

BELDEN

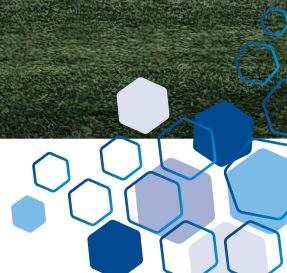
SENDING ALL THE RIGHT SIGNALS

Notre Dame Studios & Stadium

One of the nation's leading undergraduate teaching institutions relied on Belden for cabling infrastructure to reimagine broadcast techniques and equipment



Our End-to-End Expertise
Your End-to-End Solution





Customer



Since 1930, Notre Dame Stadium in South Bend, IN, has brought friends and families together during commencement ceremonies and welcomed fans as they cheer on the Fighting Irish.

Over the years, as the University of Notre Dame campus expanded all around the stadium, it became one of the most centrally located facilities – but was only used a few times each year.

Partly due to its location, the institution wanted the venue to become more than just a football stadium. Students, staff and faculty envisioned a multi-use hub and student center that would buzz with nonstop, year-round activity.

After years of research and discussion, the University of Notre Dame’s Campus Crossroads initiative was unveiled to bring this concept to life: a \$400 million plan that put the stadium at the campus intersection of academics, athletics and student life. This project included a complete renovation of Notre Dame Stadium and the addition of three new buildings surrounding it, making Campus Crossroads the biggest construction project to take place at the University of Notre Dame.

The Campus Crossroads initiative also incorporated a cutting-edge, 18,000-square-foot production facility. The Rex and Alice A. Martin Media Center houses Notre Dame Studios and its comprehensive array of technologies and services for live and recorded events. From press conferences, meetings and athletic events to consortiums, Sunday morning mass, lecture captures and storytelling about the institution, Notre Dame Studios supports on-campus production so broadcast trucks aren’t needed.

“We’re built like a television network and can handle that load because of the equipment and infrastructure we have,” explains Scott Rinehart, director of broadcast technology at University of Notre Dame. “The days of sending press releases and newspapers picking them up and writing about you are fading. The idea for Notre Dame Studios came from our athletics director, who wanted to change the media landscape and pushed us to do something different.”





Challenge

This project let University of Notre Dame reimagine its broadcast techniques and equipment to give football games and other on-campus events a different look and sound than any other broadcasted college team or program.

The decision to deploy IP-based operations provided more flexible access to production resources, offering benefits like enhanced capture and playback – but it also required a cabling solution that could support IP technology.

Notre Dame Stadium also needed equipment and cable for live streaming, new broadcast approaches, distinctive reporter perspectives and one-of-a-kind camera angles that were unique to collegiate football.

Because this renovation provided the university with the ability to show video inside the stadium for the first time, everyone on campus needed time to learn and practice the process before the late August kickoff.





When the Campus Crossroads project was announced, along with a complete stadium overhaul, University of Notre Dame staff were already familiar with the performance and functionality of Grass Valley products. During previous stadium renovation projects, Notre Dame Stadium partnered with Grass Valley to transform its television content production and distribution.

“For this project, we did a camera shoot with three different manufacturers on two weekends,” says Rinehart. “We shot football games during daylight hours and at night. At the end of the day, it was an eye test – and Grass Valley’s cameras looked better in the darker areas of the stadium. Anybody can shoot in the daylight. But when it gets really dark, that’s when camera performance really matters.”



When it came to cable and connectivity, the decision to use Belden was made by the University of Notre Dame’s systems integrator, BeckTV. “We trusted them to make the right decision for us,” says Rinehart.





Solution

To support live streaming and broadcasting from Notre Dame Stadium, Belden supplied plenum-rated camera cable, digital coax and audio cable, as well as Category 6 and 6A solutions for reliable performance, high resolution, more bandwidth and exceptional signal integrity.

SMPTE 311M HDTV Fiber Camera Cable was used to multiplex audio and video signals while also delivering power to 16 Grass Valley cameras, which were selected for better pixels and high light sensitivity.

A 96-foot by 54-foot screen on the south wall, 150 large-screen TVs for replays and ribbon boards throughout the stadium are also connected to broadcast equipment with Belden cable, giving Notre Dame Stadium its first-ever opportunity to display video.

Belden's Access Control Composite Cables, featuring patented Banana Peel® construction and a smaller OD, helped Notre Dame keep its project timelines in check. By affixing the individual cables to a center spline and eliminating the need for an overall jacket, labor savings can exceed 31% by using this technology.

Taking advantage of the REVConnect® Connectivity line's universal termination method for all RJ45 connections, REVConnect Category 6+ jacks were used to reduce project installation time. In addition to being quick and easy to install, the jacks also provide performance margins that exceed standard and guarantee transmission performance up to 300 MHz and a data rate of up to 4.8 Gb/s.

Belden's 10GX Patch Cords were used to connect devices to Notre Dame's network while providing excellent control of internal plug NEXT. A Bonded-Pair design offers superior alien crosstalk performance and also maintains cable flexibility. The patch cord's small footprint makes it fully compatible with high-density hubs that use RJ45 connections.





Results

“When we plug stuff in, we now know it’s all going to work. This facility was the first I’m aware of where a university is relying on an IP backbone.

When you get into that environment, there are some things you just have to be able to count on.”

— Scott Rinehart

University of Notre Dame Director of Broadcast Technology

By integrating high-performance broadcasting equipment and connectivity from Belden and Grass Valley into Notre Dame Stadium, the venue is now better equipped to serve its new role as the campus “hub,” hosting events like concerts and professional sporting events.

Thanks to Belden, Notre Dame Studios also has the technology it needs to continue to support on-campus production for live and recorded events.



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