

Case Study

Exterior Renovation

Bronx, New York

3800 Waldo Avenue: A Fresh New Look for a Bronx Building's Exterior

In May of 2010, Merritt Engineering Consultants, P.C. was retained by Metro Management Development Corp. to complete an extensive restoration project at 3800 Waldo Avenue located in Bronx, NY. Issues were occurring at the building's roof deck, retaining walls, and parking lot stairways.

Upon recommending and designing the appropriate remedial work to correct the problem conditions, Merritt publicly bid the project and Xinos Construction Corp. was selected to complete the work. The project was to be conducted over a four month period and broken up into four separate phases in order to minimize the disruption to the tenants and allow the parking lot to remain fully functional throughout the duration of the project.

Phase I. The first phase of the project was focused on the repair



Roof: Before Restoration

and replacement of the roof deck above the upper section of the parking lot, adjacent to the building. The existing asphalt atop the roof deck, approximately 6 to 8 inches thick, was extremely porous and allowed significant amounts of moisture to penetrate the roof, through the concrete deck and down to the parking spaces below. Not only did the current conditions prove to be unsafe, but they were also staining the walls and damaging cars below.

After removing all of the asphalt down to the bare concrete deck, the deck was then patched from the topside and underside. The railing base posts were completely repaired and all of the concrete curbs around the perimeter of the roof deck were repaired. The existing drains, placed at the building line, were plugged and abandoned and three new drains were installed in the center of the roof deck. The new draining system specified by Merritt allowed for a slightly sloped roofing surface towards the center of the roof and also prevented water from being pitched towards the building.

Once all of the roofing repairs were conducted, a new 20-year roofing membrane was installed. The new roofing system was fully water tested in order to ensure that it was installed properly and was not allowing water to penetrate the membrane. Finally, once the roofing system was complete, concrete pavers

The information contained in this case history is believed to be accurate and was obtained from sources BES I believes to be reliable; however, BES I does not make any guarantees as to the accuracy of the information.

were installed along the surface of the roof. This will allow the tenants to functionally use this space as well as to provide further protection to the roofing membrane below. The sidewalks leading up to this roof deck were also replaced to allow for the additional height of the new roof.

Phases 2 through 4. The following phases of work were focused on repairing the unsafe conditions that were present at the retaining walls along both levels of the parking lot. These walls were deemed unsafe in the 6th Cycle Local Law 11/98 Report and needed to be repaired within a designated time frame. The spalled and cracked areas were demolished and repaired with Euclid products. Certain cracks were also repaired with epoxy injection and all of the expansion joints were replaced. The rust staining that was present was also removed. Once these repairs had a chance to fully cure and the walls were fully cleaned, they were coated with two coats of elastomeric coating.



All of the existing chain link fencing on the property was in disrepair and needed to be replaced. The fence posts were all chopped out of the existing concrete. Each new post needed to be embedded into the retaining wall at a minimum depth of 18 inches. The new chain link fence was then rolled into place. Varying fence and post heights were required throughout the property based on the existing conditions. Because of the landscaping at the property, maintenance will need to be conducted prevent shrubbery from growing up against the fence, which previously caused fence damage at the property.

All of the existing guard rails located throughout the parking lot were also replaced. They were replaced with new galvanized sections of guard rail that were bolted to existing posts embedded into the retaining walls. These guard rails were only located along the retaining wall which separates the upper parking deck from the lower parking deck. The remaining guard rails were replaced with new rubber bumpers. These new rubber bumpers have been constructed of old recycled tires which not only save the Owner on overall cost, but also provided an environmentally friendly solution.

The two sets of stairways located within the parking lot were also repaired to eliminate all of the trip hazards and provide an economically viable solution to a full stair replacement. Prior to the project, the existing stairs had many unsafe areas and were closed off to pedestrians because of their condition. This stairway patching again was conducted with Euclid products and was meant to provide a 2-3 year window before full replacement should take place.



The repairs and improvements specified by Merritt not only eliminated unsafe conditions on the property, but also provided the tenants with a new functional outdoor space and create an aesthetically pleasing look to the rest of the building. In addition, the repairs have also paved the way for a full parking lot restoration, which will take place within the next two years. These repairs will include asphalt replacement, curb and sidewalk replacement, as well as a full scale drainage system installation.

As Merritt Engineering celebrates their 25th year in business, the firm continues to learn, grow and excel with every restoration project they complete. The successfully completed project at 3800 Waldo Avenue is one case among many that demonstrates Merritt's dedication to providing customized, practical and quality engineering solutions.