

Mechanical Systems Narrative

General Criteria and Specification Listings

The mechanical systems installation will meet the requirements of the following codes and standards:

- International Building Code, 2018 Edition, with latest Georgia Amendments
- International Mechanical Code, 2018 Edition, with latest Georgia Amendments
- The International Energy Conservation Code, 2015 Edition with latest Georgia Amendments.
- Local codes and ordinances as applicable.

All equipment, devices, and fixtures will be new and conform to the standards of the following where such standards are applicable:

- National Electrical Manufacturers Association.
- Underwriters' Laboratories, Inc.
- Air Conditioning and Refrigeration Institute.
- American Society of Mechanical Engineers.
- American National Standards Institute.

Refer to architectural drawings for building arrangement, size and functions. In addition to the services indicated on the plans, the following project descriptions will apply.

All existing mechanical systems and equipment are to be demolished.

HVAC Systems Requirements

New packaged gas-fired rooftop units will be provided for all areas. The units will be located on the warehouse roof curbs and ductwork will extend into all of the office spaces. Units serving Level 0 will have ductwork in chases passing through Level 1. These areas will be provided with the following system configurations:

- Level 0 Office & Support Spaces: 1 Unit with 5-Ton Capacity
- Level 1 Office & Support Spaces: 2 Units with 5-Ton Capacity each
- Level 1 Retail Space: 2 Units with 5-Ton Capacity each
- Level 2 Mezzanine Spaces: 1 Unit with 7.5-Ton Capacity
- Level 2 Showroom: 1 Unit with 2 Ton Capacity

As an option to eliminate the use of fossil fuels for heating the packaged rooftop units can be all-electric heat pump type.

The Warehouse will be provided with new gas fired unit heaters for heating and wall propeller fans for ventilation and heat relief.

- Five horizontal discharge unit heaters will be provided for heat. Thermostats will be located at floor level to control the heaters. Gas vents will be routed thru the roof at each heater.

Concept Narrative

- Two wall propeller fans with shutters will be provided on the west wall as high in the space as possible to exhaust hot air when required. Wall switches will be provided at floor level for control. Intake air will be drawn through operable windows.
- Four high volume, low velocity air-foil propeller fans will be provided high in the warehouse area for air movement throughout the space during moderate conditions when other cooling and heating is not needed.
- As an option, the warehouse can be heated and partially cooled using packaged rooftop heat pump units with concentric supply and return air distribution devices (similar to big-box retail outlets) eliminating the need to use fossil fuels for heating. This can be accomplished utilizing 4 Units at 10 Ton Capacity each.

Supply air duct systems serving the Level 1 and Mezzanine spaces will be exposed spiral, lock seam ductwork with a paint grip finish suitable for field painting. Concealed ductwork serving the Level 0 spaces will be galvanized steel ductwork fabricated per the latest SMACNA duct construction manuals.

Return systems will be fully ducted from ceiling or sidewall grilles. Ductwork will be routed tight to the structure and will require offsets and close coordination with ceiling treatments to provide maximum ceiling heights.

Exhaust fans in each bathroom and breakroom area will be ducted to wall caps on the exterior wall and provided with individual wall switches.

Condensate drain piping will be trapped and released on the roof near a downspout.

Each system will be provided with a programmable thermostat. System efficiencies will be a minimum of 14 SEER. Depending on overall project sustainability goals, the system efficiencies may warrant higher SEER ratings as an option.

Ductwork will be galvanized sheet metal. Concealed supply air ductwork will be insulated with fiberglass duct wrap insulation. No duct liner will be used.

End of HVAC Narrative