

Hybrid Sectional Door Solution Plays Important Role in Pursuit of Fleet Facility's LEED Gold Certification

Challenge:

Produce a vehicle service bay sectional door solution that would ensure the highest level of energy efficiency while equally balanced with an architectural design that maximizes daylight penetration and outside views in order to meet the requirements for LEED Gold Certification.

Solution:

20 hybrid 14'x16' mixed sectional doors that each combine five Amarr® 2042 two-inch polyurethane insulated (R-value of 19.4) pebble-finished steel sections with three Amarr 3552 aluminum full view sections with ½-inch ThermaPro Low-E insulated glass.

Results:

A highly insulated, durable and functional combination of eight sectional door panels per service bay door that contribute to 30 percent less energy usage than a facility of equal size, while providing a comfortable and safe working environment along with plenty of natural light for all facility technicians and staff.

Facility:

Salt Lake County Fleet Management Vehicle Maintenance Facility

Environment:

County Government Facility

Location:

Midvale, UT

Architects: [Blalock and Partners Architectural Design Studio](#) – Salt Lake City, UT

Consultant: [Maintenance Design Group](#) – Denver, CO

See more at architects.amarr.com



Salt Lake County Fleet Management Vehicle Maintenance Facility – Midvale, UT

Dimly lit workspaces with virtually no natural light and floors full of grease and grime are often typical perceptions of a government-run, heavy-duty fleet maintenance operation.

Not so for the Salt Lake County Fleet Management (SLCFM) Vehicle Maintenance Facility in Midvale, Utah. Opened in 2015 at a construction cost of \$9.4 million, the facility is one of only three government fleet management shops in the state of Utah to receive the ASE Blue Seal of Excellence.

In addition, Utah Construction & Design awarded the SLCFM facility its annual “Outstanding Public Project Under \$10 Million” in 2014. Since then, due in part to the facility’s hybrid energy-efficient service bay door solution, the SLCFM facility has achieved LEED Gold Certification.

Kevin Blalock, Principal and Founder, [Blalock and Partners Architectural Design Studio](#) (Salt Lake City) served as project architect and designer for the SLCFM facility. [Maintenance Design Group](#), (Denver, Colo.) provided consulting expertise



on equipment layout and the SLCFM facility's overall functionality.

Blalock worked closely with Salt Lake County on what they envisioned as a fleet management facility that had the look and feel of a 1970s-era muscle car—a marriage between heavy internal machinery and a sleek external skin.



20 door openings for 20 service bays

At 40,000 square feet (slightly less than the size of a football field minus the end zones), the SLCFM facility replaced an outdated fleet maintenance garage. With 20 maintenance bays available to service a variety of large vehicles—including those fueled by compressed natural gas (CNG)—that meant 20 door openings so vehicles could enter on one side and exit on the opposite side via “pull-thru bays.”

With so many door openings—and the need to integrate door operation with various interior structural components and equipment—achieving a viable solution that would meet the requirements for LEED Gold Certification presented a challenging task.

“The shop’s service bay doors are more than just your typical garage door,” Blalock emphasized. “They’re a vital component of the facility’s day-in and day-out operation.” What Blalock has coined as a “Jiffy Lube on

steroids” is home to Salt Lake County’s team of 30 technicians. “It’s truly their ‘office workspace’ eight hours each day. We set out to create a facility that is not only energy-efficient but one that is comfortable to spend a lot of time in each week.”

Blalock related that a primary challenge with this type of facility is to allow as much natural light as realistically possible while also meeting the necessary energy efficiency requirements to achieve LEED Gold Certification.

“The shop’s service bay doors are more than just your typical garage door. They’re a vital component of the facility’s day-in and day-out operation.”

– Kevin Blalock, AIA, Principal and Founder, Blalock & Partners Architectural Design Studio, Salt Lake City, Utah

Blalock and his team set out to incorporate functional efficiency, sustainability, and address energy consumption and conservation, all while balancing that with their muscle car architectural design concept. “In the end, we were able to manipulate the building’s exterior envelope to allow plenty of daylight while protecting workers from solar heat gain and, in turn, create a more sustainable solution,” Blalock noted.

With daylight and views and reduced energy consumption as key LEED components, the amount of daylight entering the facility

through the full view sections in the service bay doors leads to better employee health and well-being while providing a pleasant working environment.

Hybrid mixed sectional door “LEEDs” to balanced solution

For SLCFM’s facility, Blalock spec’d a hybrid mixed sectional door approach that was instrumental in meeting stringent LEED energy efficiency requirements as well as LEED daylight and views criteria.

Each 14’x16’ door features five Amarr 2042 two-inch polyurethane insulated (R-value of 19.4) pebble-finish steel sections with three Amarr 3552 aluminum full view sections that contain ½-inch high-performance ThermaPro Low-E insulated glass.



The pebble finish is designed to hide occasional dents and other marks that often occur in a high-traffic facility. The ThermaPro Low-E glass works hard to mitigate harsh sunlight, especially on the facility’s south elevation.

With the highest R-value per inch in the industry, due to the density and thickness of the polyurethane insulating foam in the sectional panels, the Amarr 2042 door

sections clearly made the difference between achieving LEED Silver and LEED Gold. The effectiveness of the doors’ seals also contributes to holding in the warmth that the facility’s radiant heat floor system generates (70 to 72 degrees F) during the winter months.

Higher degree of safety

In addition to various daylight benefits that interact with the facility’s highly reflective interior ceiling, walls and floor (which incorporated white pigmented cement), the Amarr 3552 aluminum full view sections also provide service bay technicians a high degree of safety. With the three full view sections placed at the ideal height, technicians can easily monitor vehicles and other traffic moving outside the facility.

“The full view sections give technicians more control over their work environment,” Blalock pointed out. “The ability to see who’s outside while being in such a large facility ensures that personnel knows immediately which vehicles should be there and which ones shouldn’t.”

“The full view sections give technicians more control over their work environment.”

– Kevin Blalock, AIA, Principal and Founder, Blalock & Partners Architectural Design Studio, Salt Lake City, Utah

Blalock said, “Also, due to the doors’ interplay of solid and glass surfaces, drivers can quickly determine if the door is

stationary or in motion as they are approaching or leaving the facility versus an entire full view door which wouldn't have provided the thermal performance we needed anyways."

"Due to the type of glass used in the doors, we don't experience the uncomfortable heat transfer that we experienced at our old facility."

— Greg Nuzman, Director, Salt Lake County Fleet Management, Midvale, Utah

According to SLCFM facility Operations Manager Steve Contratto, each of the bay doors cycle up and down anywhere from five to 10 times each day. "The doors are heavily used, and we really appreciate how quiet they are going up and down, as well as how much outside noise they help keep to a minimum."

SLCFM Director Greg Nuzman added, "Due to the type of glass used in the doors, we don't experience the uncomfortable heat transfer that we experienced at our old facility." Nuzman continued, "That's a real benefit due to the fact the Midvale area hits temperatures in excess of 100 degrees F 15 to 20 days each year."

No more "working in a cave"

Both Contratto and Nuzman agreed that technicians at SLCFM's old facility "felt like they were working in a cave" due to the lack of natural light and the darkness of the interior paint. All of that is history now.

Opting for clear instead of frosted glass in the doors, the facility has not experienced any issues with excessive heat or glare. On the hottest days, the SLCFM facility's interior only reaches 80 to 82 degrees F. When needed, rooftop chillers can drop the interior temperature to 70 to 75 degrees F.

Contratto remarked that the doors' solid sections (20-gauge steel exterior and 27-gauge steel interior) occasionally do take a hit from fleet vehicles. However, he stressed that they hold up well, especially due to their extra-long hinge shaft component which makes the doors very durable. He also explained that the doors' high lift design allows truck beds to fully elevate inside the facility.



Thermal performance key

Designing SLCFM's facility did present a few interior challenges pertaining to door and track placement, including:

- Embedding the doors within the structure for sufficient clearance between structural columns and below clerestory window sill plates.
- Ensuring proper clearance of a double-girder bridge crane system that runs the facility's entire length.

- Locating fire sprinklers below the open doors while all mechanical lighting and other structural components remain above the open doors.

“Amarr doors provided us a lot of flexibility on panel choice and the opportunity to spec just the right type and amount of glass to hit the UV values we needed.”

– Kevin Blalock, AIA, Principal and Founder,
Blalock & Partners Architectural Design Studio,
Salt Lake City, Utah

Blalock explained that he explored various manufacturers, but that he eventually chose Amarr doors due in part to their thermal performance value. “Amarr doors provided us a lot of flexibility on panel choice and the opportunity to spec just the right type and amount of glass to hit the UV values we needed, so the energy component, combined with aesthetics, played a big role in our decision.”



SUSTAINABLE
ENTREMATI**C**

To learn more about how Entrematic works with architects, visit [Architect Resources](#), which also includes information about our commitment to sustainability, energy efficiency and ways to contribute LEED points to building projects. Please also visit [Amarr Commercial Doors](#) to obtain detailed information on Amarr Aluminum Full View Sectional Doors, or contact us at **800-503-DOOR (3667)**.