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## GREEN BUILDING: Green building in its simplest form

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WNC GREEN BUILDING COUNCIL

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Defining green building should be simplified so everyone can understand the general meaning of this important profession. I have been in the field of green design for more than 15 years and this is what it encompasses to me: Building healthier for you and the environment.

It is that simple, and like many things in life, it is that complex. As an individual with health challenges resulting from toxic chemically derived building materials and toxic mold in structures, I can only speak from the standpoint of what I know really works to alleviate this common problem in our homes.

I am not alone in this challenge. According to the Mayo Clinic, recent studies have linked mold to a 300 percent increase of asthma rates over the last 20 years. I have helped many folks eliminate the chemical toxins from their environments — simply so they could stay alive and well.

Building healthier can involve different methods and materials for different people. Two of the more popular methods involve a reliance on the sun (solar) and natural materials like wood for heating, which creates a healthier environment for their families and the environment. Some think that creating and maintaining clean indoor air quality is our best chance for staying healthy in an unhealthy environment. These are both good ways to build. And both ways can take advantage of the many new materials that are being made today that are more respectful of the environment and people's health. This is good news.

There are, however, some facts about our climate here in Western North Carolina that can influence both of these building methods. We are in a mixed-humid climate zone according to the EPA and EEBA (Energy and Environment Building Association). This means that for more than 200 days of the year we have outdoor humidity levels between 75 and 100 percent. The recipe of high humidity and reliance on natural ventilation (opening of windows) in homes creates toxic mold indoors.

Given this fact, green building should have an end result of keeping the home dry inside and out. Moisture migrates indoors in several ways and moist air, unlike arid air, finds the first porous surface it can and it makes a home — and then it grows and moves. This is where visible mold comes into play, especially if the humidity is constantly above 60 percent, inside and out.

Can an active solar home have an end result of staying dry, inside and out? It takes so much electrical energy to run a mechanical ventilation system that a PV (photovoltaic) system cannot handle the load. This is a complaint I hear often from people who are building solar or have built solar and are now faced with mold because of their reliance on natural ventilation for cooling. We need to find a nontoxic, affordable solution to this problem along with a lowering of the cost of PV panels (tax credits do help) in order for solar building to become more affordable and healthy.

I believe the best way to ensure a healthy-built home or green home is to build it tight and ventilate it right. The other essential ingredient to this recipe is to use nontoxic materials on the inside of the home. There are many

mechanical ventilation systems on the market now including ERVs (Energy Recovery Units) and HRVs (Heat Recovery Units). Both types exhaust stale air and bring controlled amounts of fresh (and filtered) air in. Neither have the dehumidification capacity needed in a mixed humid climate. There is another system that brings a controlled amount of fresh air in, filters it and acts as a whole house dehumidifier, but leaves out the exhaust part of the equation. This seems to work well in this area, because you end up with a positive pressure in your home at all times. According to Building Science Corporation, even the tightest home will have weep holes in it. And when a house has a constant positive pressure in it, that stale air will find its way out.

Cindy Meehan-Patton is one of the founders of the WNC Green Building Council. She owns her own residential design practice with a healthy buildings consultation division and a green products store known as Shelter Ecology Inc. ([www.shelterecology.com](http://www.shelterecology.com)). Cindy has been a resident of Asheville since 1983.

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