

## Time-lapse tells story of N.Y./N.J. bridge deconstruction

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Building a bridge is a complex process, and deconstructing one as intricate as the Goethals Bridge spanning the Arthur Kill between Elizabeth, N.J., and Staten Island, N.Y., is equally as complicated. The deconstruction process required reversing the order of the original bridge's construction. The bridge, one of the first structures completed by the newly formed Port Authority in 1928, stands 140 ft above the waterway, allowing passage of deep-sea vessels.

Capturing the deconstruction process proved to be a unique challenge, where camera-mounting locations carefully selected for optimal coverage were high above the Arthur Kill and difficult to access. Due to the restricted access, the cameras would need to be reliable, substantially self-maintaining and remain operational in a demanding environment. In order to obtain the highest-resolution imagery available to document each stage for historic preservation and to provide an educational time-lapse movie, the Port Authority of New York & New Jersey (PANYNJ) reached out to the industry experts at [EarthCam](#) who provided the technology and services for the project.

Kiewit-Weeks-Massman, AJV, the design-build team selected by PANYNJ to oversee the bridge replacement project, selected a combination of EarthCam's fixed-position 24 MegapixelCam cameras and robotic GigapixelCam camera technology to document the entire process. Mounting cameras high up on the new bridge superstructure offered the perfect vantage point for the deconstruction of the old bridge. For this application, EarthCam engineers designed and fabricated specialized vibration-isolating mounts to counteract the effect of heavy traffic and bridge motion with superb results. In total, EarthCam placed six construction cameras throughout the jobsite to monitor and time-lapse the four-year project. The cameras include a wiper system to keep the lens clean throughout the documentation process, yielding clear images for the project-end time-lapse movie. The project team also required a portable camera solution and selected the EarthCam TrailerCam, a system that is perfectly suited for road and bridge applications. The TrailerCam is completely portable, enabling the project team to relocate the system to a different area of the jobsite to capture a critical construction event or milestone taking place. The heavy-duty mobile trailers are outfitted with solar panels and a wireless 4G LTE mobile connection, making this a truly autonomous solution. The cameras mounted on the trailer include full pan, tilt and zoom controls, allowing the robotic cameras to stream jobsite activity in real-time, providing the project team with important updates.

The new Goethals Bridge is an outstanding example of the major infrastructure modernizations taking place throughout the country, and how project owners and teams are relying on high-quality construction cameras to document the entire process for historic preservation.

