



Applied Materials Buildings 81&85

Sunnyvale, CA



Building Information

- Floor area: 569,188 ft²
- Function: lab, office and clean room

System Information

- 25 AHUs & 254 VAV Boxes
- 6 MAUs & 17 EXFs
- 40 RAUs, 25 FPBs, 48 FCUs
- 1300 FFUs & 244 PLNs
- 8 chillers & 43 pumps
- 6 boilers & 18 pumps

Project Date

- Project Completed: April 2009

Total Performance Oriented Retrofits (TPOR)

- Implemented Bes-Tech dynamic minimum airflow reset technology
- Implemented Bes-Tech complete system oriented SDVAV technology
- Implemented Bes-Tech complete system oriented MAU & EXF technology
- Optimized supply air temperature and supply air dew point temperature for MAUs
- Implemented optimal RAU/FFU/FTU/PLN fan speed control to maintain required particle count requirement and improve space pressure control
- Implemented Bes-Tech complete system oriented VWV (Variable Water Volume) control algorithm for central cooling plant
- Implemented optimal hot water temperature reset and differential pressure reset for central cooling plant

Benefits

- Reduced comfort complaints
- Improved system reliability
- Energy savings:
 - Electricity: 16,012 MWh/year
 - Heating: 29,546 MMBtu/year
- Cost savings: \$1,564,068/year
- PG&E incentive : \$2,200,000
- Simple payback: 5 months