General outline for design presentation

Introductions- John – all members of group, provides a timeline history including early seeds -ACS Teaching with Technology grant (2005) and Mindy Griffin, Sabbatical

BHAG (big hairy audacious goal)- To transform Heather Hall into a working LABORATORY for sustainable energy technologies. Heather Hall would become a place to set up “real life” simulations- in other words, emergent technologies would need to satisfy Heather Hall’s current and ongoing functions as performance classroom and performance venue. Prime areas of testing and research include light-emitting diodes, renewable energy generation technology, energy monitoring, and electrical energy systems.

I. PHASE ONE- RESEARCH AND DESIGN

In September, this group was formed and we established the goal of a carbon neutral energy system in Heather Hall. We formed the hypothesis that, if we implemented light-emitting diode technology in all lighting systems (house light, work light, stage light) in Heather Hall, then the drastic reduction in energy usage might allow for the extant roof(s) above it to be fitted with renewable energy resources such as sun and wind that would zero out our new energy usage.

Thus, we began meeting regularly, often inviting contractors and business representatives from the regional community, focusing on solar, wind and light-emitting diodes. Alexis Gette, with help from Kelly Lessard, created a Segue site that serves as our clearinghouse for current-event articles, scholarly reports, meeting notes, etc.

As I began my sabbatical in January the group began weekly meetings and we continued our research format. Our design began taking shape and our members’ roles in the project.

John- The design of the new lighting systems in Heather Hall

Alexis- Stage manager and web mistress

Shorty- Energy monitoring, electrical installation

Kira- Solar arrays and technology

Nathan- Wind turbines and group organizer

Bill- physics - renewable energy guru

THE DESIGNS

LIGHT EMITTING DIODES- JOHN

ENERGY MONITORING KIOSK- JOHN AND SHORTY

SOLAR ARRAY - KIRA

WIND ARRAY- NATHAN

WEB PAGE DESIGN AND PRODUCTION- ALEXIS AND KELLY

II. PHASE TWO- IMPLEMENTATION OF THE DESIGNS

DESIGN BUDGET- John will put this together by Friday of this week

The first part of the SUSTAINABLE LABORATORY to be installed is the energy monitoring system that will allow for web-based readouts and archiving of actual usage. A kiosk will be installed against the stone wall that faces out to the lobby landing adjacent to Heather Hall. Next, the light-emitting diode fixtures will replace the existing work light / house light fixtures and stagelight fixtures as we have the means to do so. We will complete the transformation to LED lightings systems as resources become available, using John’s generous sabbatical budget to purchase some of the lights.

The second part of the sustainable Lab will involve the participation of our campus architects and structural engineers. Their input will dictate how we secure our wind and solar arrays to the rooftop area(s) above Heather Hall.

Step three will involve the purchase and installation of the Solar Array(s) and Wind Turbine(s) with micro-inverters and supplies as needed. Energy generation data will be monitored at the kiosk along with energy consumption data. A curious student should be able to solve a simple equation to resolve the net-zero question.

III. PHASE THREE- EDUCATION AND RESEARCH

Beginning next week, the students and faculty (plus Tim Francis from Trinity U.) will design a course on Sustainability in the Theatre, using this Laboratory as its classroom and this project as a central component. The class will be taught by John for the first time in the summer of 2011. This course development is supported by a $7000.00 Faculty Renewal Grant. Part of the monies will assist us in Phase Two of this project.

Archiving and assessing data from our energy monitoring systems will begin as they go online. We will store that information on our web page(s) that will link to SU Sustainability page. Much of our current SU-only Segue pages will be viewable by the general public as well at the Heather Hall kiosk or from the SU website.