



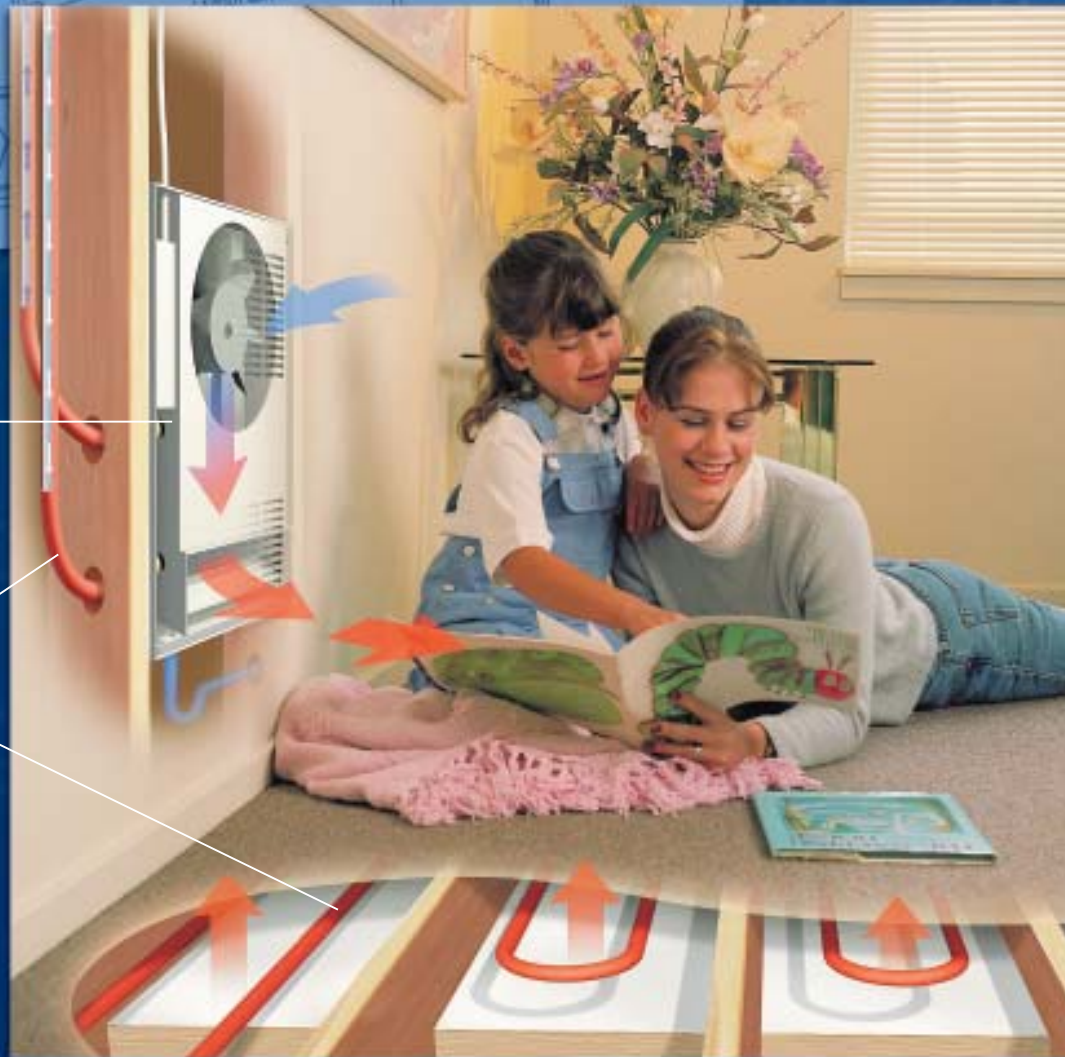
HYDRO-AIR™

A Brilliant Innovation in Home Heating and Cooling



"Total comfort" heating or cooling is delivered to thermostatically-controlled hydronic fan coil wall units in each room.

Small flexible piping circulates water to the wall unit's hydronic fan coils for warm or cool air distribution, and to an optional radiant floor heating system.



Hydro-Air™ — Simple technology that is changing the way homes and buildings are heated and cooled...

From single-family homes and apartments, to large commercial complexes — new construction or retrofit — Hydro-Air™ systems provide reliable, efficient, comfort and environmentally sound heating, cooling, and domestic hot water.

Here's How Hydro-Air Works

Unlike conventional systems that heat or cool by forcing air through large, bulky ducting, Hydro-Air systems deliver total comfort without any ducting whatsoever. Hydro-Air utilizes small, efficient hydronic fan coil units in each room that distribute either heating energy from your central water heater or boiler or cooling energy from a standard outdoor air conditioning unit.

The ability to heat or cool only the areas you need (zoned temperature control) results in lower operating cost. Customized controls provide flexibility in zoned space heating and cooling — you choose the rooms you want to heat or cool without wasting energy on unoccupied areas. Hydro-Air heating, cooling, and domestic hot water systems can be combined with popular hydronic radiant floor heating systems for superior comfort that is unsurpassed by any conventional heating equipment.

Winter Heating

In a typical application, your home's water heater or boiler is all you need to supply the energy for both heating and domestic hot water use. Durable, flexible piping installed in floors, walls, and ceilings distributes warm water to hydronic fan coil units located in individual rooms throughout the home. A standard wall thermostat activates the fan, which heats the room as air is drawn across the hot water coils. The water is then returned to the water heater or boiler to be re-heated and re-circulated in a continuous cycle.



Summer Cooling

For summer cooling, a standard outdoor air-conditioning unit is used to chill water that is circulated through the same piping system to the individual fan coil units. When the thermostat activates the fan, the room is cooled as air is drawn across cooled coils. The water is then returned to the "chiller" system, where it is re-cooled and re-circulated in the cooling cycle. Zone thermostats cycle wall-mounted fan units to maintain the cooling set point in individual areas. When in cooling mode, the water heater or boiler is still available to provide hot water for domestic use.



Running flexible piping through walls, floors, and ceilings costs less and takes less time than installing forced-air heating ducts.



Individual fan units can be installed in any room in minutes using simple tools.



The pre-manufactured Hydro-Panel — the heart of the system — easily connects to a variety of water heaters or boilers.

Hydro-Air computerized design simplifies design, fabrication and installation.

Technological Superiority

Revolutionary technology and customized computer design provides the most efficient system for your project. Beginning with a powerful design program, every square foot of your structure is analyzed for each thermostatically-zoned area. Problem comfort areas, such as rooms featuring large amounts of glass, can be identified to determine the ideal method for delivering energy to those locations. Since every home and building is unique, Hydro-Air provides a variety of system options that can be evaluated to determine which will provide the most comfort and efficiency for a project at the most economical cost.

Proprietary computer design software allows architects, engineers, and contractors to design your system at the same time they prepare your estimate. Beginning with a detailed, zone-by-zone design analysis, precise energy requirements can be determined for each area of a structure. Hydronic air units are then matched to the output required to provide the design heating/cooling load specified for each zone. All equipment is sized and integrated to guarantee sufficient capacity for your heating, cooling, and domestic hot water needs. By the time costs and design specifications are input to the Hydro-Air software program, your system is essentially designed.

System Flexibility

With more than 100,000 hydronic heating and cooling components on the market today, Hydro-Air software can select the best combination for your project. Teaming superior products with innovative software design and modern manufacturing techniques guarantees the best system at the best price. More than 13,000,000 design combinations can be drawn upon to plan, specify, and integrate a system easily into any structure — and new designs are emerging every day.

Everyone Benefits

Everyone wins with Hydro-Air technology. Once architects, engineers, contractors, and developers experience the ease of installation, teamed with the reliability of performance and total comfort the system provides, they will never want to install standard forced-air-ducted systems again. This technology is cleaner, quieter, and more efficient. And in addition to health, safety, and reliability, Hydro-Air systems schedule better into the overall construction — quite simply, this is a better system for less money than any conventional forced-air-ducted system on the market today — period!



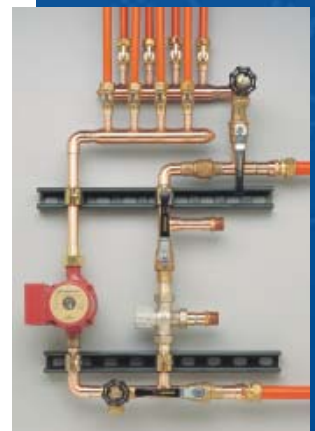
Hydro-Air's design software guarantees each system will provide the most comfort and energy efficiency at the most economical cost.



Hydro-Panels are factory-assembled to exact specifications.

The Hydro-Air Process: Design/Fabrication/Installation

1. Contractor or architect meets with home owner/buyer to discuss household requirements.
2. Designer uses Hydro-Air software programs to calculate the exact specifications and costs to get the job done.
3. A conceptual design is presented to the home owner/buyer for review and approval; changes are noted, if necessary.
4. The system is manufactured, packaged, and delivered to the building site complete and ready-to-install.
5. Installation is fast, easy, and completed by qualified installer(s).
6. Homeowner enjoys clean, quiet, economical heating and cooling, with abundant domestic hot water.



The Hydro-Panel is the heart of the Hydro-Air heating/cooling system.

What They're Saying About Hydro-Air...

"This system just provides a nicer heat all around — I don't know how else to describe it."

— Terry Hirata, maintenance supervisor for New Holly, a low income, multi-family project developed by the Seattle Housing Authority



"The (Hydro-Air) system allowed us to eliminate duct work that would have been necessary for a conventional forced-air furnace system. The system is also quieter, cleaner, healthier and less expensive to operate, and allows homeowners control of heating only the rooms they want to heat."

— Bill Jorge, SU Development Vice President of Construction, The Palazzo, a 10-story condominium development



"The Hydro-Air system costs less to install than forced air and requires less maintenance because it has less moving parts. It's designed to be more energy-efficient and it's friendlier to the new codes for single-family units."

— Brian Martens, Project Manager, Ashburn Condominium Homes, Burnstead Construction



"Puget Sound Energy recognizes the Hydro-Air system as a viable and creative option for heating single and multi-family structures comfortably and with excellent energy efficiency. Bio-Radiant has developed a great concept using proven components to make it easy to use natural gas for space and water heating. Customers like it, developers like it, and contractors like it."

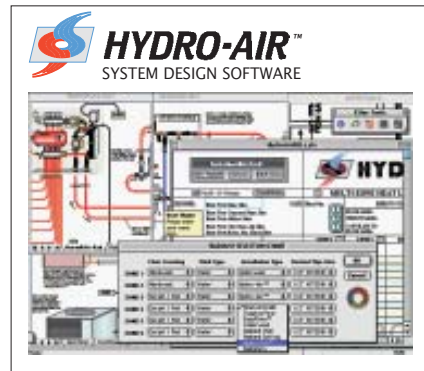
— Gary Turner, Multi-family Account Manager, Puget Sound Energy

The Hydronic Future

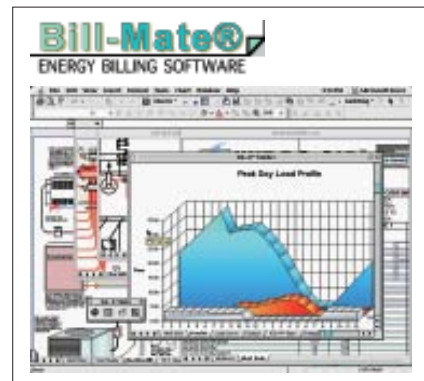
Bio-Radiant Energy, Inc., together with a team of other innovative companies, are helping local and national agencies "re-write the standards" for home heating and cooling concepts. Headquartered in Woodinville, Washington, Bio-Radiant Energy, through various licensing and joint venture agreements, is rapidly expanding it's operations to bring Hydro-Air technology to businesses and households throughout the world.

Hydro-Air systems can use any fuel source available, including (but not limited to) electricity, propane, oil, gas, coal, wood, geo-thermal, or solar. With the future in mind, Hydro-Air heating, cooling, and domestic hot water systems can be accessorized with a variety of innovative technologies such as ICE-X™ thermal battery storage, co-generation, and Bill-Mate® energy billing software.

Software Packages Make Design and Billing Easy



Hydro-Air™ — Specification/design software for heat loss/gain, radiant design, and fuel cost comparisons provide complete accurate information about your project.



Bill-Mate® — An add-on software module, individually licensed to projects that feature Hydro-Air equipment, allows secure on-line billing services for heating, cooling, and hot water energy.

Comparison of Features

	Hydro-Air	Forced Air
Easy to Install — easy to train installers	Yes	No
Integrates easily with ICE-X — can use off-peak power with ICE-X battery	Yes	Yes
Clean, quiet, and efficient (no odor, no dust, no noise)	Yes	No
Individual thermostatic zoned control	Yes	No
Install cooling ready or full build	Yes	Yes
Installs quickly on job site (no welding, soldering, or brazing required)	Yes	No
Small flexible piping instead of bulky ducting	Yes	No
Universal component construction	Yes	No
Easy to combine air with radiant heating	Yes	No
Works with a wide variety of hot water heaters, boilers, and condensers	Yes	Yes
Possibility of carbon monoxide leakage from cracked heat exchanger	No	Yes
Possibility of element short, meltdown, or fire	No	Yes
Thousands of configuration options	Yes	No
Pre-assembled/complete packaged system	Yes	No
Simple, low cost maintenance	Yes	No

All Hydro-Panels Incorporate These Features*:

Description	Specification/Approval
Possible configurations	690,000+
Circulating pump	Bronze or stainless
Pump timer	24 hour analog with switch
Anti-scald mixing valve	ANSI/ASSE 1017
Expansion tank	ANSI/NSF 61
Ball valves	Full port 600 #W.O.G.
Check valves	250# W.O.G.
Hose-bib vacuum breakers	Anti-siphon, backflow check with cap
All other valves	200# W.O.G.
Piping/copper	All type "L" copper
Complete strut mounted	Marine grade struts
Isolation supports	Cushion clamp - bronze anodized
Warranty	10-year limited warranty

* All components are approved/suitable for use with potable water.

** Specifications are subject to change without notice.

Proven Reliability and a 10-Year Limited Warranty

All Hydro-Air manufactured equipment shall be free from defects in materials and workmanship for a period of 10 years. Actual length of warranty may vary depending on the specific components used.

Meets Local Codes and Specifications

Hydro-Air designs meet or exceed applicable building codes in all 50 states. All system components are currently listed and approved by one or more of the following organizations.



Innovative Companies and Products Working Together for a World-Wide Future in Hydronics



Bio-Radiant Energy, Inc.

Turbonics INC.

HYDRO-AIR™



Bill-Mate®
ENERGY BILLING SOFTWARE

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For more information about Hydro-Air heating, cooling, and domestic hot water systems, or to order our catalog, visit our Web site at www.bio-radiant.com or contact us at: 800-598-1019