

Woodburn Memorial Aquatic & Fitness Center

Woodburn, Oregon

HVAC System and Controls



Estimated Annual Utility Cost Savings:
\$58,100

Total Utility Incentive Rebate:
\$74,689

Energy Savings:
128,415 kWh
49,006 therms

Project Implementation Costs:
\$249,681

Project Simple Payback:
3 years

SUMMARY

Project Benefits

- Reduced energy costs
- Better air quality
- More control over indoor climate
- Eliminated condensation and reduced humidity

Equipment Installed

- High-efficiency HVAC with heat recovery
- Plate-style heat exchanger
- Direct digital control system
- Heat pump reclaim system
- Ductwork

Financial Analysis

- \$249,681 project cost
- \$74,689 cash incentive from Energy Trust
- Applied for Business Energy Tax Credit pass-through from Oregon Department of Energy
- \$58,100 estimated annual energy cost savings
- 128,415 estimated annual kWh energy savings
- 49,006 estimated annual therm savings

AIR QUALITY COMES FIRST

Efficiency is in the air at Woodburn Memorial Aquatic and Fitness Center

Since 1995, the Woodburn Aquatic Center has welcomed swimmers of all ages to dive in for enjoyment or more serious exercise. The facility includes a 25-foot by 25-meter lap pool, spa, wading pool with fountain, and other features for fun, fitness and competitive swimming. The air-handling system could not provide sufficient circulation to maintain optimal air and water quality, and the facility suffered.

“We initiated the energy study process because we had a serious indoor air quality problem,” said Jim Row, community services director, City of Woodburn. “Our system didn’t bring in outside air, so the air inside was humid and recirculated chemicals that corroded the building. Since we had to replace the failing system, we wanted to look at saving energy, too.”

The aquatic center hired Willdan to prepare the design and complete the installation. The contractor’s solution was to install a high-efficiency air handling unit with heat recovery for the natatorium. By bringing in significantly more outside air, the system keeps humidity levels down, helps regulate the temperature and reduces the amount of condensed air that can settle on equipment and cause corrosion. The system also includes a plate-style heat exchanger and heat pump reclaim system that uses excess heat to warm the air or water as needed.

The automated system controls enable pool operators to see real-time interior climate data and simplify adjustments. They can also preset temperatures and humidity readings, and the system will maintain them.

“The cost to run an aquatic center is significant and we are seeing improvements. We needed to accomplish better air and water quality, and we definitely have done that. The energy efficiency is a bonus. The incentives were a solution that made this project more viable for us.”

– Jim Row, Community Services Director
City of Woodburn

As part of the contract, Willdan monitors the system for a year, reporting performance and efficiency. To date, the new systems are meeting energy savings expectations with a significant improvement in indoor air quality.

