COMMSCOPE®

Hidden yet mighty, the master of wiring behind smart buildings—Structured cabling system project in Central China Normal University's Nanhu Campus Comprehensive Laboratory Building

Customer

Central China Normal University

Country

Central China

Challenges

Located on the Nanhu Campus of Central China Normal University, the Nanhu Campus Comprehensive Laboratory and Instructional Building is a new type of smart building. Since the building's completion, it has attracted leaders from many universities, who have come to inspect the system. And, thanks to their glowing appraisals, the building has set a model of smart building cabling systems for other universities.

The indispensable qualities: advanced, reliable, and agile

With floor space of more than 95,060 square meters, the Comprehensive Laboratory and Instructional Building is a new landmark on the Central China Normal University's Nanhu Campus. From its design to its construction and management, the building meets the needs of a new age, and turns environmental concepts into a reality. Combining up-to-date design, user-friendliness, and intelligent features in a single structure, the building will be a major driver of smart educational services and information-based education and research.

At the outset, the project's goal was to win the Luban Award for construction quality, which it successfully achieved. While ensuring a high level of quality, the project highlighted the building's smart features, and the selection of facilities imposed high requirements on the quality and reliability of equipment as well as their operability, maintainability, and flexibility.

Specifically, network equipment in the Comprehensive Laboratory and Instructional Building had to be forward-looking, advanced, stable and reliable, flexibly expandable, and easy to manage. Only a network system with these features could smoothly meet the challenges of data and communications traffic on the rapidly growing campus network. The structured cabling system—a key network element—will ensure the normal operation of the campus network infrastructure, and enable functions like online instruction, campus clerical work, security monitoring, wireless coverage, and one-card shopping.

Therefore, the structured cabling solution assessed and selected by Central China Normal University had to meet the following needs: First, the structured cabling solution had to possess advanced and forward-looking features. Apart from meeting current network application needs, it had to satisfy the network expansion and upgrading needs of the next 10-15 years. Second, because applications such as multimedia instruction and remote education are highly dependent on the network system, ensuring the stability and reliability of the network is of paramount importance. Third, because the project as a whole occupies a large area, operates using many information nodes, and has a large number of users, the structured cabling system must simultaneously support numerous low-power systems and applications, and it is therefore essential to facilitate management and maintenance efficiency of IT personnel.

The "big three" foundations of structured cabling

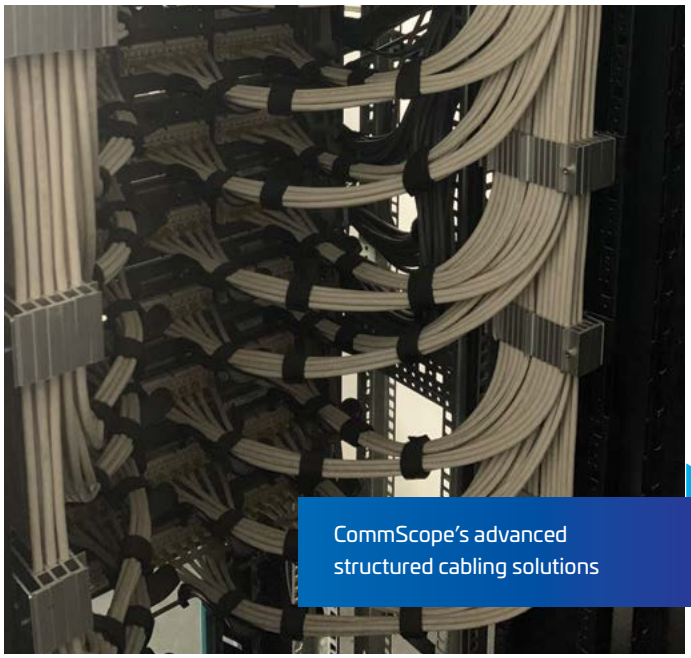
Thanks to its repeated successes in the structured cabling of smart buildings, CommScope was eager to take on this challenge, and was ultimately selected as the structured cabling system solution provider for the Nanhu Campus Comprehensive Laboratory and Instructional Building. CommScope's partner—Hubei Tuling Haiji Information Tech. Co., Ltd., which chiefly engages in the design and construction of intelligent projects, design and construction of security systems, and design and integration of smart education and information solutions—bore responsibility for project implementation and deployment tasks. Thanks to our close collaboration, the Comprehensive Laboratory and Instructional Building has been a magnificent success.

There are many brands of varying quality in the structured cabling market. CommScope was awarded the contract for the Comprehensive Laboratory and Instructional Building's structured cabling system because of its outstanding brand and high reputability, and also because CommScope is the leader in the global structured cabling market, and has striven to improve its cabling product and solution R&D, production, and services for many years. In addition, because of CommScope's strong product and technological capabilities, it has received numerous patents in the field of structured cabling, and has also participated in the development of cabling standards. As a result, CommScope's advanced, forward-looking solutions have captured a market share far larger than those of its competitors in the Chinese and even international markets. It's especially worth mentioning that CommScope possesses professional sales and technology support teams, and has many successful cases and an abundance of practical experience in the field of structured cabling, which can be provided to users as a reference. Thanks to its high-quality products and multiple authoritative third-party certifications, a growing number of universities and colleges, including Central China Normal University, trust the CommScope brand and its solutions.

Apart from CommScope's many capabilities, what most convinced Central China Normal University to go with CommScope was its advanced structured cabling solutions.

In view of the technological advancement of these forward-looking solutions, a combination of CommScope's most representative SYSTIMAX® GigaSPEED XL® copper cable solution and OS2 zero water peak singlemode fiber was chosen for use in the Comprehensive Laboratory and Instructional Building. The SYSTIMAX GigaSPEED XL copper cable solution includes twisted-pair copper cable and connectors, and offers performance that far exceeds the Category 6/Class E standard. CommScope's SYSTIMAX GigaSPEED XL copper cable solution can support a 1GBase-T network transmission distance of up to 117 meters, which is far greater than the 100 m distance limit of standard-specification horizontal cable. This cable can ensure the effective transmission of applications in ultra-long distance horizontal links, protecting users' investments, and achieving high-speed network transmission at even lower cost. In terms of the data backbone, CommScope's SYSTIMAX TeraSPEED® singlemode zero water peak solution is not subject to link distance restrictions, and can easily achieve network transmission at any speed under 100 Gbps.

From the perspective of maintaining network operating stability and reliability, this project not only ensured stable and reliable transmission performance, but also stable and reliable safety performance. In terms of transmission performance, the working



CommScope's advanced structured cabling solutions

frequency of CommScope's SYSTIMAX GigaSPEED XL twisted-pair copper cable is a very high 300 MHz, which is far higher than the 250 MHz of standard cable. In spite of the fact that this solution was designed to satisfy 1GBase-T network transmission requirements, it can also support 10GBase-T transmission at a distance of more than 60 m, which is far surpasses the standard distance of 35 m. This will ensure that most user links will have a greater performance margin, and can meet future high-speed network transmission needs. Regarding safety performance, CommScope's SYSTIMAX GigaSPEED XL twisted-pair copper cable and SYSTIMAX TeraSPEED singlemode zero water peak fiber are made entirely from flame-retardant, environmentally-friendly, low-smoke, zero-halogen materials, and meet IEC60332-3-22 type A highly flame-retardant grade requirements. Even if a fire occurs, these materials will give people in the building sufficient time to escape, and will help save more valuable data.

And, from the perspective of everyday management and maintenance, the CommScope imVision® smart infrastructure management system solution adopted in this project offers remote management functions, which are dispersed at information nodes in conjunction with electronic work orders. Production areas with high security grades can reduce the amount of time IT administrators spend walking back and forth, and can facilitate prompt maintenance and management of specific areas. The system has a malfunction alarm function, and can immediately notify IT administrators of any equipment that has malfunctioned and gone offline. It can effectively reduce troubleshooting time, enhance maintenance efficiency, eliminate potential risks, and ensure network operations remain stable and reliable. CommScope's SYSTIMAX imVision copper cable electronic panel, which is used in the solution, offers online zero-downtime replacement of active control elements, and can vastly boost the convenience of everyday management and maintenance when used in conjunction with ordinary standard jumpers. At the same time, it can ensure the network's stable and reliable operation.

imVision offers remote management functions

The management and maintenance of a structured cabling system is a long-term, complex task. CommScope's intelligent structured cabling system takes full consideration of campus IT management and maintenance needs. The use of advanced technology in the system reduces the amount of work and difficulty involved, and boosts efficiency while ensuring the system's reliable operation.

A template for smart infrastructure

CommScope's imVision smart infrastructure management system has made major contributions to the smart building applications of the Comprehensive Laboratory and Instructional Building.

The electronic panel hardware/software system used in CommScope's imVision smart infrastructure management system can allow administrators to perform interactive, real-time connection management of copper cable and fiber, which is a highly effective complement to network management software. The electronic panel chiefly performs monitoring and control of jumpers, and allows real-time checking, inspection, and recording. By providing system administrators with information on the status of all links, the electronic panel can improve cabling system maintenance, and boost the efficiency of everyday service management to over 100 percent. The electronic panel relies on backbone links and key physical links to implement real-time monitoring and control—allowing administrators to rapidly discover and resolve network problems, increasing network safety to over 50 percent.

This use of CommScope's imVision electronic panel product in this project constitutes major successful deployment in a campus network project, and is the first successful case in central China. This case will serve as a powerful demonstration that promotes the use of the imVision product in China's education industry. In the process of project implementation, many personnel from other universities who were interested in the imVision solution made fact-finding visits to the project site and praised the solution.

Seeing the big picture in the details

Because structured cabling is hidden from view, it is often overlooked, unseen, and poorly understood. But, like the title of the TV drama *Hidden Yet Mighty*, unseen advanced, stable, reliable, easy-to-maintain wiring systems provide enterprises and organizations with an important basic guarantee of normal network operation. Only smart facility vendors who both understand customers' needs and are able to provide suitable solutions are worthy of users' trust, **and this is where CommScope truly excels!**

CommScope pushes the boundaries of communications technology with game-changing ideas and ground-breaking discoveries that spark profound human achievement. We collaborate with our customers and partners to design, create and build the world's most advanced networks. It is our passion and commitment to identify the next opportunity and realize a better tomorrow. Discover more at commscope.com.

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