



*Morningstar  
Self-Storage Company*



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# CASE STUDY

## Self-Storage Company Morningstar Storage

Air distribution, temperature, and humidity control can all be challenges in the storage business, especially during peak move-in times when doors are open for extended periods.

Several years ago, one industry leader, Morningstar Storage, decided it needed to find a different approach to these issues in the new properties it was developing. Company VP of Construction Thor Heise put it succinctly, telling his engineers to “start over.”

The approach worked.

During the next 18 months, Morningstar implemented a host of changes that improved indoor air quality, temperature and humidity control in their facilities. It was among the first in the storage industry to use bipolar ionization and dedicated outdoor air HVAC, technologies designed to reduce HVAC tonnage and operating cycles while minimizing the stale air in storage facilities. That was just the beginning, however, as these two key

improvements needed an equally innovative distribution solution to maximize the investment.

Turning away from traditional metal ductwork and grills, Morningstar Storage found an intriguing alternative: fabric ductwork systems from DuctSox. The company decided to beta test the new approach at the facility in its steamy hometown of Summerville, South Carolina. A suburb of Charleston, Summerville typically experienced hot, humid summers peppered by coastal storms—but it was also subject to cool, occasionally freezing temperatures in the winter. This unique climate, combined with the facility’s segmented units and wide range of customers and stored materials, made it a highly demanding (and thus ideal) test location.



Working closely with DuctSox engineers, Morningstar implemented a custom fabric ductwork system for Summerville. The facility’s existing metal ductwork, which spanned several hallways between units, was replaced by several rows of grey fabric ductwork suspended from the ceiling. Significantly, the fabric duct was mounted above storage units, rather than down various hallways, to improve airflow above customer’s property and boost the facility’s environmental control. This clean,

simplified upgrade bolstered the Summerville facility’s indoor air quality while reducing costs.

### A Seamless Self-Storage Environment

The problem was the diffusers. The metal ducts in the Summerville facility had diffusers placed every 20-30 feet along the length of each duct. This design created hot and cold spots between the spaced diffusers, rather than the consistent, mixed air desired in the space.

“Customers and employees could feel the spotty distribution,” said Heise. “Our metal ductwork created columns of conditioned air, rather than a comfortable environment.”

The DuctSox system solved this problem. By using an air-porous fabric that allows for the entire duct to act as a diffuser, hot and cold spots were reduced, and an evenly distributed airflow was created in its place. What’s more, the new system evenly mixed cool or warm air regardless of the outside temperature. Since those temperatures can range more than 50 degrees in the Charleston area—from low 40s in the winter to the high 90s in the summer—that was no small accomplishment.

### Costs Savings

Although even airflow and purified air dispersion were the main goals of the new system, there was an additional benefit that quickly became apparent. The cost of installation was significantly less than it would have been for similarly sized metal systems that the company had installed elsewhere.

Unlike metal ductwork that is typically created in one-off, bulky pieces, fabric ductwork can be fabricated and customized to fit a space’s unique layout. In contrast, heavy sheet metal systems require extensive equipment to hang the large, bulky ducts making their installation process (and subsequent labor costs) much more.

Fabric ductwork is typically 30-50% more cost-effective than conventional sheet metal systems, with much of those savings due to lower installation time. Lighter, fabric-based systems require less structure to support them, resulting in reduced costs. Fabric duct systems also come in modular sections, which makes installation an approachable, time-saving process for any team.

Better yet, with the increased efficiency of fabric ductwork, less duct rows were needed, which further reduced construction and material costs.

“We found that the fabric ductwork took much less equipment and time to install,” noted Heise. “Bottom line, it cut costs across the board.”



### A Scalable Solution

With the new fabric ductwork system in place, air distribution is no longer a headache at the Summerville facility. In fact, based on the results, Morningstar Storage is now looking to implement fabric ductwork systems in other facilities across the country.

“We were able to ‘set it and forget it’ with DuctSox,” finished Heise. “Maintaining a high

level of performance with little maintenance is something that’s quite valuable for any of our facilities.”

Morningstar Storage has always prided itself on top-notch service. Now, thanks to the DuctSox fabric ductwork system its implemented, it is confident the air quality in its facilities can match the quality all other aspects of its facilities can offer.