



SPECIAL ISSUE **A room of its own**

Your furnace should be in a room dedicated to its requirements

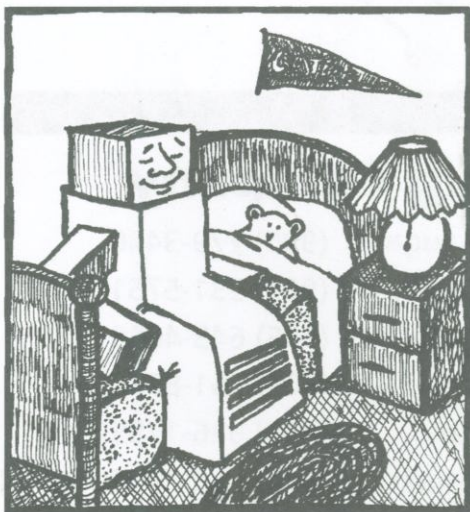
This special edition of *An Engineer's Opinion* is the first in a series devoted to specific parts of your heating, air conditioning, and indoor air quality systems and how they can affect your comfort and safety. The best place to begin is the furnace room, because this is where the majority of your home comfort equipment is. Besides the furnace, you may also find your water heater, air conditioner, air cleaner, humidifier, and heat recovery ventilator in this room as well. Other equipment such as water softeners, electrical panels, pool heaters, central vacuums, and laundry equipment might also be in this room.

When a house is built, it usually has an open, unfinished basement which, in effect, is the furnace room. Many people do finish the basement, and whether they do it themselves or use a contractor, the furnace is almost

always hidden away by a hastily constructed closet (the 'Furnace Room'). The furnace room is typically among the most neglected rooms in the house, and most of us only go there to occasionally change a filter. But this room is worth paying attention to especially when you're constructing it, because it can affect how well the equipment inside it functions, which in turn affects your comfort, safety, and even your health.

The most important part of a furnace room is the space around the equipment. You need enough space to access equipment on all sides to allow a serviceworker to perform maintenance and repairs. Specifically, this means at least 30 inches from the front of a furnace (required by the gas code) and enough space to remove the water heater or furnace from the furnace room when they eventually have to be replaced. You'll also need enough space to accommodate any future home comfort equipment. In addition to sufficient space, a good furnace room should have the following:

- ◆ combustion air openings in the walls sufficiently large for all combustion appliances to operate without producing carbon monoxide;
- ◆ a well-marked furnace switch;
- ◆ well-insulated joist header spaces on the outside walls;
- ◆ insulated walls, if the furnace room is adjacent to areas where mechanical noise would be a problem;
- ◆ floor drains that can accommodate possible overflow from water heaters, humidifiers, air conditioners, and high-efficiency furnaces;
- ◆ good lighting for service and maintenance.



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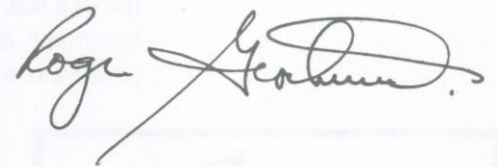
Your furnace room should *not* have any return air vents that take in air from inside the furnace room, since this can pose a health and safety risk.

The second most important part of a furnace room is what *isn't* there: a furnace room shouldn't be used to store anything other than your home comfort equipment. If you're finishing your basement, allow for storage space somewhere other than in the furnace room. Piles of stuff can obstruct service and maintenance as well as interfere with the efficient operation of your equipment. And because the furnace circulates air into every room of your house, you should particularly avoid storing anything that may be toxic or smelly. Some substances can even damage your equipment.

The following suggestions can help you keep your furnace room clean and safe.

- Keep gas appliances free of surrounding clutter that could block air needed for combustion or that could catch fire;
- Remove and dispose of used filters and old parts;
- Store chemicals in a cabinet somewhere else, particularly solvents such as paint thinners which are both toxic and a fire hazard;
- If the furnace room is also the laundry room, store cleaning chemicals in tightly sealed containers (cleaners, bleaches, and laundry detergents accelerate the rusting and failure of the heat exchanger in the furnace).
- Do not suspend anything (e.g., Laundry) from either the furnace or hot water heater vent pipes, gas pipes, or water lines;
- Keep kitty litter boxes several feet away from the furnace because the ammonia fumes from the litter can corrode the furnace's heat exchanger and the odours will circulate throughout the house.

If you are in the process of finishing your basement, keep in mind the requirements of your furnace and its accessories as you make your plans. If your basement is already finished and you have a question about your furnace room, please call.



An Engineer's Opinion

An Engineer's Opinion is published to assist homeowners in creating the healthiest, most comfortable environment in their homes at the most reasonable cost. If you have questions, criticism, or input, we want to hear them. Please write or call me personally.

Roger Grochmal, P.Eng.,
President

Carbon monoxide detectors in the basement

Most manufacturers of carbon monoxide detectors recommend that the detectors be located at least 5-15 feet away from gas appliances. This precludes installing a detector in most compact furnace rooms. That being said, **make sure** you have a carbon monoxide detector installed in any other area of the basement used as living space, especially a bedroom.



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