Retrofitting High Lights

BYU Hawaii Case Study
By Curt Christiansen
David O. McKay Gymnasium

- Built in 1957 as main Gym of ‘C.C.H.’
Conventional lighting approach for High Bay applications:

- "A low bay light is typically used with ceiling heights 20’ or less. High bay lights are typically used when ceiling heights are 20-45’ high.

- Most notably, a low bay light usually features some type of diffuser on the bottom of the light to spread the light in a manner reflective of the lower ceiling height. High bay lights typically have an aluminum reflector which allows a beam of light to reflect downwards to the floor area. Other types of high bay lights have a prismatic reflector which illuminates shelving, etc. from the floor to the ceiling.

- Whether you are using low bay lights or high bay lights, metal halide type lighting overwhelming allows users to illuminate large areas with very few lights, making it the energy savings choice for buildings of all sizes."

-Source: Internet Marketing
Before: MH 400 Watt Lights

• Inefficient, hot, slow restrike, lack of controls, spotty, depreciation, etc.
Proposition: Upgrade Lighting

• Problem- Ceiling was the original corrugated, perforated aluminum...
Make the right call
Archive from 1962 yearbook

• 4- 120 watt T-12s
• 1-1/2” dia. x 8’ l.
• 480 watts/fixture
Light Depreciation, CRI
Lamp lumen depreciation

-source: Lighting Research Center
Spotty, scalloped distribution
Restrike & Occupancy

FACULTY, STAFF & STUDENTS

“TURN OFF LIGHTS”

WHEN GYM IS NOT IN USE TO CONSERVE ENERGY.

Thank you!

Appreciated your assistance in this matter.

Coach K

BRIGHAM YOUNG UNIVERSITY—HAWAII
Funding Aligned

• Bid Ceiling and Lighting system
Demolition begins
Removal of MH fixtures
Use vendors for systems design

• Reduced count by five fixtures
Recycling MH fixtures
Recycling MH fixtures
Disassembly of old technology

- Refused requests to reuse fixtures
Ceiling Demolition
Ceiling removal
Ceiling Recycling
Reused perimeter angle
Install new HD ceiling grid
New T-5 HO fixtures
Fixture installation
4- 54 watt lamp, dual ballasts
Seismic clamps on fixtures
Clamps tie 4 corners to grid
Ceiling Tile & Insulation
Finished product
Controls for energy savings
Manual controls & sensors
Use Vendor for systems design