



New Jersey's Hidden Secrets

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As we step foot onto historic preservation projects throughout the country, the Wu & Associates contracting team knows that there is one constant no matter where we go—all historic structures hold secrets which will come to light once a shovel hits the ground. Although each and every historic site is unique in its story, location, and condition, they all share the common theme of presenting their hidden challenges for us to solve before they may enter the next chapter of their existence. Presented below are some of the secrets uncovered during our adventures in New Jersey.

Trenton Bath House and Day Camp Pavilions

In 2010, the Wu team worked together with Mercer County and their consultants to restore the Trenton Bath House and Day Camp Pavilions, originally built in 1955 and located in Ewing. Designed by Louis I. Kahn, this structure was originally slated for demolition, and was saved through the visionary efforts of Mercer County, the renowned design team, and numerous supporters.

Every feature of the Trenton Bath House was meticulously studied by the design team long before our arrival. Damaged by a half-century of water infiltration soaking into the unprotected concrete masonry unit walls standing underneath the elevated roofing structures, painstaking details for a lasting restoration were provided. These details translated to several unique field endeavors for the Wu team, including the creative reproduction of the original block, the use of thermostatic coatings to prevent future infiltration, the “slap-dash” technique of mortar application, the sourcing of terra cotta elements, and the procurement of sinker cypress wood.



The one significant surprise that arose during construction was what lay beneath the failing concrete slabs beneath the building. Upon removal of these slabs, a high water-table was uncovered as the source for the failure due to the Delaware River flowing just two miles down the road. After extensive analysis, the design team crafted an elaborate solution involving new wells, geotextile fabric, crushed stone, and trenches for storm and drain upon which the new foundation was laid.

A theme inherent to the Trenton Bath House project was the use of technology and innovation in an invisible manner in to ward off the effects of natural elements while preserving Kahn's original design. As a result, the

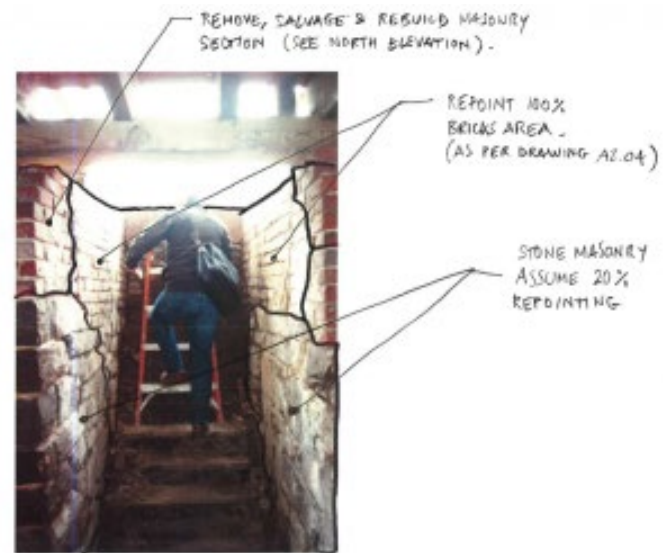
secrets that almost destroyed the structure, both known and later uncovered, have now been imperceptibly addressed to keep the site thriving for the foreseeable future.

Glassboro Train Station

In 2013, Wu & Associates was contracted to restore the Glassboro Train Station located in the Borough of Glassboro. Built in 1860, the station was previously a major transportation stop serving the southern New Jersey area. In 1971, the station closed due to the rise in automobile use, leaving the building to slowly deteriorate into a tiny, forgotten ruin nestled on the edge of an ever-expanding college campus. Recognizing the need to preserve local history and culture, the Borough of Glassboro began a neighborhood revitalization effort to focus on making Glassboro a jewel in its own right, thus beginning the restoration process for the Glassboro Train Station.

By the time the Wu team arrived at the table, numerous stakeholders including federal, state, and local government agencies alongside private rail, designers, and construction managers were already assembled to make this project a reality. From day one, the project was a race against time as the biggest initial roadblock lay in time constraints and team coordination. Due to funding originating from numerous sources, including the American Recovery Act with a congressionally mandated completion date, there was no room for any delays in completion.

Hence, teamwork was actually heightened when unforeseen conditions emerged at the site involving significant decay to the stone masonry foundation walls. These historic walls were exposed to decades of exterior moisture infiltration due to the ditching that occurred on the adjacent railroad tracks when passenger service ceased in the early 1970s. The continued exposure to moisture caused the mortar to deteriorate and wash out, resulting in the remaining stone being effectively dry laid. As the existing foundation required stabilization in order to prevent the building above from shifting, the building was jacked up at key locations to remove and reconstruct the top portion of the foundation wall, to grout a level plate for the building sills, and to repoint the areas below the building.



④ BASEMENT: ELEVATION AT STAIR WDN

Glassboro Train Station basement structural repair plan excerpt

The resulting beauty of the restored train station is now a powerful reminder of Glassboro's past. And one of the buried parts of the story is the unifying force that the potential loss of the site had on motivating all stakeholders to come together to meet each challenge every step of the way to make the project happen.

The New Milford Plant of the Hackensack Water Company

In 2016, Wu & Associates was contracted to stabilize and rehabilitate portions of the New Milford Plant of the Hackensack Water Company, located in Oradell. This former water treatment and pumping plant is located on Van Buskirk Island, with individual facilities built between 1881 and 1911. After use of the site was ceased in 1990, the plant fell into disrepair to the point where Preservation New Jersey included it on the 10 Most Endangered Historic Sites list in 1996. In the ensuing years, numerous parties including preservation groups and

Bergen County banded together to secure funding and public support to keep the New Milford Plant preserved long enough to see a future revitalization.

When the Wu team arrived onto the site in 2016, our mission was to focus on structural stabilization. Many of the repairs involved the installation of new purlins to support the roof rafters, along with the sistering of old purlins. Other work involved slate roofing, brick repair, and window protection.

The surprise came when the existing conditions of the structure were significantly more deteriorated than what was previously documented. Due to the large span of time that passed since the initiation of design years prior to the start of construction, the building was subjected to the relentless onslaught of natural elements which further compromised the structure. Additional work was required for the increased number of purlins needing work; the unique requirements necessary for the slate shingles unknown until the existing shingles were removed; and areas of brick that were failing.



By the end of the endeavor, with the roof structure stabilized and windows boarded up for protection, the Wu team was proud to turn over the New Milford Plant back to the County for the site to draw attention to the next chapter of its story.

The path forward

As Wu & Associates continues its quest to transform communities across the country, we encourage historic site owners and design team members to perform investigations to the greatest extent possible to uncover hidden secrets before the construction phase. The investment in early investigation allows for the appropriate planning for design and funding in order to limit unknowns and realistically execute a project. Unforeseen discoveries often result in delays for decision making, redesign, and funding allocation, sometimes putting the completion of a project in jeopardy. What hidden secrets are hidden in your project, and how much have you done to uncover as many as possible?



Katherine Ng, LEED AP, is a member of Preservation NJ's Building Industry Network. As Vice President of Wu & Associates, Inc., she fosters the growth of the company's award-winning design-build and general construction services nationwide with a project footprint from coast to coast. She may be reached at <http://www.wuassociates.com>, info@wuassociates.com, or 856-857-1639.