



November 2008

INSIDE THIS ISSUE

- 1 Are you new to Building Biology?
- 1 Upcoming Courses and Events
- 2 Questions & Answers – Granite countertops
- 2 Bioaerosols – Dust Mites?
- 3 Winter Issues with Gas Appliances *Dan Stih, BBEC*



- [Need a program](#)
- [Find a consultant in your area](#)
- [Need more information](#)
- [IBE courses](#)

www.buildingbiology.net
for your source of
information

Are you new to Building Biology?

Have you ever spent time in a building that embraced and nurtured you...body and soul, one that awakened and delighted your senses? In order for us to be truly healthy, our homes need to supply us with adequate opportunity to rest and relax, they need to nurture, as it is only through that that we can truly recuperate at the end of the day and recharge ready for the next with the strength to deal with the day's emotional and physical stresses.

There is an international movement of concerned individuals who are concerned with the environmental factors of the built environment that affect human health. This group is involved with delivering current information regarding environmentally friendly building systems and materials. This group is the International Institute for Bau-Biologie® and Ecology (IBE).

Bau-Biologie® is the holistic study of the man-made environment, human health and ecology. The intrinsic aspect of IBE is to hold Nature as the golden principle. Bau-Biologie, or Building Biology, was founded in Germany by a group of professionals from a variety of disciplines concerned about the inability of post-war housing to support health and ecology. IBE was started in North America in 1987, with a mission to raise awareness that buildings can abide by the laws of nature.

Nature is the ultimate guideline.

Upcoming Courses and Events

- | | |
|--------------------|--|
| December 4-8, 2008 | IBE 213 – Natural Healthy Building, Clearwater, FL |
| January 31, 2009 | Re-certification Deadline for BBEC
(details on the website) |
| April 16-19, 2009 | IBE 313 – Natural Healthy Building, Summertown, TN for practicing BBEC's and Natural Builders (space is limited, register now) |
| May 21 – 25, 2009 | IBE 211 – Indoor Air Quality Seminar, Clearwater, FL |
| Aug 20 – 24, 2009 | IBE 212 – Electromagnetic Seminar, Clearwater, FL |
| December 3-7, 2009 | IBE 213 – Natural Healthy Building, Clearwater, FL |

Stay tuned for other events including programs in your area by approved providers

Questions & Answers

Can granite counter tops be radioactive?

In building biology we are usually dealing with a variety of building materials that come with a rather low-radiation dose, but are installed across large areas. Whenever possible, such exposures should be avoided to exclude long-term effects. Natural sources of radioactivity such as radium-226, thorium-232 and potassium-40 can accumulate in natural stones, building materials and industrial products, depending on the originating mining area and production process.

The specific activity of natural radionuclides varies substantially among different materials, but even within one type of material great dose variations can occur. Among the building materials of natural origin, silicone-rich magmatic rocks - especially granite - show a relatively high content of natural radionuclides. From a radiation health perspective, radon-222 resulting from the radioactive decay of radium-226 is of particular interest.

Detection: Unfortunately, the common Geiger Mueller (GM) and Radon detectors are not very well suited for such measurements. When you hold a typical radioactivity detector in the air, you will measure gamma rays from the ground (which contains uranium and radium) and cosmic rays or gamma rays from outer space. These readings, known as background readings (of gamma rays), cannot be compared with the readings from the surface of granite, which are mostly beta particles.

So for Prudent Avoidance - Measure with either device; it can tell you if you have something that is higher than the background and should be avoided.

Each newsletter IBE experts will address a question submitted by our readers.

Submit your question to
Outreach@buildingbiology.net

Bioaerosol –

Bio – from life
Aerosol - airborne

Bioaerosols – Dust Mites?

Building Biology Information

What: Dust mites live in the warm humid environments of bedding, carpeting, stuffed furniture, and stuffed animals. Dust mite allergies are not caused by the mite, but by the feces produced by the mite and by dead dust mite parts. The primary food source for dust mites is skin scale and/or fungi growing on the skin scale. This is found in high use areas where there is a high degree of human activity – bedroom, bed, bathroom, upholstered furniture. Humidity and temperature control survival, the relative humidity > 50% is required for dust mites to survive.

Action: Keeping your home clean and well-ventilated, and using suitable light reduces the opportunity for dust mite growth. Dust mites and many other microbial organisms cannot tolerate ultra violet light. • Bed linens should be exposed to air daily and sun whenever possible. • Use of HVAC and dehumidifiers limit the mite populations by keeping the humidity below 50%. • Wash bedding and stuffed animals weekly in very hot water, bleach is not necessary. • Pillows accumulate microscopic skin cells and dust mites. This becomes a significant percentage of the pillows weight after a few years and the pillow must be replaced, as there is no good way to remove the allergic components. • Vacuum mattresses with a HEPA type vacuum cleaner or a central vacuum. • If bedroom is carpeted, vacuum once or twice a week running vacuum slowly lengthwise and across. (Solid surface flooring would be better.) • Mattress and pillow can be encased in cotton barrier cloth. Do NOT use the plastic (PVC) barrier products.

Each month IBE will be provide excerpts from their well-researched course material to empower you to take control of your indoor environment and building.



Winter Issues with Gas Appliances

Building Biologists in Action - Dan Stih

Most of the emphasis on green building is to make things energy efficient, that is airtight so they need less energy to heat them. This is not necessarily a healthy thing to do, especially if you are using natural gas or propane.

Like unfiltered tap water, gas has impurities that come from the ground including lead, mercury, arsenic and radon. Chemicals picked up in the supply line include PCBs, dioxins, tars and waxes. If there is not enough oxygen or the appliance is not perfect (none of them are) formaldehyde and other chemicals are produced when gas is burned, and carbon monoxide detectors don't detect.

Even if gas is filtered and pure, burning gas may lower the amount of oxygen indoors. Just like wood in the fireplace, gas needs air to burn. In the 1980's, Brad Turk of Environmental Building Sciences did research for the EPA measuring oxygen levels in homes that had been weatherized. Turk says "the use of gas appliances generally had very little impact on oxygen levels because most houses are [were] leaky enough to provide make-up air". Perhaps houses are more airtight now. The new unvented gas fireplaces have sensors to shut them off if the oxygen level drops.

Could the use of gas appliance or airtight buildings in general increase the risk of Sudden Infant Death Syndrome (crib death)? SIDS is most prevalent in the winter. Researchers note that SIDS tends to occur due to some combination of oxygen levels, carbon dioxide levels, heart rate, body temperature and the ability to start breathing again after a normal apnea. Ninety percent of SIDS deaths occur during the first six months of an infant's life, when immune systems are not fully developed and are more sensitive to abnormalities in the environment.

Got mold? If a gas appliance is operating perfectly, the main product of perfect combustion is water vapor (look at the water dripping from the tail pipe of a car on a cold winter morning). Unvented gas heaters and fireplaces (those that claim to be so energy efficient they don't need to be vented) contribute more moisture indoors than an unvented clothes dryer. This can cause mold from condensation on windows and cold walls in bedroom closets.

Healthy Alternatives

- Have a Building Biology inspector check gas stoves, heaters and furnaces for carbon monoxide as gas leaks at pipe fittings.
- Install a carbon monoxide monitor with battery back up
- Avoid unvented gas fireplaces and space heaters.
- Replace gas water heaters with on-demand electric units and gas furnaces with sealed combustion type units.
- Dilute indoor air pollution by providing ventilation through open windows, especially at night.
- Consider install a whole-house ventilation system that brings in fresh air.
- Do not use a gas heater that you think is malfunctioning
- Placing infants to sleep on their backs rather than their bellies may reduce the chance of SIDS by 50%.



Healthy Living Spaces was founded by Daniel Stih, B.S.E. Aerospace Engineering and indoor air quality consultant. As a Council-certified Indoor Environmental Consultant and Council-certified Microbial Consultant, he is specifically trained to identify how indoor building environments may make you sick and to determine practical and cost effective methods for making them healthier places.

*Healthy Living Spaces
369 Montezuma Ave • Unit 169
Santa Fe, NM 87501-2626
505-992-9904*

References:

Sherwood, Lauralee, Fundamentals of Physiology: A Human Perspective, Thomson Brooks/Cole, 2005, p 400.

Hunt, Carl E., *Sudden Infant Death Syndrome and Other Causes of Infant Mortality, Diagnosis, Mechanisms, and Risk for Recurrence in Siblings*, American Journal. Respiratory and Critical Care Medicine, Volume 164, Number 3, August 2001, pp. 346-357

Please submit articles to outreach@buildingbiology.net for future issues.