Sniffle prevention. Planning ahead *before* you build to make your home's air healthier, may save on tissues later.

PLAN NOW to Breathe Easier Later

Studies conducted by the EPA indicate indoor levels

If you're like most who plan to build a new home, you probably have specific ideas of what you're looking for in an elevation, floor plan, amenities and even color schemes. But have you considered choices you can make now to ensure healthier air quality in your future home?

Studies conducted by the Environmental Protection Agency (EPA) indicate indoor levels of pollutants are sometimes 2 – 5 times higher than outdoor levels. Considering the amount of time we spend in our homes, it is imperative to maintain healthy air quality in them.

Given today's advanced building methods, most new homes are built "tight" to reduce air leakage. This reduces molds, pollens and other allergens from entering the home. That's why tight homes can be very beneficial from a health standpoint, as well as saving energy. However, they can also create a relatively closed environment–somewhat like a terrarium with a sealed top. If there are toxins in a closed home, they can become very concentrated. One effective way to alleviate this problem is to add a fresh air exchanger. An air exchanger exhausts potentially stale, polluted air from the home and replenishes it with fresh outdoor air at a controlled rate.

Air filters are the place to start when looking to improve indoor air quality. An air filter's performance is measured by its MERV (Minimum Efficiency Reporting Value) rating, which

will range from 1 to 16. The higher the MERV rating, the better the filter is at removing particles and allergens, particularly the majority of harmful particles which are so small they can't be seen by the naked eye. Standard 1" disposable fiberglass furnace filters were designed to protect your furnace—not your health. They filter only the largest particles, having a MERV rating between 1 and 4. Standard pleated filters offer more surface area for filtration and may carry MERV ratings up to 6. High performance pleated filters offer MERV ratings as high as 10. Electronic air cleaners add an electrical charge to the media filter for even higher performance.

Another primary step is to incorporate radon-resistant measures in new home construction. According to the American Lung Association, as high as one in every 15 homes in the United States has radon levels above the recommended action level. For more information, visit the U.S. EPA's radon web site, www.epa.gov/radon or call 1-800-438-4318 and request *Building Radon Out: A Step-by-Step Guide On How to Build Radon Resistant Homes*.

Some of the principle culprits of indoor air pollution are VOCs (volatile organic compounds) from chemicals, paints, varnishes and stains. Due to greater awareness, some no-VOC paints and varnishes have recently been developed.

One of the most common VOCs is formaldehyde, found in particleboard, fiberboard and hardwood plywood wall paneling. Because it is so pervasive, it is difficult to eliminate, but outgassed fumes can be reduced in several ways. APA-rated oriented strandboard (OSB) and softwood plywood produced for exterior construction use contain phenol-formaldehyde (PF) resin—which emits formaldehyde at lower rates. Using these products as much as possible indoors, choosing solid wood furniture and sealing the surfaces of wood products (especially edges) with a good sealant will reduce formaldehyde emissions. Substituting wire closet shelving instead of particleboard can also help.

An increasing number of formaldehyde-free products are becoming available for residential use—such as hardboard from waste wood, particleboard from wheat straw, MDF (medium density fiberboard) from recycled paper and wood veneers.

For a list of manufacturers and suppliers, see *The Green Building Resource Guide*, published by Taunton Press (available at www.taunton.com).

Other steps you can take to ensure healthier air *before* you move in:

- Minimize combustion gases (such as carbon monoxide and nitrogen dioxide) in the home by choosing an electric range (or a gas range with a pilotless ignition) and making sure all gas appliances (range, water heater, furnace, fireplace and dryer) are vented to the outdoors. When available, sealed combustion units are best.
- Air seal the garage ceiling and walls that adjoin living space in the home.
- To reduce the chance of mold problems, make sure grading around the house leads away from the foundation and downspouts channel water away from the house. Do not plant shrubbery or other plants that must be watered within five feet of the foundation. Make sure an adequate drain tile system is installed in the yard and superior water proofing materials are applied to the wall sheathing and the foundation. In humid areas, it may be safer to avoid vinyl wallpapering within the home.
- Never put carpeting directly over cement. Instead, lay it on a raised plywood subfloor.
- Use a mildew resistant paint in the basement.
- Dehumidify crawl spaces rather than ventilating them. Keep soil free of biodegradable materials and cover soil with a heavy, airtight, polyethylene vapor barrier. Make sure any ductwork in the crawl space is well sealed.
- Vent dryer vents and kitchen and bathroom fans to the outside (rather than into the attic space).
- If allergies are a problem, choose shades or blinds for window coverings – or easy care curtains that can be washed frequently. Because carpeting also harbors dust and pollen, hardwood, ceramic or vinyl flooring may be a better choice.
- Consider an ultra-violet light air purifier that burns molds, pollens and bacteria on your heating/air conditioning unit. Go to www.herhome magazine.com/54a click on "Resources."

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For more information on building a healthy home, see www.healthhouse.org.