

Vermont House Education Committee Testimony, 4/15/15

My name is Matt Kiley. I live in Peacham, Vermont and have made a living as a lighting designer completing large and small projects in hospitals, factories, offices and schools throughout New England since 1985. For the last twenty-five years my work has been all in Vermont. I am certified to use the initials LC, (Lighting Certified) by successfully passing a four hour exam on the contents of this book, the IESNA handbook. While my projects are funded by the energy they save, my designs are directed by the needs of the users in any given space. In schools, particularly K-12 schools, that means creating a comfortable and effective learning environment. I have audited (161) of Vermont's schools. I've completed new lighting projects in over (100) of them. In the last thirty-one (31) Vermont school lighting installations, I have specified the 2011 lower lighting levels recommendations of the Illuminating Engineers Society of North America (IESNA) 10th Edition Handbook.

I am retiring from the lighting business and therefore have nothing to gain from the formal adaption of the latest IESNA recommendations, but before I do retire, I want to smooth the path for those designers who will follow me in the effort to create the most productive learning environments for our children. That is why I approached Representatives Tolle and McCormack and why I sit before you today.

I have long noted and been told by teachers and staff that light levels over forty (40) foot-candles are annoying to children, particularly the youngest students. Our homes are typically lit to between 5 to 10 foot-candles. With the old IESNA minimum light level of (50) fc, that is 5 to 10 times more light than at home. Students, especially the youngest ones, shrink from the imposition of high light levels and are more easily distracted.

As the use of technology, such as LCD projectors, Smart Boards, I-pads, overhead projectors, personal computers and laptops spread in our schools, light levels over (20) fc become a hindrance to modern and more effective teaching methods because light levels over (20) fc washes out the screen. Consequently, those classrooms with high levels of light have to turn off their lights in order to see the instruction on the board. Now the students are taking notes in the dark. At twenty foot-candles, everyone in the room can see comfortably everything in the room especially what is on the instruction board.

It is most common for me to hear in project follow-up visits, that the teachers find the students calmer, less fidgety and more focused on their lessons with the new lower light levels.

In your packet you'll find the most pertinent page of the 10th Edition IESNA handbook. It is written in "*lux*". There are 10 lux in every foot-candle, so you have to divide these numbers by ten (10) to get foot-candles. You'll note that the highest light level for a classroom where the task is reading or writing is (200) lux or (20) foot-candles. Other functions of the room would recommend less light. There are exceptions for science rooms that need to reach (50) fc for demonstrations, art for color matching, and industrial arts and consumer science for safety reasons. Other-wise in the other 95% of the typical school building, the highest level recommendation is twenty foot-candles.

You will also find the back page of four page Efficiency Vermont brochure promoting the benefits of the new light levels. Please note that the Vermont Agency of Education endorsed these new light level recommendations and allowed the agency logo to be printed on the brochure.

Lastly, please consider these salient comments of Vermont School Superintendents, Business Managers and Principals contained in the letters of support:

Jeff Forward, School consultant to Efficiency Vermont "...teaching staff as well as the facilities staff have been very pleased with the results."

Norm Etkind, Vermont Superintendents Assoc. “I have found that the 20 fc level works well for schools and support this bill that will rely upon the expertise of IESNA when setting appropriate illumination levels.”

Chris Kibbe, Supt. Windham Northeast SU “We have had no complaints about the lighting levels”

Chris Locarno, Bus. Mgr. Orange North SU “It has been documented that students are quieter, less fidgety, pay attention better and get less fatigued. I attribute this directly to the lower light levels.”

Bob Mason, Bus. Mgr. Chittenden South SU “I have not heard any negatives from occupants (students and/or teachers) to the lowering of lighting levels in classrooms.”

Dan French, Supt. Bennington-Rutland SU “Both students and teachers have remarked on how much more pleasant the classrooms are with the lower lighting levels.”

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