

CASE STUDY

A 50-Year Network: West Virginia School Builds Back Smarter with Future- Proof IT Infrastructure

Did you ever think it would be possible to build a 50-year IT network that prepares K-12 students for a digital future without breaking the bank?

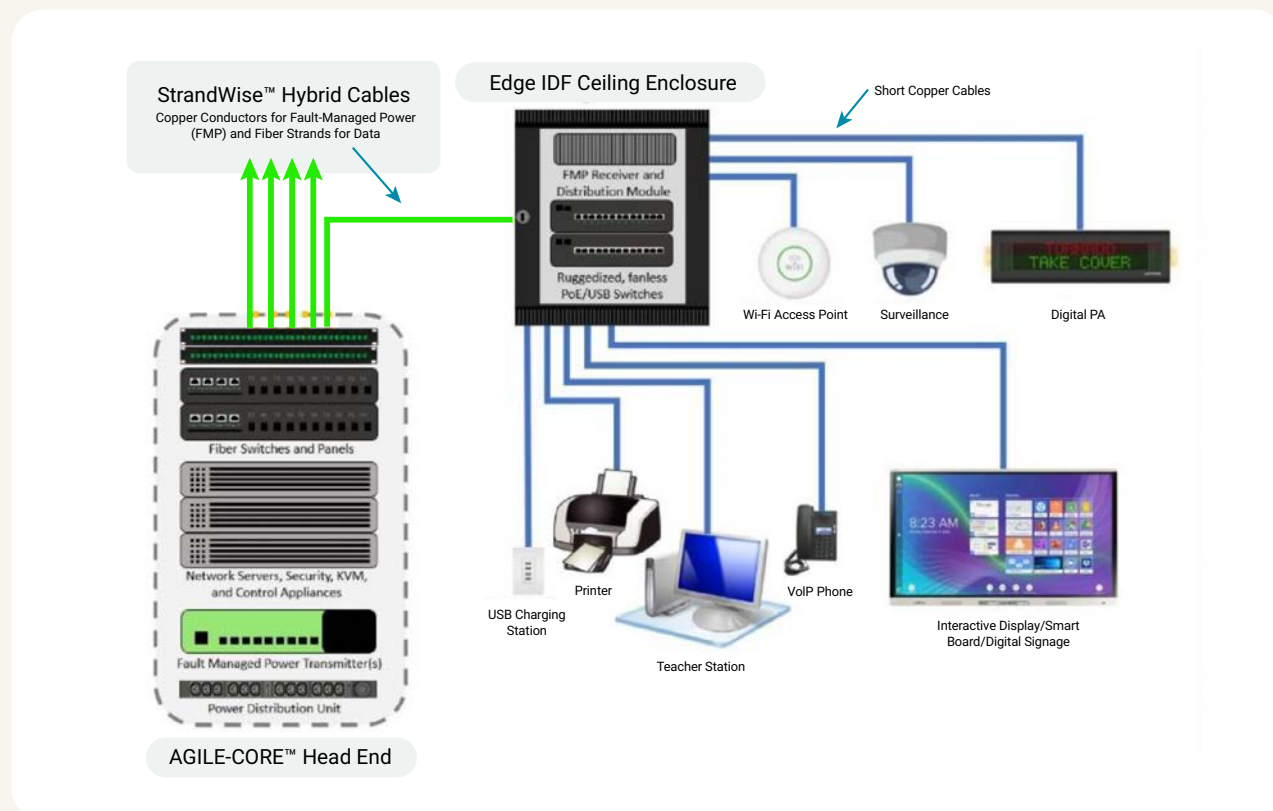
That's precisely what Nicholas County Schools in West Virginia did at their new Richwood Academic Complex when one dedicated technology director discovered a way to build back smarter using a revolutionary architecture that not only supports today's technology but is ready for tomorrow's—all while saving millions in construction, energy, and operational costs.

Rethinking Network Design

After historic floods devastated Richwood High School and Richwood Middle School, Nicholas County Schools expanded and upgraded an existing

40,000-square-foot elementary school to create a combined 110,000-square-foot K-12 academic complex. The construction of the new Richwood Academic Complex provided a unique opportunity to build a new IT network from the ground up. Chris Hanshaw, Nicholas County Board of Education's technology director and facilities manager, seized this chance to design an IT infrastructure that would serve the school for the next 50 years.

"I knew there had to be a better way to deploy the network that would prevent us from having to constantly upgrade equipment to meet the growing demands for high-speed connectivity and power," says Hanshaw. "When I came across Sinclair™ Digital's AGILE-CORE™ Distributed Edge Architecture, I saw an opportunity to deliver the technology that students need to succeed in the digital world while increasing power, saving space, and lowering costs."



By distributing low-voltage DC power throughout a school, the AGILE-CORE™ system eliminates the bulk of AC-to-DC conversion required to power electronics. AC-to-DC conversion can result in significant power losses of up to 30% and introduce distortions into power distribution systems.

“Power has been one of our biggest challenges, and we’ve had to replace more equipment due to power demand rather than the need for speed. Plus, AC-to-DC power conversion creates dirty power that can cause network equipment to fail,” explains Hanshaw. “With AGILE-CORE’s fault-managed power, everybody is safer, there is no risk of fire, and we have clean, reliable, and efficient DC power that doesn’t degrade our equipment, significantly reducing the frequency of equipment upgrades.”

Maximizing the Life of the Network

To validate the benefits of AGILE-CORE™ Distributed Edge Architecture, Hanshaw and Sinclair™ Digital set up a demo classroom installation with a single Edge IDF and short copper cables for device connections.

“Having never used this technology before, we were able to deploy all the connections for a classroom in just four hours. This demonstrated the ease of installation and proved the system’s capability, ultimately validating that AGILE-CORE™ was the best choice for our new academic complex,” says Hanshaw. “As experts in distributed edge architecture, Sinclair™ Digital was the easy button in getting this project off the ground.”

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Director and Facilities Manager

Hanshaw proceeded with the design and installation of AGILE-CORE™ Distributed Edge Architecture for the entire new Richwood Academic Complex, which

- + High-throughput Wi-Fi 5 access points for student connectivity
- + 86-inch interactive classroom displays
- + Advanced digital PA system with LED display and paging/intercom
- + VoIP phones and panic buttons
- + Peripherals like printers and clocks

“With each singlemode fiber pair capable of supporting 100 Gigabits and each copper pair delivering 600 Watts, our Edge IDF’s provide a total potential of 300 Gigabits of bandwidth and 1800 Watts of power—enough for the infrastructure to last at least 50 years. The switches also have unused ports and available PoE capacity, providing immediate means for us to connect new devices.”

-Chris Hanshaw, Nicholas County Board of Education Technology Director and Facilities Manager





