



FUTURE-PROOFING THE BUILT ENVIRONMENT WITH HYDRONICS

THE VERSATILE AND ADAPTABLE SOLUTION
FOR TODAY AND TOMORROW

USC Village

Los Angeles
Bell & Gossett rep:
Dawson Co.

The \$700 million USC Village, which opened in 2017, is the largest mixed-used development in University of Southern California history. The six-building complex includes student housing for more than 650, along with 100,000 square feet of retail space, restaurants and a dining hall. HVAC contractor Limbach Co., and B&G rep Dawson Co. supplied the B&G pumps for the development's 3,000-ton central plant. Featured pumps include the all-purpose Series e-90 close-coupled in-line mounted pump; the space-saving, versatile and high-performing VSX double-suction split-case pump; and the e-1510 base-mounted end-suction pump with an extensive efficiency profile.

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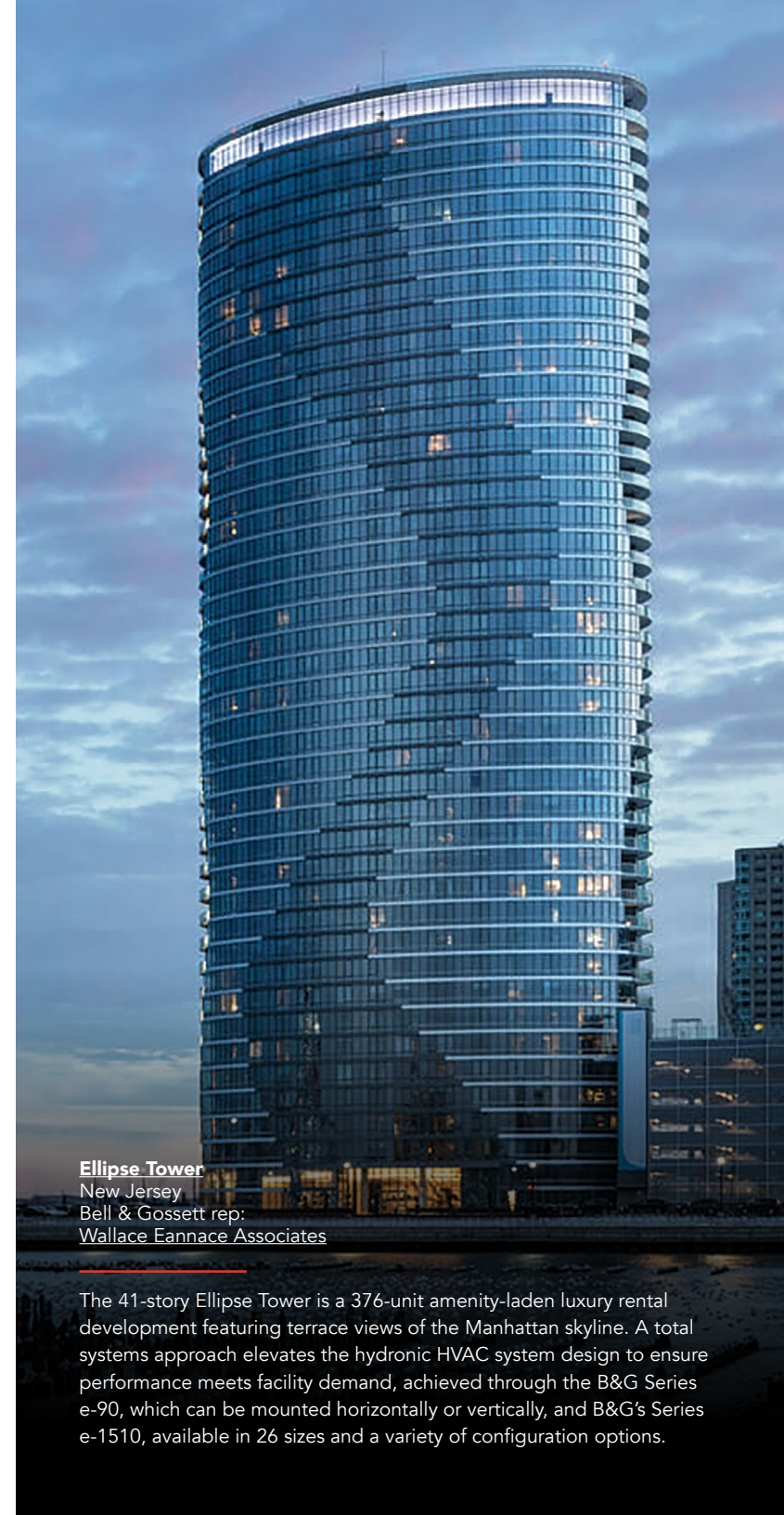


PRIORITIZING SUSTAINABILITY

As the commercial building sector navigates decarbonization, industry professionals have an opportunity to decrease the environmental impact of the built environment.

Not only do HVAC systems account for nearly half of the energy used in commercial buildings, they also fall in the top five sources of greenhouse gas emissions (GHG). That's why, as part of Bell & Gossett's ongoing commitment to sustainability and to building better, reevaluating HVAC system design is a growing focal point to address modern commercial building challenges.

With growing interest in renewable energy sources like solar and geothermal, building owners and designers are recognizing that hydronic systems provide the ideal distribution system to enable these alternative technologies to perform.



Ellipse Tower
New Jersey
Bell & Gossett rep:
Wallace Fannace Associates

The 41-story Ellipse Tower is a 376-unit amenity-laden luxury rental development featuring terrace views of the Manhattan skyline. A total systems approach elevates the hydronic HVAC system design to ensure performance meets facility demand, achieved through the B&G Series e-90, which can be mounted horizontally or vertically, and B&G's Series e-1510, available in 26 sizes and a variety of configuration options.

MAKING THE CASE FOR HYDRONICS AS THE SUSTAINABLE SYSTEM OF CHOICE

FUTURE-PROOFED FLEXIBILITY

Future-proofing buildings, or specific systems within them, equates to extending their lifecycle and usefulness. Longer lasting equipment that continues to meet the changing needs of occupants reduces costs and improves ROI.

Future-proofing focuses on flexibility to handle changing standards and occupant needs, scalability for expansion and the ability to maintain equipment efficiency.

With the HVAC market moving toward heating and cooling using renewable-sourced electricity, gas-fired boilers could be phased out within the next 15 years. Water-sourced heat pump systems can be a complete opportunity to offer an all-electric comfort system, as they can be directly swapped with conventional gas boilers, which means there is no need for costly retrofitting beyond the heat pump installation.

Even while hydronic systems are widely recognized for their energy-efficient and future-proofed properties, making the case for hydronics as the sustainable system of choice requires an understanding of its pros and cons over other HVAC system design. With HVAC systems dictating a substantial amount of the overall energy use of commercial buildings, it is critically important to evaluate varying system-to-system costs before installation.

While it can be difficult to accurately compare systems as they are applied in an actual building, industry tools like the Hydronic Industry Alliance's Building Efficiency System Tool ([BEST](#)) are credible ways to verify the efficiency of different styles of HVAC systems. BEST is an interactive commercial building system efficiency comparison application that evaluates energy performance, first cost, lifecycle cost and more for all major types of HVAC systems. The latest release includes groundbreaking new features that address emerging needs within the industry like the ability to compare projected costs and energy usage for all HVAC systems, as well as hot water consumption in any building based on what is known — all before money is spent on selecting HVAC and water heating systems.

Along with tools like BEST that enable efficient HVAC system design, Bell & Gossett products continue to meet the highest industry standards for demonstrated hydronic HVAC efficiency. For instance, Part Load Efficiency Value (PLEV) is one criteria set forth by Bell & Gossett that helps HVAC system designers select pumps based on real-world system demands to ensure the most efficient hydronic system performance. [Industry studies like Xylem's comparison of a range of HVAC systems](#) to determine the most efficient heating and cooling method also routinely demonstrate hydronic system effectiveness. While new technologies often overstate their product efficiency by as much as 50%, hydronic system efficiency is well documented in thousands of real-world installations, with an estimated 25-year operation lifecycle, as opposed to the 15-year replacement estimation for other heating and cooling methods.

With the built environment generating nearly 40% of CO2 emissions with approximately 27% attributed to building operations, the commercial building industry and all players involved in design, construction, commissioning and operation play an important part toward reducing operational and embodied carbon emissions. With this in mind, ASHRAE's 2023 Decarbonization Conference for the Built Environment, Oct. 25-27, 2023 in Washington, D.C., will focus on how the building industry as a whole can improve the impact buildings have on global climate crises.

RECOGNIZING THE VALUE OF EDUCATION

Energy leaders around the country agree that few training opportunities currently exist to help contractors embrace and advance clean air technologies like high-efficiency heat pumps. The need was illustrated on a national level when the [U.S. DOE awarded nearly \\$83 million](#) to fund projects to improve building energy efficiency and boost the development of education and workforce training programs around new energy-efficient technology.

As an industry icon in education for nearly 70 years, [Bell & Gossett's Little Red Schoolhouse \(LRSH\)](#) is focused on closing that skills gap through new training modules specifically focused on the application and design of heat pumps at our state-of-the-art schoolhouse facilities. The LRSH furthermore differentiates its instruction by emphasizing a systems-based concept of teaching. In this way, industry professionals are better equipped to perform their daily job duties related to hydronic and steam product application and system design, rather than focusing exclusively on product features and benefits.

As an Accredited Provider by the International Association for Continuing Education and Training (IACET), the Little Red Schoolhouse offers IACET CEUs for its qualifying programs, which is widely recognized as the standard of good practice internationally.

Harvard District Energy Facility

Boston
Bell & Gossett rep:
[Fluid Industrial Associates Inc. \(FIA\)](#)

As part of the Harvard University Allston extension and its commitment to environmental sustainability, the campus includes an energy-efficient 58,000-square-foot in-house utility plant. The campus also features a 1.3-million-gallon thermal storage tank with a total capacity equivalent to 9 megawatt hours that stores chilled water to cool buildings on campus. The utilization of Bell & Gossett's highly efficient VSX and HSC pumps and their robust hydraulic capabilities helps meet energy demand efficiently.






FOCUSING ON A SUSTAINABLE FUTURE

As the commercial building industry increasingly embraces sustainability objectives to reduce energy usage and lower carbon emissions, Xylem is poised to play a crucial role in achieving these objectives.

As outlined in Xylem’s annual [Sustainability Report](#), sustainability is embedded across all aspects of its business — from its supply chain and operations down to the packaging material. This model of sustainability is in turn reflected in Bell & Gossett’s own mission and vision — as a company that is committed to innovative hydronic solutions that are flexible and adaptable not just to [changing regulations and industry standards](#), but to an ever-changing world.

Among the many tenets of Xylem’s sustainability report, key highlights include:

- Consistent lowering in the volume of water it uses in its operations
- Growing its recycle and reuse
- Relevant increase in the renewable electricity it procures or generates for its operations
- Reduction in the amount of waste as a means of reaching its 2025 sustainability goals

GOAL	2022 UPDATE	PROGRESS TO 2025
100% renewable energy at major facilities*	Added 5 new facilities	
100% process water recycling at major facilities*	Added 4 new facilities	
Achieve zero waste to landfill from processes at major facilities*	Added 6 new facilities	
Develop 1.5°C science-based targets for GHG reduction (Scope 1,2,3)	Committed	Targets submitted to Science Based Target initiative in Q4 2022.
Ensure packaging material consists of 75% reusable, recyclable or compostable content	37% increase from 2020	85% of packaging consists of 75% reusable, recyclable or compostable content

* Major facilities are defined as those 22 facilities with manufacturing activities that are the top contributors to Xylem’s water, waste or GHG metrics, or are located in areas with extremely high water-stress risk.

XYLEM RECOGNITIONS

2022 World Benchmarking Alliance’s
SDG 2000 Most Influential Companies

2022 Barron’s
Most Sustainable Companies

2022 Newsweek’s
Most Responsible Companies

2022 JUST Capital’s
America’s 32 Industry Leaders for Environmental Performance

2022 3BL Media’s
100 Best Corporate Citizens

2022 Global Water Awards
Net Zero Carbon Champion

Turnberry Ocean Club Residences

Miami

Bell & Gossett rep: [George A. Israel, Jr. Inc. \(GAI\)](#)

The Carlos Zapata and Robert Swedroe-designed 54-story tower is one of the tallest buildings on the Atlantic coastline. To accommodate the variety of luxury amenities, GAI worked with installing contractor Cailis Mechanical to design a rooftop water-source heat pump compact HVAC system with B&G Series e-80SC inline pumps.



TAKING MEANINGFUL ACTION

In the quest to build better, engineers, contractors and building owners are embracing sustainable solutions, with hydronics quickly emerging as the smartest approach to future proofing HVAC system designs for decarbonization.

Not only is there value in hydronics to help reduce HVAC systems' negative impact on the environment and advance sustainability, decarbonization and net zero emissions, but they can provide major and immediate savings as the commercial building industry focuses on reducing energy consumption.

Bell & Gossett is committed to helping design efficient systems through a highly integrated approach, including developing energy-efficient pumps and energy-saving systems solutions for HVAC and plumbing applications in commercial buildings.

Learn more about Bell & Gossett's ongoing commitment to building better in its latest white paper, "[Building a Sustainable Future: Solving Modern Building Challenges with Hydronic Systems](#)," co-authored by Alan Jones, senior director of product management, and Mike Licastro, training and education manager for commercial building services and the Little Red Schoolhouse.

[READ THE WHITE PAPER ►](#)