PHOTO: COURTESY ENVIRONMENT ONE

It's No Gravity Ride

ENVIRONMENTALLY FRIENDLY SEWAGE SYSTEM KEEPS LANDSCAPES CLEAN AND BUYERS CONTENT.

BY BECK BARNES

BLOCKED VIEW: The scenic views at the Great Sky Development (just north of Atlanta) are the root of expensive and time-consuming infrastructure problems.

LOCATED A SHORT DRIVE north of Atlanta in the scenic foothills of the Appalachians, the Great Sky Development is plush with amenities including tennis courts, a water park, a pool, and a lodge clubhouse. But the newly developed neighborhood's most attractive asset—the mountainous views it offers its residents—brought a laundry list of logistical problems to developers and builders alike during the initial planning stages of the community in 2001.

Although the exhilarating views at Great Sky propel home buyers to pay a premium for homes, they also are the root of expensive and time-consuming infrastructure problems. Most notably, they pose significant problems in planning sewer disposal systems. Because of the hilly and wet terrain at Great Sky, traditional gravity systems were deemed impractical due to their reliance on, well, gravity.

"We saw right away that a gravity system at Great Sky wasn't feasible," says Bob McCullough, development director at Fairgreen who oversaw roughly 300 of the 2,800 homes planned for the site. "There was just no way you could do it economically."

According to McCullough, the financial baggage that accompanies excavation in such mountainous terrain—and the implementation of a series of lift stations—was enough for Fairgreen to seek other options. Just as problematic was the idea of implementing septic systems in such an environmentally sensitive area.

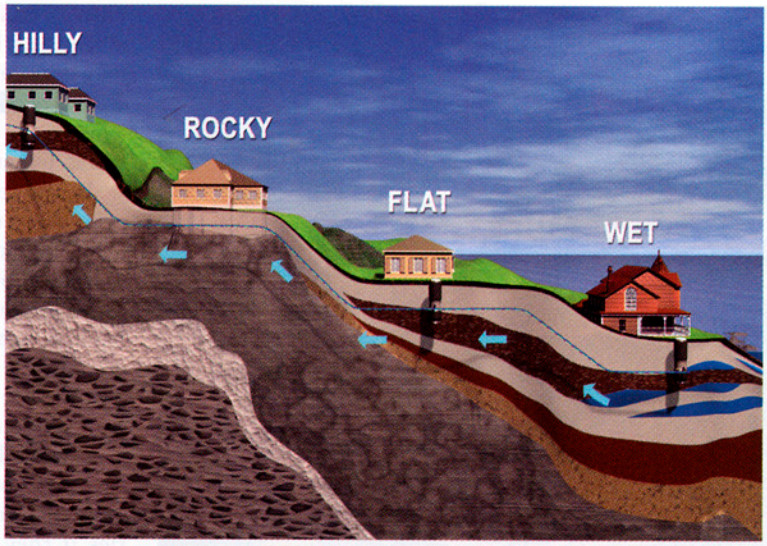
"At Great Sky, we required a low-cost sewer system alternative that would preserve [home buyers'] most important quality of life characteristics, including recreational facilities and waterfront development," says McCullough.

ONE SOLUTION

Enter Environment One, a sewage system developer based in Niskayuna, N.Y., that has been providing low pressure sewage (LPS) systems since 1971. Because Fairgreen had worked with *(see page 79)*

the company before, it was comfortable that E/One's product would best solve the logistical dilemma. The LPS system lends itself specifically to solving the problems caused by uneven, rocky, and wet terrain.

Because a gravity system inherently must flow at a downward grade, the excavation required in hilly terrain can prove costly to both the builder and the environment. The LPS system's advantage is that it uses grinder pumps to force waste through pipes, even at an uphill grade, which is impossible for the gravity system. Subsequently, excavation is significantly reduced. Installation of the 2- to 4-inch piping required for the system calls for excavation no deeper than the frost line.



FLOW CHART: The advantage of E/One's LPS sewage system is that it uses grinder pumps to force waste through pipes, even at an uphill grade, thus eliminating costly excavation required in traditional gravity pumps. It's friendlier on the Earth too.

"When it comes to the LPS system, you do a lot less damage to the terrain, and that was one of the big factors out here—keeping the beauty of the place without tearing up everything," says McCullough.

That sentiment proved to be the foundation on which E/One has built its reputation. "It's really about having a light touch on the land," says the company's George Vorsheim. "Building in an environmentally sensitive and economically sensible manner is what we campaign to aid builders with."

GREEN'S FRIEND

Since its inception more than three decades ago, the aptly named Environment One has provided the LPS system as an alternative to gravity and septic tank systems. Citing the environmental benefits of the product, Vorsheim notes the historical significance of E/One, which was founded as a spin-off of General Electric's research and development center.

The company was represented in its inaugural year at the first Earth Day celebration in New York City that featured these "ex-GE engineers, with their clean-cut style, wearing white short sleeves and ties in the midst of a sea of hippies," laughs Vorsheim. Now, this combination of technological know-how and environmental idealism is providing builders with a sensible alternative to traditional sewage practices.

"You see a certain amount of greenwashing going on these days. We never jumped on any environmental bandwagon. We were more of one of the spokes on the wheels," Vorsheim says.

Economically, E/One's LPS system just makes sense at the Great Sky development. At the heart of the pressurized system is its grinder pump, which is smaller than a washing machine. The pump grinds wastewater into a fine slurry and sends it through the small, shallow-bedded system of pipes into a sanitary sewer collection system to be treated at a wastewater treatment plant. At Great Sky, it would have taken 20 or more lift stations to accomplish the same feat for a gravity system.

"With the estimated cost for each lift station at $500,000, we saved in the neighborhood of $8.5 million in infrastructure alone," says McCullough.

Because the grinder pumps can be placed inside or outside the home—and are easily connected—they allow for homes to be built on on the most scenic and cost-effective areas of premium lots.

"We're opening up views for these home buyers. You no longer have to have row houses. The landscape architects love it," says Vorsheim. The end result amounts to more revenue for the developer. "E/One can help invent the land, and help [developers and builders] put buildings where they could never before build. Even if you can discover just one lot, you can put a $600,000 building there that you couldn't before."

STAYING POWER

In addition, the cost of E/One's LPS system can be back-end loaded. Up to 40 percent or even 50 percent of the cost can be deferred until the specific lot is sold. Some developers have seen savings of up to 80 percent or 90 percent in front-end costs.

Perhaps the LPS system's greatest attribute is its reputation as a low maintenance system. According to Vorsheim, the rough time in between service calls averages eight to 10 years nationally. The noiseless and virtually out-of-sight grinder pumps have earned a reputation as a non-factor among buyers.

"Property owners like the fact that the grinder pump is easily camouflaged by planting flowers and other landscape plants around the lid," McCullough says. "And the fact that the pumps are low maintenance bolsters our reputation as a developer with long-term quality goals."

Vorsheim cites his company's reputation among developers and builders to provide a cost-effective alternative in sewage maintenance as a main reason for its staying power. Although the technology has been around for decades, many builders and developers—increasingly strapped for lots and always in the market for usable land—are just now warming to it. It took the company 21 years to sell its first 50,000 systems. The next 50,000 were sold in the following seven years, and the next 50,000 were sold just a short three years later.

"We're seeing the acceptance curve of the LPS system really starting to catch on," says Vorsheim. While he admits that the technology is still novel to many builders, more and more are beginning to embrace it. "The technology really isn't all that weird anymore. It's not rocket science. It just saves people money." **BB**

IMAGE: COURTESY ENVIRONMENT ONE