Architectural Consulting Engineers

837 Hayes Avenue
Oak Park, Illinois 60302
Phone: 708-524-0272
Email: mark@ace-oakpark.com
Website: www.ace-oakpark.com

Emil Bach House, Chicago, Illinois

Architectural Consulting Engineers (ACE) was the mechanical engineering consultant for the minor renovation and restoration of the Emil Bach House in Chicago, Illinois. The house, designed by Frank Lloyd Wright in 1915, has been extensively remodeled in the past and this restoration returned two areas which were currently enclosed interior spaces back into the original exterior porch areas designed by Wright. When the house was renovated and the new conventional HVAC systems were installed, an issue of air distribution to the upper floor was created. The project was to address this conditioning concern with modifications to the existing system.

After a thorough investigation, without destroying aspects of the original construction on the main level, there were limited options to resolve the conditioning issues on the upper floor. The one method that made sense used the existing chimney flue space currently used by the furnace and water heater flue to serve as an additional air flow path to the upper floor. This solution would of course require a new forced air cooling system that did not require use of the chimney flue. The geothermal option became a front runner in this evaluation since the new owners already had a commitment to making the building as energy efficient as possible within the framework of the historic building envelope. After a subsequent feasibility study, it was decided to proceed with the replacement of the existing conventional HVAC system with a new geothermal system.

The building currently sits on a double lot but the owners wanted to maintain lot integrity, so the geothermal loop field will be located in the very tight back yard space. The added benefit of the geothermal system for this tight urban back yard is the elimination of the conventional condensing unit from the backyard patio area. This allows this outdoor space to be used whenever the residents like without having to be compromised with the equipment noise or the visual intrusion that would otherwise be there. As a historic structure built before the invention of mechanical cooling systems, returning this outdoor space to the quiet peaceful space it was when Wright designed the house, while still affording the occupants a environmentally comfortable interior space is the perfect combination of past and future.

This project is currently completed and fully operational.