# Job Story: Shedd Aquarium Renovation – Chicago, IL

## Reimagining a Chicago Landmark

Located on Chicago's iconic Museum Campus along Lake Michigan, the Shedd Aquarium is undergoing one of the most ambitious cultural renovation projects in the country. This multi-year, $500 million transformation—known as the "Experience Evolution"—is designed to modernize the nearly century-old aquarium while preserving its historic integrity and keeping it fully operational throughout construction.

The scale and complexity of the renovation are significant. Work spans all levels of the original 1929 structure, with extensive demolition, reconstruction, and infrastructure upgrades required to support new immersive exhibits, expanded research capabilities, and enhanced visitor experiences.

One of the biggest challenges: nearly all improvements are being executed within the aquarium's existing footprint—an already dense, highly specialized environment housing thousands of live aquatic animals. At the same time, the facility has remained open to the public, requiring careful phasing and meticulous logistical planning to ensure safety, accessibility, and uninterrupted operations.

The redesign begins the moment visitors arrive. A completely reimagined south entrance now serves as the primary entry point, guiding guests through a circular plaza and glass pavilion into a new double-height lobby. From there, visitors are seamlessly funneled into the historic Grand Hall and into revitalized exhibit galleries that reconnect the building's original architectural intent with modern expectations.

Inside, the transformation continues. The iconic rotunda now features a new "Wonder of Water" exhibit, replacing outdated installations with immersive freshwater and saltwater environments. Future additions—including a Kelp Forest, Caribbean Reef tunnel, and Changing Oceans gallery—are designed to bring visitors closer than ever to life beneath the surface.

Behind the scenes, the work is even more complex. New habitats have nearly doubled water volumes in some areas, requiring structural reinforcement—including micropiles extending to bedrock—to support the additional load. At the same time, a vast and intricate network of life-support systems, piping, and environmental controls is continuously adjusted and rerouted as construction progresses, all without disrupting the delicate ecosystems within the aquarium.

Delivering this level of transformation while maintaining operations is no small feat. It requires not only visionary design but also execution partners capable of working with extreme precision, adaptability, and respect for the environment surrounding them.

**Precision Under Pressure: Chicago Cut Concrete Cutting's Role**

At the heart of the Shedd Aquarium transformation was a non-negotiable requirement: every structural modification had to be completed without vibration, disruption, or risk to the thousands of aquatic animals housed within the facility. Traditional demolition methods such as jackhammers or breakers—were not an option. Even minimal vibration had the potential to negatively impact sensitive species.

This was not a typical demolition project. It was a surgical dismantling of a nearly 100-year-old historic structure—executed while preserving structural integrity and allowing the aquarium to remain open to the public throughout construction.

Chicago Cut Concrete Cutting was selected by Pepper Construction, the project's general contractor, not only for their cutting capabilities, but for their proven ability to perform in highly sensitive, complex environments.

Beginning in October 2023, Chicago Cut mobilized on-site under the leadership of President Tiffany Phillips and Vice President Bob "Hops" Hopkins, who also estimated the project and helped define its scope. The team quickly became a critical partner, with Brandon Lindell stepping in early as Project Manager to guide execution through its most demanding phases. In the field, Matt Koch led cutting operations, supported by a highly experienced crew including Ivo Arnauskas, Kurt Adamowicz, Tony Iacono, Rich Arceneau, Mike Dill, and apprentices Adam Fueling and Nick Cywinski.

The Chicago Cut team's role extended far beyond execution—requiring constant coordination, problem-solving, and disciplined precision. Despite the scale and technical demands, safety remained the top priority, achieved through rigorous procedures, proper equipment selection, and a commitment to excellence. Over more than 500 days of work, the project was completed entirely accident-free

From day one, the approach was clear: eliminate vibration and maximize control through advanced cutting methods. Operating within an active aquarium added another level of complexity. Crews worked around water, live exhibits, and critical life-support systems, where slurry control, cleanliness, and environmental containment were essential. Precision cutting significantly reduced disruption and rework—critical in a setting where even minor contamination could impact delicate ecosystems.

To achieve this, Chicago Cut relied on Pentruder wall, wire and chainsaws along with ICS guidebars, diamond chains, and diamond wire; equipment engineered for high-performance cutting in the most demanding conditions.  Some of the most challenging elements included massive concrete beams embedded with early manufactured steel I-beams constructed from riveted angle iron and plate. Large structural components—some measuring up to 17 feet long, nearly two feet thick, and weighing over 13,000 pounds—were carefully segmented before being safely removed via crane. In many cases, entire tanks were cut into manageable sections, requiring precise coordination across teams to ensure safe lifting and removal.

As Hops noted, "In my opinion, this project could not have been completed without the Pentruder set-ups. This was demolition at its most refined—true surgical precision. The nearly century-old concrete proved exceptionally dense, unpredictable, and difficult to cut. Many structural components had been under load for decades, storing internal tension that was released during cutting. At times, this energy would pinch blades and stop cuts instantly. Despite these conditions, the equipment performed flawlessly without a single breakdown."

The work demanded constant adaptability. Crews modified and removed original aquarium tanks dating back to the 1930s, along with heavily reinforced structural elements. With limited documentation available, teams relied on GPR scanning, field experience, and real-time decision-making to guide each cut. "Working inside a structure that is nearly 100 years old carries a certain weight," said Hops. "This wasn't demolition—it was carefully dismantling a piece of Chicago history-with respect for the people who built it."

The team also enabled key project milestones by cutting roof and skylight openings to allow crane access for large-scale removals—often working extended hours and six-day weeks to maintain schedule. One standout moment came after portions of the main tank slab were removed, allowing sunlight to enter for the first time in more than 90 years. "It felt less like tearing something apart and more like opening it up—giving it a chance to breathe again," Hops recalled.

Throughout the project, collaboration with Pepper Construction remained seamless. Close coordination across sequencing, structural shoring, and lift planning kept work progressing efficiently despite the complexity.

The impact of Chicago Cut's work did not go unnoticed. As Tim Baldocchi, Project Executive at Pepper Construction, stated:

"This work could not have been successfully performed by many of the cutting companies in the Chicago area. The professionalism and skills of your technicians, and the quality of your equipment, were monumental to the success of this project. With almost no breakdowns on your equipment, we were able to keep production at a high level."

On a project defined by constraint and complexity, Chicago Cut Concrete Cutting delivered with precision, reliability, and professionalism—demonstrating that even the most challenging environments can be transformed with the right expertise and approach.

**The Outcome**

The Shedd Aquarium renovation represents a rare combination of historical preservation, technical innovation, and operational complexity. It demanded precision at every level, from design to execution—and required partners who could adapt, collaborate, and perform under pressure.

For Chicago Cut Concrete Cutting, it stands as a defining project.

From removing century-old tanks to cutting massive structural elements within a live environment, their work laid the foundation for the next generation of exhibits and experiences at one of the world's most recognized aquariums. It wasn't just about cutting concrete, it was about enabling transformation. And on a project where every detail mattered. Chicago Cut delivered exactly that.