

Church Building Renovation

Replace Existing Single Fan Air Handlers with DDP Fan Air Handlers



Existing Air Handler Issues



- Replace existing Single Fan Air Handlers
- Supply Ductwork installed in confined space that causes air turbulation that creates noise and vibrations
- Casing falling apart with many holes
- Room located in lower level with limited access

Lower Level Layout with Access Path

nyb

Lower Level Layout

- The lower level consists of parking garage, bank vault, equipment room, and some office space
- All the walls are concrete for bank security
- The perimeter foundation walls
 have no existing openings

Access Path

- Entrance through garage into corridor
- Down corridors into equipment
 room



Accessibility to Air Handler Location



Access path limitations

- Entrance into corridors is thru a door that is 72" tall by 72" wide
- Only access to equipment room is through corridors with concrete walls with max width of 42"





Solution – Provide New Modular DDP Fan Air Handler



- New Air Handler needs to be sized so that modules can be moved through corridors
- Unit needs to be split in halve length wise and each section sized to be less than 42"
- Four DDP fans allows the fan modules to be split in halve and short enough to be less than 42"
- Base rail to be assembled in equipment room to allow the height of the modules to fit through the doorway and corridor



Staging of Air Handler Modules

- Modules lined up at factory for shipping
- Modules staged in parking garage
- Fan modules with sub bases removed









Old Unit and New Unit



Old Unit

New Unit







Advantages of New Air Handler Solution

- Lower fan total static pressure due to the elimination of sound attenuators and even air flow profile through the air house plenum
- Multiple fans so if one fan fails the other fans pick up the load. The building will not lose air flow.
- The possibility that one or two fans may be turned off and used in standby mode after a year of operation.
- System fan analysis may show the fans never run at full capacity therefore are operating at low efficiency, two less fans may operate the complete fan assembly at maximum efficiency.