P2022-07 - Scope of Work

Project Narrative:

San Marcos Unified School District is requesting a proposal that will comply with the requirements of Assembly Bill 841, School Energy Efficiency Stimulus Program. The scope of work is intended to cover the requirements set forth in the bill to have certified technicians performing the assessment and testing of all ventilation systems throughout the following schools.

- Mission Hills High School
- San Marcos Middle School
- Knob Hill ElementarySchool
- Paloma Elementary School
- Woodland Park Middle School
- Joli Ann Leichtag Elementary School
- San Marcos Elementary School

Scope of work for Ventilation System Testing:

1. Verify ventilation rates in all occupied areas.
2. Measure and verify outdoor air supply rates.
3. Where possible, adjust existing outdoor airflow dampers as needed to meet CalSHAPE Minimum Ventilation Rates and document adjustments.
4. For systems with economizers test dampers for proper operation and report conditions.
5. Test and evaluate balancing of supply and return air systems and note deficiencies.
6. Measure building pressure.
7. Visual observation of exhaust air discharge and outside air intakes and note deficiencies.
8. Note any demand control ventilation systems and their operating conditions.
9. Verify coil condition, condensate drainage, cooling coil air temperature differentials, heat exchanger operation and drive assembly. Note deficiencies.
10. Check controls/thermostats to ensure the building has been programmed to maintain intended ventilation rates, and for scheduling of daily flush.
11. Verify system operational times, setpoints and enable features meet ASHRAE guidelines.

Scope of Work for Filter Replacement:

1. Provide and install new MERV-13 Filters for all units tested, unless system performance would be adversely affected, in which case like-kind filters will be installed.

Scope of Work for Carbon Dioxide Monitoring:

1. For all unitary single-zone HVAC equipment (packaged units, split systems and wall units), Contractor shall:
    a. Provide and install an independent CO2 monitor for each occupied zone of the building. Each zone must be equipped with a CO2 monitor that meets the following criteria per AB 841 guidelines:
        i. Be hard-wired or plugged in and mounted to the wall between 3-6 feet about the floor and at least 5 feet away from the door and operable windows.

ii. Display the CO2 readings to the occupants through a display on the device or other means such as a web-based application or cell-phone applications.
iii. Notify the building operator through a visual indicator on the monitor or other alert such as e-mail, text, or cell phone application, when the CO2 levels have exceeded 1,100 PPM.
iv. Maintain a record of previous data which includes at least the maximum CO2 concentration measured.
v. Have a range of 400 PPM to 2000 PPM or greater.
vi. Be certified by the manufacturer to be accurate within 75 PPM to 1,000 PPM CO2 concentration and is certified by the manufacturer to require calibration no more frequently than once every five years.

Scope of Work for Engineering Assessment:

1. Review unit nameplate data and manufacturers specifications to identify ability to use Merv 13 filters
2. Calculate minimum required outside air ventilation rates for each occupied area.
3. Review ventilation rates and assess whether they meet minimum ventilation rate requirements per Title 24.
4. Calculate coil velocity based on balancing report and coil size.
5. Compare measured airflow to design airflow and note deficiencies.
6. For units not meeting Title 24 ventilation; review measured airflow rates and determine if more ventilation can be provided.
7. Review documents provided from technicians
8. Identify discrepancies.

Scope of Work for Assessment Report:

1. Compile list of deficiencies and required repairs to meet minimum ventilation and filtration requirements.
2. Determine whether any cost-effective energy efficiency upgrades or replacements are warranted or recommended.
3. Provide estimated cost for these repairs and upgrades.
4. Document HVAC equipment model number, serial number, general condition, and other pertinent information to assist in determining energy efficiency benefits.
5. List verified ventilation rates for all spaces.
6. List discrepancies between design ventilation rates and current rates.
7. List reasons why certain spaces are unable to meet required ventilation rates.
8. Documentation of system deficiencies and recommendations for additional maintenance, replacements or upgrades to improve energy efficiency, safety or performance.