Note: This section is a common document on a multi-contract project.

Use and edit this section when green buildings criteria (LEED, sustainable design, etc.) are being used on the project. Confirm use of this article with the Project Manager.

SECTION 018119 **-** CONSTRUCTION INDOOR AIR QUALITY MANAGEMENT

1. GENERAL
   * + 1. CONSTRUCTION IAQ MANAGEMENT GOALS FOR THE PROJECT
          1. The Work of this Project shall minimize the detrimental impacts on Indoor Air Quality (IAQ) resulting from construction activities. Minimize factors that contaminate indoor air, such as, but not limited to: Dust entering HVAC systems and ductwork, improper storage of materials on-site, and poor housekeeping.
       2. SUMMARY
          1. This Section includes requirements for the development of a Construction Indoor Air Quality Management Plan (IAQ Plan). Develop the IAQ Plan for approval by the Director’s Representative. The IAQ Plan shall be implemented throughout the duration of the project construction and shall be documented as outlined in the SUBMITTALS Article below.

Delete subparagraph below if LEED is not part of the green buildings criteria.

The IAQ Plan is part of the LEED BUILDING requirements for the project.

* + - * 1. The IAQ plan must be approved prior to start of work within the building envelope.
      1. DEFINITIONS
         1. Volatile Organic Compounds (VOCs): Chemical compounds common in and emitted by many building products, including solvents in paints, coatings, adhesives and sealants, wood preservatives; composite wood binder, and foam insulations. Not all VOCs are harmful, but many of those contained within building products contribute to the formation of smog and irritate (at best) building occupants by their smell and/or health impact.
         2. Materials that act as “sinks” for VOC contamination: Absorptive materials, typically dry and soft (such as textiles, carpeting, acoustical ceiling tiles and gypsum board) that readily absorb VOCs emitted by “source” materials and release them over a prolonged period of time.
         3. Materials that act as “sources” for VOC contamination: Products with high VOC contents that emit VOC’s either rapidly during application and curing (typically "wet" products, such as paints, sealants, adhesives, caulks, and sealers) or over a prolonged period (typically “dry” products such flooring coverings with plasticizers and engineered wood with formaldehyde).
      2. REFERENCES, RESOURCES
         1. “IAQ Guidelines for Occupied Buildings Under Construction”, 2nd Edition, Chapter 3, November 2007*,* The Sheet Metal and Air Conditioner Contractors National Association (SMACNA). (703) 803-2980, www.smacna.org.
         2. ANSI/ASHRAE 52.2-1999, “Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size”, www.ashrae.org.
      3. CONSTRUCTION IAQ MANAGEMENT PLAN
         1. Prepare and submit a Construction IAQ Management Plan to the Director’s Representative for approval. The Construction IAQ Management Plan shall meet the following criteria:

Construction activities shall be planned to meet or exceed the minimum requirements of the Sheet Metal and Air Conditioning National Contractors’ Association (SMACNA) “IAQ Guidelines for Occupied Buildings under Construction”, First Edition, 1995.

Absorptive materials shall be protected from moisture damage when stored on-site and after installation.

If air handlers are to be used during construction, filtration with a Minimum Efficiency Reporting Value (MERV) of 8 must be at each return air grill, as determined by ASHRAE 52.2-1999.

Filtration media shall be replaced immediately prior to occupancy. Filtration media shall have a Minimum Efficiency Reporting Value (MERV) of 13 as determined by ASHRAE 52.2-1999.

A “Sequence of Finish Installation Plan” shall be developed, highlighting measures to reduce the absorption of VOCs by materials that act as “sinks”.

* + - * 1. Upon approval of the IAQ Plan by the Director’s Representative, it shall be implemented by the through the duration of the construction process and documented in accordance with the SUBMITTALS Article below.
        2. Further description of the Construction IAQ Management Plan requirements is as follows:

SMACNA Guidelines: Chapter 3 of the referenced “IAQ Guidelines for Occupied Buildings Under Construction”, outline IAQ measures in five categories as listed below. The Construction IAQ Management Plan shall be organized in accordance with the SMACNA format and shall address measures to be implemented in each of the five categories (including subsections). All subsections shall be listed in the Plan; items that are not applicable for this project should be listed as such.

HVAC Protection:

Return Side.

Central Filtration.

Supply Side.

Duct Cleaning.

Source Control:

Product Substitution.

Modifying Equipment Operation.

Changing Work Practices.

Local Exhaust.

Air Cleaning.

Cover or Seal.

Pathway Interruption:

Depressurize Work Area.

Pressurize Occupied Space.

Erect Barriers to Contain Construction Areas.

Relocate Pollutant Sources.

Temporarily Seal the Building.

Housekeeping.

Scheduling:

Protect of Materials from Moisture Damage: As part of the “Housekeeping” section of the Construction IAQ Management Plan, measures to prevent installed materials or material stored on-site from moisture damage shall be described. This section should also describe measures to be taken if moisture damage does occur to absorptive materials during the course of construction.

Replacement of Filtration Media: Under the “HVAC Protection” section of the Construction IAQ Management Plan, a description of the filtration media in all ventilation equipment shall be provided. The description shall include replacement criteria for filtration media during construction, and confirmation of filtration media replacement for all equipment immediately prior to occupancy.

Sequence of Finish Installation for Materials: Where feasible, absorptive materials shall be installed after the installation of materials or finishes which have high short-term emissions of VOC’s, formaldehyde, particulates, or other air-borne compounds. Absorptive materials include but are not limited to: carpets; acoustical ceiling panels; fabric wall coverings; insulations (exposed to the airstream); upholstered furnishings; and other woven, fibrous or porous materials. Materials with high short-term emissions include, but are not limited to: adhesives, sealants and glazing compounds (specifically those with petrochemical vehicles or carriers); paints, wood preservatives and finishes; control and/or expansion joint fillers; hard finishes requiring adhesive installation; gypsum board (with associated finish processes and products); and composite or engineered wood products with formaldehyde binders.

Develop a separate sequencing plan that identifies feasible opportunities to meet the above-stated goals for the project. The plan shall be submitted to the Director’s Representative in accordance with the SUBMITTALS Article below.

Implementation and Coordination: Implement the Construction IAQ Management Plan and coordinate the Plan with all affected trades. Include provisions in the Construction IAQ Management Plan for addressing conditions in the field that do not adhere to the Plan, including provisions to implement a stop work order, or to rectify non-compliant conditions.

Delete subparagraph below if LEED is not part of the green buildings criteria.

Designate one individual as the Construction IAQ Representative, who will be responsible for communicating the progress of the Plan with the Director’s Representative on a regular basis, and for assembling the required LEED documentation.

* + - 1. SUBMITTALS
         1. Submit the following records and documents:

A copy of the Construction IAQ Management Plan and the Sequence Installation Plan, as defined in CONSTRUCTION IAQ MANAGEMENT PLAN Article above.

Product cut-sheets for all filtration media used during construction and installed immediately prior to occupancy, with MERV values highlighted. Cut sheets shall be submitted with the Contactor’s or Subcontractor’s ‘approved’ stamp as confirmation that the products are the products installed on the project.

Provide the Director’s Representative with a minimum of 18 photographs comprising of at least six photographs taken on three different occasions during construction. The photographs shall document the implementation of the Construction IAQ Management Plan throughout the course of the project construction. Examples include photographs of ductwork sealing and protection, temporary ventilation measures, and conditions of on-site materials storage (to prevent moisture damage). Photographs shall include integral date stamping and shall be submitted with brief descriptions of the Construction IAQ Management Plan measure documented or be referenced to project meeting minutes or similar project documents which reference to the Construction IAQ Management Plan measure documented.

1. PRODUCTS (Not Used)
2. EXECUTION (Not Used)

END OF SECTION 018119