"The Wireless Pneumatic Thermostat installation took only eight days and was one of the easiest, fastest and most cost effective energy efficiency improvements we have ever made in our buildings."

Jeff Draper

Manager of Building Operations

County of Santa Clara

From Pneumatic to DDC in 20 Minutes!

CYPRESS ENVIROSYSTEMS™

CASE STUDY:

WIRELESS PNEUMATIC THERMOSTAT (WPT)

COUNTY OF SANTA CLARA

OUR SOLUTIONS

HEADQUARTERS

198 Champion Court

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MINUTES TO INSTALL | SAVES ENERGY | PAYS BACK in 18 MONTHS

SITUATION:

The County of Santa Clara needed to retrofit their buildings' pneumatic HVAC controls to save energy and participate in PG&E's Auto-Demand Response program

- Two five-story buildings built in the year 2000, totaling 300,000 square feet
- 350 non-communicating, non-programmable pneumatic thermostats
- Potential to achieve 200 kW of load shed by participating in PG&E's Auto-Demand Response program

Social Services Administration Buildings
333 and 373 Julian Street, San Jose, CA 95110

CHALLENGE AND SOLUTION:

Traditional Direct Digital Control retrofits were cost and time prohibitive for the County—the WPT enabled them to retrofit their buildings at 80% less cost in only eight days

	Best DDC Quote	Actual WPT Retrofit
Installed price	$875,000	$175,000
Project time	6 months plus	8 days
Disruption of tenants and operations	Significant	Minimal
Potential exposure to toxic substances in walls	Unknown	None
Paid by PG&E Auto-DR incentive program	31%	100%

Legacy Pneumatic Thermostat

DDC in 20 Minutes!

Wireless Pneumatic Thermostat

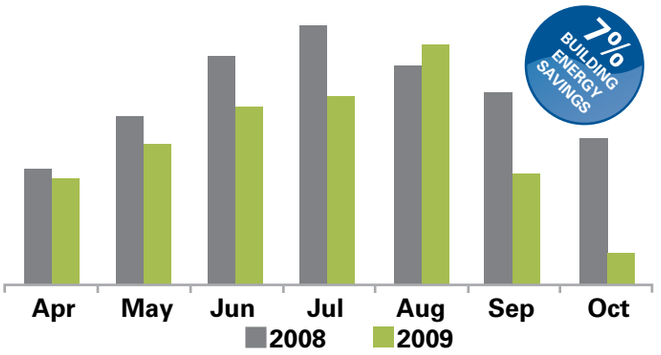
- Manual setpoint control
- Cannot support Auto-DR
- No remote readings
- No diagnostics
- Manual calibration
- Old technology
- Very unreliable

- Remote monitoring and control
- Enables Auto-DR strategies
- BACnet interface to BMS and compatible with legacy systems
- Diagnostics for continuous commissioning
- Automatic self-calibration

RESULT:

Through the first seven months of operations, the County achieved 7% average building energy savings with set-point strategies and continuous commissioning

Actual Year-Over-Year Energy Savings From WPT Retrofit[1]



[1] Graph is based on actual PG&E billing data and reflects average kWh/day. The range shown is 15,000 to 20,897 kWh/day.

Realized Benefits from WPT Retrofit

$205,500 annualized savings with 16-month payback (excluding PG&E incentive payment)

- **Energy Savings:** $42,000 per year
  – 350,000 kWh per year saved at $0.12 per kWh
- **Demand Response Savings:** $7,500 per year
  – 10,700 kWh per year curtailed at a peak rate of $0.70 per kWh
- **Maintenance Cost Savings:** $156,000 per year
  – Continuous commissioning data helped prioritize maintenance and reduce troubleshooting time resulting in cost savings of more than 50%