MultiCare Good Samaritan Hospital
Combined heat and power (CHP) system

ABOUT MULTICARE
MultiCare is an integrated healthcare network made up of eight hospitals and numerous clinics (primary care, urgent care and specialty services) across Washington. MultiCare’s roots date to the founding of Tacoma’s first hospital in 1882. In total, MultiCare has 450 locations across Pierce, King, Kitsap, Thurston, Snohomish and Spokane counties.

At McKinstry, our mission is to make every building we touch more efficient, and we’ve been working towards that goal ever since we first partnered with MultiCare in 2013. Since then, we’ve developed more than 30 projects with MultiCare across the Puget Sound region.

MultiCare’s Good Samaritan Hospital (located in Puyallup, Wash.) has often been at the vanguard of sustainability. It’s why they pushed to be the first inpatient hospital facility in Washington state to receive LEED Gold certification in 2012, and it’s the reason why the MultiCare team didn’t stop there.

BIG RESULTS AT GOOD SAMARITAN
At Good Samaritan, MultiCare and McKinstry recently implemented a combined heat and power (CHP) system. This innovative system allows the hospital to generate its own power on-site, which is drastically more reliable, cost efficient and energy efficient—all while lightening Good Samaritan’s carbon footprint.

The new two-megawatt CHP system came online in late 2019 and was fully implemented in early 2020. The CHP system is now the full-time power system for the entire hospital.

“Sustainability efforts like this new CHP system at Good Samaritan are essential to MultiCare delivering on our mission of partnering for healing and a healthy future.”

— Tammy Buyok, MultiCare Vice President, Facilities Management and Operation Support
In addition—to maximize efficiency—the excess heat generated by the new CHP system is also captured and used to create steam and to heat water for space heating, humidification, sterilization and domestic hot water used by patients, staff and families throughout the hospital.

According to the U.S. Environmental Protection Agency, CHP systems can achieve energy efficiencies of over 80 percent, as compared to 50 percent for a traditional system. It’s no surprise that more than 200 hospitals in over 30 states now use CHP systems.

WHY CHP SYSTEMS MAKE SENSE FOR HEALTHCARE FACILITIES

In addition to the energy efficiency benefits, CHP systems have added value for critical facilities like hospitals. Losing grid power for a little while is an inconvenience for most residences and buildings, but it can be a disaster for healthcare facilities.

Hospitals are legally required to maintain off-grid emergency generators for this exact reason, but generators only provide electricity, rely on a finite/stored fuel supply, are often only sized for life-safety and critical functions and are normally off—which can lead to unreliability even if they are tested regularly. In contrast, CHP systems are also off-grid, provide both electricity and thermal energy, are always on (and are thus more reliable) and run on fuel that isn’t finite and is usually unaffected by disasters.

It’s not just the EPA that’s recognizing the powerful potential of CHP systems, either. Puget Sound Energy (PSE)—a major provider in Washington—offers significant incentives specifically for implementation of CHP systems, as do many other utilities across the country.

As PSE notes, CHP systems are “a great opportunity to save money and increase your system reliability.” The utility also adds that CHP systems make sense for “businesses that have high annual hours and a continuous thermal load...examples include hotels, hospitals, nursing homes, pools, and health facilities.”

At the national level, a 2016 U.S. Department of Energy (DOE) report singled out hospitals and healthcare facilities as “good fits” for CHP systems, due to their coincident power and consistent thermal loads. The report estimates that healthcare facilities alone represent nearly 10 gigawatts of technical potential for CHP systems, with only a small fraction of that potential being taken up by existing CHP capacity.