



# REFURBISHED EXTERIOR PROVIDES NEW LOOK AND ADDED LIFE TO ARLINGTON APARTMENTS

*The completed work shown here at the rear entrance of the building is one of the four V-shaped quadrants created by the X-shaped building.*

As a group, apartments are some of the oldest buildings in the U.S., with an average age of 66 years, according to SMR Research Corp.'s most recent Commercial Building Inventory. While many of these older buildings are in need of serious refurbishing, apartment owners can be reluctant to disrupt the lives of their tenants with massive repair or reconstruction projects. Sometimes, however, there's simply no choice. In those cases, the apartment owners do everything possible to ensure that the required work is completed as quickly and as unobtrusively as possible.

The JBG Companies, a prominent developer in the DC area, faced that situation a year ago. In 2004, they had acquired the Dominion Towers apartment building as part of a portfolio sale. But the 1950s-era, eight-story building was showing its age. The red brick façade had been laid out originally in

common bond without relieving angles to help carry their weight; as a result the façade was beginning to crack and sag from years of stress under expansion and contraction. But a complete removal of the exterior would mean disrupting the more than 330 individuals and families who live there.

JBG worked with Fox Architects and Kramer Consulting (structural engineers) to develop a restoration plan for Dominion Towers. They chose Manganaro Midatlantic, LLC, to perform the work, which required removal of 16-inch-high bands of brick (five-courses) at each level of the building to reveal the eight-inch floor slab. The contractor's crews would install relieving angles at each floor to help support the brick, and then insert a through-the-wall flashing system along the relieving angles to keep water out of the face of the building. The final step in the process would be the replacement of the five rows

of original red brick with a contrasting white brick that defines the building's exterior with a new architectural presentation.

### Unexpected Complications

While the plans seemed fairly straightforward, construction was just underway, however, when the project team found it had to make modifications.

"The first month was the worst; we hit every issue that we could possibly hit," said Jim Klein, JBG vice president. "There were no flashings in places where we thought there would be, and the slab edge conditions were not per the original documents. In addition, the existing brick was further out of tolerance from the years of expansion and contraction than we had expected."



**The repair work involved removing 16-inch-high bands of brick to reveal the eight-inch floor slab.**

Manganaro also found that variations in the building face required some last-minute adjustments in construction materials and project scheduling.

"There were huge differences in the size of all the structural angles that were needed to support the brick. The job was originally assessed with only two different size angles, but we ended up needing 12 different sizes," said Jonathan Lane, Manganaro's senior project manager. To remain on schedule, Manganaro made extensive building measurements as the project began.

"Although this solution exhausted a lot of schedule time up front, we needed to do that intense exploratory work to make sure that we could expedite and secure long lead materials

in advance," said Lane. "If we had waited to get to each floor and then ordered the materials, it would have taken several additional weeks to receive the angles, and the job schedule and residents would have been substantially impacted."

Another unforeseen difficulty arose when the construction crews had to remove the angles that had carried the brick across the window spans. Because of the way the original angles had been installed, moving them resulted in some cracks in the plaster ceilings and walls.

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*said Jim Klein, JBG vice president*

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"The additional plaster ceiling and wall work introduced more unexpected labor, but we were able to send in patching crews from our drywall product line to complete this work. Controlling the activity with our own resources enabled us to limit the impact on the schedule and to ensure a quality installation with minimal inconvenience to residents," said Lane. About one-third of the apartments needed this additional repair performed.

To save time, Manganaro did much of this work itself, although it did subcontract the installation of custom aluminum doors, column covers, and canopies at the building's entranceways, as well as the modification to the roofing system.

### Reducing Tenant Disruptions

Since JBG wanted to limit the project's schedule—and thus its impact on residents' activities—the construction team adopted a streamlined approach to repairs that allowed it to move through the process quickly. The X-shape of the building formed four V-shaped quadrants, so Manganaro repaired two quadrants at a time. Crews worked in a floor-to-floor sequence, scaffolding two faces of a V simultaneously with platform scaffold systems.

"The flow of work was more predictable. We could let residents know that this week we were going to be on the fourth floor south side of the building so that they could prepare for it. In fact, prior to the start of any work, we partnered with JBG, Fox Architects, and Kramer Consulting to host a resident pre-construction session to inform everyone of what to expect and to provide the opportunity to ask questions and meet



***Manganaro Midatlantic, LLC, took care to protect the building and residents during the work by covering all of the windows in the complex with protective film, covering windows on the floor it was working on with rigid insulation, and installing overhead protection across walkways.***

our team,” said John Livingston, Manganaro’s manager of business development.

Despite the early setbacks, the project seemed back on track until crews reached the eighth-floor parapet.

“The interstitial space, which goes a foot or so above the roofline and about three feet below the roofline, was completely deteriorated,” said Klein.

“The top of the building looked almost like it had been twisted,” added Lane. “Originally, we were supposed to just remove the brick veneer above the windows and replace it. But when we opened it up, we realized that from the head of the windows to the top of the building there were huge voids and structural concerns at the veneer back up; if you took the brick off, you could see into the insulated space above the residents’ ceilings.”

This could have brought the project to a halt if Manganaro had not adopted in the last few years a “One Voice, One Team” approach that allowed it to provide the necessary manpower and expertise immediately.

“Manganaro has a framing and drywall services component, and our project managers are cross-trained,” said Lane, who

had previously done both drywall and masonry projects. That cross-training enabled Manganaro to quickly develop, through additional design engineering, a solution that involved light gauge stud framing to replace the existing masonry-only back up construction.

“The use of light gauge stud framing gave us the ability to adjust the backup system that was needed to reinforce the new brick veneer and accommodate all of the variances within the profile of the existing structure that we were dealing with,” said Lane.

“Within two weeks we had approval from the structural engineer and from Arlington County to proceed,” said Klein. The use of these structural studs rather than masonry saved JBG a few hundred thousand dollars, the project team hours of labor, and the tenants additional weeks of construction activity.

### **Safety Was Foremost Concern**

Throughout the project, members of the construction crews were always aware that they were working on a 98-percent occupied apartment building. They took every precaution to ensure residents’ safety.

To prevent any window breakage, for example, the Manganaro workers covered all of the windows in the complex with a protective film. When crews were working on a floor, they covered the windows with rigid insulation to ensure tenants’ privacy and safety. To protect tenants entering and exiting the building, the company controlled access zones and installed overhead protection across walkways. Work crews carefully maneuvered heavy equipment through parking lots that served 500-plus vehicles.

During the entire eight-month project, Klein said he is aware of only one tenant that formally complained about the construction work. “Other than that, people were pretty happy with the aesthetics of the building,” he added.

The project team members were also satisfied with the way they were able to overcome some serious obstacles to keep the project on schedule.

“It was a very good team environment working with JBG, Fox Architects, and Kramer Consulting,” noted Lane. “Everyone was very direct and transparent as to what they were expecting and striving to achieve.”