

Category: 5- Best Building Project—Specialty Contractor (\$2-\$6 Million)

Contractor: Metropolitan Glass, Inc.

Project Name: HCA Swedish Medical Center’s Neuroscience Hospital Expansion and Renovation

An Amazing, Impressive Feat

Imagine constructing two floors onto the roof of an existing hospital building where, directly below the new construction floors, hospital patients are recuperating in what needs to be a serene environment. Expert coordination, solution-oriented innovation and strategic execution were paramount to Metropolitan Glass, Inc. (MGI) successfully completing the Hospital Corporation of America (HCA) Swedish Medical Center expansion project.

HCA Swedish Medical Center’s Neuroscience Hospital Expansion and Renovation project of 77,000sf included the vertical addition of the 9th and 10th floors for 40 patient rooms, as well as the penthouse-floor mechanical area on the 11th floor. The scope also included the infill construction of two floors below the Critical Care Unit for 21,000 square feet of office and shell space, as well as a lobby area.

This Swedish Medical Center expansion was extremely challenging, at the very least. The tower portion of the project utilized a conventional curtain wall system, however, the facility included a focal point portion of vertical expansion. The architect, Perkins + Will, designed that particular area with a structurally glazed system for aesthetic appeal.

JE Dunn chose MGI as the specialty glazing contractor for this project because the project required a contractor with vast experience working in occupied facilities and high-traffic areas, who thrives on developing innovative solutions to project challenges, is reliable and has the professional team in place to complete the work on time and within budget. Based on these criteria, MGI offered the best overall value to the Swedish expansion project.

“We have worked with MGI on numerous projects that have unique challenges, and our experience has always been positive,” said Paul Zubeck, JE Dunn project manager. “MGI jumped right on this project and offered options to overcome logistical and scope challenges.”

Coordination and Safety Led to Zero Lost Time Accidents and Maintained Hospital Business as Usual

Coordination around environmental factors of the occupied hospital building and limited space for construction staging presented the first challenge MGI needed to successfully navigate to complete this project.

The hospital was bustling with traffic, including patients, staff, visitors, construction crews and neighboring businesses. Foot and vehicle traffic was heavy and space was extremely limited. While crews worked vertically on the main tower's roof, it was business as usual in the hospital entry on the ground directly below that tower. The MGI construction team was keenly aware of its surroundings while building the 9th floor addition—those surroundings included the lower floors being fully occupied with patients and staff. MGI's work hours began at dawn each day, with the noisiest work being done mid-day, to mitigate disturbance in patient rooms.

Traffic control was another coordination challenge with this project. MGI had trailers rolling in and out of the project area, delivering pre-fabricated window systems. MGI assigned crew to work as spotters to watch foot and vehicle traffic, maintaining safety and organization during project work. MGI's foreman scheduled crane work with respect to the other trades' work on the project site. When cranes were needed, MGI notified all trades in advance, re-routed traffic and fully enclosed the work area. MGI's foreman strategically planned all crane work to be efficient and be as minimally intrusive as possible.

Another coordination challenge was the site's work space. Considering the occupied space, MGI had extremely limited space for a laydown yard. The work space was small, as well, with numerous trades working on the roof simultaneously. MGI's construction team was acutely aware of surroundings to assure safety. The crew performed safety checks prior to swing stage use, assured tiebacks were in place and that all rigging was tight.

The MGI team completed the Swedish Medical Center expansion project in 6,823 hours and with zero lost-time accidents.

Strategic Planning and Innovative Practices that Warrant Quality Work

The Swedish Medical Center expansion project required an innovative solution to the challenge of successfully marrying up old systems with new systems. The meeting point of these two systems (old and new) had to have a watertight seal to water penetrating the floors and causing mold concerns; therefore, it was imperative that the vertical mullion layouts matched the existing layouts. Throughout the entire project, the team was cognizant of the weather and its potential effect on the building.

The team utilized the Kawneer Clearwall™ Curtain Wall System, allowing them to prefabricate much of the work in the weatherproof and temperature-controlled environment of MGI's warehouse. The system includes a glass retaining mechanism and is designed to reduce installation labor, simplify onsite logistics and offer a safer installation for jobsite crews. Through advanced planning, temperature dips didn't affect the schedule for MGI's team. All of MGI's critical weather seals had to be performed at 40 degrees Fahrenheit or warmer, so the indoor prefabrication work allowed workers to be more productive and efficient with their outside work. The team added all temperature-sensitive outside work on the afternoon schedule, further reducing chances of below 40-degree weather.

Prefabrication Work and Hopscotching were Instrumental to Successful Execution of this Project

A key to MGI's successful completion of the Swedish Medical Center expansion project was the company's prefabrication team. The majority of the glazing work took place in the controlled environment of MGI's fabrication shop. The shop crew applied a four-sided frame to all of the glass units, which required certification and training. Once the products were assembled and inspected, they were carefully packaged and delivered to the jobsite for installation. This work enhanced the quality of the product and the efficiency of the construction team, and also reduced the threat of weather to outside worker safety and productivity.

Another key to successful project execution was MGI's method of completing the work. MGI performed all outside work off of swing stages, using a "hopscotch" and "leap frog" system that allowed MGI workers, as well as all other trades, to access areas of the building as needed for their work. By hopscotching and leap-frogging, the MGI team accessed the swing stage for their

portion of the work, and then allowed another trade to access the swing stage for their portion of the work, and so on. As each participating trade completed their portion of work in an area, the teams dismantled the swing stage and moved it to the next work area.

Throughout this challenging project, MGI's construction, engineering and project management team provided strategic installation techniques that assured safety of workers and passers-by. The team also maintained the schedule through expert coordination. JE Dunn was appreciative of MGI's overall planning, management and execution of the Swedish Medical Center expansion project, referring to their work as an, "amazing, impressive feat."









