

Conversion of Fluorescent Light Hoods with Fluorescent Tubes to LED Light Hoods with LED Tubes

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Abstract

In order to save money, decrease power consumption, and decrease carbon emissions, fluorescent light fixtures can be converted into LED light fixtures. This project can start within the Science D building, which has outdated fluorescent fixtures running outdated fluorescent lights. The project can potentially expand to all buildings within the HSU campus that use fluorescent hoods with fluorescent tubes, because that would mean more energy savings and cost savings for the school overall. The project would be very low cost because the school already needs to replace fluorescent bulbs on a regular basis. By converting to LED tube lights, the school would not need to replace the LED tube lights as often because of the much longer lifetime of an LED tube light compared to that of a fluorescent tube light.

Project Description

Fluorescent tube light hoods can be converted into LED tube light hoods relatively easily, from my experience and understanding. An appropriate rewiring of a fluorescent tube light hood makes it usable for LED tube lights. Depending on the type of ballast that is used, electronic or magnetic, also may change how the hood needs to be re-wired. Starting with the Science D building, or another building for demonstration, the light hoods can be re-wired to accept only LED tube lights (once converted to accept LED tube lights, the light hoods cannot accept fluorescent tube lights). The rest of the school's fluorescent tube light hoods can then be converted to LED tube light hoods.

Need Statement

Fluorescent lights need to be replaced more often than LEDs, and are less efficient, which means fluorescent lights cost more money to replace and to run to produce the same amount of light as LED bulbs. Saving money and stopping carbon emissions is a win-win situation.

Outcome

The school would likely break even on the investment in a relatively short period of time, since fluorescent tube lights must be replaced often and LED tube lights last for a much longer period of time compared to fluorescent tube lights. The school would also save a lot of money in the long run due to the lower power consumption of LED lights, and the longer lasting lifetime of the LED lights.

Partners

Other engineering students besides myself I'm sure would be happy to support this project, as it's quite simple in theory, however a bit more complicated in practice.

Appendix

<https://www.youtube.com/watch?v=H2-Vxsu4FQg>