



Pattullo Bridge Replacement Project

Bridge Tower Construction

After the main in-river foundation is completed, the bridge tower is built. The tower is 167 metres high, which makes this the tallest bridge in British Columbia. The tower will hold the 80 stay cables that support the bridge deck.



Tower Construction Steps



Foundation pile cap:

First, a concrete cap is poured on top of the in-river foundation. The cap creates a stable base for construction of the tower legs.





Formwork: Next, construction crews build the formwork to support construction of the tower legs. A 5-metre-tall frame, called a 'self-climbing' form, is built for each tower leg. This includes an inner form, an outer form and a steel frame to hold it in place. The inner and outer forms give shape to the concrete when it is poured.



The formwork system has four levels:

1. Upper deck – for installing rebar cages and pouring concrete.

2. Lower form deck – for setting and stripping formwork.

3. Jacking deck – the self-climbing jacks are located here.

4. Trailing deck – for finishing the concrete such as patching.



Concrete Pours: Once the rebar is installed, concrete is poured into the form at the upper deck level using a crane and bucket method.

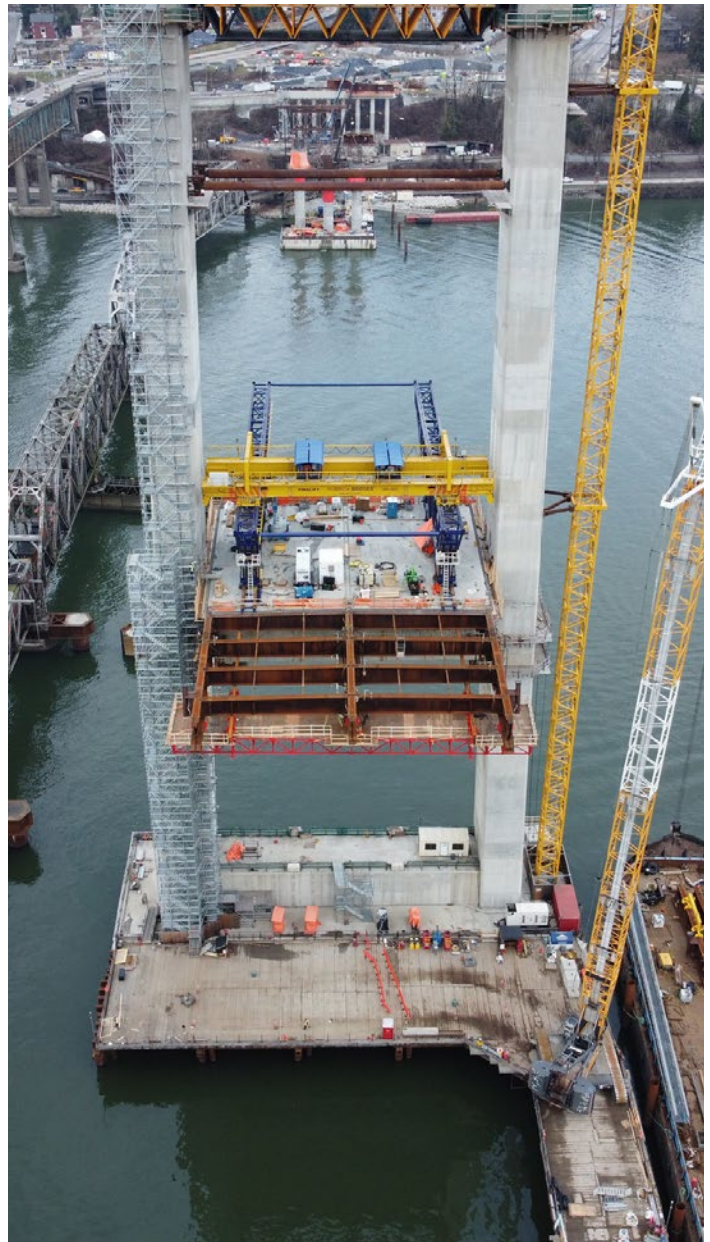
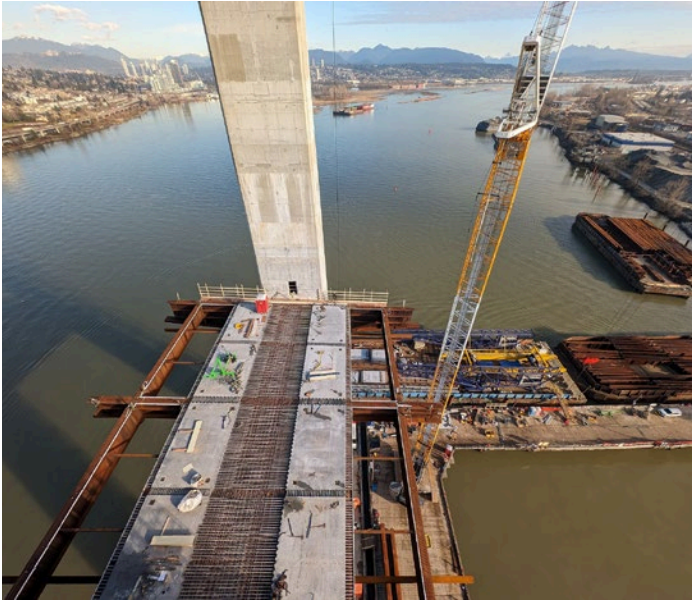
Once the concrete is cured, the form climbs to next level using the self-climbing jacks. Each time the form moves up to pour the next segment, it is called a "jump".

There are 33 jumps for each tower leg, and it takes about 70 minutes to jump to the next section. There is also a walkway, called a "catwalk" that connects the two tower legs so crews can access each side.



Crossbeams: The tower includes two crossbeams that connect the two legs of the tower. The first is 46 metres above the river and supports the traffic deck. The second is 114 metres above the river and provides extra support to the tower.

Watch an animation
of the bridge tower
construction on YouTube.



The bridge tower supports the bridge deck. Here, you can see the bridge deck starting to take shape.

