



CHALLENGE

ORIGINALLY BUILT IN 1936, THE HOMESTEAD GRAYS BRIDGE NEEDED BOTH STRUCTURAL AND AESTHETIC UPGRADES.

SERVICES

- Civil Engineering
- Environmental Engineering
- Highway Engineering
- Planning
- Structural Engineering

AWARDS

OUTSTANDING REHABILITATED BRIDGE
Association for Bridge Construction & Design (ABCD)


DIAMOND AWARD CERTIFICATE
American Council of
Engineering Companies (ACEC)
of Pennsylvania

HOMESTEAD GRAYS BRIDGE

The Homestead Grays Bridge, located in Homestead and West Homestead, Pennsylvania, spans the Monongahela River and the Waterfront, a 260-acre mixed-use development. The bridge was built in 1936.

The Waterfront, located under the south portion of the bridge, was originally a 1225 housing development (known as the Ward) in 1936. In 1941, the United States Steel Company displaced the homes when

the U.S. Government ordered the expansion of their steel mill to help support World War II. The mill closed in 1986 and the site was demolished by 1998. In 2000, the riverfront property was purchased by Continental Real Estate Companies, who started the redevelopment of The Waterfront.

One of the unique features of the main bridge is the Wichert trusses, developed by E.M. Wichert of Pittsburgh, PA in 1930. This was the first bridge to utilize this type of truss. Since that time, there have only been a few bridges built in the world using this truss design, which lacks a vertical member at the interior supports of the continuous trusses.

ms consultants first became involved with the bridge in 1988, when the firm was selected by the ACDPW to perform an in-depth inspection of the bridge, prepare a detailed report indicating the condition of the structure and develop a method of widening the four lanes.

The latest project involved widening of the roadway from 40' to 46', the replacement of both sidewalks, replacement of the deck and joists in Spans 1 to 5, construction of a PA Barrier (concrete barrier with railing, TL-5A rating), replacement of all expansion dams, replacement or retrofitting of all seismically vulnerable bearings, replacement of the through girders in Span 5, replacement of the floorbeams at Pier 14, construction of ladders and platforms to provide access to the new navigation lighting, replacement of the entire drainage system, steel and concrete repairs, replacement of the overburden at Pier 15 with lightweight fill to increase foundation capacity and reconstruction of the roadway approaches.

All construction work was performed while maintaining two lanes of traffic on the bridge at all times.