

September 22, 2017

Executive Summary:

Thermo Fisher Scientific is considering a **5,766** square foot segregated temperature controlled Whitby Distribution Center located at 111 Scotia Court, Whitby, ON L1N 6J6

The purpose of the room is the storage and temperature control of specific temperature sensitive products.

Site Visits: Contact Laurie Hart (905) 431-5556 to schedule a visit.

The proposed improvement scope consists:

1. Calculating the most efficient and cost effective R-Value insulation for the project.
2. Constructing approximately a **5,766** square foot Room around existing racking: **proposed layout attached**
 - a. Walls will be made of drywall
3. Engineered Mechanical Cooling and Heating controls required to maintain a specified interior room temperature:
 - a. 68- 77 degrees Fahrenheit
 - b. 20-25 degrees Celsius
 - c. Max relative Humidity of 65%
4. The temperature control room will be located in a distribution facility that has no cool climate control in the warehouse.

Mechanical Scope (required):

- Calculate the HVAC unit specification and quantity to meet room requirements:
 - Manual J and Manual S approved load method of calculating (inbound product mass temp, surround space temp, surround space RH, etc.)
- Ensure that the **proper R-Value** (per all codes) for the **side walls and existing roof structure** are included in construction documents.
- Ductwork into the new room to mounted above the maximum material handling mast level.
- Contractor to specify the following to maintain even temperature from floor to ceiling and proper unit sizing:
 - Air exchanges per hour and subsequent unit specs
 - Type of ductwork, grills and/or ceiling fans
- Contractor to provide rationale for/against installation of vapor barrier.
- Provide calculations and plans for City Submission and permit approval. (Allowance) Plan check and permit fees
 - Fire protection approval is part of contractor scope
 - FM must review and approve prior to issuing of contract
- Redundant System (2 or 3 units): Control system must toggle between the **providing equal runtime and redundancy** in the event of a unit failure.
- Condensate drain lines run to the nearest approved receptor.
- Complete rigging and material hauling services should be included.
- Start and test units for proper operation and full function testing should be included.
- Contractor pricing should include all installation labor, equipment rentals, freight and sales tax.
- Contractor should furnish and install a web based control system with one (1)

- Control module with expandable capability to include additional components.
- Furnish the necessary programmable controllers and control wiring.
- Furnish and install one (1) software license
- Install & configure the software onto one (1) owner furnished computer.
- Program a schedule to provide equal runtime between the multiple units.
- Provide the labor for startup, programming and testing the new control points.
- Create customized graphic pages for the new control system points.
- Provide for system training for designated employees.
- Contractor should provide Full Parts and Labor Warranty
- Contractor should provide Replacement Compressor Parts Warranty

Even Temperature distribution within the room will be mapped with a layout similar to Figure 1 below:

(sample shown below).

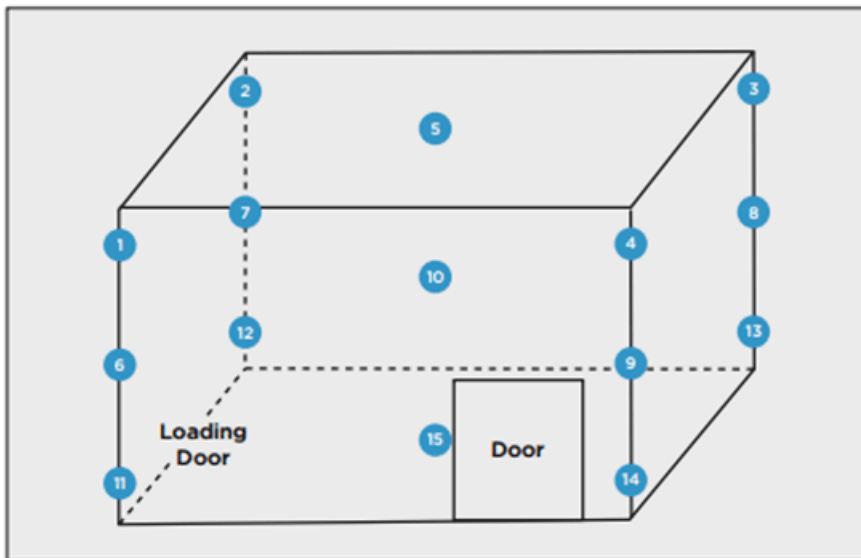


Figure 1. The even distribution of 15 sensors is a typical pattern for three-dimensional mapping of a small space.

Contractor Scope (required):

- **ALL PRICING MUST BE SUBMITTED ON Microsoft Excel OWNER PROVIDED COST FORM**
- **PROJECT TIMELINE MUST BE SUBMITTED ON Microsoft Excel OWNER PROVIDED FORM**
- This project will be bonded by selected contractor.
- Winning bidder must sign Thermo Fisher Scientific NDA professional services contract to be provided at the end of bidding process.
- Contractor must field verify the accuracy of the room dimensions to insure proper installation
- Contractors to provide engineering and primary structural drawings with associated wet stamps for City Submission and permit approvals.
- Contractors to provide installation of:
 - Room walls

- **2 Man Door Installed & 2 Openings** for Overhead Door (Contractor to install High Speed Door, door and specs to be provided by owner).
- Man door to be self-closing and contain a glass window.
- Protective railing around the entire room.
- Provide all Electrical to include lighting alignment
- Included are all sealants, fasteners, finish trims, cove base and ceiling support hardware.
- (Allowance) Plan check and permit fees.
- Furnish and install (___ Amp, ___ Volt) circuits to serve the added units (if required).
- These circuits will be added to panel (Emergency Generator System Distribution) with a verified adequate capacity to carry the load in the event of a power failure, verification provided by the certified electrical sub-contractors.
- All required conduit, breakers, wire, fused disconnect switches and flashings to be provided by the electrical sub-contractors.
- Contractors to provide plans and calculations for City Submission and Permit issuance.

Fire Protection Scope (required):

- Insure that all existing ESFR sprinkler heads remain in compliance inside of new room
- All sprinkler modification should be documented and planned for in advanced. All sprinkler work will need to be approved by local authority and Factory Mutual Insurance.
- Contractors to provide engineered drawings with associated wet stamps for City submission and permit approvals.

In addition to the requirements of the general contract, the following submittals will be required during the execution of the contract:

- Insurance Certificates w/ Thermo Fisher Scientific as an Addition Insured
- Minimum \$2.0 million coverage
- Permits as required by Province and Local Authorities
- Warranties and Guarantees
- Performance Bond
- Operating and Maintenance Manuals (when applicable)
- Recommended Spare Parts Lists and Prices (when applicable)
- Testing and Acceptance Plan (when applicable)