

## University of Notre Dame

Regarded for its academic excellence, the University of Notre Dame offers four undergraduate colleges, ten major research institutions, more than 40 centers and special programs, and the University Library system. Located in Notre Dame, Indiana the beautiful 1,250-acre campus comprises roughly 12,000 students and 136 buildings.



In addition to maintaining its long-standing traditions, Notre Dame continues to invest substantially in the campus local area network to keep ahead of the data demands of its faculty and student body. One recent area of technical improvement was the upgrade of the campus fiber optic cabling infrastructure. The Notre Dame Office of Information Technologies (OIT) selected the Superior Essex line of riser-rated indoor/outdoor tight buffer fiber optic cables for the backbone portion of the network.

With decades of experience in advancing Notre Dame's networking technology, the five-person Office of Information Technologies wiring team handles 95% of the design, installation and service of the campus cabling network. Dr. Dewitt Latimer, Chief Technology Officer and deputy CIO of Notre Dame, stated "Technology is an integral part in our goal to assist students, faculty,

and staff in their learning, teaching, and research programs. Notre Dame invests heavily in the professional development of its information technologies staff across the board.”

OIT’s Network Design Engineer, Eric S. Mauch, acknowledged product breadth and technical assistance as reasons for choosing Superior Essex. Mr. Mauch said “Not only is the Superior Essex fiber optic product line as complete as any that I have found in the industry, but what really set Superior Essex apart was the attention to technical service for the customer.” Mr. Mauch added “I received total team support from the local sales representative Matthew Mattiello of WG Technologies and the Superior Essex technical support and applications engineering team, at its headquarters in Atlanta.”

## The Installation

By nature, universities require many types of telecommunications services because of their varied layouts and applications. Notre Dame’s backbone cabling infrastructure must be specialized enough to handle the unique demands of each department or facility yet the distribution system must have the flexibility to address future technologies and growth.

The backbone system at Notre Dame is a physical star wiring topology. The main cross-connect, located in the basement of Hesburgh Library, utilizes highperformance fiber optic cables to connect seven intermediate cross-connects strategically located in outlying buildings. This past summer, the OIT team installed the largest concentration of singlemode fiber optic cable on campus. To accommodate both future technologies and campus expansion, several Superior Essex fiber optic cables were selected. A 4,500 foot run of a 96-strand singlemode fiber optic cable and a 4,500 foot length of a hybrid, 24 strand singlemode/12-strand multimode, fiber optic cable were installed from Hesburgh Library to the crossconnect located in the brand new Marie P. DeBartolo Center for the Performing Arts.

Mr. Mauch feels the tight buffered configuration offers advantages over more traditional loose tube designs. Mr. Mauch stated “Because of some tight bends in our underground pathways, we require the flexibility that a tight buffered product offers. Second, the 900 micron tight buffered fibers eliminate the need for breakout kits or other special termination equipment which saves us time and money.”

Time is especially valuable given that day-to-day issues still demand attention even when projects that require the installation of cable are taking place. Mr. Mauch added, “The riser flammability rating of this indoor/outdoor construction means that the cable can run directly from our underground pathway to the cross-connect in the respective building. This eliminates



*University of Notre Dame Main Building, Golden Dome  
Photos courtesy of Notre Dame Media Group*



*Notre Dame Hesburgh Library*

the need to purchase separate cables for indoor and outdoor use.” The hybrid cable was installed primarily to serve the DeBartolo Center. The multimode fiber serves as the backbone fiber to support today’s technologies while the singlemode fiber positions Notre Dame to take advantage of future technology offerings.

The expanded fiber system will help support the joint Indiana University/Notre Dame medical education and research facility. Additionally, in an initiative to upgrade the Internet and Internet2 services and bandwidth, the 96-strand fiber will link with incoming fiber from the cities of South Bend and Chicago. Internet2 is a consortium being led by 202 universities working in partnership with industry and government to develop and deploy advanced network applications and technologies, accelerating the creation of tomorrow’s Internet.

As a university that is recognized for both its academic and athletic excellence, Notre Dame has lived up to its reputation with the advancements made recently to its fiber cable network. The selection of Superior Essex indoor/outdoor fiber cable was an investment that will support both current needs and future growth of the campus.



*Notre Dame Stadium*