

ENERGY SAVINGS FEATURES

IPS™

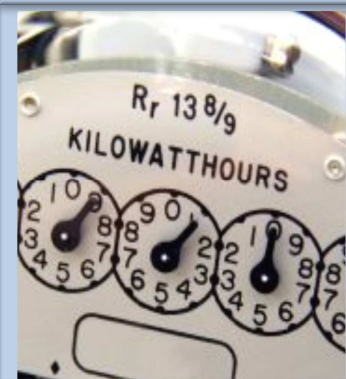
INTEGRATED PIPING SYSTEM

60% more efficient than Window packaged terminal units & **20% to 40%** more efficient than 2-pipe hydronic, 2-pipe water source heat pump or variable direct expansion systems.



Terminal Unit - Fan Coil

- IPS Fan coil uses no Compressor. Moving component include fan with fan motor, Solenoid or TRAC valves. In 2 & 3 Pipe Risers the IPS Fan Coil uses small energy efficient circulators.
- Instead of standard PSC motors, IPS Fan coil uses efficient EC blower motor.
- Tracking and adjustment to real time variable load. Totally Variable fan coil is the *demand-controlled* fan coil, offering variable CFM, GPM, LAT and dehumidification. Reduce water flow of up to 80%, significantly reduces pumping energy cost and reduces Central Plant overall demand which improves plant efficiency by 40%.



TWO IN ONE Mechanical System

- State of the ART - TWO IN ONE Mechanical System uses domestic water to transfer energy.
- Eliminate piping & equipment duplication which results in significant energy savings.
- Uses less piping and less equipment with Central Plant Advantage approach, works ON DEMAND resulting in less wastage and losses of precious energy.
- Dual Free Savings –**FREE HEAT & FREE COOL** - Heat Recovery & Economizer are inherent to the IPS design utilizing free heating & free cooling when every gallon of water used by resident saves energy ([Reduce, Recycle & Reuse approaches](#)).
- Lower heating (120°F to 140°F) and higher cooling (45°F to 50°F) water design temperatures which provide 95°F to 105°F LAT in winter & 50°F to 55°F LAT in summer.
- No System changeover required. Heating / Cooling is available 24/7 year round.



Two in One Heating & Cooling Delivery System

- Efficient delivery system uses Domestic water based insulated Fan Coil Risers - 2 Pipe Riser, 3 Pipe Riser or 4 Pipe Riser. No Separate Risers needed for HVAC System.
- Lower flow rates results in Smaller Pipe Sizes.
- Riser material can be CPVC in low rise projects, resulting less thermal losses.
- Design process is very similar to plumbing design approach, resulting elimination of risers balancing valve which means no Rises balancing is required.
- System uses domestic water which means pipe scaling is insignificant, no water treatment or anti-freeze is required resulting lower fluid viscosity reduces pumping energy cost.



Central Plant Advantage

- Less equipment & reduced run time means better control of energy usage throughout the year. BTU's are generated at much lower cost per ton than with unitary compressor's.
- Variable Fan coil provides real time ON DEMAND Heating & Cooling improves Central Plant efficiency by 40%.
- Lower flow rates with variable speed pumping reduce pumping energy cost.
- Ultra High Energy Efficient Central water to water heat pump uses Geothermal based efficient but relatively smaller borehole thermal energy storage (**BTES**) system which satisfy entire building heating and cooling demands – **Renewable Energy**.
- Efficient Air source Heat Pump to provide heating and cooling (*Optional*).
- Efficient Air & Water Cooled heat recovery Chiller (*Optional*).
- Efficient Fluid Cooler (*Optional*).
- 93% efficient Condensing Boiler based system heating.
- Solar System Heating – **Renewable Energy**.