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The next-generation house

Old meets new at the 'NextGen House,' but builders and consumers are slow to respond

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The NextGen house, built for the International Builders Show last month in Orlando, ostensibly served as a showcase of today's best building-science and digital-lifestyle practices, from fortification to resource conservation to digital technology. The question left lingering, though, was why?

Some of the methods and materials that were showcased as if they are the next great thing have been available for a decade, and should be commonplace by now. CE Pro magazine, a trade publication about custom electronics, even mentioned on its Web site in January that the NextGen house itself "has been around for a few years." Despite that, the technologies have been slow to catch on in the marketplace.

Since at least the mid-1990s, some of the same capabilities that are available in coordinated, complete home control have been available, and not the names showcased this year. While these gadgets and practices are indeed useful and exciting, and while many eventually will become commonplace, representatives helped answer why it's taking so long to put the NextGen's demonstrations into place: As if they would rather return to building with straw and mud, the construction industry's slowness to embrace technology is the real culprit.

"The home-automation industry is still in its infancy, with less than 5 percent market penetration," according to a spokesman for Columbus, Ohio-based Exceptional Innovation, one of the house's sponsors. "Consumers have been slow to adopt" these technologies, according to a company press release, because these "exorbitantly priced" solutions didn't fit their income, or because the construction industry didn't yet adopt them or didn't even know about them.

Nevertheless, just as hybrid cars took years to become familiar, if not common, on America's roads, the people behind the NextGen house will continue to showcase their wares until the wares become common.



COURTESY PHOTOS

The NextGen House looks normal, but it's packed with systems and built with methods to make it strong, energy efficient and technologically advanced. At top, these next generation products are designed by Carrier.

More photos



The nation's first Certified NextGen community is coming to Tampa.

Porte de la Mer, a waterfront community of 45 fortified, eco-friendly, energy-efficient and highly digitized houses, inspired by the NextGen house at the International Builders Show (see page 1G) will be built along the Alafia River in Riverview.

The gated community will present four traditionally styled houses that will range from 3,000 to 4,000 square feet of living area, and have private docks in addition to the community's 10 boat slips.

Three two- and three-story models are scheduled to open this month at 7015 Riverview Drive, according to Frank X. Daly, a partner with Brownstone Builders & Associates, a green builder based in Landenberg, Pa., that is building and developing Porte de la Mer.

Additionally, the NextGen demonstration house used at the 2006 International Builders Show in Orlando will serve as the community's sales center. The 2,600 square-foot, single-story house will showcase many products and

Built in the parking lot of the Orange County Convention Center, the NextGen demonstration house was a two-story modular house of 2,816 square feet of interior space. On the first floor, digital technology took center stage, from home automation systems to kitchen appliances.

Digital technology

Life|ware, Exceptional Innovation's digital entertainment and home-automation software system, exhibited how homeowners can set the mood through various subsystems: lighting, climate and/or music. The company's hardware-neutral media center, built on a Microsoft platform, manages photos, films, music and appliances. The homeowner communicates with the system through a television monitor, on wall-mounted touch screen devices, or remotely. It can be configured in zones, and several modes, such as "vacation," "goodnight" or "welcome home," can be set up.

For instance, when the homeowner arrives home from work, the system switches from secure to "welcome home," and she will walk into a climate-controlled house that is playing the music she likes, has turned on the lights she prefers, has lighted the path she commonly walks upon arrival, and has disarmed security. Later that night, the house switches to "goodnight," shutting off lights, turning off music and the television, closing the blinds, and checking the security system around the house.

"The system is scalable to fit multiple price levels (according to) what you're trying to accomplish," said Brett Werner, regional sales manager for Exceptional Innovation, the makers of Life|ware.

Homeowners can purchase a starter home automation package and have it installed in a day through BestBuyBusiness.com for \$15,000. The package includes a media center home server, home-automation software, a 32-inch, flat-screen television, networking components, programmable remote controls, network video cameras, a digital thermostat, heating/cooling system interface, lighting switches and lighting keypads.

This system is not only applicable for new construction, but also it can be retrofitted, too. It's well suited for main residences or pied-a-terres, says the manufacturer.

The NextGen house's kitchen featured appliances that have been available since the mid-1990s, but so far have not become household names. Tonight's Menu Intelligent Oven is a doubly smart oven that also refrigerates. It switches from chilling to cooking at pre-programmed times, so that when the family gets home, dinner is almost fully prepared, which is especially useful for busy families. If the family is delayed, however, a simple remote instruction can convey the proper command. The system can be programmed up to three days ahead of time, and can function as a refrigerator for up to 90 days.

It features a touch screen, and is connected to the Internet to convey messages and take instructions from afar. For example, when a refrigerator part becomes faulty, it electronically notifies the homeowner -- a useful feature in second homes when owners are absent.

demonstrations to illustrate what makes these homes and the community eco-friendly, energy-efficient, Category 5-hurricane resistant and digitized.

Some of those products will include Life|ware, a home-automation system for complete connectivity; PGT windows for impact resistance; and a Decra steel roofing system that can handle wind loads of up to 200 miles per hour. Interior appointments will include hardwood floors, granite counter tops, custom cabinetry, vaulted ceilings, and many windows.

Accrediting organizations include the Institute for Building and Home Safety (under its Fortified ... for Safer Living program), the Partnership for Advancing Technology in Housing (PATH), the U.S. Department of Energy's Energy Star program, the U.S. Green Building Council's LEED program, and the Consumer Electronics Association's TechHome Rating.

For information, go online to www.BrownstoneBuilders.net.

Structural strength

Upstairs in the NextGen house, "emergent" technologies in fortification, energy-efficiency and green building were shown.

Why was modular construction used?

"It takes one-third the time as a concrete or stick-built house, and it's done in a controlled environment," according to Barry W. Holloway, a sales manager for the Buffalo, N.Y.-based Icynene Corp.

The house was built to standards set by the Institute for Business & Home Safety in Tampa, which monitors buildings' resistance to natural disasters. Some of these fortified practices include engineered roof trusses, which strengthen the house and provide more durable connections to the walls.

"These are critical elements, especially during high winds; windows, doors, the roof and windows all have to work together," said IBHS spokeswoman, Wendy Rose.

Efficiency

In addition to having radiant heat tubes in the floor, the NextGen house had a hybrid heat system, to be launched in May by Carrier, that switches between a gas furnace and an electric heat pump. The frequently updated computerized system decides which resource to use, choosing the lower-costing utility based on the homeowner's zip code.

Additionally most of the appliances from the kitchen to the laundry room are Energy Star-rated.

The house's green items seemed to be the most mainstream by today's standards. Otherwise, some of the items employed in the NextGen house are commonly found in today's homes, and others were so new they haven't yet been released to the public.

Demonstrating its green side, the house was insulated with Icynene foam, used paints that do not emit volatile organic compounds (VOCs), and featured photovoltaic panels.

Carrier added a finishing touch its Energy Star-rated heating and cooling system that features an aesthetically pleasing thermostat called The Edge. Instead of jutting out from the wall, the device is less than an inch thick and bears a lid that closes to cover with the keys or LCD inside.

On the Web: NextGenhome.com.