Sizing Footings

I was pleased to see Mike Guertin's "Better Deck Piers" article in the Feb/Mar 2015 issue raise awareness of footings. Sizing footings based on tributary area has been a topic of interest for many involved with the development of DCA6; in fact, an Appendix and Commentary to DCA6 is being developed in that regard.

As far as the DCA6 prescriptive approach, we believe, based on the example presented in Figure 4 of the article, that a joist span of 14 feet rather than 18 feet should have been used. Just as the cantilever is not added to the joist span for the beam-sizing table, so too it should not be added to the joist span in the footing-sizing table. This correction means that in DCA6, the prescriptive middle footings should be 18 inches square or 21 inches in diameter. A footnote to the footing-size table in DCA6 allows for end-footing sizes to be multiplied by 0.9, resulting in 16 ¼ inches square or 19 inches in diameter. A difference still exists but not as significant as presented in the article. The difference is primarily because the DCA6 footing-size table assumes the maximum joist cantilever is present, which adds to the tributary area. In other words, the smaller the actual cantilever, the larger the difference will be between the calculation method and the prescriptive method.

Also, Mr. Guertin commented that the new beam spans offered in the 2015 IRC are "a bit more generous." The difference between the IRC and the DCA6 table is 3 inches because span is defined differently. The IRC defines the span as being from center-of-post to center-of-post; whereas DCA6 defines it as clear span (from inside face of post to inside face of post.) With that in mind, the difference between the IRC and DCA6-09 isn't significant.

Hopefully this letter adds some clarity to DCA6 and the tools available to deck builders. The tributary-area method is extremely useful and will always be more precise than a prescriptive method, and new DCA6 Commentary provisions will aid in this approach as well.

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Bad Deck-Ledger Behavior?

There is a bit of disinformation [in "Connecting Girders to Deck Ledgers," April 2015] as related to the behavior of a ledger board. As described in the article, the ledger behavior is the same as that of the rim joist and its point loads; however, reality is very different since a ledger's dynamics are a universe away from the rim joist's. When one factors in the fastener schedule of lag bolts that tie the ledger uniformly to the main structure and the cumulative effect of the decking on the framing, the illustrated properties associated with the described load and moment around the girder/ledger are virtually nullified. In fact, with a standard schedule of lags factored into the mix, the forces required to promote the effect illustrated would substantially exceed the holding capabilities of the hanger holding the girder in place, thus causing a catastrophic failure at the girder/ledger point load, not a situation that is likely in the real world for reasonable structures—possible but not wholly likely.

Anonymous reader comment (online, 4/30/15)

Safety Reminder

On page 22 of the latest issue of *PDB* ["Installing a Patio Cover," May 2015], there is a picture showing a guy on a ladder leaning way out away from the ladder. Because his weight is pushing in the opposite direction of where he's working, the ladder can slide right out from under him. Also, his feet can follow gravity's laws and skate off the ladder rungs, and he'll go down feet first, which won't feel good. The railing below won't be a comfortable landing pad, and the mattress over what looks like a doghouse is too far away to help.

As a 46+ year veteran in construction, I've learned a few things about accidents. Work safe: Respect what you're standing on as something that can—and will—fail in a heartbeat if you aren't careful.

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