SECTION 015720

INDOOR AIR QUALITY PLAN DURING CONSTRUCTION

PART 1 - GENERAL

1.1 SUMMARY
- A. Section Includes:
  1. Requirements to develop and utilize an indoor air quality plan for the construction operation.
  2. A sample plan applicable to all interior construction and trades.
  3. Reference:
     a. "IAQ Guidelines for Occupied Buildings under Construction", 2008 Edition, by the Sheet Metal and Air Conditioning Contractors National Association, Inc.

1.2 TRAINING
- A. Contractor shall provide copies of the plan and training to all subcontractors and appropriate personnel.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 EXECUTION
- A. Contractor shall utilize a plan to protect the indoor environments from contamination during construction and finish out similar to the following plan.
- B. Contractor shall enforce and verify compliance by all personnel and subcontractors.
- C. Contractor shall take pictures of the related construction operations to verify conformance to each section of the plan. These pictures will be provided to the Architect. A minimum of eighteen (18) pictures (six (6) pictures taken on three (3) separate occasions) will be submitted.

3.2 INDOOR AIR QUALITY PLAN DURING CONSTRUCTION OPERATIONS
- A. Introduction
  1. This plan outlines the processes required to assure acceptable air quality. Elements of the program include:
     a. HVAC Protection and Containing the work area
     b. Source Control and Modifying HVAC Operation and Reducing Emissions
     c. Pathway Interruptions
     d. Intensifying Housekeeping
     e. Scheduling or Relocation of Occupants

3.3 THESE REQUIREMENTS APPLY TO ALL PARTIES INVOLVED IN DESIGN, CONSTRUCTION, AND BUILDING MOVE IN:
- A. CONTAMINANTS
  1. Air contaminants include many different materials. These may include: gases, vapors, chemicals, mold/fungus, pathogens, allergens, particulates and radiation. Eliminating all of these is not possible but reducing the introduction and distribution of these contaminants is possible and desirable. The programs outlined in the following pages are intended to reduce contaminants and provide as clean a building as possible for the residents.
  2. The following sections outline procedures and precautions to reduce building contamination and meet the requirements for a healthy environment.
- B. CONSTRUCTION OPERATIONS
  1. HVAC PROTECTION: The air conditioning system is the distribution method for air and potential contaminants throughout the building. Keeping the system clean is a necessity.
     a. All air handling equipment, spiral and fabricated ducts and accessories shall be kept clean during transportation, storage and assembly.
     b. All lined, spiral and assembled ducts shall be wrapped and protected from dirt and water during transportation and storage.
     c. All insulation and lined duct shall be kept dry at all times. Any insulation that has become wet shall be removed and replaced.

d. Fiberglass duct board in the air handlers and bases shall be kept dry and clean. Exposed fiberglass subject to erosion shall be coated with a sealer to prevent the entry of raw fiberglass into the air stream.
   1) Water will not be allowed to stand on any mechanical equipment.
e. All open ends of installed duct and equipment shall be covered and sealed to prevent the entry of dirt.
f. All zone boxes shall be wrapped and sealed from dirt and water before installation. Installed zone boxes shall have the openings sealed until permanently connected to the ductwork.
g. All dampers and attenuators into open chases and ducts shall be covered to reduce dirt entry.
h. The air handlers shall not be started without MERV 8 filtration in place. Upon system activation, install sheet media on all return openings and filters in zone box plenum openings. These filters must be monitored and changed as necessary to prevent the entry of dirt into the system. The temporary media shall be removed after building flush out and before occupancy.
i. The return air system should not be used during sheet rock installation, sanding or painting operations.
j. The building should be kept under a positive pressure as much as possible.
k. Chase dampers shall be kept closed until the system is activated.
l. Complete the initial mechanical checklists at system startup.
m. Replace final filters with new filters before flush out or occupancy per design requirements.

2. SOURCE CONTROL
   a. No smoking or tobacco materials shall be allowed on all campuses.
   b. No gasoline or fuel-fired equipment shall be used inside any enclosed building.
   c. Wet processes within the building shall be kept to a minimum.
   d. All chase and wallboard materials shall be protected from water. All damaged materials shall be removed and replaced.
   e. Use low-emission materials and chemicals.
   f. All cleaning involving chemicals shall be performed outside the building wherever possible.
   g. All carpet materials shall be unrolled or unboxed and aired out in a well-ventilated warehouse for a minimum of three days before installation.
   h. All modular furniture shall be aired out in a well-ventilated warehouse for seven days before entry into the building.
   i. Trash shall be cleaned up and removed daily to the appropriate recycle container.
   j. Any mold growth shall be treated according to the procedures shown in the New York City Department of Health “Guidelines on Assessment and Remediation of Fungi in Indoor Environments”.
   k. Clean the inside of all walls at the base track to remove excess materials and dirt with a vacuum cleaner before enclosing the wall. This is particularly critical on walls with plumbing or water piping included.
   l. HEPA vacuum all concrete floors before installation of floor covering materials.
   m. No obvious mold or chemical contamination shall be enclosed, hidden or painted.

3. PATHWAY INTERRUPTION
   a. Dust-producing operations shall be exhausted to the outside to the extent possible.
   b. Exhaust fans may be installed on each floor to remove dust and contaminants.
   c. The air handler shall supply conditioned air to the floors. Floors with heavy dust or chemical operations shall be exhausted to the outside.
   d. During rain or high-humidity conditions, the air supply coming from the coils shall be cooled to 55° F or the air handler stopped to prevent moist air entry into the building. Exhaust fans shall not draw moist air into the building. It is preferable to have little airflow to moist air entering the building.
   e. Return air dampers and openings shall be covered with filter media during operations that may contaminate the system.
   f. During activities producing airborne particulates in occupied buildings undergoing renovation, or projects whose airspace is connected to occupied buildings, dust producing activities such as, but not limited to, demolition, sanding, buffing, and welding, the Contractor will provide commercial high volume air scrubbers at the rate of 1 per 7000 square feet, operate them continuously, and service them per the manufacturer, including high-efficiency particulate arrestance (HEPA) filter replacement.

4. HOUSEKEEPING
   a. Food or food residues shall be properly disposed after meals or breaks.
   b. Once the building is enclosed with finishes applied, keep dirt entry to a minimum with walk off mats at all entrances. Clean the mats at least daily.

c. All sweeping shall be done with dust reducing wax-based sweeping compounds.
d. All materials shall be kept clean and stored neatly on dunnage or pallets as required by the manufacturer.
e. Coils, fans, and air handler chambers, including return air chambers, shall be inspected and cleaned if required before start up, final testing and commissioning, and air testing.
f. All workers shall utilize the proper personal protective equipment per OSHA standards during any operation involving chemicals and dust production.
g. No food, drink, or smoking shall be allowed within the building after the building is enclosed.

5. SCHEDULING
   a. Complete all dust producing and chemical operations before the installation of “sink” materials such as carpet and ceiling tile.
   b. Complete the HVAC control system sufficient to allow the operation of the supply and exhaust systems to control pressurization and contaminants.
   c. Group contaminating operations where possible to maximize exhaust use.

END OF SECTION