

# FAIR PARK ESPLANADE

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**F**air Park is a National Historic Landmark, home to several entertainment and cultural centers. Located two miles east of downtown Dallas, TX, Fair Park is home to nine museums and six performance facilities, including the Texas Vietnam Memorial, Smirnoff Music Centre, Music Hall, and Cotton Bowl Stadium. It comprises 277 acres (1.12 km<sup>2</sup>) of land and has the largest collection of 1930s art-deco-exposition-style architecture in the U.S. The Texas State Fair is one of the state's largest attractions, bringing 3.5 million people to Fair Park annually; they flood through the Parry Avenue gates, past the ticket booths and central tower, and end up near the Esplanade before dispersing throughout the park. The Esplanade is a 700 ft (213 m) long reflecting pool with three fountains and was originally built for the 1936 Texas Centennial building.

After so many years of heavy use, a repair strategy was necessary; this entailed a 5-month scope of work for both roofing and waterproofing the Parry Gate entrance, ticket booths, Central Tower, Esplanade, and pylons.

## UNUSUAL DESIGN AND CONSTRUCTION TECHNIQUES

The repair of the Parry Avenue entrance involved two major innovative solutions: 1) staying within the Texas Historical Commission (THC) requirements; and 2) using a unique method of paint removal.



*Parry Avenue Central Tower being cleaned*

## HISTORICAL CONSTRUCTION MEANS AND METHODS

A registered historical building requires certain approved methods for the remedial process. The Parry Avenue Central Tower had at least four layers of paint and putty caked on the walls and in the crevices. Due to the historical nature of the project, the waterproofing contractor was limited to certain means of chemical removal. No abrasive or high-pressure equipment was allowed, and this presented a challenge: how do you go about removing multiple layers of paint while being restricted from using certain types of chemicals? The short answer is testing every different type of paint stripper available in the market. After sampling multiple paint strippers, two were found that could remove the majority of the paint without damaging the substrate and were also approved by the THC.

The next step in the project was to complete the Central Tower in the shortest amount of time possible. This involved determining the amount of time it took to place the paint stripper on the wall and the amount of time it took to dry—the “dwell time.” After the dwell time, the paint stripper then had to be removed but could only be done so using a low-pressure wash. This too created a problem, limiting the amount of area that could be completed at one time. As a result, the project was broken down into sections. Once the work areas were divided, work began at the top of the tower, where one coat of paint stripper was applied; this was then repeated on the second section. By the time the second section was coated with the painting stripper, it was time to pressure-wash the first section. This cycle was repeated on all sections of the tower until it was completed.

## CONTAINMENT OF LEAD-BASED PAINT

Another key element of this project involved the restoration of the two ticket booths that sit in the front entrance. During initial investigation, it became apparent that both ticket booths had been previously painted with a lead paint. As a result, a method was devised to remove the paint yet keep the toxic material contained for removal. The removal process began by placing a scaffold on each side of the building and connecting the scaffolding to create a walkway all the way around the building. Then a large plastic tarp was wrapped around the building, creating an enclosed “dome” with only one way in or out. By designing this dome, the lead-based paint could be safely abated while

creating a safe place for employees to work outside of the booth. The lead abatement process consisted of water and sand-blasting, which prevented damage to the booths. After the abatement was completed, the employees properly disposed of all debris.

## SPECIAL OBSTACLES

During construction, three major obstacles occurred that had to be overcome: working on a remedial construction project while a completely different project was being performed in the same area, applying several different waterproofing processes, and scheduling and coordinating the work with other trades.

## GREEN LINE DALLAS AREA RAPID TRANSIT (DART) RAIL

The DART's Green Line train station was built at the exact same time work was scheduled to take place on the Fair Park Esplanade. This posed a major problem when it came time to work on the entrance of the park. The main entrance to Fair Park has two ticket booths and one Central Tower. To power-wash and remove paint from the Central Tower and ticket booths, the project superintendent had to make sure that the work did not affect the construction associated with the DART rail project. This process involved making sure that as the lead paint was being removed from both ticket booths, it was being done in a secured fashion. Second, after the Central Tower was coated with paint stripper and ready to be rinsed, containment measures were placed and monitored to ensure that the water coming from the washing process did not escape and affect the work on the new DART rail line. Finally, equipment delivery schedules had to be coordinated with the DART rail project. This included making sure that heavy equipment did not harm their completed DART work, done specifically at all new concrete curbs, sidewalks, and platforms.

## FIVE STAGES OF WATERPROOFING

The waterproofing of the Esplanade fountain involved seven different stages of work. Work began by shot-blasting the concrete slab and grinding all vertical walls and edges to obtain the proper profile for waterproofing adhesion. Next, the vapor barrier was applied—a product that required 24 hours of cure time before any other product could be applied over it. Once the vapor barrier had cured, a waterproofing primer and neoprene flashing were applied. Once the flashing was completed, another 24 hours of cure time was required. The fourth step involved two separate base coats of another type of waterproofing to the primed concrete, which then had to cure for 48 hours. Finally, the process was finished by applying two top coats of waterproofing with 48 hours of cure time between each coat and 72 hours of cure time after final application. Due



*Central Tower after restoration*



*Ticket booth with tarp covering for containment of lead-paint removal*



to this multistep process, there was a great risk of creating significant construction delays. To maximize production and maintain a steady workflow, the development and use of an application schedule was critical to the timely completion of this project; without it, work could have been completed incorrectly, resulting in costly rework and project delays.

## WORKING WITH OTHER TRADES

When work began at the Esplanade, coordination with other trades became critical. The General Contractor began work at the Esplanade by first destroying the original fountain structure. Once this demolition was complete, the process of rebuilding the fountain began. Work began on the east side and progressed in sequential sections until the reflecting pool was reconstructed. As each section was completed, the five stages of waterproofing application were done, as well as the installation of submersible sealants in the fountain joints, cast stone, glass block, and stainless steel channels at the fountain weirs. This process was continued until the entire fountain was completed. Coordination with other trades became critical when the fountain waterjets, electrical wiring, and metal grates were installed in the fountain trenches and pits to keep the fountain watertight and ensure a successful installation.

## QUALITY CONTROL AND PERSONNEL MANAGEMENT

Quality control was the primary responsibility of the waterproofing contractor's site superintendent and job-site foreman. This quality control team was responsible for maintaining job safety and security, along with ensuring the quality installation of products. The waterproofing foreman maintained the quality of appropriate application of all waterproofing products at vaults, planters, and the Esplanade fountain. The restoration foreman at the Central Tower and ticket booths managed the application and removal of sealants and marble joints. It was critical that the building maintain its historical significance and closely reflect its original condition. Safety had to be at the forefront. While



*Ticket booth after restoration*



*Waterproofing the Esplanade fountain and reflecting pool*



Completed Esplanade fountain and reflecting pool

demolition was taking place on the ticket booths and the great pylon roofs, the team had to clearly communicate and coordinate their work to eliminate accidents and damage to the property. The coordination and communication of safety was a key element that ensured that the project was successfully completed on time, under budget, accident-free, and with no lost time.

## SCHEDULING

Project scheduling was another key element that affected the success of this project. As a contract requirement, all work on the Esplanade was required to be completed by mid-September prior to the start of the fall State Fair. This requirement

resulted in a construction time of approximately 32 weeks—a very short construction time frame.

## RAIN DELAYS

As with outdoor coating projects, the restoration team also had to contend with rain. When rain would occur, the coating process would shut down. This was because waterproof coatings cannot be applied to wet surfaces. These surfaces had to dry out before the new urethane coatings could be applied. To use the downtime associated with the rain, other activities were completed by the restoration team. These included various concrete surface preparations—a work scope that was not affected by the inclement weather—that would ultimately contribute to and expedite the work when it resumed the next day.

## Fair Park Esplanade

### OWNER

**City of Dallas Parks & Recreation**  
Dallas, TX

### PROJECT ENGINEER

**Quimby McCoy Preservation**  
Dallas, TX

### REPAIR CONTRACTOR

**Roger O'Brien**  
Dallas, TX

### MATERIAL SUPPLIERS

**All Tex**  
Dallas, TX

**Gaco Western**  
McKinney, TX

### WATERPROOFING CONTRACTOR

**Chamberlin Roofing & Waterproofing**  
Dallas, TX

## SETTING UP FOR THE FAIR

Several weeks before the State Fair opened, car stages, snack booths, rides, and State Fair personnel began showing up and preparing the fairgrounds for the opening of the fall fair. When this process was announced, the schedule became compressed by several weeks, causing the waterproofing contractor to double the team's efforts to avoid any conflict with fair personnel and meet the project completion deadline. Work crews were expedited to increase project manpower, and daily production schedules were continually monitored for any issue that might create any type of delay. As a result of meticulous scheduling, even the surprise of early State Fair personnel did not affect the project, as final touches of paint, sealants, and waterproofing were completed prior to the opening of the fairgrounds.

When work wrapped up at Fair Park in the fall of 2009, the \$782,000 Esplanade restoration project was completed on time, productively, and accident-free. The new fairgrounds were not only watertight at the Esplanade and pylons, but the roofs were also leak-free at the ticket booths and Central Tower.