

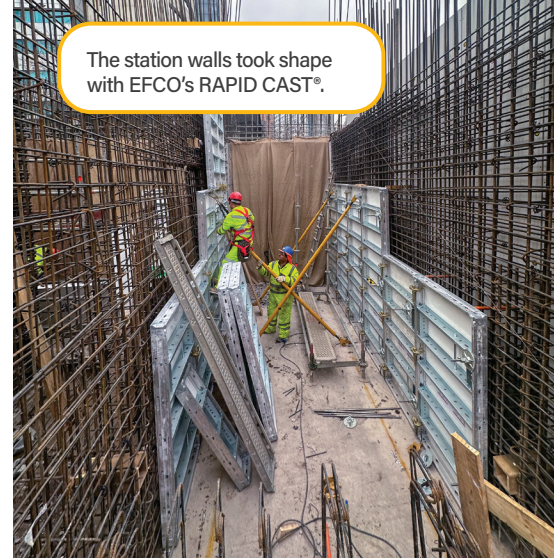


Forming a Cable Car Station Over a River

Santiago, Chile

Connecting a City by Air

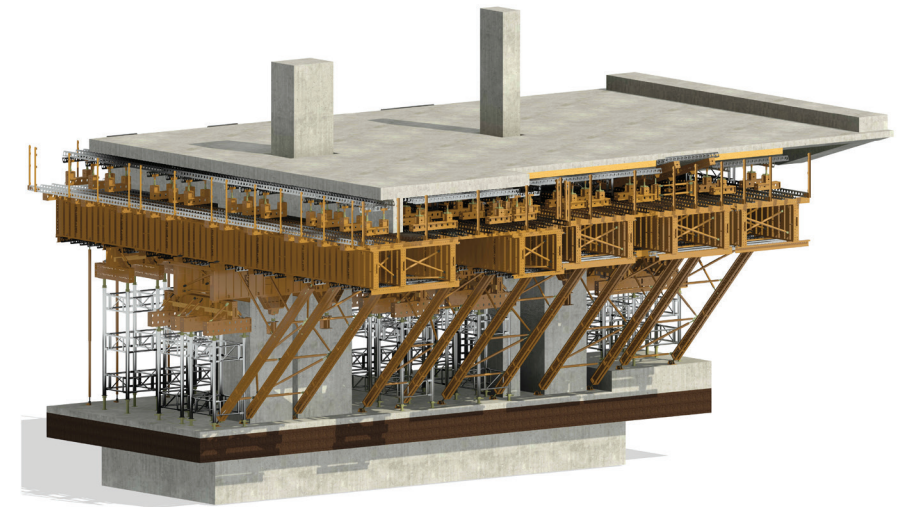
Santiago's Teleférico Bicentenario is changing how people move across the city. The urban cable car runs 3.2 kilometers (2.0 miles) from the Canal San Carlos station to the Metropolitan Park in Ciudad Empresarial, Huechuraba, passing over the Park and connecting the municipalities of Providencia, Las Condes, Vitacura, and Huechuraba. The ride takes about 13 minutes each way. That trip can take 40 or 50 minutes on regular public transit. The system runs 121 cabins, each carrying ten passengers, and moves up to 3,000 people per hour in each direction across three main stations: San Carlos, Metropolitan Park, and Ciudad Empresarial. For the thousands of residents and office workers who commute between downtown and the financial district to the north, it turns a long, congested trip into a short and reliable one. It's the kind of project the city will rely on for decades to come.



The station walls took shape with EFCO's RAPID CAST®.



Elevated slabs formed with EFCO's E-Z DECK®.



EFCO's PLATE GIRDER® spanning system handled what standard formwork couldn't: a platform above moving water with downtown traffic flowing uninterrupted underneath.



ICAFAL Ingeniería y Construcción: A Partnership Already Proven

ICAFAL Ingeniería y Construcción took on the project's most demanding work: building cable car stations in the middle of downtown Santiago, including a station platform that had to extend out over the river. This was the latest in a long line of projects ICAFAL and EFCO have built together, and that history mattered. Both teams already knew how the other worked and how to move quickly when problems came up. But the real reason ICAFAL brought EFCO in was for their reputation for engineered solutions in challenging environments. A platform above moving water, with downtown traffic that couldn't be stopped underneath, wasn't something a standard formwork system could handle. EFCO's PLATE GIRDER® spanning system could. The work came together around a focused set of EFCO products: PLATE GIRDER® for the columns and the spanning solution, RAPID CAST® for the station walls, and E-Z DECK® for the elevated slabs.

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Spanning the River Without Touching It

The hardest part of the job was the platform itself. It had to sit out over the river, where there was no ground to set traditional shoring on. ICAFAL needed a large, stable support, anchored to the columns and strong enough to span the full gap, roughly 25 feet (7.5 meters) of open river.

EFCO's engineering team designed a PLATE GIRDER® spanning solution supported by support brackets mounted to columns. The span was built in five sets, with girders ranging from 12 to 21 feet (3.6 to 6.3 meters) long. EFCO supplied the columns too, 12 PLATE GIRDER® columns carrying the bents through the structure, so the span and everything holding it up were engineered as a single unit. E-Z DECK® formed the station deck on top.

The finished assembly gave crews a platform solid enough to build on safely, reaching across a distance no standard shoring setup could have covered.



Built on the Ground, Placed in One Move

The downtown site barely had room to work, and that constraint shaped how the spanning sections went together. Rather than assembling them in the air, crews built each PLATE GIRDER® section on the ground, faster and safer, then lifted it into position with a single crane pick. One move per section, no piecing it together overhead.

The platform also had to meet the customer-specified clearance height and width, so trucks and cars could keep moving underneath. Without that clearance, downtown traffic would have stopped during construction.

RAPID CAST® handled the station walls, the first time the panel system had been used on a project in Chile. And when questions came up, ICAFAL's crews could reach EFCO's engineering, field service, and warehouse teams directly. That kind of access kept the work moving and helped the contractor finish on time.





The Business Case for Spanning

The spanning solution wasn't just the safe call. It also delivered the better economics. The realistic alternative was buying steel beams and fabricating them on site, and on a jobsite with no spare room, that fabrication would have been a problem on its own. Building the span from standard rentable EFCO components took that work completely off the table. The REVIT drawings EFCO provided did the same on the assembly side, giving the crew a clear model to follow and cutting down the back-and-forth that quietly runs up labor hours. No on-site steel fabrication, fewer crane hours, less rework. Add it all up, and the result is the Lowest In-place Concrete Cost (LIPCC): not the lowest equipment price on the quote, but the lowest total cost once engineering, labor, and schedule are all counted.



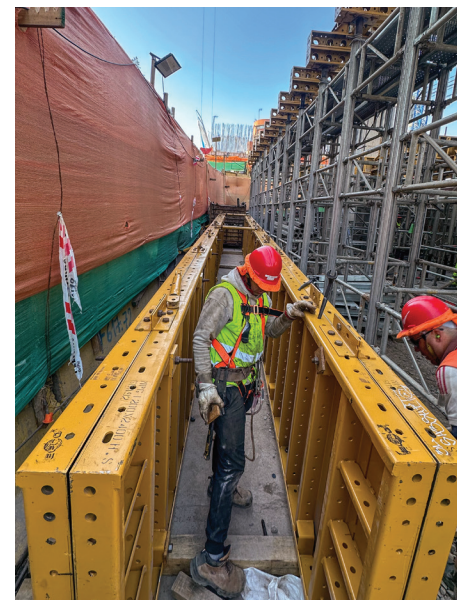
Artist rendering of completed project.



The collaboration remained close throughout, with EFCO ready to update a drawing whenever conditions warranted it.

Why ICAFAL Chose EFCO

ICAFAL chose EFCO for the Teleférico Bicentenario because the job needed more than rented formwork. It needed an answer to a problem that didn't have a standard one. A long history of projects together had already given ICAFAL confidence in how EFCO works, but it was the engineering that made the difference on this one: a spanning solution built for a site where standard methods simply didn't fit. Just as important was how the two teams worked through it. The collaboration remained close throughout, with EFCO ready to update a drawing whenever conditions warranted it. The spanning solution did exactly what it had to: the *PLATE GIRDERS*® and brackets gave the crew something they could trust, and EFCO's engineering and field service teams were reachable whenever questions arose. For contractors taking on jobs where standard methods don't fit, the Teleférico Bicentenario shows what EFCO brings to the table: engineering that turns a difficult site into a buildable one, and a partnership built around the Lowest In-place Concrete Cost (LIPCC).



EFCO EQUIPMENT

PLATE GIRDER®, *RAPID CAST*®, *E-Z DECK*®

EFCO FORMWORK SPECIALISTS - CHILE

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Sergio Malshafsky Field Supervisor

ICAFAL INGENIERÍA Y CONSTRUCCIÓN

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