



AN ENVIRONMENTALLY FRIENDLY HOME and LANDSCAPE, Part 2

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In the U S Green Building Council's LEED for Homes program there are 8 areas of Accountability (Innovation and Design Process, Location, Sustainable Sites, Water Efficiency, Indoor Environmental Quality, Materials and Resources, Energy and Atmosphere, and Awareness and Education).

In last month's column, we discussed two of the 5 potential credits that can be attained in the Sustainable Sites category. In this column we will discuss the remaining three (Shading of Hardscapes, Surface Water Management, and Non-Toxic Pest Control).

Shading of Hardscapes: The intent is to reduce local heat island effects. There are no mandatory measures for this credit. The optional measure is to design and install trees and shrubs to shade at least 50% of sidewalks, patios, and driveways within 50 feet of the house (at 5 years' growth) OR install light colored, highly reflective materials for at least 50% of the site's non-roof impervious surfaces. The shading of hardscapes around the home will reduce irrigation needs as well as temper the home's outdoor environment. Also, locate trees, fences, shrubbery or other plantings to capture or deflect seasonal breezes as appropriate. The local heat island effect can be minimized by providing shade over paved surfaces. This will enable the homeowner to better utilize the outdoors, even on hotter days. As is typical of our terrain, the home footprint area on our lot consisted primarily of Ashe Juniper (cedar). We chose to eliminate most of the cedars around the house footprint. Once construction was completed, we planted a 3-inch diameter Chinquapin Oak tree to shade the carport area. Other landscaping choices were native and/or drought tolerant plants and shrubs, such as desert willows, Mexican redbud, various salvias, skullcap, and germander. This fall we will be planting additional trees: a big tooth maple, a lacey oak and a Texas ash.

Surface Water Management: The intent is to minimize erosion and run-off from the site. The mandatory measure is to install permeable material for at least 65% of the undeveloped portion of the site. The project is exempt from this measure if the lot is less than or equal to $\frac{1}{4}$ acre. The optional measures are a) Install permeable paving material (e.g. pervious pavement or grid pavers) for exposed walkways, patios, playgrounds, recreation courts, aprons, and driveways; b) Design and install permanent erosion control measures. These could be installing permanent storm water control (i.e. vegetated swales, onsite rain garden, etc.); reducing long term run-off effects through the use of terracing and retaining walls and planting one tree or four 5-gallon shrubs per 500 sq ft of disturbed construction area, or four large, 5 gallon shrubs (four 5-gallon shrubs are equivalent to one tree). Erosion represents the loss of a valuable resource from the home site — topsoil — that can overload storm sewers, and may cause stream clouding and siltation (with potential harm to wildlife). Permeable surfaces also encourage recharging local aquifers and may reduce irrigation needs. Even though an asphalt driveway would reduce the dust and not diminish scarring the terrain, we purposely chose screened river rock as the driveway material for its pervious nature. The paving industry has developed pervious asphalt and concrete; however, I could not find any contractors in the area that used these pervious materials. We also used crushed granite on the walkways, again for its pervious nature and lack of dust.

Non-Toxic Pest Control: The intent is to avoid the use of poisons for insect and disease control. There are only optional measures for this requirement. A) In areas with termite infestation, treat all cellulosic material (e.g. wood framing) with a borate product to a minimum of 3 feet above the foundation OR place sand or diatomaceous earth or a steel mesh barrier termite control system OR use non-cellulosic (i.e. not wood or straw) wall structure. B) In areas with termite infestation, use solid concrete foundation walls OR masonry wall with top course of solid block bond beam or concrete filled block. C) Keep all wood used at least 12" above soil (code requires 8". points. D) Protect exposed foundation insulation with moisture-resistant, pest-proof cover (e.g. fiber cement board, galvanized insect screen). E) Install rodent and corrosion proof screens (e.g. copper or stainless steel mesh) on all openings that cannot be caulked or sealed. F) Separate any wood-to-concrete connections (e.g. at posts, deck supports, stair stringers) with metal or plastic fasteners / dividers OR have no wood-to-concrete connections. G) Install landscaping so that all parts of mature plants will be at least 24" from the house. Adopting turf limits and native plantings can help to reduce the need for other toxic chemical such as fertilizers, pesticides, herbicides, etc. Keeping plants away from the house is also advisable to avoid irrigating close to the house and thereby minimize the risk of moisture leaking into the home's foundation.

Further resources for the reader:

[IPM Practitioners Association](#) – This site places emphasis on urban, non-agricultural applications.

[Bio-Integral Resource Center](#) – Part of what makes the LEED for Homes program important and work for all of the industry and environment is that the compliance of these homes with LEED criteria must be verified by a third party (other than the builder). Verification activities include documentation, review, field inspections, and performance testing.

Common Sense Pest Control, William Olkowski, Shiela Dar, Helga Olkowski, Taunton Press, 1991