

SIU Sustainability Council Project
Final Report

Project title: *LED Theatrical Lighting Fixtures: "Lighting the Way for a Brighter Tomorrow", Phase II*

Project I.D. #: 101208

Award date: 12/10/12

Completion date: 9/18/13

Funds used (if different from award amount): \$20,193

Brief write up of project/project experience (not to exceed 250 words):

With the addition of LED fixtures previously purchased with a Green Fund award, the existing lighting control console in the McLeod Theater had nearly reached capacity for control channels. The purchase of the new console with funds provided in this round of funding increased that capacity 5 fold. Also added to our inventory of LED wash fixtures were 4 additional Colorado Batten 144 strip-light type fixtures to add to the eight purchased with previous funds. Purchased with the new console was an I-Pad and app allowing it to serve as a remote unit. This was a substantial savings as the available manufacturer's remote cost in excess of \$2,000. The I-pad and app were purchased at a cost of less the \$500 combined. With the LED fixtures provided by these funds, we have substantially decreased the energy consumption during our performances. As an example: A silhouette effect was created for the recent production of *Rag Time*, this effect was created using LED fixtures purchased with this award and the previous award. This effect alone (not counting other LED fixtures used in the production consumed 2,160 watts of electricity. To create a similar effect utilizing convention fixtures would have consumed 54,000 watts of electricity. For the run of the production and rehearsals this represents a saving of approximately 2,480 kilowatt hours of energy. Additionally the new lighting console has provided students to work with technologies previously unavailable and student designers the opportunity to create designs using industry standard technology.

Best things learned/produced from project:

Students have had the opportunity for practical experience utilizing LED lighting fixtures, experiment with vastly improved color mixing technology and using the advanced programming capabilities of the new console they have been given a greater understanding of lighting programming with DMX 512 protocols. Students and our audiences have gained exposure to sustainable illumination technologies and an appreciation for the need for conservation of electrical energy.

How do you define sustainability?

For us in the entertainment lighting discipline, sustainability is primarily about utilizing illumination sources that provide the greatest amount of luminous energy and flexibility in control as well as design choices for the smallest possible energy consumption footprint. Additionally, long life sources and color changing luminaires, reduce significantly the quantity of expended waste materials.

Has this changed over the course of your project? If so, how?

The basic principles remain the same. However, the technology available continues to advance at a significant rate. Manufacturers are introducing new fixtures every year with greater capabilities and increased efficiency. The technology remains somewhat expensive from a start-up stand point but, as with most technology the size of the marketplace and efficiency of manufacturing techniques will eventually reach a point that will drive costs down.

What do you see as the next step for the project?

The next two steps in order of priority for this project would be 1. Add LED fixtures to be used in place of existing moving light intelligent fixture in current inventory. This would add significantly to our energy savings as moving head lights can be utilized to replace multiple fixtures in any lighting plot. It would also provide additional capabilities and practice for student designers and electricians to work with advanced programming techniques. 2. Add LED fixtures to be used in place of existing spotlight type ellipsoidal fixtures in current inventory. This would be a relatively expensive addition as there are currently in excess of 200 such fixtures in the current inventory, however it could be accomplished by adding blocks of fixtures in multiple stages.

Optional: Do you have any suggestions for the SIU Sustainability Council to improve the Green Fund award process?

Current procedures and practices appear to be working quite well.

Attach a minimum of five images – these will be used to promote interest in Sustainability Council projects. These can be photographs of the progress of the project, the completed project, or promotional materials.