St. Martin-in-the-Fields Episcopal Church
Philadelphia, PA

**LOCATION:** 8000 St. Martins Lane, Philadelphia, PA 19118

**SCOPE OF CONSULTING:** Speech-reinforcement sound system design

**COMPLETION DATE:** Designed 2000 / Installed 2001

**ARCHITECT:** Kise Straw & Kolodner (preservation & restoration architect)

**ASSOCIATED ACOUSTIC CONSULTANT:** Marshall/kmk Acoustics, Chappaqua, NY

**REFERENCES:**
- Ken Lovett, director of music and organist (church office: 215-247-7466)
- Philip Scott, project architect (215-790-1050)

**DESCRIPTION:** Restoration and upgrade of this late-19th century church sanctuary, of “English parish” proportions in the Victorian-gothic style with later French gothic additions, included some enhancement of the relatively “dry” natural acoustics to better support a rebuilt and expanded Aeolian-Skinner pipe organ (2001) and the church’s choral program. Dingy white paint applied in the 1940s was painstakingly removed from the sanctuary interior, exposing glazed brick walls with decorative banding, returning this intimate space to its original beauty. A new speech-reinforcement sound system replaced a long series of unsuccessful systems which had not met the needs of the congregation.

Digitally-controlled, steerable line-array loudspeakers were recommended as the best of several possible loudspeaker designs, and selected by the church as the most cost-effective and least visually-intrusive solution. Two 9’-tall medium-resolution line-array loudspeakers are surface-mounted on the transept front walls, well outside of the pulpit and lectern located at each side of the chancel arch, and decorated with a custom faux-brick paint treatment. Loudspeaker location is not ideal for listeners in the nave, but was directed by the architect and church on the basis of appearance. Supplementary loudspeaker systems were therefore required for the chancel, transepts and rear nave. In order to achieve accurate directional realism for listeners in the nave, side aisles and transepts, a multichannel digital-audio signal processor is configured with an innovative “level-delay matrix,” providing listeners with simultaneous “location imaging” of talkers at the left-side pulpit, right-side lectern, downstage altar table and upstage chancel. Other sound system features include a “hands-free” mixing system for worship services, program monitor loudspeakers for ancillary & support areas, assisted-listening system for the hearing impaired, modest speech & music recording system for archive use or cassette tape distribution to the home-bound, and permanent wiring for future professional recording.
Nave, Crossing, Transepts, Chancel and Sanctuary – View from Rear Nave