Moisture and warm temperatures are ideal conditions for decomposers, organisms that cause wood rot and decay. Decomposers recycle nutrients which are stored in natural materials such as wood, back into the soil to be used as building blocks for growth of other organisms.

Decomposers are important in the cycle of life, but while creating building blocks for life, they can destroy buildings and creating maintenance problems for wood structures.

Old stone buildings of marble, granite and quartz have stood for centuries in Europe and the middle east. Florida architecture is much younger and these rocks are not natural here. Most of the original wood buildings have long since been weathered and destroyed by organisms such as termites, fungus and beetles.

Chemicals have been used to treat wood to prevent insect damage, rot and decay and some have been found to have serious environmental impacts. It is important to consider cost as well as impacts of wood destroying organisms, benefits of long structural life, reduced waste of lumber as a resource and environmental impacts.

Penta and creosote are some of the older treatment products. They smelled bad and were not paintable. CCA or chromated copper arsenate has been used successfully for over 30 years in outdoor settings where conditions favor decay. However, there are significant environmental impacts.

In 2004, CCA treated wood was taken off the market for many uses where folks are likely to come in contact with it, such as public playgrounds, picnic tables and decks. CCA treated wood was found to release arsenic into the soil where it was in ground contact. Sawdust from the construction process allowed more chemical to leach into the soil than did ground contact with solid boards.

Older CCA treated wood is aging resulting in a great need for treated wood for replacement and repairs. That coupled with the change in environmental regulations have encouraged the industry to develop some alternate products.

An alternative treatment known as ACQ became available and provided the construction industry and do it yourselfers with another product to keep termites and fungus from destroying wood. ACQ is a waterborne product that also contains copper but it is considered less toxic than CCA for structural timbers and ground contact uses. Since copper is toxic to aquatic organisms, ACQ has limitations and should not be used for docks and other water contact areas.

There have been problems with corrosion of fasteners used in construction with the newer ACQ treated wood so specially treated fasteners must be used. This precaution is noted sometimes on a stamp on the wood or on the fastener packaging. If you fail to use the correct fasteners, the connections could fail causing dangerous conditions on stairs, ramps and decks. This is a special concern after all the hurricane repairs that have been made in haste, often with untrained and/or unlicensed workers.

Borates are on the market for above ground use to treat wood for termite prevention in situations where the wood is not exposed to rain or groundwater. There is a sustainability concern since there is a limited supply of boron to be mined from the ground.

Sodium silicate is a new product under development that is formulated in a way that provides a protective coating around wood cells to prevent decomposition. High temperature treatment without oxygen is another alternative treatment method to help wood resist decay. It kills the organisms that could possibly start decay, as well as reduces the wood’s ability to absorb water and become a suitable host for decay organisms. Other products that chemically change the wood’s ability to absorb moisture are looking to be effective but very expensive.

Naturally rot resistant woods are an alternative that foresters are researching as well. While old Florida homes
were constructed of rot resistant pine and cypress heartwood, wood from regrowth forests do not have the high 
amount of natural chemicals that make old growth wood resistant. Other woods such as ipi and black locust show 
natural resistance to insects and rot but are not locally grown.

Research is underway to find other woods and treatment chemicals that will allow us to use wood, a renewable 
resource in a sustainable way.

Try these solutions for your outdoor construction projects for less toxic wood preservation and preserve history as 
well as property value.

- Seal existing CCA treated wood that is located where people may contact it.
- Wear gloves and dispose of sawdust and wood waste scraps in the garbage where it will go to an approved lined 
landfill.
- Do not burn CCA treated wood since the burning process releases toxic chemicals.
- Do not chip CCA treated wood into mulch.
- When working with ACQ treated wood, use hot dipped galvanized nails, hurricane ties and other fasteners that 
are labeled as meeting ASTM A153 or G185 standards.
- Do not use ACQ treated wood or borate treated wood for docks in lakes to avoid leaching of chemicals into the 
water.

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Date: September 17, 2006