

CASE STUDY

Frontgrade Technologies Vertically Increases Onsite Climatized Storage, Expands Production Space In Existing Footprint

A leading manufacturer of high-performance RF and electronic solutions for the aerospace and defense industries used a single-source provider with an out-of-the-box solution to reclaim valuable floor space, improve inventory management, and increase production capacity.

CHALLENGES

Frontgrade Technologies' most significant issue was reclaiming space inside their 68,000 square foot facility to increase production. The 10-foot ceiling clearance made any possibility of vertical storage a challenge. Inventory was stored throughout the facility, and control of managing product was becoming more difficult. All their electronic components had to be handled and stored in an



electro-static-free environment, material flow needed improvement, and cross-contamination was a factor. The bottom line was Frontgrade needed a more ergonomic and efficient storage solution that allowed them to recover space and grow valuable production areas but still have raw inventory readily available.

They stored burn-in boards, small parts, circuits, resistors, and other raw materials to build circuit boards with an average product height of 3 to 4 feet. Frontgrade stored goods on static shelving and bins. They considered using one of their storage rooms, but there wasn't enough space. They also considered a larger building with more square footage to accommodate additional storage and production but did not want to relocate from their Plainview location.

SOLUTION

Abel Womack was contacted and brought in to identify viable solutions after Frontgrade heard about them from some of their customers with whom they did business. After visiting the facility and assessing Frontgrade's operation and building limitations, a goods-to-person automated system was the best solution to meet their unique challenges. A Kardex Vertical Lift Module (VLM) has a compact footprint. This unit only requires 16 feet by 16 feet by 40 feet, utilizing a great deal of vertical space. However, after a full inspection of the interior and exterior

of the building, there wasn't enough space inside to erect the VLM unit because the one-story building was too short. Fortunately, there was an L-shaped corner outside of the building that was a perfect location to drop a concrete pad, build a silo to install and house a VLM unit, and open up more production space within the building.

Frontgrade preferred to work with a single company on this project. Abel Womack provided more than a century of experience and comprehensive services, including sales, software, installation, and support. As General Contractor on the project, Abel Womack coordinated all of the building efforts. Initially, they were going to build cinderblock walls, but with the 6-month delay due to Covid, town permitting slowed, and pricing rose. As an alternative, Butler Manufacturing™ offered customizable, pre-engineered metal buildings.

Our partner, Cook & Krupa, a local commercial construction firm and Butler Manufacturing dealer, conducted a site survey of the silo



installation area, took soil samples and had an architect, structural engineering, permit expeditor, and a construction contractor for the building. Time was spent helping engineers and architects get it right before they completed the design. A 45-foot tall Butler industrial metal structure was used to streamline construction, save time, and a substantial amount of money compared to a conventional block building.

One challenge was to have a removable panel in the building wall to install the VLM system and then enclose it. The four columns and three sides had insulated metal panels from the ground to the roof, and the fourth side panel started at 10 feet high. The silo was built as high as possible based on local permitting to maximize storage.

RESULTS

Once the town approved construction and issued a building permit, the 40-foot VLM was installed in a newly constructed silo attached to Frontgrade's existing building in three months. The unit takes up approximately 120



square feet of floor space in the 324 square foot silo. The VLM automatic shutter doors at ergonomic levels, which keep dust and contaminants out, protect goods from unauthorized access down to the tray level. The 240 trays are climate-controlled and electrostatic discharge resistant, which is critical for their components. PPG inventory and order picking software links to their ERP system and precisely handles order processing, material management, location management, and lot and qualification handling.

All their components are safely and securely stored in one unit, freeing up substantial amounts of floor space for more production equipment and revenue-generating operations to keep pace with growing demand.



The Frontgrade facility's Site Director John Kastanek said, "We are very pleased with the outcome. The installation process was efficient, and the VLM has improved our productivity and business performance."

BENEFITS

- Automated storage with controlled climate, moisture, temperature, and static
- Increased vertical space, creating valuable floor space
- Maximized material flow and increased production lines
- Quick implementation, fast ROI - 14 months

