SIU Sustainability Council Project
Final Report

Project Information

Project Title	*LED Theatrical Lighting Fixtures: Lighting the Way for a Brighter Tomorrow*
Project I.D. #	41207
Award Date	4/22/2012
Completion Date	11/29/12
Funds used	$31,196.00

Qualitative Assessment and Feedback

Please provide a brief description of the project and your experience.
This project provided for purchase of 26 LED Theatrical lighting fixtures to be used in Department of Theater productions. The first group of 18 fixtures was purchased and integrated into the first departmental production of the Season, *Rent*. The final set of 8 lighting fixtures arrived later and was integrated into the second production of the season. These fixtures have been utilized in every departmental production to date. Three of the four productions to date have been designed by students and all productions utilized students exclusively in the hanging, circuiting, and programing of the fixtures. In each of the departmental productions to date Led fixtures have represented from 25% to 35% of the inventory utilized yielding a significant energy savings. Additionally, since these are color changing fixtures there was no need to provide disposable acetate color media which is typical for conventional fixtures.

What were the best things learned/produced from the project?
Undoubtedly this project has increased the awareness of the efficiency of LED technology. It has been only recently that technology to effectively dim LED sources has been perfected to a level appropriate for Theatrical usage. There are still some low level dimming anomalies with the fixtures purchased through this project, however, careful programing and usage of the adjustable dimming curves available with the fixtures' on-board software can alleviate that. It is highly likely that this technology will improve in this respect and as is the case with most technology become more affordable as markets increase.

How do you define sustainability? In what way did this project confirm or challenge your ideas?
Anything that reduces the burden on our environment either through more efficient use of resources or reducing waste materials is contributing to sustainability. This project has confirmed this notion in both regards through measurable energy consumption reduction and reduction in the usage of disposable materials, i.e. color media and replacement projection lamps.

Where would you like to see this project, or projects like it, go in the future?
Clearly the additional opportunities to integrate this technology are numerous. There are LED fixtures available on the market to replace nearly every type of fixture in the Department of Theater's inventory. While in some cases the LED alternatives could be considered cost

prohibitive, the long term saving suggest it is the appropriate path to pursue. Many of the incandescent light bulbs on campus have already been replaced with Compact Florescent bulbs. While this particular technology is not as appropriate for theatrical usage (primarily because of poor dimming and inappropriate color temperature), it certainly yields a significant shorter term energy savings with less of an initial financial investment than LED technology. I have in fact, replaced much of the lighting in my own home with CFL bulbs. As LED technology continues to advance and reaches a wider segment of the marketplace it should become a more affordable alternative in terms of initial investment. LED's are fast becoming an industry standard for theatrical illumination and should be seeing increased usage across the illumination industries both commercial and private.

Do you have plans for continued involvement in such work? If so, how did this project contribute to those plans?
This project effectively replaced approximately 10% of the existing total Department of Theater fixture inventory and approximately 15%-20% of the inventory unutilized for any one production. A goal of replacing 75% of the existing inventory with LED fixtures would yield very significant savings in energy consumption and replacement of expendable materials such as lamps and color media. (There are some attributes of conventional incandescent fixtures that LED technology can as yet effective replicate, so a total replacement of the inventory would not be recommended at this time). Having the fixtures available from this project, however, has given us the opportunity to better understand the functions, programing, and integration of these new luminaries into a lighting design. This should provide a more seamless integration of additional units in the future.

Optional: Do you have any suggestions or ideas for the SIU Sustainability Council?

Please attach at least 5 images of your project. Make sure that at least one of these includes a picture of you with your project and, if applicable, your team. These images may appear on the Sustainability Council website to help inspire future projects and to promote sustainability at SIU Carbondale.