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**Update**

I write today regarding the proposed upgrades and changes to the Massachusetts buildings codes, now proposed. My perspective is that of a 49-year veteran of the design and building world, much of it focused on sustainable methods and projects. My involvement spans the creation of New England's first all LEED certified dwelling neighborhood, 54 LEED certifications, and the first-in-world completion of two Living Building Challenge projects.

The proposed upgrades are timely and on target overall. In many ways the new buildings requirements are fairly easy. My suggestions as to reinforcements:

1. HERS rate of 50 is a good benchmark.
2. Infiltration standards should be included, at least 1.0 ACH at 50 Pascals of pressure.
3. Solar ready needs to be defined specifically, as schematically designed and sized, whether ground mount, tracking, or roof top. It needs to be more than a properly reinforced roof system and two conduits.

For existing buildings being renovated, the standards must not be prohibitive in cost, or must be underwritten. For example, a Deep Energy Retrofit aims to reduce consumption by 90%, but this entails a level of renovation and demolition that is far outside the price capacity for most homeowners. So, what to do from a code standpoint?

1. All window replacement from one unit to total building should achieve U 2.0, R-5 windows. along with air sealing prescriptive standards for the

window opening. Some agencies are still recommending double glazing or allowing storm panels on existing sash. This latter in particular does not answer for infiltration, gas filling, or multi surface glass coating which are necessary to achieve U 2.0.

2. Using the business/ public place handicap access approach, a percentage such as 20% of assessed value should work.
3. Gas and oil furnace replacements should be set separately for minimum 92% efficiency. Making electric compulsory here might trigger an electric service upgrade and other work, as well as operating cost impacts for those of modest means, especially on an emergency replacement basis.
4. Air infiltration standards, less demanding than new building, need to be tested for and compliance levels certified. Many older buildings still operate at 6-8 air changes per hour, which means that the air in the building is being heated or cooled every 10 minutes!
5. Over a certain % value, schematically designed solar needs to be required.

Overall, raising standards means raising project cost, in an environment where we need, urgently, to accomplish the reductions in usage, AND increase the supply of housing units available. A recent study has demonstrated that the western four counties are 17,000 units in deficit.

So, on the legislative side, perhaps through the CEC, and similar to the solar loan program, but on a much larger scale, the Commonwealth needs a funding path that provides for equity across economic and social groups and incentivizes landlords to make the improvements and pass the utility savings along to the tenants. If the landlord provides heat and hot water, there should be no increase in rents.

I realize the code is for performance, and the proposed changes are laudable and proper in scope. The comments here are meant to create thought and action processes so that raising standards does not make implementing them unachievable for many residents and property owners due to cost.

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cc. Seth Lawrence-Slavas, President, Wright Builders, Inc.  
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Rep. Lindsay Sabadosa