

Cost-Conscious Heating for Remodels

Stand-alone electric systems can be an affordable heating option for remodeled spaces both large and small

BY RICHARD DEFENDORF

Sometimes the most enduring benefits of kitchen and bath remodels are the ones with little or no visual drama: the warm air coming from the kick-space heater at the base of a set of new cabinets, or the tile mats that silently generate radiant heat under the floor.

Heating tends to be forgotten amid the many other design decisions that go along with a remodel or addition. It's not until the master bath has been finished that you realize how much colder the new tile floor feels than your old linoleum, or how chilly the kitchen feels after removing that run of baseboard heat to make room for extra cabinets.

In many cases, it makes sense to extend an existing forced-air or hydronic (hot water) heating system to condition a newly remodeled space. Depending on the added square footage of the new room, the space for new ductwork, or the budget of the project, however, using your existing heating system may not be the most attractive option.

The good news is that there are many stand-alone heating options designed to fit a wide variety of situations, and they don't have to blow the budget for the whole job. Of the available options, electric heat generally involves the lowest up-front costs and simplest installations. You don't need a boiler and circulation pump, and there are no supply and return ducts to worry about hiding. Spend just a few hundred dollars (though often much less) to purchase the device, plus whatever the electrician charges to install the wiring, and you're up and running. Modern units go beyond baseboard heaters, too. In-floor, wall-mounted, and even dual-purpose towel warmers and heated mirrors make it easy to integrate electric heat into the design of a room.

Richard Defendorf is a freelance writer in North Salem, N.Y., and a regular contributor to the "Building Business" blog at FineHomebuilding.com.



Natural-convection electric heater



Kick-space-panel electric-fan heater



Wall-mounted electric-fan heater



CONVECTION OPTIONS APLENTY



The variety of low-cost convection space heaters can seem downright bewildering. Options include forced-air (fan) heaters that can be installed under a cabinet, on a wall, or overhead; and natural-convection heaters that are mounted on the lower half of a wall, often at baseboard height. Fortunately, most of these heaters are similar in function: A heating element warms air, causing it to rise. As the warm air rises, it is replaced by cooler air, creating a natural loop that distributes the heat. Sometimes this process is accelerated with the help of a fan. Narrowing down the convection choices usually means reckoning with just a few conventional issues: weighing performance criteria such as noise and energy efficiency, matching the output of the device to the volume and configuration of space to be heated, and determining the best installation locations.

Choose it

There are two general types of convection heaters: those with fans and those without fans.

Electric-fan heaters come in many shapes and sizes, from wall-mounted units that sit just below ceiling height in high rooms down to kick-space panels for mounting in the base of a cabinet. Many of these heaters operate "like giant blow dryers," says Jay Peck, a remodeling specialist in Woodbury, Conn. "They're not that efficient, and they can be noisy." Fan-forced heaters have their place, though, especially when you need to heat a room quickly but only on an occasional basis—when showering in the morning, for instance.

Units without fans, called natural-convection heaters, are virtually silent. They circulate heat only on the convective loops of rising warm air. Room temperature rises more slowly, and these heaters have to be in a more open, central spot to work at their full potential.

Size it

Manufacturers typically offer help in sizing convective units, but a good rule of thumb to match heater output to room size (when intended as the primary heat source in a room with 8-ft. ceilings) is to install 10w per sq. ft. of living space. If the heating unit will be used only to take the chill out of the air on a temporary basis—to help warm the bathroom first thing in the morning, for instance—the heater can be smaller.

Price it

Electric convection heaters (convectors) are inexpensive and readily available. A 500w baseboard unit can cost as little as \$30; a 1500w unit costs around \$90. Because these units aren't much more complicated than a toaster, they are relatively simple to manufacture, and the brand name isn't as crucial. Look for a model with a solid warranty. A typical fan-forced kick-space heater is more expensive, with pricing for 1000w to 1800w units starting at around \$130 and running up to \$230, with some models exceeding that price.

Install it

All of these heaters are easy to install if you're mindful of running the wiring so that hookups are in the correct location, meet code, and match the power requirements. Units with heating coils should be mounted in locations that maximize heat flow into the room. Be aware of clearances to nearby fixtures and combustible materials, too. These requirements vary from unit to unit, and can make or break the potential benefit of these heaters in many situations. Some baseboard electric heaters, for example, require at least 1½-in. clearance from the finished floor covering (including carpeting, if it is used).

Many convectors are hung on mounting brackets that are simply anchored to the wallboard or bolted to wall studs; others can be flush-mounted.

New products



Better baseboard

The Linear Convector is a hybrid fan-driven/baseboard heater made by Dimplex North America. It's designed to be 42% shorter but more efficient than baseboard heaters that draw comparable amounts of electricity. The compact size of the device, Dimplex says, greatly expands options for its use in small rooms. The bonus on this product is comparable pricing to standard baseboard heaters: about \$40 for a 500w unit (20 in. long) to \$95 for a 2500w unit (60 in. long).



Contemporary wall heater

Russell Hamlet, an architect on Bainbridge Island, Wash., says that his clients like their silent electric convection heaters made by Convectair and Stelpro Design, both of which have streamlined, contemporary-looking housings and no fans. Convectair's 500w Apero heater (configured for narrow spaces) sells for as little as \$256. Stelpro's 500w Silhouette starts at about \$325.



RADIANT HEATERS ARE SILENT AND, IN SOME CASES, INVISIBLE

Rather than warming the air directly, radiant heaters work by warming an object: a panel on the wall or the floor surrounding an in-floor heat mat. The most popular electric radiant heaters are mats that are laid over the subfloor before the finished flooring is installed. These systems have no fans or moving parts; instead, they rely on steady, low-level heat to warm the floor. Changes in temperature will be more gradual than with convection heaters, but the payoff is less energy use.

In-floor systems consist of mats that have the heating coils laced into them so that they can be unrolled easily and secured to the subfloor. These systems tend to be expensive, but their silent operation and the promise of a warm floor underfoot during the winter are strong selling points.

Choose it

Although they're deployed as primary heat sources in some climates, electric floor mats are generally intended for use as on-demand, rather than full-time, heat sources. Their major appeal is their relatively easy installation.

Floor material can play a major role in product choice, though. These systems are ideally suited for ceramic-tile and stone floors, which conduct and retain heat, and are less effective under vinyl, rubber, and cork floors. Pay close attention to manufacturer guidelines when choosing among brands, which vary considerably.

Size it

Mat systems usually have a power load limit of 15 amps, with 120v versions delivering enough amperage for as much as 120 sq. ft. of coverage, and 240v versions providing enough for just more than 200 sq. ft. Some companies sell 24v mats for heating floors in showers and spas.

Price it

Electric floor-mat systems are considerably less expensive to buy and install than water-heated radiant floors. According to architect Russell Hamlet, a typical quote for a medium-size bathroom—about 10 ft. by 20 ft.—will come in at about \$800 to \$1000 once space for cabinets, the toilet, and the bathtub and/or shower is subtracted from the floor area to be heated. Hamlet offers one caution:

Keep heat mats away from the easily melted wax ring under the toilet. "We learned that one the hard way," he says. Note, too, that in-floor electric mats can be expensive to operate, depending on how frequently you use the system. The timers and thermostats designed to control these systems allow users to schedule operating times and temperatures.

Install it

These mats are designed to be rolled onto a subfloor, most commonly plywood or OSB, and anchored in place with latex-modified thinset cement (photo right). Setups typically require two cables running from the floor to an electrical box in the wall: one for the power leads and one for the thermostat sensor cable.

For some products, the type of finished flooring will influence the installation. Sun-Touch, for instance, notes that the heat generated by radiant mats can cause vinyl to deform and discolor, while cork and rubber absorb heat before it gets to your feet. WarmlyYours approves the use of its mats under solid hardwood flooring, but calls for parallel sleepers (strips of wood) first to be laid down over the subfloor to provide solid nailing and channels for the wires. Nuheat, on the other hand, doesn't quibble. When it comes to wood flooring, its system is "only permitted to be installed under laminate/engineered wood floors," according to the company's website.



MANUFACTURERS MENTIONED Convection: www.convectair.ca • www.dimplex.com • www.stelpro.com

New products

Take the chill out with a warm towel

Some bathrooms are adequately heated for most purposes, but still feel chilly when you step out of the shower or bath. Heated towel bars not only offer up a toasty towel, but they also supply a bit of radiant heat to a small isolated bathroom. The model shown here is part of Runtal Radiators's Omnipanel series, which starts at about \$670 for a 250w unit. They can be switched on and off manually, but because of their low-level heat, they are best used with a timer and left to warm up towels for a good three hours or so before you step out of the shower or tub. Models are available for hard-wiring as well as for plugging into a standard outlet, and most products in this category are contemporary in appearance.



Wall-mounted radiant heat

WarmlyYours recently introduced wall-mounted glass-panel heaters. Lava panels range in size from 20 in. by 24 in. to 63 in. by 35 in., and they are available in a variety of colors and finishes. The mirror finish is particularly nice because it serves a dual purpose. The company says that although its panels can be used as a primary heat source for superinsulated spaces, they are intended mostly as a supplemental low-level heat source for bathrooms that are used only occasionally. Lava heaters range in output from 250w to 1000w, with prices starting at about \$1300.

