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editorial

Simplify the Building Codes

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The structural engineering chapters of the building codes are too complex. I think we all agree with this statement. Why are they so complex and what can be done to make them simpler? Unfortunately, structural engineers created the complexity, are perpetuating and advancing the complexity, and are doing little to simplify the code. Structural engineers are the problem and we can be the solution.

Setting aside the "we are the problem" part, let's look at our opportunities to make the codes simpler. What is it that we, through our representatives in the code process, can do to simplify the code?

First, our representatives must remember the basic purpose of the building code. It regulates design and construction to provide acceptable safety. A building code is not a building code until it is adopted by a jurisdiction. The jurisdiction can be a state, a city, a county or other unit of government. Once adopted, the building code becomes the law of the jurisdiction. Its provisions are analogous to a 55 mph speed limit.

Like a speed limit, the building code must be enforceable. Only provisions enforceable by the jurisdiction's building official should be in the code. Good design practice, detailed methods of analysis or professional standards of care need not be included in the *code*.

Second, our representatives must resist using the code to validate research. Researchers often validate their efforts by pointing to resulting modifications in the building code. Unfortunately, a lot of bad code has resulted from bad research. It is not difficult to conduct tests, interpret the results conservatively, and then propose and obtain a more restrictive code provision.

Third, our representatives must always recognize that the model code process is more political than technical. Let's look more closely at the process.

Jurisdictions generally do not write their own building codes. Instead, they accept model codes developed by private organizations such as the ICC (International code council) or NFPA (National Fire Protection Association). Today, these two model codes are competing with each other for adoption by the jurisdictions. The competition is waged at a political level and has more to do with who controls the political process than with the quality of the provisions written.

There are differences of opinion as to which process is more open to structural engineers. The IBC Code process is a "Governmental Consensus Process" while the NFPA process is an ANSI or "Industry Consensus Process". The IBC process is very similar to that used to create legislation. There are hearings, opportunities to argue and committee decisions. The NFPA process is more like a democratic voting process with formal resolution of negative votes. In either environment, good regulation takes a back seat to the best presentation or strongest political coalition

Fourth, we should lobby to slow the code cycle down. The Structural Standards Liaison Committee (SSLC), convened by SEI, includes representatives from all of the major standards writing organizations. The SSLC met in Reston on April 30th to discuss common concerns. From that meeting, a strong sentiment was expressed for changing the revision schedule for standards from a three-year cycle to a five or six-year cycle.

Finally, we need to do trial designs. The provisions of the code should be clearer and easier to interpret. Asking uninvolved engineers to conduct trial designs should be used to test new code provisions (see Structure July/August 2003). We can all participate in this process and it will make a difference. Only with trial designs can our representatives properly assess the impact provisions will have.

Before a new regulation is adopted we need to ask the following questions: Can it be enforced? Is it a result of unsubstantiated research? Has it been too compromised by the politics of the process? Has it been trial designed? If the answers are yes, no, no and yes, the regulation passes my test for simplifying the code.