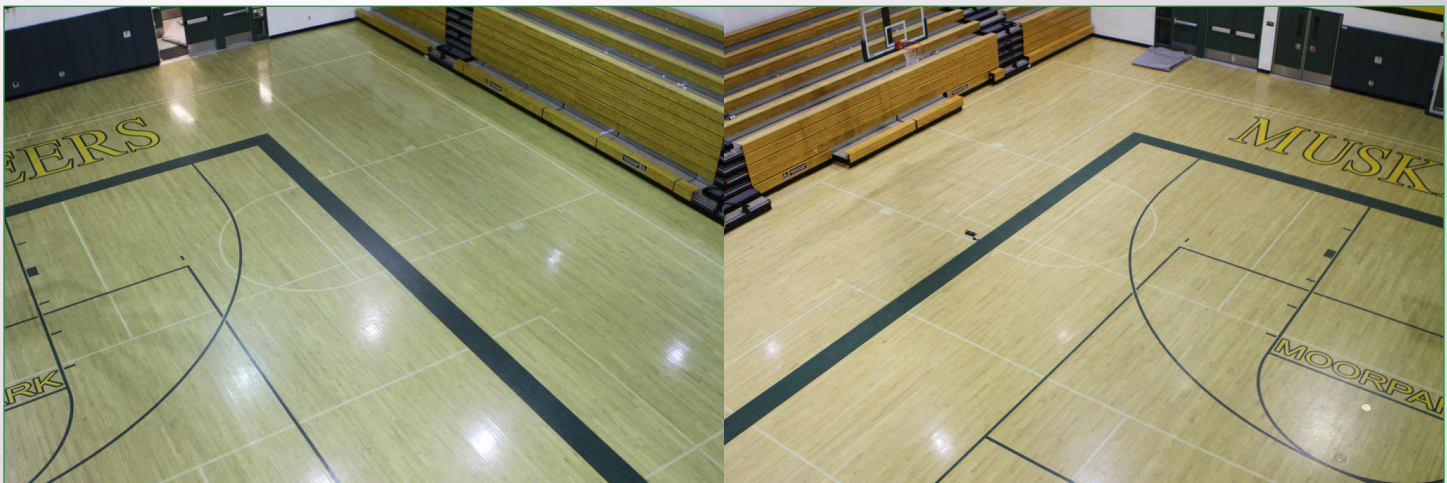


MIDDLE SCHOOL GYMNASIUM HIGH BAY CASE STUDY

	BEFORE	AFTER
Lighting Type	Metal Halide HID	Etrenzik Solid State LED
Power consumption	540W average total draw	159W total draw
Brightness	29 foot-candles average (on court)	36 foot-candles average (on court)
Warm-up and output control	Long warm-up and longer interval cycles, off/on only	Instant on and fully dimmable (for special events)
Color and attractiveness	Poor color rendering (washed-out green appearance)	High CRI improves contrast and makes colors "pop"
Bulb longevity	10,000 hours maximum to 25% output	80,000 hours minimum to 70% output
Maintenance requirements	Bulb and ballast maintenance requiring a lift, hazmat disposals, and EPA compliance documentation	Maintenance-free; mercury free; no hazardous materials
Durability	Fragile (glass and filaments)	Rugged (virtually indestructible)



before

after

ECONOMIC ANALYSIS	BEFORE	AFTER
Montly utility cost (24/7 operation, \$0.119/kWh)	\$46.91	\$13.81
Bulb cost (10k hours per bulb, \$16 each, \$1.80 hazmat disposal)	\$1.30	NA
Bulb replacement labor monthly cost (20 mins @\$60/hr, lift rental @ \$5.20 per bulb)	\$1.84	NA
Monthly Cost of Ballasts (24,000 hour life, \$45 each)	\$1.37	NA
Ballast replacement labor monthly cost (45 mins @\$60/hr, lift rental @ \$11.72 per replacement)	\$1.70	NA
MONTHLY TOTAL COST OF OWNERSHIP (TCO)	\$53.12	\$13.81
LED Project Cost		\$705.10
Payback, months		17.9
TCO OVER 5 YEARS (WARRANTY PERIOD)	\$3187.20	\$1533.70
ROI, SIMPLE, 5 YEARS, ANNUALIZED		46.9%

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