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Continued support for Detailed Geometry for residential spaces in CBECC

To Whom It May Concern:

On behalf of the CABEC Advocacy team, I am writing today to encourage the Commission to continue to support the Detailed Geometry/3D-modeling approach and workflow within the CBECC software.

In previous versions of CBECC-Com, this workflow was quite helpful in modeling Non-residential and High-Rise Residential projects within CBECC-Com, and used (quasi)-publicly available/accessible tools to aid in building geometry data entry. 3D-modeling is more accurate, and also saves time on all but the simplest of projects. Simplified geometry requires manual measurements and moving back and forth between plans and CBECC. Modelers must perform tedious take-offs by hand, then transfer them into CBECC whereas 3D modeling can reduce the time it takes to complete an energy model by 30-40%.

3D modeling software such as Sketch-Up have been invaluable to energy modelers since CBECC debuted. Beginning models in a 3D format improves accuracy, as it enables modelers to easily visualize and account for all surfaces. Dimensions are captured by OpenStudio, not measured by hand. The detailed geometry method minimizes human error. While the CBECC engine is running, the detailed geometry approach also improves accuracy further by accounting of all surfaces, as well as accounting for self-shading.

As it currently stands, detailed geometry is not available for residential spaces, however it is still available for non-residential spaces. There are many possible approaches to adding this functionality to the workflow for the residential spaces that would not entail a huge effort on behalf of the software team. The issue is one of translation between non-residential spaces (which are modeled in EnergyPlus) and residential spaces (modeled in CSE) which have somewhat different schema.

We understand that this request comes at a time when there are more important and fundamental issues of functionality for the CBECC software. All things considered, we present this as an important "feature request"™ that will have substantial time savings for the industry, and not a critical issue at this time. Nevertheless, as the critical issues are worked out, we wanted to submit this as an important feature that will aid the implementation of the 2022 energy code.

In the meanwhile, members of our committee have considered the possibility of producing our own little translation applet that we would consider publishing publicly (if it works well enough). It would be a band-aid in lieu of a more comprehensive approach internally in the CBECC software, but we mention it to inspire a more collaborative spirit to address ongoing issues in performance software that we hope and wish the modeling industry would adopt, as opposed to pinning all software development on the limited bandwidth and budget of the CEC's™ software team and subcontractors.

California is experiencing a housing crisis. Some sources say that the state needs to

build upwards of 2.5 million units. Affordable housing and market rate developers alike are rising to the occasion. Multifamily residential projects are booming in California. Many Certified Energy Analysts have experienced a growing number of these multifamily projects. With a 3D modeling option, energy consultants can meet the rising demand of projects while helping to keep down costs.

Luke Morton

On behalf of the CABEC Advocacy Committee