Dee Events Center Gets Ultra-Modern Lighting Upgrade

When assessing a potential energy saving project, the Energy and Sustainability office at Weber State University will often look to examples from other institutions. Analysis of the campus energy use revealed that the High Intensity Discharge lighting (HID) at the Dee Event Center was one of the single biggest power hogs. *"Month after month when the electric bill came for the Dee Events Center (DEC) all we could do was cringe and pay."*
The problem was, there just weren't any examples (in the country) to look at.

Albeo Technologies, a Colorado company, offered an LED direct replacement fixture for high bay warehouse applications. The energy team ordered one to do some experimentation.

(Albo Tech 3 bar series – www.albotech.com)

When most people hear about L.E.D.'s they think of those little key chain flash lights. Multiply that by a few thousand and you have the new Dee cloud. Here are the key stats:

- 80 total lighting fixtures - 20 inner ring, 40 outer ring, 20 up facing fixtures.
- 200 plus foot candles on the court (NCAA requirement is about 100 foot candles).
- Instant on/off - (read no warm up time to get full brightness).
- Quiet…. no more 60Hz buzzzz.
- Uses *70% less* energy compared to the old H.I.D. lighting.
- Annual savings will be at least $20,000.
- Dimmable and adjustable by 9 zones around the arena.
- 100,000 hour operating life. (That's 11 years of runtime!)

With a fixture in hand the Energy office went to work testing the capabilities of the LED fixture. All the numbers had to work out for this project to happen so the team took the time up front to measure the distribution of light, the dimming capabilities, and the net change in weight applied to the cloud structure. Next a mounting system had to be designed and fabricated. Finally the single unit was hung in the cloud for approval by the athletics department.

Once the project had a green light from all concerned, some serious planning had to take place. You can't just cut power to the basketball arena mid-season. In addition, working from the cloud required some special attention to safety such as having fall protection equipment when leaning over the railing, and scheduling the work so that nothing would fall with people down below on the court.

The project was divided in to 7 sequential phases:

1. Remove the old lighting from the inner ring.
2. Install and wire the new LED's on the inner ring.
3. Switch power over to the new lights.
4. Remove the outer ring and "effects lighting"
5. Install outer ring LED's and wire them up.
6. Install up facing brackets/lights
7. Balance/adjust and cleanup
8. Oh, and if it's not too much trouble….get it ***all*** done in 2 weeks!

The official results are that the lighting quality more closely resembles sunlight, and the quantity of light is more than ample. There is increased ability for special effects, and huge energy savings.

The existing HID lights were electricity hogs, and difficult to access for maintenance.

The new LED 8 bar units use 70% less power.

The old circuits had to stay in place until the inner ring was complete

The new equipment uses much cleaner Cat-5 connections