

# Into the Wild Blue Yonder *with Form-A-Drain*

*Footing form speeds housing rebuild at Midwestern U.S. Air Force bases*



**NATIONAL DEFENSE:** *In the rebuild of aging housing units on U.S. Air Force bases in Minot and Grand Forks, North Dakota, the specified stay-in-place footing forms also serve as a foundation drainage and radon reduction system, saving time and taxpayers' money.*

The United States government has figured out how to build a better foundation for national defense—or at least for the housing of stateside soldiers who help provide that defense.

About five years ago, the federal government initiated extensive construction projects to raze and rebuild hundreds of housing units, aged 50 years or older, on several U.S. Air Force bases. The aim is to build new houses with more modern design features for military families living on base. The contracts to rebuild housing units for many of the bases specify CertainTeed Form-A-Drain footing forms for the foundations. Introduced in the 1990s, these footing forms stay in place, as a foundation drainage and radon reduction system.

Minot and Grand Forks Air Force bases, both located in North Dakota, are among a handful of Midwestern bases using the forms in their housing reconstruction projects. Mark Mattson, vice president, Mattson Construction Company, a 102-year-old company specializing in commercial foundations, has the contract for the Minot Air Force Base project. He says that his crew has significantly increased production and cut costs since they started using the forms.

“After our first day of production, we were getting more foundations laid than [the previous subcontractor] was,” Mattson says. “We’re not going back stripping forms, cleaning them and moving them over. About the only thing we’re cleaning are the brackets for spreaders on the system.”

As with any new product, there’s a learning curve, but Mattson’s crew picked it up pretty quickly. “When we started out, we had five, maybe six, people on the job,” Mattson says. As they got better at it, they needed fewer and fewer workers, till they got down to three. “I don’t like keeping extra people on the job if it’s not necessary,” he adds. “These guys aren’t breaking their backs to

get this done either. They’re just working at a steady pace, and they all know what they have to do. Everything just flows.”

Lyle Dietrich, project manager, Industrial Contract Services, Inc., the 200-employee residential and commercial foundation contractor on the Grand Forks Air Force Base project, reports a similar increase in production with the forms. Using a crew of 18 workers, he initially had trouble forming two units a day. “Now,” Dietrich says, “if there’s no weather problem, we’re turning out three finished products a day.”

The forms’ additional features of radon evacuation and groundwater drainage could be vital in the region where the Air Force bases are located. According to the Environmental Protection Agency, North Dakota homes have the highest potentially risk of radon levels. Radon, America’s second leading cause of lung cancer, is a naturally occurring gas that seeps into homes from underground. With Form-A-Drain, the gas enters the drain system through continuous side openings, then evacuates to the outside through a conventional vent pipe. Equally important, the form collects and drains groundwater to either a sump pit or outdoors through a drain pipe.

Groundwater can quickly become a problem in the Dakotas, where the water table can get pretty high, Mattson says. “Where the airbase runway sits at Minot, there are parts where water’s coming out of the ground. Sometimes, there’s water coming out of the pavement. You dig out there, and you might come up with a shovel full of water,” he says.

Dietrich’s crews have encountered similar water woes at Grand Forks. “It’s a low-lying area. We’ve hit standing water at eight feet down. When it rains a lot in the spring the water table rises. We had some issues with seeping water at five feet,” he says.

Form-A-Drain is not a new product, but using it for Air Force base housing is new. Ellsworth Air Force Base in Rapid City, South Dakota, and Whiteman Air Force Base in Knob Noster, Missouri, have also specified Form-A-Drain in their housing reconstruction projects. “We haven’t had any problems whatsoever with it,” Mattson says. “We haven’t used it outside of Minot Air Force Base yet, but I’m sure we will.” ■