



STELLAR AND MAPLE REINDERS WIN 2024 BUILT BY THE BEST AWARDS

Top cold storage design-build competition recognizes two best-in-industry projects.

By Keith Loria

Stellar Elevates Cold Storage Capabilities With Americold Expansion

Americold recognized the growing need for enhanced capacity to support the production and supply chain of a leading branded food company in its facility in Russellville, Arkansas, United States.

Stellar was hired for this significant undertaking.

“We have wanted to work with Americold for a while,” says Nathan Kendall, Project Manager at Stellar. “We had submitted a proposal for some projects and based off our interviews and presentations for those projects, they gave us a shot at the Russellville job, and it was more complex than the other two.”

Stretching more than 140 feet tall and covering 136,000 square feet, the project encompasses a state-of-the-art ammonia refrigeration system, insulated metal panel (IMP) exterior walls, an automated truck unloading system and an advanced automated storage and retrieval system (ASRS) with gantry and loop connections linking the warehouse to the loading docks.

The project started just prior to the COVID-19 pandemic outbreak in 2020, which introduced unprecedented challenges, necessitating extensive communication, coordination and collaboration among all project stakeholders, notes Kendall. Despite these hurdles, the project was successfully completed on time and within budget in February 2023, culminating in its opening in March 2024.



The Americold Russellville facility expansion, designed and built by Stellar, is more than 140 feet tall and covers 136,000 square feet. (Photo courtesy of Stellar.)

Complexities in Execution

Kendall says the Americold Russellville expansion was characterized by its complexity and the requirement for advanced solutions. The specifics demanded not only cutting-edge technology but also meticulous planning to handle various operational needs.

Initially, the project faced challenges in procuring additional land to accommodate the expansion, and the existing site's limitations prompted further complications in zoning and permitting. “Early on, Americold purchased two plots of land to the west of the property in order to expand the footprint,” Kendall says.

Stellar's effective coordination with the City of Russellville, coupled with adherence to regulatory requirements, was instrumental in keeping the project on schedule despite these complications.

The project also had to navigate a series of strict regulatory and safety standards due to the use of ammonia refrigeration, the intricate fire protection system and the height of the structure. The scheduling of the installation of the racking and fire protection systems was particularly challenging, requiring effective communication to prevent delays.

“A building like this is somewhat foreign to a lot of municipalities,” Kendall says.



Left: The system allows for seamless movement of products from the loading docks into high-density storage. (Photo courtesy of Stellar.)
 Right: The scheduling of the installation of the racking and fire protections systems was challenging and required great communication to prevent delays. (Photo courtesy of Stellar.)

“When you have a 144-foot building with complex technology and fire protection, it meant a lot of time reviewing the plans with city officials and getting them acquainted with this newer technology.”

As a result, cross-disciplinary collaboration among structural engineering, process design, automation and fire protection teams was essential to achieving the desired outcome.

The facility’s architecture was engineered to accommodate precise temperature control requirements through its high-performance ammonia refrigeration system – a critical component for preserving temperature-sensitive products.

In response to rising material costs and supply chain disruptions brought on by the pandemic, the project team implemented strategic procurement and scheduling practices designed to counteract these economic challenges, explains Kendall. “Materials were ordered well in advance, and a phased construction approach was employed to align progress with material availability, thus ensuring that the project remained on course and budget.”

Notable Achievements

Building Information Modeling (BIM) was integral to the project’s success, and facilitated precise coordination among diverse trades, including structural, mechanical, electrical and automation teams. Kendall says the advanced software enabled the identification and resolution of potential conflicts early in the design phase, subsequently reducing rework and ensuring a smoother construction timeline.

One of Americold Russellville’s most notable features is its fully automated truck unloading system. This innovation is designed to streamline logistics operations, automating the flow of goods from trucks to storage and significantly reducing time and labor costs.

“The system’s integration with the automated storage and retrieval system (ASRS) allows for seamless movement of products from the loading docks into high-density storage, maximizing efficiency and addressing current labor shortages,” Kendall says.

Another significant innovation was the application of the IMPs used for the facility’s exterior walls. Kendall notes these panels were chosen for their exceptional thermal performance and energy efficiency, and played a paramount role in maintaining strict temperature controls necessary for cold storage operations. Additionally, Stellar’s

thermal team utilized a swing stage to install these panels.

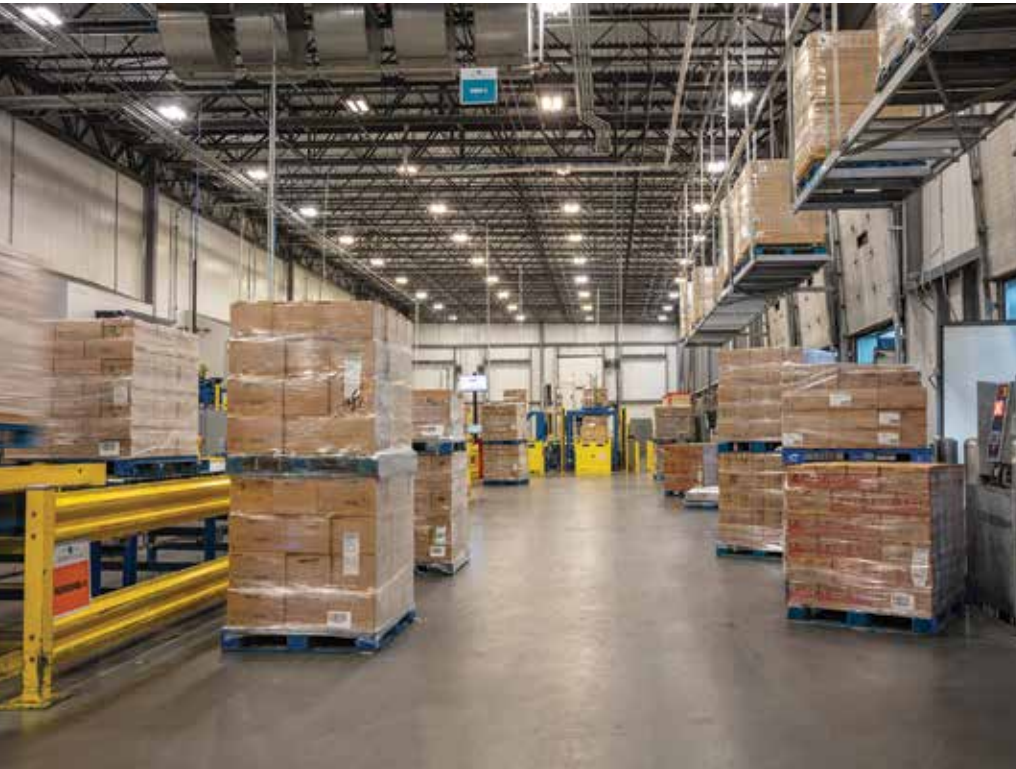
Strong Partnership

The Stellar-Americold partnership played a crucial role in the successful execution of the ASRS expansion project, Kendall explains. “Stellar adopted a project management approach characterized by integration, adaptability and an unwavering commitment to surpassing expectations,” he says. “Customized solutions were devised to meet project goals effectively, including the development of an integrated schedule that encompassed all subcontractors. This enabled the team to monitor timelines and resources with precision.”

Utilizing advanced tools like Procore, Autodesk software and Microsoft Project facilitated real-time updates and

A significant innovation on the build was the application of IMPs for the facility’s exterior walls. (Photo courtesy of Stellar.)





An automated truck loading system and an advanced ASRS with gantry and loop connections link the warehouse to the loading docks. (Photo courtesy of Stellar.)

communication among all stakeholders, ensuring alignment and clarity at every stage. The project team worked diligently to keep all parties informed about critical developments, thus ensuring a well-coordinated effort even amid public health and supply chain challenges, notes Kendall.

“A commitment to high levels of coordination was essential throughout the project’s duration, preventing operational disruptions and allowing the existing Americold facility to operate fully during construction,” Kendall says. “The team was probably the biggest success on this job.”

Sustainable Mindset

Stellar’s design team prioritized energy efficiency in the Americold Russellville expansion, optimizing the facility by incorporating sustainable building materials.

Kendall says the choice of Metl-Span’s IMPs, recognized for their energy efficiency, recyclability and long-term durability, reflects an unwavering commitment to reducing environmental impact. “The thermal performance of these panels translates to

remarkable energy savings, maintaining the delicate balance between temperature control and sustainability,” he says.

In the realm of energy-efficient lighting, all 17 installed types within the Americold facility are LED fixtures. These lights outperform traditional incandescent options by approximately 80% while extending longevity, even in the extreme conditions of the -10° ASRS area. By integrating energy-efficient lighting, the project succeeded in achieving a reduction in energy use by approximately 18% compared to baseline models.

Additionally, low-flow toilets and faucets were standard installs to diminish water consumption within the facility. Smart modeling anticipated a 25% reduction from previous usage levels, which Kendall points out supports Americold’s commitment to improving water conservation without the need for extensive outdoor irrigation systems.

A Job Well Done

The Americold Russellville project holds broader-reaching implications beyond its immediate operations.

2024 BUILT BY THE BEST AWARD WINNING SUPPLIERS

These CEBA member companies were integral to the success of Stellar’s winning project:

- Ahern Fire Protection
- Applied Fabricators
- Bitzer
- DuPont Performance Building Solutions
- Evapco
- Fastener Systems Inc.
- Frazier Industrial Company
- Innovative Refrigeration Systems
- Jamison Doors
- Metl-Span IMP
- Protectowire
- Rytec doors
- Swisslog
- Twintec USA

The project’s expansion addresses critical gaps in cold chain infrastructure, enhancing the overall reliability of temperature-controlled logistics. Kendall says such initiatives enable the redistribution of perishable goods to underserved regions, thereby improving public health standards and food security.

“Everyone worked as a team and felt accountable, and we finished a quality building, on-time and under budget, which is what our goal always is,” Kendall says. “Personally, I’m proud of what we all learned from this project, and it helped set the stage for our next project with Americold.”



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- EVAPCO SelectTech Automation and Controls



LMP

selectTECH

Maple Reinders Selected to Build Flagship Canadian Distribution Center

Dot Foods Inc., one of the largest food redistributors in North America, selected Maple Reinders to design-build its flagship Canadian head office and distribution center.

“Maple was already known to Dot Foods through our reputation in the design-build industry, and they reached out to us for support in the due diligence and site planning stage,” says Joseph Sabourin, Project Director at Maple Reinders based in Ontario, Canada. “Honestly, the pitch was just one of partnership, transparency and the alignment of shared values. Dot was new to Canada, and despite our reputation and references, we were still unknown to them. With this in mind, we offered to provide the initial services as a way for us to prove our value to the client.”

Once the due diligence and site planning was complete, Maple Reinders gained the company’s trust and confidence, and Dot Foods selected Maple to continue acting as its designer-builder for the full project.

Located in Ingersoll, Ontario, the build was an important milestone facility meant to demonstrate a long-term commitment to the Canadian market. In fact, the building would be just phase one of a four-building complex.

Both sides came together and developed a mutually agreeable strategy that placed the project needs at the forefront.

“Ingersoll has been a great town to work with, so we had confidence we could achieve the early project goals,” Sabourin says. “Moving then into design and construction, it is important to remember that parts of this project took place during the peak of market volatility. It was critical to ensure we managed project costs and schedule, specifically material lead times, to ensure the project met their operational and commercial goals.”

The project spanned a two-year period starting in 2021, with approximately eight months spent in planning, design and approvals.

“Construction was originally slated to be completed in the summer of 2023, but freezer demand was much higher than Dot Foods originally expected and it opted to add an additional 65,000 square feet during the original scope’s construction,” Sabourin said. “Early on, Maple recommended that



The project included 10,000 square feet of office space. (Photo courtesy of Maple Reinders.)

Dot Foods develop the entire master plan for municipal approval. This ended up being instrumental to the expansion because we didn’t have to go through any additional approvals process.”

Maple Reinders was able to get permit drawings developed, approved and completed in September 2023.

“The adaptability and efficiency of our team in accomplishing this project is something that I am extremely proud of,” Sabourin says.

Project Highlights

The facility features 85,000 square feet of freezer space maintained at -18°C to -30°C, a 30,000-square-foot cooler/cold dock operating between 10°C and 3°C, a 45,000-square-foot ambient storage and distribution production area and 10,000 square feet of office space.

“With any cold storage build, we always pay special attention to the envelope, the equipment and the slab,” Sabourin says. “For this project, Dot Foods decided to implement its first CO2 refrigeration system. It continues to provide significant electrical efficiencies

and the carbon credits surely don’t hurt.”

In the refrigerated and ambient storage sections, the facility features a joint-free concrete slab designed with sustainable additives, reducing the concrete material required for optimal density. This design not only enhances sustainability but also contributes to lower long-term maintenance costs and promotes a cleaner, more hygienic environment for food-grade applications.

Sustainable Measures

In Ontario, the building code mandates a number of sustainable practices related to waste reduction, durability and air quality among others.

“Not considering mandated elements, I’d say that the joint free slab and the CO2 refrigeration system are the main standouts,” Sabourin says. “The PrimX joint free slab is fiber reinforced and requires much less concrete thickness to achieve the same load bearing strength as a traditional slab. Basically, this means less materials required and less transportation of those materials to site.”

Additionally, the CO2 system is a high-



Maple Reinders was selected to design-build Dot Foods' flagship Canadian head office and distribution center. (Photo courtesy of Maple Reinders.)

efficiency system with increased potential for heat reclaim. This lowers operational expenses and energy demands.

"We followed up with Dot Foods recently to get the details on how much more energy efficient this system is for them, and I can say confidently that the numbers look great, and this is not even including the carbon tax credits in play," Sabourin says.

Overcoming Challenges

Working through a very harsh winter in the heart of Ontario's snow belt is tough for any project, and roofing and panel installation was undertaken during the severe winter months. However, this was just the tip of the iceberg of challenges that faced Maple Reinders.

"The biggest hurdle was probably the market uncertainty at the time," Sabourin says. "A lot of jobs were competing for resources during and after the pandemic. With only so much production to go around, we were at the mercy of our suppliers and the local and global supply chains."

Sabourin says Maple Reinders' strategy was to purchase with a just-in-time approach, but occasionally it was not possible to do this with confidence. "In some cases, we stocked material onsite or nearby so that we could secure pricing and materials without putting schedule or cost at risk," he says. "Dot Foods definitely kept us accountable, but they were more than fair and flexible."

A Collaborative Approach

The project was driven by mutual trust, collaboration and respect through the entire process, Sabourin says.

"No project is without its challenges, but every single person on Maple's end and with Dot Foods kept focus entirely on the success of the project," Sabourin says. "Adding to this

was the town of Ingersoll, that really pushed to get things moving and made life easy throughout the planning and development process. It really felt like a true partnership with all sides moving in conjunction with one another."

Sabourin also pays credit to the work and support of Maple Reinders' office



The build features a 30,000 square foot cooler/cold dock with levelers. (Photo courtesy of Maple Reinders.)

team, support and field teams, as well as the subcontractor, engineering and supply partners that were all instrumental in ensuring the success of the finished project.

“To be recognized by CEBA with this Built By The Best award is an absolute privilege, but it would not be remotely possible without the contributions of the hundreds of people who all own their part in this achievement,” says Sabourin.

With the facility completed, it’s expected to add 130 jobs over the next three years, encompassing a range of positions such as maintenance technicians, engineers, office

and sales staff, transportation and warehouse workers, as well as food inspection and quality assurance professionals. Sabourin notes that contributes not only to the local economy but also strengthens the workforce within the cold chain sector. ☎

KEITH LORIA is an award-winning journalist who has been writing for major newspapers and magazines for close to 20 years, on topics as diverse as sports, business and technology.

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2024 BUILT BY THE BEST AWARD WINNING SUPPLIERS

These CEBA member companies were integral to the success of Maple Reinders’ winning project:

- Belmont Concrete Finishing Co. Ltd.
- GAF
- Global Insulated Doors Inc.
- M&M Carnot
- Metl-Span
- Rite Hite



A pallet wrapper with roll-up door in the background at Dot Foods’ new distribution center. (Photo courtesy of Maple Reinders.)