Letters

Tree Roots and Foundation Cracks

In his answer to the question about whether tree roots can dry out the soil beneath a foundation enough to cause the concrete to crack (*Q&A,* 7/09), Bill Palmer refers to expansive soils. But in fact all nonexpansive clayey soils will also shrink as tree roots "suck" the moisture out of the soil — a process known as desiccation. When desiccation occurs with roots that extend beneath the bottom of the footing, the foundation will indeed settle, usually resulting in cracking.

When we investigate a settlement problem in an area known to have clayey soils, trees are the first things we look for. If a tree canopy extends over the roof or is even near the wall line in the area that is settling, then dessication is the most likely cause, since the tree's root system has about the same diameter as the tree canopy. If the settlement is not too severe, it can be stopped by removing the tree, which is the least costly solution. If the tree is not removed, settlement will continue until the foundation will ultimately require costly underpinning with hydraulic or helical piles.

Desiccation can be confirmed with soil testing. In some cases, the geotechnical engineer might be able to predict how much additional settlement will occur based on the moisture content of the clay. It should be noted that it is not possible to water the grass and hope that water will be reintroduced into nonexpansive clay — clay is relatively impervious and will not accept water by gravity alone.

Stuart Jacobson, P.E., S.E.
Northbrook, Ill.

Code Logic

In "Reroofing With Asphalt Shingles" (7/09), the author says he uses a single-layer self-adhering membrane for underlayment on roofs having a roof pitch between 2/12 and 4/12. But the IRC — section R905.2.2, which applies to asphalt roofs — says that a double layer of underlayment is required for slopes between 2/12 and 4/12.

Ken Landes
Blue Springs, Mo.

A page later, IRC section 905.2.7, which addresses ice barriers where there is a probability of ice dams, allows for a self-adhering polymer modified bitumen sheet — a membrane like the one referred to in the article — to be used instead of two layers of felt cemented together. According to Andrew Visser, a technical rep for W.R. Grace, maker of Grace Ice & Water Shield, "If one layer of a self-adhered underlayment is good enough for the ice-dam areas, then by extension a single layer is sufficient as the underlayment for the entire roof." — The Editors

Don't Mix Plastics

The article "Condensing Storage Water Heaters" (6/09) was interesting and informative, but I was appalled that professional plumbers would glue ABS pipe to PVC because they ran out of ABS. I'm not a fan of ABS-to-PVC transition cement because it's significantly weaker than either ABS or PVC cement. With the expansion rate of ABS 25 percent higher than that of PVC, there's a good chance the joint will eventually break and leak, due to the heating and cooling cycle every time the hot water heater runs. I've seen this several times in home inspections and service calls on waste lines.

Jim Nordstrom, P.E.
Overland Park, Kan.

Site-Built Arched Trusses

Who makes the truss system used to create the enclosure in the article "Roofing Under Cover" (*Backfill,* 6/09)?

Niels Kampmann, Architect
Warwick, N.Y.

The temporary roof framing was designed by the GC and assembled on site. Here's another view (below). — The Editors