

AWARD OF EXCELLENCE

PARKING STRUCTURES CATEGORY

Structural Repair and Renovation of the Plaza Deck and Parking Garage at The Promenade Apartments

MANHATTAN, NEW YORK

SUBMITTED BY SIKA CORPORATION



Fig. 1: The Promenade Apartment Building

INTRODUCTION

Few city addresses can boast of panoramic views that include green trees, views of multiple rivers, ornate bridge spans and picturesque bluffs. Even fewer can claim all those assets in addition to being within walking distance to mass transportation via train and subway that would place you in the middle of Manhattan in less than 20 minutes. Location alone makes this property a preeminent commodity, but before it could be considered a residence matching its excellent surroundings and view, a major overhaul of the building's plaza and parking garage was necessary.

Years of neglect had caused water infiltration throughout the structural decks. Significant deterioration of structural slabs and steel beams had taken place. Areas in the parking garage

were repeatedly failing. The steel beams connecting the pedestrian bridge to the garage had rusted so significantly that the bridge needed to be supported just so people could continue to walk on it safely during repairs.

The renovation of The Promenade Apartments at 150 West 225th Street in Manhattan, New York, was a complete transformation of the former Mitchell Lama building (Fig. 1). Developers purchased the 33-story building in 2013 and completed a full scale refurbishment of the building, including a newly renovated lobby, new security system, an electronically monitored package delivery system, and full renovations of the apartments and hallways. The focus of this project is on the structural repair and renovation of the plaza deck and parking garage.

PLAZA DECK

The building boasts a separate elevated structural deck immediately along the river that runs the entire length of the main plaza, accessible from a staircase that comes down off the main plaza. This veranda places the viewer right alongside the water, albeit 50 ft (15 m) in the air above the river and the Metropolitan Transportation Authority (MTA) train tracks on the ground below.

With active train service nearly 24 hours a day, and with a significant portion of the plaza cantilevering over these riverside rails, the protection of these tracks with the installation of a protective platform was a major work item for this project (Fig. 2). It was on this work platform that full-depth and overhead concrete repairs were performed; new electrical conduit and lighting installed; drain pipes installed, connected, and insulated; and steel cleaned, plated, and painted.

As is the case with many metropolitan buildings, this project did not have a significant amount of space to move materials in or out. From the top level plaza deck, a large-diameter corrugated plastic pipe debris chute ran down the two levels of the garage and onto the ground level below the garage. Once the debris was on the ground level, it was safely loaded into trucks and disposed.

After the concrete topping was removed, the old waterproofing membrane was removed from the structural concrete surface utilizing 3 ft (0.9 m) diameter planetary grinders attached to large dust-collecting vacuums. Structural repairs then took place and new drains were installed. The plaza parapet wall required stabilization, and new parapets and curbs were installed. Next, the new polyurethane, polyester reinforced waterproofing membrane system was applied (Fig. 3).

The design included the installation of a beautifully landscaped plaza (Fig. 4 and 5), which consisted of aluminum powder coated planter boxes throughout the entire space; a playground with compressive play mat; a wood deck with a steel framed pergola; built-in chaise lounge; two large lawn areas; concrete pathways; a modern privacy fence along two sides; and a decorative fencing for ground level tenants with patios. The entire plaza was also fully lamped with sleek, modern light fixtures.

PEDESTRIAN BRIDGE

The steel-framed concrete pedestrian bridge served as the primary entrance for tenants to access the building main lobby. The steel beams connecting the bridge to the plaza structural steel had deteriorated significantly, mainly due to the failed expansion joint between the bridge and plaza, and years of utilizing snow ice melt. The entire pedestrian bridge was deemed unsuitable for service and demolished and removed (Fig. 6). New steel beams were brought in for the elevated bridge spans, and the connecting girder and support column at that corner of the plaza were spliced



Fig. 2: Work platform suspended under the building



Fig. 3: Waterproofed promenade deck along the river



Fig. 4: Planters and landscaping along the length of the plaza



Fig. 5: Play area, planter boxes and landscaping



Fig. 6: Pedestrian bridge demolition



Fig. 7: Concrete placement at the pedestrian bridge



Fig. 8: Tennis court waterproofing membrane



Fig. 9: Traffic coating in the pattern of a basketball court

with new steel sections. The pedestrian bridge was widened to maximize the width of the entry (Fig. 7).

The pedestrian bridge was completed with traffic coating for extended service life. A new aluminum guard wall was installed using anodized aluminum railings and decorative panels to match the ones throughout the plaza. New aluminum light posts were also incorporated into the fence design.

PARKING GARAGE

The parking garage project included full-depth concrete repairs throughout the 100,000 sf (9,290 m²) garage and were executed while maintaining occupancy for the building's tenants. Numerous drains were also added throughout the garage.

Once the structural repairs in the garage were complete, new expansion joints with cover plates were installed at all joint locations. Vertical repairs along the perimeter spandrel beam/curb were also performed, and new bollards and fencing installed. Finally, a traffic coating was installed to preserve the repairs and give the garage an extended service life.

In another area adjacent to the garage, a recreational space was created on one of the structural decks, also located over the train tracks. After removing the existing topping and waterproofing, executing the structural slab repairs and installing new deck drains, the structural deck was prepared for a traffic coating where a custom color (forest green) in conjunction with an accent color (light green) were utilized to designate a full-size tennis court (Fig. 8) and half-court basketball court (Fig. 9).

SUMMARY

This project gave the building a look and finish worthy of its distinctive location. Once completed, residents at The Promenade can now enjoy the outdoors while still being in the middle of the city, all while taking in the extensive water views and natural scenery not common for a Manhattan address, and should provide recreational enjoyment to the tenants for many years to come!

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