National TAB

Project Summary

RTU-1
The RTU has a supply fan as well as an exhaust fan with a heat wheel. There is a mechanically linked outside air and return air damper. The exhaust and return both pull from a return grille in the multi purpose room. The exhaust was measured by positioning the return damper to the closed position and then taking velocity readings at the face of the grille with a velgrid and multiplying by the free area of the grille. A traverse was taken in the ductwork but it was too turbulent to get accurate readings. Adjustments were made at the VFD to bring the airflow within design. The supply side serves exposed spiral duct in the multi purpose room. The pre-filters were very dirty so half of them were removed to approximate a clean filter condition. The two branches in the multipurpose room were traversed.. The sum of these readings was equal to the total flow for the unit. The airflow was also traversed at the OA intake with the damper 100% open and to confirm pitot tube readings. Airflow was adjusted at the VFD until airflow was within tolerance. The branch on the east side was initially high on flow. The branch damper was adjusted to proportion air to each branch. Then airflow at each diffuser was measured using an RVA or velgrid by developing a K factor. The diffuser airflow design did not match the scheduled airflow. The diffuser designs were proportionally to match the scheduled airflow. The total flow for the unit is within tolerance, however not all diffusers are within tolerance. This is not anticipated to be an issue since the diffusers serve an open space. The outside air was set at the roof for both the minimum position and absolute minimum position.

EF-1
Airflow was measured using a flow hood. The airflow is above design and there is no speed controller installed to reduce airflow.

SS-3
The thermostat was first set to full cool and high fan speed. The airflow at each diffuser was measured using a flow hood. The sum of these readings is equal to the total flow for the unit. The airflow was initially low. Adjustments were made to the parameters inside the thermostat to increase airflow. The diffuser outside of the restroom was high on flow and the damper was closed slightly to ensure all diffusers were balanced to design.