



## Rockford Public Schools: Modernizing Their Data Center Infrastructure to Enhance Education

**Rockford Public Schools (RPS 205)** is spread across the Rockford region and is one of the largest school districts in Illinois encompassing 41 schools ranging from early childhood and preschool programs through high school and adult education programs. In addition, Rockford Public Schools offers diverse special programs, ensuring every student can find a path that suits their strengths and interests. These include Creative and Performing Arts, Gifted Academy, International Baccalaureate, Maria Montessori at Marsh, STEAM Academy at Haskell, and Two-Way Language Immersion at Barbour.

As forward thinkers, Rockford Public Schools is committed to the future of their approximately 27,700 students which is defined through their vision statement and core values. The mission of Rockford Public Schools is to collaboratively engage all students in a world-class education and through that have invested in advanced technology into its learning environment to provide a path of preparing students for the world of tomorrow.

### Business Challenges

#### Becoming a Leader in Education Through Common Challenges

With an IT infrastructure running for close to 20 years and with a past cybersecurity threat, the Rockford Public Schools IT team led by CIO, Jason Barthel and the Director of IT/IS Security, Matt Johnson jumped into action. Working alongside their teams they developed a strategy to future-proof Rockford Public Schools infrastructure and to standardize policies and procedures across the district through a new data center environment.

Organizations across all industries face challenges, but the true value of an organization is reflected in its ability to swiftly and effectively address and resolve these issues. Rockford Public Schools were in pursuit of a much-needed upgrade and partnered with Panduit and Graybar to assist in aligning with their future technology vision.

### At a Glance

#### Company

Rockford Public Schools



#### Location

Rockford, IL, USA

#### Industry

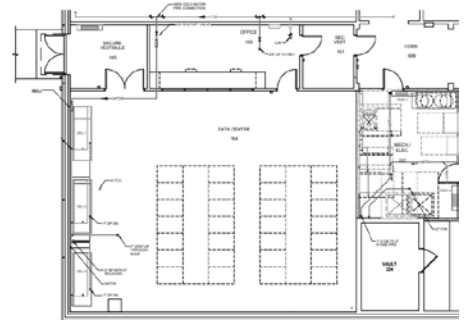
Education

#### Panduit Solution

- FlexFusion™ Cabinets
- G6 Power Distribution Units
- FiberRunner® Cable Routing System
- Wire Basket Cable Tray Routing System
- DCIM Software
- Net-Contain™ Universal Aisle Containment System
- RapidID™ Network Mapping System
- Adjustable 4-Post Rack
- Overhead Power Distribution
- QuickNet™ SFQ Fiber Cassettes
- TX6A-28™ Cat 6A UTP Patch Cords
- QuickNet™ Patch Panels
- QuickNet™ OM4 Indoor Small Diameter Trunks
- Opti-Core® LC Uniboot Pull-Boot Duplex Fiber Optic Patch Cords

### Challenge 1: Outdated Infrastructure

Located in the basement of Rockford Public Schools, their IT infrastructure faced significant visibility challenges. Maintaining proper temperature control and ventilation is essential for the health of IT equipment. However, managing the HVAC (Heating, Ventilation, and Air Conditioning) systems in the basement proved difficult for the team. In one scenario, the team experienced heat challenges that caused a disturbance that needed to be addressed immediately. Additionally, the basement location raised environmental concerns, such as potential water damage, which could lead to emergencies and significant downtime for IT equipment.



The outdated infrastructure did not meet the standards of Tier 3 or Tier 4 data centers, which are necessary for enterprises like a large school district. With Rockford Public Schools being the third largest school district in Illinois, an upgrade was essential to meet those requirements.

### Challenge 2: Security Vulnerabilities

Educational institutions worldwide are susceptible to cybersecurity vulnerabilities that can cause significant disruptions. In 2019, Rockford Public Schools was faced with a ransomware attack that impacted operations across the district. Rockford Public Schools took the severity of the attack and turned it into a learning experience that shaped its future cybersecurity initiatives. The team repositioned its focus and aligned with the National Institute of Standards and Technology (NIST) cybersecurity framework to help prevent future incidents.

### Challenge 3: Lack of Standardization

Rockford Public Schools didn't have a set of policies and procedures in place for its IT Infrastructure but with every building having a diverse setup the team quickly learned how difficult it was to manage and to troubleshoot efficiently.

### Challenge 4: Capacity Limitation

Rockford Public Schools is a leader in the education sector, demonstrating a strong commitment to the future of its staff, students, and community. With the transition to Wi-Fi 6 implemented earlier in the year offering students, and staff high speeds, and high bandwidth which provided a direct connection to the internet in classrooms, the district set its sights on how they could expand their internet connectivity initiatives. The district plans to work with private Internet Service Providers (ISPs) to ensure that every student in underserved areas has access to the internet. This will enable their students to utilize online learning tools and resources, especially during remote learning periods. In addition, the district is looking into providing colocation services for local school districts and municipalities that can provide potential cost savings.



## Strategic Objectives

### Aligning and Planning for a Successful Future

Rockford Public Schools has embarked on a significant technological upgrade to address past challenges and prepare for future educational needs. After a visit to the Panduit Experience Center (PEC), to see the products and solutions offered in person, Rockford Public Schools was able to streamline its strategic vision and develop an action plan. In addition, through ICEcad drawings, the team was able to visualize what their modernized data center would look like.

“Visiting the Panduit Innovation Center was a great experience for us. The new technologies they showcased weren't just innovative—they were very exciting and achievable. Seeing how cool and effective their solutions were made it clear that standardizing on Panduit hardware was the best move to prepare our data center for the future.”

Matt Johnson, Director of IT/IS Security, Rockford Public Schools

Panduit and Graybar teamed up to provide Rockford Public Schools with a comprehensive set of products and solutions that are well-suited to meet their main objectives. Under the leadership of Kevin Hogan, Technical Systems Engineer at Panduit, the teams collaborated to ensure the implementation of the right products and solutions. They also developed a compelling strategic outline to secure approval from the Board of Education for the project. Through ICEcad drawings, Rockford Public Schools were able to visualize what their modernized data center would look like.

#### ► **Objective 1:** Design a Modernized Infrastructure

- Implement products and solutions that would meet the requirements of a level Tier 3 or 4 data center that is a standard for educational institutions
- Utilize the newly acquired space to move existing infrastructure out of the basement facility to improve performance, visibility, and reliability. In addition, this would address HVAC and environmental concerns due to the existing location.

#### ► **Objective 2:** Augment a Plan for Cybersecurity and Physical Security

- Review vulnerabilities identified after a 2019 ransomware attack and determine procedures to alleviate future attacks by aligning with the NIST cybersecurity framework
- Discover ways to improve upon the physical security that supports their modernized infrastructure

“Standardization significantly simplifies our tasks, enabling us to troubleshoot various issues more efficiently and effectively”

Jason Barthel, CIO, Rockford Public Schools

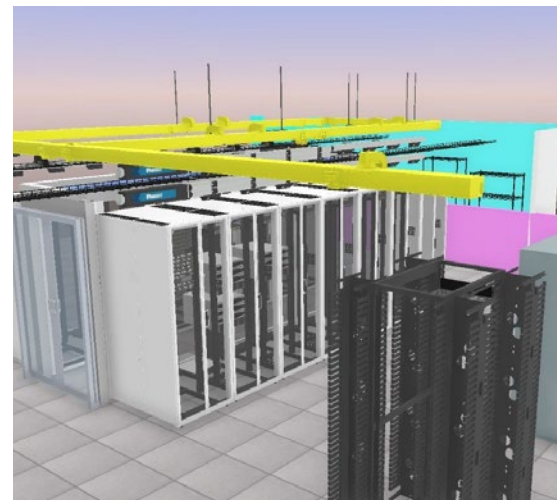
Proposed Location of Modernized Data Center



Current Data Center

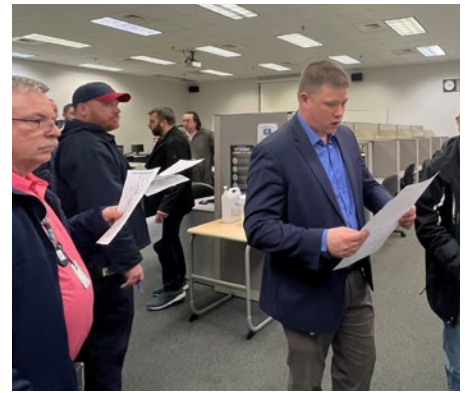


Modernized Data Center Visual Drawing



► **Objective 3:** Standardize IT Policies and Procedures Across the District

- Maintain consistency by developing standards to improve efficiency in troubleshooting and maintenance for the 300 IDFs (Intermediate Distribution Frames) and MDFs (Main Distribution Frames) across the district
- Facilitate overall system reliability



“Centralizing everything in one location will not only streamline our operations but could also lead to substantial energy and cost savings.”

Jason Barthel, CIO, Rockford Public Schools

► **Objective 4:** Explore Cost-saving Opportunities

- Assess the potential for the new space to be utilized in partnership with other local school districts and municipalities to create a cost-effective colocation environment
- Implement energy-efficient solutions that can help reduce cost

► **Objective 5:** Support Digital Transformation

- Continue to be the leaders in education with a data center environment that showcases what the future of technology advancement holds
- Provide internet access for students and staff to work when the school needs to be closed for emergencies

► **Objective 6:** Prepared for the Future

- Ensure the infrastructure can support emerging educational technologies including Artificial Intelligence
- Offer students the opportunity to develop careers in IT through their mentorship program by offering the latest technology solutions giving access to both a modern and interactive experience

## End-to-End Product Solutions from Panduit

### Power Adds a Layer of Protection

Data Centers require a vast amount of power to run efficiently, especially in an educational institution that is reliant on maintaining connectivity to avoid disruptions in the school day.

The Panduit G6 Power Distribution Unit (PDU) is one of the most secure PDUs on the market and has been validated from a security penetration perspective through the [USGv6-r1 Product Registry ISO/IEC 17025 accredited testing](#). It will help Rockford Public Schools maintain their newly implemented security initiatives and enable the technology team to make informed decisions based on real-time data from power, environmental conditions, and cabinet security monitoring.

## Structured Cabling Sets the Standardization

Panduit structured cabling solutions enable the standardization of the school's IT infrastructure across all buildings. This consistency simplifies maintenance, troubleshooting, and future upgrades, ensuring a uniform and efficient network environment. Supported by the Panduit QuickNet Cabling System and Category 6A U/UTP copper cabling with RapidID labeling already implemented, Rockford Public Schools will be able to troubleshoot and perform maintenance updates more efficiently. It will also be a source of backup in case an outage occurs. Plus, higher bandwidths will be able to be achieved and will adhere to the increasing data demands of a modernized educational environment and also streamline future initiatives.

## Pathways Pave the Way to Scalability

By providing a reliable and scalable cable management solution, the Wire Basket Cable Routing System not only adds versatility but also helps Rockford Public Schools achieve their strategic goals of updating their data center space and ensuring consistent access to digital learning tools. The system protects cables from physical damage and environmental factors which can extend the lifespan and eliminate unwanted maintenance costs which is essential in maintaining network reliability. This supports the district's dedication to providing high-quality education and preparing students for future technological advancements.

## Cabinets that can Add Cost Savings

As Rockford Public Schools expands or colocation plans continue to surface the versatile FlexFusion cabinets can accommodate a wide range of equipment additions and configurations. They are also durable and don't require the frequent need to be replaced or upgraded which can result in a cost-savings opportunity for Rockford Public Schools.

## Backed by a Guaranteed 25-Year Warranty

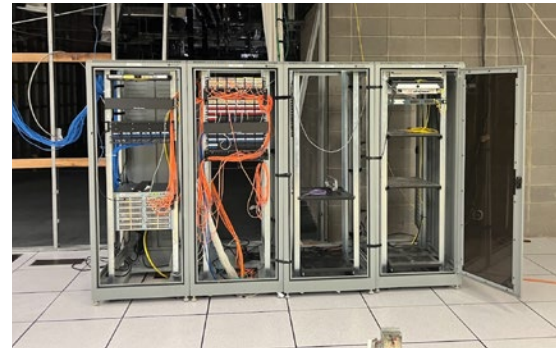
Backed by a Panduit 25-year standards-based performance warranty which is for structured cabling and covers Panduit-branded copper and fiber connectivity hardware, and Panduit-branded cable or approved manufacturer's cable is a proven commitment to our customers that shows unwavering support to make sure the project outcome is successful for years to come.

Through the design of ICEcad drawings, Rockford Public Schools saw their vision of a future-proofed data center take shape. The design allowed them to review the pre-build to make sure that all products and solutions were accounted for. Power, fiber connectivity, pathways, and cabinets would be integral to the revitalized Rockford Public Schools data center environment.

## Benefits Achieved So Far

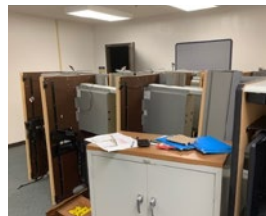
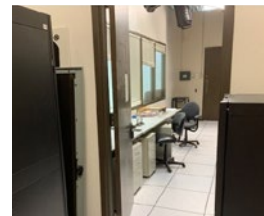
"I'm excited that we're standardizing on this and forming a partnership both with Panduit and Graybar going down this route, it makes my job and my team's job a lot easier because it's frictionless at this point."

Jason Barthel, CIO, Rockford Public Schools



"From a staff and students' perspective, it allows us to provide a robust, highly reliable and secure infrastructure."

Jason Barthel, CIO, Rockford Public Schools



## Building a Strategic Vision for the Future

Rockford Public Schools is guided by a strong vision for the future, with a primary focus on prioritizing the needs of its students. To achieve their goals and objectives, Rockford Public Schools partnered with Panduit and Graybar to analyze their recommissioned space and to build a data center that could assist in eliminating security vulnerabilities, advocate cost savings and efficiency, increase capacity, and become future-ready.

"We are thrilled to partner with Rockford Public Schools in their mission to modernize their data center infrastructure. By implementing our comprehensive suite of products and solutions, we are helping Rockford Public Schools create a robust, secure, and future-ready environment. Together, we are paving the way for a brighter, more connected future for their students and staff."

Chris Mactal, Regional Sales Manager, Panduit

As the project continues to be worked on, Rockford Public Schools are already beginning to see the significant benefits from their infrastructure modernization efforts:

1. **Improved reliability and uptime:** An upgraded infrastructure, guided by a Panduit products and solutions roadmap, will significantly reduce downtime, ensuring staff and students have consistent access to digital learning tools
2. **Operational efficiencies:** Standardization across the district will make troubleshooting and maintenance much more efficient for the Rockford Public Schools IT team
3. **Upgraded security procedures:** Eliminating vulnerabilities by strengthening the data center infrastructure, systems, and procedures in accordance with the NIST cybersecurity framework
4. **Future-proofed:** Having a modernized infrastructure will allow Rockford Public Schools to implement emerging technologies such as Artificial Intelligence supporting their mission of providing students with the latest technology
5. **Potential cost-savings:** The new layout of the data center will allow Rockford Public Schools to work with other local school districts and municipalities to create a colocation facility that can assist in offsetting costs
6. **Additional learning opportunities:** With Microsoft announcing plans to build a state-of-the-art data center in Cherry Valley, Rockford Public Schools is giving their students opportunities through the mentorship program and the updated data center infrastructure to experience how a Tier 3/4 Enterprise Data Center operates, giving them the skills needed to potentially pursue careers at Microsoft or other future planned data centers.
7. **Community impact:** Improving internet connectivity will support the community by providing online access to underserved areas, ensuring they are equipped for remote learning

Rockford Public Schools demonstrates its commitment to faculty and students through strategic planning in its technological investments. The ongoing project at Rockford Public Schools is expected to be completed by Q1 2025. Meanwhile, Rockford Public Schools, Panduit, and Graybar continue to work together to identify additional products and solutions that will add value to future installations.



"Partnering with Panduit and Graybar is very exciting for us. Their state-of-the-art solutions and expertise will help us modernize our data center making our school district stronger and better equipped to support our students and staff."

Matt Johnson, Director  
of IT/IS Security, Rockford  
Public Schools

“Having a tier 4 data center added to our area is a wonderful thing for more than just the Rockford Public Schools, it offers other public entities, such as the County of Winnebago, the opportunity to enhance our delivery of services to our employees and constituents as well. RPS’s data center greatly enhances our opportunity for equipment colocation. Being able to do so with an established partner allows us to leverage greater security, stability, and redundancy for the County’s many systems.”

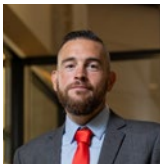
Dan Magers, Chief Information Officer, Winnebago County

## Meet the Rockford Public Schools Team



**Jason E. Barthel** is an accomplished Information Technology Executive with extensive experience in education, local government, and the private sector. Currently serving as the Chief Information Officer at Rockford Public Schools, Jason has been instrumental in driving technology advancements and improving service operations.

With a strong background in Cybersecurity, Project Management, Service Strategy, and IT Operations, he has a proven track record of success in implementing technology solutions and process improvements. Jason’s career includes significant roles such as Technology Solutions Manager at Montel Technologies, LLC, and Manager of IT Integration: Public Safety at Winnebago County. His military service as a noncommissioned officer in the Signal Corps in the US Army further underscores his technology and telecommunications expertise. Jason holds a Master of Business Administration (MBA) from Liberty University, and Master of Information Technology with a focus in Project Management and Bachelor of Information Technology with a focus in Computer Forensics from American InterContinental University. His certifications include Certified Project Management, several Microsoft Certifications, and ITIL Foundation, among others.



**Matthew R. Johnson** is an established Information Technology leader with over 25 years of experience across the education, mortgage, finance, and real estate sectors. As the Director of Information Technology/IS Security at RPS 205, he manages a sophisticated IT infrastructure that includes advanced server architectures, network systems, telephony, video surveillance, and data centers. His strategic focus on Cybersecurity safeguards the confidentiality, integrity, and availability of critical systems, reinforcing his role in protecting organizational data and ensuring secure digital access for students.

Instrumental in designing and implementing a comprehensive Cybersecurity Framework at RPS, Matt has established robust controls and procedures that enhance defenses against evolving cyber and operational threats. Leading a team of 12, Matt fosters a collaborative environment that champions innovation and bolsters security measures. His extensive experience and Certified Project Manager status enable him to align project management principles with strategic business objectives, significantly impacting IT operational efficiencies and the effectiveness of security initiatives within his professional domain.



Learn more about Data Center Infrastructure products and solutions from Panduit at [panduit.com/datacenter](https://panduit.com/datacenter)