

Department of General Administration
Division of Engineering and Architectural Services
Facilities Engineering Section

Building Commissioning Case Study



Facility: **Yelm Prairie Elementary School, Yelm Community Schools**

Project Description: Yelm Prairie Elementary School was constructed in 1983 and in the late 1990s the energy management control system was upgraded. The building was never commissioned. The occupants have complained about the building temperature and being uncomfortable since the building was built. The district tried several methods to correct the problems. In the spring of 2003 the district decided to retro-commission the building and contacted GA for assistance. Yelm Community Schools and GA jointly selected a commissioning firm. The scope of the project was to thoroughly test the existing systems, to review equipment condition and operational sequences, and correct major issues found during the retro-commissioning process. Some of the major findings were: the sequence of operation needed to be reprogrammed; the primary air duct to each VAV box needed to be replaced; the building had never been air balanced; the flow rings at each VAV box needed to be calibrated; CO₂ sensors needed to be calibrated; and, temperature set points needed to be calibrated.

Project Summary:

Project Completed:	April 2004
Building Size:	40,400 square feet
Commissioning Cost:	\$25,760
Commissioning Cost per Square Foot:	\$0.66
System Repair and Air Balancing Cost:	\$22,020
Puget Sound Energy Commissioning Grant:	\$9,600
First-Year Cost Benefit:	\$7,230
Annual Energy Savings:	43,200 kWh \$2,160

Project Benefits: The retro-commissioning process improved the learning environment for the students, improved the working conditions for the school staff, and reduced the number of service calls for the maintenance staff. The building systems now operate correctly with proper outside air quantities. Erling Birkland said "The exceptional aspect of this project has been the response of the staff and the students. Prior to commissioning it was not unusual to receive daily complaints regarding heating and cooling; since the project was completed the maintenance department has not received any significant complaints. I would recommend to any district the use of GA's Building Commissioning Program."

Commissioning Firm: Keithly Welsh Associates Inc. (KWA)

Project Managers: Erling Birkland, Director of Facilities, Yelm Community Schools, (360) 458-6127
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