OVERALL COST & ENERGY SAVINGS

FEATURES

IPS™

INTEGRATED PIPING SYSTEM

General

- TWO IN ONE System uses less but necessary equipment result in smaller mechanical room and can eliminate Penthouse results in structural savings.
- TWO IN ONE System uses less Piping (See Piping Reduction)
- Relatively smaller mains & sub pipe sizes due to lower GPM.
- Piping Material Flexibility – Riser -CPVC, Plumbing – PEX embedded in concrete for noncombustible construction.
- Eliminate separate high temperature hydronic loop.
- Plumbing trade do most of the piping.
- Lower connected electrical load result in smaller electrical system.

Less Operating Cost

LEED friendly savings. Every Case is different, however, standard IPS™ is **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 which means operating costs of **$0.75/sq. ft to $0.9/sq. ft.** is very attainable with geothermal.

Reduced Labor Costs

Labor costs are reduced because the materials going into the building are reduced most of the equipment and piping are eliminated. This results in overall cost savings of the project ($2000 to $3000) on a typical high rise buildings which can be deployed to geothermal field with higher system efficiencies.

Piping Reduction

The mechanical system is at all times totally isolated from the domestic water system. The IPS™ Terminal becomes a "fixture" and the temperature of the cold water is managed while the hot water temperature remains unchanged. Standard 4-pipe fan coil systems require domestic cold water, domestic hot water supply, domestic hot water return, heating water supply, heating water return, chilled water supply and chilled water return for a total of seven pipes. 2-pipe fan coil systems require five pipes; domestic cold water, domestic hot water supply and return – space heating water supply and return. In the cooling season, the heating pipes "changeover" to chilled water. Radiant baseboard systems have five pipes. Water source heat pumps have five pipes. Variable refrigerant adds refrigerant piping and controls plus the cost of electrical. The Integrated Piping System (IPS™) adds a single pipe for a total of four pipes; a domestic hot water supply and return, along with a domestic cold water supply and return. The supply is sized for the domestic requirement and the return is sized for HVAC. Subjected to design system temperature the 4 pipe IPS can further reduce to 3 or 2 pipe IPS system.

Boiler Reduction

By utilizing the domestic hot water boilers and distribution system for dual-purpose use, the need for separate space heating boilers is eliminated.

Pump Reduction

Further capital cost savings are realized with IPS™ as the domestic water system eliminates the need for a separate space-heating loop. The pumps typically needed in standard hydronic heating systems to circulate space-heating water are eliminated. Booster Pump can be eliminated too.

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Associated Equipment Reduction
Sometimes referred to as "interface costs" are the costs associated with installing the second set of pipes. Installation requires building space along with fittings and valves, chases, access, insulation, hangers and treatment of wall or floor penetrations, inspection and test; and all in addition to balancing and pressure management. In addition, stagnant water and dead legs are eliminated as now both the hot and cold water are continuously circulating.

Less Maintenance
- No Compressor operation.
- No Water Treatment OR use of antifreeze on distribution piping.
- No Large Strainers required.
- No pipe scaling on distribution piping..
- No Balancing Valves needed – System runs on balanced pressure.
- No hydronic balancing needed.
- It is important to note that with IPS™, controls are relatively simple, giving a peace of mind to building operator as they can operate the building proficiently without going into excessive system training.

Compliance: IPS™ fan coil is UL & CSA approved product and IPS system is in full compliance with municipality & local building codes requirements.

Proven Track Record: Williams is almost a century old fan coil manufacturer. William introduces IPS concept more than 13 years ago since then it has been installed in over 130 projects in the United States and Canada (Alberta / British Columbia) from Salt Lake City, Utah to Edmonton, which is where it started.

More Comfort and Improved Indoor Air Quality

Quite Operation – System uses Fan coil which do not need noisy Compressor, results in quiet and comfort environment in the space.

More Dehumidification – IPS Fan coil uses a low-flow, high-latent coil design, which results in better indoor air quality than heat pump system and better environment that is free of mold growth.

Improved indoor air quality with individual control, reduced draft and stratification, less ON-OFF cycling, variable air flows, variable leaving air temperature & dehumidification which will make energy efficient system even more efficient (more energy savings, less operating cost.)