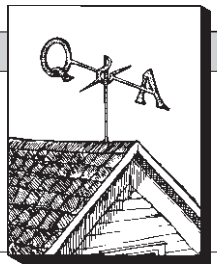

Indoor Pool Problems

by Henry Spies

Q. *We are building a house with an indoor pool. The pool room is beneath a structural slab, which forms the garage floor. There will be a dropped ceiling under the slab, which will house recessed lights. What type of framing and fasteners should be used in the ceiling? Is the steel reinforcing in the slab at risk? What other precautions should be taken?*

A. The load of two cars on a span of at least 20 feet will require a *major* structural slab. I would suggest consulting a structural engineer for its design. Precast T- or double T-beams could be used. The slab should be treated as a plaza deck because of the salt and slush brought in by the cars. This means a wearing surface, waterproofing, a layer of insulation, and then the structural slab. The stirrups for the reinforcing steel should be of plastic, and care must be taken to be sure no rebar or mesh is exposed on the bottom of the slab where it will rust.

The more insulation the better, because this will reduce the tendency for condensation to form on the bottom of the deck and drip back onto the dropped ceiling. The pool room will need to be ventilated to control the humidity. If the water temperature is 85°F and the air temperature is 75°, it will take 1/2 cfm of ventilation per square foot of water surface running 24 hours per day to keep the humidity at 50 percent. A pool cover to reduce evaporation when the pool is not in use will be almost essential.

The dropped ceiling can be hung from threaded inserts or keyways cast into the slab, or from studs placed with a powder-driven fastener system, using pump-rod nuts and steel hangers. If recessed lights are used, there can be no effective vapor barrier in the ceiling, so the dropped ceiling cannot be insulated. Perhaps the ceiling should be eliminated and track lighting installed, with a sprayed-on acoustic control, or mechanically attached acoustic absorption pads. ■

Cracking Corners

Q. *I've been installing drywall for years and recently had a problem develop. After two to four weeks, cracks develop at some of the corners and seams. A new coat of mud on the crack seems to solve the problem, but I would like to avoid this in the future. Any suggestions?*

A. I'm afraid not. The problem is probably lumber shrinkage, caused by the wetter lumber that is now being delivered in many instances. As it dries, it shrinks and opens the cracks in the drywall. Lumber shrinkage is responsible for many problems, some recognized and some not. Few builders, or even lumber dealers, have a moisture meter to find out just how wet the lumber is—and when to reject it. ■

Floating Slabs

Q. *We would like to develop a site with a very high spring water table. What types of foundations might be suitable and economical? Are full foundations out of the question?*

A. Probably the best solution is a slab-on-grade foundation. Slabs have been maligned for years but are still a good, economical solution for a site with a high groundwater table. The slab should be built high enough that the ductwork in the slab is always above the water table, and surface water will not accumulate at the site.

By a full foundation, I assume you mean a basement. If you are willing to build a reinforced concrete boat and the house is heavy enough to keep it sunk, then a full basement might work. Even with the waterproofing systems and drainage membranes, however, there has to be a place to drain the water to prevent hydraulic pressure from raising the house, or at least the basement floor. Any system that depends on sump pumps is destined to fail, sooner or later. ■

Bleach Without Blotches

Q. *What is the best way to achieve a uniform silver-gray color (without black mildew splotches) on a house we are building about 1,000 feet from the Chesapeake Bay. The house will have large overhangs. What type of bleaching oil is best? Should it contain gray pigment? Which types of wood will weather best?*

A. The best recommendation I have is Cabot's 0241 bleaching oil, which has a gray pigment in it. The clear creosote pretty much takes care of the mildew as well. If it mildews under the eaves, where it is seldom dry, you may have to re-bleach to get rid of the black stain, but that usually is not a problem. Undoubtedly, redwood is the best for weathering to a gray patina, but cedar does well also. ■

Turbine Vents

Q. *I'd like to know about turbine roof vents as compared to static systems. I believe I saw a study that found turbine types were not as efficient as some others. Do you have any information on this?*

A. The efficiency of turbine vents seems to depend on who does the testing. I do not recommend them: I have seen too many taken off their pivots because they made too much noise after a few years. I have also found them covered with garbage bags in the winter, which defeats their purpose entirely. I am not in favor of any type of vent that can be blocked that easily. ■