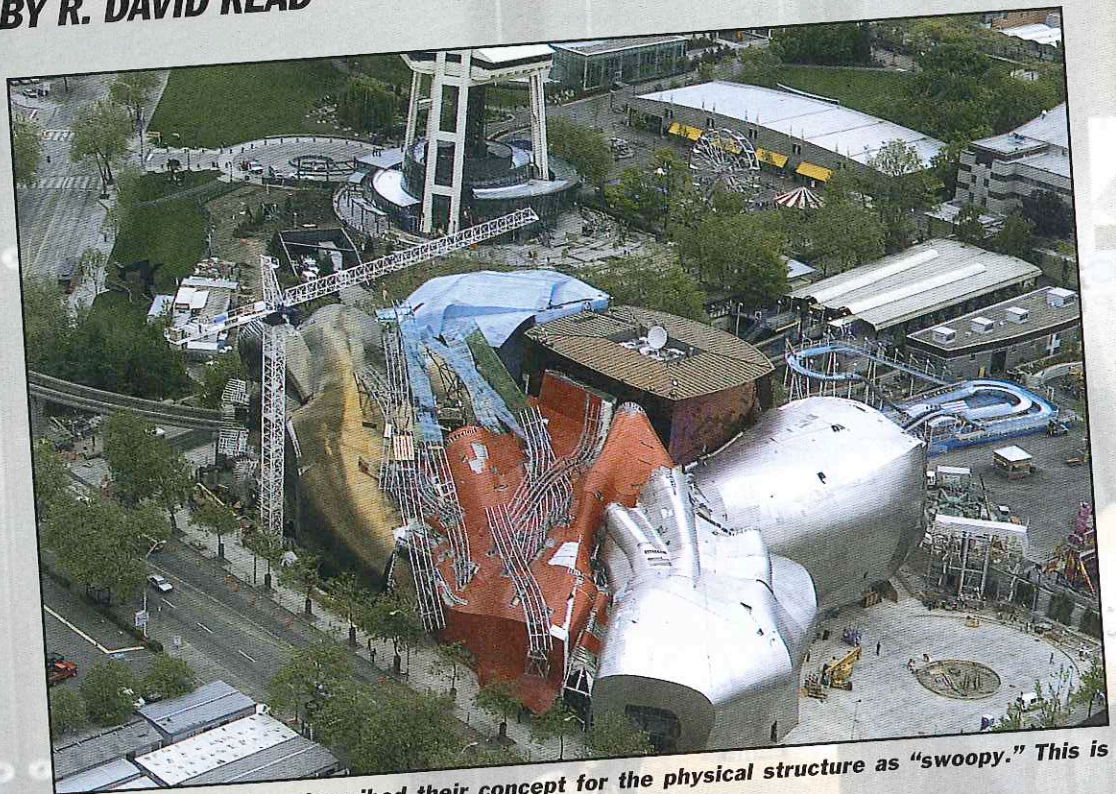# SIGHTS & SOUNDS OF THE SEATTLE EMP

### BY R. DAVID READ

*It All Started with Jimi Hendrix!*



The EMP's founders described their concept for the physical structure as "swoopy." This is the building while still under construction.

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A unique and, some might say controversial, 140,000-square-foot structure—Experience Music Project (EMP)—showcasing contributions to contemporary music opened to the public in downtown Seattle in June. Adjacent to the Space Needle and sliced through by the city's Monorail, this latest addition to the Seattle cityscape is certain to achieve recognition as a visitor destination. The abstract Frank O Gehry & Associates architectural design is a complex architectural arrangement of curvilinear, multi-colored elements that has been described by some as resembling the inner ear, smashed guitars and other wildly interpretive descriptions.

The EMP was the brainchild of Paul Allen, co-founder with Bill Gates of Microsoft Corporation, who grew interested in the career of Seattle native, guitarist Jimi Hendrix. Allen had amassed not only a considerable fortune but also garnered a significant collection of Hendrix artifacts and wanted to share his collection with the general public. From an initial, modest concept of merely showcasing those artifacts, the project grew into an estimated $360 million edifice that not only celebrates Jimi's contributions to the world of rock 'n roll but also presents

the concept of musical diversity through employment of interactive, multimedia presentations that are intended to inspire and develop the public's future tastes in any number of musical genres.

Allen enlisted the help of his sister, Jody Allen Patton, as co-founder of the EMP and, according to architect Gehry, they employed the obviously subjective term of "swoopy" to denote what they envisioned as an undulating, musical experience in architecture. The 69-year-old, Canadian born, internationally recognized architect for the acclaimed Guggenheim Bilbao Museum in Spain translated the nebulous "swoopy" into a series of undulating curvilinear, glass-curtain wall structures that functionally interrelate but at the same time define a number of culturally different and distinct experiences. Using music as an inspiration, Gehry designed a building that inundates and flows with constantly varying shades and visual aspects– much like architecture set to jazz.

For an on-line look at this radically new facility, check out www.experience.org.

## Translating 'Swoopy' into Reality

As Gehry and his associates set forth on the design of the exterior using state-of-the-art 3-D—CATIA Cadd, which *Engineering News-Report* was to describe as "light years ahead of anything previously available for 3-D architectural scaling"— several interior architectural design firms took responsibility for the design completion of different aspects of the internal venues. In a coordinating effort, the Seattle-based firm of Sparling A/V was contracted to furnish the design of the infrastructure.

Sparling's Tom Mullins explained, "Our firm assumed the responsibility for interfacing with three different architectural firms and set about designing not only the extensive cable plant but also the audio, video and data source capture and routing systems for the base building." He continued: "This infrastructure involved providing CobraNet compliant, computer-server exchange of digital video and Cat. 5 cabling, all of which involved both traditional copper and fiber optic connectivity. Inasmuch as the client envisioned a constantly evolving change in exhibits, it



*The EMP's Hendrix Gallery displays artifacts from the famous entertainer's career.*

was dictated that connectivity boxes be provided to accommodate the necessary flexuosity that would accommodate the anticipated shifts in exhibit content." Sparling A/V found themselves serving not only three architectural clients but also overseeing the activities of three electrical contracting firms and multiple A/V system implementers.

Fortunately, one of the chosen system implementers was the experienced design/build firm of Orlando-based Soundelux Showorks, which had proven most capable in the creation of such Universal Studios attractions as "Twister," "Terminator II/3D" and the recently opened "Men in Black." Given this background, Soundelux had no trouble interpreting and implementing the basic system configurations as provided by Sparling A/V. When I initially contacted Soundelux in early June, they were still in the "finish-out" aspect of the project. Soundelux was also the chosen provider for the design/build portion of the then not-yet-completed "Sky Church" and the exhilarating "Artist's Journey" attractions. Howard Schlieper, Soundelux project manager, acknowledged that they "were— very much immersed and up to their eyeballs in completing the assignment." Topper Sowden, the

*Fragments from the Fender Stratocaster smashed by Jimi Hendrix at the Saville Theatre in London, June 4, 1967*
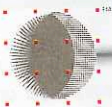
*The Guitar Gallery.*

acoustical consultant for the Soundelux portion of the project, also signified that he was a frequent traveler between his Fort Worth office and Seattle, as they strove to complete the installation on time and within budget.

As the EMP staff humorously notes on the informative website (http://www.experien-ce.org), "If you made a typical steel guitar "E" (first) string from the [structural] steel in the building, it would be 1.6 million miles long—enough to circle the Earth 65 times. If you made it into the lightest banjo string, you could stretch it one-quarter of the way to the planet Venus. [Twang!]" An early press-released note adds, "The data cable already installed in the building could wrap around the Earth, and we are not even done yet!"

## Multiple Projects Within a Project

Within the sprawling confines of this ambitious musical outreach that will be dedicated to exploring the creativity and innovations in American popular music, EMP strives to capture and reflect the essence of rock 'n roll and probes the influence of jazz, soul, gospel, country and blues as well as exploring rock 'n roll's ongoing contribution to other forms of the contemporary music scene.

To complete the total musical experience, nine distinct areas provide a synergistic opportunity to explore, in various ways, the processes that comprise the art of music-making. These elements are comprised of:

restaurant and bar, with what EMP boasts is a deliciously funky menu, and a small performance stage for live music.

Not to be content with the confines of their Seattle environment, EMP plans to take the show on the road with their Electric Bus venue, which is planned to be a mini-version, touring sample of the many museum offerings that might otherwise be inaccessible to non-Seattle visitors.



*The turntable setup used by Grandmaster Flash in the late 1970s, early 1980s.*

## Implementing the Technology

Certainly, any one of the described entertainment venues could constitute a story unto itself. However, here we've concentrated on the audio/video systems that serve the Sky Church and Artist's Journey. An inspection of the accompanying equipment lists certainly conveys to even the most casual reader that this was a project of major proportions. The successful completion can be attributed to detailed initial design principles and prompt implementation of the plans and specifications. Not to say the project was devoid of design shifts and subsequent change orders but, according to the designers and implementers, these modifi-

# Artist's Journey Equipment List

| Qty | Item | | Qty | Item |
|---|---|---|---|---|
| 2 | AKAI DR16 PRO 16 Channel Digital Recorder | | 2 | JBL SP128S Speaker, Dual 18" Subwoofer, Flyable |
| 4 | Atlas 415-8 Baffle/Surface/Wall | | 12 | JBL SP-212A Speaker, Two-Way, High Power |
| 10 | Atlas HT-87 70 Volt Transformer | | 6 | JBL VS3215 Speaker, Three-Way, High Power |
| 6 | Barco Graphics 6300 Video Projector, 2000 ANSI LCD | | 1 | MediaMatrix MF 208-40 Digital Audio Multi-Processor |
| 1 | Barco Graphics 9300 Video Projector, 5000 ANSI LCD | | 14 | MediaMatrix MM 8840 A/D - D/A Converter |
| 4 | Bittree B52DC-HNOBT/E3 Patchbay, 1/4" Audio, 26 x 2 | | 1 | MediaMatrix MM 960 Digital Audio Processor Frame |
| 1 | Bittree B52T-2WT/T Patchbay, 26 x 2 (52 point) Video | | 8 | MediaMatrix MM-DSP DSP Cards |
| 8 | Bittree PCW3600-75 Patch Cable-Video | | 1 | MediaMatrix Mware Media Matrix Software |
| 4 | Black Box AC328A Video to VGA Converter | | 2 | MediaMatrix Pasha RS-232 Control Software |
| 1 | Brainstorm SR-15 Time Code Distripalyzer | | 1 | MediaMatrix V2.1 Mini-Frame Expansion Kit |
| 1 | Brainstorm SR-3R SMPTE Reshaper w/Freewheel | | 4 | NEC LCD-2010 20" LCD Monitor |
| 1 | 1 Crown 24X6 Amplifier, 520/225 Watts Bi-Amp Main Screen H/M | | 4 | Omni-Mount 100WA Speaker Mount |
| 6 | Crown 3600VZ Amplifier, 1565 W/Ch, Main Screen Low | | 2 | Panasonic CT-S1390Y Preview Monitor 13" |
| 14 | Crown 36X12 Amplifier, 1,120/310 Watts Bi-Amp Over/Surr/Side | | 2 | Panasonic WJ-225R Video Switcher, Passive, w/Loop Through |
| 7 | Crown 5000VZ Amplifier, 2000 W/Ch-4 Ohm, Main Sub | | 2 | Panasonic WV-CP454 Video Camera, Color |
| 5 | dbx 286A Vocal Processor/Preamp | | 4 | Panasonic WV-CP454 Video Camera, Color, Interior |
| 4 | Denon DNC680 Compact Disc Player, RS-232 | | 6 | RDL STD-10K Passive Mixer |
| 1 | Extron 60-30-01 Rack Mount Kit, VDA | | 1 | Sanyo PLC-XF10NL Video Projector, LCD |
| 1 | Extron ADA 2 300HV VDA, 1x2 Component | | 5 | SDX V2000 Genlock Genlock Module |
| 1 | Extron ADA 4 300 MX-HV VDA, 1x4 Component | | 3 | SDX V2000 Pro 12 Digital Video Server, 12 Mbit, 6 Channel |
| 18 | FSR SP-ES AC Power Sequential Switcher | | 1 | SDX V2000 Pro 12 Digital Video Server, 15 Mbit, 2 Channel |
| 4 | InLine IN1010 Universal Decoder | | 1 | SDX V2000 Pro 4 Digital Video Server 15 Mbit Component Output |
| 10 | JBL 4632 Speaker, Mid High Wave Guide Cinema Series | | 20 | Sennheiser H200 Assistive Listening Receiver, Two Channel |
| 4 | JBL 4642A-GS Speaker, Dual 18" Subwoofer | | 5 | Sennheiser S120-2 Assistive Listening Package, IR |
| 2 | JBL Control 1 Speaker, Compact Full Range, 8 ohm | | 3 | Shure 514B Microphone, Cab Style |
| 15 | JBL Control 1/70AW Speaker, Compact Full Range | | 2 | Shure MX412S/C 12' Gooseneck Mic |
| 6 | JBL Control 5 Speaker, Compact Full Range | | 1 | Sigma BSG-21N Black Burst Sync Generator |
| 8 | JBL Control 1/70AW | | 2 | Sigma ENC-2191L Encoder Card |
| 4 | JBL CSP-118S Speaker, Subwoofer, Single 18", Flyable | | 6 | Sigma SDA-2182 Video Distribution Amplifier |
| 4 | JBL EON 15P Speaker, Powered, Full Range | | 2 | Sigma SS-2100-16+ 16 Card Frame |
| 5 | JBL MPC-200 Amplifier, 225 Watts/Channel - 4 Ohm | | 1 | Sigma SS-2100-6 6 Card Frame |
| 2 | JBL MPC300T Amplifier, 175 Watts/Ch., 70V | | 6 | Sigma TYC-2115 Encoder Cards |
| 7 | JBL MPC600 Amplifier, 400W/Ch, 8 Ohm Point Source | | 2 | Sigma VDA-2100 Video Distribution Cards |
| 4 | JBL MPX-300 Amplifier, 300 Watts/Channel - 4 Ohm | | 2 | Sigma VDA2102 |
| 9 | JBL MS-28HR Speaker, Full Range | | 3 | Sigma VEQ-2105 Video Distribution Cards |
| 33 | JBL MTC-1A Speaker Mounts | | 4 | Sony PFM-500A1WU 42" Plasma Monitor |
| 6 | JBL MTC-51 Speaker Mount | | 4 | Sony PFM500A2WU 42" Plasma Monitor |
| 4 | JBL SB-2 Speaker, Subwoofer | | 1 | Stewart Film. Lumiflex 130 RP Screen Material + Frame, 10.5' x 14' |
| 10 | JBL SP125S Speaker, Low Frequency | | 5 | Whirlwind TRSP-2 Isolation Transformer |
| | | | 1 | Wohler VM2 Audio Monitor, Dual Channel Rack Mt. |

cations were accomplished without a lot of gut-retching indigestion. (The on-site project managers might take exception to this statement.)

The scope of this project is also a harbinger of similar projects that the sound and communication industry can anticipate in the immediate future. Consider, if you will, that the EMP design and installation involved audio, video, computer, lighting control, video-projection technology and included cabling procedures that not too many years ago would have been an unthinkable task for pre-system integrators (sound contractors) to even envision—let alone submit a tender proposal.

As the opening day's hordes of visitors qued up to enter this new museum-type experience, the A/V technology quietly and effectively operated in the background. Kudos to the designers and implementers who transformed a "swoopy" concept into a brick-and-mortar reality.

# Base Building Equipment List

| Qty | Item |
|---|---|
| 2 | Acer TTX 1531D Monitors |
| 6 | ADC DAL3-14MkII-3ENSBG Patchbay, digital audio |
| 1 | ADC PV224B-SVJT Patchbay, digital video |
| 90 | ADC VA-1 Audio Module |
| 9 | ADC VC-1 PatchBay Chassis - Mixed |
| 90 | ADC VVSVJT Video Module |
| 45 | AJA D10C Video D-A Converter, RGB |
| 38 | AJA D5CE Video D-A Converter, Y/C |
| 83 | AJA DWP Power Supply for Converters |
| 10 | Allen & Heath GR-8A Amplifier, 8 Channel |
| 20 | Atlas 164-8A White Speaker Grill |
| 20 | Atlas HT-87 Transformer |
| 51 | Atlas Soundolier 164-8 Grille |
| 5 | Atlas Soundolier 417-8WD Grille |
| 34 | Atlas Soundolier 61-8W Grille |
| 3 | Atlas Soundolier GA-30T Speaker, Paging Horn, 30W, 70v |
| 148 | Atlas Soundolier HT-87 Transformer, 70 V |
| 1 | Barco 9001560 Reality 9300 Video Projector |
| 1 | Barco 9829780 Projection Lens 1.5-3.0:1 |
| 9 | Barco 90-01449 Graphics 6300LC, LCD Projector |
| 9 | Barco 98-29860 Ceiling Mount Kit |
| 4 | Barco R9829790 Lens, QGD2-2.8:1 |
| 5 | Barco R9829850 Lens, QGD1.36-2.06:1 |
| 2 | Belden 1694 Cable, Digital Video, 1000' |
| 4 | Beyerdynamic SHM-424/423.300 Microphone, 12" Gooseneck/Flange |
| 38 | BSS 9088LL Digital Signal Processor |
| 2 | dbx 286A Voice Processor |
| 2 | Denon DN-T620 CD/Cassette Player |
| 17 | Display Works 15M 15" Plasma |
| 14 | Display Works 18M 18" Plasma |
| 5 | EAW UB-72 Speaker, UB-72 |
| 1 | JBL 4645C Subwoofer 18" |
| 5 | JBL C26T Speaker, 2-Way, 6.5" |
| 6 | JBL Control 1 Speaker, Full Range/2-Way |
| 7 | JBL Control 1/70AW Speaker, Full Range/2-Way, 70V |
| 16 | JBL Control 5 Speaker, Full Range/2-Way/Passive |
| 3 | JBL CSP-18 Speaker, Full Range/2-Way/Passive Crossover |
| 129 | JBL LE8T-H Speaker, 8"/Coaxial Ceiling |
| 13 | JBL LSR32 Speaker, Full Range/3-Way/Passive |
| 7 | JBL MPC-300 Amplifier, 300W/Ch. @ 4Ohms |
| 22 | JBL MPC-300T Amplifier, 250W/Ch. @ 70V |
| 9 | JBL MS-26WP Speaker, Full Range/2-Way/Passive |
| 23 | JBL MS-28HR Speaker, Custom |
| 4 | JBL MTC-2+ JBL Control 1 mount |
| 3 | JBL SB-2 Subwoofer |
| 1 | JBL SP125S Subwoofer |
| 11 | JBL TLA-4431 Speaker, Line Array |
| 1 | JBL VS-3115FR Speaker, Full Range |
| 1 | JBL VS-3115WP Speaker, Full Range |
| 3 | LCS LD-88G Digital Mixer, 8 x 8 |
| 2 | LCS Wild Tracks Compatible HD |
| 1 | Madrigal Proceed w/AC-3 Surround Sound Processor |
| 1 | MediaMatrix CAB 8i Preamp, 8-Channel Input Only |
| 1 | MediaMatrix CAB 8o Converter, 8-Channel Output Only |
| 1 | MediaMatrix CommCenter PageMatrix Command Center |
| 1 | MediaMatrix MM 760nt Digital Processing Mainframe |
| 3 | MediaMatrix MMDSP-CN DSP, Cobranet |
| 2 | MediaMatrix ST 10 DSKTP PageMatrix Station Ten Desktop |
| 1 | MediaMatrix ST 4 DSKTP PageMatrix Station Four Desktop |
| 4 | MediaMatrix ST 4-W PageMatrix Station Four-W, Wall Mt. |
| 1 | Pesa Ocelot Y/C Video Router |
| 9 | Pesa RCP-XY X-Y Router Control Head |
| 1 | QSC Rave 80S Cobranet Input |
| 1 | QSC Rave 81S Cobra net Input |
| 1 | 4 QSC Rave160 Cobra-Net Output |
| 4 | QSC Rave161 Cobra-Net Input |
| 2 | QSC Rave188 Cobra-Net Output |
| 1 | 1 QSC Rave80 Cobra-Net Output |
| 13 | QSC Rave81 Cobra-Net Input |
| 3 | Rane CP64 Processor, 4-Line In/2-Stereo Zone Out |
| 47 | Sennheiser GP AM 3000 Mollie Antenna |
| 116 | Sennheiser GP ID 3000-IN Mollie Proximity Detector |
| 21 | Sennheiser GP SR 3000-2 Mollie Base Station |
| 7 | Shure 514B Microphone, Omnidirectional/Paging Push to Talk |
| 48 | Sony PFM-510A1WU Video Display (Lg) |
| 2 | Sony Pss-610 Projector Mount |
| 5 | Stewart Film AT-1.5 Screens |