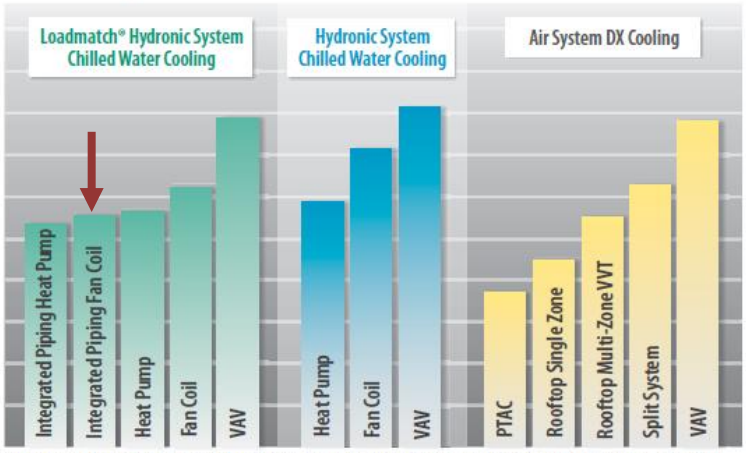
TWO IN ONE
MECHANICAL SYSTEM

IPS™
INTEGRATED PIPING SYSTEM

TACO Case Study:

One of North America's Leading HVAC companies, TACO has recently performed case studies involving capital cost, energy savings, and life cycle savings of many different HVAC systems in the market. IPS was fortunate to be included in this case study. Graphical representations of the results are shown below. Load Balance Potable Water (LBPW) system, the modified version of IPS, that uses GEOTHERMAL based Central System was not included in this study.

HVAC Systems – Installed Costs



Costs based on sum of mechanical system costs and electrical system costs associated with mechanical systems.

Source: Taco, Inc., Cranston, RI.

As shown the IPS is one of the most affordable hydronic systems to install.

"TWO IN ONE" IPS system is represented by the graph entitled "Integrated Piping Fan coil", uses the domestic water piping for dual functions; ***domestic water for personal use and space heating and cooling.***

In "TWO IN ONE" IPS system the simplified system is achieved by *Combining HVAC and Domestic systems in ONE*, resulting complete elimination of central HVAC heating system and reduce cooling HVAC system ultimately reduces the total number of pipes, labor and equipment which in the end reduces the overall cost of the project without compromising the entire system efficiency.

13 YEARS - TRACK RECORD OF SUCCESS!

IPS has been installed in over 130 projects in

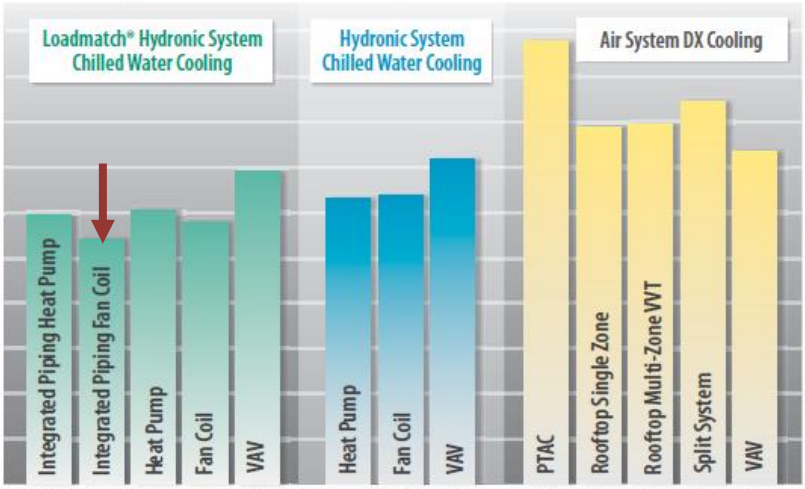
U.S.A
&
CANADA

130
PROJECTS

As shown the "Integrated Piping Fan Coil" or IPS is show to have the best life cycle cost versus all other systems in the study.

The use of a factory-configured, low kilowatt E.C motor based circulator in place of expensive, energy-wasting control valves, which provides proper water flow under varying conditions.

HVAC Systems – Life-Cycle Costs



Costs based on 20-year life cycle, 8% rate of return, 4% inflation rate, and HVAC construction and maintenance cost survey of maintenance costs.

Source: Taco, Inc., Cranston, RI.


Glenora Mansion - 80 units


Kamloops Renaissance - 97 units


Dockside Green - 115 units


Playa Del Sol - 291 units


Zermott Hotel & Villas - 289 units


The Ridge at Hermitage - 126 unit


Terra Losa - 198 units


Tradition at Southbrook - 126 units

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MECHANICAL SYSTEM

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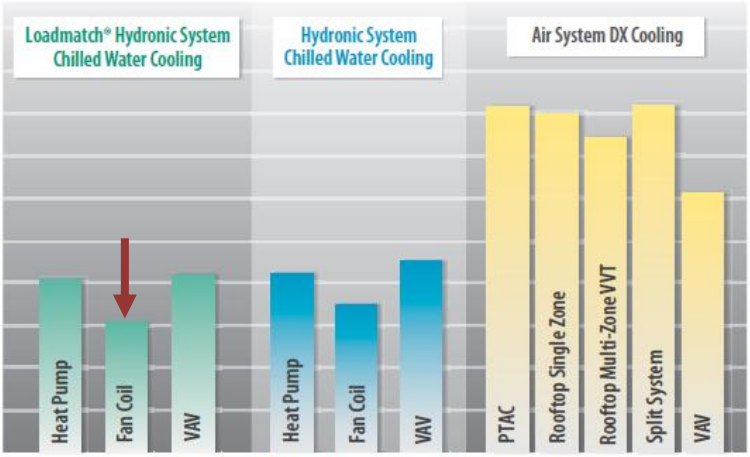
IPS was created to reduce the cost of HVAC in Condominiums, Hotels, Motels, Senior Care, Dorm, Apartments, Army Barracks & much more.

HVAC Systems – Energy Costs



Costs based on average utility rates from APPA and AGA and average US climatic conditions.

Source: Taco, Inc., Cranston, RI.

In this graph, the IPS represented by the "fan coil" is shown to have significantly less energy costs.

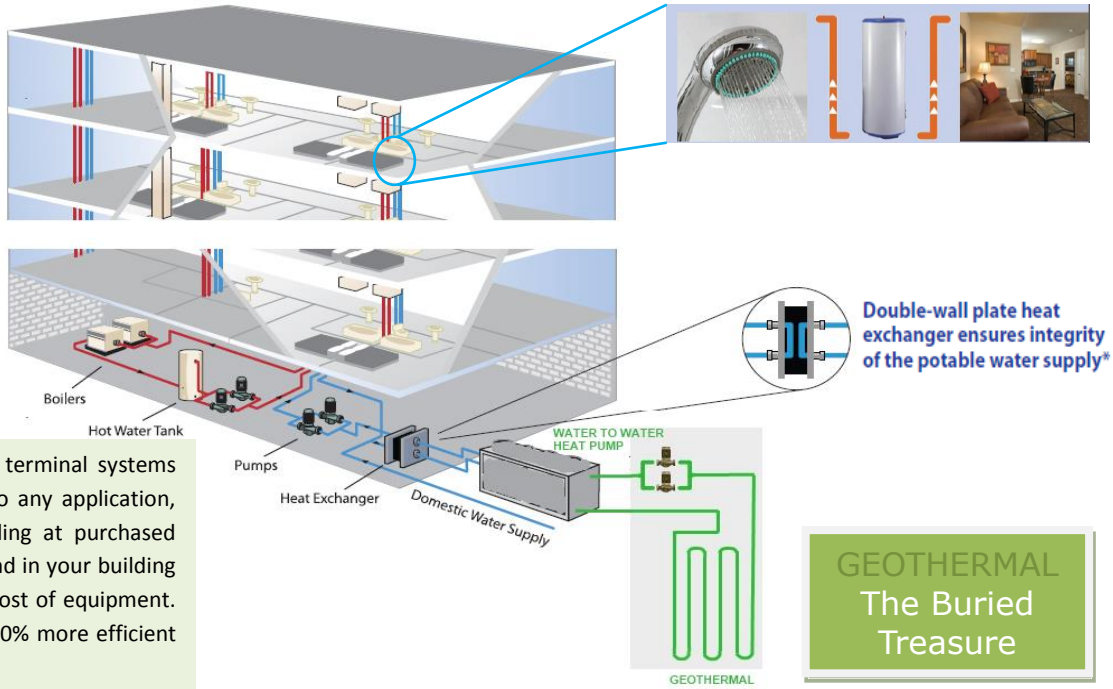
Fan Coil units are placed in each zone, giving occupants 100% control of their environments.

LEED-friendly energy savings – up to 60% more efficient than packaged terminal units, up to 40% more efficient than 2-pipe hydronic, WSHP or variable DX systems, no compressors or equipment in the occupied space & reduced electrical power.

Reduced operating costs - less equipment and greater central plant efficiency means a tighter reign on energy usage.

NEXT APPROACH – IPSgeo™

Advanced & Innovative version of "TWO IN ONE" IPS system is IPSgeo, which uses GEOTHERMAL Central system to enhance system efficiency by combining the domestic water piping system for dual functions; ***domestic hot water for personal use and space heating & cooling.***



Central Plant Advantage – When terminal systems such as heat pumps are applied to any application, efficiency drops due to units cycling at purchased horsepower rather than the demand in your building and all at a higher dollar-per-ton cost of equipment. The fan coil system can be up to 60% more efficient than unitary based systems.

GEOTHERMAL
The Buried Treasure


Magrath Mansion - 162 units


Palisades on the Park - 54 units


Urban Village - 95 units


Homewood Suites - 61 units


Oxford Lake - 178 units


Regina Renaissance - 158 units


The Coventry - 52 units


The Sky Lodge - 126 units