

Concrete sleuth gets down to basics

By Doug Funks stald witter

Jean Randolph, a Beverly Hills resident, says she's the only persist in forensie around here who works in forensie concrete petrography. She can't understand why anyone would find that exciting. But all kinds of people on the construction scene — consulting enders, builders and suppliers — seek out Randolph's expertise.

"A petrographer identifies and classifies rocks," she sald. "Concrete is cement, water and aggregate — usually limestone in Michigan mixed together and hardene.

"In 80 percent of my work somehing went wrong and they (clients) want to know why." Randolph said. "Some want me to do a quality control check — did we get what we ordered! Maybe some concrete is 15 years old. They want to know then went wrong so they know how to repair it."

Randolph, who carned a geology degree from the University of Texas and "apprenticed" in concrete petrography at the Portland Cement Association in Chicago, tries to find the answers.

HER MAJOR tools are two high-powered microscopes, basic knowl-edge and experience.
Clients send her samples of con-crete several inches thick.
Randolph, working out of a labo-ratory in her basement, cuts a cross-section of the sample with a re-concrete saw. She then takes "output" hours to polish and smooth the knows section.

hours to polish and smootl. One cross-section.

After mounting the satir-direction of the microscope slide, Randolph, sees a smaller saw to reduce the sample to one millimeter thick, then uses a grinder to reduce the sample even further to about 20 micrometers.

"I can see all kinds of microscopic detail on the sections," she said. "I look for micro cracks, air content, agregate quality, cement paste quality," get the water/cement ratio for concrete."

RANDOLPH TAKES two weeks for a study and charges a fee of \$350. She doesn't take referrals from homeowners about driveway and sidewalk problems. What does her study not deter-

Anything that needs chemical analysis or has to do with engineer-

ing or sub-base materials. But 70-80 percent of the time, she can reach a conclusion about what's happening within the material itself.

"You have to be a geologist," Randoph sad. "You have to be a geologist," Randoph sad. "You have to be to reach the trained his not like you go to school. You have to get a job somewhere. Someone teaches you on the folb. It takes years. Every job is different.
"You have to know what's going on in the field," she added. "Everything is so different. It takes years of accumulated knowledge."
Randoph deelded to form her business, Construction Petrographics, as a way to stay active in the field white staying home with her young children. She learned white working for an engineering firm in

No cases stick out in her mind. Or at least none that she wanted to talk about.

Randolph has analyzed chunks from parking decks, curbs, roads, septic tanks and buildings awaiting restoration.

restoration.
"I find her a very astute business person, very energetic, extremely competent in her field," said Richard Melnechuk, technical services manager for St. Marys Peerless Cement Co. in Detroit and vice president for the Michigan chapter of the American Concrete Institute.

Karen Kalbaugh, a graduate geology student, works with Randolph.

Landscaping the natural way

AP — For, homeowners who want to attract wildlife into their yards, Country America magazine offers this advice for a workable

plan.

The plan begins with a sketch of the property as it exists. Draw in the buildings and roadways and all of the existing vegetation — trees, shrubs, garden plants, bedges and

shribs, garden plants, bedges and rassy areas.

Next, determine what new vegetation is required to naturescape the property. There needs to be an abundance of large and small trees, large and small struss, plus tall and low growing plants, including annual and perennial flowers. If this cover also produces widdlife food, it's all the better.

Plantings need to be graduated from the tallest in the back to the shortest in the front. That doesn't mean a person can't plant trees and shrubs in the middle of the yard, but it does mean that what-

ever one plants should not hide the wildlife for which the plantings are intended. Some folks simply let parts of their yard grow wild with fair suc-cess. But a better way is to plant desirable species. The recommend-ed plants will vary by region, of course.

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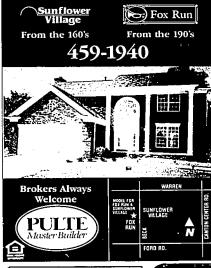


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