

The healthy home: Innovations keep homes pure

BY TOM TRACEY

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While they can't control the environment outside, homeowners are finding ways to create a healthier environment inside.

Testing

The first step in creating a healthy home is to determine its current condition. This can be accomplished using alarms and test kits.

"People with vacation homes buy these products," said Pedro Oviedo, sales associate for Ace Hardware in Traverse City. "We even have alarms that phone the owner when they are away."

Alarms can alert occupants of unknown hazards. Carbon monoxide, for example, is a deadly but colorless and odorless gas, and can emit from furnaces, heaters, stoves, fireplaces and vehicles in attached garages, according to the U.S. Environmental Protection Agency.

Test kits can be used to specify the types and levels of toxins in the home. Residents with well water can test for copper, nitrates, nitrites, iron bacteria and hydrogen sulfate.

A test for radon gas — a naturally occurring but potentially carcinogenic byproduct of uranium decaying in the soil — is available. Radon can enter homes through cracks in drainpipes, foundations and basements, according to the EPA.

Another test determines the presence of lead. Used in household paint prior to 1978, lead may affect a child's intellectual development, says the EPA.

"We have a test for that," said Oviedo, "and a test for asbestos."

Home test kits cost between \$9 and \$23.

Air

A typical home carries airborne contaminants such as bacteria, molds, mildew, viruses, animal dander, dust, mites and pollen. Some particulates are removed by filters in home heating and cooling devices.

"Filters in central air conditioners, furnaces and humidifiers should be replaced quarterly," according to Tray Ray, sales associate for Home Depot in Traverse City. "Also, ventilation ducts need to be clean."

Window-mounted air conditioners are a different story.

"They're exposed to more condensation and dust, so the filters should be changed twice as often," said Ray.

Further air purification may be accomplished using an ion generator, which positively charges airborne particulates, then attracts and traps them inside the device. Cost is around \$350.

Even indoor plants contribute to air quality by absorbing carbon dioxide in exchange for oxygen.

Water

In places where the purity of drinking water may be suspect, several options exist for homeowners.

Gene Johnson, sales associate at Home Depot, pointed out that water purification has two goals.

"One is to remove sediments like rust and sand; the other is to remove odors and bad taste. This is best done by installing two separate filter devices," said Johnson.

"Install a water purification system where the water line first comes into the house, before the water heater or water softener," suggested Johnson. Cost is about \$200.

"A second water purification system can be installed at the faucet," said Johnson.

The system uses either reverse-osmosis or activated carbon to trap impurities.

"You can go as low as \$18 for a pitcher with a built-in filter," he said.

Toxins

As part of the manufacturing process, some building materials may contain various levels of toxins.

John Kerridge AIA, a Traverse City architect, has observed three trends in building healthier homes.

"Low VOC (Volatile Organic Compounds) are now being used in finishes, and I'm seeing alternative materials used for some of the underlayments," said Kerridge. "Also, houses

are so tight now that adequate infiltration — ways of allowing fresh air in — is a consideration."

Not all toxins are introduced through manufactured materials; some occur naturally.

The greenish-black "toxic mold" *Stachybotrys chartarum*, although not common, has been implicated in building-related illness. The EPA notes "materials with a high cellulose and low nitrogen content (such as fiberboard, gypsum board, dust and lint)" combined with "high levels of moisture" are conducive to toxic mold.

Homeowner Mike McMaster of McMaster Construction Inc. pays attention to the moisture

in his own home.

"I'll turn the humidifier down when I get moisture at the bottom of my windows," said McMaster. "A 45 percent humidity level is about right."

Pests

Even ways to deal with outside visitors inside the home has changed.

"One thing I think is interesting is the Pest X," said Roxanne Brown, operations manager at Home Depot. "It plugs into an electrical outlet and sends off high-frequency sound waves that drive away insects and mice."

The cost is under \$17.

Tom Tracey is a local freelance writer.

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