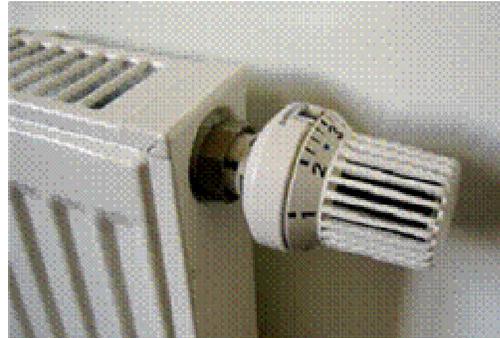


HYDRONIC BOILERS VERUS FORCED AIR HEATING

“INSTALLATIONS OF BOILERS REDUCE ENERGY CONSUMPTION BY MAINTAINING LOWER TEMPERATURES IN UNOCCUPIED AREAS”

Zonability: A heating system that maintains an entire building at the same temperature doesn't give occupants with individual comfort preferences much choice. The heating system in most homes should divide the building into two or more independently controlled comfort zones. Such systems can reduce energy consumption by maintaining lower air temperatures in unoccupied areas. They also allow the comfort level of rooms to be adjusted to suit individual tastes and activity levels.



Non-electric thermostatic radiator valve allows for room-by-room comfort control.

Imagine a heating system that automatically adjusts itself as sunlight shines in the windows of some rooms but not others, or one that automatically reduces heat output when several people gather in the living room but still maintains a toasty warm bathroom for another person to shower in. This type of “room-by-room” zoning is easy to accomplish using hydronics without resorting to the complex and costly hardware necessary for zoning forced-air systems. Some hydronic systems provide room-by-room comfort control at each heat emitter without the necessity of thermostats and associated wiring.

Clean Operation: One of the leading complaints from owners of forced-air heating systems is the amount of dust and other airborne pollutants their systems distribute through the house. Although sometimes the result of poorly maintained filters, this complaint demonstrates one of the potential pitfalls of forced-air distribution systems.

The inside of ducting can build up with dust, pet hair and mold spores from years of operation, even when a filter is present in the system. Occupants end up breathing air that, in some cases, passed through this ducting several times each hour. In contrast, most hydronic heat emitters induce very gentle, almost imperceptible air circulation. The heat emitters that use small fans or blowers create room-air circulation rather than whole-house air circulation. People with allergies or other respiratory conditions are especially appreciative of the reduced air movement afforded by hydronic heating.



24 Volt zone valve also allows for room to room comfort control

Source: The *Green Advantages of Hydronic Heating*; ISH North America News letter Dated February 2008 (24 volt zone valve submitted by Nushagak Consultants).

See also Isometric drawing of a zoned heating system at: www.nakco.com/cad/cobb.htm