MIXED-USE PROJECT PROFILE

THE EBELL OF LOS ANGELES

- LOS ANGELES , CALIFORNIA

CHALLENGE

Opened more than a century ago, The Ebell of Los Angeles and the accompanying Wilshire Ebell Theatre participates in and encourages the educational, cultural, and social growth of the Los Angeles community. The Ebell works with a wide range of artists and promoters from around the world to bring performing arts to the diverse population of the city. Since 1927, the complex has been owned and operated by the Ebell of Los Angeles women's club and was added to the National Register of Historic Places in 1994, solidifying its status as an iconic building.

With a variety of spaces within the structure, The Ebell of Los Angeles houses a performing arts theater, office space for staff, and smaller rooms for special events. Since its opening, the Ebell Theatre has hosted musical performances and lectures by world leaders and top artists, including the likes of Judy Garland, Igor Stravinsky, Stevie Wonder, Michelle Obama, and many others. This building not only holds a special place in the hearts of Los Angelenos, but also to theatergoers who appreciate a grand, iconic performance center.

With the need to replace an old, inefficient cooling tower and chiller system that only conditioned the theater space, The Ebell of Los Angeles' management team sought a new innovative HVAC solution to address the full needs of the theater and occupants throughout the larger complex.

CRITERIA

The facility management team required a versatile system that would both respect The Ebell of Los Angeles' recognized status on the National Register of Historic Places and meet the theater's needs to cool, heat and dehumidify the front and back stage areas. Additionally, the system needed to provide air conditioning for the building's event hosting spaces, which the old system did not provide beyond the theater.

The new system needed to maintain the aesthetically appropriate historic qualities of the landmark property while delivering high performance and enhanced energy savings. A key requirement for the new HVAC system was design flexibility. The Ebell of Los Angeles' unique architecture presented a substantial challenge due to the structural difficulties of installing outdoor units on the roof of the building. This meant the new system would have to be flexible enough to fit in two places – the confines of the basement, where the old chiller was housed, and discretely around the exterior of the theater.

Finally, due to the varying occupancy throughout the entire property at different times, the system needed to effectively condition each space with a wide range of heat loads and provide effective dehumidification to the cavernous theater space.

SOLUTION

After carefully evaluating the criteria, the building's General Manager and Chief Operating Officer Philip Miller, in conjunction with mechanical, design-build firm Athena Engineering, designed an efficient and seamless solution that would allow for occupant comfort in the theater and event spaces.

Each area of the complex experienced fluctuations in occupancy on a daily basis. For example, the theater could house a large audience one day, and then sit empty for days in between scheduled events. Therefore, due to the various loads experienced on a nightly basis, the amount of moisture and body heat had to be taken into consideration and managed with a sensible solution.

After carefully reviewing the requirements, DMG Corporation, the project's HVAC Equipment Solution team, recommended LG AHU Conversion Kits paired with Multi V™ 5 Variable Refrigerant Flow (VRF) condensing units. LG's industry-leading VRF technology was selected because it excels at sensible cooling and the modularity of the design enables the overall system to properly condition the various spaces throughout the theater despite the heating and cooling load changes. Prior to installing LG, the Ebell maintenance team had to use large and noisy portable air conditioners to keep the rooms cool. Now with LG's VRF technology, the spaces are quickly and quietly conditioned for optimal guest comfort.

Due to the unique aspects and structure of the building, Athena Engineering designed and installed a custom-built system that replaced the old chiller structure with LG's condensing units,

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- RICHARD CHIERA,

EXECUTIVE VICE PRESIDENT, ATHENA ENGINEERING

which were easily installed on the exterior of the theater. The new units feed into LG's AHU Conversion kits that are housed in the theater's basement. The AHU Conversion Kits, consisting of EEV kits and Communication kits, are able to communicate with coils stacked within the new custom AHUs to drive the temperature of the coils lower to effectively dehumidify and condition the air to increase comfort. Additionally, LG's MultiSITE™ Communications Manager was installed to allow the LG systems to communicate with third-party controls for seamless system management.

"As the sun-load hits this massive concrete structure, it basically stores all of the heat and releases it into the space," noted Richard Chiera, executive vice president, Athena Engineering, "We needed a system that could handle this. With LG, we can harness the power of VRF to ramp the system up rapidly and get to temperature in only a couple of short hours." Ultimately, the basement and outdoor space behind the theater were used to house the LG AHU Conversion Kits and 4 Multi V 5 VRF systems, comprised of 12 modules.

"With our old chiller system, the various spaces throughout the property would experience a warm, swampy atmosphere and when you're hosting a special event such as a wedding, that's not a good thing to happen," said Philip Miller, "Now with LG's new system in place, we can easily set individualized temperature settings for each room to create peak comfort for our occupants throughout the entire property – whether that's guests in our theater or in clubhouse rooms."

RESULTS

For nearly the same initial cost as a traditional system, with greater savings and overall efficiency over its lifespan, The Ebell of Los Angeles now has a highly reliable, energy-efficient HVAC solution to deliver comfort and convenience for its occupants.

"Ultimately, the LG Multi V 5 outdoor units and AHU Conversion Kits allowed for concrete duct design that worked with the existing ductwork to deliver an energy efficient and flexible HVAC system." LG's advanced control options gave Athena Engineering an easy way to integrate the VRF system with a third party control package enabling the owner to have seamless oversight from a central location." Jordan Jones, sales engineer, DMG corporation added, "LG's VRF system gave us the capabilities to meet all of the demands we were navigating in this complex installation process. If you are trying to identify a system that is efficient, compact and ultra-responsive with great controls, LG just fits the bill for these types of projects."

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