

CASE STUDY

Savoring Success: Building Scale, Flexibility and Resilience into Frozen Pizza Manufacturing

By integrating automation and digital systems, CJ Schwan's built a production and distribution campus designed for scale and resilience centered around people and performance.



Challenge

When Incremental Growth Reaches Its Limit

For more than 50 years, CJ Schwan's has manufactured frozen pizza in Salina, Kansas. The company entered the category in 1970, beginning with the acquisition of an 18,000-square-foot manufacturing facility and the Tony's® pizza brand.

Today, CJ Schwan's, a subsidiary of South Korea-based CJ Foods, produces frozen pizza for retail and foodservice markets nationwide. Its portfolio includes well-known brands such as Red Baron®, Tony's®, Freschetta® and Big Daddy's®. Collectively, these brands account for more than 20% of the \$7.4 billion U.S. frozen pizza market.

Over the years, the Salina operation has expanded to approximately 550,000 square feet, becoming one of the largest pizza production facilities in the world. While this steady growth mirrored the company's success, it also introduced challenges. Decades of incremental

Project Stats

Client

CJ Schwan's

Location

Salina, Kansas

540K

square feet of manufacturing,
warehousing and distribution space

100M

pizzas produced annually

2026

Plant of the Year –
FOOD ENGINEERING

additions resulted in a complex, segmented footprint. The site's layout limited throughput, restricted automation and made future expansion difficult. At the same time, sustained growth across multiple national brands has intensified pressure on production capacity, consistency and labor efficiency.

Distribution constraints added to the manufacturer's challenges. Existing cold storage capacity could not support rising pizza volumes or the company's goal of consolidating frozen products from multiple CJ Schwan's facilities into a centralized logistics hub.

CJ Schwan's needed a scalable, long-term solution that could adapt to changing product demands, support greater automation and maintain rigorous food safety and quality standards. The development team wanted to design and build a factory of the future.

Solution

Embracing a Holistic and Inclusive Delivery Model

To meet its goals, CJ Schwan's partnered with Burns & McDonnell, a longtime collaborator with extensive experience in food and beverage manufacturing, cold storage facilities, automation and engineer-procure-construct (EPC) project delivery. The construction firm was tasked with designing and constructing a new frozen pizza manufacturing facility and distribution center.

The project added a 400,000-square-foot, highly automated production facility and a 140,000-square-foot distribution center. Together, the new buildings help create a unified manufacturing and logistics campus totaling approximately 1 million square feet. The finished result is one of the most advanced frozen pizza production complexes in the world where employees can produce and distribute up to 100 million pizzas annually.

Infrastructure Improvements

Significant site redevelopment was required before construction could begin. More than 140,000 square feet of abandoned structures were demolished and approximately 10,000 tons of concrete were recycled for use in new construction.

The project also included extensive flood mitigation measures. Crews rerouted a 200-acre watershed, installed 2,000 feet of culvert and built a six-acre retention pond to support controlled drainage and discharge. Utility upgrades and transformer relocations further improved infrastructure conditions for the campus and neighbors in the surrounding area.

Plant and Process Design: Protecting Food and Workers

The new facility reflects lessons learned from more than 50 years of construction and pizza production. All departments offered feedback on requirements and Burns & McDonnell hosted three

supplier summits where a holistic view of project scope and needed machinery was determined. Layout decisions prioritized flow, visibility and maintainability, with automation embedded throughout ingredient handling, baking, topping, packaging, palletizing and wrapping.

Engineering began in 2019, during the COVID-19 pandemic, with construction overlapping design starting in 2020. CJ Schwan's incorporated structural choices that support both food safety and operational resilience, including clearly segmented production zones and dedicated access points for different workflows.

Each production stage was designed to operate independently when needed, reducing risk and improving containment while preserving throughput. The facility's cellular layout separates major process areas with physical walls and controlled access. This approach enhances food safety, simplifies sanitation and allows targeted response in the event of quality or health issues.

Employee-focused safety design features include touchless hand-washing stations, wider walkways and separate entrances for employees and visitors. While these elements were introduced during the pandemic-era build, they continue to support safe operations under normal conditions.

During all phases of the project, worker safety was further prioritized with proximity detectors used to support social distancing and traceability. Additionally, modeling and remote coordination played a critical role in planning, design and construction.

Product Development and Process Consistency

The new facility created an opportunity to refine CJ Schwan's long-standing pizza processes without altering the product experience consumers expect.

Maintaining consistency as products transitioned from legacy systems to new automated lines was a central requirement. The company used an on-site pilot plant, supplier testing and extensive validation efforts to tighten process parameters while preserving finished products. Key focus areas included ingredient dosing accuracy, baking oils, oven performance and baking surfaces.

The facility was also designed with future innovation in mind. Room was built into the design for expansion. Dedicated space and infrastructure were incorporated to allow for new products, formats and processing methods to be introduced without major structural modifications.

Innovation, Automation and Digital Integration

Automation spans the entire line — from accurate ingredient dosing to robotic pizza handling — minimizing manual touchpoints from



start to finish. The production line was made even more efficient by building in excess capacity for critical downstream processes such as palletizing and film wrapping to reduce bottlenecks and downtime.

Furthermore, an integrated supervisory control and data acquisition (SCADA) system provides real-time visibility across operations. Supported by a sitewide IT/OT wireless network, employees have visibility and control of all automated processes and can access production data, diagnostics, equipment documentation and training resources on mobile devices and tablets. This unified digital environment improves response times, supports root-cause analysis and strengthens cross-functional understanding of the facility's overall performance.

Distribution Center and Cold Chain Optimization

Construction on the distribution center started in 2023 and was completed in 2025. Standing 144 feet tall, the new high-bay distribution center is the tallest building in Salina. It features 12 loading docks and a racking system with 38,000 pallet positions served by three automated pallet cranes. At any given time, the facility's employees manage millions of pizzas at the new distribution center, which connects directly to an existing distribution building. Together, the facilities provide nearly 245,000 square feet of distribution space.

At the distribution center, automated pallet cranes, multilevel racking and battery-powered automated guided vehicles (AGVs) move product without forklift-pedestrian interaction. These systems improve safety, throughput and reliability while creating new, higher-skilled technical roles within the operation.

Workforce Development and Campus Culture

While automation increased the demand for technical skills, CJ Schwan's treated training as a collaborative process. Employees who worked directly with the project's original equipment manufacturers (OEMs) helped develop training materials and operational practices used across the campus. Training resources are available digitally, and clearly defined skills matrices outline pathways for advancement and compensation growth. Ongoing education is built into daily operations to support long-term employee development.

The legacy plant continues to play an important role in onboarding and reinforcing company culture. This continuity helps with consistent expectations for safety, quality and teamwork across all facilities.

Results

A Scalable Plan for Long-Term Growth

With comprehensive automation and strong cross-functional collaboration guiding the way, the CJ Schwan's frozen pizza manufacturing and distribution campus was named FOOD ENGINEERING's 2026 Plant of the Year.

Today, the Salina campus supports production of more than 100 million pizzas annually while improving safety, consistency and operational visibility. Automation has reduced manual handling and downtime. Digital systems have strengthened decision-making. Employees are equipped with new skills and clear advancement opportunities.

With additional acreage available and facilities designed for flexibility, CJ Schwan's has developed a factory of the future by establishing a scalable platform that supports current demand and future innovation — without compromising product quality or company culture.

Project Highlights

- Automated manufacturing, warehousing and distribution processes as well as an integrated control system to drive a higher yield and consistent product quality.
- On-demand data available at workstations and on mobile devices.
- Factory of the Future and Internet of Things-enabled manufacturing site.
- When combined with current operations, this project brought the total area of the CJ Schwan's site in Salina to more than 1 million sq. ft. of operating space.

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