

Forward Thinking Consultants, LLC

2899 Hinesburg Rd
Richmond, VT 05477
802-434-3770
forward@gmavt.net

Tuesday, April 14, 2015

Vermont House Education Committee
Vermont Statehouse
Montpelier, VT

RE: H. 280, An Act relating to rules on school lighting requirements

Dear Chairman Sharpe,

I am an energy efficiency and renewable energy consultant. I have nearly 25 years of professional experience working on energy efficiency and renewable energy issues and projects and have worked with hundreds of schools; hospitals and other institutional facilities throughout the country to help them evaluate their energy opportunities related to biomass, solar and energy efficiency technologies.

Over the past five years I have worked with Efficiency Vermont to facilitate energy efficiency projects in schools throughout Vermont. There are probably few people in Vermont outside of Norm Etkind from the VSA School Energy Management Program who have been to as many schools in Vermont as I have.

One of the common issues I see when I go to a school is overlit classrooms. Maybe this is because lighting design when Vermont schools were originally built was not as sophisticated as it is today. Maybe it is because of the culture in this country of more is always better. But for whatever reason, many if not most classrooms I have been in are over lit and sometimes significantly overlit. Let me provide an example.

I served on the Mount Mansfield School Board for over 10 years. During that time we had Kiley Company perform lighting audits on all three of our schools, Browns River Middle School, Camels Hump Middle School and Mount Mansfield Union High School. When we went ahead with first lighting retrofit in CHMS, were able to reduce the number of fixtures in the building by one third. In the library of that school, Mr. Kiley measured 210 footcandles. The new Illumination Engineers Society of North America (IESNA) calls for 15 footcandles in that application. In addition, there was insulation installed above the light fixtures. The only explanation we could think of for the insulation was that these schools were originally electrically heated when they were built in the early 1970's and that they installed extra light fixtures in the library in order to provide more heat! Remember at that time, electricity was predicted to become too cheap to meter.

Times have changed. The most respected lighting authority in the country, the IESNA, has done exhaustive research into lighting levels for all sorts of applications including classrooms and schools. Their latest standards recognize that teaching techniques have changed greatly over the years and less light is better for most classroom activities. Children actually see better with less light and overlighting a classroom introduces too much “energy” into the learning environment for active kids. In this case less is more.

So I encourage you to pay close attention to Mr. Kiley’s testimony. In every instance that I am aware of where Mr. Kiley has specified a school lighting retrofit and reduced light levels, the teaching staff as well as the facilities staff have been very pleased with the results. It turns out that a well thought out lighting design can reduce light levels, increase energy savings and provide a better learning environment all at the same time.

One last point. The purpose of H. 280 as I understand it is to correct an antiquated rule within the Vermont Department of Education Standards that requires a minimum of 50 footcandles for lighting design in public school classrooms. This rule is decades old. The latest IESNA standards encourages lighting designers to design to far fewer footcandles for the very reasons I outlined above. The Department’s standards are now rarely enforced because the state provides very little in the way of school construction aid. That could change with the drive to consolidate school districts. I encourage you to change this section of the Department’s rules now so that any school construction projects going forward can be in compliance with the IESNA standards and the Vermont Department of Education rules.

Thank you for the opportunity to voice my opinion. I understand that Mr. Kiley is testifying this week in your committee. I would have tried to do in person as well, but am unavoidably out of state this week. If you would like me to testify in person later this session, I will make myself available at your disposal.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read "Jeff Forward". The signature is fluid and cursive, with a large initial "J" and "F".

Jeff Forward, Principal
Forward Thinking Consultants, LLC