



PROJECT PROFILE

Columbus Road Lift Bridge

Engineering Services for Bridge Rehabilitation | Cleveland, OH



OWNER

City of Cleveland

CLIENT

TranSystems

BACKGROUND

The Columbus Road Lift Bridge is a historic span drive vertical lift bridge crossing the Cuyahoga River in Cleveland, Ohio. The bridge was designed by Ralph L. Harding of Cleveland, Ohio, and constructed in 1940 by the Wisconsin Bridge and Iron Company of Milwaukee, Wisconsin.

WJE provided engineering services for all phases of the Columbus Road Bridge rehabilitation project, from inception through completion of construction. The objective of the mechanical design was to maintain the historic character of the structure from a visual perspective, while significantly reducing maintenance requirements and improving overall system efficiency.



SOLUTION

A scoping inspection of the mechanical machinery and electrical systems determined their suitability for continued long-term service and compliance with current AASHTO code requirements. A comprehensive report was then prepared that included a condition assessment of the bridge, rehabilitation alternatives, and associated cost estimates. All work was closely coordinated across disciplines with the engineers responsible for the rehabilitation of the structure, which required major rehabilitation of the lift span towers and complete replacement of the lift span.



The new mechanical design provides for complete replacement of all span support machinery, span drive machinery, and span locks. The new electrical design provides for complete replacement of the bridge electric utility service; new standby generator service; and control system, including all field feedback devices and replacement of traffic gates and traffic barriers. Control system technology utilizes relay interlocking with a programmable logic controller for system monitoring, including capability for remote monitoring and diagnostics. The span drive system utilizes digitally controlled variable speed motor drives.



Construction services included review of shop drawings and requests for information (RFIs), shop inspection of all mechanical fabrications, and field inspection of machinery installation.