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## **Alternative building codes**

To whom it may concern:

As a licensed general contractor and energy efficient house designer I have some concerns regarding the latest trends in California's building guidelines. (Code)

For the record, I built a Passive Solar ski chalet in Quebec, Canada in 1979 and have been building and doing retrofits since, always with efficiency in mind, which is often just common sense.

Canada in the late '80s, introduced something called R2000 which was a new, standard of air tightness that is quite similar to what California is doing now. Envelope houses with controlled airflow and machines to condition it, super insulated and airtight enough to pass pressure (blower) tests. Right away and from earlier experiments they realized that Heat Recovery Ventilators had to be invented and drastically improved. When you put people and pets etc., into any controlled environment, the air quality deteriorates. Virtually all of the code applied to stick framed, softwood built houses and required considerable changes to the framing process.

In the early '90s in Germany, another school of energy efficient design emerged; The Passive Haus school of design uses many of the same ideas and can be airtight too, but also enhances the positive characteristics of the site, and defends against the negative aspects. The buildings use Thermal Mass (in the form of masonry usually) to act as energy storage and to moderate temperature swings. It's this aspect of design that I work on mostly, using 3D modeling software (Sketchup) and energy analysis software (Beopt from NREL.com) to discover how a building will work, where to place the thermal mass and other elements like glass and ventilators, before it's built. I can dial in any day or time of the year to analyze sun and shadow locations and to know how much energy is incoming, how much stays, and how much is lost.

My concern is that California's new code only applies to conventional stick frame buildings and sometimes negatively impacts the options for alternative designs. All the 'Ranch style', shoe box bungalows, covered on the outside with heat islanding stucco/concrete are 'inside out'. New insulation should be continuous and applied to the outside of the building, not retrofitted tediously from the inside as this new code would have one do. I see conflicts right away because the Passive Haus code considers the site carefully, and the California code, not at all.

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