



Charles Gates Dawes House, Evanston, Illinois

Architectural Consulting Engineers (ACE) was the mechanical engineering consultant to AltusWorks, Inc. for a Building Condition Assessment at the historic Charles Gates Dawes House in Evanston, Illinois. This building was declared a National Historic Landmark in 1976 and currently houses the Evanston History Center. The house was built in 1894 and was designed by Henry Edwards-Ficken. Charles Gates Dawes was Vice-President of the United States under Calvin Coolidge, a WWI Brigadier General, and a Nobel Peace prize winner.

As part of the assessment team, ACE was responsible for a comprehensive review of the building mechanical, electrical and plumbing (MEP) systems. ACE performed an extensive field survey of the existing conditions of these systems, reviewed available documentation of the original and current systems and identified system deficiencies that needed remediation on a prioritized basis.

Additionally, ACE performed a feasibility study that looked at adding air conditioning to this historic structure. This included identifying reasonable methods to implement this system upgrade while minimizing the disruption to the historic fabric of the building. One important aspect of adding air conditioning to structures which were never intended to have this technology is to implement a system that can assist in simultaneously controlling temperature and relative humidity at levels appropriate to the historic nature of the building and the collections displayed and stored on site. There was also an additional interest in finding the most cost-effective, yet energy efficient system. The result of the feasibility study determined that a new ground-source heat pump system was not only feasible, but after energy savings were taken into account, this system would pay for the increased installation cost within a very reasonable timeframe and could then offer the History Center an economical system to operate throughout the balance of the system life.

As a follow-up to the condition assessment, AltusWorks, Inc. and ACE were further commissioned to develop final construction documents for an electrical system upgrade throughout the house and a ground-source heat pump based HVAC system for the building. The project is completed and operating as of January 2014.