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# Case Study

## Vogt Recreation Center - City of Philadelphia

Vogt Recreation Center, in Philadelphia needed a change from the antique mercury vapor lighting system installed many decades ago. Greentech Energy Services coordinated the change-out, through City of Philadelphia Energy Manager, Kent Miller, in 2001.

The change-out removed 24 - 1,000 watt mercury vapor units (total load of 26.4 kw), and replaced them with 27 - #W4C3296 Magnaray® HIF units (total load of 4.05 kw). Each fixture utilizes 4-F32T8/841 lamps on a programmed start ballast, with a 1.2 BF. Lighting energy savings is 84+%, while maintenance, and AC costs are lower as well. Using a rate of \$.08/kwhr, and 18 hours of use per day, energy and maintenance savings provide over \$1,000/month (lighting only) for this one facility. The City of Philadelphia has 48 other rec centers that could use this same system. There are no heat problems like have recently been associated with linear - T5 systems.

Pollution savings are dramatic as well. There are potentially 16,994 less pounds of carbon dioxide, 36,440 mg of nitric oxide, and 43,176 mg of sulfur dioxide each year from just this one facility. After almost two years of service, there has been no vandalism to the lighting equipment. It is felt that the low glare system, providing quality illumination is mainly responsible.

The new system provides "instant-on" lighting (so can be connected to motion sensors for even more savings), uses high CRI (F32T8/841) lamps with a lamp life of nearly 30,000 hours, and 90+% lumen maintenance. The high CRI has a definite impact on the eye. Low exit luminance (glare) from the fixture, contributes greatly to the visual acuity, and "see-ability" of the system. Uniformity is nearly 1.0, so the eye doesn't have to continually adapt to brighter and darker areas of light.



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"Quality is never an accident; it is always the result of high intention, sincere effort, intelligent direction and skillful execution; it represents the wise choice of many."