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Building in a Coastal Environment

More builders are becoming aware of construction's effects on a coastal environment.

By Chuck Ross

One of the great attractions of coastal living is a sense of closeness to nature. But over time, adding homes to such interconnected locales can degrade their surroundings — unless builders take care to address potential problems. Calling in the right professionals before planning begins can minimize such damage and, in some cases, even help restore natural features that may have been lost already.

Understand the terrain

Beaches and dunes may be the first images that come to mind when you consider coastal settings, but these areas actually can incorporate a much broader range of sensitive ecosystems, including marshland, estuaries, vernal pools and even mangrove forests in the South. Each of these environments contributes to the health of the others and can foster vital plants and wildlife. The first step when considering a site in any such area is to make sure you understand what makes that location unique.

For John Knott, president and co-founder of the North Charleston, S.C.-based [Noisette Co.](#), this understanding begins with a thorough inventory of the site's geology, natural resources and environmental context before any property is purchased. This approach is based on his long experience in large-scale sustainable projects: He developed Charleston's 1,200-acre Dewees Island, winner of the 2001 Urban Land Institute Award for Excellence. Currently the Noisette Co. is leading a 3,000-acre urban-redevelopment project in the city, incorporating restored marshes and waterways among its 4,000 new houses and 5,000 rehabbed housing units.

Get outside help

Knott doesn't take on the work of inventorying prospective sites himself. Instead, he generally calls in landscape architects with a background in land planning to assist in the process, and eventually to develop site plans.

"I think the landscape architects are the ones who should be doing the siting to begin with," Knott says, noting that these professionals will document the direction of prevailing winds along with existing vegetation and tree cover and the overall topography of the area. It's also important to know if any underground streams or aquifers rest under the property and whether soil conditions can support any necessary septic systems.

"Once you understand all that, the site will tell you where the house should be."

Study the past

Builders also need to look beyond present-day condition to understand how a site has responded to its environment over time. Historic erosion rates, storm-surge levels and wind speeds, among other data points, paint a picture of what could happen in the future, not just what a site looks like now. Related maps and other information that help describe such patterns can be found through state natural-resource and coastal-resource agencies, the [National Oceanographic and Atmospheric Administration](#) and the [Environmental Protection Agency](#).

"It's all available information," Knott says. "It takes some time to get to it, but it's not unavailable."

The next step forward

In many coastal communities, the regulators who require builders to gather this kind of background information are most concerned with ensuring that new construction doesn't create any more stress on the environment than it already may be facing. However, a new generation of sustainable builders is looking at ways their efforts can *improve* the existing environment.

By studying historic maps and working with landscape pros, these builders want to bring back long-missing wetlands and native vegetation, a strategy that actually can bolster a building's survivability as it adds to the natural beauty. Salt marshes, for example, provide a natural buffer against storm surges and help filter ground-water contaminants.

"There's been a bit of a philosophical shift," says Timothy Beatley, a professor in the University of Virginia School of Architecture's Department of Urban and Environmental Planning, and author of *An Introduction to Coastal Zone Management*. "I think there's a growing consensus that we've done a lot of damage. I think increasingly the challenge is going to be how we restore those natural systems."

Chuck Ross is a freelance writer who specializes in construction topics. A resident of Cape Cod, he is particularly interested in issues affecting coastal areas.