Mount Street Bridge Cable Stay Replacement

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Completed in 1972, the Mount Street concrete bridge is a cable-stayed with a semi-fan system. Located in Perth's CBD, and it functions as an important bicycle and pedestrian crossing over the Mitchell Freeway.

The mast and cable-stay system were identified to be in an advanced state of corrosion, affecting the capability to sustain its structural integrity into the future. For this reason, the bridge required replacement or upgrading, with a minimum impact to the public during the process.

The contractor designed a temporary mast and cable stay structure which consisted of the following elements: 4 sets of temporary cable-stay anchorage connections thru to the soffit of the bridge, taking the bridge load and transferring it through 4 sets of multi-strand cables to a top mast structure, which then transferred the load back thru the existing deck onto a lower steel support tower and into piled foundations.

Bridge loads were transferred in pre-determined stages to maintain stability within the temporary and permanent cable stay system, by progressively transferring the loads off the old permanent cable-stays onto the temporary multi-strand cables.

The old concrete mast was wire cut at the base and removed in its full length with a single crane lift. The new concrete mast was precast in 3 sections and installed on site with vertical stress bars stressing the sections together. This was followed by the installation of the permanent cables and the final load transfer

The project was completed successfully under live traffic without any freeway closures.