

Case Study

Office Tower Surrounded by Rail Lines Ensures a Premium Acoustical Environment

The team overseeing the development of a new ultramodern office space in downtown Chicago wanted to ensure that the 52-story River Point tower would not only maximize the panoramic views of the city and the Chicago River but also deliver a premium experience its future tenants would expect.

Hines, which was the developer, owner, and property manager of the site, wanted to ensure that the 1.3-million-square-foot tower would provide opportunities for tenants to connect professionally and access state-of-the-art services to make their everyday lives happier, healthier, and more productive. Trinity Cerami, which had already partnered on several developments with the project team, was engaged to provide acoustic consulting services for the site.



Challenge

The developer of an ultramodern riverfront development wanted to provide panoramic views and a premium experience for tenants while mitigating the acoustical impact of multiple commuter and freight lines below and adjacent to the building.



Solution

Cerami assessed the noise and vibration impact of the rail lines as well as the building's mechanical systems and provided recommendations for comprehensive acoustical solutions for the façade and other aspects of the tower's design.



Result

By partnering closely with the project team and advocating for prospective tenants, Cerami helped ensure that the tower would meet the acoustical needs of its future occupants.

Challenge

The unique location and architectural design of River Point posed several acoustical challenges. The office tower lies above several rail lines in addition to Chicago's rapid-transit system—the L—which travels along the glass façade of the building. The tower also had highly customized mechanical systems, which can impact acoustical requirements, directly above the most valuable office space in the building—the top floor.

Solution

Cerami was engaged to work on core and shell design on the tower, with a specific emphasis on evaluating and addressing the vibration and airborne noise of the trains. Because Cerami had already worked extensively with the project team on other sites, the teams were able to partner with a high level of trust and confidence.

Cerami also played a key role in balancing the expectations of future clients who would lease the space with the needs and preferences of the developer. With the office space slated to go for a premium price—and the most expensive square footage located directly under the loudest pieces of mechanical equipment in the building—the project team needed to ensure that the acoustical experience would deliver on expectations, and Cerami served as a liaison between all the parties.

Result

By engaging Cerami, the project team was able to leverage Cerami's extensive experience in acoustics as well as the team's collective experience working together to hone in on the issues that would have the greatest impact on the River Point tower. A key focus was on the glass used for the building's façade; due to the proximity of the L, the project teams wanted to ensure that the glass used would deliver the appropriate level of reduction in sound desired. Cerami helped the project team select the right glass, of the appropriate thickness, to preserve the panoramic views they wanted while reducing noise from the trains.

Cerami also helped ensure that the noise from the building's mechanical equipment had no negative impact on the acoustical environment of the top floors of the building. In addition to the mechanical equipment, River Point had a building maintenance unit (BMU) with a boom and piston that was designed to operate faster than what was typical of BMUs. The fast-moving piston, however, created acoustical problems 15 floors below—another unique challenge Cerami helped the project team solve. The end result was a comprehensive acoustical solution for the building that mitigated the impact of the nearby train and elevated rail lines, for an acoustical performance that would satisfy even the most demanding of future tenants.

About Trinity Consultants

Trinity Consultants, a leading global environmental consulting firm, provides services and solutions in the EH&S Regulatory Compliance, Built Environment, Life Sciences, and Water & Ecology markets. Founded in 1974 Trinity has the technical expertise, industry depth, and capabilities to help clients achieve their goals across the natural and built environments.