Taming the Elements

Progressive community builders attack the business of forging, adapting, controlling, and conserving earth, air, fire, and water in the development process.

BY CHRIS WOOD

Through the Grapevine

Rethinking land use as part of larger soil remediation plans.

When Hemisphere Development and IMG Resort Communities teamed up in 2005 to redevelop the 1,000-acre Diamond Shamrock Painesville Works into an active adult, amenity-heavy resort community on the shores of Lake Erie, they knew soil remediation was the name of the game.

In 1980, the U.S. Environmental Protection Agency placed a 120-acre clay cap over an area contaminated by chromium. Yet that was nothing compared to the settling ponds—the vast, shallow reservoirs that removed industrial contaminants from water used during manufacturing.

"There is an area of the site that—because of historical operations—[has] 300 acres of chalk," says Hemisphere CEO Todd Davis. "From 1912 until 1976, they had a 300-acre pond filled with chalky baking soda and pumped 100 million gallons of water over it each day."

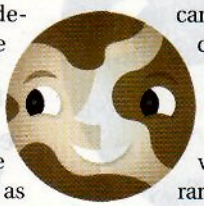
To obtain maximum development value, Hemisphere used common tactics such as locating golf holes on more troubled dirt to obtain recreational remediation approval rather than the more stringent residential standard. "Savvy developers, and brownfield developers in particular, are becoming experts at pushing and pulling the master plan to achieve environmental standards cost effectively but also create value," Davis says.

Covering remediation sites with golf holes is one thing, but Hemisphere saved its master stroke for the settling pond, transforming the chalky soil—which looked and smelled bad but was environmentally inert—into one of the largest commercial vineyards in Ohio. The vineyard that also serves as a viticulture amenity to the development, allowing interested residents to explore the art and craft of growing grapes and creating wines.

Making the Grade

Discovering hidden profits in grading management plans.

Scott Oldham has one simple rule for developers looking to contain costs: Don't import and export dirt. "In hillside topography especially, your grading contractor will often be the No. 1 cost in the total development budget," says the vice president of Irvine, Calif.-based based Developers Research, a land optimization consultancy specializing in grading analyses for 12 of the top 20 public homebuilders, as well as serving the institutional real estate arms of Lehman Bros., Goldman Sachs, CalPERS, and Hearthstone.



Oldham argues more needs to be done to promote grading management plans that orchestrate the efforts of civil engineers (i.e., site planners) and soil engineers (i.e., dirt movers and graders) in the design and grading stages of site development. He also prods many developers to consider soil and aggregate removal as a mining operation and profit center.

"It can be $10 per yard to blast and move material, and that could eat the entire profit off of a 10-lot subdivision," Oldham says. "That doesn't mean you avoid that alternative at all costs. It might be $10 million to remove the rock, but you might be able to grind it on-site, sell it for $15 million, and make your site more developable."

Total Impact

Aboriginal construction techniques make a comeback.

North and Central American aboriginal peoples and 17th-century Spanish colonizers both knew there was nothing quite like using 4-foot-thick earthen walls to control the harsh climate of the southwestern United States. But forget the dark clay caverns of yore: Today's homes of the earth are decidedly more functional—and fashionable.

In fact, the use of rammed earth as a structural material is limited only by imagination and wall width. "Height gets more expensive, but structurally if your wall is 4 feet wide, you can go 40 feet high ... 5 feet wide, you can go 50 feet high," explains Tom Wuelpern, president of Rammed Earth Development, a Tuscon, Ariz.-based design and development firm specializing in rammed earth and adobe, the construction of custom homes, and the development of mixed-use and multifamily sites.

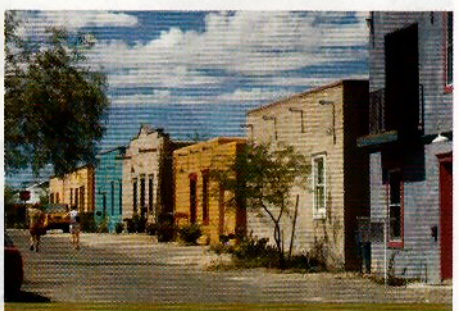
In addition to offering environmental benefits such as promoting interior thermal mass and reducing lumber use, rammed-earth construction also fits naturally into traditional Southwest community architecture. This is an advantage that Wuelpern says mainstream green architecture needs to recognize with greater credence.

"There is a whole new wave of green buildings that are ultra modern and all glass," Wuelpern says. "They may have been built with sustainable materials, but in this climate that glass turns the building into an energy pig. Sustainability is great, but we need to keep track of what is going to be timeless architecture for our locales 50 years from now."

The Mayans and missionaries likely couldn't agree more.

IN VINO VERITAS: Hemisphere Development has remediated 300 acres of industrial waste into a community vineyard.

STAKING A CLAIM: Developers Research wants site engineers to rethink the grading, moving, and even selling of their dirt.



RAM TOUGH: Today, rammed-earth construction is more practical and aesthetically viable for Southwestern developers.

LEFT TO RIGHT: HEMISPHERE DEVELOPMENT; DEVELOPERS RESEARCH; RAMMED EARTH DEVELOPMENT