

APA CASE STUDY

Raising Up Raised Wood Floors

This builder took his home to the next level

Owner/builder Scott Murray admits that local contractors questioned his sanity when he began installing a raised wood floor with an enclosed crawl space in the home he was building for his family in hot and humid Florida.

“Some of them just told me I’m crazy,” said Murray. “They asked, ‘Why would you build a wood floor system in Florida?’”

But Murray and his wife knew they wanted a home with height and curb appeal; they wanted classic style and a front porch overlooking the yard. So they decided to forego the slab-on-grade construction typical for Florida and instead design and build a home with a raised wood floor.

Many Benefits

A raised wood floor is an engineered assembly of wood beams, girders, joists and sheathing panels designed to elevate the living space off the ground, isolating it from moisture and pests – two common headaches for Florida home builders. “If you elevate the house, then you are adding additional protection against the termites,” said Murray.

Foundation inspections, underfloor repairs and retrofits are all easier with a raised wood floor system, which can help extend the useful life of the structure. “Access to my mechanicals and electrical systems was important to me,” said Murray. “Maintaining and upgrading those systems down the road is a lot more feasible than on a slab.”

Murray also prefers the comfort provided by a wood floor. “It just feels better on your feet. Concrete floors are cold. They provide a great spot for dogs to sleep on a hot day, but a cold slab allows condensation and moisture build-up, which I wanted to avoid.”



Owner/builder Scott Murray’s desire for a home with height and curb appeal led to his decision to build a raised wood floor system that is “characteristic of the historic architecture that I like.”

Project Summary

PROJECT

Murray House

LOCATION

St. Augustine, Florida

OWNER

Scott Murray

ARCHITECTR. N. Black
Savannah, Georgia**CONTRACTOR/BUILDER**Scott Murray
Green Cove Springs, Florida**ENGINEER**Bryan Murray, PE
Murray Engineering
Green Cove Springs, Florida**COMPLETED**

2009



Closed Crawl Space

Murray wanted to use the raised wood floor to improve his home's performance in terms of moisture management, thermal performance and energy consumption. He opted for an unventilated, enclosed and conditioned crawl space, otherwise known as a *closed crawl space*.

"It made total sense to condition and keep the crawl space dry," said Murray. "Doing so allows me to house my mechanical systems, plumbing, electrical and the HVAC systems in a conditioned environment without odors or pests."

Installation

Building the raised wood floor over a closed crawl space was fast ("we probably gained a week and a half of construction time as opposed to doing a concrete slab," said Murray) but took some planning. The first step was to grade the site to elevate it above the surrounding lot, creating positive drainage away from the building and mitigating groundwater seepage.

Next, Murray constructed a continuous stem wall foundation from eight-inch concrete masonry unit (CMU) blocks over a poured-in-place footing. Once the perimeter walls were built, a 10-mil polyethylene ground cover was placed directly over the clean fill and taped, seamed and turned up the wall.

Murray framed the floor with APA-trademarked I-joists: lightweight I-joists are easily installed and provide optimum floor performance over long spans. Once the joists and subfloor were installed, Murray's subcontractor, BCI Insulation, added a closed-cell spray foam system to the perimeter crawl space walls and Rim Board,[®] effectively creating a 'mini-basement.'

After repairing any damage to the polyethylene ground cover, Murray added a damper-controlled supply and a return air system to the crawl space to control moisture. The system also allows him to maintain pressure equalization and temperature inside the house.

Crazy Like a Fox

Murray said it all made perfect sense to him, but his project created quite a buzz among other builders in St. Augustine. "I'm sure some still think I'm crazy," he laughed. "But I'm confident that I've protected my home from moisture and termites, I improved the envelope's energy efficiency, I am prolonging the life of my mechanical systems, and I am better able to service and inspect my home."

But perhaps most importantly, says Murray, he has a more attractive home with traditional style and charm. "I received over a hundred phone calls in the first weeks after the house went up – calls from people saying, 'Your house sits so beautifully on the lot. If I had to do it over, the first thing I would change is to elevate my house.'"



The continuous stem wall foundation, constructed from eight-inch CMU blocks over a poured-in-place footing, encloses the crawl space.

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