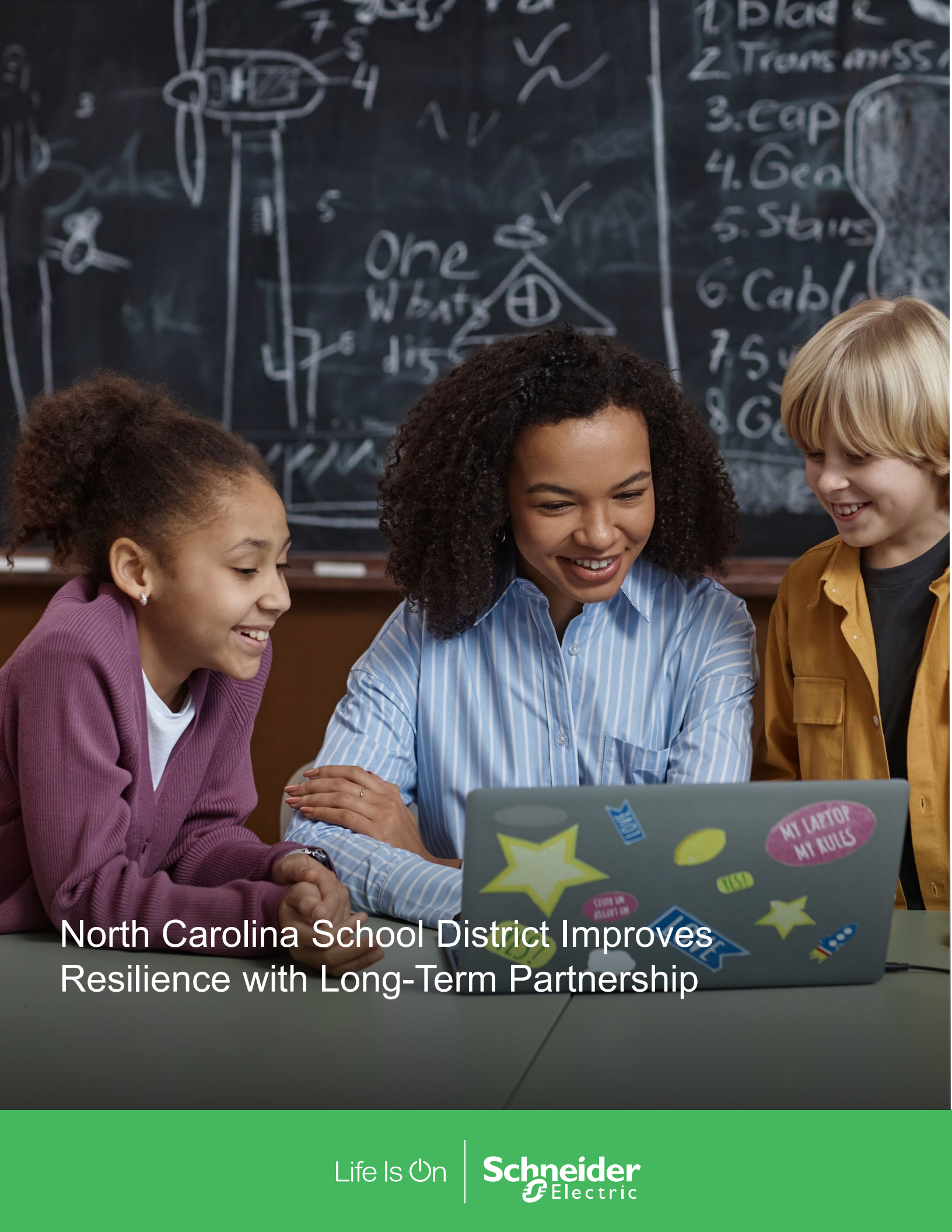




North Carolina School District Improves Resilience with Long-Term Partnership

CASE STUDY

Brunswick County School District, North Carolina

Brunswick County, located along the picturesque coastline of North Carolina, faces harsh environmental conditions. Brunswick County Schools (BCS), the small local school district, must constantly contend with these coastal community challenges to maintain their over 2 million square feet of school facilities.

The locale means BCS buildings are prone to unpredictable flooding and infrastructure damage from coastal storms. As recently as 2018, Hurricane Florence brought devastation to Brunswick County, dropping nearly 2 feet of rain and preventing BCS from reopening for 19 days.

The high humidity sea air prevalent in the area also speeds up wear and tear on critical mechanical systems like HVAC equipment and reduces indoor air quality, posing additional challenges.

2017 Energy Savings Performance Contract

District leadership sought to make critical mechanical and weatherization improvements but lacked the necessary funding, prompting them to explore alternative solutions.

“When I came here, we had AC systems in more than one school that wouldn’t run consistently. We had a lot of problems. We didn’t have enough money to do the type of, or the amount of, mechanical improvements that we needed to do. So, we started looking for another way to do it.”

Sue Rutledge, Former Chief Operating Officer, Brunswick County Schools

In 2017, BCS embarked on a transformative \$17M Energy Savings Performance Contract (ESPC) with Schneider Electric. The project aimed to address the district's pressing infrastructure needs by improving energy efficiency and reinvesting those operational savings. This initiative creates \$942,087 in guaranteed annual savings, significantly reducing operation costs and allowing reinvestment into school facilities.

Key Improvements:



LED Lighting Conversion & Controls

BCS upgraded interior and exterior lighting to energy-efficient LEDs, significantly reducing energy consumption. Occupancy sensors were installed in select areas based on data logger analysis, further optimizing lighting efficiency.



HVAC Modernization & Deferred Maintenance

A total of 26 outdated gas-fired rooftop units were replaced across five schools, resolving long-standing maintenance issues. Modern HVAC systems now provide improved indoor air quality and comfort, especially in the humid coastal environment.



Fuel Oil to Cleaner Energy Conversion

Twelve sites transitioned from fuel oil to cleaner-burning natural gas or propane. This shift not only reduced fuel costs and environmental impact but also enabled broader heating system upgrades.



Building Envelope & Environmental Controls

Weatherization improvements to the building envelope enhanced insulation and reduced energy loss. The integration of advanced energy management systems and plug-load controls allows for precise environmental regulation and energy savings.



Water Conservation Measures

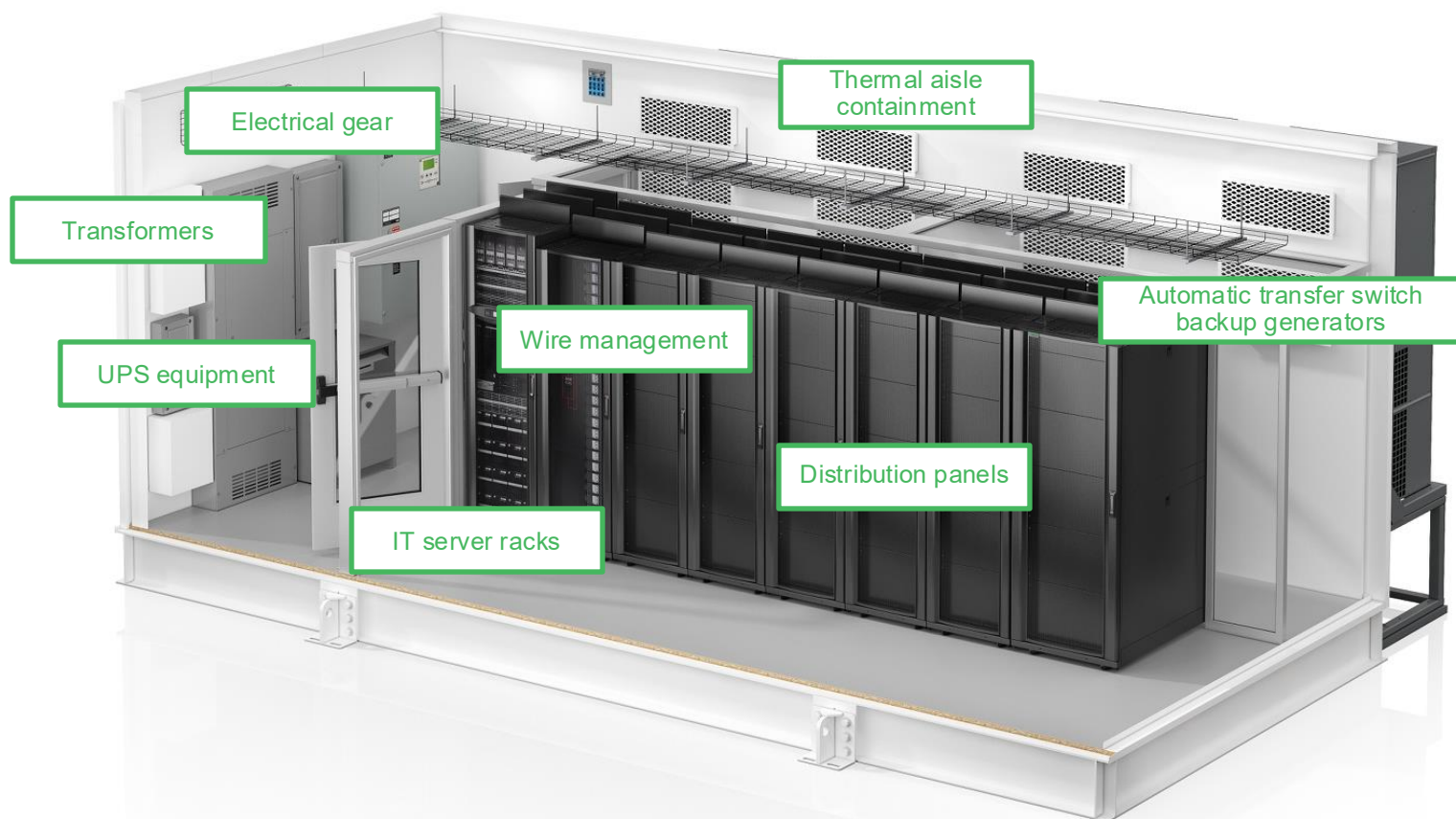
Low-flow fixtures and other water-saving technologies were implemented to reduce water usage and utility costs across the district.

"Redoing all our HVAC and building controls has really helped us control the indoor environment with respect to humidity. That truly has been a plus for us."

Kem Harmon, Director of Facilities, Brunswick County Schools

Improving IT Resilience with Containerized Data Centers

To further strengthen disaster preparedness, BCS deployed two containerized data centers capable of supporting the district's entire IT infrastructure in 2025. These prefabricated units ensure continuity in the event of natural disasters, fire, or equipment failure.



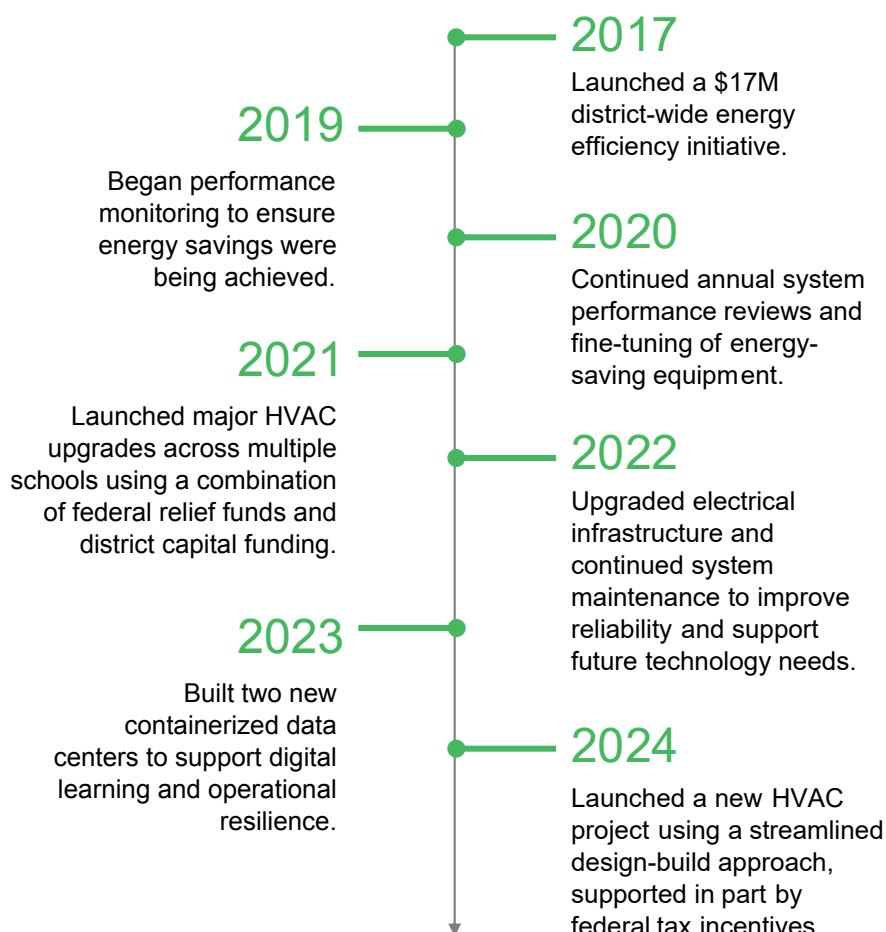
"With the deployment of our containerized data centers, we've taken a major step forward in ensuring IT continuity no matter what challenges come our way. This project is more than just infrastructure. It's a commitment to keeping our students connected, our data secure, and our schools resilient."

Debra Bair, IT Director, Brunswick County Schools



Continuing Progress on Energy Efficiency and Resilience

From 2018 to 2024, BCS continued to invest in infrastructure upgrades to improve energy efficiency and strengthen system resilience. To maximize the impact of each investment, a range of funding sources was identified, combined, and secured, including federal stimulus programs, district and county capital allocations, tax incentives, and savings generated through performance-based strategies. Many of these improvements were made possible through ESSER (Elementary and Secondary School Emergency Relief) funding, which supported essential upgrades to heating, ventilation, and building control systems. Each project was matched with the most suitable procurement approach, using either competitive Energy Savings Performance Contracts (ESPC) or flexible Design-Build methods to deliver timely and cost-effective results.



2025 and Beyond

Brunswick County School District will begin a comprehensive HVAC upgrade at Bolivia Elementary School. The project will replace classroom unit ventilators and add new dedicated outdoor air systems, delivering modern, energy-efficient equipment and improved comfort. All new systems will be fully integrated into existing building controls to support healthier learning environments for years to come.

Creating Unique, Hands-On Student Engagement Programs

Brunswick County Schools has made student engagement a cornerstone of its infrastructure modernization journey. Through hands-on learning and real-world applications, students are gaining exposure to clean energy technologies and environmental stewardship. These opportunities have been enriched through the district's collaboration with Schneider Electric, which has supported and co-led several student-focused initiatives.

The C.O.A.S.T Collaboration

The Center of Applied Science and Technology (C.O.A.S.T) offers specialized career and technical education with a focus on clean energy technologies. With access to real-time energy data provided through Schneider Electric's systems, students apply classroom concepts to real-world scenarios, deepening their understanding of energy management.

"It's really great to see that Brunswick County Schools is partnering with a company like Schneider Electric to keep our facilities up to date and innovative. We don't have to worry about our classrooms not being the thing that we need them to be to do our job. We know that we have what we need to teach our students."

Daniel Richardson,
Teacher at the C.O.A.S.T



Additional Student-Focused Initiatives:



Solar Picnic Tables installed at all three high schools, allowing students to charge devices using renewable energy and bringing solar technology into daily life.



STEM Night at Union Elementary: Engaged 300 students in an Upcycled Garden activity, emphasizing sustainability and ecosystems.



Science Olympiad at Shallotte Middle:

Featured a pasta tower challenge judged by Schneider Electric team members, promoting engineering and problem-solving skills.



College and Career Fair:

Schneider Electric showcased Building Automation Systems (BAS), helping students understand energy systems and inspiring interest in sustainability careers.



Earth Day Activities:

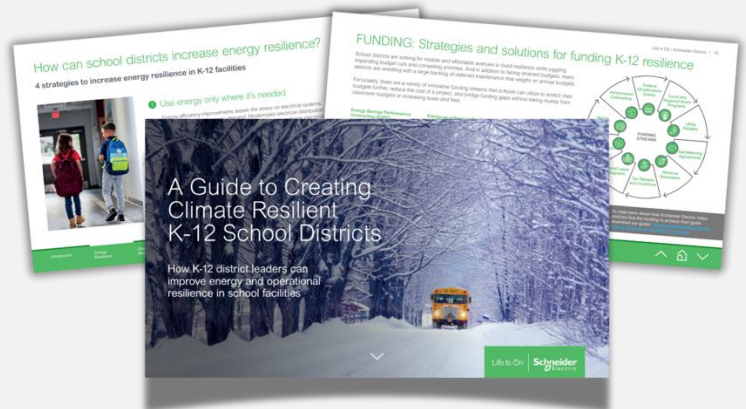
K-2 students explored carbon footprints, while grades 3-5 conducted hands-on experiments with solar-powered bugs.

Creating Climate Resilient K-12 School Districts

Equip yourself with the knowledge to safeguard your district's operations against the growing threats of extreme weather.

In this comprehensive guide designed for K-12 leaders, learn how strategic resilience planning and implementation can future-proof your school district's operations, improve student performance, and create budget stability against increasingly volatile energy costs.

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