

CASE STUDY

EDUCATION



The American Museum of Natural History

Occupying four city blocks in Manhattan's upper-west side, the American Museum of Natural History (AMNH) is one of the largest natural history museums in the world. AMNH is home to 35 million artifacts, a 500,000 volume library, and 200 scientists engaged in basic research. Through an extensive new optical fiber network infrastructure linking its 26-building campus, AMNH offers its vast collection and scientific resources to a worldwide public.

BUSINESS REQUIREMENTS

The Museum's goals for the fiber infrastructure were two-fold. For internal users, the Museum wanted the new network to support collaborative networking between its 36 departments. For visitors, AMNH wanted a network to utilize state-of-the-art technology in interactive exhibits and programs.

WHY FIBER?

The Museum saw many benefits to using fiber in its network. First, AMNH wanted a wide-band transmission cabling system that would serve for at least 10-15 years or more. This requirement made using fiber optic cable in the backbone an obvious choice.

In addition, using fiber allowed the Museum to combine all of its information systems in one infrastructure.



The American Museum of Natural History, a New York City landmark



Guests take advantage of the Museum's new central reservations system made possible by the new fiber network.

The Museum has numerous independent information systems in place, including science research, central reservations, administrative, educational, planetarium, exhibition, and audio visual systems, not to mention the various small networks that run department-specific applications. The new fiber infrastructure ties these systems together.

Distance limitations were also a concern. The Museum is comprised of 26 extremely old contiguous buildings that spread over 1.3 million square feet. Not restricted by the same distance limitations as copper cabling, fiber easily routed around trouble spots.



Fiber Cabling Solutions for Premises Networks

The American Museum of Natural History

SOLUTIONS



Young visitors use the fiber optic network to explore fossil timelines on a computerized kiosk in the Miriam and Ira D. Wallach Orientation Center.

DVI Communications Inc., a consulting firm in New York City and a member of Corning Cable Systems' Consultant LinkUp ProgramSM, was retained to design the Museum's network. Intelligent Building Systems (IBS), a member of Corning Cable Systems' exclusive LANscape[®] Extended Warranty ProgramSM, was the contractor chosen for the museum's installation. DVI worked closely with IBS to ensure that the network would meet the Museum's needs.

DVI's design called for two mirror main fiber termination/data centers – one in the attic and one in the basement – with fiber optic cable running from each center to 26 telecommunications closets throughout the campus. Two trunk lines connect the hubs of the two stars. In this fully redundant, dual star topology, two cables travel to each closet in separate routes to avoid catastrophic failure in the event a cable is severed.

For the network backbone, DVI specified Corning Cable Systems' hybrid MIC[®] cables containing 24 strands of Corning multimode and 12 strands of Corning single-mode fiber. Corning Cable Systems' LANscape hardware was used exclusively in the equipment rooms which required 26 equipment racks, 72 patch panels, and 3,000 multimode and single-mode "SC" fiber optic connectors.

Because all Corning Cable Systems' fiber optic products were used in the Museum's installation, IBS was able to secure a 15-year warranty on the project. Product selection and the ability to offer future-proofing technology at a competitive price were key to the Museum's implementing a LANscape solution.

While this is not a typical fiber-to-the-desk installation, AMNH has identified many opportunities for "fiber-to-the-device." Fiber runs within 300 cable feet of every square foot of the Museum, but it will also run directly to all the Museum's basic communication, web, e-mail, and DNS servers. In addition, fiber runs directly to the Museum's audio visual facilities, theaters, and public presentation areas. Even a fiber link from AMNH to Columbia University's Lamont Doherty Earth Observatory (LDEO), allows scientists at LDEO to remotely operate the Museum's Electron Microprobe research facility.



Scientists from Columbia University and the AMNH operate the AMNH - LDEO Electron Microprobe

CONCLUSION

AMNH uses its fiber infrastructure to facilitate basic research, distance learning programs, interactive presentations, electronic science bulletin boards, live video feeds, directional kiosks, and a new central reservations system, but some of the most exciting ways that the Museum will use its new fiber plant have not even been conceived yet. Fiber will allow AMNH to take on "Blue Sky" projects that previously had not been possible. William Barnett, Ph.D., Director, Network Systems and Interdepartmental Laboratories for AMNH, notes that the new fiber plant "opens up the opportunity to do projects that we never would have had the infrastructure to support before."

CORNING

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