



Renton High School

Controls Retrofit

Project Overview

Located in downtown Renton, WA, the historic Renton High School (RHS) was originally built in 1911. The initial building was later demolished to make room for an updated school with improvements and additional space for the increasing population of the area. Over its 105-year history the high school has been rebuilt and expanded upon many times. The latest improvements began in 2013 with a complete controls retrofit of the RHS Campus.

A Direct Digital Control (DDC) system was originally installed at RHS in 2000, and then updated in 2010. The District was never completely satisfied with the operation of the system or the support they received from the original installer. Within three months of operation the District switched to manual boiler control due to ongoing issues with the boiler control interface. Because of the control issues the staff knew the boiler and the rest of the school was operating inefficiently. In order to address the issue, the District, working with a local energy service company (ESCO), approached ATS to perform a complete DDC retrofit at the RHS.

Over the course of 3 school years the following benefits have been seen

- **37% reduction** in energy usage
- **32% reduction** in cost
- **\$168,210** in avoided cost over a 3-year period
- A **36 point decrease** in their Energy Usage Intensity.

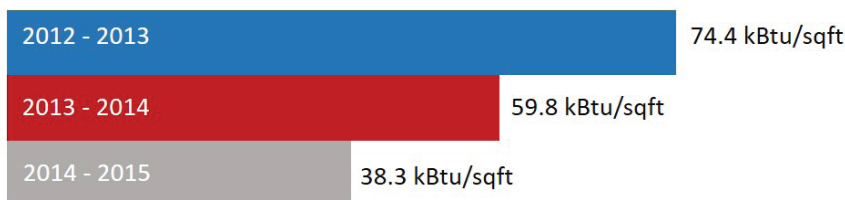
Controls Retrofit

ATS designed and installed a complete DDC retrofit, replacing a poorly commissioned and legacy control system with Alerton I/O controllers and global controllers along with a Niagara AX Supervisor front-end to conform with District standards. In addition to the controls retrofit, ATS also installed CO2 sensors to enable demand control ventilation strategies. According to J. Stine, Program Manager for the Renton School District's Energy Management Office, an element that made this project such a success was the planning and gathering of input from the maintenance staff. Now RHS has a fine-tuned, commissioned and fully functional system that provides a standard for all facility improvements to come.

Savings and Energy Usage Reduction

As a result of the DDC retrofit RHS has had a dramatic drop in energy consumption and cost. Just over a three-year period, energy use has dropped 37% and cost has decreased 32%. District energy use intensity has decreased from 74.4 kBtu/sqft to 38.3 kBtu/sqft, a reduction of 49 percent.

Energy Use Intensity (EUI)

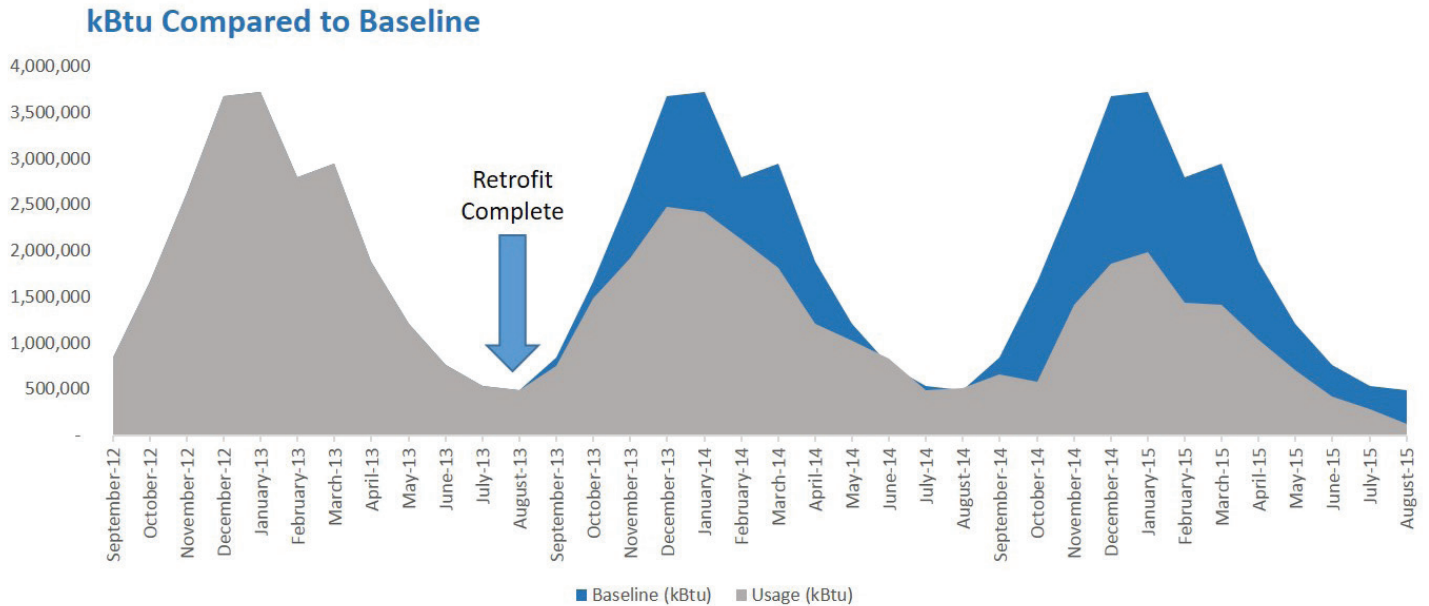


“This project is an amazing example of what it looks like when a DDC retrofit is done right”

- J. Stine, Program Manager

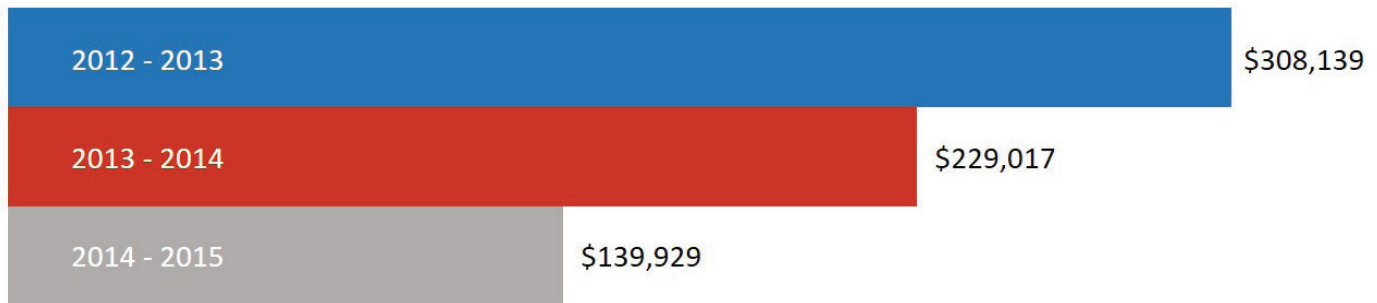
Renton School District Energy Management Office

The following chart illustrates the District's energy usage over a three-year period compared to the school-year baseline. Substantial completion of the project was achieved during the summer of 2013.



The following graph compares energy cost for the Renton High School over a three-year period. The District was able to reduce their cost by 32 percent.

Cost Comparison



About ATS

ATS, established in 1986, specializes in custom engineered and installed Building Automation Systems control solutions for buildings' mechanical and electrical systems, allowing owners to reduce energy consumption and maximize effectiveness of facilities management personnel. ATS has offices and provides services in Washington, Idaho, Montana, Colorado, Wyoming and Alaska. Contact your local ATS representative to find out how you can start running your building more efficiently and economically. Visit www.atsinc.org to find the location near you.

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