

May 17, 2007

William Pennington  
California Energy Commission  
1516 Ninth Street, MS-28  
Sacramento, CA 95814

Re: Docket Number 05-BSTD-2: 2008 Building Energy Efficiency Standards;  
Additional comments on PG&E CASE Initiative Proposal for 2008 Energy Code

Dear Bill:

This letter follows up our November 1, 2006 expressing the concerns of the CBIA Construction Codes & Energy Subcommittees about the framing cost calculations used for the PG&E CASE proposal for non-residential construction in the 2008 Energy Code. The previous letter is attached for your reference.

After further review of the proposal with a structural engineer, CBIA is willing to amend our proposed remedy to the framing factor calculation flaws in the study. The practical limit for wood framing is 4 stories and 5 stories for cold formed steel framing (at least in seismically active California). Above that, structural steel takes over and the wood or cold formed steel used to frame the walls is similar to the partition wall construction as assumed in the CASE proposal.

However, for the 4 and 5 story mid-rise high density residential housing, the material estimates are still incorrect. This is easiest to illustrate in steel as the required stud thickness changes as stories are added.

4 Story	Engineered increase in steel weight per square foot	CASE assumed increase in steel weight per square foot	5 Story	Engineered increase in steel weight Per square foot	CASE assumed increase in steel weight per square foot
2 x 4	base	base	2 x 4	base	base
2 x 6	27 %	27 %	2 x 6	27 %	27 %
2 x 8	61 %	55 %	2 x 8	61 %	57 %
2 x 10	110 %	89 %	2 x 10	104 %	84 %
2 x 12	183 %	109 %	2 x 12	164 %	111 %

The impact is much higher than predicted by the CASE proposal as the stud size increases.

CBIA proposes the following compromise.

**Do not** apply the tables to the 4 and 5 story "non-residential" construction used for wood and light gauge steel framed mid-rise housing. Instead, set 2 x 6 as a minimum framing size for this type of construction as is typical for this type of construction. Require use of R-19 minimum wall insulation to improve energy efficiency. This will allow continued use of this style of housing construction as a solution to desperately needed urban infill needs without seriously dislocating construction costs.

Use the tables for all other applications for which they were intended (above 5 stories), although we suggest you proactively check with commercial builders on the framing cost. One flaw in the study assumption is that 16 gauge is the minimum manufactured thickness for 12" studs and 18 gauge was assumed in the study. This analysis was supplied by Greg Roos of Lennar Communities. If you have any technical questions please contact Greg Roos at (949 349-8231).

Sincerely,

Michael G. Hodgson

Chair, CBIA Energy Committee

CC: Mazi Shirakh, CEC 2008 Standards Manager  
Robert Raymer, CBIA Technical Director  
Greg Roos, PE, Lennar R+D Manager, Western Region