



## Shiawassee County PEA Summary

The Shiawassee County Jail facilities team has done a great job keeping energy costs under control especially given system designs and the age of equipment and controls in the buildings.

The Jail facility is a mix of additions and modifications. The Jail facility presents heating and cooling challenges that make it difficult to properly assure indoor environmental air quality and temperatures required for public facilities. The construction is primarily a concrete Dox plank that makes facility very modifications difficult. (i.e. holes and pathways for electrical of HVAC upgrades.)

The facility's Energy Utilization Index (EUI) to be very poor. The energy usage is 52% more than the national average for prison/incarcerations facilities.

EUI is a calculated value of the energy use (electric and natural gas) of one facility compared to another of a similar usage. EUI are based on the energy use (in kBtu) per square foot of the building.

Shiawassee County Jail EUI	141 kBtu/square foot
Median Energy Star EUI	93 kBtu/square foot for prison/incarceration properties

Implementing the facility upgrade measures would cost \$958, 927. The measures recommended in this report are:

1. Upgrading lighting to LED with new controls and Occupancy sensors per Michigan 2018 lighting code.
2. Plumbing retrofit for water conservation and controls
3. Roof Replacement
4. Outside Duct Repair
5. Power Factor Correction
6. Temperature Controls upgrades
7. Dryer vent relocation (Fire hazard)
8. Roof Safety Barrier (Code Violation)
9. Temperature control zoning
10. Electrical Panel Replacement and Electrical upgrades (Code violation and upgrades)
11. Closet Exhaust Addition

These upgrades for Shiawassee County Jail will ensure a quality environment result in energy savings of over \$23,317 per year, which represent a 27% reduction in energy costs. However, even with all the recommended work the facility will still be above the median EUI.