

Case Study ›

PROJECT OVERVIEW

- Powercat 6 UTP solution
- Optical Fibre backbone
- 9,299 Total Ports
- Campus installation comprising 22 buildings

Demand driven and development oriented Molex PDS deployed at the University of Nottingham-Ningbo

The University of Nottingham-Ningbo is a cooperative project between the University of Nottingham and Zhejiang Wanli Education Group. It is situated in the Ningbo University Park and comprises of 22 stand alone buildings providing a gross floor area of 250,650 square meters. As the affiliate to an internationally recognized university in China, it pays special attention to the promotion of modern university education through IT construction to ensure its continued success in future.



Sophistication, Reliability And Scalability (Demand Analysis)

The University recognised that the Premise Distribution System (PDS) was to be the nerve center of the building services, providing the infrastructure for data and voice communication across the whole campus. It is the core framework of an intelligent building, which constitutes the most fundamental parts of an information system.

Firstly, the PDS should feature cutting-edge technology and high reliability to accommodate the requirement for automated communication and office work. Secondly, the PDS should be highly flexible and able to support various teaching applications, such as the lesson preparation system, evaluation system used by the teaching staff, student management system and intelligent card (IC) system. In addition, with the rapid development of the education industry in China, the project owner also demands that the PDS should accommodate the university development for the next ten years and feature scalability as well as investment protection.

Project Design (Choice Of System)

Based on the above requirements, the university conducted market research and compared the solutions provided by several vendors, the university selected the Cat6 UTP solution provided by Molex. This solution features easy installation and investment protection, providing a faster and more reliable information transmission platform as well as a 25-year system performance assurance.

The intelligent structured PDS is intended mainly for university teaching and research with emphasis on functional management and resource sharing between campuses and colleges. The system shall have the following features when it is completed:

1. Versatility

The PDS had to support various digital data communication, multimedia technologies and information management systems. It can be connected with WAN and accommodate the technology development in the coming ten years.

2. Openness

As the number of college students is growing rapidly, more and more teachers are required, as is the campus capacity. An open PDS is needed to meet the increasing

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demand of students and teachers for Internet access.

3. Security

The PDS shall ensure the security of academic achievements of various teaching and research institutions of the university.

4. State-of-the-art and flexibility

The PDS can help the university to create a sound and modern workspace as well as a supporting infrastructure for LAN. Based on the teaching management and teaching statistics, the system adopts modern computer, communication, multimedia and software technologies, and consists of data center (database), system software and supporting system. It can integrate various business systems, basic office software and other application systems to provide a neat, advanced and practical technology platform for teaching, research and management.

5. Scalability

The PDS is highly scalable to enable easy expansion to accommodate future development. The solution adopts a star-topology to support present and future applications. Through the patch cords and different network devices, the system is able to cater to various networks featuring different topologies. New cables can be added to the "tree branch" to provide system expansion.

6. Cost effectiveness

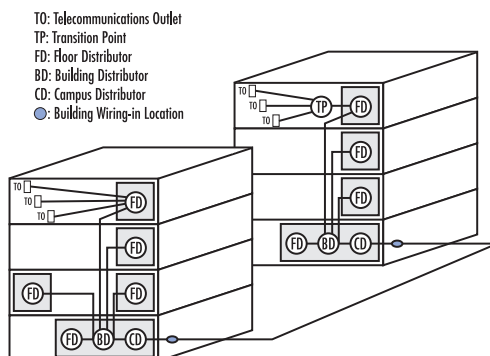
In addition to satisfying campus requirements, the PDS also features cutting-edge technology to ensure optimum price ratio and performance.

7. Sound design

The design philosophy is based on openness of the system, state-of-the-art technology and implementation flexibility. It should also consider the rationality and practicability into full consideration so that the PDS can implement the functions required by a high-speed IT infrastructure with maximum cost effectiveness.

Intelligent Pds (Project Execution)

The intelligent PDS adopts the star topology structured modular cabling, composed of work area subsystem, horizontal cabling subsystem, administration subsystem, riser backbone subsystem, equipment cabling subsystem and campus backbone subsystem.



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The University of Nottingham-Ningbo consists of Phase-I and Phase-II projects with a total of 22 buildings. The PDS is to be installed in all the buildings. A detailed design is made for the I/O Outlets in the 11 buildings covered in Phase-I of the project. For the remaining 11 buildings for Phase-II, the fiber backbone design was commissioned.

The work area subsystem comprises of the information outlets, patch cords (cables connecting the information outlets and terminals) in the offices, PC rooms, classrooms, meeting rooms and reading rooms on all the floors, with a total of 6,522 data I/O points, 2,777 voice I/O points and 188 voice-grade copper wire I/O points. Cat6 UTP RJ45 modules are used for the data and voice services for all the work areas in all buildings.

The horizontal cabling subsystem is composed of the cable between the FD/IDF's and work areas in all the buildings. All the horizontal cables are based on Molex Cat6 UTP cables that support 250MHZ bandwidth.

The riser backbone subsystem adopts the star-shaped architecture, going from the main equipment room on the first floor of the executive building to the BD/MDF's of all the buildings using point-to-point Star Cabling. All the Outdoor Backbone cabling is based on 6-core single-mode fiber cables. Within the buildings, indoor 6-core multi-mode fiber cables are used. 4-Core indoor Multimode cables are used to link from the riser rooms to PC classrooms.

Within the BD/MDF subsystem, the telephone blocks, voice and data patch panels are installed in wiring cabinets. This would ensure that cables and patch cords within these wiring racks can be properly maintained.

Future Proof (Effectiveness)

When commenting on the PDS, an University Engineer involved in the campus infrastructure construction said, "The PDS can satisfy various application requirements and achieve the preset goals in terms of security, sophistication, scalability and flexibility. This lays a solid foundation for the IT drive of the university and gives us much confidence to head down a path of international operation in our teaching. We are very satisfied with the products and services provided by Molex."

The PDS enables interconnection between the data communication devices, PBX, information management system, equipment control system and security system as well as the connection of these devices with external communication network, enabling efficient and reliable management by the campus functions (teaching management, research management, student status and dossier management and logistics).

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In addition, the new system will also provide the campuses of the university with a channel for resource sharing and information exchange, help the university to change the original classroom- and teacher-centered teaching mode with LAN, connect the campus and public information sources such as the classrooms, teachers and students via the LAN which connects with WAN to provide resource sharing.

The successful deployment and implementation of PDS at the University of Nottingham-Ningbo demonstrates the stability, reliability, flexibility, scalability and maintainability of Molex Cat6 PDS that is worth the trust from the customers in education industry. This is because Molex, one of the world's leading structural cabling system producer, has been committed to the research of IT construction demand, implementation of customization strategy and long-term efforts.

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