

## **Project Summary**

The summary below provides a quick understanding of our scope of work and general testing procedures. Enclosed in the report is further detail about your building performance including recommendations, asset data, and pictures. Our focus is to work with the trades to remedy any issues or deficiencies during the actual field balancing and not after the balancing has occurred to achieve a positive environment and outcome. The level of success is determined by the availability of the trades, possible parts needed, or time constraints.

## **RTU's (Roof Top Units)**

Each of the RTU's were measured at their terminal devices or via traverse to establish a total flow for that unit. Each RTU was adjusted to within tolerance of the engineer's design flow. Each outlet was then adjusted to within tolerance of the design flow. Outside air was measured by reading the intake air opening with a velocity grid and multiplying by the free area. The outside air damper was adjusted until the airflow was within the design requirements. Once these setpoints were determined, the outside air damper positions would not hold when they were input into the controller. We discovered this was being caused by the NOVAR controls, which are not yet fully operational. The units were balanced by running them in commissioning "test" mode. This gives complete control of all the features of the unit regardless of the controls system. Once I determine my OA set points for high and low speed, I end the commissioning mode, and input those points into the York controller. When this was done, within 90 seconds, the points would revert back to 10% for both high and low speed. York default OA setpoints are 10 and 15%. I unplugged the building controls and reentered my setpoints. They held for over 5 minutes. Once I plugged the NOVAR controls back into the board, within 90 seconds, I could visually see the OA points revert back to 10%. After speaking with YORK tech support, we determined the NOVAR controls were clearly the cause of the issue. The Novar technician is not complete with his work. RTU-2 and RTU-6 held their points, and both have alarms indicating they are operating off of return temperature. This tells me that the NOVAR controls are not communicating with these two RTUs. Recommend NOVAR review their control wiring. Their technician will also need to input the OA setpoints for each RTU as listed in this report. I could not input the points due to their controls system. Any equipment that fell outside of that tolerance is noted throughout the report.

## **General Exhaust Fans w/ Grilles**

The general exhaust fans were measured by reading each air device with a flow hood. The total airflow for each fan is equivalent to the sum of these readings. Fan speed was then adjusted so that the airflow was within tolerance of design. All the general exhaust fans were wired to high speed initially. It was necessary to rewire EF-3 to low speed so that it could be adjusted within design utilizing the speed controller. All fans motor setpoints are marked with permanent marker on their speed controllers. Each terminal device was balanced to within tolerance of the design volume using the installed volume dampers. Any equipment that fell outside of this tolerance is noted throughout the report.