MNR Harlem River Lift Bridge

As part of an ongoing effort to protect critical infrastructure, the MNR is currently pursuing methods to protect the Harlem River Lift Bridge (HRLB) by physically hardening the structures in vulnerable areas, providing electronic security systems that limit control and monitor access as well as increased surveillance to detect and deter potential intruders and increasing the fire detection and suppression systems at the bridge.

AG's scope is to perform a comprehensive Threat, Vulnerability and Risk Assessment (TVRA), study and design the ESS solutions to meet the demanding security measures to improve target hardening and consequence management for threats and hazards (accidental or manmade) at the Harlem River Lift Bridge (HRLB).

In addition, AG's scope included the design of an infrastructure to provide power and communication to all the electronic systems on the bridge while connecting all of them through a common backbone to the entire MTA network.

The main power and communication problem faced during the design was that there were many sensors and systems on the bridge that made it impossible to provide power and communication to each single one of them independently. Also, connecting all sensors and systems to the main MTA network individually it was an intolerable task. Besides the impossible physical connections, the cost of such connectivity approach would be tremendous.

Therefore, AG designed a power network with capabilities to bring power to all the systems and sensors from a specific node on the bridge. Simultaneously, AG designed a sophisticated Fiber network to minimize the conduit runs on the bridge while enormously increased the communication traffic capabilities. Lastly, the idea of treating the entire project as node in a much bigger network not only provide engineering benefits but financial ones as well.

Location:

New York, NY

Owner:

MNR

Services Provided:

Electrical

Communications

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