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Safespan™: Multi-Span Bridge Decking and Shielding

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SAFESPAN™: MULTI-SPAN BRIDGE DECKING AND SHIELDING

THE NEED

Contractors in bridge rehabilitation have been experiencing risks and difficulties associated with their line of work: safety and inspection issues, environmental concerns, business interruption, emergency situations, and rising labor costs. Traditional timber and conventional platform are labor intensive in erecting, and have limited shielding abilities and limited access to the bottom flanges, steel beams, bridge bearings, and concrete piers. More efficient, safer, and economical options of providing access and work spaces in bridge rehabilitation are needed.

FIGURE 1 SAFESPAN COVERED 114,000 SQ. FT. IN ONE PHASE

THE TECHNOLOGY

Safespan™ Multi-Span Bridge Platform System was developed by James Frangos and Lambros Apostolopoulos in 1995 to alleviate the obstacles found in bridge rehabilitation. The system designs are flexible. It uses various methods to connect the platform to the structure, depending on the bridge's configuration, that allow contractors to adjust the platform's height for a desired working clearance. This method enables contractors to solve the limited traffic under-clearance constraints unique to their project.

FIGURE 2 SAFESPAN'S ADDRESSED THE OUTSIDE FASCIA

Safespan's patented cable-suspended platform provides a stable working surface. The platform is supported on cables fastened in equal intervals to the bridge's structural members. Then, steel decking specially configured for the project's scope and weight requirements is attached to the cables, using Safespan's custom-fabricated fasteners. Safespan's decking provides secure shielding, supporting loads up to 200 psf (976.4kg/m²). It completely shields the area under the project from demolition debris and other hazards. Side tarps create a full enclosure. This arrangement not only contains dust and debris to meet environmental regulations, but also protects crews and equipment from inclement weather, allowing work to continue in otherwise adverse conditions. It enables maximum air flow for ventilation, heating and cooling. Safespan essentially brings bridge projects to the ground, allowing numerous spans to be accessed simultaneously. This feature permits multiple trade crews to work concurrently, resulting in significant labor and cost savings. Safespan employs reusable components, custom designed by Safespan's in-house structural engineering staff to meet individual project requirements. Platform installation, redeployment and removal proceed quickly with minimal traffic disruption.

THE BENEFITS

- Accelerates contracting crews' performance with easy installation and removal, providing simultaneous access to multiple work areas
- Stretches contractors' work season by dramatically increasing productivity, thereby reducing time and labor costs.
- Reduces contractor liability by shielding pedestrians and vehicles from hazardous demolition debris.
- Gets contractor's project approach approved by meeting or exceeding Occupational Safety and Health Administration (OSHA) and American Association of State Highway and Transportation Officials (AASHTO) requirements and facilitating site inspections.
- Mitigates environmental issues by retaining dust and debris for easy clean-up and disposal.

STATUS

Safespan Multi-Span Platform System is a patented system with multiple improvements patents pending. It has been used in several painting and rehabilitation projects in U.S., such as:

- Painting project of Robert Moses Bridge across Fire Island Inlet east of New York City.
- Concrete removal and shotcrete rehabilitation project of Veterans' Memorial Bridge in Rochester, New York.
- Blasting and painting project of eight-span bridge in the state of Connecticut.
- Roadway rebuilding project on the upper deck of the Henry Hudson Bridge, New York City.
- Rehabilitation project of the Veterans Homes Memorial Bridge in Minnesota.

POINTS OF CONTACT

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REVIEWERS

Peer reviewed as an emerging construction technology

DISCLAIMER

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