Executive Summary

Reconstruction and Revival: SEPTA's 5th Street Station
Category H

5th Street Station is the gateway to "America's most historic square mile." SEPTA prioritized the station — located next to Philadelphia's Independence Mall — as the first of many in a master plan to protect and extend infrastructure along the busiest, most important line in the SEPTA system.

Thorough and highly accurate assessments guided comprehensive station repairs despite many unobservable conditions within a 113-year-old structure. Project leadership aligned dozens of stakeholders, navigating around adjacent and concurrent construction projects, in an underground tunnel with very limited clearances, near electrified rail of the Market-Frankford Line (MFL) subway, at one of the city's most sensitive and trafficked areas, without nearby staging areas.

Sophisticated phasing and sequencing measures ensured continuity of station services, subway operations, and street-traffic activity, all while overcoming the significant utility-reconfiguration and water-infiltration challenges anticipated within a dense, urban area.

The Burns Engineering-led revitalization became a model for the design and construction of structural repairs, architectural renovations, and special-systems upgrades. Engineering-excellence achievements include:

• Performing adaptive, in situ remediation to repair concrete-encased structural steel members and transit-grade materials, including 40 columns, 200 feet of platform edges, and an entirely replaced 1,300-square-foot tunnel completed as part of a stairway reconstruction.

• Designed resilient waterproofing strategies through hand excavation followed by tunnel-structure and stormwater-management upgrades.

• Precisely controlled structural integrity through innovative shoring solutions within constrained spaces.

• Demonstrated collaborative leadership, aligning priorities of two-dozen stakeholder.

• Enhanced street-level safety with new glass headhouses, curb cuts and bumpouts.

• Completed construction on schedule.