

## **DIVISION 1 – GENERAL REQUIREMENTS**

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### **01524 CONSTRUCTION WASTE MANAGEMENT**

#### **A. Design Considerations**

1. The University, by requiring the recycling of non-hazardous demolition and construction materials and other waste generated on the construction site, seeks to divert as much material as possible from the waste stream, to promote responsible use of resources, and to conserve energy.
2. Recycling shall be required on both renovation and new construction projects.

#### **B. Special Documentation Requirements**

1. Written proof of construction waste recycling must be submitted to the University through the Project Manager, within 30 days of removal of materials from site. The Project Manager shall provide the Director of Environmental Services and Grounds with copies of said documentation.
2. At a minimum, documentation of construction waste recycling shall include the following:
  - a. Name and location of recycler.
  - b. Total units (length, area, volume, etc., as applicable) of each material recycled.
  - c. Date of transaction.
  - d. Document shall include legible signature of recipient of recycled materials.

#### **C. Materials and Methods of Construction**

1. New Construction: The General Contractor shall require all employees and subcontractors to recycle the items listed below, in accordance with all local, county and state laws, regulations and guidelines. It shall be the responsibility of the General Contractor to ensure compliance with this standard.

- a. Provide separate covered, labeled roll-off containers for each material listed:
  - 1) Concrete;
  - 2) Steel/metals;
  - 3) Asphalt;
  - 4) Cardboard;
  - 5) Wood/lumber;
  - 6) Vegetation;
  - 7) Cans/glass/plastics.
  
2. Renovations: The following materials shall be recycled in accordance with all local, county and state laws, regulations and guidelines, and shall be stored on site and transported in containers as listed. Do not mix materials in any container, except as indicated:
  - a. Fluorescent Lamps – properly boxed and labeled.
  - b. Electronic Ballasts – in 55 gallon drums, labeled.
  - c. Acoustical Ceiling Panels not containing asbestos, not faced with fiberglass, and without attached insulation – stacked on pallets.
  - d. Aluminum Siding – stacked and bound.
  - e. Cardboard Packing Boxes – broken down and in an appropriate covered, labeled "dumpster".
  - f. Steel/metals – in covered, labeled "dumpster".
  - g. Wood/lumber – in covered labeled "dumpster".
  - h. Soils/vegetation – in covered, labeled "dumpster".
  - i. Carpet (all types) and padding – in covered, labeled "dumpster" from carpet recycler.
  - j. Concrete/CMU – in covered, labeled "dumpster".

- k. Asphalt – in covered, labeled "dumpster".
- l. Cans/glass/plastics – in covered, labeled "dumpster".
- 3. Soils: Topsoil shall not be removed from University property. Refer to Division 2 of these standards for requirements for topsoil. Subsoils to be removed from the site shall be properly and legally disposed of, and records shall be maintained of soil quantities and location of disposal sites.
- 4. Transport: All items are to be properly transported to appropriate recycling centers or retrieved by recycling companies.
- 5. Solid Waste: All other waste must be captured in covered (dog house style) waste "dumpsters", which must be removed from site when full. Overloaded containers will not be tolerated.
- 6. Although not required, the University's waste hauler can be used. Waste Management is familiar with our requirements and will provide the University Division of Environmental Services with appropriate documentation of recycled materials for the project, on a monthly basis.

## **01815 HVAC COMMISSIONING REQUIREMENTS**

### **A. Design Considerations:**

**NOT USED**

### **B. Special Documentation Requirements:**

- 1. As a minimum requirement, the Design Engineer of Record shall provide commissioning services and documentation in accordance with the requirements of the latest issue of ASHRAE Standard 90.1. The scope of commissioning services and documentation provided shall match the sophistication of the systems designed and shall be subject to the review/approval of Rutgers University Office of Facilities Project Administration. All commissioning services and documentation shall be in conformance with the latest issue of ASHRAE Commissioning Standards and Guidelines.

**C. Materials and Methods of Construction:**

1. The Design Engineer of Record shall be responsible for commissioning all systems designed by him as part of construction administration duties where construction administration is part of his contract. Commissioning services shall be in addition to shop drawing responsibilities and shall include but not be limited to verifying proper operation of controls and all equipment/systems, spot checking air/water balancing readings, evaluating acoustic readings, reviewing field installation of ductwork, piping, etc. during the course of construction up to and including final project close-out. The Design Engineer of Record shall implement commissioning services as heretofore described by coordinating/scheduling with pertinent trades and sub-consultants as required to complete a "Commissioning Check List" which may be included as part of the Construction Administration Contract with the Owner. The "Commissioning Check List" will require the signature and seal of the Design Engineer of Record confirming that the installation/operation of mechanical equipment and systems conform to contract documents unless otherwise approved in writing by the Owner.
2. The Owner reserves the right to hire a third party Commissioning Agent at the inception of any project. The Commissioning Agent will be responsible for reviewing and commenting on the design concept and design documents prepared by the Design Engineer of Record in order to ensure conformance with University requirements, Industry Standards and maximize value to the University. The commissioning Agent shall also review the installation and operation of all mechanical equipment and systems with the Design Engineer of Record as well as all pertinent trades to ensure conformance with contract documents prepared by the Design Engineer of Record. The Design Engineer of Record shall be obligated to work amicably with the Commissioning Agent throughout the design and construction process.
3. The Commissioning Agent shall ensure that appropriate Rutgers Facilities Operations and Services, REHS and the end user representatives receive adequate instruction and/or training to ensure proper operation, maintenance, and use of installed mechanical systems as described and intended by the manufacturer. Training shall be appropriate to the specific target audience (maintenance, safety, end user) and shall include written or electronic documentation manuals for reference as appropriate.