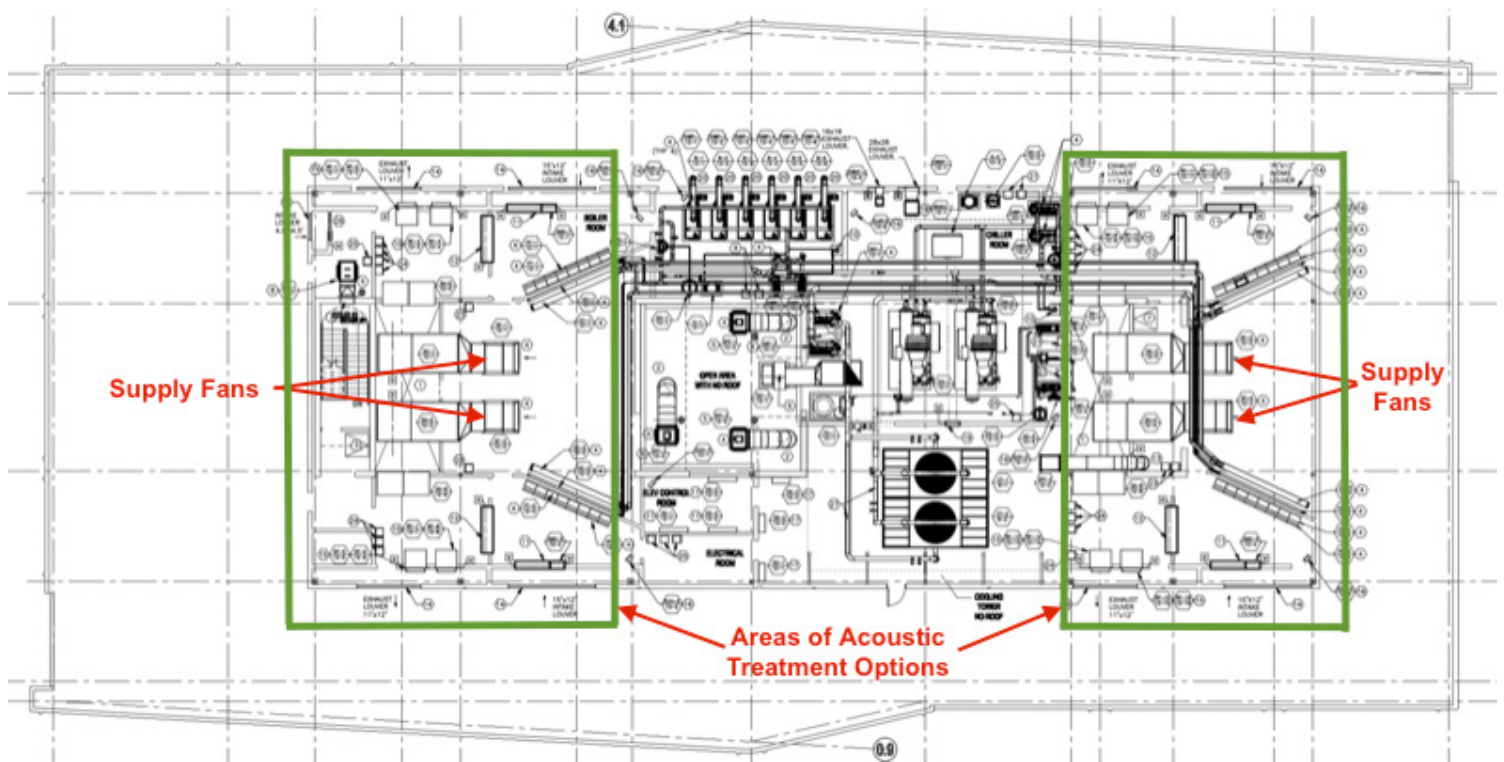


CENTRAL PARK TOWER

BUILT-UP ACOUSTIC SOLUTION



The developers of Central Park Tower were faced with a dilemma during the design of their new 11-story office tower in Broomfield, Colorado. The acoustic target for occupied office space in the new facility was NC 35-40. The primary air handling systems were designed on the 12th floor directly above the most expensive and desirable space in the building. Four 150 HP vane-axial supply fans were located within two conditioned air plenums above occupied office space (see plan below).



Analysis of the calculated sound in the immediate areas of the 11th floor below the air handlers indicated a resultant level far exceeding the specified NC levels. Several solutions were offered by the acoustic consultant to mitigate the potential excessive sound levels on the 11th floor:

Lining of the outdoor air, mixed air, and conditioned air plenums with 2" thick fiberglass insulation combined with one of the following:

- Increase concrete and steel floor system from 5-1/4" thick beneath fan rooms to 18" thick.
- Construct an engineered floor system beneath the fan rooms consisting of an acoustic sandwich of plywood, insulation and 4" of lightweight concrete.
- Construct an insulated gypsum board ceiling system above the 11th floor dropped ceiling, extending to an area 10' out beyond the area of the fan rooms above.

Select another fan system that will provide 157,500 CFM at 6.5" SP per fan room at significantly reduced sound levels.

The mechanical engineer contacted AcoustiFLO for an option to the four vane-axial supply fans. AcoustiFLO engineered a solution incorporating (20) 25HP 686q supply fans, (10) per fan room. This solution was accepted and incorporated into the new facility (see system photos).

The advantages of this solution are:

- The quiet, efficient AcoustiFLO 686q fans equipped with optional inlet silencers eliminated requirements for lining plenums and any of the foregoing mitigation options.
- A savings of over \$150,000 in construction first cost when compared with the base design and the most cost effective sound mitigation option above.
- 100 HP reduction in connected supply fan horsepower and resultant electrical system construction savings.
- Lifetime savings in fan energy due to selection of more efficient fans.
- Improved level of redundancy in the event of a single fan failure.

Fan Room Inlet



Fan Discharge



AcoustiFLO

Technologically Advanced Air Handling Systems