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Crawlspaces and Basements

Surveyors have been having trouble describing buildings for the National Flood Insurance Program (NFIP) since time immemorial, or at least since the introduction of building diagrams to categorize general construction techniques. It seemed that every structure we encountered in the field fell between the cracks in terms of conforming to one or another of the proffered examples. The most recent version of the Elevation Certificate, activated in 2009 and now mandatory until its expiration in 2012, has two choices not available in prior editions. While this is helpful, it has not solved all our problems.

Our difficulties often arise due to general confusion and misunderstanding on two fronts: (1) the parallel universes of technical and insurance aspects of the NFIP, and (2) the distinctions between crawlspaces and basements.

The first of these points can be summed up as follows: you can build pretty much any way you want if it meets technical construction standards, but that doesn't mean you will be exempt from mandatory flood insurance coverage. In other words, the technical guidelines proffered by FEMA and others merely provide a means to erect structures that will be a little safer, but the buildings will still be in the flood zone. That means a risk of flooding that must be covered by flood insurance. And that translates to many dollars annually if the structure is not high enough to warrant slightly lower rates, as there is no complete waiver unless the entire building footprint is

removed from the 1% annual chance floodplain by installing fill or altering the floodplain in other ways to reduce its extent. FEMA provides an array of publications, both hard copy and on line, to guide both the design and construction of edifices that for one reason or another must be located within the mapped 1% annual chance floodplain.

The second point is a little stickier. Technically, in accordance with 44 CFR 59.1, "Basement" means any area of the building having its floor subgrade (below

The cover of TB-11 features two cutaway sketches of buildings on crawlspaces, one with the floor of the crawlspace equal to the exterior grade and the other with the crawlspace floor below the soil against the foundation at that point. Doesn't that immediately make the second illustration fall into the category of "basement"? Well, yes and no. Figure 3, appearing on page 5, elaborates on the second cover diagram by adding dimensions for "Requirements regarding below-grade crawlspace

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ground level) on all sides." Notice that there is no dimension for how far below subgrade the floor is, only that it is below adjacent grade. A tenth of a foot, one foot, ten feet subgrade—according to this definition, all are considered to be "basements". The Code of Federal Regulations has no definition of "crawlspace", and instead we must turn to Technical Bulletin 11 (TB-11), issued in November of 2001, entitled "Crawlspace Construction for Buildings Located in Special Flood Hazard Areas, National Flood Insurance Program Interim Guidance."

construction." Here we see that the maximum height from the crawlspace interior grade to the bottom of the floor joist for the next higher floor is four feet, and that the depth between the interior grade and the lowest adjacent exterior grade (LAG) is limited to a maximum of two feet. Just prior to this diagram, TB-11 provides a bulleted list of additional requirements for below-grade crawlspaces that the community must incorporate into its floodplain management ordinances on top of National

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Flood Insurance Program requirements for all crawlspace construction in order for subgrade crawlspaces to avoid being categorized as basements.

So in terms of allowable construction techniques, adhering to dimensional and structural requirements seems to keep the building in the realm of crawlspaces rather than crossing over into the basement netherworld. But here is where we fall into that parallel universe I mentioned earlier: while technically sound if constructed according to the

guidelines in TB-11, “rates for buildings with below-grade crawlspaces will be higher than rates for buildings that have the interior grade of the crawlspace at or above the adjacent exterior grade, since the risk of flood damage is greater for the former type of construction.” (From page 6 of TB-11.)

Wanting to find out more about the insurance side of distinctions between basements and crawlspaces, I went to the source (being FEMA) to elucidate once and for all. The following hypothetical examples illustrate the difference in

annual premiums between a structure with a basement that is below grade and a structure with a subgrade crawlspace. Thanks to Dave Zaika for his efforts in pulling this information together.

In both examples, the coverage for buildings and contents begins with a basic amount at one rate charged per hundred dollars of coverage, with a lesser rate for additional insurance coverage up to the legislated limit (which changes as the National Flood Insurance Act is modified by Congress to reflect rising housing costs). 

Example One

Basement floor is 1 foot below the Base Flood Elevation and 3 feet below grade on all four sides. Risk is a single-family house, two floors with a basement, located in flood

Zone AE. Requested coverage is \$100,000 for the building, \$50,000 for contents, with deductibles of \$1,000 structure/\$1,000 contents. The LAG is 226.00', the basement

floor is 223.00', and the Base Flood Elevation is 224.00'. Therefore the elevation difference for rating is -1 [comparing the BFE and the basement floor].

Basic Bldg. 60,000 x 1.89 = \$1134	Add'l. Bldg. 40,000 x 0.67 = \$268	Total bldg. premium	1402.00
Basic Cont. 25,000 x 0.60 = \$150	Add'l. Cont. 25,000 x 0.14 = \$35	Total cont. premium	185.00
		ICC premium fee	6.00
		Federal fee	40.00
		TOTAL PREMIUM	\$1633.00

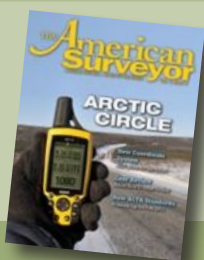
Example Two

Crawlspace floor is 1 foot below the Base Flood Elevation and one foot below grade on all four sides. Risk is a single-family house, two floors with crawlspace, located in flood Zone AE. Requested coverage is \$100,000 for the building,

\$50,000 for contents, with deductibles of \$1,000 structure/\$1,000 contents. The LAG is 224.00', Base Flood Elevation is 224.00, the crawl space floor is 223.00' and the lowest elevated living floor is 227.00'. The crawlspace enclosure is less

than 1,200 square feet, with proper flood vent openings. There is no machinery or equipment in the crawlspace enclosure. The starting rate is +3, which is the difference between the elevated living floor level and the Base Flood Elevation.

Basic Bldg. 60,000x0.32 = \$192	Add'l. Bldg. 40,000x0.08 = \$32	Total bldg. premium	224.00
Basic Cont. 25,000x0.38 = \$95	Add'l. Cont. 25,000x0.12 = \$30	Total cont. premium	125.00
		ICC premium fee	10.00
		Federal fee	40.00
		TOTAL PREMIUM	\$399.00



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