

Neland Avenue CRC: Creation Care in Facilities Management

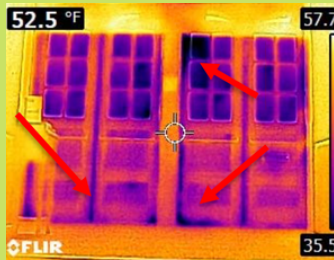
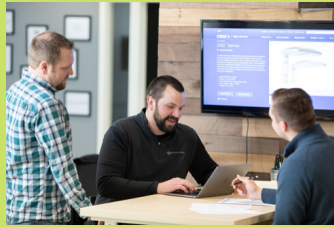


About Neland Avenue CRC

For Neland Avenue Christian Reformed Church, sustainability is fundamental to their mission. The Christian Reformed Church of North America has written, "Climate change is caused almost exclusively by human activities, especially the use of fossil fuel based energy". In the spirit of "think global, act local", Neland Ave is caring for creation via responsible management of their carbon footprint.

THE AUDIT

The Grand Rapids 2030 District's Energy Assistance Program sponsored an ASHRAE level "1.5" energy audit performed by E3M Solutions. According to the report, the building had an energy use index of 95 kbtu/ sq ft. The national median is 46 kbtu/ sq ft. This indicates that Neland Ave is using 48.4% more than the median house of worship of their size according to CBECS of the DOE. The audit discovered a retrofit package with a 2:1 savings to investment ratio, a simple payback of 5 years and a 10 year Net Present Value of \$49,345. The audit also included an assessment of the utility bills and customized EnergyStar Portfolio Manager account. ECMs included thermostat updates, surge strips, boiler tune ups, insulation, destratification, energy management software, building envelope updates, lighting updates rooftop solar photovoltaics



BEFORE

Neland Ave CRC building was established in 1916, heated by coal-fire heating with natural ventilation. 10 years ago, a renovation doubled their size and converted to gas-power heating. The 3,000 sq ft property has about 8" concrete block exterior walls with single pane, wooden frame windows which are double hung with storm windows. The classrooms, nursery and office spaces are served by a water source heat pump system. This includes a cooling tower and boiler which are nearly 20 years old. The fellowship hall and sanctuary are served by a steam boiler which was replaced 6 years ago. As the church prepares for another expansion, they seek ways to "do it right from the beginning": reduce their carbon footprint through energy efficiency and on-site renewable generation.

AFTER

The audit advised ways to join new construction with existing buildings. It answered how to offset the new energy load of the building with energy efficiency. Low/no cost measures were handled immediately, such as LED upgrades, boiler tune up, and insulation wrap. Mid-long term investments are being incorporated into the renovation plan. Neland's management is looking forward to the energy drop during the winter.

Energy Conservation Measures (ECMs) earmarked for coming years

ECM's	Annual Cost Savings	Rebates Available	Payback
Update Thermostat Programs	\$300	NA	Immediate
Replace Remaining LED Lights	\$50	\$0	1 year
RTUs with Economizers	\$1,500	\$300	1.5 years
Refrigerant Pipe Insulation	\$50	\$0	2 years
Neon Lights with LED	\$600	\$600	5 years

To Put This into Perspective

"The audit couldn't have come with better timing", one church member commented when reflecting on the impact of the Energy Assistance Program. The energy management and wise environmental stewardship point of view in the audit guided encouraged church members during the capital campaign process. The audit has given the facilities management committee and the creation care committee "something solid for significant impact."