

# Siemon Cabling Helps AIU3 Support Schools, Families & The Community



(2004, United States)

In 1970, the Pennsylvania Department of Education commissioned the creation of 29 intermediate units with the goal of extending educational services and support into the community. The Allegheny Intermediate Unit, also known as AIU3, is located in Homestead, Pennsylvania. It is an educational service agency that supports and assists 42 suburban school districts throughout Allegheny County in providing educational opportunities that support schools, families and communities.

Allegheny Intermediate Unit currently offers over 130 programs for learners of all ages, including HeadStart and early intervention programs, professional development of educational staff (including technology skills for the Information Age), English as a Second Language (ESL), programs for the handicapped and gifted, job readiness programs, and much more. It is staffed by a network of over 2000 people who work for AIU3 in school districts, the central office, and educational centers throughout the county.

AIU3 provides invaluable services to the people of the Allegheny County community. By providing educational options and opportunities, the agency maximizes achievement for all learners in the area.

## EXPANDING TO A LARGER HEADQUARTERS

In their quest to provide educational opportunities and ever-increasing services to their diverse community of learners, the Allegheny Intermediate Unit needed to relocate its headquarters/central office and consolidate two smaller sites into one larger facility. They decided to build a new 75,000 sq. ft. building on a site located on East Waterfront Drive, Homestead, PA.

The new larger facility would be designed to include a 60-node Computer Training Room, two Multi-purpose Rooms, numerous Conference Rooms, offices and working spaces. The building would be a state-of-the-art facility which would be capable of sustaining the AIU3 for many years to come, including the ability to keep pace with future computer technology advancements.

## SETTING UP THE IT INFRASTRUCTURE TEAM

Debbie Stella was AIU3's primary project manager during construction of the new building, overseeing all aspects including all interior design and furniture selection. Joe Shwoebel, AIU3's Director of Technology, and Kevin Rump, AIU3's Supervisor of Computer Services, headed up the network infrastructure decisions for the project.

AIU3 began bringing a team together. They selected Continental Building Systems as the general contractor for the project. They also enlisted the help of their data communications consulting firm SynergIT Inc. of Pittsburgh, PA to assist in the design of the overall network infrastructure, systems and applications, and all data issues related to the relocation.

With the initial network design team in place, it was time to begin selecting and planning the new building's cabling infrastructure.

## STANDARDIZING ON SIEMON

To help Allegheny Intermediate Unit select their cabling system, SynergIT brought in products from five of the top cabling manufacturers. Together they walked through mini-racks of products,

comparing product qualifications, pricing, aesthetics, and warranties. Based on these criteria and the fact that they wanted a cabling infrastructure that would take them well into the future and support new and emerging computer technologies, AIU3 selected the new 10G *ip*™ system from The Siemon Company.

Siemon, which has been in business since 1903, is known world-wide for superior quality and technological innovation in the cabling industry. SynergIT, which has been a long-time user of cabling systems from Siemon, supported AIU3's decision.

10G *ip* is the world's first available augmented category 6 system. When installed by a Siemon Certified Installer (CI™), 10G *ip* offers a 20-year warranty — which greatly appealed to AIU3. With the cabling system now selected, the search then began for an installer who was certified to install Siemon cabling systems.

## CABLOCITY SELECTED AS CABLING INSTALLER

Through a competitive labor bid with various Siemon Certified Installers, SynergIT selected Cablocity Inc., a Pittsburgh, PA-based communications company as the installer for the voice and data communications cabling system implementation. Like SynergIT, Cablocity, is also a strong advocate of Siemon cabling systems.

"We work with only the best products," explained Phil Jackson, RCDD and Executive Vice President of Cablocity, Inc. "I have personally designed and supervised the installation of cabling systems components from all leading manufacturers over the past two decades. Whenever we test Siemon products, they always

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**ITS A HOME RUN!**

One of the most challenging aspects of the infrastructure design, was the limited space for running cables. The building, which is three floors high, is built on a concrete slab with no basement. The offices are mainly on the second and third floors.

Cablocity, SynergIT and Siemon worked together to create an infrastructure design that would meet the building's structural challenge. They designed the main computer room/Main Distribution Frame (MDF) on the second floor. There would be no Intermediate Distribution Frames (IDF)... all cables from all floors would be home-run to the computer room on the middle floor.

Designing a home-run cabling infrastructure was possible largely because of the decision to install category 6e cabling. With this higher level performance, the cable easily supported the length of the cable runs.

For the first floor, the team utilized traditional cable trays above the suspended ceilings, and installed EMT conduit systems in walls and into the concrete slab for pathways to floor boxes. For floors two and three, a low-profile raised floor system, which was specified by the building contractor, was installed. Manufactured by SMED International, the raised floor system deploys a unique design where electrical and communications cabling systems are installed in a floor cell only 2 1/2" high. The cells are created by the positioning of pedestals and dedicated pathways, which provide separation for the electrical and communications cabling systems.

According to project manager Debbie

Stella, "The greatest challenge was the low-profile raised floor. Since we had only one telecom room and an enormous amount of cables coming into it, strategic routing of those cables was crucial."

Cablocity re-engineered large portions of the underfloor pathways and cable tray, and worked with SynergIT to re-design portions of the main computer room to accommodate the large quantities of incoming station cables. In all, over 1,800 UTP category 6e communications cables were installed throughout the building and home-run to the main computer room.

**WIRING THE AIU3**

AIU3's facility is a showcase of the highest level of cabling available today. In the computer equipment room, eleven Siemon RS-07 distribution racks with both vertical and horizontal cable management were installed. Augmented category 6 connectivity was implemented through the use of Siemon 10G™ 6 HD® patch panels, 10G™ 6 MAX® modules, MAX® MuTOA enclosures and MAX® patch panels in the computer room; and 10G™ 6 MAX® modules, Siemon modular furniture adapters, SM® surface mount boxes, and MAX® faceplates in the work areas. Category 6e UTP cable was used throughout.

Steve Wirth, President of SynergIT, commented, "We put the best cabling system possible into the Allegheny Intermediate Unit headquarters. At SynergIT, we believe in doing things right. We are confident in Siemon's 10G *ip* category 6e system because of the enhanced performance headroom that would support our client's application needs even into the distant future."

**DESIGNED FOR FLEXIBILITY**

The work areas were designed with flexibility to meet both today's and tomorrow's communications needs. Three UTP category 6e cables were run to every work station. One was used for data, one for voice, and the third "extra" outlet could be used for either voice or data. This would allow for easy adaptability of applications — either as new applications were implemented or as staff moved from one work area to another.

Other rooms throughout the facility were also cabled with future-proofing and flexibility in mind. The computer training room features 60 nodes; two multi-purpose rooms feature over 50 cable drops in each



room; and numerous conference rooms have multiple connections ranging from nine to 26 nodes per conference room. Six Cisco Systems Wireless Access Points provide mobile computer access throughout the facility.

**COMPLETING THE INSTALLATION**

After SynergIT moved AIU3's electronics and IT assets from the two smaller buildings to the new larger one, Cablocity and SynergIT jointly tested, configured and brought up the network; and project managed the implementation of the Verizon phone system.

To complete the installation, Cablocity provided AIU3 with comprehensive cabling documentation including all UTP category 6e cable test and certification reports, "as-built" blueprints with each station location clearly labeled, logical network schematics, and Cable Locator Charts which trace a particular cable from the wall jack to the specific data switch or voice switch port.

"Cablocity was very accommodating to us," said Stella. "They came to us with solutions to both design and time challenges."

The project was completed on schedule in December 2003.

**The Siemon Company  
World Regional Headquarters**

**The Americas**  
Watertown, CT USA  
Phone (1) 860 945 4200

**Europe/Middle East/Africa**  
Surrey, England  
Phone (44) 0 1483 480040

**Asia/Pacific**  
Shanghai, P.R. China  
Phone (86) 21 6390 6778

WWW.SIEMON.COM

