
Energy Upgrades Will Impact Your Bottom Line

Publication / Date: The CHOA Journal-Summer 2017

Written by: Nick Farina / Trane Canada-West

Did you know that a building's HVAC system can be responsible for more than half of its energy consumption? Understanding how your HVAC system works in your multi-family building will help you keep consumption costs down, and reduce downtime and emergency repairs, therefore keeping maintenance costs down for owners. The end result? Home owners know they are working with a property management company and/or strata corporation that cares about its owners and their investment.

So where do you start? We use a checklist to help us get going. Here are a few things to look at:

- ✓ Review past energy, electrical, gas and water bills for a minimum of one year to best understand how your system is using these utilities.
- ✓ Evaluate your HVAC system. How old is it? How often has it broken down over the past five years? Is this consistent with what you were told?
- ✓ Review your mechanical service contracts and see what is included and where you are incurring additional costs.

Once you have a basis for how your system is functioning and how much it is costing you, develop an action plan which falls into line with your AGM and projected annual maintenance budget. Start by analyzing incurred expenses to see what areas are costing you the most and if any of these charges are higher than you might have expected. If you see higher than normal maintenance invoices coming in, look at bringing in a 3rd party to review your system and identify what is happening with your building. If you see energy bills that fluctuate throughout the day or month, bring in an energy services company to see if heat recovery is an option in your building.

The ASHRAE equipment life expectancy chart tells us to expect 15-25 years out of an HVAC system. If you have equipment that is failing well before the 15 year milestone, look at working with suppliers who offer longer term warranty and service periods and stand behind their product and install longer than the industry standard of one year. How many home owners enjoy interrupted service, construction projects in the building, and increasing maintenance costs to cover the frequent repairs? Having a strong understanding of your system, or partnering with a company who does, will help remove or reduce these frustrating experiences, while saving money and energy over time.

If you are apprehensive you may not have the funds to take on this seemingly overwhelming task, look at developing an energy retrofit project which incorporates incentive programs with design for operational efficiency and life expectancy. Many cities and utility companies offer financial contributions for projects which make your building more energy efficient. This isn't just limited to HVAC systems, but lighting, building envelopes, water consumption, (toilets, showers, etc.) and more. If you are reducing your energy consumption by 20-40% and investing in a system with a life span of 15-25 years, the savings have a great impact over original capital investment. We typically see cost recovery anywhere from 5 to 10 years based on the reduction of monthly energy bills and maintenance costs.

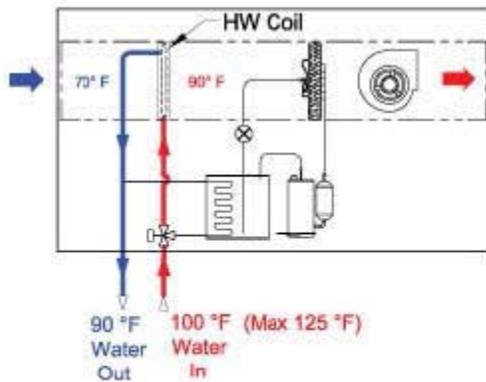
New technology from CGC on hybrid heat pumps is worth review for retro fit applications. A retrofit to a hybrid heat pump system can reduce energy costs by eliminating the use of electricity for heating and providing new opportunities for heat recovery.

Here is a link and below please see the operational breakdown. <http://www.cgc-group.com/splash.php>

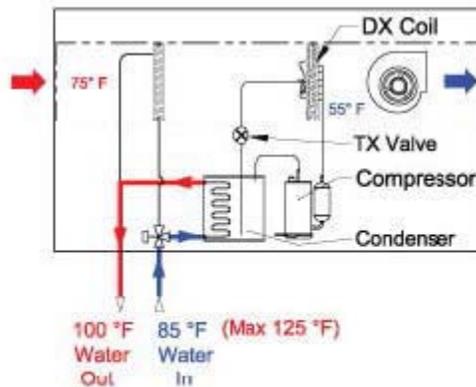
Operation

The CGC Group Hybrid Heat Pump System is a novel combination of two traditional commercial HVAC building technologies. The system combines conventional water cooled air conditioning and hydronic space heating, all in one package. A CGC Hybrid unit operates as a fan coil in heating and a water cooled DX unit in cooling. The compressors do not

operate in the heating mode. They can cool or heat any space at any time of the year. Instead of a refrigerant reversing valve for heating, the CGC Hybrid unit diverts the loop fluid to a hydronic heating coil located inside the unit. This loop fluid varies in temperature depending on outdoor ambient conditions. As the ambient temperature gets colder, the fluid temperature is increased.



Fan Coil in Heating Mode



Water-Cooled AC in Cooling Mode