



MULTI-FAMILY RESIDENTIAL RESIDENTIAL PROJECT PROFILE

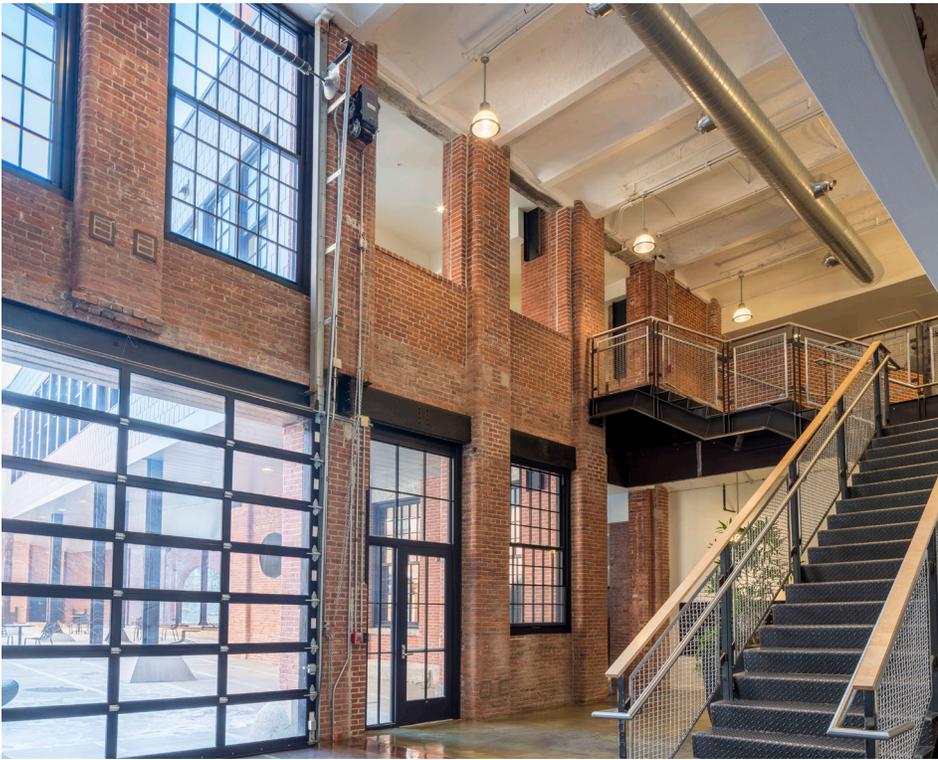
SHARPE BUILDING AT THE FOUNDRY

– PROVIDENCE, RHODE ISLAND

CHALLENGE

Originally built in 1872, The Foundry has a rich history dating back more than a century. Once the former manufacturing campus of industrial powerhouse Brown & Sharpe, the 13 brick buildings located on 26 acres at the edge of downtown Providence, RI have been meticulously restored into a mixed-use complex, which bridges the old and new.

In the middle of the sprawling complex is the Sharpe Building at the Foundry, which served as a mill during the building's manufacturing years. The goal for the renovation of the 157,500-square-foot, six-story building was to develop 196 loft-style luxury residences. Placed on the National Register of Historic Places in 2003, the Sharpe Building required a renovation that upgraded the functionality of the building while preserving the notable architecture.



CRITERIA

The project team required an HVAC system that would both retain the Sharpe Building's unique historic character, while at the same time provide young professionals migrating to Providence's urban center with modern comfort and conveniences. Therefore, the team looked for a system that was energy-efficient, aesthetically pleasing and, equally important, quiet.

SOLUTION

The project's mechanical contractor, Peregrine Mechanical, Inc., turned to Trumbull Campbell Associates to help them design a super-efficient solution that would allow for individually-controlled heating and cooling in the building's mix of studio, one- and two-bedroom units.

A traditional water-source heat pump system was originally specified for the project, but

the rapid on-off cycling of compressors and fans can be noisy, and the system would not be able to match the cooling or heating loads without broad space-temperature swings—a problem for a luxury residential building.

After carefully reviewing the requirements, Trumbull Campbell Associates recommended installing the LG Multi V™ IV VRF heat recovery system. Using LG's VRF (variable refrigerant flow) systems would preserve the architectural integrity of the historic building, while addressing space considerations by running small refrigerant lines throughout the building without using bulky ductwork.

In addition to the small refrigerant lines and compact equipment, the LG Multi V IV does not require a large mechanical room. In turn, the Sharpe Building was able to repurpose that space for amenities for the residents including a gym and a theater. Additionally,

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BY USING INDIVIDUAL ZONES, THE LG MULTI V IV SYSTEMS ONLY RUN WHEN THERE IS ENOUGH DEMAND, AND THEN BALANCE THE LOAD REQUIREMENTS ACROSS ALL SPACES TO USE ENERGY MORE EFFICIENTLY.

on a large portion of the roof that would have been occupied by a conventional system, the Sharpe building created an outdoor space overlooking downtown Providence for the residents.

To create a comfortable and appealing indoor environment, the Sharpe Building features a mix of indoor units including ceiling cassettes and wall-mounted units, depending on the location. Selected for their minimal noise level, the LG indoor units provide precise temperature control while operating at library sound levels. By using individual zones, the LG Multi V IV systems only run when there is enough demand, and then balance the load requirements across all spaces to use energy more efficiently. The system provides further energy efficiency through the heat recovery feature as warm air removed during cooling is redistributed to the zones that need it, rather than discharging it to the outdoors.

RESULTS

The energy-efficient LG Multi V IV VRF system met all the Sharpe Building's criteria with

flawless performance since the building opened in 2015.

"The building owners tell us they are experiencing significant cost savings per square foot operation," said Eric Peters, Regional Sales Engineer, LG Air Conditioning Technologies.

For nearly the same cost as a traditional system, the Sharpe Building now has a highly reliable, stable HVAC solution that provides energy efficient comfort for residents.