CONSTRUCTION WASTE MANAGEMENT PLAN

SOUTHERN CONNECTICUT STATE UNIVERSITY
NEW ACADEMIC LABORATORY
STATE PROJECT NO. BI-RS-283

485 Fitch Street
New Haven, Connecticut

DRAFT September 27, 2012

Prepared by:
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I. OBJECTIVES

The objectives of this plan are to:

1. Document FIP Construction's proposed methods to comply with requirements of specifications section 018113 Sustainable Design Requirements and 017419 Construction Waste Management and Disposal as relates to demolition and construction waste generated by the project.

2. Section 017419: Recycle, reuse or salvage minimum 50%, 75% preferred by weight, of the waste generated as a result of demolition, land clearing, and construction activities for the Southern Connecticut State University New Academic Laboratory Building Project.

3. Section 018113: Comply with the criteria and documentation requirements of "Materials and Resources Credit 2 Construction Waste Management, Target 50%, Preferred 75% of construction waste recycling rate" of the U.S. Green Building Council's LEED Rating System, Version 3.0.

II. PROJECT DESCRIPTION

The project consists of site development and new building construction for a new 110,000 s.f. academic lab facility on the campus of Southern Connecticut State University.

III. PLAN IMPLEMENTATION, OVERSIGHT AND ENFORCEMENT

The Demolition/Construction Waste Management Plan will be managed by FIP Construction, Inc.; however, specific salvage and recycling activities will be performed by various specialty subcontractors and vendors as detailed in Section IV below. FIP will provide oversight, coordination, and enforcement of all waste management activities on site.

FIP will assemble copies of all tickets, receipts or other submittal information related to waste removal, salvage, and recycling from the respective vendors.

FIP will compile a log of the salvaged and recycled materials throughout the demolition and construction phases. The log will track the total amount of salvaged and recycled materials (by weight), the amount of material sent to landfills (by weight), and the overall salvage/recycling rate for the project (See Attachments for format). The log will be updated and presented to the Owner/Design team for review on a periodic basis.

FIP will designate one individual on-site to coordinate and address issues that may arise related to the project's demolition/construction waste management activities.

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IV. WASTE MANAGEMENT MEASURES DURING DEMOLITION AND CONSTRUCTION

During the demolition and site preparation phase, salvage and recycling activities will be undertaken by the demolition/excavating contractor, ***(TBD)*** with management and oversight by ***FIP Construction.*** The targeted materials, sorting methods, and required submittals are described below.

During the construction phase, all salvage and construction waste stream activities will be undertaken collectively by the trades subcontractors and ***FIP Construction*** with management and oversight by FIP Construction. The targeted materials, sorting methods, and required submittals are described below.

Per Section III above, FIP will oversee and enforce these subcontractors' salvage and recycling efforts, and will collect copies of all tickets, receipts or other submittal information. FIP will use these subcontractors' submittals to update the project waste recycling log (described in Section III above).

LIST OF TARGETED MATERIALS FOR RECYCLING

DEMOLITION

1. Concrete
2. Bricks/Concrete Masonry Units (CMU)
3. Metals, including structural steel, miscellaneous steel items, metal studs, stairs, rails ductwork, piping, conduit, pipe hangers, plaster lathe, radiators, rebar, galvanized sheet steel, and door hardware items. Metals anticipated to include ferrous metals, cast iron, stainless steel, aluminum, copper, zinc, lead, brass, and bronze.
4. Clean Dimensional Wood
5. Cabinets/Casework
6. Drywall
7. Insulation
8. Acoustical Tiles/Pads
9. Glass
10. Plastics
11. Porcelain Tile/Ceramic Tile
12. Mechanical/Electrical Equipment Items/Fixtures
13. Hazardous Materials: Additional hazardous materials, if encountered, are excluded from recycling calculations

CONSTRUCTION WASTE

1. Brick/Masonry/CMU
2. Lumber/Misc. Wood

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3. Wood Sheet Materials, including plywood, OSB, and particle board
4. Metals
5. Roofing Materials
6. Insulation
7. Carpet & Pad
8. Gypsum Wallboard
9. Acoustical Tile
10. Paint
11. Piping/Conduit
12. Packaging

SORTING METHODS

General: *On-site sorting/segregation of waste materials will be the primary handling method for both the demolition and construction materials waste stream. Dedicated haulers, described further below, will remove sorted containers for further off-site processing. For limited amounts of the waste stream where sorting is impractical, materials will be placed in mixed containers on site and removed for processing.*

Demolition Waste: *Metals, masonry/concrete, wood and general construction debris will be placed in separate containers on site by* ***Monarca Building Contractors*** *demolition crews. Each container will be transported to off-site facilities to be off-loaded for sorting and recycling. Materials will be transported to the following facilities/companies for processing:* ***Wood/building materials:*** *USA Hauling and Recycling, Enfield CT;* ***Masonry:*** *Butler Construction, Portland, CT;* ***Concrete****: Krol Construction, Middletown, CT;* ***Metal:*** *Calamari Recycling, Essex CT. Refer to summary chart below. FIP will provide documentation from each processer on their letterhead declaring their recycling rate of demolition materials and listing the receiving facilities/companies that will be purchasing or accepting the recycled or salvaged materials. This information is attached for USA Hauling and Recycling. Specific items to be salvaged and turned over to the Owner will be segregated from construction waste and protected until turned over to the Owner.*

Construction Waste: *Construction waste material generated from non-demolition, general construction activity will be gathered on site in segregated containers for masonry/concrete, wood, metals, paper & cardboard and transported off-site processing locations to be off-loaded by* ***USA Hauling and Recycling*** *for processing and recycling. USA Hauling and Recycling typically recycles an aggregate of 75% construction demolition waste. Documentation from USA Hauling indicating a sampling of recycling rates of waste materials and a listing of the receiving facilities/companies that will be purchasing or accepting the recycled or salvaged materials is included with this waste management plan. As required, a limited quantity of materials will be placed in mixed containers on site and removed for processing.*

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MATERIAL TYPE	PLANNED PROCESSING METHOD	CONTRACTOR / SUBCONTRACTOR RESPONSIBLE	HAULER / RECYCLER RESPONSIBLE
Demolition Wood	Sort on site / recycle	Monarca	USA Hauling
Demolition Metal	Sort on site / recycle	Monarca	Calamari Recycling
Demolition Concrete	Sort on site / recycle	Monarca	Krol Construction
Demolition Masonry	Sort on site / recycle	Monarca	Butler Construction
Construction Waste Including Wood, Metal, Concrete, Masonry, Demolition, Drywall, Packaging	Sort on site to separate containers / recycle	FIP / Trades Subcontractors	USA Hauling
Construction Waste – Small Quantity Misc. Mixed	Dispose mixed on site / sort recycle off-site	FIP / Trades Subcontractors	USA Hauling

COMMUNICATION PLAN

During the pre-construction meetings with all subcontractors prior to start of work, FIP will review the waste management plan and processes to be strictly adhered to throughout the duration of the project. It shall be the responsibility of all on-site subcontractors to adhere to the waste management plan and policies. FIP will monitor and enforce all requirements of the waste management plan.

DOCUMENTATION TO BE PROVIDED

- Construction Waste Management Plan
- Periodic Reports; Weight tickets and receipts from entities listed below involved in the waste stream handling/management
- Waste diverted to-date calculation (see below)

SUBMITTALS

FIP and its designated subcontractors will provide calculations and supporting documentation to demonstrate end-of-project salvage/recycling rates meeting the requirement of 50% minimum (75% preferred) diversion from landfill.

1. **Demolition Waste Documentation**
   Monarca Building Contractors and their material handling vendors will record and document the following:
   - Total weight (in tons) of all demolition waste materials transported from the site.
   - Dates removed from site/tracked by ticket #s.
   - Total weight (in tons) of all demolition waste materials, by material type recycled or salvaged.

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- Total weight (in tons) of all demolition waste materials sent to landfill/incinerator.
- Resulting percentage of total weight of material by type recycled or salvaged.

2. Construction Waste Documentation

FIP Construction and their material handling vendors will record and document the following:

- Total weight (in tons) of all construction waste materials transported from the site.
- Dates removed from site/tracked by ticket #s.
- Total weight (in tons) of all construction waste materials, by material type recycled or salvaged.
- Total weight (in tons) of all construction waste materials sent to landfill/incinerator.
- Resulting percentage of total weight of material by type recycled or salvaged.

For demolition and construction waste materials separated for recycling/salvage; FIP will obtain a letter from the processors stating the average percentage of waste they recycle, along with a listing of the receiving facilities/companies that will be purchasing or accepting the recycled or salvaged materials. Receipts or other proof of facility reception of materials will be provided per Item 3 below.

3. Progress Reports

Monarca Building Contractors and FIP Construction will submit periodic Waste Management Progress Reports, containing the following information as applicable:

A. Project title, name of company completing report, and dates of period covered by the report.

B. Report on the disposal of all job site demolition and construction waste, including:
   1. Amount of waste material generated (by weight)
   2. Dates removed from the job site/ticket #s
   3. Destination/Receiving Party
   4. Waste quantity salvaged (by weight)
   5. Waste quantity recycled (by weight)
   6. Waste quantity landfilled/incinerated
   7. Waste quantity recovered (recycled/salvaged) as a percentage of waste generated
   8. Records of sales of salvageable materials
   9. Record of receipts of recyclable materials
   10. Landfill/Incinerator disposal records

4. Final Report

FIP Construction will submit a final Waste Management Reports, containing the following information:

A. Final calculation of construction waste and demolition diversion conforming to requirements of LEED NC 2009 letter template waste diversion calculation for Credit MR 2.

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Final project-wide C&D waste diversion rate will be calculated as follows:

Total C & D Waste	x Tons	Total waste generated by land clearing, demolition, and construction
Total Recycled + salvaged/re-used	y Tons	Materials diverted from landfills, by salvage, reuse and recycling
Diversion Rate	y/x %	Percentage of project's waste diverted from landfills

B. Copies of on-site logs, weight tickets and receipts. FIP will save the original documents for the duration of the project plus 3 year(s).

V. MEETINGS AND COMMUNICATIONS

The Construction Waste Management Plan will be reviewed at the kick-off meetings prior to the mobilization and start-up of each trade's work. Ongoing plan issues will be recorded via project meeting minutes as the project progresses. Per Section III above, FIP will designate one individual on site to coordinate and address issues that may arise related to the project's demolition/construction waste management activities.

VI. ATTACHMENTS

CONTRACTOR MONTHLY C&D WASTE MANAGEMENT PROGRESS REPORT
- Blank Waste Management Tracking Spreadsheet

USA HAULING AND RECYCLING
- List of Representative Projects and Recycling Rates
- List of Material Processing Facilities