

Building Energy Efficiency Standards (BEES) Survey Summary

The BEES proposals were examined under the criteria of accomplishing stated objectives in the least costly manner. Because no authoritative Alaskan field studies have been done on some of the proposals the authors used published research, discussions with building officials and scientists, computer modeling, and a survey of Alaskan building contractors to evaluate proposals. Taken as a package, the proposals do not pass a cost-benefit standard because 1) Key elements do not clearly achieve stated objectives in a least costly manner and 2) A lack of prioritizing competing objectives has resulted in some inconsistencies.

For example, the requirement to eliminate positive air pressure differentials had a theoretical basis in reducing moisture damage. But published research based on field tests, computer modeling, and building science indicated there are more cost-effective approaches. At the same time, a change in measuring air leakage has inadvertently increased allowable leakage and this runs counter to the previous objective, as well as an energy efficiency objective. Changing the definition of air leakage does address a bias across home sizes, is a good idea, and simply needs to be set at the right level.

Where field studies were lacking and substantial differences of opinion existed among scientists, building officials, and contractors, a proposal cannot be forwarded as the least costly method of achieving an objective. Some current building codes (such as venting of crawl spaces) do not pass these criteria. Requiring a continuous vapor barrier on crawl space walls in all circumstances was a case in point with the proposed BEES.

Survey results indicated that including chapter two mandatory measures for the Energy Rating method is the most controversial change, and has potentially the widest impact. The analysis suggests that the Energy rating method is the most common compliance method because it allows builders increased flexibility with respect to insulating components of attached garages. This change and elimination of the passive ventilation option would increase building costs for a typical single-family residence by an average of \$670 while not recouping sufficient energy savings.

Requiring all builders to meet other aspects of the mandatory measures was not considered significant because current standards implicitly require builders to comply with these. A change of top concern to respondents was the balancing of air pressures within the structure. This change was largely viewed as excessive and unwarranted by affected builders. The requirement to test and balance air pressure within the structure was estimated to cost \$185. Finally, a requirement to install a vapor barrier on the walls of unheated crawl spaces was considered costly at \$200 without clear economic benefits. This procedure was viewed as fairly involved and if done incorrectly has the potential to cause structural damage.

It was noted that a nationwide asthma epidemic concurrent with the tightening of homes points to a need for carefully evaluating building standards as they pertain to health. Unfortunately, Alaska State health officials are not tracking asthma but it should be a priority concern given the Alaska climate and disproportionate amount of time indoors. Without first establishing clear global priorities as the impetus for changing standards we may be sacrificing more important objectives for insignificant

gains in a lesser priority. The tremendous increase in asthma cases, particularly among children, may indicate a need for establishing a health priority.

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