

PHILLIPS ARCHITECTURE & PLANNING, INC.
 384 SW UPPER TERRACE DRIVE, SUITE 200
 BEND, OREGON 97702
 PH: (541) 382-8415 FAX: (541) 382-8729
 WWW.PHILLIPSARCHITECTURE.COM

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Toxic Mold — A Product of Circumstance

Written by Annette Prozialeck

Mold has been around for thousands of years – just look in the book of Leviticus where priests would inspect homes for mold before they would pronounce it acceptable for habitation. It is important to note that homeowners have *always* seemed to have some dealings with mold. In the past they were not as significant for several reasons: houses had adequate ventilation and were constructed of materials that were much more resistant to mold contamination and growth. In recent years, we have sacrificed fresh air ventilation for better energy efficiency and have incorporated synthetic, chemical based products into the construction process.

Mold comes in two forms, benign and toxic. Our daily lives are enhanced by the benign mold varieties: penicillin and cheese (to name a couple). Both toxic mold and benign are products of their environmental circumstance. But what circumstances have led to produce a toxic mold?

Most new homes today are built using treated lumber, chipboard (OSB) sheathing and drywall. These materials can be ideal platforms for mold growth. However, the chemicals that have gone into the production of these materials are the very fuel that have led our environments naturally occurring benign mold spores to levels of toxicity. In fact, some of the lumber which arrives on the jobsite is already contaminated with mold and is just waiting for some moisture to start growing. If that lumber has been treated with chemical agents the spores are able to adapt accordingly.

Two favorite growing mediums of toxic mold are chip board and drywall. Drywall has been in use for about 50 or 60 years. Chip board has been used extensively as roof and exterior wall sheathing for only about 20 years. These products contain man-made resins which are a food source for the toxic mold. What we are actually doing is providing a very good environment for mold growth and feeding it the toxic chemicals that create toxic mold! The only other ingredient invasive mold spores need to begin their proliferation is a source of moisture. If your home is in an area where humidity levels can



Mold growing on fallen leaves.

average above 75%, then that moisture requirement is already taken care of. If that's not enough, most houses have at least one major plumbing leak within the first 20 years and may have many small leaks that go unnoticed for some time. So, we are building mold incubators that *contain* the mold within the home once it begins growing, and feeding it the necessary chemicals to create a toxic species. Also, keep in mind that the greater the air concentration, the greater the amount of spores and toxins the occupants will be breathing.

- Continued on Page 5

Inside this issue:

Toxic Mold—A Product of Circumstance	1
AAC: The World's Smartest Building Material	2
Project Completions	3
Under Construction	4
Thanksgiving—Office Closure	4
Toxic Mold - cont from page 1	5
On The Boards	6

AAC: THE WORLD'S SMARTEST BUILDING MATERIAL

It is our pleasure to introduce E-Crete, an amazing building material that is now available on the West Coast after being used widely around the world for 80 years. The timing couldn't be better. An increasing number of contractors, architects, and builders are seeking more sustainable and cost effective building materials as the price of lumber increases, toxicity of material is in question and supply dwindles. E-Crete, or Autoclaved Aerated Concrete Block (AAC), provides the perfect solution to these concerns.

Originally developed in Europe 80-100 years ago, AAC has been used all over the world, including Asia, the Middle East, Australia and South America. Many of the structures built over 75 years ago still stand today and continue to require little maintenance, a testament to the durability of the material.

AAC is produced from 5 natural materials: silica sand, lime, cement, gypsum and water, combined with aluminum powder. The special combination of these substances yields a material with excellent construction properties such as structural strength, lightness, thermal insulation and fire resistance. Much of the material used in the manufacturing process is recaptured from non-toxic mine tailings, dramatically reducing the amount of raw materials required for production. Additionally, waste generated during production is recycled back into the manufacturing process.

E-Crete is compatible with sustainable building practices since it requires fewer raw materials to produce and is completely non-toxic. Production of E-Crete is designed to minimize waste and maximize recycling of materials. It is feasible to grind the extra block into a fine powder and produce an interior plaster, leaving very little waste for the landfill.

E-Crete is.....

- ◆ **Lightweight**, weighing approximately 1/5 as much as concrete. This attribute makes the design and construction of AAC buildings easier and less strenuous. The lighter weight doesn't compromise strength as AAC has a compressive strength of 435 psi.
- ◆ **Energy Efficient**. The closed air cell construction of AAC provides superior insulation equivalent to R-values between 20-24. It is possible to save up to 40% on energy bills because of the combined DBMS (Dynamic Benefit of Massive Systems) measurement which takes into account how thermal energy moves through a material in addition to the R-Value. The breathable qualities of E-Crete allow energy to move through the blocks very slowly, thus ensuring that the interior temperature remains consistent.



Home designed with E-Crete.
Courtesy of Cascade Stone Craft

- ◆ **Fire Resistant**. E-Crete is non-combustible and transfers heat slowly. E-Crete has a UL fire rating of 4 hours for a 4" non-load bearing wall. As a result, insurance premiums may be lower for AAC built structures. AAC built structures provide homeowners with added piece of mind in fire prone landscapes.
- ◆ **Extremely Versatile**. Because it can be shaped by ordinary power tools with ease, E-Crete lends itself to aesthetically pleasing designs like curves, arches and domes.
- ◆ **Easy to Install**. E-Crete can be drilled, cut, cored, chased and shaped on site. Plumbing and electric lines can be routed directly into the block.
- ◆ **Affordable**. The installed cost of E-Crete is competitive with other building materials, but there are additional cost savings:
 - Faster construction time
 - No need for fiberglass insulation
 - No sheet rock required
 - Color pigments can be added to stucco and plaster
 - Energy use is reduced by up to 40%
 - Low long-term maintenance
- ◆ **Sound Absorbing**. In addition to providing thermal insulation, dead air cells within the blocks reduce the passage of sound. This makes E-Crete ideal for projects next to airports, highways, apartments, resorts or high-density neighborhoods
- ◆ **Wear Resistant**. E-Crete is impervious to pests and will not break down or decompose. It is also completely inert and inhibits mold growth.
- ◆ **Guaranteed**. E-Crete carries a 100-year warranty. Few building material offer comparable protection.

PROJECT COMPLETIONS



Constructed by
Andy Johnson Company,
Olympia, WA

The New Home of
Deschutes County Title Company

Please join us in Congratulations to the following people on a job well done in completing their projects!

- The Deschutes County Title Company— Bend, OR
- The Bell Residence—Sisters, OR
- The Steelhammer-Everett Residence—Bend, OR
- The J. Johnson Remodel—Bend, OR



The Bell Residence—Sisters, OR



Constructed by
Vintage Construction,
Bend, OR



UNDER CONSTRUCTION

Projects that are currently under construction.

- ◆ The Plaza Condominiums—Bend, OR
- ◆ Central Oregon Builders Office Building – Redmond, OR
- ◆ Karnopp Peterson LLP Office Remodel—Bend, OR
- ◆ The Blankenship Triplex—Bend, OR
- ◆ The Seelhorst Residence—Bend, OR
- ◆ The Orner Residence—Awbrey Butte
- ◆ The Neely Residence, Eagle Crest
- ◆ AB Premier Homes—Marchi Residence, Bend
- ◆ The J. Johnston Residence— Bend, OR
- ◆ The Jones Remodel—Bend, OR
- ◆ The Moore Remodel—Bend, OR
- ◆ The Snow Residence— Bend, OR
- ◆ The Wann Residence - Sunriver, OR
- ◆ The Steindorf Residence—Black Butte Ranch, OR
- ◆ The Schreiber Residence—Bend, OR



The Wann Residence



Karnopp Petersen LLP Tenant Improvement



*Phillips Architecture & Planning
wish you all a*

Happy Thanksgiving

*Our office will be closed the week of
November 21—25 to observe the holiday.*

Toxic Mold — A Product of Circumstance (cont. pg 1)

We have not lost our battle with mold, however, there are alternatives to living in a toxic mold incubator. Whether you are building a new residence or planning defensive measures for an existing home, there are several things that you can do to create a healthy living environment for you and your family while inhibiting the growth of toxic mold. Let us first discuss what can be done in your existing residence for protection.

The first thing that should be done is to have your home inspected and tested by a Certified Mold Inspector to determine if mold is present, and if so, how far the mold has spread, what type of mold it is and where the moisture is coming from that supports the mold colonies. One of the simplest and least expensive measures of mold protection is to install a 3M Ultra-Allergen filter in your return air. These filters will remove about 90 % of all mold spores in the air, as well as, other particulates greater than 1/3 micron. You should check these filters at least once a month and replace them when you can see a visible buildup on the filter membrane. A more thorough (albeit more expensive) solution is to install a forced-air HEPA filter, with an auxiliary fan, in the return air to eliminate 99.97% of all airborne particles. Annual home inspections by a Certified Mold Inspector for possible mold and hidden moisture problems can be a considerable savings to you against the negative effects of mold to your health and your property in the long run.

In the event that you are building a new home, there are several things that can be done to safe guard yourself and your investment from mold contamination. Firstly, the homes initial design can be your best defense against mold. A home designed with good air circulation and ventilation can be a simple first step. Secondly, the materials chosen for your homes construction can act as a natural mold growth inhibitor from the onset of the construction process. E-Crete or AAC Block can provide for sound construction without sacrificing energy efficiency. AAC (autoclaved aerated concrete) is an inorganic, non-toxic material that wicks moisture making it impervious to mold. If you are using traditional building materials, it is best to



Proliferation of mold on the under floor of a residence in Sisters, Oregon

choose the products that are less likely to assist the mold in its growth process. Chipboard (OSB) should be avoided, if possible, and lumber should be kiln dried and stored in an area that does not invite the growth of mold spores. It is highly recommended that a Mold Inhibitor Treatment is done during construction by a Certified Mold Specialist. Finally, as with existing residences, proper air filtration that incorporates a UV air purification system along with a forced-air HEPA filter at the return air to provide the highest protection and the cleanest air possible.

While mold is not the ideal foe to combat in our homes, it is battle that we can win. It is our pledge and commitment to you that we at, Phillips Architecture & Planning seek new, more healthful, building materials and follow sound construction and maintenance procedures, the end result will be healthful homes that will endure through the generations.

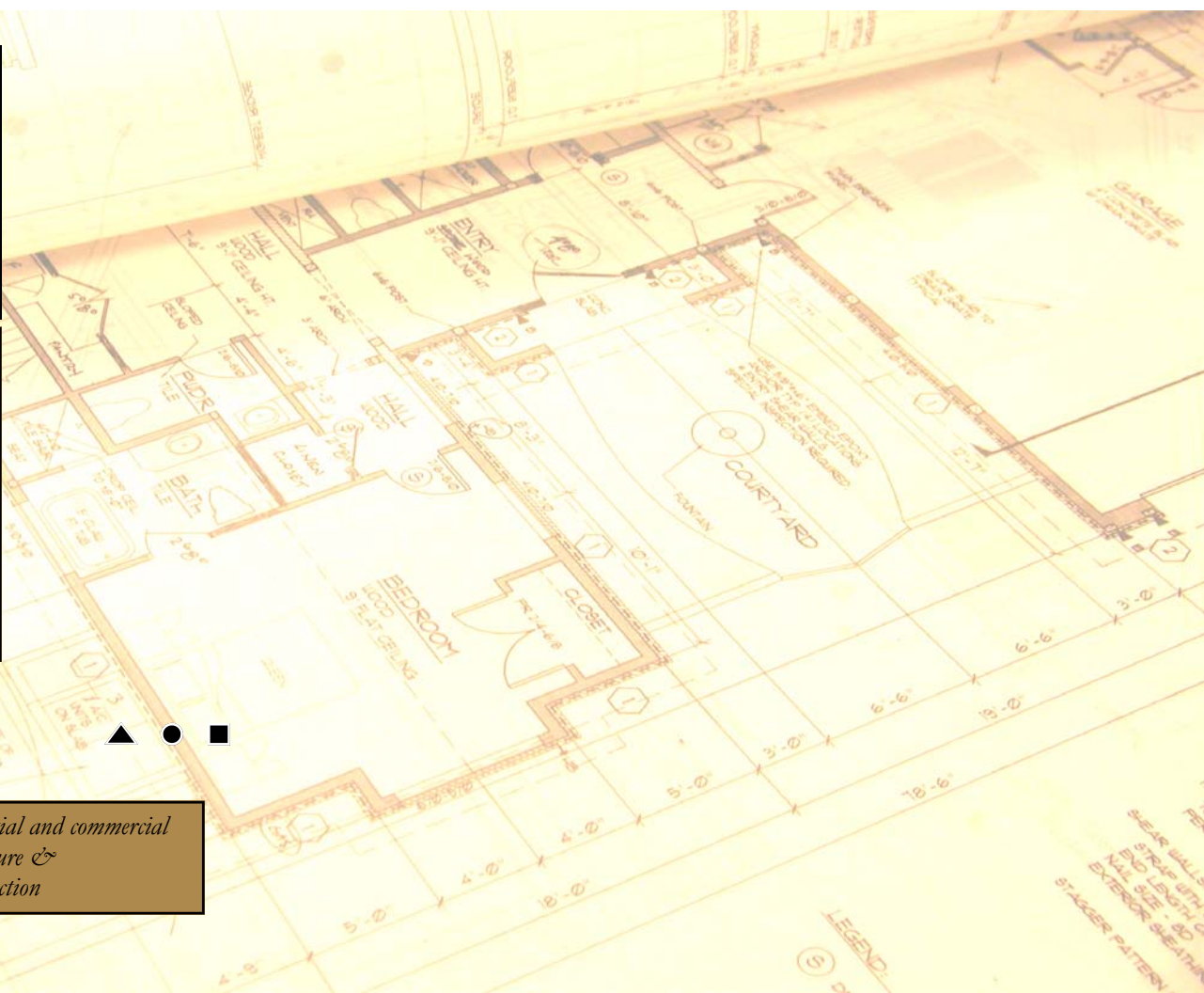
For additional information on toxic mold, mold inspections and treatments, air filtration systems, and healthful building products, contact our office at 541-382-8415 and we will direct you to the products and specialists in your area. Δ

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*Excellence in residential and commercial
 Architecture &
 Construction*

ON THE BOARDS

Welcome Aboard! We appreciate the opportunity to bring your ideas to fruition!

- ◆ Aspen Title & Escrow—Klamath Falls, OR
- ◆ The Barg Residence—Sunriver, OR
- ◆ The Belser Residence—Awbrey Butte
- ◆ The Bolton Residence—Reno, NV
- ◆ The Bott Residence—Sisters, OR
- ◆ The Garrigan Remodel—Bend, OR
- ◆ COR Space Planning/Cascade Village—Bend, OR
- ◆ The Harcourt Residence—Eagle Crest
- ◆ The Harris Kimble Residence—Bend, OR
- ◆ The Hatfield Residence—Brothers, OR
- ◆ The Keller Residence—Bend, OR
- ◆ The McFarlane Residence—Eagle Crest



Future Harcourt Residence



Future Bott Residence



The Future Home of Aspen Title & Escrow
 Klamath Falls, Oregon