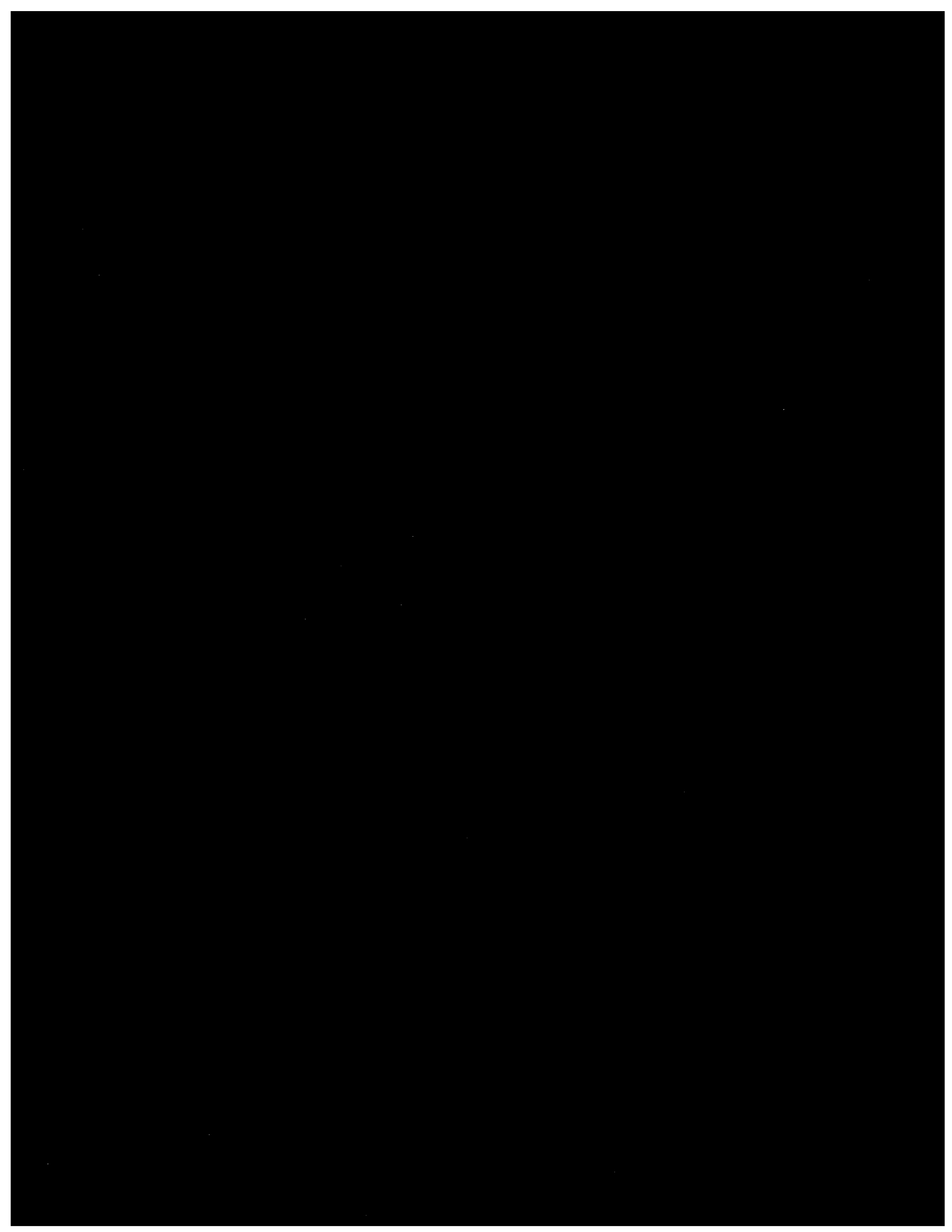


LOWER MANHATTAN DEVELOPMENT CORPORATION

CLEANING AND DECONSTRUCTION OF  
130 LIBERTY STREET NEW YORK, NEW YORK

Documents Enclosed with this 6-13-05 Invitation To Bid:

1. Part 1: Invitation to Bid
2. Annex 6 – Scope of Work for Deconstruction Contractor
3. Attachments:
  - a. Attachment 4: Variance Reopening Regarding File No. 05-0427 dated 6/1/05.
  - b. Attachment 5: Variance Reopening (2) for Walker Duct and Raceway Cleaning Protocols regarding File No. 05-0427 dated 6/10/05.
  - c. Attachment 6: Phase II Variance Petition dated 6/10/05.
  - d. Attachment 7: Deconstruction Plan
    - i. Section 1: Waste Management Plan
    - ii. Section 2: Ambient Air Monitoring Plan
    - iii. Section 3: Emergency Action Plan (EAP)
    - iv. Section 5: Health and Safety Plan (HASP)
  - e. Fisher Brother Drawings (For Reference Only)



# LOWER MANHATTAN DEVELOPMENT CORPORATION

## INVITATION TO BID

for

### CLEANING AND DECONSTRUCTION OF 130 LIBERTY STREET

*The Lower Manhattan Development Corporation, a subsidiary of the New York State Urban Development Corporation d/b/a Empire State Development Corporation, seeks bids for the cleaning, abatement and removal of all interior and exterior materials and the deconstruction of the building at 130 Liberty Street, New York, New York.*

#### Lower Manhattan Development Corporation

John C. Whitehead, Chairman  
Stefan Pryor, President

**June 13, 2005**

**MANDATORY Pre-bid conference: June 22, 2005, 9:00 AM EST**

**First Building Walkthrough: June 27, 2005, 9:00 AM EST**

**Second Building Walkthrough: June 29, 2005, 9:00 AM EST**

**Deadline for submission of Bids: July 12, 2005, 5:00 PM EST**

A MANDATORY pre-bid conference will be held on June 22, 2005 at 9:00 AM at LMDC's offices located at 1 Liberty Plaza, 20<sup>th</sup> Floor, New York, NY 10006. Questions must be submitted in writing no later than July 5, 2005 to David Ridley by email at [dridley@renewnyc.com](mailto:dridley@renewnyc.com), by mail to LMDC, or by facsimile to (212) 962-2431.

Addenda to this Invitation to Bid, including responses to any questions, will be posted on the LMDC web site [www.renewnyc.com](http://www.renewnyc.com) by June 21, 2005. LMDC will not accept, and cannot respond to, questions via other methods.

LOWER MANHATTAN DEVELOPMENT CORPORATION

DECONSTRUCTION OF  
130 LIBERTY STREET NEW YORK, NEW YORK

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  - d. **Attachment 4:** Variance Reopening Regarding File No. 05-0427 dated 6/1/05
  - e. **Attachment 5:** Variance Reopening (2) for Walker Duct and Raceway Cleaning  
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LOWER MANHATTAN DEVELOPMENT CORPORATION

EXTERIOR SCAFFOLDING IN CONNECTION WITH  
DECONSTRUCTION OF  
130 LIBERTY STREET NEW YORK, NEW YORK

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## **I. GENERAL INFORMATION**

### **A. Mission and Structure of the Lower Manhattan Development Corporation**

The Lower Manhattan Development Corporation (“LMDC”) was established in late 2001 to develop and revitalize Lower Manhattan in the aftermath of the September 11, 2001 terrorist attacks. LMDC defines Lower Manhattan to mean all areas in Manhattan south of Houston Street.

LMDC is a subsidiary of the New York State Urban Development Corporation, doing business as Empire State Development Corporation (“ESDC”), a political subdivision and public benefit corporation of the State of New York, created by Chapter 24 of the Laws of New York, 1968, as amended. LMDC is governed by a 16-member Board of Directors, of which half was nominated by the Governor of the State of New York and half by the Mayor of the City of New York.

LMDC is funded by federal appropriations administered by the United States Department of Housing and Urban Development (“HUD”) through its Community Development Block Grant (“CDBG”) program. To date, approximately \$2.783 billion has been allocated to LMDC. (*See* Defense Appropriations Act of 2002, Public Law 107-117 and Supplemental Appropriations Act of 2002 for Further Recovery from and Response to Terrorist Attacks on the United States, Public Law 107-206).

### **B. Overview of the Work and the Submission Process**

In fulfilling its responsibility of revitalizing Lower Manhattan, LMDC will need to obtain the services of a firm to abate and remove all interior and exterior materials and to deconstruct the building (the "Building") located at 130 Liberty Street (the "Work"). Firms interested in submitting a bid to provide the Work are required to follow the guidelines and instructions contained in this Invitation to Bid. In the event it becomes necessary to revise any part of this Invitation to Bid, revisions will be provided by addenda posted on the LMDC web site: <http://www.renewnyc.com>.

(Please respond in writing if you do not intend to submit a proposal for this project and also return the bid documents.)

Bid proposals should provide a straightforward, complete and concise description of the firm’s capabilities and qualifications to perform the Work. Please prepare eight (8) copies of your bid proposal. Each copy of the bid proposal should be bound in a single volume and include any documentation you may wish to submit.

Any firm submitting a bid proposal in response to this Invitation to Bid may be required to give an oral presentation of its qualifications to LMDC. This oral presentation may provide an opportunity for the firm to clarify or elaborate on its qualifications but will in no way change the original submission. Engagement staff should be present at the oral presentation. LMDC’s request for an oral presentation shall not constitute retention of the firm for this Work or for future services.

Bid proposals must be received no later than 5:00 PM EST, July 12, 2005. Deliver all bid proposals to:

RFP/RFQ Processor  
Lower Manhattan Development Corporation  
One Liberty Plaza, 20<sup>th</sup> Floor  
New York, NY 10006  
Attn: 130 Liberty Street Deconstruction

Proposals are considered confidential. Your proposal, properly executed, should be prepared and submitted in a sealed package clearly identified on the outside that it is a proposal, stating the project name and trade. Original bid proposals rendered in the form of a telegram, telephone, or electronic transmission will not be accepted. Changes to bid proposals will be accepted if received in a sealed package marked as above, indicating whether the changes supplement or replace the previous submission and detailing which parts of the original proposal were changed, and delivered at the location specified before the bid due time and due date. Any proposal received after the above stipulated time and date may be returned to you unopened.

We welcome suggestions regarding changes in specifications and/or modifications in design or production methods which will aid in reducing costs without impairing quality or safety, or which will improve the quality, safety, schedule and/or performance of the Work. However, your base bid price must be submitted on the basis of the bid documents. All voluntary alternates are to be presented as a separate deduction from or addition to the base bid price.

LMDC shall have no obligation to disclose to any firm the results of the bid process or of LMDC's determinations (including any information as to the bids furnished by any other bidder), except that LMDC shall notify the firm in writing if such firm is not awarded the contract.

The award of the contract shall not be construed as a guarantee by LMDC that the amount of the bid, the plant, equipment and the general scheme of operations and other data submitted by bidder with or after its bid proposal is either adequate or suitable for the satisfactory and timely performance of the Work.

LMDC reserves the right to cancel this Invitation to Bid at any time, to reject any bid or all bids, to negotiate with any or all bidders, to waive any informality or irregularity in any bid received or to afford any bidder an opportunity to remedy any deficiency resulting from any informality or irregularity. LMDC assumes no obligation, no responsibility and no liability for costs incurred by the responding firms prior to the issuance of a contract.

LMDC may at its election deny permission to modify, explain, withdraw or cancel any bid or part thereof after the time designated for the opening of bids.

The current schedule for this effort is as follows:

- June 13, 2005 – Invitation to Bid Issued
- July 12, 2005 – Responses Due

- July 13 – July 20, 2005 – Interviews of Finalists/Oral Presentations Conducted (if necessary)
- July 25, 2005 – Qualified Firm Selected

C. Pre-Bid Meeting and Site Visit

You are requested to attend a **MANDATORY**<sup>1</sup> pre-bid meeting and site visit scheduled for:

Time: 9:00 AM EST  
 Day: Wednesday  
 Date: June 22, 2005  
 Location: LMDC offices, One Liberty Plaza, 20<sup>th</sup> Floor, New York, New York 10006

The firm and its employees and representatives must exercise extreme care during all site visits. The firm and its employees and representatives must be prepared with their own safety equipment such as hard hats, boots, flash lights, etc. in advance of any visit to the site. In addition, due to the presence of Hazardous Materials in and on the Building, the current health and safety plan ("HASP") contains the following minimum requirements for entrance into or about contaminated portions of the Building which must be satisfied in full in advance of entry into or about contaminated portions of the Building:

Asbestos Awareness Training (to be provided 9am Monday June 27th at 130 Liberty, if needed);

HASP Training (to be provided 9am Monday June 27th at 130 Liberty);

Respirator training and fit-test (to be provided 9am Monday June 27th at 130 Liberty, if needed);

Medical/Physician certification that entrant is physically able to wear a respirator (to be supplied in advance by the person requesting access to the site); and

Half-Face Respirator with HEPA filter cartridges (to be supplied by the person requesting access to the site).

The firm and its employees and representatives must at all times comply with the HASP as well as all other site-access requirements imposed by LMDC, including but not limited to execution of a waiver and release and compliance with any additional health and safety rules LMDC may adopt.

**II. ANTICIPATED SCOPE OF WORK**

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<sup>1</sup> Attendance at the Mandatory pre-bid conference is a condition to submission of a bid.



LMDC requests bid proposals for a firm to perform the Work, which will include, but will not be limited to the planning, engineering (including preparation of Contractor's Implementation Plan (defined in the Contract Documents)), maintenance, cleaning, abatement and removal of interior and exterior materials, deconstruction and disposal of removed materials, backfilling of basement areas, site work and all other Work required in connection with the deconstruction of the Building and as otherwise described in the Scope of Work, Specifications, and other Contract Documents.

**NOTE:** The forms of Deconstruction Contract, General Conditions and Specifications are not attached to this Invitation to Bid, but will be issued and made available on June 20, 2005.

### **III. SUBMISSION REQUIREMENTS**

Interested firms are invited to submit bid proposals that contain the following information:

#### **A. Experience, Structure, and Personnel (ten-page limit)**

1. A history of the firm's experience performing projects similar to the Work, including the specifics outlined in Section II above, to economic development organizations, municipalities, other governmental entities, private developers, not-for-profits and civic organizations.
2. A description of the firm's organizational structure, including resumes of the principals, project manager(s), superintendents and professional staff who would work directly with LMDC, and the proposed percentage of time each individual would work directly on this Project. For joint ventures, partnerships or other special purpose entities created for this Project, submit the above information for each partner/venturer/member of the entity.
3. Descriptions of five (5) major projects that the firm has completed that are comparable to the Work-- specifically on projects with a high level of public scrutiny. Include the client, the name of a contact person who is able to provide a reference, a description of the nature of the work, the size and complexity of the project, and the original contract sum and final sum including change order payments.
4. Any other information that you believe would make the firm's work on behalf of LMDC superior to that of other firms or information about your firm's specialty or particular skill to perform the Work.
5. If you are a partnership, joint venture or other special purpose entity created for this Project:
  - a. Describe what form of legal entity you are and which persons have authority to bind the entity;

- b. Describe the individual entities that comprise the partnership/joint venture/  
special purpose entity.

**NOTE:** No particular company may be a partner/venturer/member of more than one partnership/joint venture/special purpose entity submitting a bid proposal. LMDC will evaluate each partner/venturer/member of a partnership/joint venture/special purpose entity both separately and as a part of the partnership/joint venture/special purpose entity. LMDC will reject a bid from any partnership/joint venture/special purpose entity comprised of more than three entities.

**NOTE:** Bidders should include as part of the foregoing information covered under Section IV below.

B. Bid Form (Attachment 4)

Complete the Bid Form (Attachment 4), including:

1. The lump sum price for the Work, per the Bid Form attached as Attachment 4 (Bid Form).
2. For work added by change order, the current hourly rates the firm pays under its union agreements for labor, along with the percentage mark-up for the firm's entire costs of administration, profit, general conditions and overhead associated with change orders. (That percentage will be a factor in LMDC's analysis of the competitiveness of your firm's proposal.)
3. Any reduced prices offered to other municipalities, governmental entities, economic development or nonprofit organizations, and civic organizations.
4. Unit prices, alternate prices, and/or allowances required in Attachment 4 (Bid Form).

**NOTE:** Although the proposed lump sum price will be taken into account, LMDC reserves the right to negotiate a lower or different compensation structure with any firm that is selected.

C. Contact Information

On a single cover sheet in your statement of qualifications, please provide:

1. The lead firm or individual name;
2. The lead firm's contact person;
3. License or certification information of lead firm principal(s) or individual(s) that are anticipated to work on a LMDC project;

4. Telephone, fax, and cell phone numbers for firm principal(s) or individual(s) that are anticipated to work on a LMDC project;
5. E-mail address for firm principals or individuals that are anticipated to work on a LMDC project;
6. The street address of lead firm or individual;
7. The year the firm or individual practice established;
8. The M/WBE status of the firms (Minority-owned Business Enterprise or Women-owned Business Enterprise, as certified by New York State);
9. The type of work or specialty and size of firm; and
10. The signature of the lead individual, and the date of the signature.

D. Conflicts of Interest

1. Submit a statement describing any potential conflict of interest or appearance of impropriety, relating to other clients of the firm (including, but not limited to, projects located in Lower Manhattan (defined as the area south of Houston Street) or projects for Deutsche Bank, AXA Corporate Solutions Insurance Company, Allianz Global Risks US Insurance Company, or their affiliates), or officers, directors, and employees of LMDC, that could be created by working for LMDC.
2. Indicate what procedures will be followed to detect and notify LMDC and to resolve any conflicts of interest.
3. Indicate any pending litigation and/or regulatory action by any oversight body or entity that could have an adverse material impact on the firm's ability to serve LMDC.
4. Indicate if the firm has ever had a prior contract with any governmental entity terminated for any reason, and provide a detailed explanation.
5. Submit a completed Standard Business Background Questionnaire (Attachment 3).
6. Submit a completed Contractor Disclosure Contracts Form and the Contractor Disclosure of Prior Non-Responsibility Determinations Form (Attachment 6) in compliance with New York State Executive Order 127.
7. Identify the firm's proposed insurance carriers.
8. Provide information for any other Lower Manhattan projects (and/or projects for Deutsche Bank, AXA Corporate Solutions Insurance Company, Allianz

Global Risks US Insurance Company, or their affiliates) or work related to 130 Liberty Street.

E. Nondiscrimination Policy and M/WBE

1. Firms with fifty (50) or more employees shall submit a copy of their nondiscrimination or affirmative action plan.
2. Firms with less than fifty (50) employees shall submit a statement of their commitment to equal opportunity and affirmative action from their chief executive officer.
3. Each responding firm (including each member of a partnership/joint venture/special purpose entity) and all proposed subcontractors must also complete and submit both (a) Attachment 1 (Workforce Employment Utilization Report) relating to the anticipated workforce to be utilized on the project, and (b) Attachment 2 (MBE/WBE Compliance Report) relating to the anticipated participation of minority and women-owned business enterprises as subcontractors, if any. Please provide a detailed M/WBE plan and a plan for utilizing minorities and women on this Project, as required by the Opportunity Downtown Plan (see Schedule "F" of the General Conditions).

F. Proposed Subcontractors

1. Each responding firm shall submit a list of any proposed subcontractors, and the amounts of each such subcontractor proposal, along with a completed Standard Business Background Questionnaire (Attachment 3) for each such proposed subcontractor.
2. Firms are cautioned that all proposed subcontractors must meet all the requirements set forth in the form of contract accompanying this Invitation to Bid. If a proposed subcontractor, submitted with your bid, is disapproved, the successful bidder must provide an alternate subcontractor, acceptable to the LMDC, at no additional cost to the LMDC.

G. Bid Bond

1. Each responding firm must submit two originals of the Bid Bond in the form set forth in Attachment 6 (Bid Bond).

H. Evidence of Insurance.

1. Each responding firm must submit evidence of their ability to secure the insurance required by LMDC, as set forth in Schedule I of the General Conditions.

I. Project Approach and Methodology

1. Each responding firm must submit Attachment 7 (Project Approach and Methodology).
- J. Bidder Prequalification Application/Team Structure Schedule
1. Each responding firm must submit Attachment 8 (Bidder Prequalification Application/Team Structure Schedule).
- K. Comments on Contract
1. The firm should indicate what changes, if any, it would request in the forms of Contract Documents accompanying this Invitation to Bid. While LMDC will evaluate requested changes, LMDC will have no obligation to accept any changes in the Contract Documents and will not be deemed to have accepted any requested changes by selecting Contract's bid proposal.

All information and documents described in subsections A through K above must be included or addressed in the submission.

#### IV. CRITERIA FOR SELECTION

- A. Because of the special complexity and coordination requirements of this Project, LMDC will select the Contractor based on factors demonstrating such Contractor's responsibility and experience with large, difficult projects involving compliance with strict Legal Requirements. For this reason, LMDC expressly reserves the right to award to other than the low bidder. Among the factors which LMDC will apply in making its final selection, not necessarily in order of importance, are the following.
1. Experience of the firm on comparable projects [list five such jobs], including (a) number, complexity, and nature of projects in New York City similar to the Project handled by the firm; (b) complex, large scale projects; (c) experience with large-scale demolition projects requiring cleaning and disposal of Hazardous Materials in the State of New York; (d) experience of firm in performance on similar projects for municipalities, economic development organizations, or other governmental entities, comparable governmental organizations in New York City and comparable qualification requirements. [Address each subcategory]
  2. Experience of firm's employees, and also the professional engineering team, to be assigned to this Project by or for the firm, and the firm's selected staff ability, experience, availability and facility for working with LMDC directors, officers, staff and consultants.
  3. Demonstrated knowledge of the environmental issues facing Lower Manhattan, 130 Liberty Street, and the WTC Site and familiarity with local, state, and federal environmental regulations and other Legal Requirements applicable to the Project.

4. Quality of firm's work product as demonstrated through references from owners of other projects of a similar nature (or other documentary evidence), including (a) quality of work; (b) demonstrated record of safety and safe performance; and (c) innovative or outstanding work by firm that demonstrates the firm's unique qualifications to perform the Work. [Address each subcategory]
5. Quality/responsiveness of bid proposal, including (a) responsiveness to this Invitation to Bid; (b) responsiveness to the requirements of the Contract Documents, (c) approaches in proposed methodology that demonstrate maximum comprehension of and ability to successfully complete the Project in accordance with the Contract; and (d) conformity with or exceedance of applicable LMDC policies as set forth in the Contract, including specific policies relating to nondiscrimination, affirmative subcontracting goals, and Opportunity Downtown Plan. [Address each subcategory]
6. Amount of Lump Sum bid and also amounts and rates for other dollar factors required by this Invitation to Bid.
7. Willingness to accept the forms of Agreement, General Conditions, and other Contract Documents set forth in the attached Schedule A without change.

## **V. CONTRACT REQUIREMENTS**

Selected firm(s) will be required to enter into a formal Agreement (including General Conditions, Specifications, and other Contract Documents) with LMDC in the forms issued (or to be issued) as part of this Invitation to Bid, subject to addenda or amendments issued by LMDC.

## **VI. MISCELLANEOUS CONDITIONS**

### **A. Obligation Only on Formal Agreement**

The issuance of this Invitation to Bid and the submission of a response by any candidate firms or the acceptance of such response by LMDC do not obligate LMDC in any manner. Legal obligations will only arise on the execution of the formal Agreement by LMDC and the firm selected by LMDC. Responses to this Invitation to Bid will be prepared at the sole cost and expense of the candidate firms. No materials submitted in response to this Invitation to Bid will be returned.

### **B. LMDC Reservation of Rights**

LMDC may (i) amend, modify, or withdraw this Invitation to Bid, (ii) revise requirements of this Invitation to Bid, (iii) require supplemental statements or information from any firm, (iv) accept or reject any or all responses hereto, (v) extend the deadline for submission of responses thereto, (vi) negotiate or hold discussions with any respondent, (vii) waive defects and allow corrections of deficient responses which do not completely conform to the instructions contained herein, and (viii) cancel this Invitation to Bid, in whole or in part, if LMDC deems it in its best interest to do

so. LMDC may exercise the foregoing rights at any time without notice and without liability to any proposing firm or any other party for their expenses incurred in the preparation of the responses hereto or otherwise.

C. Nondiscrimination and Affirmative Action Policies; Opportunity Downtown Plan

It is the policy of the State of New York, ESDC, and LMDC to comply with all federal, state and local laws, policies, orders, rules and regulations which prohibit unlawful discrimination because of race, creed, color, national origin, sex, sexual orientation, age, disability or marital status, and to take affirmative action in working with contracting parties to ensure that Minority and Women-owned Business Enterprises (“M/WBEs”), Minority Group Members and women share in the economic opportunities generated by LMDC’s participation in projects or initiatives, and/or the use of LMDC funds. LMDC is a subsidiary of ESDC and its non-discrimination and affirmative action policy will apply to this Invitation to Bid and any resulting contract(s). LMDC has established a 20% M/WBE participation goal for the entire redevelopment project. The selected firm shall be required to use its best efforts to provide for the meaningful participation of United States M/WBEs, Minority Group Members and women in the execution of this contract. A copy of each responding firm’s equal employment opportunity policy statement, Attachment 1 (Workforce Employment Utilization Report) relating to the anticipated workforce to be utilized on the contract and Attachment 2 (MBE/WBE Compliance Report) relating to the anticipated participation as subcontractors of M/WBEs, shall be included as part of the response to the Invitation to Bid. The ESDC Affirmative Action Unit (“AAU”) is available to assist you in identifying M/WBEs certified by the State of New York that can provide goods and services in connection with the contract. If you require M/WBE listings, please call the AAU at (212) 803-3224. The selected firm must also participate in LMDC’s Opportunity Downtown Plan.

Please refer to Article 20 of the General Conditions and Schedules C and F to the General Conditions for additional requirements relating to the foregoing.

CHECKLIST OF REQUIRED ATTACHMENTS FOR BIDDER TO COMPLETE

Attachment 1	Workforce Employment Utilization Report
Attachment 2	MBE/WBE Compliance Report
Attachment 3	Standard Business Background Questionnaire
Attachment 4	Bid Form
Attachment 5	Contractor Disclosure Contracts Form and the Contractor Disclosure of Prior Non-Responsibility Determinations Form
Attachment 6	Bid Bond
Attachment 7	Project Approach and Methodology
Attachment 8	Bidder Prequalification Application/Team Structure Schedule



Workforce Employment Utilization Report

[attached]

# MONTHLY EMPLOYMENT UTILIZATION REPORT

(See next page for instructions)

PROJECT NAME: \_\_\_\_\_  
 PROJECT LOCATION: \_\_\_\_\_  
 COUNTY: \_\_\_\_\_ ZIP: \_\_\_\_\_

CONTRACTOR START DATE: \_\_\_\_\_  
 ESTIMATED COMPLETION DATE: \_\_\_\_\_  
 PERCENT OF JOB COMPLETED (for reporting period): \_\_\_\_\_  
 CONTRACT NO.: \_\_\_\_\_  
 CONTRACT AMOUNT: \$\_\_\_\_\_

REPORTING PERIOD: Month \_\_\_\_\_  
 Year \_\_\_\_\_

## COMPANY EMPLOYMENT DATA

**A. TOTAL COMPANY EMPLOYEES** (for the beginning of project)  
 Male | Female

**B. TOTAL COMPANY EMPLOYEES** (at the end of project)  
 Male | Female

**C. NET INCREASE** (applies only to changes, if any, in Company's Employee makeup at the end of project)

TOTAL MALE		TOTAL FEMALE	
C1. EMPLOYEES	C2. OCCUPATIONAL CODES# OF EMPLOYEES	C3. EMPLOYEES	C4. OCCUPATIONAL CODES# OF EMPLOYEES
TOTAL WHITE		TOTAL WHITE	
TOTAL BLACK		TOTAL BLACK	
TOTAL HISPANIC		TOTAL HISPANIC	
TOTAL ASIAN		TOTAL ASIAN	
TOTAL NATIVE AMERICAN		TOTAL NATIVE AMERICAN	

### 1. WORKER HOURS OF EMPLOYMENT

1b. BLACK (Not of Hispanic Origin)

2. NUMBER OF WORKERS

1c. HISPANIC	1d. ASIAN or PACIFIC ISLANDER		1e. NATIVE AMERICAN/ ALASKAN NATIVE		2a. ALL		2b. MINORITY	
	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
MALE								
FEMALE								

### 3. CONSTRUCTION TRADES



# MONTHLY EMPLOYMENT UTILIZATION REPORT

## *Instructions for Completion*

The Monthly Employment Utilization Report ("MEUR") is to be completed by each subject contractor (both Prime and Sub) and signed by a responsible official of the company. The reports are to be filed by the 5th day of each month during the term of the project, and they shall include the total work-hours for each employee classification in each trade in the covered area for the monthly reporting period. The prime contractor is responsible for submitting its subcontractors report, along with its own. Additional copies of this form may be obtained from Lower Manhattan Development Corp. ("LMDC").

***Minority:*** Includes Blacks, Hispanics, Native Americans, Alaskan Natives, and Asian and Pacific Islanders, both men and women.

1. ***Worker Hours of Employment (a-e):***
  - a) ***All Worker Hours:*** The total number of male hours, the total number of female hours, and the total of both male and female hours worked under each classification.
  - b) through e) ***Minority Worker Hours*** The total number of male hours and the total number of female hours worked by each specified group of minority worker in each classification.
2. ***Number of Workers (a-b):***
  - a) ***All Workers*** Total number of males and total number of females working in each classification of each trade in the contractor's aggregate workforce during reporting period.
  - b) ***Minority Workers*** Total number of male minorities and total number of female minorities working in each classification, in each trade in the contractor's aggregate workforce during reporting period.
3. ***Construction Trade:*** Only those construction crafts which contractor employs in the covered area.  
***Construction Trades include:*** Field Office Staff (Professionals and Office/Clerical), Laborers, Equipment Operators, Surveyors, Truck Drivers, Iron Workers, Carpenters, Cement Masons, Painters, Electricians, Plumbers and Other.

Note: LMDC may demand payroll records to substantiate work hours listed on the Monthly Employment Utilization Report, if discrepancies should arise.

### OCCUPATIONAL CODES

Officials/Administrators	100
Professionals	110
Technicians	120
Sales Workers	130
Office & Clerical	140
Craft Workers	150
Operatives	160
Laborers	170
Service Workers	180

### FORWARD TO:

***Beverly Bobb***  
***Lower Manhattan Development Corp.***  
***One Liberty Plaza, 20<sup>th</sup> Floor***  
***New York, NY 10006***  
***[bbobb@RenewNYC.com](mailto:bbobb@RenewNYC.com)***  
***(212) 962-2300 Phone***  
***(212) 962-2431 Fax***

Attachment 2

MBE/WBE Compliance Report

[attached]

SCHEDULE C, Attachment C-2

**MBE/WBE COMPLIANCE REPORT**  
**CONSTRUCTION**  
 (to be filed monthly)

PROJECT SPONSOR/DEVELOPER: \_\_\_\_\_ LMDC AA REPRESENTATIVE: Beverly Bobb

ADDRESS: \_\_\_\_\_ PROJECT NAME: \_\_\_\_\_

PROJECT START DATE: \_\_\_\_\_ PERCENT COMPLETE: \_\_\_\_\_

ACTUAL COMPLETION: \_\_\_\_\_

TELEPHONE: \_\_\_\_\_

CONTACT PERSON: \_\_\_\_\_

Attach M/WBE contract documentation, i.e. executed contracts, signed purchase orders or canceled checks. This report should be completed by an officer of the reporting company, and forwarded to the LMDC with the appropriate documentation.

PRIME CONTRACTOR (Name, Address, Contact Person and Phone)	TYPE OF CONTRACT (Trade/Service)	CONTRACT AMOUNT	SUB CONTRACTOR NO. & AMT.	MBE/WBE SUBCONTRACTOR (Name, Address, Contact Person and Phone)	SCOPE OF SERVICES	AMOUNT CONTRACTED TO MBE/WBE

CERTIFICATION: I, \_\_\_\_\_ (Print Name), the \_\_\_\_\_ (Title), do certify that (I) I have read this Compliance Report and (II) to the best of my knowledge, information and belief the information contained herein is complete and accurate.

SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

Forward to:

*Beverly Bobb  
Lower Manhattan Development Corp.  
One Liberty Plaza, 20<sup>th</sup> Floor  
New York, NY 10006  
[bbobb@RenewNYC.com](mailto:bbobb@RenewNYC.com)  
(212) 962-2300 Phone  
(212) 962-2431 Fax*

Standard Background Questionnaire

[attached]





LOWER MANHATTAN DEVELOPMENT CORPORATION  
STANDARD BUSINESS BACKGROUND QUESTIONNAIRE

INSTRUCTIONS

- This Questionnaire shall be completed on behalf of the Firm by an individual who is knowledgeable about the past and present operations of the firm and its policies.
- Firms intending to bid as joint venturers should submit a separate Questionnaire for each joint venturer.
- Whenever more space is needed to answer any question, or you wish to give further explanation, complete by attaching extra pages.
- All questions must be answered. If a particular question does not apply, the response must state "Not Applicable" ("NA").
- Any suits, liens, judgments, litigation, violations, and administrative or court actions under appeal must be disclosed.

NOTE: Please indicate whether you believe that any of the information supplied herein is confidential and should be exempt from disclosure under the New York Freedom of Information Law: \_\_\_\_\_yes, \_\_\_\_\_no. If you checked "yes" you must identify the information you feel is confidential by placing an asterisk in front of the appropriate question number(s) and attach an additional sheet(s) explaining the basis for such claim(s).

DEFINITIONS

For purposes of this Questionnaire, the following terms shall have the following meanings:

- A. "Affiliate" shall mean any person or entity that is directly or indirectly controlled by the person or entity to which the question relates, or any person or entity that directly or indirectly controls such person or entity. For purposes of this definition, control means the power to direct the management of the firm, person or other entity, whether through ownership of shares, the right to designate the Board of Directors, contract or otherwise.
- B. "Principal" shall mean any person who is or has been, within the past five (5) years, either an owner of five percent (5%) or more of the firm's shares, one of the firm's five (5) largest shareholders or a director, officer, partner or proprietor of the Firm.
- C. "Key Person" shall mean any individual, not identified in this Questionnaire as a Principal, who participates in policy making, financial decisions, or the Firm's operations in relation to the LMDC project.

GENERAL INFORMATION

1. LEGAL NAME OF FIRM (hereafter, the "Firm") \_\_\_\_\_

EMPLOYER IDENTIFICATION NUMBER \_\_\_\_\_

DBA NAME, IF ANY \_\_\_\_\_

MAILING ADDRESS \_\_\_\_\_ PHONE NO. (\_\_\_\_) \_\_\_\_\_

CITY \_\_\_\_\_ COUNTY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_ FAX NO. (\_\_\_\_) \_\_\_\_\_

ACTUAL LOCATION \_\_\_\_\_

FIRM HEADQUARTERS (if different) \_\_\_\_\_

E-MAIL ADDRESS \_\_\_\_\_ WEB SITE \_\_\_\_\_






12. Are any persons identified in your answers to questions 7, 8, or 10:
- (a) Present or past employees of the LMDC No \_\_\_\_\_ Yes \_\_\_\_\_
- (b) Related by kinship or marriages to any present or past employees of the LMDC? No \_\_\_\_\_ Yes \_\_\_\_\_
- If you answered "yes" to questions 12(a) or 12(b), provide name(s) of such individual(s) and indicate his or her relationship to the current/former LMDC employee.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**D. FINANCIAL INFORMATION**

13. Attach a copy of the Firm's most recent audited annual financial statement, include (if any) the auditor's report and accompanying footnotes.
14. For the purpose of this contract, is any other person or entity guaranteeing the performance of, or otherwise providing financial assistance to, your Firm? If so, describe the form of assistance and list the name(s) and federal tax identification number(s) ("TIN") of each person or entity:

FORM OF ASSISTANCE	INDIVIDUAL	COMPANY NAME	FEDERAL TIN	ADDRESS


**OTHER INFORMATION**

15. For the Firm or any individual, firm or Affiliate identified in questions 7 through 10 above; (a) list and describe all judgments, liens or claims over \$25,000 filed against the Firm, individual, firm or Affiliate and remaining undisputed or unsatisfied for more than ninety (90) days; and (b) list and describe all liquidated damages assessed. Also list any litigation currently pending against the Firm, individual, firm, or Affiliate, if the judgment sought relates to the type of work to be performed for the LMDC, or could have a material adverse financial impact on the Firm, individual, firm or Affiliate.

INDIVIDUAL, FIRM OR AFFILIATE	LIENS, CLAIMS, LITIGATION INDEX/DOCKET NO.	LIQUIDATED DAMAGES

16. Within the past five (5) years has the Firm, Principal, Key Person, or Affiliate been the subject of any of the following (respond to each question and describe in detail the circumstances of each affirmative answer; attach additional pages if necessary):

- (a) a judgment of conviction for any business-related conduct constituting a crime under state or Federal law? No \_\_\_\_\_ Yes \_\_\_\_\_
- (b) a criminal investigation or indictment for any business-related conduct constituting a crime under state or Federal law? No \_\_\_\_\_ Yes \_\_\_\_\_
- (c) a grant of immunity for any business-related conduct constituting a crime under state or Federal law? No \_\_\_\_\_ Yes \_\_\_\_\_
- (d) any felony or misdemeanor charges pending that were filed either before or during their employment or affiliation with the Firm? No \_\_\_\_\_ Yes \_\_\_\_\_
- (e) a Federal or state suspension or debarment? No \_\_\_\_\_ Yes \_\_\_\_\_

- (f) a finding of non-responsibility by any government agency? No \_\_\_\_\_ Yes \_\_\_\_\_
- (g) a denial or revocation of prequalification? No \_\_\_\_\_ Yes \_\_\_\_\_
- (h) a voluntary exclusion from bidding/contracting agreement? No \_\_\_\_\_ Yes \_\_\_\_\_
- (i) any administrative or civil action seeking specific performance or restitution on any public works contract except any disputed work proceeding? No \_\_\_\_\_ Yes \_\_\_\_\_
- (j) an OSHA Citation and Notification of Penalty containing a violation classified as serious? No \_\_\_\_\_ Yes \_\_\_\_\_
- (k) an OSHA Citation and Notification of Penalty containing a violation classified as willful? No \_\_\_\_\_ Yes \_\_\_\_\_
- (l) a prevailing wage or supplement payment violation? No \_\_\_\_\_ Yes \_\_\_\_\_
- (m) a state labor law violation deemed willful? No \_\_\_\_\_ Yes \_\_\_\_\_
- (n) any other federal or state citations, notices, violation orders, pending administrative hearings or proceedings or determinations of a violation of any labor law or regulation? No \_\_\_\_\_ Yes \_\_\_\_\_
- (o) any criminal investigation, felony indictment or conviction concerning formation of, or any business association with, any allegedly false or fraudulent women's, minority or disadvantaged business enterprise? No \_\_\_\_\_ Yes \_\_\_\_\_
- (p) any denial, decertification, revocation or forfeiture of Women's Business Enterprise, Minority Business Enterprise or Disadvantaged Business Enterprise status? No \_\_\_\_\_ Yes \_\_\_\_\_
- (q) rejection of a low bid on a local, state or federal contract for failure to meet statutory affirmative action or M/WBE requirements? No \_\_\_\_\_ Yes \_\_\_\_\_
- (r) consent order with the NYS Department of Environmental Conservation, or a federal, state or local government enforcement determination involving a violation of federal or state environmental laws? No \_\_\_\_\_ Yes \_\_\_\_\_
- (s) any citations, notices, violation orders, pending administrative hearings or proceedings or determinations for violations of: No \_\_\_\_\_ Yes \_\_\_\_\_

- Federal, state or local health laws, rules or regulations? No \_\_\_\_\_ Yes \_\_\_\_\_
  - Federal, state or local environmental laws, rules or regulations? No \_\_\_\_\_ Yes \_\_\_\_\_
  - unemployment insurance or workers compensation coverage or claim requirements? No \_\_\_\_\_ Yes \_\_\_\_\_
  - ERISA (Employee Retirement Income Security Act)? No \_\_\_\_\_ Yes \_\_\_\_\_
  - Federal, state or local human rights laws? No \_\_\_\_\_ Yes \_\_\_\_\_
  - Federal or state security laws? No \_\_\_\_\_ Yes \_\_\_\_\_
  - a request to withdraw a bid submitted to a public owner or any claim of an error on a bid submitted to a public owner? No \_\_\_\_\_ Yes \_\_\_\_\_
- (t) any bankruptcy or reorganization proceeding? No \_\_\_\_\_ Yes \_\_\_\_\_
- (u) any suspension or revocation of any business or professional license, certificates or certifications? No \_\_\_\_\_ Yes \_\_\_\_\_
- (v) a denial of application an for a professional or trade license? No \_\_\_\_\_ Yes \_\_\_\_\_

17. Within the past five (5) years has the Firm, Principal, or Key Person (respond to each question and detail the circumstances of each affirmative answer; attach additional pages if necessary):

- (a) filed or submitted to any government agency, employee or representative any document that the Firm, Affiliate, Principal or Key Person knew to contain a false statement or false information? No \_\_\_ Yes \_\_\_
- (b) falsified any business record? No \_\_\_ Yes \_\_\_
- (c) given or offered to give money or any thing of value or any benefit to any labor official or public servant with intent to influence that person with respect to his or her official acts, duties or decisions as a labor official or public servant? No \_\_\_ Yes \_\_\_
- (d) given or offered to give money or any thing of value or any benefit to any official or employee of a business with intent to induce that person or employee to engage in unethical or illegal business practices? No \_\_\_ Yes \_\_\_
- (e) agreed with any person to submit a proposal, price or bid below prevailing market rate? No \_\_\_ Yes \_\_\_
- (f) been sued or paid a settlement of claim related to the performance of professional services? No \_\_\_ Yes \_\_\_

18. Within the past five (5) years, has the Firm ever:

- (a) failed to file any required tax returns or failed to pay any applicable Federal, state or New York City taxes, or other assessed New York City charges including, but not limited to, water and sewer charges? No \_\_\_ Yes \_\_\_
- (b) had, or does it presently have, any delinquent Federal, state or New York City taxes outstanding? No \_\_\_ Yes \_\_\_

If you answered "yes" to questions 18(a) or 18(b), supply details.

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19. Provide any supplemental information the Firm desires to have considered as part of its response to this Questionnaire.

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# CERTIFICATION

The undersigned recognizes that this Questionnaire is submitted for the express purpose of inducing the LMDC to award a contract or approve a subcontract; acknowledges that the LMDC may in its discretion, by means which it may choose, determine the truth and accuracy of all statements made herein; authorizes the LMDC, the United States Department of Housing and Urban Development, or their agents to contact any entity named in this Questionnaire and any attachments for the purposes of verifying the information supplied; acknowledges that the intentional submission of false or misleading information may constitute a felony under New York Penal Law Section 210.40 or a misdemeanor under Penal Law Section 210.35 or Section 210.45, and may also be punishable by a fine of up to \$10,000 or imprisonment of up to five years under 18 U.S.C. Section 1001; represents that the information submitted in this Questionnaire and any attached pages is true, accurate and complete, and agrees to notify LMDC in writing of any change in circumstances occurring after the submission of this questionnaire and during the performance of any contract awarded.

Sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_.

\_\_\_\_\_  
Signature of Officer

\_\_\_\_\_  
Title

\_\_\_\_\_  
Notary Public

\_\_\_\_\_  
Commission Expiration Date

Contractor Disclosure Contracts Form  
and the Contractor Disclosure of Prior Non-Responsibility Determinations Form

New York State Executive Order Number 127 (EO 127) provides for increased disclosure in the public procurement process through identification of persons or organizations whose function is to influence procurement contracts, public works agreements and real property transactions.

A procurement is any contract, agreement or subsequent amendment involving an annualized expenditure in excess of \$15,000.00, but does not include those contracts that by law must be awarded to the lowest responsible bidder or based on the lowest price.

LMDC is obligated to obtain identifying information on every person or organization retained, employed or designated by or on behalf of the contractor to attempt to influence the procurement process. LMDC is obligated to collect information on whether such person or organization has a financial interest in the procurement. This obligation is on-going, and survives the awarding of the contract.

In addition, EO 127 mandates consideration of whether a contractor has intentionally provided false or incomplete information under such Order within the last five years, and whether a contractor has failed to timely disclose accurate and complete information or otherwise cooperate in the implementation of the Order. LMDC is precluded from awarding a procurement contract to a contractor with a finding of non-responsibility under the Order unless it makes a finding, on the record, that such contract is in the best interests of the State, notwithstanding the prior finding of non-responsibility.

Please complete and submit the attached Contractor Disclosure of Contracts Form and Contractor Disclosure of Prior Non-Responsibility Determinations with your proposal.

Attachments

Contractor Disclosure of Contracts Form

Contractor Disclosure of Prior Non-Responsibility Determinations

## Contractor Disclosure of Contracts Form

This form shall be completed and submitted with your bid/proposal or offer in accordance with Executive Order Number 127 (EO 127). Failure to complete and submit this form shall result in a determination of non-responsiveness and disqualification of the bid, proposal or offer. If at the time of submission of this form, the specific name of a person authorized to attempt to influence a decision on your behalf is unknown, you agree to provide the specific person's information when it is available. You also agree to update this information during the negotiation or evaluation process of this procurement, and throughout the term of any contract awarded to your company pursuant to this bid/proposal or offer.

\*\*\*\*\*

RFP / RFQ (title): \_\_\_\_\_

Name of Contractor: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

Name and Title of Person Submitting this Form: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Indicate below if this is an initial filing in accordance with Section II, paragraph 1 of EO 127 or an updated filing in accordance with Section II, paragraph 2 of EO 127? (Please circle):

Initial filing

Updated filing

The following person or organization was retained, employed or designated by or on behalf of the Contractor to attempt to influence the procurement process:

Name: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

Telephone Number: \_\_\_\_\_

Place of Principal Employment: \_\_\_\_\_

Occupation: \_\_\_\_\_

Does the above named person or organization have a financial interest in the procurement?  
(Please circle)      yes                      no

Attach and label additional sheets with detail if necessary.

## Contractor Disclosure of Prior Non-Responsibility Determinations

RFP / RFQ (Title): \_\_\_\_\_

Name of Contractor: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

Name and Title of Person Submitting this Form: (Print / Type) \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Has any covered agency or authority made a finding of non-responsibility regarding the Contractor in the last five years? (Please circle):

No                      Yes

If yes, was the basis for the finding of the Contractor's non-responsibility due to the intentional provision of false or incomplete information required by Executive Order Number 127? (Please circle):

No                      Yes

If yes, please provide details regarding the finding of non-responsibility below.

Covered Agency or Authority: \_\_\_\_\_

Month and Year of Finding of Non-responsibility: \_\_\_\_\_

Basis of Finding of Non-Responsibility: \_\_\_\_\_

\_\_\_\_\_  
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Has any covered agency or authority terminated a procurement contract with the Contractor due to the intentional provision of false or incomplete information required by Executive Order Number 127? (Please circle):

No                      Yes

Attach and label additional sheets with detail if necessary.

Bid Bond

(attach two originals)

**BIDDER** (Name and Address): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**SURETY** (Name and Address of Principal Place of Business): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**OWNER** (Name and Address): Lower Manhattan Development Corporation  
One Liberty Plaza, 20<sup>th</sup> Floor  
New York, New York 10006

**PROJECT TO BE BID:** [insert trade scope]

**BID DUE DATE:** \_\_\_\_\_, 2005 at \_\_\_\_\_

**BOND**

BOND NUMBER: \_\_\_\_\_  
DATE: (Not later than Bid Due Date): \_\_\_\_\_  
PENAL SUM: (10% of Bid Amount) \_\_\_\_\_

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to pay to LMDC upon default of Bidder any difference between the total amount of Bidder's bid and the total amount of the bid of the next lowest, responsible and responsive bidder as determined by LMDC for the Work required by the Contract Documents, provided that:
  - 1.1 If there is no such next lowest, responsible bidder, then Bidder and Surety shall pay to LMDC the penal sum set forth on the face of this Bond, and
  - 1.2 In no event shall Bidder's and Surety's obligations hereunder exceed the penal sum set forth on the face of this Bond.
2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Invitation to Bid (or any extension thereof agreed to in writing by LMDC) the executed contract required by the Invitation to Bid and any performance and payment bonds required by the contract.
3. This obligation shall be null and void if:
  - 3.1 LMDC accepts Bidder's bid and bidder delivers within the time required by the Invitation to Bid (or any extension thereof agreed to in writing by LMDC) the executed contract required by the Invitation to Bid and any performance and payment bonds required by the contract, or
  - 3.2 All bids are rejected by LMDC, or
  - 3.3 LMDC fails to issue a notice of award to Bidder within thirty (30) days after the last date for submissions of bids (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by paragraph 5 hereof).
4. Payment under this Bond will be due and payable upon default by Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from LMDC, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.

5. Surety waives notice of and any and all defenses based on or arising out of any time extension to issue notice of award agreed to in writing by LMDC and Bidder, provided that the total time for issuing notice of award including extensions shall not in the aggregate exceed 120 days from the date of the bid without Surety's written consent.
6. No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default required in paragraph 4 above is received by Bidder and Surety and in no case later than one year after due date for the bid as set forth in the Invitation to Bid.
7. Any suit or action shall be heard and determined only in a court of competent jurisdiction located in the City and County of New York.
8. Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier or by United States Registered or Certified Mail, Return Receipt Requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.
9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent or representative who executed this Bond on behalf of Surety to execute, seal and deliver such Bond and bind the Surety thereby.
10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable provision of any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.
11. The term "bid" as used herein includes a bid, offer or proposal, as applicable.

**IN WITNESS WHEREOF**, Surety and Bidder, intending to be legally bound hereby, subject to the terms on the following page, do each cause this Bid Bond to be duly executed on its behalf by its authorized officer, agent, or representative.

**BIDDER**

\_\_\_\_\_  
Bidder's Name and Corporate Seal

By: \_\_\_\_\_  
Signature and Title

Attest: \_\_\_\_\_  
Signature and Title

**SURETY**

\_\_\_\_\_  
Surety's Name and Corporate Seal

By: \_\_\_\_\_  
Signature and Title  
(Attach Power of Attorney)

Attest: \_\_\_\_\_  
Signature and Title

**Note:**

- (1) Above addresses are to be used for giving required notice.
- (2) Any singular reference to Bidder, Surety, or other party shall be considered plural where applicable.

**ACKNOWLEDGMENT OF PRINCIPAL, IF A CORPORATION**

STATE OF )  
 ) ss:  
COUNTY OF )

On this \_\_\_\_ day of \_\_\_\_\_, 2005, before me personally came \_\_\_\_\_, to me known, who, being by me duly sworn, did depose and say that he resides at \_\_\_\_\_, that he is the \_\_\_\_\_ of \_\_\_\_\_, the corporation described in and which executed the foregoing instrument; that he signed his name thereto by order of the directors of said corporation.

Notary Public or Commissioner of Deeds

**ACKNOWLEDGMENT OF PRINCIPAL, IF A PARTNERSHIP**

STATE OF )  
 ) ss:  
COUNTY OF )

On this \_\_\_\_ day of \_\_\_\_\_, 2005, before me personally came \_\_\_\_\_, to me known, who, being by me duly sworn, did depose and say that he resides at \_\_\_\_\_, that he is the \_\_\_\_\_ of \_\_\_\_\_, the partnership described in and which executed the foregoing instrument; that he signed his name thereto by order of said partnership.

Notary Public or Commissioner of Deeds

**ACKNOWLEDGMENT OF PRINCIPAL, IF AN INDIVIDUAL**

STATE OF )  
 ) ss:  
COUNTY OF )

On this \_\_\_\_ day of \_\_\_\_\_, 2005, before me personally came \_\_\_\_\_, to me known, who, being by me duly sworn, did depose and say that he resides at \_\_\_\_\_, that he is the individual who executed the foregoing instrument, and that he signed his name thereto.

Notary Public or Commissioner of Deeds

**AFFIX ACKNOWLEDGMENTS OF BID BOND, JUSTIFICATION OF SURETIES AND/OR COPIES**



Project Approach and Methodology

[attached]

## **Attachment 7 – Project Approach and Methodology**

As part of the bid submission it is mandatory that each contractor provide a detailed Project Approach and Technical Methodology in narrative form with accompanying sketches, site logistics plans, etc. and protocols and procedures to be used for penetrations at anchoring locations, netting removal, and façade washdown, that will depict the contractor's knowledge and understanding of the work scope and project requirements.

Careful consideration will be given to this technical submission as well as the bidder pre-qualification questionnaire (Attachment 8) during the bid evaluation process.

**Contractor to provide the project approach attachment here for submission with the bid.**

Bidder Prequalification Application/Team Structure Schedule

[attached]



**DECONSTRUCTION OF 130 LIBERTY STREET - BIDDER PRE-QUALIFICATION APPLICATION PAGE 1 OF 10**

Business Applicant Name \_\_\_\_\_

TIN \_\_\_\_\_

Name of person completing this application \_\_\_\_\_

Title \_\_\_\_\_

Date Completed \_\_\_\_\_

1. Licenses: If the work of this subcontract requires a New York City, State or Federal license or certification under governing law, provide copies of all required licenses. Attached \_\_\_\_\_ NA \_\_\_\_\_

2. Labor Agreements: Does this business have any collective bargaining labor agreements with New York City labor organizations? If yes, provide additional information on attached sheet Yes \_\_\_\_\_ No \_\_\_\_\_

**3. Apprenticeship Programs:**

(a) Firm must demonstrate participation in a New York State approved apprenticeship program that has been in successful operation for a period of not less than three years. Successful operation shall be defined as placement of all graduates in an appropriate trade, the majority of who remain continuously employed in the trade for a period of at least two years. If yes, provide additional information. Yes \_\_\_\_\_ No \_\_\_\_\_

(b) If awarded a subcontract, will this business participate in an apprenticeship program as approved by the NY State Commissioner of Labor? Yes \_\_\_\_\_ No \_\_\_\_\_

**4. Not Applicable**

Provide a response to all questions. Attach additional sheet(s) of paper to this application as needed to respond fully to all questions.



**DECONSTRUCTION OF 130 LIBERTY STREET - BIDDER PRE-QUALIFICATION APPLICATION PAGE 2 OF 10**

Business Applicant Name \_\_\_\_\_

TIN \_\_\_\_\_

**5. Personnel:** Indicate the number of full-time employees in the NY metropolitan area at this time in the chart below:

Executive #	Managerial #	Technical #	Clerical #	Skilled Tradespersons #	Unskilled Labor #

**6. Financial:**

(a) With this application, submit certified financial statements for the last three years to demonstrate the following criteria:

- Current ratio (current assets/ current liabilities) at least 1.0
- Debt to equity ratio less than or equal to 4.0 to 1.

(b) Pre-qualification requires a Dun and Bradstreet satisfactory overall rating of 3 with no adverse findings: Duns # \_\_\_\_\_

**ONLY** Businesses that are not rated by D&B must list ten construction material or equipment vendors/suppliers below. Three vendor/suppliers will be contacted to verify that the applicant business is currently paying in 90 days or less.

	Vendor/Supplier Company Name	Contact Name	Contact Phone #
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

**Provide a response to all questions. Attach additional sheet(s) of paper to this application as needed to respond fully to all questions.**



**DECONSTRUCTION OF 130 LIBERTY STREET - BIDDER PRE-QUALIFICATION APPLICATION PAGE 3 OF 10**

Business Applicant Name \_\_\_\_\_

TIN \_\_\_\_\_

(c) Pre-qualification requires business credit lines with a minimum total of \$1,000,000, with 50% unused/available. Provide details below for each line of credit, or loan provided by a lending institution. If none, please indicate.

Name and address of lending institution	Amount of Credit Line	% Credit Remaining

**7. Not Applicable**

**8. Safety:**

(a) **Workers Compensation Experience Information:** List the Interstate Workers Compensation Experience Modification Rate (EMR) for this business for the last three full years below:

Year	Workers Compensation Insurance Carrier	Policy Number	EMR
2003			
2002			
2001			

We require verification of your EMR. Please attach the endorsement page from your policy showing your EMR, or have your insurance carrier or broker provide this information on their letterhead. Verification Provided Yes \_\_\_ No \_\_\_

**Provide a response to all questions. Attach additional sheet(s) of paper to this application as needed to respond fully to all questions.**



Business Applicant Name \_\_\_\_\_ TIN \_\_\_\_\_

**(b) Workplace Injuries and Illnesses**

Provide the following information for the last three years (if none enter zero):

	2001	2002	2003
A. Number of Fatalities (Attach description of Event(s))			
B. Number of cases that involved days away from work and or days of restricted work activity			
C. Number of cases involving Recordable cases without lost or restricted workdays			
D. Total OSHA Recordable Cases			
E. Total hours worked			

Not	Used

**9. Not Applicable**

**10. Staffing Qualification:**

As part of this pre-qualification application, complete the attached Team Structure Schedule and submit the completed form to URS along with this application.

Team Structure Schedule Submitted: Yes \_\_\_\_\_ No \_\_\_\_\_

**Provide a response to all questions. Attach additional sheet(s) of paper to this application as needed to respond fully to all questions.**



**DECONSTRUCTION OF 130 LIBERTY STREET - BIDDER PRE-QUALIFICATION APPLICATION PAGE 5 OF 10**

Business Applicant Name \_\_\_\_\_

TIN \_\_\_\_\_

**11. Manpower:** List projects where your average payroll or crew size exceeded 30 men within the last 3 years.

Client	Project	Prime contractor or Subcontractor?	Average Crew Size	Client Reference Contact Name & Title	Reference Contact Telephone #
1 -					( )
2 -					( )
3 -					( )
4 -					( )
5 -					( )

**Provide a response to all questions. Attach additional sheet(s) of paper to this application as needed to respond fully to all questions.**





**DECONSTRUCTION OF 130 LIBERTY STREET - BIDDER PRE-QUALIFICATION APPLICATION PAGE 6 OF 10**

Business Applicant Name \_\_\_\_\_

TIN \_\_\_\_\_

**12. Current Projects:** Provide information about five current contracts in the following chart.

	Client Company/Agency/Authority and Project Name	Prime contractor or Subcontractor?	Your Contract value \$	Size / Square Footage	Client Reference Contact Name & Title	Reference Contact Telephone #
1	-					( )
	-					
2	-					( )
	-					
3	-					( )
	-					
4	-					( )
	-					
5	-					( )
	-					

**Provide a response to all questions. Attach additional sheet(s) of paper to this application as needed to respond fully to all questions.**



**DECONSTRUCTION OF 130 LIBERTY STREET - BIDDER PRE-QUALIFICATION APPLICATION PAGE 7 OF 10**

Business Applicant Name \_\_\_\_\_

TIN \_\_\_\_\_

**13. Current Backlog:** List projects your firms has been awarded that have not yet started.

Client	Project Name	Prime contractor or Subcontractor?	Your Contract value \$ (round to closest \$100K)	Anticipated Start Date	Scheduled Duration, Years
1					
2					
3					
4					
5					
6					
7					

**Provide a response to all questions. Attach additional sheet(s) of paper to this application as needed to respond fully to all questions.**



**DECONSTRUCTION OF 130 LIBERTY STREET - BIDDER PRE-QUALIFICATION APPLICATION PAGE 8 OF 10**

Business Applicant Name \_\_\_\_\_ TIN \_\_\_\_\_

**14. Schedule Performance:** List projects with aggressive/ expedited schedules which were completed on or ahead of time within the last 5 years.

Client & Project Name	Prime contractor or Subcontractor?	Your Contract value \$	Client Reference Contact Name & Title	Reference Contact Telephone #
1 - -				( )
2 - -				( )
3 - -				( )
4 - -				( )
5 - -				( )

**Provide a response to all questions. Attach additional sheet(s) of paper to this application as needed to respond fully to all questions.**



**DECONSTRUCTION OF 130 LIBERTY STREET - BIDDER PRE-QUALIFICATION APPLICATION PAGE 9 OF 10**

Business Applicant Name \_\_\_\_\_

TIN \_\_\_\_\_

**15. Similar Completed Projects:** Use this sheet to list at least 5 similar projects completed in the New York City area in the last 5 years that are similar in scope, specifically high rise scaffolding.

Name of the bid package for which this application is made: \_\_\_\_\_

	Client Company/Agency/Authority and Project Name	Prime contractor or Subcontractor?	Your Contract value \$	Size / Square Footage	Client Reference Contact Name & Title	Reference Contact Telephone #
1	- -					( )
2	- -					( )
3	- -					( )
4	- -					( )
5	- -					( )

**Provide a response to all questions. Attach additional sheet(s) of paper to this application as needed to respond fully to all questions.**



**DECONSTRUCTION OF 130 LIBERTY STREET - BIDDER PRE-QUALIFICATION APPLICATION PAGE 10 OF 10**

Business Applicant Name \_\_\_\_\_

TIN \_\_\_\_\_

**The following certification must be completed by an officer of the applicant firm.**

A material false statement or omission made in connection with this application is sufficient cause for denial of the application or revocation of a prior approval thereby precluding the business applicant from performing work for URS either as prime contractor or subcontractor for a period of three years. In addition, such false submission may subject the person and/or entity making the false statement to criminal charges, including New York State Penal Law section 175.35 (offering a false statement for filing) and 210.40 (sworn false statement) and/or Title 18 U.S.C sections 1001 (false or fraudulent statement) and 1341 (mail fraud).

I, \_\_\_\_\_, being duly sworn, state that I am \_\_\_\_\_ of \_\_\_\_\_ (Business Applicant name) (Name, print) (Title) and that I have read and understood the questions contained in this application. I certify that to the best of my knowledge the information given in response to each question and the appendices is full, complete, and truthful. I acknowledge that URS may, by means it deems appropriate, determine the accuracy and truth of the statements made in the application. I recognize that all the information submitted is for the express purpose of inducing URS to pre-qualify a contractor and does not assure that it will be deemed qualified. I authorize URS to contact any entity named in the application for purposes of verifying the information supplied by the applicant.

\_\_\_\_\_  
(Signature) \_\_\_\_\_ (Date)

Sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, 2005

\_\_\_\_\_  
Notary Public

**END OF BIDDER PRE-QUALIFICATION APPLICATION**

URS Bidder PreQualification Application 4-29-05

**Provide a response to all questions. Attach additional sheet(s) of paper to this application as needed to respond fully to all questions.**

## Team Structure Schedule

**Project:** LMDC - Deconstruction of Deutsche Bank Building, 130 Liberty Street, NY NY

Reference Bidder Pre-Qualification Application, page 4, item 10, "Staffing Qualifications"

Position	Name	Resume Attached-for LMDC use		
		yes	no	notes
Project Executive				
Project Manager				
Field Engineer				
Assistant Project Manager				
Project Superintendent				
Site Superintendent				
Office Engineer				
Office Administrator				
Community Liaison				
Site Safety Health Officer				
Regulatory Compliance Officer				
Waste Compliance Officer				
Project Monitor/Industrial Hygiene Technician				
Project Accountant				
Logistics Coordinator				
Projects Controls/Scheduling				
Purchasing Manager/Contracts Administrator				

- >See attached "Staffing Qualifications" for job description and qualification requirements
- >Provide the name of the individuals filling each position listed as they apply to this project.
- >List additional positions as required
- >Attach resume for each individual listed
- >Add sheets if necessary

## **Deconstruction 130 Liberty Street Staffing Qualifications**

### **I. Staffing Needs – Job Descriptions/ Qualifications**

#### **A. Project Executive – responsible for overall management of the project.**

- 1) Individual would perform the following tasks:
  - a) Coordination and scheduling of all contractor activities;
  - b) Resolution of work conflicts and contract change orders;
  - c) Chairing weekly meetings with contractors and subcontractors;
  - d) Approval of contractor invoices for payment;
  - e) Report directly with client, attorneys, other key stakeholders on project status, issues, etc;
  - f) Coordination and preparation of all required written reports;
  - g) Coordination/interaction with local community groups, politicians, and regulatory agencies.
  
- 2) Qualifications:
  - a) New York State licensed professional engineer (negotiable in lieu of extent of experience);
  - b) Detailed knowledge of New York City construction regulations including New York City Building Code, New York City Department of Environmental Protection, and New York City Fire Department codes and permitting;
  - c) Familiarity with NYS DEC, NYS DOH, NYS DOL, and US EPA regulatory programs and permitting;
  - d) Minimum 20 years experience working on large scale New York City construction projects (>\$20M) at various and increasing levels of responsibility;
  - e) Minimum 10 years experience directly managing (technical and financial) large-scale New York City construction projects (>\$40M);
  - f) Excellent verbal and written communication skills. Able to give presentations to major project stakeholders and the public.

#### **B. Field Engineers (2) – responsible for field management of project.**

- 1) Individual(s) would perform the following tasks:
  - a) Oversee and manage all day to day contractor field activities;
  - b) Coordinate directly with contractor's superintendents and foremen to ensure compliance with specifications, plans, and applicable regulations;
  - c) Identify and correct deficiencies in contractor's work as they relate to specifications, plans, and regulations;
  - d) Prepare daily reports describing contractor's activities; including manpower, equipment, and waste disposal;
  - e) Coordinate with Site Safety Health Officer, Regulatory Compliance Officer and Project Executive to discuss and resolve job-related issues; and
  - f) Attend job safety and progress meetings, as required

## **Deconstruction 130 Liberty Street Staffing Qualifications**

- 2) Qualifications:
    - a) Undergraduate degree in engineering or construction management;
    - b) Minimum of 5 years experience working as a construction manager in New York City with emphasis on environmental remediation;
    - c) OSHA 40 hr HAZWOPER training.
- C. Site Superintendent** – responsible for all field supervision and control of the facility.
- 1) Individual would perform the following tasks:
    - a) Responsible for management of site including site safety and security;
    - b) Oversee and manage all day to day contractor field activities;
    - c) Coordinate directly with contractor's superintendents and foremen to ensure compliance with specifications, plans, and applicable regulations;
    - d) Prepare daily reports describing contractor's activities; including manpower, equipment, and waste disposal;
    - e) Coordinate with Site Safety Health Officer, Regulatory Compliance Officer and Project Executive to discuss and resolve job-related issues;
    - f) Hold regular job safety and progress meetings; and
    - g) Coordination/interaction with local community.
  - 2) Qualifications:
    - a) Detailed knowledge of New York City construction regulations including New York City Building Code, New York City Department of Environmental Protection, and New York City Fire Department codes and permitting;
    - b) Familiarity with NYS DEC, NYS DOH, NYS DOL, and US EPA regulatory programs and permitting;
    - c) Minimum 20 years experience working on large scale New York City construction projects (>\$20M) at various and increasing levels of responsibility;
    - d) Minimum 10 years experience as Superintendent for large-scale New York City construction projects (>\$20M).
    - e) Licensed New York City Site Safety Manager;
    - f) 40 Hr HAZWOPER trained, with current 8 hr refresher;
    - g) Familiarity with New York City and New York State asbestos abatement regulations.
- D. Community Liaison**
- 1) Individual would perform the following tasks:
    - a) Responsible for day to day communication with local community;
    - b) Responsible for day to day coordination with adjacent projects;
    - c) Establish Points of Contact/Responsibilities for Project
    - d) Community Outreach/Newsletter



**Deconstruction 130 Liberty Street  
Staffing Qualifications**

- e) Coordinate Agency involvement with Community
- f) Public Notification of work disruptions to residents, commuters, & business
- g) Responsible for coordinating public relations issues and interaction with Lower Manhattan Construction Command Center

2) Qualifications:

- a) Detailed knowledge of New York City construction regulations including New York City Building Code, New York City Department of Environmental Protection, and New York City Fire Department codes and permitting;

**E. Site Safety Health Officer** – responsible for providing overall technical and administrative oversight of the health and safety program.

1) Individual would perform the following tasks:

- a) Review and approve contractor and subcontractor Health and Safety Plan (HASP) and any changes to the Plan;
- b) Direct and implement requirements of the HASP;
- c) Review and approve the NYCDOB Site Safety Plan, as required by Article 19 of the New York City Building Code;
- d) Coordinate with contractor supervisory and safety personnel, as needed, on matters regarding safety program compliance;
- e) Receive and maintain documentation from contractor field supervisors for all safety related matters, including accident record keeping, accident investigations, safety training and certifications;
- f) Attendance at weekly safety and planning meetings;
- g) Weekly formal and daily site inspections.

2) Qualifications:

- a) Licensed Certified Safety Professional (CSP) or Certified Industrial Hygienist (CIH);
- b) Licensed New York City Site Safety Manager;
- c) Minimum of 15 years experience as a safety officer on construction projects in New York City;
- d) 40 Hr HAZWOPER trained, with current 8 hr refresher;
- e) Familiarity with New York City and New York State asbestos abatement regulations.

**F. Regulatory Compliance Officer** – responsible for compliance with and preventing violations of federal, state, and local laws and regulations.

1) Individual will perform the following tasks:

- a) Review and approve site work plans, which will provide a listing of the specific regulations and permits (if applicable) for each work task;

**Deconstruction 130 Liberty Street  
Staffing Qualifications**

- b) Define and communicate upcoming regulatory compliance issues related to the planning of each project task;
- c) Evaluate general regulatory compliance; assist in permit applications; manage waste shipping manifests and all related record-keeping;
- d) Prepare and coordinate spill or release notifications to regulatory agencies, if required;
- e) Evaluate regulatory non-compliance events to prevent these events in the future;
- f) Chair periodic regulatory compliance meetings with the project team;
- g) Arrange for periodic executive review meetings with the client and others to report the overall status of the compliance program.

2) Qualifications:

- a) Undergraduate degree in engineering or sciences;
- b) Knowledge of New York City, New York State, and federal regulations as they relate to the New York City construction environment including hazardous materials, asbestos, and DOT;
- c) Minimum 20 years experience working in New York City managing construction, demolition, and/or remediation projects;
- d) Extensive experience interacting with federal, state, and local regulators, including permit preparation.

**G. Waste Compliance Officer**

1) Individual(s) would perform the following tasks:

- a) Oversee and monitor all waste removal from site;
- b) Maintain all documentation related to waste removal and disposal such as waste manifests;
- c) Ensure all trucks are properly labeled and maintained;
- d) Work with Project Controls and Scheduling personnel to utilize GPS

2) Qualifications:

- a) OSHA 40 hr HAZWOPER training;

**H. Project Monitors/Industrial Hygiene Technicians** – responsible for asbestos abatement oversight and air sampling. (1 – 10 required)

1) Individual(s) would perform the following tasks:

- a) Oversee and monitor asbestos abatement work for compliance with applicable regulations;
- b) Collect air samples as required by regulations and ambient air monitoring plans;
- c) Document worker training, fit testing, medical clearances, and licenses indicating fitness to perform the work;
- d) Coordinate with project team for planning and phasing of work.

**Deconstruction 130 Liberty Street  
Staffing Qualifications**

- 2) Qualifications:
  - a) Certified by NYSDOL as an air sampling technician or asbestos project monitor;
  - b) OSHA 40 hr HAZWOPER training;
  - c) Knowledge of and experience in sampling for airborne toxins such as metals, polychlorinated biphenyls, silicates, and respirable dust.

**I. Project Accountant**

- 1) Individual(s) would perform the following tasks:
  - a) Responsible for all invoicing;
  - b) Responsible for certified payrolls;
  - c) Responsible for compliance with HUD Requirements;
  - d) Establish budgets; maintain commitments; coordinate cost vs. schedule impacts; change order costs
  - e) Certification of consultants and sub contractor's invoice and requisitions for payment

- 2) Qualifications:
  - a) Undergraduate degree in business, accounting, engineering or construction management;
  - b) Minimum of 5 years experience working as a project accountant.

**J. Logistics Coordinator**

- 1) Individual (s) would perform the following tasks
  - a) Coordination of material delivery and waste removal
  - b) Lead interaction with NYC DOT, NYS DOT and PANYNJ to implement Truck Traffic Plan
  - c) Coordinate Utility work including, but not limited to, Utility cut-off service, temporary and emergency power
  - d) Logistics layout and staging
  - e) Communications lead on site movement and flow
  - f) Establish phasing of work
  - g) Implement Maintenance & Protection of Traffic Plan (MPT)
  - h) Responsible for coordination meetings amongst neighboring projects

- 2) Qualifications
  - a) Undergraduate degree in engineering or sciences;
  - b) Knowledge of New York City, New York State, and federal regulations as they relate to the New York City construction environment including hazardous materials, asbestos, and DOT;
  - c) Minimum 5 years experience working in New York City managing construction logistics;
  - d) Extensive experience interacting with federal, state, and local regulators, including permit preparation.

**Deconstruction 130 Liberty Street  
Staffing Qualifications**

**K. Project Controls/Scheduling**

- 1) Individual (s) would perform the following tasks
  - a) Responsible for projects technical support including IT and data management
  - b) Establish and Monitor/track Project Schedule
  - c) Document and project control and reporting requirement
  - d) Coordinate permitting process and track insurance documents amongst other requirements
  - e) Assist with payment procedures
  - f) Utilization of GPS for waste removal on trucks
  - g) Reporting on control and scheduling issues and resolutions
  - h) Sub contractor coordination
  - i) Monitor performance of Sub contractors, cost control, scheduling and schedule control tasks for compliance with contract requirements, project procedures, and work instructions;
  - j) Identify and analyze deficiencies, and recommend solutions and corrective actions
  
- 2) Qualifications
  - a) Undergraduate degree in engineering, construction management or sciences;
  - b) Knowledge of New York City, New York State, and federal regulations as they relate to the New York City construction environment including hazardous materials, asbestos, and DOT;
  - c) Minimum 10 years experience working in New York City managing Project Controls and Scheduling;
  - d) Extensive experience project software, scheduling tools, CPM, and database management

**L. Purchasing Manager/Contracts Administrator**

- 1) Individual will perform the following tasks:
  - a) Responsible for purchasing materials, goods, services;
  - b) Managing and oversight of contractor's and sub contractor's contract requirements
  - c) Establish Supplier Diversity requirements
  - d) Coordinate Workforce Development and Diversity training and administration
  - e) Responsible for Minority and Women-Business Enterprise compliance and reporting
  
- 2) Qualifications
  - a) Undergraduate degree in business or related field;
  - b) Experience managing large scale construction contracts;

**Deconstruction 130 Liberty Street  
Staffing Qualifications**

- c) Minimum 5 years experience working in workforce development such as minority and women-business participation (similar experiences may be considered)
- d) Experience in construction purchasing and managing supplier relations

**M. Senior Project Manager/Project Director**

- 1) Individual will perform the following tasks
  - a) Responsible for entire staff and subcontractors
  - b) Daily management of all operations
  - c) Interface with LMDC, and all agencies
  - d) Coordination of all correspondence, submissions, pay requisitions and documents
  - e) Determine delegation of work tasks to the entire staff
  - f) Main contact for all tasks and services
  - g) Reports status of project to LMDC
  - h) Attends all meetings
  - i) Reports to the Project Executive
- 2) Qualifications
  - a) Management of projects in excess \$50 million, for a minimum of 5 years
  - b) Minimum one large NYC facility project, or high profile NYC type project in excess of \$50 million
  - c) Familiar with NYC construction, trade labor agreements, and agency coordination
  - d) Experience on Demolition projects in NYC
  - e) Experience on asbestos/environmental related projects in NYC
  - f) Excellent verbal and written communication skills
  - g) Past experience managing multiple contractors

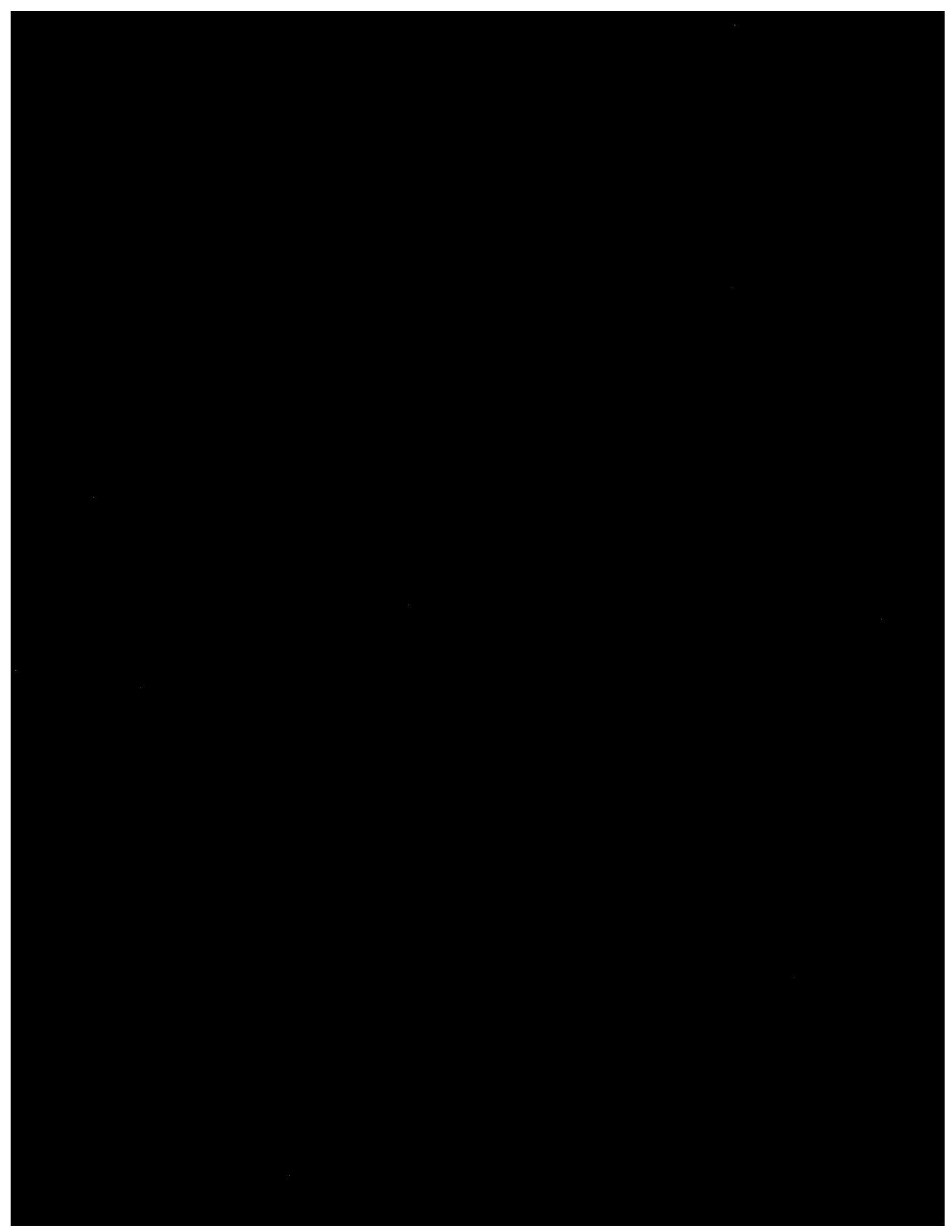
**N. Project Manager/Assistant Project Manager**

- 1) Individual will perform the following tasks
  - a) Management of daily activities for each trade
  - b) Responsible for all contract management tasks of the subcontractors
  - c) Requisition review and approval
  - d) Insure compliance with all contract requirements for each subcontractor
  - e) Management of labor and staffing
  - f) Mange scheduling and coordination between subcontractors
  - g) Administer all sub contract requirements
  - h) Report to Senior Project Manager/Project Director
  - i) Coordinate all activities with agencies and LMDC as required for their work
- 2) Qualifications:
  - a) Management of projects in excess \$20 million for a minimum of 5 years
  - b) Detailed knowledge of New York City construction regulations including New York City Building Code, New York City Department of

**Deconstruction 130 Liberty Street  
Staffing Qualifications**

Environmental Protection, and New York City Fire Department codes and permitting;

- c) Experience on Demolition projects in NYC
- d) Experience on asbestos/environmental related projects in NYC
- e) Familiarity with NYS DEC, NYS DOH, NYS DOL, and US EPA regulatory programs and permitting;
- f) Excellent verbal and written communication skills.



## ANNEX "6" SCOPE OF WORK FOR DECONSTRUCTION CONTRACTOR

NOTE: This Scope of Work is intended as a general overview. Contractor is responsible for all matters covered in this Scope of Work, the Specifications, and all other Contract Documents.

### Y. BACKGROUND

On September 11, 2001, the Building<sup>1</sup> was severely damaged when debris from the WTC broke approximately 1,500 windows and cut a fifteen story gash in the north façade of the Building ("Gash Area"). In addition, a combination of soot, dust, dirt, debris, and contaminants settled in and on the Building. Since September 11, 2001, the Building has been unoccupied. The Gash Area and broken windows exposed the interior of the Building to the elements, which may have caused some further impacts after the initial exposures and events of September 11, 2001.

Subsequent to September 11, 2001, operations were undertaken by the then-owner Deutsche Bank to clear debris from the plaza, lobby, and interior spaces in the Gash Area. A porous geosynthetic mesh or "netting" was hung on the outside of the Building for further protection and safety. The immediate Gash Area was cleaned in accordance with New York City Department of Environmental Protection ("NYCDEP") and New York City Department of Health ("NYCDOH") protocols to permit the construction of columns, beams, and floor decks to stabilize the Gash Area. Once the initial cleaning and stabilization measures were in place, office furniture, equipment, and other non-attached items in the Building were removed and disposed of by Deutsche Bank.

LMDC, the current owner of the Building, plans to clean and deconstruct the Building as part of the redevelopment and rebuilding of the larger WTC Site that will be performed in coordination with The Port Authority of New York and New Jersey ("Port Authority"). Currently, plans for the 130 Liberty Street site include underground truck security and bus parking away from the locations of the former WTC Towers 1 and 2, a relocated St. Nicholas Church, and a proposed fifth office tower that will reduce the building density on the WTC Site and create open space for public use.

The Deconstruction Plan addresses the abatement, cleaning, and removal of contaminants identified in the Building in the September 14, 2004 Initial Building Characterization Study Report<sup>2</sup> and the Supplemental Characterizations<sup>3</sup> published in February 2005 (collectively, "LMDC Studies"). These LMDC Studies analyzed for five COPCs designated by the United States Environmental Protection Agency ("EPA") as being associated with WTC dust (asbestos, dioxins, lead, polycyclic aromatic hydrocarbons ("PAHs"), and crystalline silica), as well as other contaminants suspected of being present in the Building, including

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<sup>1</sup> Capitalized defined terms not defined herein shall have the meanings set forth in the General Conditions ~~issued~~ herewith.

<sup>2</sup> 130 Liberty Street Initial Building Characterization Study Report, The Louis Berger Group, Inc., September 14, 2004.

<sup>3</sup> 130 Liberty Street Supplemental Characterizations, TRC Solutions Inc., issued in February of 2005 as multiple reports.



polychlorinated biphenyls (“PCBs”) and heavy metals (barium, beryllium, cadmium, chromium, copper, manganese, mercury, nickel, and zinc).

The Building is a former office building comprised of 42 stories. The Building measures approximately 180' x 180' and 535' in height. It comprises approximately 1.5 million square feet. The exterior skin of the Building is a glass and aluminum curtain-wall framework. The curtain wall mullions are mechanically attached to the Building's columns and floors at each floor level. The typical building floor slabs are constructed with corrugated metal decking with firespray and a poured concrete slab on top. Typical floors are rated 100psf for live load. The Building has mechanical floors, located on the 5<sup>th</sup> floor and 38<sup>th</sup>/39<sup>th</sup> floors. Mechanical floors load ratings are usually higher than on typical floors. The building's vertical transportation was comprised of twenty-nine (29) elevators:

- Eight (8) low-rise cars, traveling from the 3<sup>rd</sup> floor lobby to the 16<sup>th</sup> floor (stopping at all floors).
- Eight (8) mid-rise cars, traveling from the 3<sup>rd</sup> floor lobby to the 28<sup>th</sup> floor (stopping at 3 and 17-28),
- Seven (7) high-rise cars, traveling from the 3<sup>rd</sup> floor lobby to the 38<sup>th</sup> floor (stopping at 3 and 28-38).
- One (1) car traveling from basement level B to 39<sup>th</sup> floor.
- Two (2) cars traveling from basement level B to 38<sup>th</sup> floor.
- Three (3) special service elevators serving the lower 3-5 floors.

The Building has two (2) below grade basement areas, Cellar Level "B", and Cellar Level "A". The below-grade construction was assembled as a "bathtub" to resist a hydrostatic head; the foundation is a concrete mat on H pile supported pile caps. The basement Level "B" slab is to remain intact throughout and after the Deconstruction. There is a tunnel for the 1-9 subway, which runs under Greenwich Street and adjoins the Building with passive vents located in the sidewalk. A fan plant for forced ventilation of the subway tunnel is under Albany Street alongside the South Plaza running approximately the length of Albany Street on the South Side sidewalk.

The Building shall be deconstructed down to the top of the foundation walls, leaving the basement Cellar "B" slab intact. The Building shall be deconstructed by the Contractor, in pieces as a safety precaution and shall not include the use of explosion/implosion devices. A complete scaffolding of the Building on all elevations from top to bottom, shall be required for this Project, and shall be erected by the Scaffolding Contractor, and then transferred to Contractor as set forth in the Contract Documents.

(Note: the foregoing information is approximate and intended only for general reference and not for bid purposes. LMDC does not warrant any reference information available regarding the Building.)

## Y. SCOPE OF WORK – DECONSTRUCTION CONTRACTOR

### A. GENERAL OVERVIEW

(Note: Certain defined terms used in this Annex "6" are defined elsewhere in the Contract Documents.)

- 1) This Scope of Work ("SOW") sets forth a summary of the Work required to be completed by the Contractor in connection with the deconstruction of the Building.
- 2) Contractor shall at all times comply with, and cause all persons working or otherwise present at or about the Project to comply with, all Legal Requirements applicable to the Project including the Deconstruction Plan for 130 Liberty Street as it may be amended from time to time.
  - a) On May 12, 2005, LMDC submitted four sections of the revised draft Phase I Deconstruction Plan to various Governmental Authorities for review, direction, and approval. LMDC submitted Section 1- Waste Management Plan, Section 2- Ambient Air Monitoring Program, Section 3- Emergency Action Plan, and Section 5- Health and Safety Plan. LMDC shall be submitting Section 4, the Asbestos and COPC Abatement and Removal Plan, shortly. Currently submitted portions of the Deconstruction Plan are available on LMDC's website:[http://www.renewnyc.com/plan\\_des\\_dev/130liberty/deconstruction\\_plan.asp](http://www.renewnyc.com/plan_des_dev/130liberty/deconstruction_plan.asp)
  - b) Once all or any portion of the Deconstruction Plan is approved by the applicable Governmental Authorities, the approved portion of the Deconstruction Plan becomes one of the Legal Requirements as defined in the General Conditions. The Contractor, all subcontractors, and any others at or about the Project Site must comply at all times with all approved portions of the Deconstruction Plan.
  - c) Any and all changes to the Deconstruction Plan, or any approved portions thereof, require LMDC's advance written permission and the approval of the applicable Governmental Authorities. No such changes may be requested without LMDC's advance consent and written approval. No such changes shall be deemed Extra Work.
- 3) Contractor shall be responsible for all Work as outlined in the Deconstruction Plan including Section 1 Waste Sampling and Management Plan, Section 2 Ambient Air Monitoring Program, Section 3 Emergency Action Plan, Section 4 Asbestos and COPC Abatement and Removal Plan, and Section 5 Health and Safety Plan. This excludes solely that work completed or to be completed by the Scaffolding Contractor. Contractor's Work includes, but is not limited to, the Work of the Deconstruction Team, the Contractor, the Subcontractor(s), the Environmental Consultant/ Subcontractor, the Environmental Consultant Project Monitor, the Abatement Contractor/ Abatement Subcontractor.
- 4) Contractor is responsible for ensuring that any individual or firm performing air sampling and/or analysis for this Project on or off site including but not limited to asbestos air clearance sampling (such as the Environmental Consultant/ Subcontractor and/or the Environmental Consultant Project Monitor), (1) has not performed and will not

- perform any other function on the Project (including but not limited to serving as the Abatement Contractor/ Abatement Subcontractor) and (2) is at all times completely independent of all parties involved with the Project (including but not limited to the Abatement Contractor/ Abatement Subcontractor), and (3) is properly trained, licensed, and certified to perform such work, all in accordance with 12 NYCRR § 56-17.4 and 15 RCNY § 1-36 as well as all other Legal Requirements applicable to the Project.
- 5) Contractor shall be responsible for the removal, packaging, transportation, and disposal of all refuse and debris, including all Hazardous Materials, resulting from the Deconstruction, including but not limited to the abatement and removal of ACM, COPCs, and any other Hazardous Materials during or in connection with the Deconstruction.
  - 6) The Building is to be filed under an alteration application if mechanical means are anticipated during the deconstruction operations. Department of Buildings Special Permit shall be obtained by Contractor. No deviation will be permitted.
  - 7) As described in this SOW, the Contractor shall deconstruct, remove, transport and dispose of all elements in, on, and constituting the Building including without limitation all Hazardous Materials, waste materials, ACM, and COPCs. The Contractor shall not remove the Building foundation, bottom slab (See Specification Section 02060PS), column stubs at Basement Level "B", or exterior basement walls. The Contractor may determine not to remove the interior structural subgrade walls and incorporate such walls into the bracing, if bracing is necessary and/or required.
  - 8) Contractor shall be responsible to maintain the stability of the Building and the site throughout the deconstruction process and to leave the remaining subgrade elements in a stable condition, as described in Section II.L of this SOW (see Specification Sections 02060PS and 02222). The Contractor shall backfill the basement to resist uplift groundwater pressures, as necessary (see Specification 02060PS). No penetration of the mat slab shall be permitted. Upon the completion of the deconstruction process, the Contractor shall backfill and grade the basement footprint area at street level so that surface water on the site drains to catch basins as described in Sections II.K-L of this SOW (see Specification Sections 02010, 02020, and 02222). Utilities entering the Site shall be capped and locations documented.
  - 9) LMDC is engaging Contractor to perform the Work summarized in this SOW and more particularly set forth in the Deconstruction Plan and Specifications, in order to create a site ready for redevelopment. Contractor shall be responsible for all necessary means and methods to accomplish the intended purpose, whether or not specific procedures or responsibilities are set forth in the SOW, the Deconstruction Plan, or in the Specifications.
  - 10) Contractor and LMDC agree that, as provided in this SOW, the deconstruction of the Building shall proceed as follows:

- a) Contractor shall perform abatement and removal of all Hazardous Materials, including but not limited to ACM and COPCs, under negative air pressure possibly several floors at a time, in accordance with Specification Section 02080 and Attachment #3.
  - b) After an area has been cleaned and properly cleared and the required buffer zone has been established, the Contractor shall deconstruct the structural elements of the Building in the cleaned and cleared areas, in accordance with Section II.J of this SOW and Specification Section 02221.
- 11) Contractor shall be responsible for removing and disposing of all materials, contents and apparatus from or constituting the interior and exterior of the Building, including without limitation all Hazardous Materials, with the exception of the existing exterior netting, which is to be removed and disposed of by the Scaffolding Contractor.

#### B. COMPLIANCE WITH LAW/HEALTH AND SAFETY REQUIREMENTS

- 1) Contractor shall comply with, and ensure compliance by all persons and firms at or about the Site with, all applicable laws, statutes, regulations, ordinances, rules, common laws, decrees, orders, judgments and codes of the City and State of New York and the United States including, without limitation the Comprehensive Environmental Response, Compensation and Liability Act of 1980, the Resource Conservation and Recovery Act ("RCRA"), the Clean Water Act, the Clean Air Act, the Toxic Substances Control Act, Occupational Safety and Health Act, regulations of the New York City Department of Environmental Protection, regulations of the New York State Department of Labor, the National Emission Standards for Hazardous Pollutants Asbestos Regulations, the New York State Navigation Law, National Historic Preservation Act and the New York State Historic Preservation Act, and all variances or permits under the above, each as amended and applicable to the Site as if owned by LMDC or a private party, which ever is more stringent, as well as other applicable Legal Requirements whether pertaining to Hazardous Materials or otherwise.
- 2) Contractor shall ensure that the methods of performing the Work do not involve undue danger to the personnel employed thereon, the public, and public or private property. Should charges of violation of any Legal Requirement be issued during or in connection with the performance of the Work, a copy of each charge and resolution thereof shall immediately be forwarded to LMDC. Contractor shall be responsible for all costs, fines, penalties, delays, and all other liabilities resulting from any such charges, violations, and any failure to meet this requirement.
- 3) Contractor shall at all times comply with, and cause all persons working or otherwise present at or about the Project to comply with, all health and safety requirements related to the Project, including but not limited to all procedures to ensure compliance with applicable Legal Requirements, including requirements and protocols established by Governmental Authorities including, but not limited to, OSHA; the

National Institute of Occupational Safety and Health (NIOSH); the United States Environmental Protection Agency (USEPA); the New York State Department of Environmental Conservation (NYSDEC); the State of New York, NYSDOL; the New York City Department of Environmental Protection (NYCDEP); and the City of New York.

- 4) Compliance with a formal health and safety plan is required due to structural and environmental damage suffered by the Building on September 11, 2001, hazards associated with the Building's current condition and anticipated deconstruction activities. The current health and safety plan for the Project, entitled the "Site Specific Health and Safety Plan For 130 Liberty Street" was prepared for LMDC by TRC Environmental Corporation in August 2004 ("Current HASP").
- 5) LMDC has proposed to modify the Current HASP. In May 2005 LMDC released a document entitled "Health and Safety Plan for the 130 Liberty Street Building Phase I Deconstruction Project" ("Proposed HASP") (copy available on LMDC's website). Once the Proposed HASP is approved by the applicable Governmental Authorities as part of the Phase I Deconstruction Plan, the requirements outlined in the Proposed HASP, as and if approved, shall supersede and replace the Current HASP. The Contractor shall develop and implement its own health and safety plan that is no less stringent than the Current HASP (or Proposed HASP, if it is approved at that time) and cause all persons working or otherwise present at or about the Project to comply with said plan.
- 6) Any and all changes to the Current or Proposed HASP require LMDC's advance written permission and the approval of the applicable Governmental Authorities. Moreover, no changes to the Current or Proposed HASP may be proposed or made if they render the protections less stringent than the Current HASP. No such changes shall be deemed Extra Work.
- 7) Contractor shall be solely responsible for identifying health and safety requirements for his/her employees and for all employees of all Subcontractors, and for ensuring the health and safety of his/her employees, the employees of all Subcontractors, and the public, which could potentially be impacted by the work of the Contractor.
- 8) Contractor shall be responsible for all aspects of Section 5 Health and Safety Plan. This includes the Work of the Contractor, Subcontractor, New York City site safety manager, and the Administrative Monitor. Contractor shall be responsible for all aspects of the Health and Safety Plan including, but not limited to:
  - a) Completing the health and safety hazard analysis and risk assessment,
  - b) Establishing and implementing engineering controls,
  - c) Establishing and implementing administrative controls and work practices,
  - d) Providing all necessary Personal Protective Equipment (PPE) and safety equipment and conducting and ensuring completion of all required medical testing and assessments,
  - e) Personal air monitoring,

- f) Site control,
- g) Conducting all required and necessary safety meetings,
- h) Establishing a training program, providing necessary training, and ensuring all workers comply with training requirements,
- i) Hazard communication,
- j) Accident prevention, investigation, reporting, and follow-up,
- k) Medical surveillance, and
- l) Documentation.

#### C. PLANS AND SUBMITTALS

- 1) Contractor shall be responsible for preparing Contractor's Implementation Plan (defined in the General Conditions) setting forth Contractor's means and methods, techniques, equipment, transportation plan, and all other details as to Contractor's manner and methodology for undertaking and completing all Work required by the Contract Documents, which plan shall be consistent with all Legal Requirements. Contractor's Implementation Plan shall be subject to LMDC's review and acceptance pursuant to this Contract. Contractor shall also be responsible for obtaining any and every permit of any Governmental Authority required for approval of Contractor's Implementation Plan and the performance and completion of the Work.
- 2) As part of Contractor's Implementation Plan, Contractor shall create, issue, and implement all plans as requested by any and all regulatory agencies for this Contract, signed by a Professional Engineer, if required, and subject to LMDC's review, including the following:
  - a) MTA Influence Line Plan
  - b) Site Plan
  - c) Truck Traffic Plan
  - d) Site Security Plan
  - e) Deconstruction Plan
  - f) Health and Safety Plan
- 3) Contractor shall prepare and file an ACP-7 with the NYCDEP.

#### D. SITE SECURITY

- 1) Contractor shall be responsible for site security from the date that Contractor takes control of the Site simultaneous with signing and execution of this Contractor's contract. Site security precautions shall include, but not be limited to, the provision and maintenance of fencing and/or barriers, gates, watchman services in addition to requirements of Specification Section 01541 – Site Security.
- 2) An electronic swipe system such as the "Epic 7", or equivalent, is to be integrated into the security program within 30 days of contract execution. Four (4) guards at a

minimum are required 24 hours, 7 days per week for the duration of the project, of which one (1) is to be a supervisor on duty on Site.

- 3) Contractor shall be responsible for all aspects of Section 3 Emergency Action Plan including, but not limited to:
  - a) Establishing the Contractor Emergency Coordinator;
  - b) Pre Emergency Response Activities including pre-planning, training, drills, and emergency response coordination;
  - c) Purchase, installation, and implementation of safety equipment and communication equipment;
  - d) Emergency response measures to specific emergency events; and
  - e) Emergency action investigation and reports.

#### E. PHASING OF WORK

- 1) The Phase I abatement and removal shall be conducted starting at the top of the building and working down. It is anticipated that work areas of approximately four (4) floors shall be established. During the cleanup and abatement, a minimum buffer zone of two floors shall be maintained between the active abatement (Phase I) area and the exterior abatement/ structural demolition (Phase II) portion of the project.
- 2) There may be exceptions to the general sequencing of Phase I work. First, it shall be necessary for the Scaffolding Contractor to clean some limited, designated exterior surfaces and to create several limited clean containments or sealed penetrations to facilitate the erection of the required man-hoists, crane and scaffolding. This work shall occur as necessary and not necessarily in the “top down” sequence presented above. Second, Contractor will need to clean areas of the basements out of sequence to facilitate some Phase II work. Third, Contractor must clean access areas required for Phase II activities including emergency egresses. The requirements for this Work are further detailed within Section 4 of the Deconstruction Plan.
- 3) Except as required for the erection of the required man-hoists, crane and scaffolding, Phase II activities shall not commence until all Phase I activities are complete on the top three floors. After this occurs, previously cleaned and cleared floors may be deconstructed under Phase II provided abatement activities are always at least two floors below the level of deconstruction. Personnel involved with Phase II activities shall access their work areas utilizing a “clean” exterior hoist or any other pre-cleaned/ cleared access route and shall only be permitted to work in previously cleaned and cleared areas.

#### F. PHASE I AND PHASE II - ABATEMENT AND REMOVAL OF HAZARDOUS MATERIALS, ACM, AND COPCs

- 1) Contractor is responsible for:
  - a) the general area cleanup (from the interior and exterior of the Building) of WTC dust and debris, which as stated by the regulators must be treated as asbestos;

- b) removal and disposal of installed porous and certain non-porous building materials and components contaminated by WTC dust and debris, which as stated by the regulators must be treated as asbestos;
  - c) cleaning and salvage (if Contractor so chooses) of certain installed non-porous building equipment and components contaminated by settled dust and debris;
  - d) removal of building materials containing asbestos which were present in the Building prior to September 11, 2001 (referred to herein as "ACBM"), from the Building's interior and exterior; and
  - e) Removal and disposal of all other Hazardous Materials from the Building in a manner consistent with all Legal Requirements.
- 2) Contractor is responsible for all work in the initial phase of deconstruction (Phase I). Phase I includes the necessary interior, non-structural deconstruction and related work. The entire interior of the Building, with the exception of certain shafts and non-porous mechanical equipment and shafts, shall be removed and disposed of during Phase I.
- 3) Contractor is responsible for all Work related to Phase I and Phase II and included in Section 4 of the Deconstruction Plan, the Asbestos and COPC Abatement and Removal Plan, including, but not limited to:
- a) work area preparation including the installation of High Efficiency Particulate Air ("HEPA") ventilation equipment;
  - b) pre-cleaning;
  - c) installation of isolation barriers;
  - d) establishment of waste and personnel decontamination systems;
  - e) cleaning of vertical shafts as necessary for the establishment of passageways for transport of workers and materials and establishment of clean air shafts;
  - f) establishment of the negative pressure work areas;
  - g) cleaning of settled dust and debris (above and below the plenum, within HVAC and other Building systems, and in interstitial spaces);
  - h) removal and disposal of all Building Contents including, but not limited to, all Hazardous Materials, miscellaneous FFE including large conference tables, kitchen equipment, a limited number of rooms containing office equipment, shelving, and any spare materials, all miscellaneous garbage and debris and miscellaneous construction materials installed after September 11, 2001;
  - i) removal and proper handling and disposal of all miscellaneous building components including but not limited to: light bulbs, light ballasts, mercury thermostats, batteries, and refrigerants;
  - j) proper handling and removal of all mold and bacteriological contamination and contaminated materials;
  - k) removal of ACBM;
  - l) removal of interior Building components;
  - m) removal of interior non-structural building elements (such as gypsum wall board ("GWB"));
  - n) removal of all interior building equipment including large and small scale mechanical, electrical and plumbing ("MEP");



- o) removal of sprayed-on fireproofing (“SOFPP”);
  - p) cleaning and inspection of Walker Duct and raceways;
  - q) cleaning of the exterior Gash Area including Walker Duct and raceways in the gash area;
  - r) roof cleaning;
  - s) disassembly of clean and contaminated interior vertical shafts;
  - t) waste handling;
  - u) packaging, documentation, transport, and disposal of waste materials;
  - v) air monitoring;
  - w) detail cleaning of work area; and
  - x) clearance air testing.
- 4) Contractor shall be responsible for all Work in Phase II including Work related to Section 4 Asbestos and COPC Abatement and Removal Plan of the Deconstruction Plan including, but not limited to:
- a) Installation of exterior negative pressure tent enclosures where required;
  - b) Roof, façade and general exterior area clean-up;
  - c) Removal of rooftop cooling tower transite ACBM;
  - d) Removal of rooftop caulking materials;
  - e) Removal of factory installed exterior column cover and fascia aluminum panel ACBM caulking;
  - f) Localized removal of exposed exterior spray-on fireproofing; and
  - g) Washdown of the Building exterior.
- 5) Contractor shall properly manage all wastewater including necessary filtration and stormwater in accordance with Legal Requirements.
- 6) All Phase I activities shall be conducted by a NYSDOL and NYCDEP licensed asbestos abatement subcontractor (the “Abatement Subcontractor”) under controlled conditions and all resultant debris shall be treated as asbestos waste (at a minimum), hazardous waste, universal waste and/or regulated waste (as appropriate) and packaged, labeled, handled, transported and disposed of in accordance with all applicable local, state and federal statutes and regulations, including but not limited to NYSDOL Industrial Code Rule (“ICR”) 56. Porous demolition debris and porous material within the work area shall be disposed of as asbestos waste, at a minimum. Non-porous salvage items may be decontaminated and released as specified in Industrial Code Rule 56-8.2.

#### G. AUTHORITY TO STOP WORK

- 1) Governmental Authorities having jurisdiction, LMDC, the Contractor, and the Environmental Consultant Project Monitor shall have the authority to stop the abatement work based upon violations of Legal Requirements, the HASP, Section 4 of the Deconstruction Plan, the Permits, and/or any approved Variances. In addition, the occurrence of any or all of the following events shall be reported in writing to the Environmental Consultant Project Monitor and shall require the Abatement Subcontractor to stop abatement activities and initiate appropriate corrective actions:

- a) Excessive airborne fibers outside containment area (0.01 f/cc or above (via PCM) or in excess of background fiber levels, whichever is greater).
  - b) Exceedances of US EPA Trigger Levels as contained within the Ambient Air Monitoring Program (Section 2 of the Deconstruction Plan).
  - c) Break in containment barriers.
  - d) Loss of negative air pressure (at or below 0.02 inches of water column).
  - e) Serious injury within the containment area.
  - f) Fire or other safety emergency.
  - g) Respiratory protection failure.
  - h) Power failure affecting the abatement process or the maintenance of negative air pressure.
- 2) Contractor shall be responsible for all delays, costs, and work related to any work stoppages.

#### H. Air Monitoring

- 1) Contractor shall be responsible for all air monitoring included in all sections of the Deconstruction Plan or otherwise required by Legal Requirements including, but not limited to, Section 2 Ambient Air Monitoring Program, Section 4 Asbestos and COPC Abatement and Removal Plan, and Section 5 Health and Safety Plan. This air monitoring includes air monitoring for asbestos and other COPCs as indicated in the Deconstruction Plan and required by Legal Requirements. Contractor is responsible for air monitoring including, but not limited to:
  - a) Pre-abatement sampling;
  - b) Level 1 air monitoring of Contractor and Subcontractor personnel inside of work areas;
  - c) Level 2 air monitoring inside the Building outside of work areas;
  - d) Level 3 air monitoring exterior to the Building as detailed in Section 2 Ambient Air Monitoring Program of the Deconstruction Plan including street level stations and upper level stations;
  - e) Air monitoring of negative filtration unit exhaust;
  - f) Analysis of all testing results;
  - g) Provision of all testing results in a timely and electronic manner. All testing results may be made available to the public at LMDC's direction. Providing a system in compliance with the Deconstruction Plan for electronic data management and reporting; and
  - h) Establishing and implementing protocols for necessary actions related to exceedances of any health and safety levels, action levels, target air quality levels, and USEPA site specific trigger levels.

#### I. Waste Sampling and Management

- 1) Contractor shall be responsible for performing and complying with all aspects of Section 1 Waste Sampling and Management Plan of the Deconstruction Plan and

otherwise complying with all Legal Requirements applicable to waste and Hazardous Materials. Contractor shall be responsible for all waste sampling and management including, but not limited to:

- a) Waste Characterization;
  - b) Classification of all waste;
  - c) Management of waste;
  - d) Containerization of waste;
  - e) Manifesting waste and providing all other necessary documentation;
  - f) Transport of waste; and
  - g) Disposal of waste.
- 2) Contractor shall be responsible for all handling, movement, and preparation for disposal of all materials and waste, including but not limited to all Hazardous Materials in or on the Building. The Variances provide some possible methods including the use of a portable bulk shredder and the use of dust-free inclined chutes which may be used in the Mezzanine Area to transport material into the containers located one floor below. Contractor shall be responsible for establishing a detailed implementation plan for the handling of waste consistent with the Variances and Legal Requirements. Contractor shall be responsible for establishing means and methods for handling and movement of materials and waste meeting these requirements.

#### J. PHASE II - GENERAL DECONSTRUCTION

- 1) The Contractor shall deconstruct the Building to the top of the foundation walls on Greenwich Street, Washington Street, and Albany Street at street level. On each floor, the structural deconstruction of the Building shall include removing, reuse as clean fill, and/or disposing of all materials including the masonry walls, exterior walls, curtain wall, structural steel and floor slabs.
- 2) Deconstruction shall be accomplished in accordance with specification Section 02221 and this Scope of Work. In General the building shall be deconstructed down to the Cellar "B" Level. Contractor is responsible to set survey target as directed by LMDC so as to monitor movement of foundation walls and basement Cellar "B" level slab, and Building. The Cellar "B" floor slab shall remain in place. (See Section 02060PS). However, foundation walls at Washington Street, Greenwich Street, and Albany Street are to be maintained at street level along with any existing or future lateral bracing as required by PE.
- 3) Contractor shall not commence any deconstruction activities on any floor, until such floor has been cleared for deconstruction activities in accordance with the monitoring protocols set forth in this SOW and Attachment #3. Contractor shall be responsible for ensuring that measures are taken during deconstruction to control rain water, snow, and other elements and to ensure that the work area under active abatement are not impacted by the elements.

- 4) Contractor shall undertake all deconstruction activities in strict compliance with the HASP, Deconstruction Plan, Contractor's Implementation Plan, and any and all other plans as required. The approval process performed by LMDC shall include but not be limited to review of all safety and health issues, regulatory agency requirements by federal, state, and local entities and LMDC procedures. In connection with these deconstruction activities, Contractor shall at a minimum:
- a) Obtain all governmental approvals, permits and licenses necessary to proceed with the environmental and deconstruction Work, and the termination of existing utilities, including permits to reuse facilities within the structure, such as, for example, elevators/utilities, etc.
  - b) Obtain permits from appropriate agencies at the requisite times. Permits for this Project shall include but not be limited to:
    - i) NYC DOB Work Permit, for Building Demolition;
    - ii) NYC DEP Permits including the ACP-7, ACP-5 and all other environmental permits;
    - iii) DOB Alteration Application;
    - iv) DOB Building Scaffolding Permit;
    - v) DOT Sidewalk Shed Permit;
    - vi) DOB (CN) for tower crane and the mobile crane to erect the tower crane;
    - vii) DOB and Elevator Permit to install and use personnel/ material hoist;
    - viii) FDNY Permit to store air and gas at the site;
    - ix) FDNY certification for burners (Certificates of Fitness);
    - x) FDNY certification for fire-watch during burning operations;
    - xi) DOB PW-1 approvals for mechanical equipment on the floors;
    - xii) NYCTA approval for effects on subway and connected facilities; and
    - xiii) DOT permits for sidewalk and roadway closings, equipment and storage on streets and sidewalks.
  - c) Develop a "Contractor's Implementation Plan", which shall be submitted to LMDC for review and approval. The Contractor's Implementation Plan shall include the Contractor's engineered sequence of deconstruction, which shall address all necessary aspects of the Work to ensure stability of the Building during all stages of the Work (including but not limited to the Work described in Section II.K-L of this SOW and Specification Section 02221), as well as the stability of all adjacent structures affected by the deconstruction. The Contractor's Implementation Plan shall be designed, approved, and signed by an engineer licensed in the state of New York. Together with the Contractor's Implementation Plan, Contractor shall submit to LMDC all necessary computations verifying stability of the structure for all stages of the Work, including but not limited to all temporary structures, bracing and permanent installations and construction equipment (including the crane, hoist, and scaffolding) as is required to perform the Work described in this SOW.

- d) Be responsible for all necessary site safety precautions/procedures during deconstruction including an accepted HASP and any and all other plans as they may apply including a site safety manager licensed by the City of New York, fall protection at perimeter and floor openings, fire extinguishers, fire watches, sidewalk sheds, secure covering of dumpsters during non-work hours, shoring and other equipment, as required in accordance with all Legal Requirements. Contractor shall not permit any person access to the site at any time who does not comply with the requirements of the HASP and any and all other requirements in effect at that time.
- e) Provide an inspection station that verifies that the loads on any vehicle are properly secured and covered to prevent any material from escaping the vehicle, and that vehicles are cleaned and ready for transport.
- f) Manage the disconnection of utilities on an as needed basis, including direction of MEP Subcontractor and coordination with utility companies.
- g) Remove, reuse as clean fill, and/or dispose slab over the main bank vaults along with bank vault and doors.
- h) Submit to LMDC documentation verifying that all Hazardous Materials, debris, and others material removed from the Building have been disposed of in accordance with Legal Requirements.
- i) Comply with all specifications, requirements, and attachments as included or referenced herein.
- j) Contractor is responsible for implementing alternate plans to maintain the Project schedule during periods of inclement weather (i.e. freezing conditions, high winds, ice, snow, rain, etc.) for outside/ scaffold related Work and all other Work including, but not limited to the use of temporary heat, interior hoists, interior elevators, interior debris chutes, etc.

**K. SITE WORK (See Specification Sections 01541, 02010, 02020, and 02222)**

- 1) The site shall be backfilled with clean select fill per the referenced specification sections.

**L. BASEMENT STABILIZATION (See Specification Sections 02060PS and 02222)**

- 1) The Cellar/ basement will be stabilized per the referenced specification section.

**M. MECHANICAL/ PLUMBING (See Specification Section 15400)**

- 1) During the course of the deconstruction the Contractor shall disconnect, cap and drain-down all mechanical/plumbing systems remaining for their use. Systems which have been drained down, fully or partially, include, but are not limited to the following: Steam, hot water heating systems, chilled water systems, natural gas, freon and domestic hot and cold water. In addition to the Work described above, the Contractor shall:
  - a) Dispose of all contents of these remaining systems in accordance with all applicable Laws, codes, statutes and regulations.
  - b) Cut and cap existing underground utilities within 5'-0" of the property line, in accordance with the World Trade Center Deutsche Bank Site drawings (Contract No WTC-404.251), with the locations and sizes to be shown and noted on the final annotated Contract drawings.
  - c) HVAC gases have not been evacuated and are part of the Work.

#### N. SPRINKLER

- 1) The existing system has been drained down and is abandoned. An existing dry standpipe shall remain in service a minimum of 2 floors below structural deconstruction activities. There are three separate connections: Albany Street, Washington Street, and Greenwich Street. All connections at these locations are to have signs posted, directing FDNY to their locations.

#### O. ELECTRICAL

- 1) The Contractor shall be responsible to check for disconnection of all electrical, fire alarm, security, data and telephone services in the Building. The aforementioned have been disconnected by LMDC under a previous contract. The disconnection shall be done in a phased method as the Building is being demolished in close coordination with the deconstruction and cleaning procedures. It is anticipated the deconstruction shall occur from the top of the Building down. A minimum 400-amp service is still active on all floors. Temporary lighting does exist throughout. In addition to the above, the Contractor shall be responsible for the following:
  - a) Electrical hookup and disconnection of the man/ material hoist.
  - b) Standby electrician for the duration of the environmental and deconstruction Work.
  - c) Install (if necessary) and maintain temporary power to existing power panels in the Building core until necessary to disconnect for the performance of this Work.

- d) Maintain the top floor or top working floor, whichever applies, temporary lighting at all times from dusk to sunrise, so as to achieve visibility of the Building for any aircraft.

#### P. SCAFFOLD / HOIST(S) / SIDEWALK BRIDGING

- 1) LMDC has engaged the Scaffolding Contractor to erect the exterior scaffolding pursuant to a separate contract (the "Scaffolding Contract"). LMDC has given Contractor a copy of the Scaffolding Contract and the scaffolding plan prepared by the Scaffolding Contractor pursuant thereto); and by signing this Contract Contractor agrees that Contractor has reviewed and accepts and has no objection to the terms and conditions of the Scaffolding Contract and the scaffolding plan prepared by the Scaffolding Contractor. In the Contract Documents "scaffolding", unless otherwise specified, means all scaffolding erected and installed by the Scaffolding Contractor. If erection of the scaffolding is complete before the date of this Contract, Contractor shall be deemed by signing this Contract to have accepted and assumed responsibility for the scaffolding as set forth below. If erection of the scaffolding is not complete on the date of this Contract: (a) when the Scaffolding Contractor gives Contractor written notice to LMDC and Contractor that erection of the scaffolding is complete in accordance with the Scaffolding Contract, Contractor shall have ten working days in which to inspect the scaffolding and give written notice to LMDC and the Scaffolding Contractor if and to the extent the scaffolding was not erected in accordance with the requirements of the Scaffolding Contract. If and after the Scaffolding Contractor then cures and corrects any matters of which LMDC or Contractor identify in the foregoing written notices, LMDC will then give written notice (the "Scaffolding Transfer Notice") to Contractor that Contractor is responsible for the scaffolding; and from and after the date of the Scaffolding Transfer Notice Contractor shall be responsible for, and shall accept and assume all responsibility for, the scaffolding and the maintenance, repair, insurance, and dismantling of the scaffolding, in accordance with the Specifications of this Contract. In the event of any dispute between or among LMDC, Contractor, and/or the Scaffolding Contractor as to whether the Scaffolding Contractor has completed erection of the scaffolding in accordance with the Scaffolding Contract, all parties shall accept the decision of the Interim Arbitrator, which (notwithstanding anything to the contrary in the Scaffolding Contract or in this Contract) shall be conclusive and binding on all of LMDC, the Scaffolding Contractor, and Contractor. For the avoidance of doubt, from and after the date of the Scaffolding Transfer Notice Contractor shall be responsible for all risk of loss to the scaffolding, whether by casualty or any other cause and shall treat the scaffolding as if it were part of the Building for all insurance, safety, health, and security issues and all other purposes of the Contract. An exception to the foregoing is that the Scaffolding Contractor remains responsible for maintenance and dismantling of the hoist, although Contractor will furnish and pay for all personnel to operate the hoist. See Specifications for more detail.

- 2) Alterations to the scaffold after the date of the Scaffolding Transfer Notice shall be the responsibility of the Deconstruction Contractor, including PE sign-off for same.
- 3) Dismantling (and final cleaning) of the scaffold shall be the responsibility of the Deconstruction Contractor.
- 4) All scaffolding components including construction netting, planking, supports, outriggers, protective platforms, etc., shall be thoroughly cleaned and dismantled by the Deconstruction Contractor. Scaffolding Contractor to provide all labor and trucking to remove scaffold components from the Site. Deconstruction Contractor shall coordinate with the Scaffolding Contractor. Deconstruction Contractor shall be responsible for maintaining condition and security of all scaffolding components until components are accepted by Scaffolding Contractor and removed from Site.
- 5) Maintenance:
  - a) The Deconstruction Contractor shall have the scaffolding inspected on a daily basis by their competent person. Any scaffolding needing corrective work shall be addressed immediately. A site log shall be maintained by the Contractor's competent person indicating daily scaffolding inspections. All necessary repairs and/ or rework of the scaffold, including moving, adjusting or altering ties and/ or supports to accommodate the ongoing work shall be the responsibility of the Deconstruction Contractor.
- 6) Scaffolding Contractor shall furnish and install new sidewalk bridging along the entire façade at Greenwich Street, Albany Street and Washington Street so as to comply with the requirements of Subchapter 19 of the NYC Building Code for Safety of Public and Property During Construction Operations.

#### Q. ADDITIONAL CONDITIONS AND PRECAUTIONS

- 1) In order to further minimize the effects of the Work on surrounding areas, the Contractor shall:
  - a) Limit unnecessary idling of diesel-powered engines on site.
  - b) Locate diesel-powered exhausts away from fresh air intakes.
  - c) In accordance with applicable Legal Requirements, control dust related to construction site through a Soil Erosion Sediment Control Plan (See Specification Section 02020) that includes among other things:
    - i) Use of clean water as a suppressing agent during construction activities, i.e. misting, sprinkling, etc.;



- ii) Utilization of Building exterior enclosure to contain dust by performing interior stripping prior to exterior enclosure removal and use of containment barriers around perimeter of floor while removing concrete slabs;
  - iii) A dust abatement program at grade where roll-off containers and trucks are loaded;
  - iv) All trucks leaving the site having tarps or other means of mitigating dust which might blow off of the debris during transit;
  - v) Adjustment for meteorological conditions as appropriate; and
  - vi) Truck wash station in compliance with all Legal Requirements.
- d) Use best efforts to schedule deconstruction activities to avoid or minimize adverse impacts on surrounding areas.
  - e) Use best efforts to coordinate deconstruction activities with other construction projects in surrounding area to minimize impact.
  - f) Cooperate with LMDC's efforts in the coordination of Lower Manhattan construction, including attendance at meetings of the LMDC and the Lower Manhattan Construction Command Center.
  - g) Work with LMDC to minimize interruption of access to cultural and historic sites.
  - h) Cooperate with LMDC to develop a plan acceptable to the community to address issues relating to working hours.
  - i) At LMDC's request, cooperate with, and participate in, public outreach and information sessions.
  - j) At LMDC's request, promote public awareness through site signage.
  - k) Ensure sufficient alternate street, Building, and station access during the deconstruction.
  - l) At LMDC's request, assist LMDC in communicating with NYCDOT and other state, local and federal agencies.
  - m) At LMDC's request, add reasonable professional appropriate signage for affected businesses or amenities.
  - n) Use best efforts to reuse materials and resources.
  - o) Use best efforts to promote environmentally-friendly operations and maintenance.

- p) Use best efforts to conserve water.
- q) Coordination with the work of the Scaffolding Contractor if applicable, and any other work being conducted on behalf of LMDC or the Port Authority of New York and New Jersey.
- r) Comply with Storm Water Management requirements. (Section 02010).
- s) Disconnection and proper capping of all utilities (including but not limited to those portions of all utilities located in crawl spaces) including, but not limited to:
  - i) Electricity.
  - ii) Gas.
  - iii) Water.
- t) Removal and capping of sanitary sewer lines and industrial waste lines including those portions under the cellar slabs in crawl spaces.
- u) Maintenance of fire protection and standpipe systems.
- v) Disposal of all equipment remaining in the Building and crawl spaces.
- w) Removal, handling and disposal of asbestos containing gaskets in pipe flange assemblies.
- x) Removal, handling and proper disposal of transformers known or presumed to contain PCB's (see Specification Section 02091).
- y) Removal and legal disposal of all deconstruction debris.
- z) Processing of uncontaminated concrete debris into particles of suitable size for use as backfill.
- aa) Temporary bracing to insure the stability of all structures during deconstruction.
- bb) Manifesting and documentation of legal disposal of all regulated and non-regulated material.
- cc) Temporary enclosures and personnel safety measures.
- dd) Clean Up.
- ee) Compliance with all applicable Legal Requirements and LMDC requirements.
- ff) Snow removal operations to commence immediately upon snow fall. This includes all but not limited to the following: sidewalks, sidewalk sheds, roads,

streets, roof, working deck, working platforms on exterior scaffolding and sidewalk bridging, open environments in the Building during deconstruction, and entire perimeter as required.

#### R. SALVAGE MATERIALS

- 1) Items of salvageable value to the Contractor must be cleaned, if necessary, in accordance with Legal Requirements and removed from the structure and Site as Work progresses. All salvaged items must be transported off the site as they are removed during deconstruction operations.
- 2) In certain instances salvaged items removed may be permitted to be stored on the site only upon receipt of prior written acceptance by LMDC in its sole discretion. However, in no instance shall there be any auction, liquidation or sale activities on the Project site. Areas of any stored items shall also require advance written LMDC's approval in its sole discretion. See Specifications for limitation on salvage of equipment cut or removed from Building.

#### S. RIGHT OF FIRST REFUSAL

- 1) LMDC shall have the right to purchase any or all scrap metal directly from the Contractor on a first refusal basis at the price (or prices) set forth in the Schedule of Values and/or Bid Form.

#### T. VERIFICATION OF INFORMATION

- 1) The Contractor is advised that the information shown on any drawings or sketches provided by LMDC or other parties is not guaranteed to be correct. Contractor is advised that it is Contractor's responsibility to inspect the Project to determine the accuracy of any such drawings or sketches.

#### U. LMDC FIELD OFFICE TRAILER: Contractor shall provide office trailer as per the following specifications.

- 1) The Contractor shall provide, at their expense one temporary office structure for the use of LMDC completely separate from any other office structures at a location approved by LMDC from the commencement of the Project until sixty (60) days after Final Completion of the Project.
- 2) Provide such office structure for the exclusive use of LMDC/ Owner's Representative(s).
- 3) Bear all costs in relation to the furnishings, construction and removal of such office structure.

- 4) Repair and refinish the area as directed by Owner's Representative.
- 5) Construct such office structure and furnish such office structure as required by the Contract.
- 6) Office shall be a minimum of 700 SF and is to include the following features (to be provided by Contractor):
  - a) Wash room, complete with flush toilet, wash basin, paper holder, medicine cabinet with mirror, and enclosed 6-gallon electric hot water heater.
    - i) Flush toilet shall be supplied with either fresh water or a 2-tank system. One tank for fresh toilet fluid/ water, and one waste reservoir. Waste fluid is not to be recirculated.
    - ii) Toilet reservoirs are to be cleaned/ refilled twice per week by Contractor.
  - b) Heater and air conditioner with thermostatic controls, to provide for inside temperature of 70° F.
  - c) Closet and overhead cabinets.
  - d) Electrical system complete with plug-in connector and three circuits protected by circuit breakers. Four 48" fluorescent lights, and one incandescent fixture (for wash room). Eight electric outlets and three pre-planned telephone outlets.
  - e) Large aluminum windows and screens, aluminum doors with screens, and locks. All windows/ vision panels to be protected with exterior window guards. Doors to be secured with locking bar and pad-lock.
  - f) Plan table 36" x 72", and plan rack.
  - g) 2 desks (2 ½' x 5' minimum) and 2 office chairs.
  - h) One (1) water cooler (and water supply as required) with hot and cold water outlets and refrigeration space as provided by Deer Park or approved equal.
  - i) Legal size 4-drawer metal filing cabinet, suspension type provided with follower and rod.
  - j) Fifty (50) vertical file guides and 50 manila folders.
  - k) Items i. and j. above shall remain the property of the LMDC and be moved by the Contractor, when directed to LMDC's office.
  - l) Six (6) folding chairs (with chain & lock).

- m) One approved dry chemical fire extinguisher, equal to twenty (20) pound CO<sub>2</sub> rating.
- n) Copy machine: Provide and maintain copy machine capable of copying sizes 8 ½" x 11" , 8 ½" x 14" , and 11" x 17". Provide supplies.
- o) Maintenance of office
  - i) Clean daily including removal and proper disposal of waste.
  - ii) Wash, when required, and at least once every week.
  - iii) Maintain 70 degrees temperature inside, during working hours.
  - iv) Keep weatherproof and water-tight.
  - v) Replace burned out fluorescent tubes.
- p) Provide Central Station Hookup Alarm System complete with door and window sensors, and motion detectors.

## V. LABOR REQUIREMENTS

- 1) This Contractor shall be responsible for all costs associated with labor required by collective bargaining agreement within the New York City area as stipulated through the trade associations or unions that have jurisdiction rights to this project. This shall include all overtime, shift time, and differential costs associated with each trade.
- 2) Labor requirements for this project shall include, but not be limited to the following:
  - a) Teamsters
  - b) Operating Engineers
  - c) Master Mechanics
  - d) Shop Stewards
  - e) Electricians
  - f) Elevator Operators
  - g) Hoist Operations
- 3) All costs associated with temporary facilities, communications, cell phones, offices, trailers, etc. shall be the responsibility of this Contractor.
- 4) This Contractor shall be responsible for all labor harmony and associated costs to maintain proper labor jurisdiction on the trades performing the Work. Contractor is advised that it must maintain labor harmony throughout the duration of the Project. All labor disputes, slowdowns, strikes and/or sympathy actions shall be the sole responsibility of the Contractor to resolve in order to maintain labor harmony.
- 5) It shall be the Contractor's responsibility to resolve all labor disputes immediately. Failure to resolve such incidents action and inactions which obstruct the work and

impact the Project schedule shall be considered a breach of contract which may result in termination as per the conditions set forth in this Contract.

#### W. WORK UNDER OTHER CONTRACTS

- 1) General: Cooperate fully with separate contractors so work on those contracts may be carried out smoothly, without interfering with or delaying work under this Contract. Coordinate the Work of this Contract with work performed under separate contracts.
- 2) Preceding Work: LMDC may award under a separate contract(s) for the following construction operations at Project Site. Those operations may have commenced before work under this Contract begins.
  - a) Exterior Scaffolding.
  - b) Rack & Pinion Hoist(s).
  - c) Sidewalk Bridging.
  - d) Building Washdown.
  - e) Exterior Netting Abatement and removal.
  - f) Site Security prior to the date of this Contract.
  - g) Decontamination Unit Maintenance prior to the date of this Contract.
  - h) General Building Maintenance (Elevators, Utilities) to be the responsibility of LMDC until the execution of the Deconstruction Contract, at which time these responsibilities shall then be transferred to the Contractor.

#### X. USE OF PREMISES

- 1) General: Contractor shall have complete site responsibility prior to Final Completion, subject only to LMDC's right to have work performed or to retain other contractors on portions of Project.
- 2) NO Onsite Parking shall be Allowed.
- 3) Driveways and Entrances: Keep driveways (including the loading dock located at Washington Street) and entrances serving premises clear and available to LMDC, LMDC's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials. Do not block emergency access to "Viewing Area" at end of Washington Street or Gate 8 to Port Authority property. Access to these areas is to be maintained at all times.
  - a) Schedule deliveries to minimize use of driveways and entrances.
  - b) Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

#### Y. WORK RESTRICTIONS

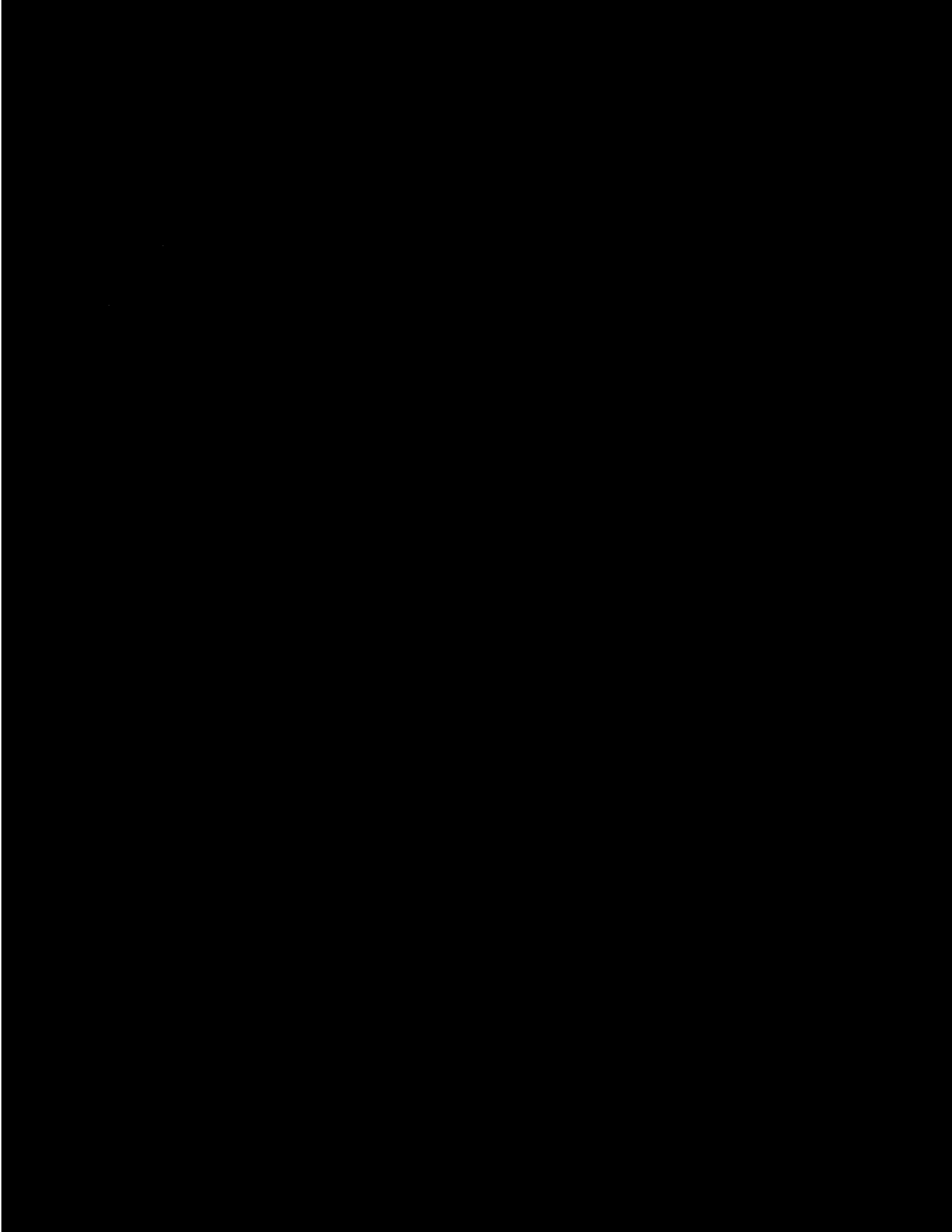
- 1) All Work shall be done during Normal Working Hours unless the Contractor requests authorization to Work in other than Normal Working Hours and such authorization is

granted by LMDC. If other than Normal Working Hours is authorized by LMDC, the Work shall be done at no additional cost to LMDC. Any and all associated costs for after hours work, including LMDC's and Owner's Representative's expenses, operating engineers, teamsters, electricians, shop stewards, inspectors, etc., shall be borne by the Contractor. For purposes of this Contract, "Normal Working Hours" means 7:00 a.m. to 4:00 p.m., Monday through Friday, at times for which the Contractor has received the applicable work permits, but not on any New York State or Federal legal holiday or September 11.

- 2) Holidays are as follows:
  - a) New Years Day
  - b) Memorial Day
  - c) Independence Day
  - d) Labor Day
  - e) Thanksgiving Day
  - f) Day after Thanksgiving Day
  - g) Christmas Eve
  - h) Christmas Day
  - i) New Years Eve
- 3) Consult with the City of New York for construction embargos or street closings.
- 4) LMDC shall impose a moratorium on Work creating excessive noise/vibrations during school testing days each year. Contractor shall factor this into the Project schedule and any such moratorium shall not constitute an Excusable Delay.

## Z. SPECIFICATION CONVENTIONS

- 1) Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
- 2) Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be inferred as the sense requires. Singular words shall be interpreted as plural, and plural words shall be interpreted as singular where applicable as the context of the Contract Documents indicates. Deleted Language: Language used in the Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be inferred as the sense requires. Singular words shall be interpreted as plural, and plural words shall be interpreted as singular where applicable as the context of the Contract Documents indicates. Delete this Article or portions of it if unnecessary. See Evaluations.
- 3) Wherever it is said "Contractor shall be responsible", "Contractor shall provide", or words of similar import, the meaning shall be that Contractor shall do so at Contractor's cost and expense within the Lump Sum.
- 4) The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.





**Attachment 4: Variance Reopening Regarding File No. 05-0427 dated 6/1/05**



Customer-Focused Solutions

JUN 14 2005

June 1, 2005

05-0427

Christopher Alonge, P.E.  
NYS Department of Labor  
Engineering Services Unit  
State Campus Bldg. 12, Room 154  
Albany, NY 12240

**Subject: Variance Reopening Regarding File No. 05-0427; 130 Liberty Street, New York, NY**

Dear Mr. Alonge,

We respectfully submit the additional information regarding the referenced File No. for this project.  
Please note the following:

**Aggressive Clearance Air Sampling of Individual Floor(s) Within An Active Work Area Grouping**

Abatement is proposed to be conducted within a series of consecutive floors ("Work Area Grouping") concurrently. A decontamination unit ("decon") will be installed on the "cleared" floor immediately above the active Work Area Grouping and will be attached to the Work Area Grouping. Non-contaminated make-up air will be drawn from (a) cleaned vertical shafts and (b) through the attached decon from building areas, which have been previously cleaned and released, which exist outside the personnel decon and above the active Work Area Grouping. The top floor of the building will be addressed as provided below.

Clearance air monitoring may be performed on individual floors within the active Work Area Grouping as follows. The floor(s) to be cleared individually will be isolated from the balance of the Work Area Grouping at the completion of gross removal and gross clean-up within the floor(s) to be cleared. Airlock(s) with a minimum dimension of 3'x3' will be constructed at (a) the entrance to the clean vertical shaft on the isolated floor(s) and (b) at the entrance to the isolated floor(s) from the balance of the Work Area Grouping. Personnel proceeding to the isolated floor in the final cleaning stage shall don two suits within the personnel decon, and shall then remove their outer suit prior to entering the airlock at the entrance to the isolated work area that is in the final cleaning stage. Upon achieving satisfactory clearance air sampling results, the cleared floor shall be isolated from the balance of the Work Area Group.

**Entry/Exit to Asbestos Project Work Areas**

Entrance/egress from the active Work Area Grouping shall be through an attached decon located on the first clean floor above the active Work Area Grouping. The top floor of the building will be addressed as provided below.

Use of a remote personnel decon during Phase I will be limited to exterior work, interior negative pressure tent enclosures and disassembly of vertical shafts within two-layer tents. The following activities are proposed to be conducted utilizing remote personnel and waste decon units:

- Netting removal;
- Exterior façade cleanup;
- Exterior fireproofing removals;

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Telephone 212-221-7822 • Fax 212-221-7840



- Scaffold tie-ins, hoist tie-in installation, and crane tie-ins;
- Preliminary roof cleaning to establish a clean area for construction of a personnel decon on the roof for the balance of roof cleaning and for access/egress to the uppermost Work Area Grouping;
- Interior vertical shaft decon; and
- Creating waste decon access openings.

### **Sequencing Of Asbestos Project Work Within Shafts And Stairwells (Interior Vertical Shafts)**

#### **Clean Interior Shafts**

One or more interior vertical shafts may be maintained to provide “clean” make up air for clearance air monitoring of individual floors and movement of clean personnel and equipment during the project. The vertical shaft to be cleaned will be isolated from adjacent contaminated spaces. The interior surfaces and equipment of the “clean” vertical shaft shall be thoroughly HEPA vacuumed and wet-wiped prior to conducting aggressive TEM clearance air sampling. Clean make-up air will be provided from non-contaminated areas above or below the vertical shaft, as practicable.

Upon successful completion of clearance air sampling, the cleaned vertical shafts will be isolated from contaminated areas prior to and during active abatement and gross cleaning on each floor. At the completion of removal and gross clean-up, an airlock(s) with a minimum dimension of 3’x3’ will be constructed at the work area(s) entrance to the clean vertical shaft. Make-up air during the final clean-up stage and for clearance air monitoring for each isolated work area will be provided from the clean vertical shaft. Access/egress for abatement personnel through clean vertical shafts shall be limited to those areas where satisfactory clearance air monitoring results have been achieved.

Only properly packaged and labeled waste or personnel moving between clean areas shall be transported within clean vertical shafts. Use of cleaned vertical shafts by abatement personnel shall be limited to access between clean areas only. Bulk waste material containers shall not be transported through these cleaned vertical shafts.

#### **Contaminated Interior Shafts**

One or more contaminated interior vertical shafts may be maintained to provide for transport of (a) containerized waste from the active abatement area to the waste re-packaging area and/or (b) properly packaged waste to the waste decon for final packaging prior to transport from site. The contaminated interior shafts will be isolated from any floor within the active Work Area Grouping where gross removal and gross cleaning has been completed. The contaminated interior vertical shaft shall remain isolated from all cleaned areas and non-active abatement areas. A curtained doorway shall be constructed at the lowest point of egress from the interior contaminated vertical shaft. The curtained doorway shall be connected by a two layer poly tunnel to the waste re-packaging area. A by-pass area for properly packaged and labeled asbestos waste may be installed within the waste re-packaging area leading directly to the waste decon attached to the waste re-packaging area. Bulk packaged material or waste not packaged for final disposal shall be brought through the tunnel into the waste re-packaging area for final packaging and labeling. The waste re-packaging area, tunnel and waste decon shall be maintained under negative pressure during the entire abatement project. At the completion of all abatement activities, the curtained doorway shall be cleaned, all surfaces within the waste re-packaging area, tunnel and waste decon shall be thoroughly cleaned using HEPA vacuuming and wet-wiping. At the completion of the first cleaning a visual inspection shall be performed to verify the work area is clean. The exposed interior layer of poly within the negative pressure work area shall be lightly misted with encapsulant. Encapsulant shall not be applied to any surfaces which have been the subject of abatement. Upon completion of a minimum four-hour settling/drying period the interior of the work area shall be inspected. If all surfaces are verified to be clean and dry, aggressive clearance sampling may be performed. Upon satisfactory completion of

aggressive clearance air sampling, the waste re-packaging area and tunnel may be disassembled and disposed of as asbestos waste. The curtained doorway shall be removed only when disassembly of the interior vertical shaft has been completed after successful air clearance sampling.

#### **Disassembly of Clean and Contaminated Interior Vertical Shafts**

Clean vertical shafts which are of CMU construction shall remain sealed from contaminated areas and may remain in place for demolition and disposal as clean material during Phase II deconstruction.

Vertical shafts (both clean and contaminated) which are not CMU, will not necessarily be removed as part of the wall to wall gut conducted on each floor and may be maintained intact for use during cleanup of subsequent Work Area Groupings. Such vertical shafts shall be disassembled as follows.

A negative pressure tent consisting of two layers of six mil poly shall be constructed to enclose the area surrounding the section of the vertical shaft to be removed. The tent shall be sealed at the top and the bottom of the section of vertical interior shaft to be removed. The tent on each floor shall consist of four walls and a floor. The walls shall be attached directly to the underside of the metal ceiling deck. An airlock(s) with a minimum dimension of 3'x3' shall be constructed at each entrance to the negative pressure tent. Barrier tape and signage shall be placed surrounding the negative pressure tent at a minimum distance of twenty-five feet, where practicable. The interior of the negative pressure tent shall be considered the work area.

HEPA ventilation units shall be installed within the tent to maintain a minimum of six air changes per hour. Clean make-up air shall be provided to the tent from clean areas adjacent to the tent which have been previously cleared as part of the wall to wall gut on the balance of each floor. Where possible, negative ventilation units will be exhausted outdoors. However, negative ventilation units may be exhausted indoors into areas where satisfactory clearance air sampling has been achieved. Where HEPA ventilation units exhaust indoors, the primary unit shall be piggybacked into a second HEPA ventilation unit of equivalent capacity and the exhaust of the second unit shall be monitored. Barrier tape and signage shall be placed to enclose the interior exhaust point at a minimum distance of twenty-five feet, where practicable.

The personnel decon closest to the lowest elevation from which the shaft wall is being removed will serve as a remote decon for this activity. Personnel shall utilize a two suit method for access/egress to the negative pressure work area. Waste generated during the vertical shaft disassembly shall be properly packaged in a leak-tight waste container within the tent. The exterior surface of the leak-tight waste container shall be wet-wiped and placed into the airlock. Personnel in proper PPE who have not entered the work area shall enter and remain within the airlock during bag-out. These personnel shall properly place and seal the containerized waste within a second leak-tight container, wet-wipe the exterior of the second container and place the properly packaged waste outside the airlock for transport to the remote waste decon. Waste shall not be stored within the airlock. Upon completing gross removal and disassembly of the entire length of vertical shaft wall being removed, the entire negative pressure work area shall be cleaned using HEPA vacuuming and wet-wiping. The exposed interior layer of poly in the negative pressure tent shall be lightly misted with encapsulant. Encapsulant shall not be applied to any surfaces which have been the subject of abatement. Upon completion of a minimum four-hour settling/drying period the interior of the tent shall be inspected. If all surfaces are verified to be clean and dry, aggressive clearance sampling may be performed. Upon satisfactory completion of aggressive clearance air sampling, the tent may be disassembled and disposed of as asbestos waste.

#### **Simultaneous Removal of Multiple Types of ACM within a Single Containment**

Removal of multiple types of ACM within a single containment shall follow the sequential order from the ceiling down and or from the most friable to least friable in each active abatement area per the Variance Decision File No. 05-0427. Multiple active abatement areas may exist simultaneously within a single

containment, however individual active abatement areas shall be separated by a minimum distance of fifty (50) feet (approximately equal to distance between two (2) columns).

#### **Establishing and Releasing a Cleaned Area within the Contaminated Building Areas utilizing Interior Negative Pressure Tent Enclosures**

Interior Negative Pressure Tent Enclosures will be utilized to clean and release contaminated areas within the Building that cannot otherwise be included in the Interior Negative Pressurized Containment on a floor due to sequencing requirements. Procedures for establishing, cleaning, clearing and maintaining Negative Pressure Tent Enclosures are described below.

1. As the Negative Pressure Tent Enclosure will be installed within a contaminated area of the building, a Remote Personnel Decon Enclosure System, otherwise consistent with the requirements of ICR 56-9, shall be utilized.
2. If at any time a worker has to pass through an uncontaminated area to access the remote decon unit or the next work area, the worker wearing two suits of PPE shall remove one suit while in the work area, wet wipe the inner suit, don a clean outer suit and proceed either to the next work area or the decon unit.
3. Negative Pressure Tent Enclosures shall be constructed and used per the 05-0427 Variance Decision dated May 11, 2005 including but not limited to two layers of six mil fire-retardant polysheeting and shall include walls, ceiling and a floor (except for portions of floors, walls and ceilings that are removal surfaces) with double-folded seams. Interior tent areas will be constructed with an attached 3'x 3' airlock. Make-up air shall be provided to the airlock through HEPA-filtered interior air sources.
4. Personnel exiting the Negative Pressure Tent Enclosure shall proceed through the contaminated portion of the building to the Remote Personnel Decon Enclosure System.
5. Once tent enclosure work area preparation has been completed and abatement activities commence, on a daily basis and per work-shift, one air sample shall be collected within the tent enclosure entrance/exit. No other air samples associated with this work will be collected during the work exterior to the tent in the contaminated portions of the building.
6. Clearance air sampling inside the tent, per 05-0427 Variance Decision, will be conducted under static pressure conditions. No other clearance air samples associated with this work will be collected during the work exterior to the tent in the contaminated portions of the building. Upon completion of clearance air sampling, the tent shall be sealed airtight.
7. Upon receipt of successful clearance air sampling results, the tent enclosure will be maintained under a slight positive pressure utilizing HEPA-filtered supplied air to maintain its clean condition. Personnel entering the interior tent enclosures from a contaminated area shall proceed as follows:
  - Prior to entering the attached airlock, personnel shall remove the outer layer of protective clothing.
  - The exterior surface of the respirator shall be wet-wiped or HEPA vacuumed.
8. The opening to the exterior (if required) can then be established within the tent.
9. Once work is complete in the tent, isolation of the opening to the exterior shall be maintained by installation of isolation barriers or decon chamber.

#### **Hoist/Scaffold Tie-Ins**

Tie-ins for the erection of any scaffold and hoist shall be performed by New York City Department of Environmental Protection ("NYCDEP") and New York State Department of Labor ("NYSDOL") asbestos certified handlers in a controlled manner as described below:

### **Tie-ins requiring Glass Panel Removal**

For tie-ins requiring the removal of sections of the curtain wall glass, the following procedures shall be required:

1. Existing exterior netting shall be removed as required following the procedures described herein.
2. The exterior of the glass to be removed to facilitate installation of tie-ins shall be cleaned per NYCDEP protocols as defined in the NYSDOL Variance Decision File No. 05-0427.
3. Prior to removal of glass, the interior tie-in attachment points shall be enclosed within an Interior Negative Pressure Tent Enclosure attached to the glass to be removed as described above. Negative Pressure Tent Enclosure shall be large enough to accommodate workers, equipment, glass and material removal and cleaning operations. All items within the tent shall be properly removed and surfaces cleaned. Each Negative Pressure Tent Enclosure shall be cleaned and cleared, including passing a visual inspection and clearance air sampling prior to creating the opening to the exterior.
4. Once the necessary tie-in connections are prepared, the opening to the exterior can be established and final connections made for the erection of the hoist or scaffold.
5. The abatement contractor shall then immediately seal the exterior opening with a rigid barrier covered by two layers of six-mil polyethylene sheeting with appropriate supports to ensure the barrier will remain in place until the completion of Phase I Deconstruction activities on the floor.

### **Tie-ins requiring Aluminum Panel Removal**

For tie-ins requiring the removal of sections of the curtain wall aluminum panels, the following procedures shall be required:

1. Existing exterior netting shall be removed as required following the procedures described herein.
2. The exterior of the aluminum panels to be removed to facilitate installation of tie-ins shall be cleaned per NYCDEP protocols as defined in the NYSDOL Variance Decision File No. 05-0427.
3. Prior to removal of aluminum panels, the interior tie-in attachment points shall be enclosed within an Interior Negative Pressure Tent Enclosure attached to the aluminum panels to be removed as described above. In addition, a Negative Pressure Tent Enclosure shall be constructed on a scaffold exterior to the building to enclose the aluminum panels to be removed. (Note a pilot study is to be proposed to attempt to obtain regulatory relief from the requirement for exterior enclosures for this work.) The Negative Pressure Tent Enclosure shall be large enough to accommodate workers, equipment, aluminum panels and material removal and cleaning operations. All items within the tent shall be properly removed and surfaces cleaned. Each Negative Pressure Tent Enclosure shall be cleaned and cleared, including passing a visual inspection and clearance air sampling prior to creating the opening to the exterior.
4. Once the necessary tie-in connections are prepared, the opening to the exterior can be established and final connections made for the erection of the hoist or scaffold.
5. The abatement contractor shall then immediately seal the exterior opening with a rigid barrier covered by two layers of six-mil polyethylene sheeting with appropriate supports to ensure the barrier will remain in place until the completion of Phase I Deconstruction activities on the floor.

### **Tie-ins Requiring Small Penetrations through Curtain Wall**

For tie-ins requiring small (less than six inch diameter) penetrations of the curtain wall utilizing manufacturer equipped HEPA-shrouded drilling/cutting equipment, the following procedures shall be required:

1. Access to the active work area on the scaffold will be restricted. The work area on the scaffold shall be cordoned off with barrier tape.
2. Only NYSDOL and NYCDEP certified asbestos workers shall be permitted within the work area.
3. The exterior of the impacted section of curtain wall to facilitate installation of tie-ins shall be cleaned per NYCDEP protocols as defined in the NYSDOL Variance Decision File No. 05-0427.

4. Drilling or cutting through asbestos-containing caulk on sections of aluminum column covers and fascia is not permitted unless work is performed within an exterior Negative Pressure Tent Enclosure. (Note a pilot study is to be proposed to attempt to obtain regulatory relief from the requirement for exterior enclosures for this work.)
5. Drilling or cutting through curtain wall to create a small penetration for installation of tie-in shall be accomplished with manufacturer equipped HEPA filtered and shrouded drilling/cutting equipment.
6. Polyethylene sheet or rubber mat shall be installed under the work area prior to start of work. Upon completion of creating small access point in curtain wall, connecting rod shall be inserted within penetration and penetration sealed and area HEPA vacuumed and/or wet-wiped.
7. Interior installation of tie-in shall occur within the building by properly certified NYSDOL and NYSDEP asbestos workers.

### **Netting Removal**

1. Existing building netting shall be removed as scaffold is erected.
2. Access to the active work area on the scaffold will be restricted. The work area on the scaffold shall be cordoned off with barrier tape.
3. Only NYSDOL and NYCDEP certified asbestos workers shall be permitted within the work area. The vacating of each work area and warning signs shall comply with ICR 56-8.1(b).
4. One layer of poly or rubber mat shall be installed on the scaffold work area floor.
5. Once the scaffold is prepared, the netting will be misted with an amended water solution prior to cutting and/or HEPA vacuumed (depending upon dust concentrations), then cut under wet conditions into manageable sections.
6. Removed netting will be properly bagged or wrapped in two (2) layers of poly in preparation for transportation and disposal as asbestos waste.
7. Once netting is removed, the exposed cables and tiebacks will be wet wiped, and thereafter may be removed as clean material. The cleaned cable or tiebacks may remain for removal during subsequent deconstruction.
8. If at any time a worker has to pass through an uncontaminated area to access the remote decon unit or the next work area, the worker shall don two suits of PPE, remove one suit while in the work area, wet wipe the inner suit, don a clean suit and proceed either to the next work area or the decon unit.

### **Exterior Negative Pressure Tent Enclosures**

Exterior Negative Pressure Tent Enclosures shall be utilized, as required, to clean and release contaminated areas exterior to the Building. Exterior negative pressure tent enclosure work areas shall be utilized to remove exposed exterior spray-on fireproofing ("SOFP"). The quantity of SOFP removed within a single negative pressure tent should be limited to removal of a maximum of approximately 160 square feet. For removal of exposed exterior SOFP, construction of multiple enclosures shall be required to ensure the quantity within a single tent does not exceed 160 square feet. Procedures for establishing, cleaning, clearing and maintaining Exterior Negative Pressure Tent Enclosures are described below.

1. The Negative Pressure Tent Enclosure will be installed exterior to the building on a scaffold system, a Remote Personnel Decon Enclosure System, otherwise consistent with the requirements of ICR 56-9, shall be utilized.
2. If at any time a worker has to pass through an uncontaminated area to access the remote decon unit or the next work area, the worker wearing two suits of PPE shall remove one suit while in the work area, wet wipe the inner suit, don a clean outer suit and proceed either to the next work area or the decon unit.

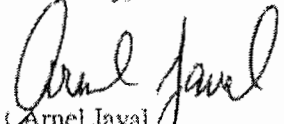
3. Negative Pressure Tent Enclosures shall be constructed and used per the 05-0427 Variance Decision dated May 11, 2005 including but not limited to two layers of six mil fire-retardant polyethylene sheeting and shall include walls, ceiling and a floor (except for portions of floors walls and ceilings that are removal surfaces) with double-folded seams. Exterior tents will be constructed with an attached 3'x 3' airlock. Make-up air shall be provided to the airlock through HEPA-filtered interior air sources.
4. Bulk removal of SOFP shall be performed using manual means (i.e., wet scraping) with local HEPA ventilation.
5. Upon completing the removal of SOFP, the surfaces from which SOFP have been removed and the interior surfaces of the tent will be thoroughly HEPA vacuumed and wet-wiped.
6. Personnel exiting the Negative Pressure Tent Enclosure shall proceed to the Remote Personnel Decon Enclosure System.
7. Once tent enclosure work area preparation has been completed and abatement activities commence, on a daily basis and per work-shift, one air sample shall be collected within the tent enclosure entrance/exit and exterior to the tent as required.
8. Clearance air sampling will be conducted inside the tent, prior to tent removal.

#### **Roof, Façade and General Exterior Area Clean-up**

The roof, building façade and exterior areas requiring general clean-up will be cleaned as part of Phase I activities in accord with NYCDEP WTC Dust/Residue Roof & Façade Cleaning procedures provided in the NYS DOL Variance Decision File No. 05-0427, dated May 11, 2005.

As in the past, a copy of this letter is being provided to representatives of other interested regulatory agencies, as indicated below. If you have any questions please feel free to contact us at (212) 221-7822.

Sincerely,

  
Arnel Javal  
Senior Project Manager

cc: Robert Iulo (NYC DOB)  
Gil Gillen (USDOL/OSHA)  
Richard Fram (NYSDEC)  
Pat Evangelista (USEPA)  
Krish Radhakrishnan (NYCDEP)  
Amy Peterson (LMDC)  
Vincent Lander (QUEST)  
Ed Gerdtz (TRC)



**Attachment 5: Variance Reopening (2) for Walker Duct and Raceway cleaning  
Protocols Regarding File No. 05-0427 dated 6/10/05**



June 10, 2005

File No. 05-427

Christopher Alonge, P.E.  
NYS Department of Labor  
Engineering Services Unit  
State Campus Bldg. 12, Room 154  
Albany, NY 12240

**Subject: Variance Reopening (2) for Walker Duct and Raceway Cleaning Protocols  
Regarding File No. 05-0427; 130 Liberty Street, New York, NY**

Dear Mr. Alonge,

We respectfully submit for consideration the additional information regarding the referenced File No. for this project. Please note the following protocol replaces the procedure submitted previously with the original submission:

**Cleaning, Visual Inspection and Clearance of Walker Ducts and Raceways**

It is the intent of this work to clean and remove all dirt, dust and debris from the raceway and walker ducts in the floor cabling system. If after video inspection and/or testing, it is determined that areas have not been thoroughly cleaned, those areas shall be re-cleaned by the contractor. Third party inspections will be conducted by the Owner's representative. This work will be done during the Asbestos Abatement Project under negative pressure.

1. Work to be performed will include the following:

- Removal of raceway/duct access plates, as necessary.
- Removal of all wires and cables from the ducts/raceways.
- Isolation of ducts, as required, to prevent cross contamination.
- Cleaning of all East to West Raceways (approx 2" x 6") on all floors.
- Cleaning of all Walker Ducts (1" x 4") on all floors.
- Cleaning of all terminal drops to floor ducts which are part of the systems.
- Removal of all dirt, dust, lint, etc., caused by cleaning process in areas affected by cleaning process.
- Representative photographs will be taken after cleaning.

2. Cleaning, Visual Inspection and Clearance Air Sampling will be performed as follows:

- Cleaning will be performed in accordance with the National Air Duct Cleaners Association Standards (NADCA) ACR 2005. All access will be through existing 6" floor openings.
- Negative air machine shall be attached to the duct system to obtain approximately 2,500 linear feet per minute of air movement across the active duct work space.
- All areas will be air washed using Scand Tech USA High Volume Nozzles or equivalent.
- Air washing will be done using high volume, medium pressure Scand Tech USA Tornado Nozzles, or equivalent (see attached for example equipment). Maximum air pressure at nozzles should not exceed 125 psi with a minimum volume of 80 cubic feet per minute (CFM). Air movement must be of sufficient volume to prevent any cross contamination.

- High volume Tornado Nozzles will be used to move contaminants to the collectors. Use of tube style air whips will not be allowed unless they are capable of dispensing a minimum of 80 CFM of discharge air.
- Air Compressors will be Kaeser ASD 30 or equivalent. Air compressors must generate a minimum of 130 CFM at 125 PSI. Air compressors will use "Y Delta" connections to reduce start up amperage.
- HEPA Air Scrubbers up to 2000 CFM will be used for make up air entering the duct systems.
- Dislodged contaminants will be collected in a HEPA filtration system. All dirt, dust, lint and other accumulations will be removed by approved, HEPA filtered negative air machines (NADCA ACR 2002, 5.3.3) capable of removing a minimum of 4000 CFM of air from the duct system during the cleaning process.
- Following initial air washing, a visual inspection of the cleaned duct area will be performed. As the cleaning work progresses and prior to duct access plate closure, the cleaned duct work area shall be inspected.
- Video inspection equipment will be used to inspect cleaned duct areas (see attached example equipment). The camera lens will be capable of focusing to 1" from surfaces. Inspection equipment will be capable of inspecting ducts of a minimum 1" x 4" dimension up to an approximate distance of 20 meters from one access port.
- All inspected areas will be identified and recorded on VHS format.
- If debris is still observed during the visual inspection, brushing may be required. If necessary, a variety of brushes and mechanical agitators may be used to dislodge contaminants. If brushing is required, brush cables must be capable of reaching up to 30 meters from one opening. Brushes must be sized specifically for each duct size; Scand Tech USA brushes or equivalent. If brushing is required, whip brushes must be used on all square or rectangular ducts.
- Upon successful completion of the visual inspection, aggressive air sampling within the work area shall be performed as described in Variance Decision File No. 05-0427. Prior to commencement of this clearance air sampling, all Walker Duct/Raceway floor opening access ports shall be opened to the work area and leaf blower directed into access port openings.

If you have any questions please feel free to contact us at (212) 221-7822.

Sincerely,



Arnel Javal  
Senior Project Manager

Attachments

cc: Amy Peterson - LMDC  
Edward Gerds - TRC  
Vincent Lander - QuES&T

June 8, 2005

Vincent M Coluccio, DrPH  
TRC  
177 Upper Samsonville Road  
Olivebridge, New York 12361

**RE: 130 Liberty Street, NYC BASIC EQUIPMENT NEEDS for 1 set Approx.\$**

The following is a basic equipment list for the specialty requirements. There would be additional small tools and equipment need that most contractors would already have. The only printed Camera price list we have is from 2001. All pricing in our computer is approximately 20% higher. HEPA Equipped Collection units (we do not sell them) very greatly from manufactures. Rental Air Center, Inc. provide the compressors on other Ground Zero projects and are familiar with the requirements.

**SCAND TECH LLC**

1" Camera, Push Shaft, Reel, Monitor, Charger	\$4,200 to \$5,500
½ Tornado Cleaning Kit 101.012	\$ 800 to \$1,200
¾ inch hose/Chicago fittings \$75. each 50 feet x 4	\$ 300
2 Rotating Cleaning Cables 12 meter & 20 m	\$ 800
Misc. Brushes	<u>\$ 100</u>
	<b>\$6,200 to \$7,900</b>

**VACUUM COLLECTION UNITS** Three stage HEPA Equipped

Abatement, Air Care, Meyers Machine, Nikro Industries

Examples

HEPA AIRE 2500 cfm	\$7,500
HEPA AIRE 4500 cfm	\$9,500

**ELECTRIC AIR COMPRESSORS** 100 to 200 cfms 220volt to 480 volt

Rentals Air Center, Inc 908-276-1992

**AIR SCRUBBERS** HEPA EQUIPPED 2000cfm

Rental or New \$2000

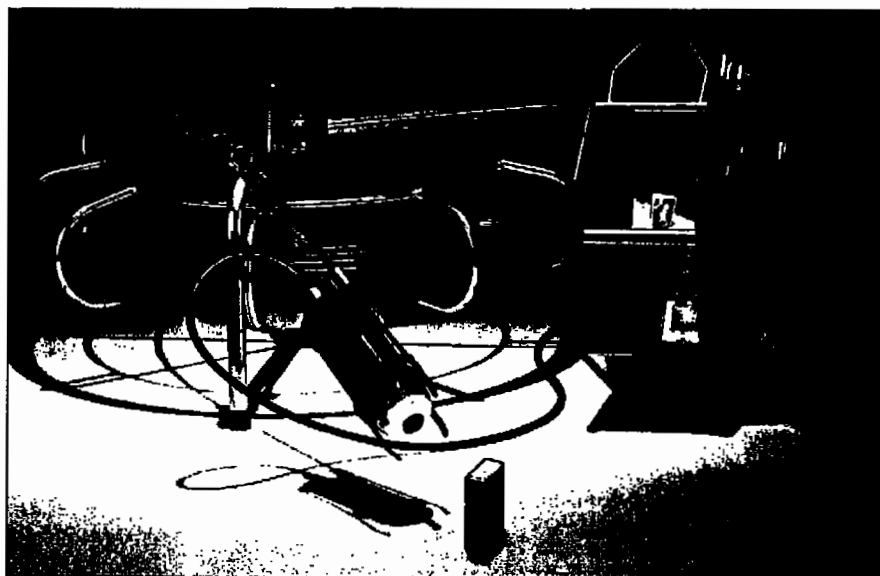


**SCAND TECH USA, LLC ®**

**PRICE LIST**

*Scand Tech, USA, L.L.C.*  
**P. O. Box 265 440 John Fitch Blvd South Windsor, CT 06074 USA**  
**Phone 800-587-3980 Fax 800-587-3979 E-Mail: [scanduct@aol.com](mailto:scanduct@aol.com)**

# INSPECTION EQUIPMENT



## Inspection Camera, 2 inches (49 mm)

**Item No.501.001** This small size Inspection Camera is very versatile for vertical as well as horizontal ventilation ducts. The unit is equipped with a high-definition, black-and-white camera module with automatic aperture setting and super wide-angle lens. Focus control can be made from a distance of 0.4" (10 mm). The camera head is activated by a joystick and the movements are directly synchronized. Endless rotation of camera head as well as turning from 0 to 90 degrees. The control unit is equipped with a flat monitor in a solid plastic casing, remote control (joystick) and a cable reel for 65 ft (20 m) cable.

#### Technical Data: Camera Unit.

Camera: High-definition CCD b/w camera module with automatic aperture setting.  
Super wide-angle lens 0.1" (2.5 mm).  
Photosensitivity: 0.5 lux.

Diameter: Camera head = 2 inches (49 mm).  
Length: Camera head = 5 inches (134 mm).  
Range of rotation: Endless left - right.  
Range of turning: 0 - 90 degrees vertical to horizontal position.  
Weight: 0.6 lb (280 g).  
Illumination: Nine subminiature lamps, 8.4 W totally.

#### Technical Data: Control Unit.

Monitor display: Flat monitor, 3"x2" (81mm x 59 mm).  
Panel: Flip switch, joystick, adjustment for contrast and brightness, LCD-Voltage indicator, VCR-connection.  
Cable: Cable reel with special cable, 65 ft (20 m) with metric scale.  
Weight: 10 lbs (4.7 kg).  
Power supply: Battery operated 12V - maintenance-free, long life accumulator. Automatic charger. Operation time depending on camera head = 60 - 20 min.  
Case: Black plastic casing with carrier belt.

Accessories: Watertight camera, diameter less than 1 inch (22 mm), with fixed head and with 10 ft (3 m), 16 ft (5 m), 33 ft (10 m) or 49 ft (15 m) push-shaft. Charging-cable for cigarettelighter outlet in cars, 12 V.



**SCAND TECH**

MEMBER OF  
**ROVR**  
Riksförbundet Sveriges  
VentilationsRengörare

MEMBER OF  
**NADCA**  
NATIONAL AIR DUCT CLEANING ASSOCIATION









# KUMMERT

## Chimney Inspection

Pricelist valide at March 2001




Bernhard Kummert Videoinspektionssysteme - D-97447 Gerolzhofen, Albert-Einstein-Str. 8

↓  
+20%  
for 2005









Article-No.	Picture	Article	Price
Analog Basic Instruments			
4352		Colour Mini Hand Instrument without cable, 12poles, incl. charge station and exchange accu	1.595,00
3588		Mini Hand Instrument without cable, 12poles, incl. charge station and exchange accu	1.095,00
1385		Portable Instrument with fixed cable reel, 20 m cable	1.449,00
1388		Portable Instrument with fixed cable reel, 30 m cable (12poles) and charge device	1.549,00
1776		Multi Inspection Device, with LCD Colour monitor, VHS-video recorder and rotatable cable reel with 20 m cable, 12poles	4.495,00
4283		Colour Portable Instrument with rotatable reel, 20 m cable (12poles) and charge device	2.450,00
1386		Portable Instrument with rotatable reel, 20 m cable (12poles) and charge device	1.895,00
1389		Portable Instrument with rotatable reel, 30 m cable (12poles) and charge device	1.995,00

Bernhard Kummert Videoinspektionssysteme - D-97447 Gerolzhofen, Albert-Einstein-Str. 8

**+20%**

Article-No.	Picture	Article	Price
<b>Camera heads</b>			
4015		Colour Glass Cupola Camera, 12poles, swing range 180°, rotating range 360°, diameter 51 mm	1.590,00
3874		SK-22 Black/White Miniature Spring Camera 6poles diameter 22 mm	985,00
3867		CSK-35 Colour Camera, 6poles, waterproof, diameter 35 mm	1.265,00

**Attachment camera heads**




1522		Reel Connection for art.-no. 1391/4258	185,00
1544		Centring Spring for art.-no. 1391/4258, ajustable - for the variable centering of die Rotating Globe Shape Camera for the inspection from top to bottom inside of the chimney	159,00
1558		Centring Carriage for art.-no. 1391/4258	249,00
4001		Reel Connection for art.-no. 2594/4015	248,00
3839		Spring Guide for art.-no. 2594/4015	71,50
4193		Removable protected cover for art. no. 3874	85,00
4105		Socket clip for Centring Carriage for art. no. 3874 Miniature spring Camera	45,00
4202		Basic connection	197,00

All Prices are excluded V.A.T., postage and packing. Subject to alteration.  
All preceding Prices are invalide.





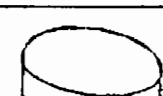
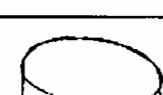


Bernhard Kummert Videoinspektionssysteme - D-97447 Gerolzhofen, Albert-Einstein-Str. 8



**+2070**

Article-No.	Picture	Article	Price
<b>Attachment camera heads</b>			
4262		Centring carriage for system 2000	168,00
4478		Centring Brush Set, 3 Leinstars of Nylon, 200 mm, 300 mm, 400 mm, hole 28 mm	57,00
4184		Connection Spring, 14 cm, 6poles, flexible connection between camera head CSK-35 and GFK rod	187,00

**Accessories for pushing camera heads**

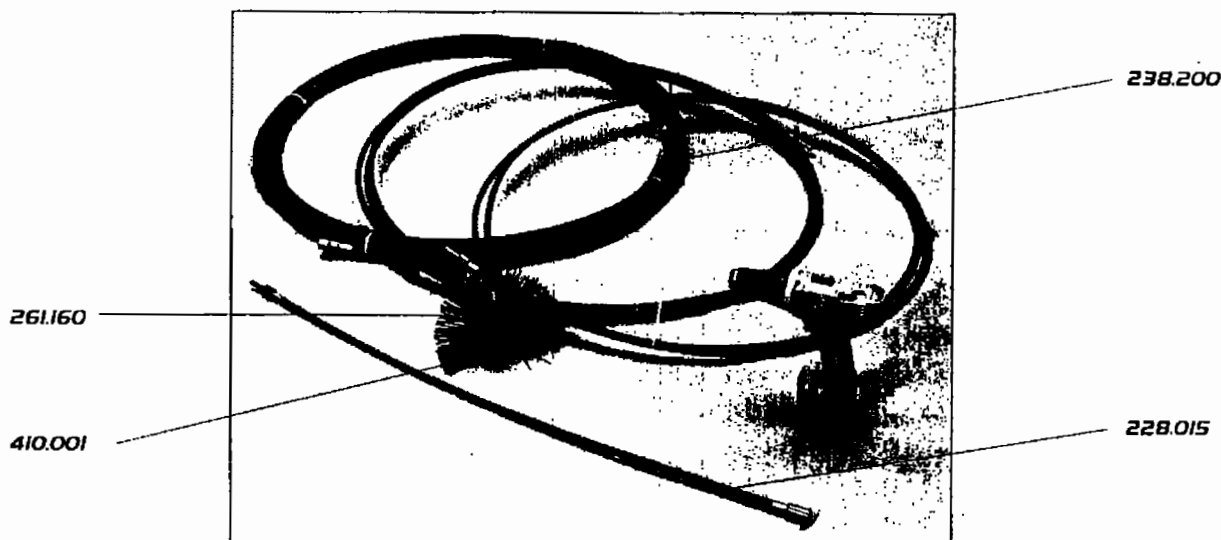
3923		Camera rod 3m, 6mm, 1*6poles, 1*12poles	270,00
3922		Camera rod 5m, 6mm, 1*6poles, 1*12poles	320,00
4033		Camera rod 10m, 6mm, 1*6poles, 1*12poles	370,00
1571		Camera rod 3m, 6mm, 2*12poles	270,00
1569		Camera rod 5m, 6mm, 2*12poles	320,00
1557		Camera rod 10m, 6mm, 2*12poles	370,00

**Camera reel**

4337		Mini reel 12poles, zinc-plated, 20 m, rod 4,5 mm	745,00
4336		Large reel zinc-plated, 12poles, 20 m, rod 6 mm	895,00

All Prices are excluded V.A.T., postage and packing. Subject to alteration.  
 All preceding Prices are invalide

# MECHANICAL CLEANING



## Rotating Cleaning Cable

Item Nos. 228.010 - 238.300

The Rotating Cleaning Cables are connected to a battery - powered drill, up to 33 ft (10 m), or to the Brush Machine, 33 ft (10 m) and up. The inner wire is made from hardened steel and inspected using laser. The outer casing has a diameter of 0.4 inch/10mm.

- \* **Item Nos. 228.010- 228.100** Cleaning Cable, with 0.11" (2.8 mm) inner wire recommended for duct sizes of 3" - 6" (80 mm - 160 mm) with numerous bends. Available in standard lengths from 3 ft - 30 ft (1m - 10 m). Any preferred length available on special request. Marked with yellow tape at the stop nipple.
- Item Nos. 232.010- 232.120** Cleaning Cable, with 0.13" (3.2 mm) inner wire recommended for duct sizes of 4" - 12" (100 mm - 300 mm) with some bends. Available in standard lengths from 3 ft - 40 ft (1 m - 12 m). Any preferred length available on special request. Marked with blue tape at the stop nipple.
- Item Nos. 238.050- 238.300** Cleaning Cable, with 0.15" (3.8 mm) inner wire recommended for duct sizes of 6" - 24" (160 mm - 600 mm) with few bends. Available in standard lengths from 16 ft - 98 ft (5 m - 30 m). Any preferred length available on special request. Marked with red tape at the stop nipple.
- Item No. 238.200** Cleaning cable with 0.15" (3.8 mm) inner wire and a length of 66 feet (20 m).
- Item No. 228.015** Cleaning cable with 0.11" (2.8 mm) inner wire and a length of 5 feet (1.5 m).
- Item No. 261.160** 6" (160 mm) brush for circular ducts - see separate product leaflet.
- Item No. 410.001** Brush Ball - see separate product leaflet.



**SCAND TECH**

SCANDTECH, USA

Phone: 1-800-587-3980

Fax: 1-800-587-3979

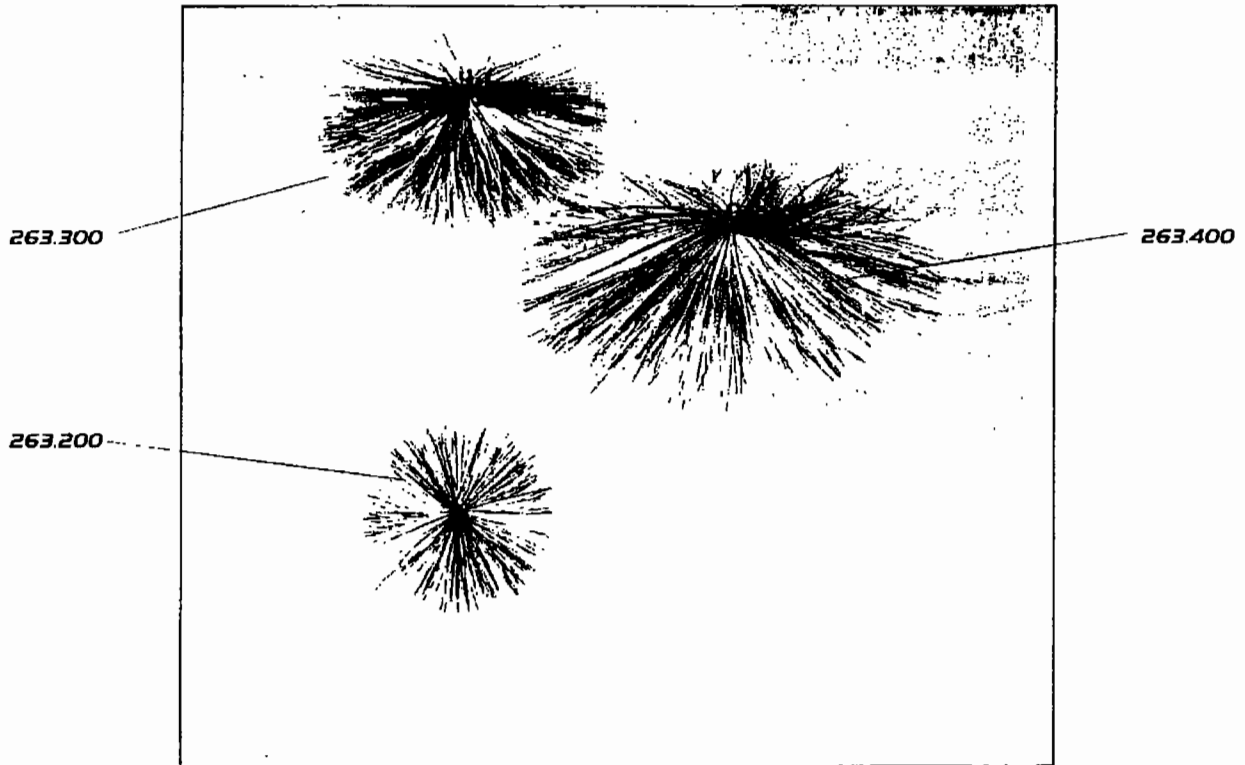
E-Mail Address:

scanduct@AOL.Com

MEMBER OF  
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Ventilationsrengörare

MEMBER OF  
**NADCA**  
NATIONAL AIR DUCT CLEANING ASSOCIATION

# MECHANICAL CLEANING



## Soft and hard Nylon Whip Brushes

**Item Nos 263.200 - 263.600** Brushes made of hard red/white nylon bristles, and 8" (200 mm) extended soft white nylon bristles. The brushes are designed for use in square and rectangular ducts. The soft white nylon bristles remove dirt from corners. The Brushes are available in sizes from 8"-24" (200 mm-600 mm).

**2" & 3" AVAILABLE**



**SCAND TECH**

SCANDTECH, USA

Phone: 1-800-587-3980

Fax: 1-800-587-3979

E-Mail Address:  
scanduct@AOL.Com

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NATIONAL AIR DUCT CLEANERS ASSOCIATION

**COMPRESSED AIR CLEANING****Rotating Nozzles**

100.012	Rotating Brush Nozzle Cleaning Kit, 1/2 inch (12 mm) with an 80 ft (25 m) hose on a reel, shut-off valve and claw coupling. 12 different brushes made of nylon and steel. <b>IMPROVED!</b>	2.695
100.020	Rotating Brush Nozzle Cleaning Kit, 3/4 inch (20 mm) with an 80 ft (25 m) hose on a reel, shut-off valve and claw coupling. 12 different brushes made of nylon and steel. <b>IMPROVED!</b>	3.495
100.025	Rotating Whipstream Nozzle Cleaning Kit, 1 inch (25 mm) with an 80 ft (25 m) hose, shut-off valve and claw coupling. <b>IMPROVED!</b>	2.995

**Tornado Nozzles**

101.012	Tornado Nozzle Cleaning Kit, 1/2 inch (12 mm) with a 98 ft (30 m) hose on a reel, shut-off valve and claw coupling. 4 hard plastic jet nozzles with variable spreading angles for different duct sizes. 1 aluminium jet nozzle for ducts made of concrete.	1.195
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101.016	Tornado Nozzle Cleaning Kit, 2/3 inch (16 mm) with a 98 ft (30 m) hose on a reel, shut-off valve and claw coupling. 4 hard plastic jet nozzles with variable spreading angles for different duct sizes. 1 aluminium jet nozzle for ducts made of concrete.	1.395
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101.025	Tornado Nozzle Cleaning Kit, 1 inch (25 mm) with an 80 ft (25 m) hose, shut-off valve and claw coupling. 1 hard plastic jet nozzle for sheet metal ducts and 1 aluminium jet nozzle for ducts made of concrete.	995
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**Cleaning Hoses**

102.012	Light-weight cleaning hose, 1/2 inch/80 ft (12 mm/25 m).	259
102.112	Cleaning Hose, 1/2 inch / 98 ft (12 mm / 30 m).	289
102.116	Cleaning Hose, 2/3 inch / 98 ft (16 mm / 30 m).	510
102.120	Cleaning Hose, 3/4 inch / 80 ft (20 mm / 25 m).	917
102.125	Cleaning Hose, 1 inch / 82 ft (25 mm / 25 m).	487

**Feeding Hoses**

103.010	Feeding Hose 0.4 inch/98 ft (10 mm/30 m) with claw coupling and quick coupling.	160
103.020	Feeding hose (Mantex) 1 inch/65 ft (25 mm/20 m) with 2 claw couplings.	255
103.060	Feeding hose (Mantex) 1 inch/197 ft (25 mm/60 m) with 2 claw couplings.	708

**\* DELETE REEL ! EXTRA TETS - 400.00**

Scand Tech, USA, L.L.C.

P. O. Box 265 440 John Fitch Blvd South Windsor, CT 06074 USA  
Phone 800-587-3980 Fax 800-587-3979 E-Mail: scanduct@aol.com

## MECHANICAL CLEANING

### Powerful Brush Machines

210.670	Brush Machine, 110 V, Single-phase, 740 rpm.	2 695
220.670	Brush Machine, 220 V, Single-phase, 740 rpm.	2 695

### Soft and flexible cleaning cable, 0.11 inch (2.8 mm) for duct sizes from 3"-6" (80 - 160 mm).

228.010	Cleaning Cable, 3ft (1 m).	103
228.015	Cleaning Cable, 5ft (1.5 m).	139
228.030	Cleaning Cable, 10 ft (3 m).	160
228.050	Cleaning Cable, 16 ft (5 m).	187
228.070	Cleaning Cable, 23 ft (7 m).	229
228.100	Cleaning Cable, 33 ft (10 m).	296

### Medium and flexible cleaning cable, 0.13 inch (3.2 mm) for duct sizes from 4"-12" (100 - 300 mm).

232.010	Cleaning Cable, 3 ft (1 m).	103
232.015	Cleaning Cable, 5 ft (1.5 m).	139
232.030	Cleaning Cable, 10 ft (3 m).	160
232.050	Cleaning Cable, 16 ft (5 m).	187
232.070	Cleaning Cable, 23 ft (7 m).	229
232.100	Cleaning Cable, 33 ft (10 m).	296
232.120	Cleaning Cable, 39 ft (12 m).	339

### Hard and flexible cleaning cable, 0.15 inch (3.8 mm) for duct sizes from 6"-24" (160 - 600 mm).

238.050	Cleaning Cable, 16 ft (5 m).	187
238.070	Cleaning Cable, 23 ft (7 m).	229
238.100	Cleaning Cable, 33 ft (10 m).	296
238.120	Cleaning Cable, 39 ft (12 m).	339
238.150	Cleaning Cable, 49 ft (15 m).	405
238.200	Cleaning Cable, 66 ft (20 m).	458
238.250	Cleaning Cable, 82 ft (25 m).	544
238.300	Cleaning Cable, 98 ft (30 m).	608

### Hard and flexible cleaning cable with jetstream-function. Suitable for rectangular ducts 10"-28" (250 mm-700 mm)

250.150	Rotating JetStreamCable, 49 ft (15 m).	799
250.200	Rotating JetStreamCable, 65 ft (20 m).	899
250.250	Rotating JetStreamCable, 82 ft (25 m).	999
250.300	Rotating JetStreamCable, 98 ft (30 m).	1 099

### Brushes for normal pollution in circular ducts

261.100	Nylon Brush, 4 inches (100 mm).	18
261.125	Nylon Brush, 5 inches (125 mm).	20
261.160	Nylon Brush, 6 inches (160 mm).	22
261.200	Nylon Brush, 8 inches (200 mm).	24
261.250	Nylon Brush, 10 inches (250 mm).	26
261.315	Nylon Brush, 12 inches (315 mm).	29
261.400	Nylon Brush, 16 inches (400 mm).	34
261.500	Nylon Brush, 20 inches (500 mm).	48
261.600	Nylon Brush, 24 inches (600 mm).	54
261.700	Nylon Brush, 28 inches (700 mm).	61
261.800	Nylon Brush, 32 inches (800 mm).	65

Scand Tech, USA, L.L.C.

P. O. Box 265 440 John Fitch Blvd South Windsor, CT 06074 USA  
Phone 800-587-3980 Fax 800-587-3979 E-Mail: scanduct@aol.com

Item no.	Description	Price USD
	<b>Brushes for severe pollution in circular ducts</b>	
262.100	Nylon Brush reinforced with steel, 4 inches (100 mm).	18
262.125	Nylon Brush reinforced with steel, 5 inches (125 mm).	20
262.160	Nylon Brush reinforced with steel, 6 inches (160 mm).	22
262.200	Nylon Brush reinforced with steel, 8 inches (200 mm).	24
262.250	Nylon Brush reinforced with steel, 10 inches (250 mm).	27
262.315	Nylon Brush reinforced with steel, 12 inches (315 mm).	29
262.400	Nylon Brush reinforced with steel, 16 inches (400 mm).	34
262.500	Nylon Brush reinforced with steel, 20 inches (500 mm).	48
262.600	Nylon Brush reinforced with steel, 24 inches (600 mm).	54
262.700	Nylon Brush reinforced with steel, 28 inches (700 mm).	61
262.800	Nylon Brush reinforced with steel, 32 inches (800 mm).	65
	<b>Brushes for normal pollution in rectangular ducts (Whip Brushes)</b>	<b>25</b>
→ 263.015		
263.200	Soft and hard Nylon Whip Brush, 8 inches + 8 inches (200 mm + 200 mm).	27
263.300	Soft and hard Nylon Whip Brush, 12 inches + 8 inches (300 mm + 200 mm).	31
263.400	Soft and hard Nylon Whip Brush, 16 inches + 8 inches (400 mm + 200 mm).	37
263.500	Soft and hard Nylon Whip Brush, 20 inches + 8 inches (500 mm + 200 mm).	52
263.600	Soft and hard Nylon Whip Brush, 24 inches + 8 inches (600 mm + 200 mm).	60
	<b>Brushes for internally insulated ducts</b>	
→ 264.085		
264.100	Soft Polythene Brush, 3 inches (85 mm).	16
264.125	Soft Polythene Brush, 4 inches (100 mm).	18
264.160	Soft Polythene Brush, 5 inches (125 mm).	20
264.200	Soft Polythene Brush, 6 inches (160 mm).	22
264.250	Soft Polythene Brush, 8 inches (200 mm).	27
264.315	Soft Polythene Brush, 10 inches (250 mm).	29
264.400	Soft Polythene Brush, 12 inches (315 mm).	31
264.500	Soft Polythene Brush, 16 inches (400 mm).	34
264.630	Soft Polythene Brush, 20 inches (500 mm).	48
	<b>Brushes for severely polluted ducts, for example kitchen ducts</b>	
265.085	Steel brush, 3 inches (85 mm).	16
265.110	Steel brush, 4 inches (110 mm).	18
265.140	Steel brush, 6 inches (140 mm).	20
265.170	Steel brush, 7 inches (170 mm).	22
265.230	Steel brush, 9 inches (230 mm).	27
265.290	Steel brush, 11 inches (290 mm).	29
265.350	Steel brush, 14 inches (350 mm).	31
265.425	Steel brush, 17 inches (425 mm).	34
265.525	Steel brush, 21 inches (525 mm).	48
265.625	Steel brush, 25 inches (625 mm).	54
	<b>Spare Parts</b>	
240.028	Inner thread, 0.11 inch (2.8 mm), per ft.	2
240.032	Inner thread, 0.13 inch (3.2 mm), per ft.	2
240.038	Inner thread, 0.15 inch (3.8 mm), per ft.	2
242.028	Brush nipple, 0.11 inch (2.8 mm).	31
242.032	Brush nipple, 0.13 inch (3.2 mm).	31
242.038	Brush nipple, 0.15 inch (3.8 mm).	31
243.028	Stop nipple, 0.11 inch (2.8 mm).	31
243.032	Stop nipple, 0.13 inch (3.2 mm).	31
243.038	Stop nipple, 0.15 inch (3.8 mm).	31

Scand Tech, USA, L.L.C.

P. O. Box 265 440 John Fitch Blvd South Windsor, CT 06074 USA  
Phone 800-587-3980 Fax 800-587-3979 E-Mail: scanduct@aol.com

ORDER FORM

Date \_\_\_\_\_

Company name \_\_\_\_\_

Address \_\_\_\_\_  
(Street) (P.O.Box)

(City) (State) (Zip)

Tel \_\_\_\_\_ Fax \_\_\_\_\_

Please charge the following order to our  Visa  MasterCard  Payment by check

Account no \_\_\_\_\_ Expiration date \_\_\_\_\_

Cardholder's name \_\_\_\_\_ Signature \_\_\_\_\_



Item no	Description	Quantity	Price	Total

Our company and its representatives shall not take part in any attempt to alter or copy any products - directly or indirectly - from SCAND TECH, nor promote or sell products from other entities offering products that obviously originated as products designed by SCAND TECH. Signed below by person authorized to sign for the firm.

Sum total

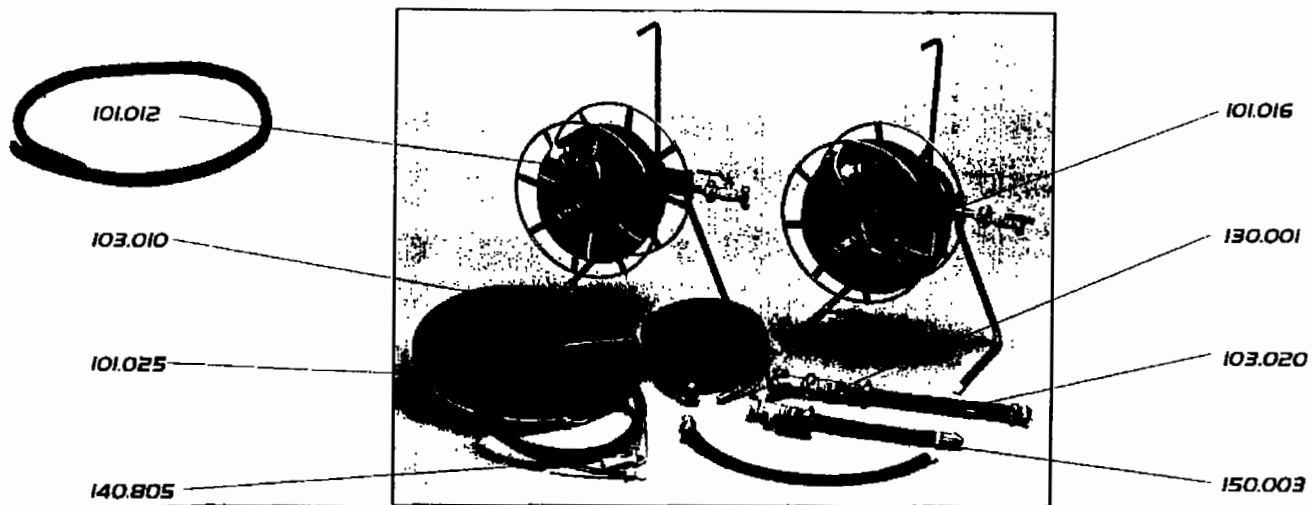
Printed name \_\_\_\_\_ Title \_\_\_\_\_ Signature \_\_\_\_\_

**DELIVERY TERMS:** Delivery 1 - 3 weeks after payment. All the equipment is sent door-to-door to the customers address via UPS Ground. The freight cost is included if the order exceeds 500 US\$ - if not, charges of 100 US\$ will apply. The customer is responsible for any customs, VAT or required taxes. Prices are based upon the exchange rate of Jan 1 1999. If the exchange rate varies more than 4% from the above date, prices can be adjusted.

**[Redacted Address]**  
P.O.Box 265 440 John Fitch Blvd South Windsor Connecticut 06074 USA  
Phone 1-800-587-3980 Fax 1-800-587-3979 E-mail: scanduct@aol.com



# COMPRESSED AIR CLEANING



**Item No. 101.012** Tornado Nozzle Cleaning Kit, 1/2 inch (12 mm) with a 98 ft (30 m) hose on a reel, shut-off valve and claw coupling. 4 hard plastic jet nozzles with variable spreading angles for different duct sizes. 1 aluminium jet nozzle for ducts made of concrete. Recommended for: Duct sizes from 3" - 12" (80 mm-300 mm). Recommended compressor capacity: 185 cfm (5.2 m<sup>3</sup> / min) at 116 psi (8 bar).

**Item No. 101.016** Tornado Nozzle Cleaning Kit, 3/4 inch (16 mm) with a 98 ft (30 m) hose on a reel, shut-off valve and claw coupling. 4 hard plastic jet nozzles with variable spreading angles for different duct sizes. 1 aluminium jet nozzle for ducts made of concrete. Recommended for: Duct sizes from 6" - 24" (160 mm-600 mm). Recommended compressor capacity: 185 cfm (5.2 m<sup>3</sup> / min) at 116 psi (8 bar).

**Item No. 101.025** Tornado Nozzle Cleaning Kit, 1 inch (25 mm) with an 80 ft (25 m) hose, shut-off valve and claw coupling. 1 hard plastic jet nozzle for sheet metal ducts and 1 aluminium jet nozzle for ducts made of concrete. Recommended for: Duct sizes from 12" - 47" (300 mm-1200 mm). Recommended compressor capacity: 185 cfm (5.2 m<sup>3</sup> / min) at 116 psi (8 bar).

**Item No. 103.010** Feeding Hose 0.4" / 98 ft (10mm/30m) with claw coupling/ quick coupling. To be used together with Jetstream Cables, Air and Blaster Guns or other Air Tools.

**Item No. 103.020** Feeding Hose black (Mantex) 1" / 65 ft (25mm/20m) with two claw couplings.

**Item No. 130.001** Connection central for two Compressed Air Cleaning Kits. This Y-type connection central connects with a claw coupling to an 1 inch (25 mm) feeding hose from the compressor. Allowing you to connect two different Compressed Air Cleaning Kit with claw couplings.

**Item No. 140.805** Air Gun recommended to be used in smaller ducts -from 3 inch to 5 inch (80 mm-125 mm). The kit consist of a 0.3 inch / 33 ft (8 mm - 10 m) stiff plastic hose and two plastic jet nozzles for forward or reverse directed compressed air. Recommended compressor capacity: 10 cfm (250 l / min) at 87 psi (6 bar).

**Item No. 150.003** Shut-off valve 1 inch (25mm) with two claw couplings.



**SCAND TECH**

SCANDTECH, USA

Phone: 1-800-587-3980

Fax: 1-800-587-3979

E-Mail Address:

scanduct@AOL.Com

MEMBER OF  
**ROVR**  
Riksförbundet Sveriges  
VentilationsRengörare

MEMBER OF  
**NADCA**  
NATIONAL AIR DUCT CLEANING ASSOCIATION



**Attachment 6: Phase II Variance Petition dated 6/10/05**

STATE OF NEW YORK – DEPARTMENT OF LABOR  
**DIVISION OF SAFETY AND HEALTH**  
**ENGINEERING SERVICES UNIT**  
 STATE OFFICE BUILDING CAMPUS  
 ALBANY, N.Y. 12240-0010

**PREPARE APPLICATION IN TRIPLICATE**  
 SUBMIT ALL APPLICATIONS TO THE  
 ADDRESS SHOWN WITH A CERTIFIED  
 CHECK OR MONEY ORDER (made  
 payable to the Commissioner of Labor)

**PETITION FOR A VARIANCE OR OTHER RELIEF**  
 (NOT APPLICABLE FOR PUBLIC EMPLOYERS)

1. NAME AND ADDRESS OF PETITIONER <b>Mr. Arnel Javal</b> <b>TRC Environmental Corporation</b> <b>1430 Broadway, 10<sup>th</sup> Floor</b> <b>New York New York 10018</b>  <b>As Petitioners Agent for:</b> <b>Lower Manhattan Development Corporation</b> <b>One Liberty Plaza, 20<sup>th</sup> Floor</b> <b>New York, New York 10006</b>	4. FOR AN ASBESTOS PROJECT ONLY. PETITION OR AGENT IS OR HOLDS (Check appropriate box)  <input type="checkbox"/> Asbestos Contractor - License No. _____  <input type="checkbox"/> Air Monitor – Certificate No. _____  <input checked="" type="checkbox"/> Project Designer - Certificate No. <b>AH 92-10951</b>  <input type="checkbox"/> Project Monitor - Certificate No. _____  <input type="checkbox"/> Management Planner - Certificate No. _____  <input type="checkbox"/> Other (Specify) _____
2. PETITIONER'S TELEPHONE NUMBER <b>212-221-7822 (Arnel Javal, Agent for the Petitioner)</b>	
3. PETITIONER'S FEDERAL EMPLOYER IDENTIFICATION NUMBER (FEIN)	
5. AFFECTING PREMISES KNOWN AS <b>130 Liberty Street</b>	6. STREET ADDRESS OF SUCH PREMISES <b>130 Liberty Street, New York, New York 10006</b>

7. This facility is situated south side of Liberty Street

(Check one) in  City  TOWN  VILLAGE OF **New York**  County of **New York**

8. NAME AND ADDRESS OF ALL DESIGNATED EMPLOYEE REPRESENTATIVES (Enter "None" if no employee organization)

**\*\*\*This question is not applicable to an Asbestos Project\*\*\***

THE PETITIONER HEREBY PETITIONS THE COMMISSIONER OF LABOR FOR A VARIANCE (OR OTHER RELIEF) FROM THE REQUIREMENTS OF THE LABOR LAW, ORDERS OF THE COMMISSIONER OF LABOR REQUIRING COMPLIANCE WITH THE STATE BUILDING CONSTRUCTION CODE, THE NEW YORK STATE UNIFORM FIRE PREVENTION AND BUILDING CODE AND/OR THE RULES OF THE COMMISSIONER OF LABOR AS STATED BELOW.

**A. CITATION**

LIST THE APPLICABLE SECTION AND PARAGRAPH OF THE RELEVANT LAW, CODE, OR REGULATION (S) FOR WHICH A VARIANCE IS BEING REQUIRED.

9. LABOR LAW <b>Art.30, Sec. 906</b>	10. STATE BUILDING CONSTRUCTION CODE <b>Not Applicable</b>	11. UNIFORM FIRE PREVENTION CODE <b>Not Applicable</b>	12. INDUSTRIAL CODE RULE NUMBER <b>ICR 56</b>
13. ORDERS ISSUED: <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes if yes, enter date issued	14. ISSUED BY: <input type="checkbox"/> STATE INSPECTOR <input type="checkbox"/> LOCAL INSPECTOR	15. ISSUED TO: <input type="checkbox"/> OWNER <input type="checkbox"/> AGENT <input type="checkbox"/> LESSEE (Enter name appearing on Notice of Violation) _____	

16. QUOTE THE TEXT OF THE ORDERS AS GIVEN ON THE NOTICE OF VIOLATION AND ORDER TO COMPLY, if applicable.

**Not Applicable**

17. IF A VARIANCE HAS BEEN GRANTED PREVIOUSLY COVERING THE SAME SECTION AND PARAGRAPH AS SPECIFIED ABOVE IN IT 5-8, LIST THE CASE NUMBER AND DATE SUCH VARIANCE WAS GRANTED.

**Not Applicable**

## B. DESCRIPTION OF PREMISES

(To be filled out only when pertinent to the petition)

18. Date building was constructed 1976 19. No. Stories: Front 41 Rear 41  
 Wood; Non-fireproof; Fireproof;L
20. Construction of building is  (Masonry walls, wood floors and roof)  (Masonry walls, concrete floors and metal roof)
21. Size of lot: At street level Feet front 200 Feet deep 200
22. Size of building: At street level Feet front 200 Feet deep 200
23. Size of building: At typical floor level Feet front 200 Feet deep 200

24. Use of each floor and maximum number of persons on each floor are as follow: Unoccupied

Floor	Equipped with Automatic Sprinklers		Use	Present		Proposed	
	Yes	No		Men	Women	Men	Women
Cellar							
1							
2							
3							
4							
5							

## C. REASON FOR REQUEST FOR VARIANCE

25. State the grounds for a variance (or other relief) setting forth difficulties and/or hardships involved in complying with the requirements stated above. Failure to complete this section may result in dismissal or denial of this petition.

Refer To Attachment

## D. PROPOSAL

26. State the proposal, if any, for securing safety or protecting health without literal compliance with such requirements.

Refer To Attachment

**\*\*\* This question is not applicable to an Asbestos Project\*\*\***

27. I affirm that a copy of this Petition

has been set or  shall be sent within 3 days of sending this Petition to the Commissioner of Labor, to all designated employee representatives by certified mail, return receipt requested

AND

has been posted or  shall be posted within one week of sending this Petition to the Commissioner of Labor at the site affected by the variance in an easily accessible location

I certify that the information contained in this Petition is true and accurate



June 10, 2005  
28. DATE

Arnel Javal, TRC as Agent for Petitioner  
29. SIGNATURE OF PETITIONER OR PETITIONERS AGENT

**Return THREE copies of this application and the \$350.00 fee to the address shown on front (Use additional 8 1/2 x 11 sheets, if necessary)**

**130 LIBERTY STREET, NEW YORK, NY**  
**REQUEST FOR VARIANCE**  
**PHASE II: EXTERIOR ABATEMENT AND STRUCTURAL DECONSTRUCTION**

**NATURE OF THE WORK**

The proposed Phase II Exterior Abatement will be conducted so that the Building can be safely deconstructed to allow for redevelopment of the WTC Site. This Phase of the project entails removal of exterior building materials containing asbestos which were present on the Building exterior prior to September 11, 2001. This variance request addresses materials specific to Phase II of the deconstruction, however work may be performed concurrently with Phase I work as addressed in previous Variance File No. 05-0427.

**REASON FOR REQUESTING A VARIANCE**

LMDC, its consultants and its contractor are committed to compliance with applicable law throughout the cleaning and deconstruction of the Building. Accordingly, the Request for Variance is intended to comply with applicable federal, state and local law. It is the goal of LMDC, its consultants, and its contractor to conduct the proposed abatement in a manner which (i) will not expose the general public to asbestos, (ii) will minimize worker exposure to asbestos through the use of appropriate controls and personal protective equipment, (iii) will minimize adverse impacts of the project on the adjacent community, (iv) will address the practical operational opportunities and challenges presented by the Building and the Building conditions, and (v) will prepare the Building for deconstruction.

**PROPOSED EXEMPTIONS**

We request exemption from the following sections of Title 12 NYCRR Part 56, also known as Industrial Code Rule ("ICR") 56:

**56- 6.1 Ventilation;**

**56- 8.1(j), (k)(1-5) Isolation Barriers;**

**56- 9.1 (a) – Attached Personal Decontamination Enclosure System;**

**56- 10.1 (a) – Attached Waste Decontamination Enclosure System;**

**56- 11.1 (b) – Pre-abatement Settling Period;**

**56-12.1 (c) – Handling**

**56- 15.2(c-e) – Post-abatement Requirements**

Exemption from these subsections is requested based on the following:

- a. The subject facility is a vacant 40 floor high-rise office building in lower Manhattan scheduled for deconstruction.
- b. This exterior abatement work will be coordinated with the building deconstruction.
- c. Exterior building materials containing asbestos which were present in the Building prior to September 11, 2001 (referred to herein as "ACBM") are non-friable and will be removed manually utilizing wet methods.
- d. HEPA filtered local exhaust ventilation, as required by Industrial Code Rule 56-7.1(j), shall be utilized.
- e. All openings within twenty-five feet of the active abatement area (including, but not limited to windows, doors, ducts and grilles) on the roof level shall be sealed with two (2) layers of at least six mil fire retardant polyethylene sheeting ("poly").
- f. A personal decontamination enclosure system "remote" from the work area but otherwise compliant with Subpart 56-9, shall be utilized.
- g. A waste decontamination enclosure system "remote" from the work area but otherwise compliant with Subpart 56-10, shall be utilized.
- h. Exterior work will not be performed within a negative pressure enclosure.

**130 LIBERTY STREET, NEW YORK, NY**  
**REQUEST FOR VARIANCE**  
**PHASE II: EXTERIOR ABATEMENT AND STRUCTURAL DECONSTRUCTION**

**I. ROOFTOP COOLING TOWER TRANSITE AND CAULKING MATERIALS**

1. The work area shall be cordoned off with barrier tape or line and shall be accessible through only one entrance/exit. The asbestos work area shall extend beyond the active abatement area to the roof edge or a maximum distance of twenty five (25) feet, whichever is less.
2. We propose that in areas where these distances are not attainable due to obstructions (equipment, structural components) an orange construction fence shall be erected at the furthest point achievable to demarcate the work area.
3. The work area below the materials to be removed shall be plasticized using a drop cloth consisting of six mil fire retardant poly. The poly shall extend outward from below the active abatement area at least ten feet, where possible.
4. The area surrounding the cooling tower and roof top penthouse from which transite or caulking is to be removed shall be plasticized using two layers of at least six mil poly. That poly shall extend outward on the surface of the rooftop from the perimeter of the structure for a distance of at least six (6) feet.
5. Uncertified persons shall not be permitted within the work area. The vacating of each work area and warning signs shall comply with ICR 56-8.1(b).
6. All openings (including, but not limited to windows, doors, ducts, and grilles) on the roof level within twenty-five (25) feet of the active abatement area shall be sealed with two (2) layers of at least six mil poly.
7. The transite and caulking materials shall be removed using manual methods whenever possible. HEPA filtered local exhaust ventilation shall be utilized, as required by Industrial Code Rule 56-7.1(j), whenever removal of ACBM requires the use of power tools.
8. Precautions shall include, but not be limited to, the use of amended water to adequately wet the transite panels and the use of controlled methods to lower the panels. The transite panels shall be transferred to a waste consolidation area for packaging prior to being lowered to ground level for placement into a transportation container. Properly packaged and labeled waste will be transferred from the ground level staging area to the transport container.
9. Caulking shall be wetted with amended water during removal and immediately placed in asbestos disposal bags of at least six mil poly and sealed airtight.
10. Personal protective equipment as required by Industrial Code Rule 56-4.1(d) shall be provided and used by all personnel within the work area.
11. A personal decontamination enclosure system "remote" from the work area but otherwise compliant with Subpart 56-9, shall be utilized. The personal decontamination enclosure shall be removed only after satisfactory clearance air monitoring results have been achieved.
12. The Contractor shall establish an equipment area adjacent to the regulated work area for the decontamination of employees and their equipment. This equipment area shall consist of an area covered with an impermeable drop cloth (two layers of six mil poly, at a minimum) on the horizontal

**130 LIBERTY STREET, NEW YORK, NY**  
**REQUEST FOR VARIANCE**  
**PHASE II: EXTERIOR ABATEMENT AND STRUCTURAL DECONSTRUCTION**

working surface. The equipment area shall be of sufficient size to accommodate cleaning of equipment and removing the outer disposable personal protective clothing without spreading visible accumulations of contamination beyond the equipment area boundaries.

13. Air sampling and analysis shall be conducted, in each work area, according to the requirements of Subpart 56-17. An area sample will be taken within ten (10) feet of the work area boundary in an adjacent non work area, for each day of work in that area.
14. In addition to the requirements of Subpart 56-17, air monitoring of the entire work area shall be conducted when abatement activities are being conducted. If air sample results indicate any airborne asbestos fiber concentration(s) at or above 0.01 fibers per cubic centimeter, or the background level, whichever is greater, work shall be stopped immediately, methods shall be altered to reduce the airborne asbestos fiber concentrations(s) to the aforementioned level and work shall not resume until that level is attained.
15. If at any time a worker has to pass through an uncontaminated area to access a remote decontamination unit or the next work area, the worker shall don two suits of PPE, remove one suit while in the work area, wet wipe the inner suit, don a clean suit and proceed either to the next work area or the decontamination unit.

**II. NON-FRIABLE EXTERIOR ACBM WASTE CONSOLIDATION AREA**

1. The Contractor shall establish a waste consolidation area in close proximity to the regulated exterior work area for the preparation and packaging of non-friable waste for transportation and disposal. The waste consolidation area shall consist of an area covered with an impermeable drop cloth (consisting of two layers of six mil poly, at a minimum) on the floor/deck or horizontal working surface.
2. The waste consolidation area shall be of sufficient size to accommodate consolidation and packaging of waste.
3. The waste consolidation area shall be enclosed with barrier tape at a minimum distance of ten feet from the edge of the impermeable drop cloth.
4. Prior to being removed from the waste consolidation area, all waste will be wrapped in two layers of 6-mil poly, sealed leak tight.
5. The exterior surface of the properly packaged waste shall be wet-wiped prior to removal from the waste consolidation area. Properly packaged waste will be transported from the waste consolidation area directly to the disposal container.

**PROJECT SCOPE**

Exterior Caulk (Roof Level)	100	LF
Cooling Tower Transite (Roof Level)	20,000	SF

**Attachment 7: Deconstruction Plan**

**WASTE SAMPLING AND MANAGEMENT PLAN  
FOR THE  
130 LIBERTY STREET  
PHASE I DECONSTRUCTION PROJECT**

May 2005



**LOWER MANHATTAN DEVELOPMENT CORPORATION**  
1 Liberty Plaza  
New York, New York 10006



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## ATTACHMENTS

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<b>Attachment</b>	<b>Title</b>
1	List of Potential Hazardous and Universal Waste
2	Sample Management, Labeling and QA/QC
3	Preliminary List of Potential Disposal Facilities

## **1. OBJECTIVE**

The objective of the Waste Sampling and Management Plan (Plan) is properly to classify, manage, containerize, transport, and dispose of (or recycle), in conformance with all applicable laws and regulations, waste streams that will be generated as part of the 130 Liberty Street - Phase I Deconstruction Project.

### **1.1. BACKGROUND**

Phase I of the Deconstruction Project includes the cleaning and removal of all interior surfaces and non-structural elements within the building under containment. The cleanup and abatement will be conducted so that the building at 130 Liberty (Building) can be safely deconstructed to allow for redevelopment of the WTC Site. Phase I of the Deconstruction Project will occur while the work area is placed under negative pressure containment and includes the following general categories: (a) the general area cleanup of WTC dust and debris, (b) removal and disposal of installed porous and certain non-porous building materials and components, (c) cleaning and salvage of certain installed non-porous building equipment and components, (d) removal of building materials containing asbestos which were present in the Building prior to September 11<sup>th</sup>, 2001 (referred to herein as “ACBM”), primarily within the Building interior, (e) packaging of asbestos and other regulated waste including, but not limited to light bulbs, lighting ballasts, batteries, mercury-containing thermostats, etc.) at generation points, movement of containers to the decontamination unit and movement of decontaminated containers to waste loading using an exterior hoist or crane, and (f) cleaning of limited, exterior surfaces as necessary to facilitate the erection of the man-hoist and the crane.

During all Phase I activities, a minimum buffer zone of three floors initially for the top three floors and then two floors thereafter, will be maintained between the active abatement and clean-up (Phase I) area and the exterior abatement/structural demolition (Phase II) portion of the project. The proposed cleanup and abatement will be conducted so that the Building can be safely deconstructed in compliance with applicable law to allow for redevelopment of the WTC Site.

Phase II of the Deconstruction Project includes the structural deconstruction of the remaining cleaned steel, concrete, and curtain wall as well as the cleaning and removal of the Building exterior and the roof.

The information in the *Supplemental Investigation Summary Report - Preliminary Waste Characterization Sampling Summary Results* for 130 Liberty Street dated February 10, 2005 prepared for LMDC by TRC Environmental Corporation (Preliminary Waste Characterization) and the *130 Liberty Street Initial Building Characterization Study Report Volume I, September 14, 2004* by the Louis Berger Group, Inc. (Initial Building Characterization), as well as information in this Plan, will be utilized by the Contractor and its Subcontractors to determine the appropriate transportation and disposal for the generated waste in accordance with applicable federal, state and local regulations. The Environmental Consultant will characterize the waste streams to be generated. Based on the results of this characterization, once analytical results are received, the Environmental Consultant will issue an addendum to the Plan, if necessary. The Contractor or its authorized representative will ensure proper handling and disposal activities as described in this Plan.

## **1.2. ROLES AND RESPONSIBILITIES**

Involved entities are identified in this Plan by title/responsibility. The roles and responsibilities identified below are provided for the generically identified organization rather than for specific corporate entities. It should be noted that these roles and responsibilities are provided for informational purposes herein, and should not be construed as being representative of contractual obligations, responsibilities or liabilities.

Within this Plan, the “Owner” is the Lower Manhattan Development Corporation (LMDC).

The “Deconstruction Team” for the Phase I Deconstruction Project is made up of the Contractor and the Contractor’s subcontractors, including the Environmental Consultant.

The “Contractor” is responsible for ensuring that the 130 Liberty Street Building Phase I Deconstruction Project is accomplished in a safe manner that complies with applicable federal, state and local laws and regulations. In addition, the Contractor is responsible for meeting the

various waste management and disposal requirements of the Contract. The Contractor bears overall responsibility for implementing the Deconstruction Project.

The “Environmental Consultant” is a subconsultant of the Contractor and is responsible for providing technical support to the Deconstruction Team relating to regulatory environmental and health and safety aspects of the deconstruction.

The “Abatement Subcontractor” is a subcontractor of the Contractor and is responsible for abating asbestos-containing and contaminated materials within 130 Liberty Street Building from areas included in the Phase I Deconstruction Project. The Abatement Subcontractor will conduct a dust clean-up, limited soft strip and interior gut (including, but not limited to suspended ceiling tiles, carpeting, fiberglass insulation, loose cabling/wiring above ceilings and under raised floors, etc.) and removal of ACMF throughout the 130 Liberty Street building in accordance with the Asbestos and COPC Abatement Plan of the Phase I Deconstruction Plan. The Abatement Subcontractor is also responsible for proper disposal of wastes generated during these Phase I activities. The “Abatement Subcontractor” shall be a New York State Department of Labor (NYSDOL) and New York City Department of Environmental Protection (NYCDEP) licensed asbestos handler. The Abatement Subcontractor may also have responsibility for handling the certain potentially hazardous and/or regulated miscellaneous building components.

Hazardous waste generated at 130 Liberty during the Deconstruction will list LMDC as the generator. It will be the responsibility of the Contractor to determine the appropriate Treatment, Storage, and Disposal Facility (TSDF) to which the materials will be shipped based on waste profiles, subject to the approval of LMDC. In addition LMDC, as the current owner of the property, will file a hazardous waste notification revision with the EPA pursuant to the Resource Conservation and Recovery Act (RCRA).

## **2. BUILDING COMPONENTS**

This Plan has been developed to address the components within the Building that will be cleaned and/or removed during Phase I activities (i.e., asbestos and COPC removal abatement, and soft strip/interior gut). At this time, the following list of anticipated waste streams has been identified and will be addressed in this Plan:

- Dust
- ACBM
- Deconstruction Waste including:
  - Suspended ceiling tiles and support grid
  - Carpeting
  - Gypsum Wall Board (GWB) and associated metal studs
  - Sprayed-on fireproofing
  - Fiberglass insulation
  - Doors and frames
  - Raised flooring
  - Small scale Mechanical Electrical Plumbing (MEP) components (heating, ventilation and air conditioning [HVAC] duct, plumbing, wiring, etc.)
  - Minor exterior building components (limited window units and a small amount of column covering) to facilitate man-hoist and crane connections
  - Exterior mesh/netting currently covering the building façade
- Miscellaneous Other Building Related Regulated including:
  - Light ballasts
  - Lamps
  - Mercury switches
  - Uninterruptible Power Supply (UPS), Exide and other batteries
  - Refrigerants
  - Bagged accumulated waste
  - Fuel
  - Fire extinguishers
  - Halon fire suppression systems

The following sections will outline the proposed steps for further characterization, removal and recycling or disposal of the above-mentioned components. The classification of building components and contents is an ongoing effort and has been and will be conducted in accordance with applicable New York City, New York State and federal laws, rules, and regulations. This Plan is intended as a working document to be used during ongoing operations at the Building and will be updated as necessary as new information becomes available.

### **3. GENERAL WASTE CHARACTERIZATION STRATEGY**

Of the waste types identified above, some will require additional sampling and analysis to determine disposal routing while, for others, sufficient analytical data or other information already exists to determine disposal routing.

The TRC Preliminary Waste Characterization Study indicated the following:



Fourteen representative composite bulk dust (six samples) and anticipated waste stream/building material (eight) samples were collected on various floors of the Building and analyzed for Resource Conservation and Recovery Act (RCRA) Characteristics and full Toxicity Characteristic Leaching Procedure (TCLP) analysis. Results of the 14 samples were compared to criteria provided in 40 CFR Part 261 sections 21 through 24 and Environmental Protection Agency Publication SW 846 Chapter 7. None of the 14 samples collected exceed the criteria provided in 40 CFR Part 261 sections 21 through 23 or SW 846 Chapter 7. None of the eight building material samples exceeded the Maximum Concentration of Contamination for the Toxicity Characteristics provided in 40 CFR section 261.24. One of the six composite bulk dust samples, collected in a mechanical room on the 40<sup>th</sup> floor, exhibited levels of cadmium that exceeded 40 CFR section 261.24. This sample exceeded the cadmium maximum concentration of 1.0 mg/L with a result of 6.2 mg/L. (Additional sampling will be conducted to determine whether specific equipment or surface coatings in the 40<sup>th</sup> Floor mechanical room contributed to the cadmium levels.)

In general:

- All waste materials generated in the work areas during Phase I of the Deconstruction, including caulking, polyethylene sheeting, foam sealants, spray adhesive, spent filters, etc. will be disposed of as asbestos waste, at a minimum. (Note that non-porous items decontaminated in accordance with state and local requirements will not be treated as asbestos wastes.)
- Waste generated during the project will be characterized, managed, transported and disposed of in compliance with this Waste Sampling and Management Plan and applicable regulations.
- All dust, including but not limited to WTC dust, will be sampled and further characterized for waste classification relative to other identified contaminants (including COPCs) to determine if it must be handled as a hazardous waste in addition to being handled as an asbestos waste. In addition, an investigation of painted surfaces/mechanical equipment in the 40<sup>th</sup> floor mechanical room for the presence of cadmium in paint will be conducted to assess potential contribution of cadmium in paint to the cadmium result in dust for that location as identified in the TRC Preliminary Waste Characterization Study.
- TRC performed supplemental sampling and analysis of representative glass in the Building for the presence of selenium. Selenium was not detected in glass samples analyzed for total and TCLP selenium.

- Dust sampling for hazardous waste characteristics will be performed in advance of sampling of materials impacted by dust. If the dust classification sampling indicates that the dust is not a characteristic hazardous waste, then by extension, any non-hazardous materials potentially impacted by dust (e.g. fireproofing, GWB, carpets) would also not be hazardous. Those materials would then not be sampled for Resource Conservation and Recovery Act (RCRA) characteristics unless there is an independent concern that they might be hazardous waste due to the inherent composition of the component, subcomponent or waste stream (e.g., light ballasts which may contain PCBs, items coated with lead-based paint).
- Porous Deconstruction Waste (including any associated dust remaining on it) will be sampled and tested for waste characterization relative to identified contaminants (COPCs other than asbestos) through the collection of representative bulk and/or core samples of the materials including any settled/entrained dust as described in Section 4.2.3, only if the dust samples described in the above bullet indicate that the bulk dust meets any of the RCRA characteristics. Porous Deconstruction waste will be managed as described in Section 4.2 as well as consistent with any other waste classification that is identified by the analytical results of the waste classification sampling, if needed.
- ACBMs by their nature and definition will be disposed of in accordance with ACM disposal requirements outlined in the Asbestos and COPC Abatement Plan of the Phase I Deconstruction Plan. Asbestos-containing materials that are both ACBM and hazardous waste will be managed in accordance with the requirements for both types of waste streams.
- Non-Porous Deconstruction Waste may be managed by either of two options. The Abatement Subcontractor may choose to clean the non-porous surfaces in accordance with procedures outlined in the Asbestos and COPC Abatement Plan of the 130 Liberty Street Phase I Deconstruction Plan. The resulting cleaned material will not be sampled unless it is painted; in that instance, sampling will be performed as described in Section 4.3.3 of this Plan. Alternatively, based on field conditions and decisions regarding the use of its labor force, the Abatement Subcontractor may choose to not clean the surfaces and instead manage those uncleaned non-porous materials as asbestos waste at a minimum or otherwise, if required, as determined by the RCRA characteristics sampling.
- Miscellaneous Other Building Related Components can be characterized based on inherent composition and corresponding applicable waste standards.

For materials requiring sampling, a random sampling strategy will be used and composite samples representative of the final waste streams will be collected. The locations and frequency of samples to be combined into composite samples shall be determined by the Environmental Consultant such that a representative sample of the waste type has been obtained. All sampling personnel shall be familiar with sample collection and waste storage protocols and shall have

undergone Hazard Communication training in accordance with 29 CFR section 1910.1200 as well as being trained appropriately per the Health and Safety Plan.

The waste classification samples will be sent to a New York State Environmental Laboratory Approval Program (ELAP) certified (6 NYCRR Section 370.1(f)) and qualified laboratory for waste classification analysis (e.g., TCLP and RCRA characteristics) to determine appropriate waste classification and handling requirements (40 CFR section 262.11). Other sampling and laboratory analysis may be required by the disposal facility prior to waste acceptance. The laboratory subcontracted to perform the analysis will be also be certified through the National Environmental Laboratory Accreditation Program (NELAP) for the analytical parameters being analyzed, so there is assurance that the laboratory has passed a nationally recognized quality assurance program that includes audits, analysis of blind performance samples to check data quality and meeting certain minimum technical standards for the qualifications of testing personnel.

Upon receipt of analytical results, determination of waste classification and identification of disposal facilities, the Environmental Consultant will identify applicable regulatory requirements for waste handling, worker training and protection (e.g., specific training/certifications, personal protection equipment [PPE]), packaging (e.g., type of packaging, marking, labeling), transporting (e.g., placarding, shipping papers), waste routing and disposing of these wastes. Since waste classification samples will be collected from in-place materials, on-site storage of deconstruction wastes for waste classification will not be required. Rather, all removed materials will be placed into their applicable disposal containers/vehicles for off-site shipment. All potentially hazardous waste will be managed as hazardous waste until analytics prove otherwise.

Further detail for each of the anticipated categories of waste along with currently identified volume estimates is provided in Attachment 1. Greater detail regarding monthly estimated quantities of generated regulated hazardous waste will be provided subsequent to detailed waste characterization sampling and analysis.

If greater than 1000 kg/month of hazardous waste is generated during the deconstruction process, Contractor will comply with , among other things, 6 NYCRR Part 373, Subpart 373-3, section 373-3.3(b).

#### **4. WASTE CHARACTERIZATION SPECIFICS**

The LMDC retained Berger to conduct an Initial Building Characterization Study for the Building. These results were subsequently presented and discussed in the September 14, 2004 Initial Building Characterization Study Report (Initial Building Characterization). In addition the LMDC retained TRC Environmental Corporation to conduct a preliminary waste characterization in the Building. These results were presented and discussed in the TRC Preliminary Waste Characterization Study (Preliminary Waste Characterization).

In keeping with the procedures utilized during the Initial Building and Preliminary Waste Characterization studies, the Environmental Consultant will divide the Building into six zones for the purposes of waste characteristic sampling:

- Zone 1 - Mechanical Rooms on the 5th, 6th, 40th, and 41st Floors to include the air intakes, fan rooms, and air handling units of the HVAC system. Note, Zone 1 will be further divided into Zones 1A – 5<sup>th</sup> and 6<sup>th</sup> floors and Zone 1B – 40<sup>th</sup> and 41<sup>st</sup> floors.
- Zone 2 - Office Space located at or below the 24th Floor that may have been subjected to WTC dust entering the Building through an external breach (Gash Area), HVAC system (and possibly circulated through the HVAC system), vertical shafts, or broken windows.
- Zone 3 - Office Space located above the 24th Floor that may have been impacted by WTC dust distributed through the HVAC system, vertical shafts, or broken windows.
- Zone 4 - Gash Area that was cleaned by Deutsche Bank subsequent to September 11, 2001 to permit structural work to be performed.
- Zone 5 - Roof Area that may have been impacted by the settling or adhesion of WTC dust to the exterior surfaces.
- Zone 6 - Exterior Facade building materials.

Since the scope of Phase I work addresses interior Building issues, waste characterization will not occur at this time on materials/components associated with the exterior of the Building (Zones 5 and 6) or will occur only to a limited extent as necessary to facilitate Phase I work (e.g., exterior mesh/netting may require removal in some areas to facilitate some aspects of the Phase I deconstruction work).

These zones will be carried through the sampling scheme described in this Plan for wastes that are ubiquitous to the Phase I deconstruction activities (e.g., settled dust, ACBM, deconstruction

generation waste). For materials that are less prevalent throughout the 130 Liberty Street Building (e.g., transformers, batteries, mercury switches), waste management sampling, if required, will be performed independently, not by zones. Instead, these materials will be segregated, handled, and disposed in accordance with the applicable requirements for each specific material.

#### **4.1. ASBESTOS-CONTAINING/CONTAMINATED WASTE**

##### **4.1.1. Definition**

The Initial Building Characterization and the TRC *Supplemental Investigation Summary Report – Summary of Results of Additional Asbestos Containing Building Material (ACBM) Inspection* dated February 23, 2005 (Supplemental ACBM Inspection) identified various ACBM materials present in the Building prior to September 11, 2001. These materials are classified as “asbestos material.” In addition, the Initial Building Characterization identified settled dust with visible accumulations of less than 0.25 inch throughout the Building in locations such as the top of radiator covers, carpets, concrete floors, door frames, reception desks and HVAC units. Above the suspended ceiling (plenum), visible dust was identified on top of ceiling tiles, ceiling grids, HVAC ductwork, electrical lighting fixtures and sheetrock ceilings.

The results of the Initial Building Characterization indicated that settled dusts had detectable levels of COPCs identified by EPA which included: asbestos, crystalline silica, PAHs, dioxins, PCBs and heavy metals (e.g., barium, beryllium, cadmium, copper, lead, manganese, mercury, nickel and zinc). The concentration of the COPCs found within the settled dust samples varied throughout the Building.

WTC dust impacted materials must be handled as asbestos waste. Therefore, additional waste characterization sampling will not include asbestos as such testing is not necessary since all dust will be treated as asbestos waste. Instead, additional waste characterization testing will include analysis for TCLP and RCRA characteristics of ignitability, corrosivity, reactivity, and toxicity to determine if these materials must be managed as hazardous wastes as well as asbestos waste. All potentially hazardous waste will be managed as hazardous waste unless analytics prove otherwise. If results of waste characterization sampling and analysis dictate that waste material

must be managed and disposed of as both an asbestos and a hazardous waste, both asbestos and hazardous waste management and disposal requirements will be met. If there are conflicts between the requirements for asbestos and hazardous waste that preclude compliance with both, then the hazardous waste requirements will dictate specific management and disposal requirements.

#### **4.1.2. Components**

Settled dust, materials impacted by WTC dust, and ACBMs comprise the waste streams that will be handled as asbestos at the Site.

##### **4.1.2.1 *Settled Dust***

The Contractor will manage the disposal of all settled dust and materials impacted by dust as asbestos waste, at a minimum. As part of the waste characterization process and prior to collection of waste classification samples from building materials impacted by settled dust, additional samples of the settled dust will be collected throughout the Building to determine the proper waste disposal options. Sample analysis will be limited to RCRA characteristics (including TCLP) and exclude asbestos.

As one composite TCLP dust sample collected on the 40<sup>th</sup> floor mechanical floor exhibited a concentration of cadmium that exceeded 40 CFR section 261.24, focused testing is warranted in this area. Zone 1 sampling will be further segregated into Zone 1A specific to Mechanical floors 5/6 and Zone 1B specific to Mechanical floors 40/41. In addition, an investigation with paint chip sampling for cadmium analysis will be performed on the 40<sup>th</sup> floor to assess potential contribution of cadmium in painted surfaces/mechanical equipment to the elevated cadmium result identified in the TRC Preliminary Waste Characterization Study. This additional testing will be completed prior to any abatement work on the 40<sup>th</sup> floor. Upon receipt of the sample data, it will be determined whether the dust in the 40<sup>th</sup> floor mechanical room will be disposed of as asbestos waste only or as an asbestos and hazardous waste for chromium (or other hazardous waste classification).

Analytical results for RCRA characteristics will be used to determine if the dust in an area is non-hazardous or must also be classified and subsequently managed as hazardous waste due to the influence of other COPCs.

#### *4.1.2.2 Pre-September 11, 2001 Asbestos-Containing Building Materials*

The Initial Building Characterization and Supplemental ACBM Inspection studies performed sampling of suspect ACBM found within the Building. The results of these studies indicate the majority of the building material samples tested negative for asbestos or were not asbestos containing material by regulation, including spray-on fire-proofing, wallboard, roofing materials, fire doors and most thermal insulation for piping and ducts. Other building materials tested and listed below contained greater than one percent asbestos and are considered ACMs by regulation. Refer to the Asbestos and COPC Abatement Plan for quantities and locations.

- Floor tiles
- Sealant at cable entrances
- Mastic
- Thermal pipe insulation
- Transite wallboard
- Linoleum flooring and mastic
- Pipe insulation (various sizes)
- HVAC duct joint caulking
- Window caulking material
- Wall and joint tar paper
- Transite wall material
- Wall insulation material
- Baseboard mastic
- Sealant material over weather stripping
- Exterior caulking materials

Since these building materials have previously been determined to contain asbestos at greater than one percent by weight, the Contractor will manage these wastes as asbestos waste, at a minimum.

If settled dust sample results collected from an ACBM indicate the dust also will be classified as RCRA characteristic waste (in addition to as asbestos waste), then waste classification samples will be collected from impacted ACBM for analysis of RCRA characteristics, that were detected above regulatory limits in the dust. The results of the bulk ACBM waste classification samples

will be used to determine if the ACBM must also be classified and subsequently managed as hazardous waste.

Should the Contractor or Subcontractors come upon any materials for which proper material sampling does not exist, the Owner, Contractor and Environmental Consultant shall be immediately contacted to arrange for appropriate testing.

#### **4.1.3. Analytical Methods and Sample Collection Frequency**

The sampling strategy for each main category of asbestos-containing/contaminated material will be described in the following subsections of this Plan.

Analytical methods for the RCRA waste characteristics are as follows. Where more than one method is identified, each analytical method is valid per the regulations. All allowable methods are included in this plan to allow for flexibility in selecting an analytical laboratory(ies).

- The characteristic of ignitability carries the RCRA waste code of D001, and may be analyzed for using American Society of Testing Materials (ASTM) method D-93-79 or D-93-80 or D-3278-78.
- The characteristic of corrosivity carries the RCRA waste code of D002, and may be analyzed using Method 9045C as set forth in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846. SW-846 method 9040 (whether B or C) is for aqueous wastes and multiphase waste where the aqueous phase constitutes at least 20% of the total volume of the waste; 9045C is for soils and waste samples where the waste may be solids, sludges, or non-aqueous liquids. The aqueous phase must be less than 20% of the total volume of the waste.
- The characteristic of reactivity carries the RCRA waste code of D003, and may be analyzed using the analytical methods outlined in sections 7.3.3.2 or 7.3.4.2 of "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846. The referenced sections are from SW-846 Chapter Seven: Characteristics Introduction and Regulatory Definitions. They are specifically for Reactivity. Chapter Seven was revised to reflect the withdrawal of the reactive cyanide and sulfide guidance in sections 7.3.3 ("Interim Guidance for Reactive Cyanide") and 7.3.4 ("Interim Guidance for Reactive Sulfide"), and to replace certain characteristic explanatory text with referrals to the regulations themselves. This change can be found in the Proposed Update IIIB to SW-846.
- The characteristics of toxicity carry the RCRA waste codes of D004 through D043. Each waste code identifies the specific chemical component for which the waste is classified as toxic. The samples to be analyzed for the characteristic of toxicity must be prepared



using the Toxicity Characteristic Leaching Procedures (TCLP) per Method 1311 in “Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,” EPA Publication SW-846. The analytical method applied to the resulting leachate depends on the type of chemical being analyzed for, as follows:

- Volatile organic compound (VOC) toxic constituents will be analyzed by Method 8260B of “Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,” EPA Publication SW-846. VOC toxic constituents include benzene (D018), carbon tetrachloride (D019), chlorobenzene (D021), chloroform (D022), 1,4-dichlorobenzene (D027), 1,2-dichloroethane (D028), 1,1-dichloroethylene (D029), methyl ethyl ketone (D035), tetrachloroethylene (D039), trichloroethylene (D040), and vinyl chloride (D043).
- Semivolatile organic compound (SVOC) toxic constituents will be analyzed by Method 8270C of “Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,” EPA Publication SW-846. SVOC toxic constituents include 2,4-dinitrotoluene (D030), hexachlorobenzene (D032), hexachlorobutadiene (D033), hexachloroethane (D034), o-cresol (D023), m-cresol (D024), p-cresol (D025), cresol (D026), nitrobenzene (D036), pentachlorophenol (D037), pyridine (D038), 2,4,5-trichlorophenol (D041), and 2,4,6-trichlorophenol (D042).
- Pesticide toxic constituents will be analyzed by Method 8081A of “Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,” EPA Publication SW-846. Pesticide toxic constituents include chlordane (D020), endrin (D012), heptachlor and its epoxide (D031), lindane (D013), methoxychlor (D014), and toxaphene (D015).
- Herbicide toxic constituents will be analyzed by Method 8151A of “Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,” EPA Publication SW-846. Herbicide toxic constituents include 2,4-D (D016) and 2,4,5-TP (also known as Silvex, D017).
- Mercury (D009) will be analyzed by Method 7470A (aqueous samples) of “Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,” EPA Publication SW-846.
- Metals/inorganics other than mercury will be analyzed by Method 6010B of “Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,” EPA Publication SW-846. These constituents include arsenic (D004), barium (D005), cadmium (D006), chromium (D007), lead (D008), selenium (D010), and silver (D011).

Generally, building components would not be considered as possible RCRA characteristic wastes except for the potential that exists due to impacts by WTC dust. The notable exceptions to this would be painted surfaces, which would typically be sampled for TCLP lead, cadmium and chromium analysis as well as miscellaneous materials containing hazardous components prior to WTC impact (such as transformers, ballasts, lamps, etc.).

The results of RCRA characteristic analyses, the classification of the material based on historical information, as well as the material's status as presumptively asbestos-contaminated, will be used as the basis for the Waste Profile for the particular waste stream.

#### *4.1.3.1 Waste Characteristics Sampling Frequency for Settled Dust*

Three composite samples of the dust will be collected from within each zone (Zone 1A, 1B, Zone 2, Zone 3, and Zone 4 only) as identified in Section 4, above. Each composite sample will consist of, at a minimum of four grab samples per composite, but the number of grab samples may increase based on field conditions. The composite samples will be analyzed for all RCRA characteristics as identified in Section 4.1.3 of this Plan to determine if the dust must be managed as RCRA waste (as well as asbestos waste).

The Environmental Consultant will collect composite samples that are representative of the settled dust. The representative composite samples will consist of a minimum of 400 grams of material to provide adequate sample size necessary for chemical analysis.

In addition to dust sampling, paint chip sampling of painted surfaces for cadmium analysis will be performed on the 40<sup>th</sup> floor to assess potential contribution of cadmium in painted surfaces/mechanical equipment to the elevated cadmium result identified in the Preliminary Waste Characterization Study. Paint chip samples will be collected and submitted to a certified independent laboratory for analysis.

A unique sample identifier for each sample along with requested analytical parameters will be tracked and recorded using a Chain-of-Custody (COC) form. Sample management, labeling and quality assurance/quality control (QA/QC) procedures are outlined in Attachment 2 to this Plan.

#### *4.1.3.2 Waste Characteristics Sampling Frequency for Asbestos-Containing Building Materials*

Waste classification samples for RCRA characteristics of ACBM will only be collected if the analytical sampling results for the dust samples indicate that the dust exceeds the regulatory limits for RCRA characteristic waste or there is another reason to suspect the ACBM is hazardous (i.e. painted with suspected lead-based paint). In those instances, the sample analysis will be limited to only those RCRA characteristics identified in the dust or otherwise suspected.

For porous distinct ACBM identified in the previous studies (e.g., sealant at cable entrances, mastic, thermal pipe insulation, and mastic, pipe insulation, HVAC duct joint caulking, window caulking material, wall and joint tar paper, wall insulation material, sealant material over weather stripping, and exterior caulking material), three composite samples will be collected from within each zone (Zone 1, Zone 2, Zone 3, and Zone 4 only) as identified in Section 4, above. Each composite sample will consist of a minimum of four grab samples; however, the number of grab samples per composite may be increased based on field conditions. Each grab sample will consist of a bulk or core sample that collects both the ACBM and any entrained dust. The samples will be analyzed for RCRA characteristics as identified in Section 4.1.3 of this Plan to determine if these materials must be managed as RCRA waste (in addition to being managed as asbestos waste).

The Environmental Consultant will collect composite samples that are representative of each type of ACBM. The representative composite samples will consist of a minimum of 400 grams of material to provide adequate sample size necessary for chemical analysis. A unique sample identifier for each sample along with requested analytical parameters will be tracked and recorded using a COC form.

#### **4.1.4. Disposal.**

##### ***4.1.4.1 Settled Dust and Materials Impacted by WTC Dust***

Settled dust, and materials presumed to have been impacted by WTC dust, will be managed as asbestos waste, at a minimum. Should results of the waste classification sampling described in Section 4.1.3 and 4.1.3.1 of this Plan indicate that the waste classification sample results exceed the regulatory threshold for one or more RCRA characteristics, the dust represented by the sample(s) that exceeded the threshold(s), as well as materials impacted by such dust, will be managed as both a RCRA waste of the appropriate waste code and asbestos waste. Potential disposal facilities are identified in Section 7 of this Plan. All final disposal facilities must be approved by the Owner before waste is shipped.

Representative TCLP testing of the dust in the 40<sup>th</sup> floor Mechanical room will occur prior to disposal. Until results of that additional sampling and analysis are available, the dust in the 40<sup>th</sup>

Floor Mechanical room will be presumed hazardous for cadmium, in addition to being an asbestos waste.

#### *4.1.4.2 Asbestos-Containing Building Material*

As part of the Phase I Deconstruction Project, a New York State Licensed Asbestos Abatement Contractor, prior to building demolition, will remove the ACBM identified throughout the Building. All ACBM will be removed, packaged, transported, and disposed of in accordance with the Asbestos Abatement Plan.

Should results of the waste classification sampling described in Section 4.1.3 and 4.1.3.2 of this Plan indicate that the waste classification sample results exceed the regulatory threshold for one or more RCRA characteristics, the waste stream represented by the sample that exceeded the threshold will be managed as both a RCRA waste of the appropriate waste code, as well as asbestos waste.

The disposal of all removed ACBM will be at an approved, licensed and permitted asbestos landfill. Potential disposal facilities are identified in Section 7 of this Plan. All final disposal facilities must be approved by the Owner before waste is shipped.

## **4.2. Porous Deconstruction Waste**

### **4.2.1. Identification**

Porous deconstruction wastes are those interior building components that have porous surfaces and that have not been identified as ACBM. In addition, while the netting is an exterior material which is, for the most part, part of Phase II deconstruction activities – some areas of netting at a minimum will need to be removed to facilitate Phase I deconstruction activities (man-hoist and crane erection). Exterior netting removed during Phase I activities is included in the porous deconstruction waste category.

### **4.2.2. Components**

At this time, the following Porous Deconstruction waste streams have been identified as being associated with the Phase I portion of the deconstruction process:

- Suspended ceiling tiles
- Carpeting
- Fiberglass Insulation
- GWB
- Sprayed-on fireproofing
- Exterior mesh/netting currently covering the building façade that will be removed during Phase I

All porous materials will be disposed of as asbestos waste at a minimum. Should results of the waste classification sampling indicate that a porous material exceeds the regulatory threshold for one or more RCRA characteristics, the porous materials that exceeded the threshold(s) will be managed as both a RCRA waste of the appropriate waste code and asbestos waste. If sample results indicate RCRA characteristics in excess of regulatory requirements for disposal as asbestos waste, then further characterization for segregation of the porous materials will be performed. Exterior mesh/netting will require characterization prior to disposal. Representative samples of the mesh/netting will be collected and analyzed for RCRA, TCLP characteristics and asbestos. The results of the sampling will determine the final disposition of the material.

#### **4.2.3. Porous Deconstruction Waste Sampling Frequency**

Waste classification samples of Porous Deconstruction Waste for RCRA characteristics will only be collected if the analytical sampling results for the dust samples indicate that the dusts exceeded the regulatory limits for RCRA characteristic waste. In that instance, only those RCRA characteristics identified in the dust will be analyzed for in the samples collected from the porous deconstruction waste/dust matrix.

The Environmental Consultant will collect composite samples that are representative of each type of porous deconstruction generated waste. The representative composite samples will consist of a minimum of 400 grams of material to provide adequate sample size necessary for chemical analysis. A unique sample identifier for each sample along with requested analytical parameters will be tracked and recorded using a COC form.

Sampling frequencies for each porous deconstruction waste stream are described in the following sections.

#### **4.2.3.1**            *Waste Sampling Frequency for Suspended Ceiling Tiles, Gypsum Wallboard, Carpeting and Fiberglass Insulation*

For each of these materials (suspended ceiling tiles, carpeting and fiberglass insulation), three composite samples will be collected from within each zone (Zone 1, Zone 2, Zone 3, and Zone 4 only) as identified in Section 4 above. Each composite sample will consist of a minimum of four grab samples; however, the number of grab samples per composite may be increased based on field conditions. Each grab sample will consist of a bulk sample that collects both the porous deconstruction waste and any entrained dust on/in the porous deconstruction waste.

#### **4.2.3.2**            *Waste Sampling Frequency for Sprayed-on Fireproofing*

The fireproofing will be managed as asbestos waste without additional sampling, unless bulk dust samples indicate the dust exceeds one or several RCRA characteristics. In that instance, three composite samples will be collected from within each zone (Zone 1, Zone 2, Zone 3, and Zone 4 only) as identified in Section 4 above. Each composite sample will consist of a minimum of four grab samples; however, the number of grab samples per composite may be increased based on field conditions. Each grab sample will consist of a bulk sample that collects both the dust and the spray-on fireproofing; analysis will be limited to those RCRA characteristic(s) that were determined to be of concern in the bulk dust samples.

#### **4.2.3.3**            *Waste Sampling Frequency for Exterior Mesh/Netting*

Waste classification samples will be collected from the netting for both RCRA characteristics and asbestos. One composite sample, comprised of a minimum of four grab samples, will be collected from three of the cardinal directions (north face, east face, and west face) of the building, excluding the south face where there is no netting. Each grab sample will be collected from the ground-floor level. The results of the RCRA characteristic and asbestos analysis would establish the anticipated disposal conditions for the netting removed as part of the Phase I and, subsequently, the Phase II Deconstruction.

#### **4.2.4. Disposal**

As described above, the suspended ceiling tiles, carpeting, gypsum wall board, sprayed on fireproofing, exterior netting, and fiberglass insulation will be disposed of as asbestos waste

unless RCRA characterization sampling (if required based on dust sample results) indicates that the material must be managed as RCRA hazardous. If the material is determined to be RCRA hazardous, then it will be handled, packaged, labeled, transported, and disposed of in accordance with appropriate regulatory requirements determined to apply to the waste.

The waste stream(s) (except decontaminated non-porous materials) will be managed as asbestos waste, and material will be removed, packaged, transported and disposed of in accordance with the Asbestos and COPC Abatement Plan, New York State and New York City Regulations, and relevant variances. All removed porous building materials will be disposed at an approved, licensed and permitted asbestos landfill. Potential disposal facilities are identified in Section 7 of this Plan. All final disposal facilities must be approved by LMDC before waste is shipped.

### **4.3. NON-POROUS DECONSTRUCTION WASTE**

#### **4.3.1. Characterization/Identification**

Non-porous building materials, by definition, will not have WTC dust entrained within the material matrix. Therefore, if non-porous building materials are sufficiently wet-wiped/HEPA vacuumed in accordance with the Asbestos and COPC Abatement Plan to remove dust, this material would not be classified as asbestos waste. By extension, if dust is removed, any COPCs associated with WTC dust will also be removed, thereby eliminating the need to perform waste sampling for RCRA characteristics associated with WTC dust. For non-porous deconstruction waste, only those components that are painted will be sampled; the samples will be analyzed for the RCRA characteristic of TCLP lead, cadmium, and chromium to determine if the painted surfaces would cause the material to be classified as RCRA hazardous.

In addition, TRC collected nine (9) TCLP for selenium and three (3) total selenium samples of glass at 130 Liberty Street. Glass included tinted vision glass, spandrel glass and plate glass. Selenium was not detected in any of the twelve (12) glass samples analyzed.

If the Abatement Subcontractor chooses to dispose of non-porous deconstruction waste without first wet-wiping/HEPA vacuuming, then the non-porous deconstruction waste would be classified as asbestos waste as discussed above. In that case, the material waste would also have to be classified and managed based on the settled dust RCRA characterization results due to the

fact that the dust will remain on its surface; however, the core material itself need not be tested as, due to its non-porous nature, the dust will not have impacted the matrix of the material/component. The results of RCRA characteristic analyses as well as the unabated material's status as asbestos waste will be used as the basis for the Waste Profile for the particular waste stream.

#### **4.3.2. Components**

At this time, the following non-porous deconstruction waste streams have been identified as being associated with the Phase I portion of the deconstruction process:

- Raised flooring
- Small scale MEP components (HVAC duct, plumbing, conduit, wiring, etc.)
- Doors and door frames
- Suspended ceiling support tracking/grid
- Minor exterior building components - select, limited window units and a small amount of column covering

#### **4.3.3. Analytical Methods and Sample Collection Frequency**

For cleaned (wet-wiped/HEPA-vacuumed) non-porous deconstruction waste, samples will not be collected unless the non-porous components are painted and to be disposed of. Cleaned painted scrap metals that are recycled are exempt from the below described waste characterization sampling and analysis. For non-porous components that are painted, one composite sample made up of a minimum of four grab samples of each distinct painted non-porous building component (based on paint color, building component type and zone in which the component is located) will be collected for RCRA lead, chromium and cadmium analysis. Each grab sample will be collected as a core sample (i.e., both painted surface and building component matrix) and sent to the lab under COC for analysis.

#### **4.3.4. Disposal**

Cleaned, unpainted, non-porous deconstruction waste will be classified, managed and recycled/disposed of as non-hazardous construction and demolition (C&D) debris. Likewise,



cleaned, painted, non-porous deconstruction waste with TCLP lead, chromium and cadmium results of less than applicable standards would also be classified, managed and recycled/disposed of as non-hazardous C&D debris.

Cleaned, painted, non-porous deconstruction waste with TCLP lead, chromium and cadmium results greater than applicable standards would be classified, managed and disposed of as hazardous waste with the toxicity characteristic of lead, chromium and/or cadmium.

Non-cleaned, non-porous deconstruction waste will be disposed of as asbestos waste at a minimum for the reasons indicated previously. Should results of the settled dust classification sampling indicate that the dust results exceed the regulatory threshold for one or more RCRA characteristics, the waste will be managed as both a RCRA waste of the appropriate waste code as well as asbestos waste.

Potential disposal facilities are identified in Section 7 of this Plan subject to approval by LMDC prior to usage.

#### **4.4. MISCELLANEOUS BUILDING COMPONENTS**

##### **4.4.1. Definition/Characterization**

Miscellaneous building components, as listed in Section 2 above have been identified throughout various portions of the Building. Prior to the commencement of the Phase I Deconstruction activities, the Environmental Consultant will conduct a detailed survey of the Building to confirm that the current inventory is complete and accurate and to determine/classify Miscellaneous Building Components contained in the Building.

All characterization information obtained during the detailed survey will be documented in a spreadsheet. This spreadsheet will include an inventory by major category and will be used to help determine sampling requirements, specific handling requirements (including applicable worker training and/ or licensing requirements), disposal classification, disposal status and disposal procedure.

With few exceptions, as noted below, these components will not require any additional characterization prior to handling, packaging, removal and/or disposal. Instead, these materials

can be classified based upon their inherent composition. Based on the treatment of the settled dust as an asbestos waste, the non-porous miscellaneous building components may be cleaned (wet-wiped/HEPA vacuumed) prior to disposal.

Any material classified as “unknown” during the survey will require sample collection and analysis for full RCRA characteristics in accordance with 40 CFR Part 261 (as described in Section 4.1.3 of this Plan) and will be disposed of based upon the results of that sampling and the nature of the waste. If the material is classified as RCRA hazardous waste, additional sampling may be required for “total” concentrations of specific contaminants to determine whether the waste may be land filled or is “land banned”; the contaminants to be analyzed for will depend on the specific waste classification of the waste.

Further detail on the anticipated materials is provided below.

#### **4.4.2. Components**

##### **4.4.2.1           *PCB Light Ballasts and other PCB Wastes***

###### **4.4.2.1.1 Definition**

PCBs are a family of man-made chemical compounds that do not exist in nature, but are manufactured by the replacement of hydrogen atoms on the biphenyl molecule by chlorine. Because of their physical properties, PCBs are commonly found in electrical equipment that requires dielectric fluid such as transformers and capacitors as well as hydraulic machinery, vacuum pumps, compressors and heat exchanger fluids. Other uses include fluorescent lighting ballasts.

###### **4.4.2.1.2 Characterization/Analytical Method**

During deconstruction activities, as ballasts are removed from lighting fixtures, the Abatement Subcontractor shall clean the surfaces of dust and containerize ballasts for disposal as PCB waste. All ballasts, including those labeled “No PCB” will be containerized for disposal as PCB waste due to the presence of potting material. For potentially PCB-containing equipment other than ballasts, PCB samples may be required to determine whether the dielectric fluid contains more than 50 parts per million (ppm) PCBs, which would make the equipment subject to the

PCB regulations. SW-846 Method 8082, Analysis of Polychlorinated Biphenyls by Gas Chromatography is specified by regulation for determining the concentration of PCBs in wastes.

#### 4.4.2.1.3 Components

Materials that have the potential to be PCB-containing (e.g., electric oil-filled switches, transformers, capacitors, etc.) will be tested for PCB concentration. If 50 ppm or more PCBs are detected in the waste stream the materials will be classified as both federal Toxic Substances Control Act (TSCA) waste and New York State hazardous waste. Potential PCB wastes will be sampled in accordance with TSCA (40 CFR Part 761). At the time this Plan was being developed it was not possible to determine the number of samples to be collected since the detailed waste survey has not yet been performed.

#### 4.4.2.1.4 Disposal

Ballasts (all assumed to contain PCBs) shall be handled, packaged and labeled as required for disposal as a PCB regulated waste. All hauler, transportation and disposal facility requirements shall also conform to the requirements for this category of waste.

Shipments of PCB waste must be in properly labeled and marked containers, the waste must be shipped under a properly executed manifest and Land Disposal Restriction (LDR) form, the transporter must have a valid EPA Identification number and must have a valid New York State Part 364 transporter permit as well as the latest version of U.S. Department of Transportation's Emergency Response Guide (2004). The vehicle in which PCB wastes are being shipped must be properly placarded and marked to reflect that it is transporting PCBs and must also be marked with the New York State waste transporter permit number on its sides and rear.

Disposal facilities that accept PCB wastes must have an EPA Identification number and have received TSCA authorization from the EPA and any additional state permits for the disposal/management of PCBs applicable to the state in which the facility is located. The disposal facility must comply with all manifesting requirements specified in the regulations and must prepare a certificate of destruction and send it to the generator or the generator's agent.

For fluids sampled, wastes containing less than 50 ppm PCBs are generally not considered PCB wastes and would therefore not be classified as TSCA waste nor would they be classified as New York hazardous waste unless they were classified as a hazardous waste for a component other than PCBs. Electrical equipment containing 50 ppm or more but less than 500 ppm PCBs is considered PCB-contaminated electrical equipment. Electrical equipment containing 500 ppm or more PCBs is considered PCB equipment. The waste disposal options available depend on the type of equipment and the PCB concentration found in the equipment.

Once the presence/absence of PCBs has been confirmed, the specific disposal requirements for the equipment based on the concentration and equipment type will be identified. Disposal will be consistent with the regulations set forth at Title 40 Code of Federal Regulations Part 761 (40 CFR Part 761) and Title 6 New York Code of Rules and Regulations Chapter 371.4(e) [6 NYCRR Section 371.4(e)].

#### 4.4.2.2 *Universal Waste*

##### 4.4.2.2.1 Definition

40 CFR Part 273 and 6 NYCRR Section 374.3 establish requirements for managing universal wastes. Universal wastes are those wastes that would reasonably be expected to be classified as hazardous wastes but, due to their universal use in industrial and residential properties, regulations were created that would ensure that they were managed in a manner that prevented harm to the environment while reducing the regulatory burden on generators of these wastes.

Universal wastes include the following waste types:

- (1) Batteries as described in 40 CFR section 273.2 and 6 NYCRR Section 374-3.1(b)
- (2) Pesticides as described in 40 CFR section 273.3 and 6 NYCRR Section 374-3.1(c)
- (3) Thermostats as described in 40 CFR section 273.4 and 6 NYCRR Section 374-3.1(d)
- (4) Lamps as described in 40 CFR section 273.5 and 6 NYCRR Section 374-3.1(e)

It is assumed that pesticides will not be generated during the 130 Liberty deconstruction project; the requirements for mercury switches and batteries will be discussed in the following sections.

It should be noted that universal waste may be managed according to hazardous waste regulations; however, it is assumed that all materials that are eligible for management as either universal wastes or hazardous waste will be managed as universal waste.

#### 4.4.2.2.2 Analytical Method

Per the universal waste regulations, analytical testing is not required to determine classification as universal waste.

#### 4.4.2.2.3 Disposal

All hauler, transportation and disposal facility requirements shall also conform to the requirements for this category of waste.

Anyone who generates universal waste is either classified as a large-quantity handler of universal waste (accumulates 5,000 kilograms or more aggregate of all universal waste at any one time) or a small-quantity handler of universal waste (accumulates less than 5,000 kilograms of universal waste). Prior to accumulating 5,000 kilograms of universal waste at any given facility/location, written notification must be sent to the EPA to apply for an EPA hazardous waste identification number. Universal waste handlers may only send or transport universal waste to another universal waste handler or to a destination facility permitted to accept that specific type of universal waste. 40 CFR Part 273 and 6 NYCRR Section 374-3 establish the specific storage, management, shipping and recordkeeping requirements for universal waste.

### 4.4.2.3 *Universal Waste –Lamps*

#### 4.4.2.3.1 Definition

See Section 4.4.2.2.1 of this Plan.

#### 4.4.2.3.2 Components

Anticipated lamp types generated during the 130 Liberty Street Building Phase I Deconstruction Project include fluorescent lamps, neon lamps, high-pressure sodium lamps, mercury vapor lamps and metal halide lamps.

#### 4.4.2.3.3 Disposal

All collected lamps shall be handled, packaged and labeled as required for disposal as a universal waste. All hauler, transportation and disposal facility requirements shall also conform to the requirements for this category of waste.

#### 4.4.2.4 *Universal Waste – Thermostat Mercury Switches*

##### 4.4.2.4.1 Definition

See Section 4.4.2.2.1 of this Plan.

##### 4.4.2.4.2 Components

Mercury switches are commonly used in thermostats. Mercury-bearing switches use mercury as an electrically conductive switching mechanism in electrical system components.

##### 4.4.2.4.3 Analytical Method

Per the universal waste regulations, analytical testing for thermostats is not required to determine classification as universal waste. A hazardous waste determination shall be made for all non-thermostat mercury switches prior to disposal.

##### 4.4.2.3.4 Disposal

All collected thermostat mercury switches shall be handled, packaged and labeled as required for disposal as universal waste. All hauler, transportation and disposal facility requirements shall also conform to the requirements for this category of waste.

Anyone who generates universal waste is either classified as a large-quantity handler of universal waste or a small-quantity handler of universal waste. Prior to accumulating 5,000 kilograms of universal waste at any given facility/location and thus changing from small-quantity handler to large-quantity handler classification, written notification must be sent to the EPA to apply for an EPA hazardous waste identification number. Universal waste handlers may only send or transport universal waste to another universal waste handler or to a destination facility permitted to accept that specific type of universal waste. 40 CFR Part 273 and 6 NYCRR Section 374-3

establish the specific storage, management, shipping and recordkeeping requirements for universal waste.

#### 4.4.2.5 *Universal Waste - Batteries*

##### 4.4.2.5.1 Definition

See Section 4.4.2.2.1 of this Plan.

##### 4.4.2.5.2 Components

Anticipated battery types generated during the 130 Liberty Street Building Phase I Deconstruction Project include lead acid batteries, nickel cadmium (NiCad) batteries, lithium batteries and silver oxide batteries as well as any other batteries present in the building.

##### 4.4.2.5.3 Analytical Method

Per the universal waste regulations, analytical testing is not required to determine classification as universal waste.

##### 4.4.2.5.4 Disposal

All collected batteries shall be handled, packaged and labeled as required for disposal as a universal waste. All hauler, transportation and disposal facility requirements shall also conform to the requirements for this category of waste.

Anyone who generates universal wastes is either classified as a large-quantity handler of universal waste or a small-quantity handler of universal waste. Prior to accumulating 5,000 kilograms of universal waste at any given facility/location, written notification must be sent to the EPA to apply for an EPA hazardous waste identification number. Universal waste handlers may only send or transport universal waste to another universal waste handler or to a destination facility permitted to accept that specific type of universal waste. 40 CFR Part 273 and 6 NYCRR Section 374-3 establish the specific storage, management, shipping and recordkeeping requirements for universal waste.

#### 4.4.2.6 *Used Oil*

Used oil must be collected, stored, managed and disposed of in accordance with the regulations found at 6 NYCRR Section 374-2, Standards for the Management of Used Oil

#### 4.4.2.7 *Refrigerant-Containing Equipment*

Non-hazardous construction and demolition materials may contain regulated refrigerant including, but not limited to, possible refrigerant in the air conditioning and refrigeration systems. The refrigerant will be removed prior to disposal. Material would be considered an appliance and is excluded from definition of C&D debris. For refrigerant-containing equipment the following procedures shall be followed:

- Verify refrigerant has been removed. If not, a licensed refrigerant removal service must be called to properly dispose of refrigerant.
- Equipment that contains refrigerant and will be staged in a clearly demarcated on-site area until the refrigerant has been removed by a licensed refrigerant removal service.
- Remove door on refrigerators and freezers.

#### 4.4.2.8 *Bagged Accumulated Waste*

The building currently contains miscellaneous bagged accumulated waste, primarily associated with previous studies conducted by the previous building owner and its insurers, as well as decontamination chamber and spandrel glass removal generated waste. These materials will be disposed of as asbestos-containing wastes.

#### 4.4.2.9 *Diesel Fuel*

Diesel fuel need not necessarily be viewed as a waste. Any remaining diesel fuel may be used to run equipment on site. If not used on site, other recycling opportunities will be explored. If the diesel fuel is to be transported off site as waste, it must be handled, packaged, hauled, transported and recycled as regulated oily non-hazardous material.



#### 4.4.2.10 *Fire Extinguishers*

If discharged, spent fire extinguishers can be treated as normal C&D debris. If fire extinguishers have not been discharged, the manufacturer of the fire extinguisher should be contacted for the proper discharge and disposal method. Alternately, local fire department(s) may be contacted to determine if they would like to use the fire extinguishers in volunteer or community training exercises.

#### 4.4.2.11 *Halon Fire Suppression Systems*

This information serves as guidance, but may need to be reevaluated prior to recovery and management of Halon from the fire suppression systems in the 130 Liberty Street Building.

##### 4.4.2.11.1 Definition

Halon is the manufacturer's registered name for a class of low-molecular weight halogenated organic compounds that have been classified by EPA as Ozone Depleting Substances (ODSs). Specifically, Halon-1211, Halon-1301, and Halon-2402 are identified as Group II ODSs in the Clean Air Act. Under the Clean Air Act, venting refrigerant ODSs is prohibited. These types of materials must be recycled to the maximum extent possible. Although Halon in a fire suppression system is not classified as a refrigerant, and thus is not included in the prohibition, these materials should be managed in a way consistent with refrigerants of similar chemical composition.

##### 4.4.2.11.2 Characterization/Analytical Method

Analytical sampling for disposal parameters is not necessary since any recovered Halon will be recycled. Characterization of the specific Halon formulation will be performed by obtaining information from the existing Halon fire suppression system within the 130 Liberty Street Building.

##### 4.4.2.11.3 Components

Halon may be present in two forms: (1) within cylinders connected to the fire suppression piping systems, and (2) dispersed throughout the piping systems. A determination will have to be made

as to whether the fire suppression system meets the regulatory definition of high-pressure or low-pressure system to determine the certification requirements for the technician who will be contracted to recover the Halon from the system. The Contractor must assure that an EPA-certified technician, with the appropriate level of certification for the system, will be utilized for recovery and management of Halon from the fire suppression system.

#### 4.4.2.11.4 Disposal

Since recovered Halon may not be released to the atmosphere and hazardous materials disposal facilities are prohibited from accepting pressurized gases, management of recovered Halon must be through direct recycling or reclamation. Refrigerants may only be sold to certified technicians and only EPA-certified reclaimers are permitted to reclaim recovered ODSs. Reclaimers must return the ODSs to the purity level specified in the applicable American Refrigerant Institute Standards, at which point they may sell the reclaimed material to an EPA-certified technician.

Unused Halon removed from the fire suppression system in their original cylinders may be sold to EPA-certified technicians or may be managed/reclaimed by an EPA-certified reclaimer as a method of disposal. Halon recovered from the fire suppression system shall be managed through an EPA-certified reclaimer as a method of disposal.

#### 4.4.2.12 *Miscellaneous Stored Containers*

##### 4.4.2.12.1 Background/Definition

No miscellaneous stored containers have been identified within the building. However, if containers of materials are encountered during the course of work, arrangements will be made to have these materials packaged, labeled, and marked by waste classification in accordance with appropriate RCRA and both New York State Department of Transportation (DOT) and U.S. DOT requirements. These items will be “lab packed” or alternatively transferred to larger containers with other similar wastes per waste classification in preparation for transportation.

##### 4.4.2.12.2 Characterization/Analytical Method

Initial characterization may be identified by reviewing any existing labels and/or Material Safety Data Sheets (MSDSs) for each identified material if they can be obtained. Specific requirements beyond initial characterization are found in the applicable federal, state and city solid and hazardous waste and DOT regulations. The specific regulatory programs applicable to specific waste types have not yet been determined since the detailed waste survey has not yet been conducted.

#### 4.4.2.12.3 Components

Components of the Miscellaneous Stored Containers of Product and/or Waste category include antifreeze, cleaning solutions, paint, corrosion inhibitor, neutralizing acid, coolant, water treatment, oxidizer, joint compound, absorbent material and other various materials which may be found in the building that do not fit into the other defined waste categories as described within this Plan.

#### 4.4.2.12.4 Disposal

The identified materials will be handled, packaged, labeled transported and disposed of in accordance with the appropriate regulatory requirements for the waste type determined to apply to that waste stream. A generator who transports or offers for transportation hazardous waste for off-site treatment, storage or disposal must prepare a hazardous waste manifest. Non-hazardous wastes must be shipped under a shipping paper. Items that are “lab packed” are often sent to a permitted incinerator or another approved treatment, storage and disposal facility (TSDF) for disposal

## **5. STORAGE**

An enclosed, locked area will be maintained on site for the storage of waste material prior to off-site disposal. Waste streams will be separated and stored as described below. The waste storage area will be enclosed and located away from the point of waste generation. Incompatible wastes will not be stored next to each other. Containers or incompatible wastes will be segregated. All containers in the waste storage area will have proper labeling, which included information such as waste type and accumulation start date. Weekly inspections will be conducted to confirm that containers are properly stored. The condition of each individual container, any secondary

containment within the storage area, and posted signs will be inspected. Each inspection will be documented on a weekly inspection log to demonstrate compliance.

### **5.1. Hazardous Waste**

Hazardous waste will be placed in containers (e.g., USDOT approved drums, bags, roll-off containers) and transferred to the waste storage area prior to off-site disposal. Drums will be closed at all times during storage, except when waste is added or removed. Drums will be stored in manner to prevent ruptures or leaks in the waste storage area. Containers will be inspected to ensure containers are not over packed or leaking.

Hazardous waste may be kept in the waste storage area for up to 90 days from the accumulation start date. If the generator status should change from large quantity generator to small quantity generator, then up to 13,200 pounds of waste may be stored in the waste storage area for up to 180 days from the accumulation start date.

### **5.2. Universal Waste**

Universal waste will be placed in containers and stored in the waste storage area prior to transport to the off-site disposal facility. Duration of accumulation of universal waste shall not exceed one year after the accumulation start date documented on the container.

### **5.3. Asbestos**

Waste containing asbestos will be wet down to prevent visible emissions of asbestos dust into the air. The asbestos waste will be sealed while wet in a leak-tight container. A supply of leak tight containers will be kept in the waste storage area to provide adequate repackaging if a break in the container should occur. Storage area shall be maintained under a negative pressure ventilation system. Daily inspections of the waste storage area shall be required.

Storage of asbestos waste will not exceed 50 cubic yards. Authorization from the New York City Department of Sanitation (NYCDOS) and additional requirements, per code, will be required if accumulation of asbestos is anticipated to be greater than 50 cubic yards. Containers holding asbestos waste will be inspected daily to ensure no visible emissions of asbestos dust in the air or breaks in the container.

## **5.4 PCBS**

Non-leaking waste PCB waste will be placed in containers and maintained in the waste storage area prior to disposal. Any leaking PCB articles or containers will be transferred to properly marked, non-leaking containers or an over-pack containers. Leaking waste PCB articles and equipment that cannot be transferred to a non-leaking container or over pack container will be placed in a containment pad with sorbent material and tarp. PCB bulk product waste, including fluorescent light ballasts, may be kept in the waste storage area up to 180 days.

## **6. TRANSPORTATION REQUIREMENTS**

All waste materials will be transported in accordance with applicable local, state and federal DOT regulations including, but not limited to, bills of lading, manifests, placards, etc. All wastes will be shipped using properly permitted vehicles operated by drivers with Commercial Drivers Licenses (CDLs) and Hazardous Materials endorsements. All hazardous waste will be shipped using transporters with RCRA identification numbers. The actual modes of transportation to be utilized will be determined following the identification of all anticipated waste streams and will take into account the location and distance to the selected disposal facility as well as cost considerations. Site-specific transportation requirements are in the process of being developed. Once they have been finalized, those requirements will be appended to this plan and made a part of this plan by reference. All off-site shipments of waste will adhere to the site-specific transportation requirements. As required by NYSDEC (6 NYCRR Part 364) all hazardous and asbestos wastes will be transported using Part 364 permitted haulers. All haulers will be required to submit for approval and follow a Spill Contingency Plan.

## **7. TRAVEL ROUTES**

Travel route(s) will be determined following discussion with the appropriate regulatory agencies (e.g., New York City Department of Transportation). The selected waste transporter(s) will follow the designated travel routes. The Abatement Subcontractor has submitted to the Contractor for acceptance waste removal and transportation procedures, which are currently under review. Upon approval of the proposed Abatement Subcontractor's *Proposed Waste Removal and Transportation Procedures*, the approved procedures will be appended to this plan

and incorporated by reference. All waste travel routes will be consistent with the approved procedures.

## **8. DISPOSAL FACILITIES**

Waste recycling/disposal facilities will be selected based on several factors including waste types, facility acceptance criteria, regulatory compliance history, etc. Only those facilities that have valid federal/state/local permits to accept the waste type proposed for recycling/disposal at the facility will be used. A list of potential disposal facilities is provided as Attachment 3 of this Plan; however, it should be noted that this list is not inclusive nor does identification of these facilities imply an endorsement of the suitability of these facilities at this time.

Following initial selection of potential disposal facilities, the facilities that may be used for waste recycling/disposal will be contacted to determine if they have any facility-specific waste sampling requirements that were not met during the initial waste sampling effort. Based on facility-stated needs, additional sampling may be required. Disposal facilities will be chosen based on their ability to accept the different types of waste that this Phase I Deconstruction Project will generate, as well as other factors identified above.

All pertinent and required information for all proposed disposal facilities must be provided to the Contractor a minimum of one month in advance of any schedule to transport waste. All proposed disposal facilities must be approved by LMDC prior to shipment of any waste.

## **9. DOCUMENTATION**

All applicable local, state and federal documentation and record keeping requirements/guidelines will be followed. Documentation for hazardous waste disposal includes Hazardous Waste Manifesting, EPA Generator ID, EPA transporter ID, EPA ID for waste disposal facility and waste storage locations and capacities. Also documented will be emergency notification and operating procedures, worker training records (HAZWOPER, Asbestos, etc.), organizational chart, unexpected waste procedures, contractor involvement list and copies of the regulatory requirement certifications of transporters, disposal facilities, etc.

Specific regulatory documentation may change depending on the types and amounts of waste to be generated. The Contractor shall be responsible for document management.

For generators of asbestos waste, refer to the Asbestos and COPC Abatement and Removal Plan, for information detailing what documents must be created/maintained.

For generators of non-hazardous (C&D debris) waste, the following documents must be created/maintained:

- Waste determination records (to confirm that the material is not hazardous waste)
- Shipping papers (non-hazardous waste manifests, bills of lading)

For generators of hazardous waste, the specific reporting and recordkeeping requirements depend on whether the project generates waste in the quantities that would classify the generator of the waste (the Owner) as a Large Quantity Generator (LQG), a Small Quantity Generator (SQG), or a Conditionally-Exempt Small Quantity Generator (CESQG). Reports/Documents that may be required include the following:

- Notification of Regulated Waste Activity (required of LQG and SQG)
- Exception Reports (required of LQG and SQG)
- Incident Reports (required for LQG)
- Hazardous Waste Reduction Plan (required of LQG that generates more than 25 tons of hazardous waste per year)
- Annual Hazardous Waste Generator Report (required of generators that are classified as LQG for at least one calendar month in the year)
- Proof of Small Quantity Generator Status (required of SQG and CESQG)
- Hazardous Waste Determination Records (required of LQG, SQG, and CESQG)
- Weekly Inspection Logs (required of LQG and SQG)
- Hazardous Waste Manifests (required of LQG and SQG, best management practice for CESQG)
- LDR Forms (required of LQG and SQG, best management practice for CESQG)
- Exception Reports (required of LQG and SQG)
- Contingency Plan (required of LQG)
- Personnel Training Documentation (required of LQG best management practice for SQG and CESQG)

In New York State, PCB waste (greater than 50 parts per million PCB) is also New York State hazardous waste. Therefore, the documentation specified for hazardous waste above will also apply to PCB waste. In addition, for each facility that uses/stores at any one time 45 kilograms of PCBs in containers or one or more PCB transformers or 50 or more large high- or low-voltage

capacitors must develop and maintain an annual document log. At this time, since the waste survey has not yet been performed, it is not known if this requirement applies to the Building. If PCB transformers are present at the Building, weekly inspections must be performed and inspection logs created/maintained. Certificates of disposal must be obtained for all PCB wastes disposed and large-volume PCB waste generators must also develop and maintain an annual document log.

For generators of universal waste, the specific reporting and recordkeeping requirements depend on whether the project generates waste in the quantities that would classify the generator of the waste (the Owner) as a Large Quantity Handler of Universal Waste (LQHUW) or a Small Quantity Handler of Universal Waste (SQHUW). Reports/Documents that may be required include the following:

- Notification of Universal Waste Management (required of LQHUW that have not already received an EPA Identification number)
- Records of shipment of universal waste to another facility (non-hazardous waste manifest, bill of lading, universal waste manifest, etc.) and records of receipt of universal wastes from another facility (required of LQHUW)
- Personnel Training Documentation (required of LQHUW and SQHUW, personnel training in proper handling and emergency procedures)



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**ATTACHMENT 1**  
**LIST OF POTENTIAL HAZARDOUS AND UNIVERSAL WASTE**

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**ATTACHMENT 1  
LIST OF POTENTIAL HAZARDOUS AND UNIVERSAL WASTE (SEE NOTE 1)**

<b>Potential Waste Stream</b>	<b>Preliminary Waste Characteristics</b>	<b>Characterization Process</b>	<b>Disposal Options</b>	<b>Approximate Quantity</b>
Lamps	Universal Waste	None Required	Shipment to a Large Quantity Handler of Universal Waste (LQHUW)	100,000
Batteries	Universal Waste	None Required	Shipment to a LQHUW	Not Quantified
Mercury Thermostats	Universal Waste	None Required	Shipment to a LQHUW	Not Quantified
Ballasts	Note 2	Note 2	Shipment to a licensed TSDF as selected by the Contractor and approved by LMDC	25,200
PCB-containing equipment, e.g. oil-filled switched transformers, capacitors	NYS Hazardous Waste, TSCA waste	40 CFR 761	Note 3	Not Quantified
Mercury-containing Switches	Hazardous - toxicity	40 CFR 261.24	Shipment to a licensed TSDF as determined by LMDC	Not Quantified or Identified
Used Oil	Hazardous - ignitability	40 CFR 261.21 6 NYCRR Subpart 374-2	Note 4 (if used oils are classified as hazardous, it would be as likely due to their halogen content (see federal rebuttable presumption (40 CFR 279.10 (b)(ii)))	Not Quantified
Used Fuel Oils (to be handled the same way as Used Oil)	Hazardous - ignitability	40 CFR 261.21 6 NYCRR Subpart 374-2	Note 4	Not Quantified
Refrigerants	Ozone-depleting compound	None required	Note 5	Not Quantified
Fire Extinguishers		None required – manufacturer will be contacted for proper characterization	As determined by the applicable manufacturer	Not Quantified
Halon Fire Suppression Systems	Ozone-depleting compound	None required – Halon information will be obtained from equipment	Note 6	Not Quantified
Miscellaneous Stored Containers: <ul style="list-style-type: none"><li>• Anti-freeze</li><li>• Cleaning Solutions</li><li>• Paints</li><li>• Corrosion Inhibitors</li><li>• Neutralizing Acid</li><li>• Joint Compound</li><li>• Coolant</li><li>• Water Treatment</li></ul>	Note 7	Note 7	Note 8	Most materials removed prior to LMDC ownership.



**LIST OF POTENTIAL HAZARDOUS AND UNIVERSAL WASTE  
(cont'd)**

WTC Dust	Note 9	Note 9	Shipment to a licensed TSDF as determined by the generator	Unknown
<b>NOTES:</b>				
Note 1	A complete waste characterization of 130 Liberty Street has not been conducted. This waste characterization will be conducted prior to the commencement of any deconstruction activities. As such, the potential waste streams and associated quantities are only approximations. A more definitive inventory will be provided on the basis of the waste characterization results.			
Note 2	All fluorescent light fixture ballasts, regardless of labeling or age, will be classified as PCB-containing and managed as such.			
Note 3	Specific disposal requirements will be based upon the concentration of PCBs identified within the applicable equipment. Disposal will be in accordance with 40 CFR 761 and 6 NYCRR Subpart 371.4(e).			
Note 4	Used oils that are not hazardous wastes and cannot be recycled under 6 NYCRR Subpart 374-2 will be disposed in accordance with the requirements of Part 360 of Title 6.  Used oils that are identified as a hazardous waste and cannot be recycled in accordance with 6 NYCRR Subpart 374-2 or Subpart 360-14 of Title 6 will be managed in accordance with the hazardous waste management requirements of Parts 370 through 374-1 and 376 of Title 6.			
Note 5	A licensed refrigerant technician will be contracted to recover all refrigerant contained within applicable building components/equipment. All refrigerant will be recycled.			
Note 6	A licensed technician will be contracted to recover all Halon contained within applicable fire suppression systems. All Halon will be recycled.			
Note 7	MSDS information will be used to characterize material found within miscellaneous stored container. If MSDS are not available a complete RCRA hazardous waste determination will be conducted.			
Note 8	All miscellaneous materials will be segregated according to their waste characterization designation (e.g. using either MSDS information or complete RCRA hazardous waste analysis). When possible, bulk materials will be shipped in their original containers, provided that the containers meet the minimum requirements set forth by Department of Transportation packaging rules for the hazardous substance it contains. If this is not possible, like materials will be "lab-packed" and sent off site for disposal per their waste designation. Alternatively, like materials may also be transferred to DOT-approved shipping container (e.g., those waste streams in drum quantities).			
Note 9	The results of a preliminary waste characterization conducted by TRC, documented within a report dated 2-10-05, indicated that a composite bulk dust sample collected from the 40 <sup>th</sup> floor mechanical room contains cadmium above the hazardous waste threshold. Therefore, unless additional waste characterization indicate otherwise, WTC dust as a separate stand alone waste stream collected from the 40 <sup>th</sup> floor mechanical room, will be managed as a hazardous waste. All other preliminary sample data collected from other portions of the building has indicated that the WTC dust can be managed as a non-hazardous asbestos-containing waste.			
Note 10	All hazardous and universal waste will be transported to their applicable disposal facilities utilizing transporters possessing a valid New York State Part 364 Waste Transporter Permit.			
Note 11	A list of potential licensed disposal facilities is contained within Attachment 3. The Contractor will select disposal facilities. LMDC will approve of all disposal facilities prior to the shipment of any wastes.			

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**ATTACHMENT 2**  
**SAMPLE MANAGEMENT, LABELING AND QA/QC**

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When samples are collected by the Environmental Consultant they will designate by an alphanumeric code that will identify the sample location and sample type. The sample code will consist of five sub-codes as follows: a sample phase code; floor location; a unique sequential sample number; a matrix code; and a QA/QC code. The sample phase code designates the sampling phase in which the sample was collected (“1” for Phase 1, “2” for Phase 2, etc.); the building code designates the building from which the sample was collected; the matrix code designates the sampled matrix; the unique sequential sample number provides a unique three-digit identifier for each sample, and the QA/QC code denotes the sample classification (i.e., normal or type of QA/QC). All samples collected at the Building will be designated with the building code “130.” The QA/QC codes will be as follows:

<ul style="list-style-type: none"> <li>▪ QA/QC Codes:</li> <li>01 – Normal Sample</li> <li>02 – Duplicate Sample</li> <li>03 – Equipment Blank</li> <li>04 – Trip Blank</li> </ul>	<ul style="list-style-type: none"> <li>▪ Matrix Codes:</li> <li>D – Floor Dust</li> <li>C – Composite Sample</li> <li>W – Surface Wipe</li> </ul>
--	---

A typical sample may be identified as 2-40-005-D-01. The “2” code indicates the samples was collected during Phase 2 of the sampling, the “40” code indicates that the sample was collected from the 40<sup>th</sup> floor, the “005” indicates that it is the fifth sample collected, the “D” indicates it is a floor dust sample, and the “01” code classifies it as a “normal” sample.

Each sample collected from the Building as part of this sampling program will be identified with a unique, sequential sample ID reflecting the floor the sample was taken and the sequential number of the sample. Sample labeling procedures are specified in the EPA Standard Operating Procedure (SOP) for Sample Labels. This SOP will be utilized for this sampling program.

In general, each sample container will be labeled with the following information:

- Project name.
- Project number.
- Location/site ID.
- Date of sample collection.
- Time of sample collection.
- Sampler initials.
- Media sampled.
- Analyses to be performed.

- Container type.
- Preservatives (if applicable).
- The number of containers for the sample (1 of 2, 2 of 2, etc.).

A Chain-of-Custody (COC) form will be completed and will accompany each separate shipping package to the laboratory. In summary, the following information will be contained on each completed COC:

- Site name – 130 Liberty Street.
- Laboratory name and contact.
- Turn-around time (TAT) requested.
- Sample ID, matrix, date, and time.
- Parameters and analytical methods.
- Unique courier-assigned package tracking number.
- Sample technician name(s) and release signature.

The field personnel will notify the laboratory 24 to 48 hours in advance of sample shipment so that the laboratory personnel may get prepared for the sample receipt and analysis. Samples will be packed and shipped in accordance with applicable U.S. Department of Transportation (DOT) regulations, Environmental Consultant Corporate Guidelines, and International Air Transport Association (IATA) standards (if shipped by air carrier, as detailed in the most current edition of IATA Dangerous Goods Regulations for hazardous materials shipments). Samples will be prepared and shipped to the laboratory according to the following procedures:

- All sample jars, once cleaned and labeled, will be placed in clean plastic re-sealable bags. Medium or high concentration samples (determined through field observations, field screening, air monitoring, or all three) will also be packaged in metal cans. The lids of the metal cans will be secured with at least three metal lid clips. The exterior of the metal cans will be labeled in the same fashion as the sample jar.
- Place samples in a cooler and surround them with vermiculite (or equivalent) packing material for moisture absorption and stability during transport.
- Place sufficient double-bagged ice in the cooler to maintain 4°C temperature.
- Place a "temperature blank", consisting of a water-filled plastic container, in each cooler. The temperature blank will be recorded by the laboratory upon receipt to ensure adequate sample temperature.
- Place completed COC form inside a re-sealable plastic bag, and tape the bag to the inside of the cooler lid.
- Secure the cooler lid with packing tape. Place signed and dated custody seals on two opposite sides of the lid and secure with clear tape.

- If applicable, tape the drain plug closed so that it will not open.
- Place upward-pointing arrow label on two opposing vertical sides of the cooler.
- Label the cooler with laboratory address, name of laboratory contact, telephone number, and project identification.
- Attach applicable IATA and/or DOT identification labels.
- Attach a completed courier shipping label (if applicable).

Samples will be classified as environmental samples unless there is evidence of high concentrations of chemical constituents, based on visual observations, odors, previous sample data, or other criteria. All waste liquid, waste solid, tank, drum, and other container samples will be considered hazardous material samples and will be packaged and transported in conformance with the U.S. DOT, U.S. Postal Service (USPS), and the IATA Dangerous Goods Regulations if shipped by air carrier. These regulations/requirements have de minimus exemptions for small volume samples; they will be referred to prior sample shipment to ensure all requirements are being met.

The United States Environmental Protection Agency's Environmental Response Team (EPA ERT) publishes sampling SOPs for sampling at CERCLA hazardous waste sites. These SOPs will be followed during the sampling at this site.

QA/QC samples will be collected to assist in the interpretation and validation of the laboratory analytical results. The QA/QC samples that will be collected during this characterization sampling program include field duplicates or co-located samples. Field duplicate samples will be collected as a check on laboratory accuracy and precision. One duplicate dust sample will be collected from the bulk dust and or high-efficiency particulate air (HEPA) filters. The duplicate sample will be placed in the appropriate, clean, laboratory-prepared sample containers and analyzed for the same parameters.





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**ATTACHMENT 3**  
**PRELIMINARY LIST OF POTENTIAL DISPOSAL FACILITIES**

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Please note that the disposal facilities listed herein are provided for informational purposes only. The list consists of permitted facilities that may be used for disposal of the indicated waste streams. The Contractor and their Subcontractors reserve the right to respond to market and other relevant conditions in the selection of the disposal facilities and to utilize disposal facilities other than those indicated herein provided they are properly permitted to receive said waste type(s). The Contractor also reserves the right to audit said facilities prior to final selection

Note of the following facilities, or any other facility, may be used without prior written approval by LMDC.

The following facilities may be used for disposal of asbestos-containing and contaminated materials:

- Meadowfill Landfill (304) 842-2784  
Bridgeport, WV
- Cumberland County Land (717) 423-5917  
Newburgh, PA
- Imperial Landfill (724) 695-0900  
Imperial, PA
- Grows Landfill (215) 736-9475  
Morrisville, PA
- Tullytown Landfill (215) 943-9732  
Tullytown, PA

The following facilities may be used for disposal of construction and demolition (C&D) materials:

- Cumberland County Landfill (717) 423-5917  
Newburgh, PA
- Hakes C&D Landfill (585) 466-7271  
Painted Post, NY

The following facilities may be used for disposal of hazardous and miscellaneous materials:

- American Re-Fuel Company (516) 683-5443  
Westbury, NY
- American Re-Fuel Company (973) 344-0900

- Newark, NJ
- BDT, Inc. (716) 634-6794  
Clarence, NY EPA ID No. NYD000632372
  - Bethlehem Apparatus (215) 838-6333  
Hellertown, PA EPA ID No. PAD602390961
  - BFI Conestoga Landfill (610) 266-6844  
Morgantown, PA
  - Central Waste, Inc. (330) 823-6220  
Alliance, OH
  - Chemical Waste Management (716) 754-8231  
Model City, NY EPA ID No. NYD049836679
  - Clean Earth of North Jersey  
Kearny, NJ EPA ID No. NJD991291105
  - CWM-SRR (513) 859-6101  
W. Carrolton, OH EPA ID No. OHD093345293
  - Dupont Chamberworks (609) 299-5000  
Deepwater, NJ EPA ID No. NJD002385730
  - Ensco, Inc (501) 863-7173  
El Dorado, AR EPA ID No. ARD069748192
  - Envirote of Pennsylvania (717) 846-1900  
York, PA EPA ID No. PAD010540045
  - Enviro-safe Services of Ohio (800) 537-0426  
Oregon, OH EPA ID No. OHD045243706
  - Giant Cement Company (803) 496-5033  
Harleyville, SC EPA ID No. SCD003351699
  - G.R.O.W.S (215) 736-9475  
Morrisville, PA EPA ID No. PAD000429589
  - Horizon Environment, Inc. (888) 767-0088  
Grandes-Piles, Quebec, Canada EPA ID No. 1142031856
  - Inmetco (412) 758-2819  
Elwood City, PA EPA ID No. PAD087581015
  - Keystone Potrland (215) 837-2240  
Bath, PA EPA ID No. PAD002389559
  - Maplewood Recycling, Inc. (604) 561-5787  
Jetersville, VA
  - Marisol, Inc. (732) 469-5100  
Middlesex, NJ EPA ID No. NJD002465655
  - Meadowfill Landfill (304) 842-2784

Bridgeport, WV

- Phillip Services Corp. (215) 822-6996  
Hatfield, PA EPA ID No. PAD085690592
- Revere Smelting & Refining (914) 592-4414  
Middletown, NY
- Ross Incineration (440) 748-2200  
Grafton, OH EPA ID No. OHD048415655
- Stablex Canada (800) 782-2539  
Blainville, Quebec, Canada EPA ID No. NYD980756415
- Taylor County Landfill (476) 862-2504  
Mauk, GA
- Trade Waste Incineration (618) 271-2804  
Sauget, IL EPA ID No. ILD098624424
- T.R.R.F. (Tullytown) (215) 736-9400  
Tullytown, PA
- Waste Technologies, Inc. (216) 385-7337  
East Liverpool, OH EPA ID No. OHD980613541
- White Pines Landfill (717) 458-4602  
Millville, PA

The following facilities/services may be used for metal salvage:

- Mid Island Salvage Co.  
1007 Long Island Avenue  
Deer Park, NY 11729
- Aleris International Inc.  
368 West Garfield Road  
Cold Water, Michigan 49036
- Wabash Alloy  
4525 West Old 24  
Wabash, IN 46992
- Ohio Valley Aluminum Company  
1100 Brooks Industrial Road  
Shelbyville, Kentucky, 40065

- Weirton Steel Corporation  
400 Three Springs Drive  
Weirton, West Virginia 26062
- Nucor Steel Auburn, Inc.  
25 Quarry Road  
Auburn, NY 13021
- Gerdau Ameristeel  
225 Elm Street  
Perth Amboy, NJ 08862



**AMBIENT AIR MONITORING PROGRAM  
for the  
130 LIBERTY STREET  
DECONSTRUCTION PROJECT**

May 2005



**LOWER MANHATTAN DEVELOPMENT CORPORATION  
1 Liberty Plaza  
New York, New York**



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## 1.0 INTRODUCTION

### 1.1 Project Background and Evolution

This document entitled *Ambient Air Monitoring Program for the 130 Liberty Street Deconstruction* Project (Proposed Plan) represents a revised and combined air monitoring plan incorporating the following two prior plans: (i) the Draft Plan provided as Section 2 of the Draft Deconstruction Plan issued by Contractor on December 10, 2004 and (ii) the companion plan prepared by TRC Environmental Corporation (TRC) entitled *Proposed Enhanced Exterior Air Monitoring Approach and Conceptual Design 130 Liberty Street* (October 8 2004). Both of these documents were issued by the Lower Manhattan Development Corporation (LMDC) in December 2004 for review and comment by federal, state, and local regulators and the general public. At the time of release, readers of the two companion plans were advised by LMDC that, due to their independent development, there were redundancies and a good deal of overlap in the two plans. For this reason, LMDC intended to revise the two programs to ensure that the contractor's and property owner's monitoring programs were complementary and contained the necessary overlap to serve Quality Assurance/Quality Control purposes.

The December 2004 plans were submitted to regulatory agencies for review. Written responses from the United States Environmental Protection Agency (USEPA), the New York State Department of Environmental Conservation (NYSDEC), and the New York State Department of Labor (NYSDOL) addressing the December 2004 plans were provided to LMDC on January 31, 2005. This Proposed Plan was prepared to address the agencies' January 31, 2005 responses.

Additionally, subsequent to release of the December 2004 air monitoring plans, an approved monitoring plan for the deconstruction of 4 Albany Street was issued. This plan, entitled *Specifications for Community Environmental Monitoring During Abatement and Demolition of 4 Albany Street* (December 22, 2004), was approved for use by many of the same regulatory agencies reviewing the deconstruction of 130 Liberty. Accordingly, and at the direction of the regulators, the Proposed Plan adopts many of the features of the 4 Albany Street monitoring program. Most notably, the Proposed Plan adopts the two tiered system of action levels approved for use at 4 Albany Street.

This Proposed Plan appropriately consolidates the monitoring features previously offered in the two December 2004 companion programs. Once approved, the Proposed Plan will be implemented and administered by the Deconstruction Contractor and its specialty sub-contractors during Phase I of the deconstruction of the 130 Liberty Street property. In addition, LMDC will utilize an independent Environmental Consultant to serve in an oversight role. Such oversight will include specified Quality Assurance/Quality Control measures. This document does not provide all of the details of the quality assurance/quality control measures that will be implemented by LMDC. These measures are more appropriately be addressed in a Quality Assurance Project Plan (QAPP) that will be prepared and issued at a later date after a final approved air monitoring program is in place.

## 1.2 Project Purpose and Objectives

The principal purpose of the air monitoring program is to monitor air quality in the vicinity of 130 Liberty Street during the deconstruction of the building on that property. The Proposed Plan consists of monitoring of fugitive dusts in the vicinity of the deconstruction site on both a real-time or continuous basis as well as a time-weighted or integrated basis.

Principal objectives of the program are as follows:

- Monitor dusts as PM<sub>10</sub> on a real-time or continuous basis such that fugitive dusts associated with the building deconstruction are maintained below predetermined action levels.
- In the event that fugitive dusts levels exceed predetermined action levels, building deconstruction management personnel will be immediately notified so that all necessary corrective actions can be taken.
- Monitor PM<sub>10</sub> on a time weighted or 24-hour average basis to provide assurances that levels of respirable particulate matter associated with the deconstruction are below National Ambient Air Quality Standards (NAAQS) of 150 ug/m<sup>3</sup>.
- Collect particulate matter on a time-weighted or integrated basis such that samples are available for monitoring of target compounds potentially associated with World Trade Center dust (e.g., asbestos, lead).
- Compare measured concentrations of project target parameters to action levels established on a compound specific basis. In the event that measured concentrations exceed any project specific action level for one or more of these target compounds, appropriate corrective actions immediately will be taken.

## 1.3 Overview of Air Quality Monitoring Programs and Features

- There are multiple aspects and levels to the overall air monitoring program proposed for the deconstruction of 130 Liberty Street. The following is a brief summary of the three (3) components or levels of air monitoring proposed for the project:
- “Level 1”: The subcontractors performing aspects of Phase I deconstruction work (largely interior, non-structural efforts) will be responsible to collect air samples on their personnel directly performing various work activities to determine airborne levels of contaminants potentially generated by the work at the source as required by OSHA.
- “Level 2”: The next layer of sampling is for ICR 56 compliance. ICR 56-required sampling will be performed by the Contractor third party consultant who will sample the ambient air inside the building during Phase I work outside of work areas, at the personnel and waste load out decontamination stations and other locations. In addition, samples will be collected outside the building within ten (10) feet of the negative pressure ventilation exhaust. This sampling is further described in the Asbestos and COPC Abatement and Removal Plan.

- “Level 3”: Beyond that, Contractor ’s consultant will also be continually monitoring the exterior ambient air within the site boundaries and at specific elevated locations across the street from of the site, as described in this Ambient Air Monitoring Program.

While various parties will have responsibility for diligently executing different components of the program information will flow through Contractor to the LMDC and their consultants as part of a coordinated review and quality control process. Additionally, all monitoring results requested by the various regulators overseeing this project will be provided to them on a timely basis.

This Ambient Air Monitoring Program documents Contractor ’s proposed program of “Level 3” only. The other two “levels” of air monitoring outlined above are documented in the Health and Safety Plan and The Asbestos and COPC Abatement and Removal Plan Sections of the Phase I Deconstruction Plan.

## **2.0 SAMPLING SITES**

### **2.1 Network Design**

Due to the unique circumstances associated with this deconstruction project two different types of monitoring sites are recommended for inclusion in the active monitoring network as follows:

- **Street Level Stations-** These locations essentially represent sidewalk settings situated around the perimeter of the building.
- **Upper Level Stations-** While extremely unlikely, it is not impossible for dusts to be released during building deconstruction at upper levels of the 40-story structure.. Accordingly, the proposed network will make use of a number of monitoring sites in place at elevated locations above street level. Three (3) such stations will be included in the monitoring network as shown in Figure 1.

### **2.2 Siting Criteria and Network Operations**

The proposed network will be comprised of seven (7) stations in simultaneous operation at all times that building deconstruction activities are in progress, four (4) street level and three (3) elevated. The placement of sampling stations will follow USEPA and United States Army Corps of Engineers (ACOE) siting criteria for ambient particulate sampling systems to the extent possible. Strict adherence to these criteria at all stations may not be possible given the topography and logistics of the urbanized environment characteristic of the Lower Manhattan setting.

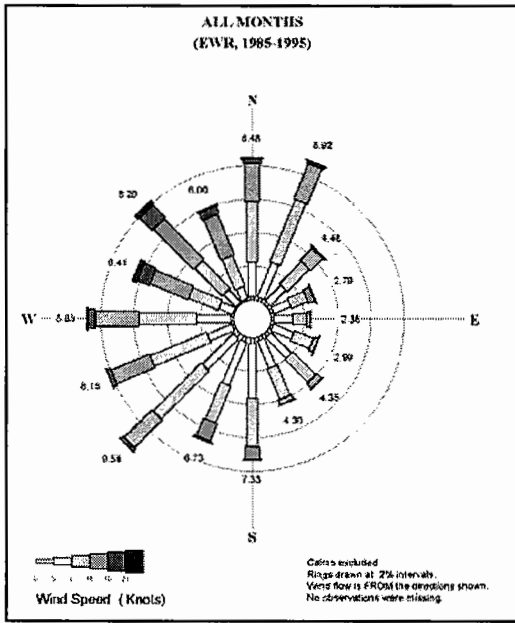
All four (4) of the ground level stations in the vicinity of the deconstruction site will be connected to a central computer housed in the site vicinity. The three (3) stations situated at elevated sites above street level will collect data continuously and telemeter (wirelessly transmit) the data to the central computer. All seven (7) of the monitoring stations in the immediate vicinity of the deconstruction site will monitor particulate as PM10 on a real-time basis. These data will be logged continuously at each of the sites as well as on the data logger contained in the on site computer center. These data will be stored and archived as 5-minute averages for each of the seven (7) stations.

### **2.3 Locations of Monitoring Stations**

The list of proposed monitoring locations is provided in Table 1. These include four (4) stations situated at ground or street level and three (3) stations situated at elevated locations atop buildings adjacent to the 130 Liberty Street property. Actual stations pending access will be placed on roof-tops or setbacks of buildings directly across the street along the perimeter of the deconstruction site. The approximate locations of each of these stations in relation to the 130 Liberty Street Site are shown in the site schematic provided as Figure 1. Figure 1 also includes a composite wind rose representative of the New York Metropolitan area noting predominant wind directions likely to be characteristic of the project work zone during the term of the

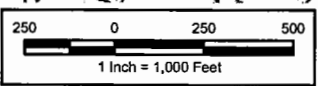
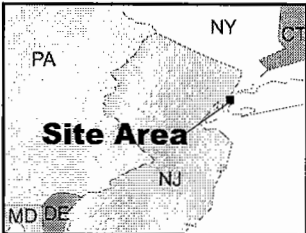
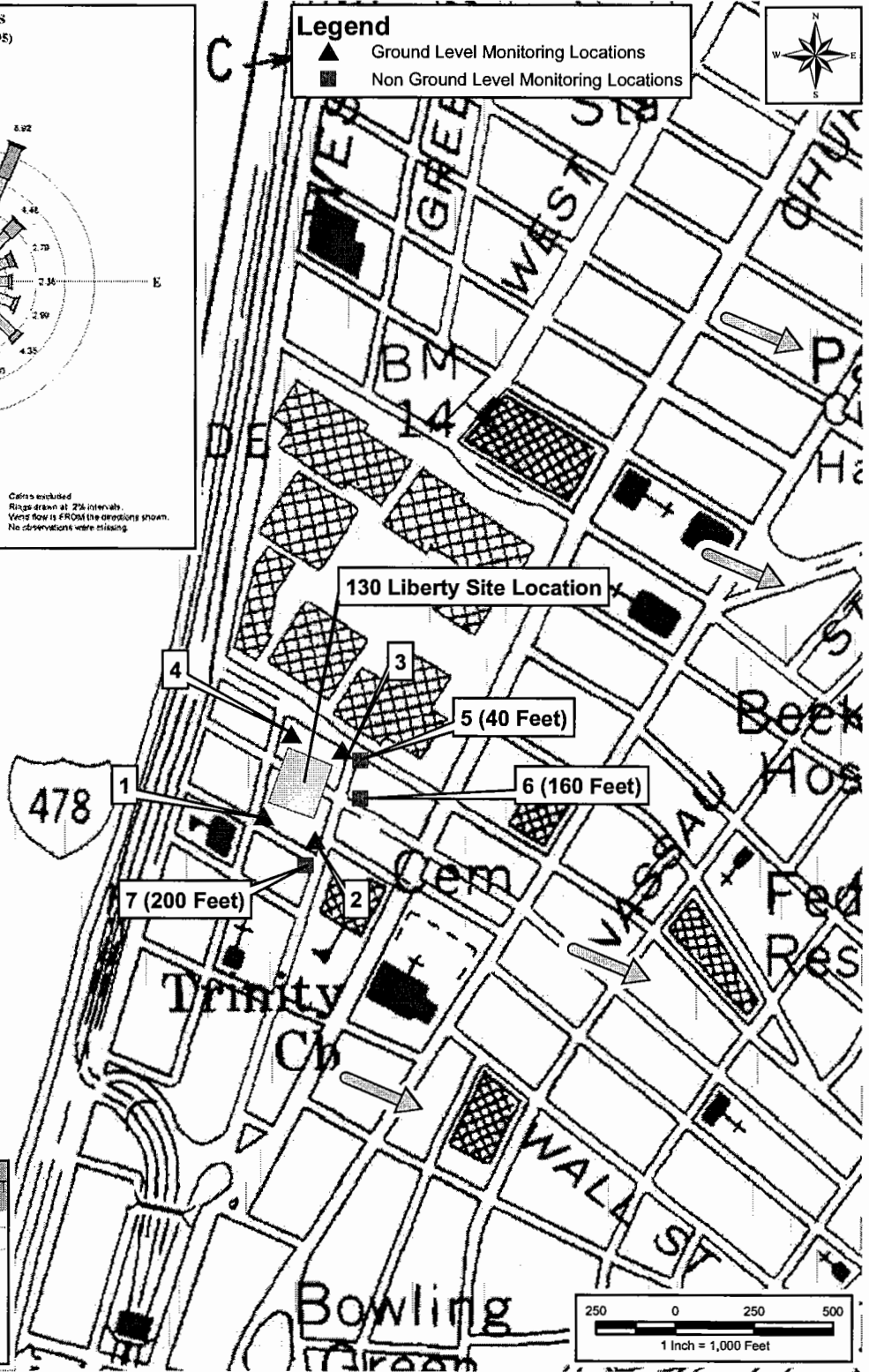
deconstruction project. These wind directional data were taken into consideration in the actual placement of monitoring stations around the 130 Liberty Street Site.

<b>Table 1. Locations of Monitoring Stations – 130 Liberty St. Deconstruction Air Monitoring Network</b>	
<b>Location #</b>	<b>Description</b>
1	Southwest of building (Washington St./Albany St.) at ground level.
2	Southeast of building (Albany St./Greenwich St.) at ground level.
3	Northeast of building (Greenwich St) at ground level.
4	Northwest of building (Washington St./Cedar St.) at ground level.
5	Fire station (10-10 House) roof on Greenwich Street at an elevation of approximately 40 feet.
6	Apartment building (125 Cedar St) roof behind fire station at an elevation of approximately 160 feet.
7	Apartment building (120 Greenwich St) roof at corner of Albany St./Greenwich St. at an elevation of approximately 200 feet.



**Legend**

- ▲ Ground Level Monitoring Locations
- Non Ground Level Monitoring Locations



**LEGEND:**

← AVERAGE WIND DIRECTION

**SOURCE:**  
USGS 7.5 Minute Series (Topographic) Quadrangles: Jersey City, NJ-NY  
Wind Roses for Newark International Airport, 1985-1995

**PROJECT:**  
130 LIBERTY STREET  
DECONSTRUCTION PROJECT

**CLIENT NAME:**  
GILBANE BUILDING COMPANY  
2 RECTOR STREET, NEW YORK, NY

**TITLE:**

Site Location Map And Proposed  
Ambient Air Monitoring Locations  
130 Liberty Street  
New York, New York



**DATE:** 04/28/05

**FIGURE #:** 1

P:\Gilbane\130\_Liberty\GIS\Map\400\WindRose\01825\_130\_Liberty\_Street\_Sampling\_Sites



### **3.0 SAMPLING PHASES**

Sampling phases will consist of the following segments: Background, Phase I – Asbestos and COPC Abatement, and Phase II - Structural Deconstruction. General descriptions of the work included in each phase are presented below.

#### **3.1 Background**

The background ambient air sampling period will consist of two weeks (14 consecutive calendar days) of monitoring performed prior to the start of Phase I abatement activities. Samples will be collected using all seven (7) stations in the monitoring network. Target parameters and the frequency of sample collection will follow measures presented in Sections 4 and 6, respectively.

#### **3.2 Phase I - Asbestos and COPC Abatement**

Phase I of the Deconstruction Project includes the cleaning and removal of all interior surfaces and non-structural elements within the building under containment. Phase II – Structural Deconstruction includes the structural deconstruction of the remaining cleaned steel, large MEP, concrete, and curtain wall as well as cleaning and removal of exterior and roof, and roof equipment. During the Phase I cleanup and abatement, a minimum buffer zone of two floors, will be maintained between the active abatement (Phase I) area and the exterior abatement/structural demolition (Phase II) portion of the project. The proposed Phase I cleanup and abatement will be conducted so that the Building can be safely deconstructed to allow for redevelopment of the WTC Site. This Phase I project entails:

- The use of a licensed abatement contractor to perform Phase I work within a negative pressure enclosed work area;
- Work includes the removal and disposal of soft strip/interior gut items and general area cleanup of dust and debris;
- Removal and disposal of installed porous and certain non-porous building materials and components. Work includes removal and disposal of all interior non-structural elements including but not limited to ceiling tiles, carpet, gypsum wall board, mechanical, electrical and plumbing, wiring/cabbling, fiberglass insulation, doors, fireproofing, toilet fixtures;
- Cleaning and salvage of certain installed non-porous building equipment and components contaminated by dust and debris;
- Removal of building materials containing asbestos which were present in the Building prior to September 11<sup>th</sup>, 2001 (referred to herein as “ACBM”), primarily within the Building interior; and
- Erection of the crane and hoist.

### **3.3 Phase II – Structural Deconstruction**

Phase II – Structural Deconstruction includes the structural deconstruction of the remaining cleaned steel, large MEP, concrete, and curtain wall as well as cleaning and removal of exterior and roof, and roof equipment. Phase II will follow successful completion of Phase I work on a floor. Phase II of this project entails:

- Cleaning of the exterior façade and rooftop of dust and debris;
- Removal and disposal of exterior netting;
- Removal of cooling tower transite ACBM materials, rooftop ACBM caulking, and exterior façade aluminum panel ACBM caulking and localized removal of exposed exterior spray-on fireproofing,
- Structural deconstruction of the Building including removal of all cleaned structural steel, concrete and large equipment requiring the use of the tower crane for removal; and
- Backfilling site.

## 4.0 TARGET PARAMETERS/COPCs

In February 2002, a multi-agency task force headed by the USEPA was formed to evaluate indoor environments for the presence of contaminants related to the WTC terrorist attacks that might pose long-term health risks to local residents. As part of this evaluation, a task force sub-committee was established to identify Contaminants of Potential Concern (COPC Committee) that are likely associated with the WTC disaster and establish health-based benchmarks for those contaminants in support of planned residential cleanup efforts in Lower Manhattan.

In addition, a number of other studies conducted by USEPA (EPA/600/R-03/142 December 2003) and (work performed by Louis Berger Group) were examined as a means of establishing a listing of target parameters appropriate to satisfy the purpose and objectives of the current deconstruction project. These objectives include active real time monitoring of fugitive dusts potentially related to the deconstruction as well as identifying levels of COPCS associated with the materials at 130 Liberty. In this manner the deconstruction project can proceed while providing an ample margin of safety for human health and the environment in the vicinity of the project site.

Most recently, USEPA approved an air monitoring program for use during the deconstruction of 4 Albany Street, another building contaminated by WTC dust as a result of the WTC disaster. This Plan entitled "*Specifications for Community Environmental Air Monitoring During the Abatement and Demolition of 4 Albany Street*" was issued as approved for use by USEPA and NYDEC on December 22, 2004. The target parameters identified for monitoring during this abatement and demolition program were also considered in the course of developing the list of target parameters for the 130 Liberty Street property.

Based upon these criteria the following target parameters were selected for inclusion in the monitoring program:

- PM<sub>10</sub>-Respirable Particulate
- Asbestos
- Crystalline Silica
- PCDDs/PCDFs
- PAHs
- PCBs
- Metals (antimony, barium, beryllium, cadmium, chromium, copper, lead, mercury (gaseous and particulate bound) manganese, nickel and zinc).

## 5.0 SAMPLING AND ANALYSES METHODOLOGY

A summary of all sampling and analyses methods proposed for use during the deconstruction of 130 Liberty Street is provided in Table 2. All analytes will be measured at each of the seven (7) stations identified in Section 2.0 of this plan during all three (3) of the program phases. These phases as defined in Section 3.0 of this plan include background monitoring (2 weeks prior to Phase I), Phase I - Asbestos and COPC Abatement, and Phase II - Structural Deconstruction. As noted, all samples in Table 2 will be collected over 24-hour integrated time periods with the exception of asbestos, PM<sub>10</sub> and mercury vapor employing the Lumex device. Asbestos samples will be collected over 4-12 hour averaging periods, while PM<sub>10</sub> measurements will be collected on a continuous near "real time" basis. Proper chain of custody procedures will be employed for all integrated samples collected. Details regarding the sampling and analyses methods planned for each type of target parameter is provided in the following sections.

<b>Table 2. Summary of Sampling and Analyses Methods</b>				
<b>Analyte</b>	<b>Sampling Method</b>	<b>Sample Rate*</b>	<b>Duration Per day</b>	<b>Comments</b>
<b>Metals</b>				
Antimony, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Manganese, Nickel, and Zinc	TSP High Volume Air Sampler 40 CFR Part 50 App B	1000 lpm	24 hours	XRy-Fluorescence (XRF) EPA Method IO 3.3
Mercury (Gas)	Ohio Lumex RA 915+ Direct Read	20 lpm	Instantaneously	Elemental (gas) Mercury Analysis
Mercury (Total)	Iodated Carbon Trap with CVAf	4 lpm	24 hours	
<b>Particulate and Dust</b>				
Asbestos	NIOSH 7402	2-6 lpm	Minimum of 4 hours	Analysis via AHERA Mod. Methodology
Particulate PM <sub>10</sub>	Met One EBAM	16.7 lpm	24 hours	
Respirable Crystalline Silica and Dust	NIOSH 0600/7500	2.5 lpm	24 hours	SKC Aluminum Cyclone
<b>Organics (semivolatile)</b>				
Dioxins/Furans (PCDDs/PCDFs)	EPA TO 9A	200-300 lpm	24 hours	Quartz Fiber Filter and PUF Cartridge
Polychlorinated biphenyls (PCB)	EPA TO 4A	200-300 lpm	24 hours	Quartz Fiber Filter and PUF Cartridge
Polycyclic Aromatic Hydrocarbons (PAH)	EPA TO 13A	200-300 lpm	24 hours	Quartz Fiber Filter and PUF/XAD-2 "Sandwich" Cartridge

\*lpm = liters per minute

## **5.1 PM<sub>10</sub> Monitoring (“Real-Time”/Continuous)**

### **5.1.1 Beta – Attenuation PM<sub>10</sub> Monitors (All Sites)**

The monitors selected to continuously measure PM<sub>10</sub> are beta-attenuation monitors manufactured by Met One Instruments, Inc. (Met One). The Met One E-BAM will be used for continuous PM<sub>10</sub> measurements. The instrument operates on the principle of beta attenuation.

The E-BAM has not been officially designated by USEPA as either Reference or Equivalent Method. However, the E-BAM design is descended directly from the BAM-1020 (which has received USEPA’s designation as an Automated Equivalent Method – EQPM-0798-100), modified to provide portable battery operation and produce measurements in real-time (averaging times less than 1 hour). The accuracy and precision of the E-BAM are consistent with USEPA requirements for Class III designation for PM<sub>10</sub>. Class III equivalent method instruments include any candidate instruments that cannot qualify as Class I or Class II instruments. These may either be filter-based integrated samples not meeting Class I or Class II criteria, or filter or non-filter based continuous or semi-continuous samplers. Other methods include all non-FRM or non-equivalent measurement methods capable of characterizing fine particles that may not be or have not yet been classified as an equivalent method. Existing manual and continuous analyzers in this category include the dichotomous sampler, IMPROVE samplers, nephelometers, beta attenuation monitors, and Tapered Element Oscillating Microbalances (TEOMs). Such instruments are not precluded from becoming equivalent on a site-specific, regional or national basis.

The beta attenuation process uses a small source of beta particles (carbon-14, 60 microcuries) is coupled to a sensitive detector that counts the emitted beta particles. The dust particles are collected on a filter tape that is placed between the beta source and the detector. Dust on the filter will intercept some of the beta particles. The reduction of beta particles is proportional to the amount of dust on the filter, which allows the mass of dust to be determined from the beta particle counts. The dust mass is combined with the air volume collected during the filter exposure time to determine the PM concentration.

The E-BAM monitors will be equipped with particle size selective inlets. The design of the inlets is such that particles larger than the desired size range will be removed from the air flow, based on the air flow rate. The units will be equipped with an inlet head to separate PM<sub>10</sub>. Sampling flow rate is critical to maintain the proper particle size cut points of the inlets. Flow rates are maintained at 16.7 liters per minute (LPM) in the E-BAM monitors using an integral flow meter, pressure sensor, and ambient temperature sensor on board each monitor.

The data from the E-BAM units will be recorded by digital data loggers using the analog signal outputs of the monitors. The PM<sub>10</sub> data from the E-BAM monitors will be recorded as 5-minute, hourly, and daily (midnight-to-midnight) averages.

The data from the Dust Monitors will be recorded by CSI CR510 digital data loggers, and telemetered back via CDMA cellular modems. The loggers on-board the units will act as backup to the CSI loggers.

### **5.1.2 USEPA Reference Method PM<sub>10</sub> Monitor**

One reference method PM<sub>10</sub> sampler will be collocated along side the real-time PM<sub>10</sub> monitors as a quality assurance (QA) check. The sampler will rotate on a monthly basis through all real-time PM<sub>10</sub> monitor locations for the duration of the monitoring program. It is proposed that a filter based PM10 EPA Reference Sampler be used such as an Andersen RAAS or performance equivalent system. In this manner the 24-hour average PM10 concentration (ug/m<sup>3</sup>) measured gravimetrically using the filter collection method can be directly compared to the average PM10 concentration measured using the collocated EBAM sampling system. The latter value will be expressed as a 24-hour average representing a composite of all 5-minute average values.

## **5.2 Asbestos**

Asbestos sample collection will be performed in accordance with NIOSH 7402, "Asbestos by TEM". Asbestos analysis will be performed utilizing Transmission Electron Microscopy (TEM) analysis specified in 40 CFR Part 763, Asbestos Hazard Emergency Response Act, (AHERA), with the following modifications:

- The sensitivity on TEM air samples will be less than 0.002 s/cc.
- Both length and width of all asbestos fibers will be recorded.
- Confirmation by Energy Dispersive Spectroscopy (EDS) and/or Selected Area Electron Diffraction (SAED) will be performed for each sample.
- The morphology of the fibers will be noted and recorded.

## **5.3 Metals**

- Metals sampling and analysis will be performed following EPA Reference Methods for the collection of Total Suspended Particulate (TSP) and lead (40 CFR Part 50 App B) in combination with EPA Method IO 3.3 for the analyses of metals by X-Ray fluorescence.
- Metals to be analyzed by XRF and reported are: Antimony, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Manganese, Nickel and Zinc.

## **5.4 Mercury (Gas/Vapor)**

Real-time monitoring for mercury will be performed utilizing a Lumex RA 915+ direct read instrument. The readings will be included with the daily download of sample collection data.

The Lumex RA 915+ will be utilized to obtain detection levels below established site air contaminant criteria. At a minimum, mercury readings will be taken twice a shift at each of the fixed air monitoring locations (seven during Abatement Phase and Demolition Phases). At the

discretion of the Environmental Consultant and as daily site conditions may dictate, additional mercury readings may be taken.

### **5.5 Mercury (Vapor/Gas)**

A separate sampling and analysis method is required for mercury, as field studies have indicated that atmospheric mercury is generally greater than 95% in the vapor phase. An iodated carbon trap will be analyzed for total elemental mercury (particulate associated/vapor) using cold vapor atomic fluorescence (CVAFA). The carbon trap is a proven and sensitive method for detecting trace ambient levels of atmospheric mercury. To collect the mercury sample, a high volume pump will be attached to the carbon trap and set at a flow rate of approximately 4 liter per minute.

### **5.6 Respirable Dust and Crystalline Silica**

Respirable dust and crystalline silica sampling will be performed according to NIOSH Method 0600 protocol with analysis following NIOSH Method 7500 (XRD).

### **5.7 Semivolatile Organics (PCDDs/PCDFs, PAHs, PCBs)**

Each site will have two (2) General Metal Works (GMW) model PS-1 high volume air samplers to collect 24-hour samples of PAH, Dioxin/Furan and PCBs, following USEPA Method TO-13A, TO 9A, and TO-4A, respectively. One sampler will be used for PAHs. A second sampler will be used for both PCBs and D/Fs. Method TO-13A, TO4A, and TO-9A use the PS-1 samplers to draw air through a sampling train consisting of a 102 millimeters diameter microquartz filter first to collect the semivolatile PAH particulates and then a glass cylinder holding a polyurethane foam (PUF) plug (1 inch of XAD-2 adsorbent resin is used in the middle of the PAH sampling media) to collect the semivolatile vapors. The entire sampling train (filter, XAD-2, and PUF plugs) are extracted together and analyzed for speciated PAH, PCBs, and D/Fs compounds using gas chromatography/mass spectrometry. The samplers will be set to run at approximately 250 liters per minute resulting in a total air volume of 360 m<sup>3</sup> over the prescribed 24-hour sampling period.

## 6.0 SAMPLING FREQUENCY

### 6.1 Background

The background ambient air sampling period will consist of two weeks (14 consecutive calendar days) of monitoring performed immediately prior to the start of abatement activities. Samples will be collected using all seven (7) stations in the monitoring network. All target parameters will be collected over a 24-hour integrated period with the exception of asbestos, PM10 and mercury utilizing the Lumex instrument. PM10 will be monitored continuously at each of the seven (7) sites while asbestos measurements will be taken at a frequency of once per every eight (8) to twelve (12) hours at each of the sites.

### 6.2 Phase I – Asbestos and COPC Abatement Phase

During Phase I (abatement phase) air monitoring will take place at all seven (7) stations each day. During the first three (3) days only of Phase I work, samples will be collected for semivolatile organics to include PCDDs/PCDFs, PAHs and PCBs. After this first three (3) day period, samples for semivolatile organics will be reduced to a single location per week employing the seven (7) station network. More specifically, samples will not be collected using all seven (7) stations each day; rather a single set of samples will be collected each day at a single station in the network. This sequence will be repeated each day using a different station each day until all of the seven (7) stations have been used. In this manner a set of samples will be collected at each location every seven (7) days. The schedule will be repeated until project completion.

The semivolatile organic samples collected employing this weekly sampling frequency will not be processed for analyses; rather they will be placed in archival storage at the laboratory. A single set of samples will be selected from each sample set representing seven (7) days to undergo analyses for PCDDs/PCDFs, PAHs and PCBs. The station with the highest 24-hour average PM10 concentration (ug/m3) recorded with a collocated organic sample each week will be selected for semivolatile organic analyses.

A summary of sampling frequencies on a target parameter specific basis applicable to the abatement phase of the deconstruction program is provided in Table 3.

<b>Location</b>	<b>Parameter(s)</b>	<b>Sample Frequency</b>	<b>Analysis Method</b>
Site Area	Mercury (vapor/gas)	Each Day	Lumex, portable mercury analyzer
Site Area	Visible dust emissions	Each Day	Visual observation
Ground/Street Level (4 Locations)	1. Asbestos 2. Silica 3. Metals	Each Day, asbestos is sampled each work shift	1. TEM 2. XRD 3. XRF
	4. PCDDs/PCDFs 5. PAHs 6. PCBs	Each Day (24 hr. Basis)	4. TO 9 A (HRGC/HRMs) 5. TO 13 A (GC/MS) 6. TO 4 A (GC/MS)



<b>Location</b>	<b>Parameter(s)</b>	<b>Sample Frequency</b>	<b>Analysis Method</b>
	7. PM10 8. Mercury (vapor/gas)	Continuously "Real-Time" Each Day	7. EBAM 8. Iodated Carbon Trap/CVAF
Roof Top (3 Locations)	1. Asbestos	Each Day	1. TEM
	2. Silica 3. Metals 4. PCDDs/PCDFs 5. PAHs 6. PCBs	Each Day (24 hr. Basis)	2. XRD 3. XRF 4. TO 9 A (HRGC/HRMS) 5. TO 13 A (GC/MS) 6. TO 4 A (GC/MS)
	7. PM10 8. Mercury (vapor/gas)	Continuously "Real-Time" Each Day	7. EBAM 8. Iodated Carbon Trap/CVAF

### 6.3 Phase II – Structural Deconstruction

During Phase II of the deconstruction project, air monitoring will take place at all seven (7) stations each day. During the first three (3) days only of Phase II, samples will be collected for semi-volatile organics to include PCDDs/PCDFs, PAHs and PCBs. After this first three (3) day period, samples for these organic parameters will be reduced to a single location per week frequency employing the seven (7) station network. More specifically, samples will not be collected using all seven (7) stations each day; rather a single set of samples will be collected each day at a single station in the network. This sequence will be repeated each day using a different station each day until all of the seven (7) stations have been used. In this manner a set of samples will be collected at each location every seven (7) days. The schedule will be repeated until project completion.

The semivolatile organic samples collected employing this weekly sampling frequency will not be processed for analyses; rather they will be placed in archival storage at the laboratory. A single set of samples will be selected from each sample set representing seven (7) days to undergo analyses for PCDDs/PCDFs, PAHs and PCBs. This sample set will be selected after consideration of the PM10 data corresponding to the sites and days where organic samples were collected. The station with the highest 24-hour average PM10 concentration (ug/m3) recorded with a collocated organic sample each week will be selected for analyses.

A summary of sampling frequencies on a target parameter specific basis applicable to the demolition phase of the deconstruction program is provided in Table 4.

<b>Location</b>	<b>Parameter(s)</b>	<b>Sample Frequency</b>	<b>Analysis Method</b>
Site Area	Mercury (vapor/gas)	Each Day	Lumex, portable mercury analyzer
Site Area	Visible dust emissions	Each Day	Visual observation

<b>Location</b>	<b>Parameter(s)</b>	<b>Sample Frequency</b>	<b>Analysis Method</b>
Ground/Street Level (4 Locations)	1. Asbestos 2. Silica 3. Metals	Each Day, asbestos is sampled each work shift	1. TEM 2. XRD 3. XRF
	4. PCDDs/PCDFs 5. PAHs 6. PCBs	Each Day (24 hr. Basis)	4. TO 9 A (HRGC/HRMS) 5. TO 13 A (GC/MS) 6. TO 4 A (GC/MS)
	7. PM10 8. Mercury (vapor/gas)	Continuously “Real-Time” Each Day	7. EBAM 8. Iodated Carbon Trap/CVAF
Roof Top (3 Locations)	1. Asbestos	Each work shift	1. TEM
	2. Silica 3. Metals 4. PCDDs/PCDFs 5. PAHs 6. PCBs	Each Day (24 hr. Basis)	2. XRD 3. XRF 4. TO 9 A (HRGC/HRMS) 5. TO 13 A (GC/MS) 6. TO 4 A (GC/MS)
	7. PM10 8. Mercury (vapor/gas)	Continuously “Real-Time” Each Day	7. EBAM 8. Iodated Carbon Trap/CVAF

## 7.0 METEOROLOGICAL MONITORING

Due to the complex nature of wind movement in an around buildings in the urbanized setting of Lower Manhattan, monitoring of wind velocity and direction on a continuous basis is warranted. Data available from regional National Weather Stations (NWS) such as Newark Airport, LaGuardia and Kennedy Airports can be used to complement the localized data but is likely NWS data may not always representative of conditions in and around the 130 Liberty Street site. A meteorological station will be deployed in the immediate vicinity of the site. The actual station will initially be located at roof top level at the deconstruction site.

The on site meteorological station will be connected directly to the computer station situated at ground level. Data will transmitted continuously and recorded as 5-minute average values. Data from the roof top station will be logged continuously at the unit's data logger and also transmitted via telemetry to the street level computer station.

The meteorological monitoring component of the air sampling and monitoring program will consist of equipment designed to continuously record wind speed, wind direction, standard deviation of wind direction, precipitation, and air temperature from a 10-foot tripod or roof mount tower. Monitoring will be done from the roof of the building at 130 Liberty Street until deconstruction activities warrant its physical removal when the roof is removed or access is denied due to ongoing construction activities. The 130 Liberty Street roof mounted station, will then be collocated with one of the air monitoring stations..

Meteorological variables and their importance in air quality modeling and ambient air monitoring is provided below as follows:

- **Wind Speed:** The wind speed is a major determinant of the travel distance and travel time of the contaminant. For example, in the air quality models, concentration is inversely proportional to the wind speed. Wind speed also affects the volatilization of contaminants from a work zone and thus influences the ambient air concentrations.
- **Wind Direction:** The wind direction indicates the direction in which contaminants will be transported. For example, ambient air quality models use hourly averages of wind direction to determine which location specific concentrations. The observed wind directions during ambient air sampling will be used to designate samples as upwind, downwind, or crosswind relative to potential contaminant emissions sources.
- **Standard Deviation of Wind Direction:** can be used to perform stability calculations for air contaminant transport calculations.
- **Barometric Pressure:** can be used in the calibration of the high-volume samples.
- **Ambient Temperature:** The ambient temperature is used in determining the rise of a buoyant plume. A plume rise calculated by an air quality model determines the final height above ground of the centerline of the pollutant plume from a point source. Ambient temperature can be helpful in quantifying the degree of contaminant volatilization.

- Rainfall: rainfall and moisture may have the effect of scrubbing particulates from the air.

The data from the meteorological station units will be recorded by a CSI CR510 digital data logger, and telemetered back via CDMA cellular modems.

## 8.0 ACTION LEVELS AND MITIGATION MEASURES

A two tiered system will be in place during the entire term of the deconstruction project. This system includes use of both Target Air Quality Levels and USEPA Site Specific Trigger Levels for each of the target parameters identified previously in Section 4. A summary listing of these Action Levels provided on a parameter specific basis is shown in Table 5.

Table 5. Target Air Quality Levels and USEPA Site Trigger Levels <sup>a</sup>		
Analyte	Target Air Quality Levels	USEPA Site Specific Trigger Levels
<b>Metals</b>		
Antimony	5 ug/m <sup>3</sup>	14 ug/m <sup>3</sup>
Barium	5 ug/m <sup>3</sup>	5 ug/m <sup>3</sup>
Beryllium	0.02 ug/m <sup>3</sup>	0.2 ug/m <sup>3</sup>
Cadmium	0.04 ug/m <sup>3</sup>	2 ug/m <sup>3</sup>
Chromium	0.6 ug/m <sup>3</sup>	60 ug/m <sup>3</sup>
Copper	10 ug/m <sup>3</sup>	100 ug/m <sup>3</sup>
Lead	1.5 ug/m <sup>3</sup>	5 ug/m <sup>3</sup>
Manganese	0.5 ug/m <sup>3</sup>	0.5 ug/m <sup>3</sup>
Mercury	0.3 ug/m <sup>3</sup>	3 ug/m <sup>3</sup>
Nickel	0.2 ug/m <sup>3</sup>	28 ug/m <sup>3</sup>
Zinc	16 ug/m <sup>3</sup>	160 ug/m <sup>3</sup>
<b>Particles and Dust</b>		
Asbestos	0.0009 f/cc (PCMe fibers)	70 S/mm <sup>2</sup> (TEM AHERA structures)
Particulate PM <sub>10</sub> (24 hour average)	150 ug/m <sup>3</sup>	150 ug/m <sup>3</sup>
Respirable Silica (crystalline)	10 ug/m <sup>3</sup>	10 ug/m <sup>3</sup>
<b>Organics (semi-volatiles)</b>		
Dioxins/Furans (2,3,7,8 – TCDD equiv.)	0.00025 ng/m <sup>3</sup>	0.025 ng/m <sup>3</sup>
PCB (total Aroclors)	0.12 ug/m <sup>3</sup>	12 ug/m <sup>3</sup>
PAH (benzo-a-pyrene equivalent)	0.034 ug/m <sup>3</sup>	3.4 ug/m <sup>3</sup>

<sup>a</sup>All values listed in Table 5 are consistent with Target Air Quality Levels and USEPA Site Trigger Levels adopted for use during 4 Albany Street deconstruction project. As such these levels represent USEPA/NYDEC sanctioned values.

### 8.1 Action Levels

The following actions will be taken if there is an exceedance of any Target Air Quality Level. If there is an exceedance of both the Target Air Quality Level and USEPA Site Specific Trigger Level, actions associated with the USEPA Site Specific Trigger Level will govern.

#### 8.1.1 Target Air Quality Levels

Any 24-hour PM<sub>10</sub> value in excess of the Target Air Quality Level will be considered an “exceedance” and the actions described below will be taken.

Any sample of an analyte, other than PM<sub>10</sub>, in excess of 3 times the Target Air Quality level for that analyte will be considered an exceedance and the actions described below will be taken.

Following the first week of sampling, a cumulative average will be established based initially on the first week's results, to which will be added daily values as results are received from the laboratory.

Exceedance of an established target Air Quality Level for any analyte calculated as shown above will result in an evaluation of engineering controls and work techniques in the source area. This evaluation shall include but not be limited to the evaluation of work activities that may be causing the exceedance, smoke testing of the isolation barriers in question, and inspection and repair of any faulty isolation barriers.

### ***8.1.2 USEPA Site Specific Trigger Levels***

Any 24-hour value (work shift value on days or four hour value on non-work days in the case of asbestos) in excess of the USEPA Site Specific Trigger Level will be considered an "exceedance" and the actions described below will be taken.

Exceedance of USEPA Site Specific Trigger Levels will result in a stoppage of work associated with the exceedance until an evaluation of emission controls is performed and corrective action is in place. The USEPA Site Specific Trigger Levels are applicable to individual sample results. If any of the individual sample results exceed an USEPA Site Specific Trigger level, then notification must be made to the USEPA Region 2, NYCDEP, NYSDOL and NYSDEC. Work will be reinitiated once the USEPA Region 2 has agreed (and NYSDOL during the Abatement Phase in the case of asbestos exceedances) to the corrective action(s) proposed to prevent the potential for exceedances in future work and such corrective actions have been implemented.

## **9.0 EXCEEDANCE NOTIFICATION**

### **Notification**

The USEPA Region 2, NYCDEP, NYSDEC and the NYSDOL will be notified as promptly as reasonably possible via phone and electronic mail of any exceedance of either a Target Air Quality Level or a USEPA Site Specific Trigger Level and will be notified promptly of any corrective actions taken in connection with a Target Air Quality Level exceedance or an USEPA Site Specific Trigger Level exceedance.

### **Monitoring Data**

All Sampling results collected pursuant to this specification, in suitable electronic form, will be promptly provided to the USEPA Region 2, NYCDEP, NYSDEC and NYSDOL offices weekly and exceedances will be reported as provided above.

## **10.0 QUALITY ASSURANCE/QUALITY CONTROL**

### **10.1 Overview**

The program described herein will be performed by the Environmental Subcontractor under subcontract to Contractor, the overall general contractor for the 130 Liberty Street Deconstruction Project. The Contractor Environmental Subcontractor will assume responsibility for the collection and analyses of all samples identified previously in Sections 5 and 6 of this plan. The Contractor Environmental Subcontractor/Contractor Team will assume responsibility for the quality of all data to be collected in the conduct of the deconstruction project. LMDC in its role as property owner will utilize its independent Environmental Consultant to serve in an oversight role to the Contractor monitoring activities. This oversight role will include additional QA/QC measures to be implemented by LMDC and its consultants to further insure that all monitoring data meet predetermined data quality goals and objectives. A separate document or Quality Assurance Project Plan (QAPP) will be prepared and issued for agency review and comment. This QAPP will provide details on all QA/QC measures to be put in place by the Contractor Environmental Subcontractor/Contractor Team for the deconstruction monitoring program. This QAPP will also identify all of the additional QA/QC measures to be undertaken by the LMDC consultant to fulfill its oversight function for this program.

### **10.2 Contractor Environmental Subcontractor/Contractor Quality Assurance/Quality Control**

The Contractor Environmental Subcontractor/Contractor Team will have primary responsibility for implementation of all program Quality Control measures identified in the QAPP. These will include but not be limited to the following types of QA/QC features:

- Data Quality Objectives
- Detection Limit Goals
- Data Capture Goals
- Chain of Custody
- Calibration Procedures and Frequencies
- Field Blanks
- Lab Blanks
- Collocated Samples
- Matrix Spikes
- Lab Control Spikes
- Lab Method Blanks
- Field Surrogate Spikes
- Lab Surrogate Spikes
- Corrective Action Measures

Elements of QA/QC typically contained in a QAPP are listed in Table 6.



**Table 6. Elements Typically Contained in a Quality Assurance Project Plan (QAPP)**

<p><u>Title Page.</u> Should include the name of the document and the date it was prepared. The QA officer should sign the title page, ensuring that field and laboratory personnel are aware of the requirements for precision, accuracy, completeness, representativeness, and comparability.</p> <p><u>Table of contents.</u> Includes a listing of the QAPP elements and any appendices, figures, and tables. A list of the recipients of official copies of the QAPP should also be provided.</p> <p><u>Project description.</u> Consists of a general paragraph describing the scope of work, general objectives, and required measurements. (If the project description is discussed in the field sampling plan, it does not need to be repeated in the QAPP.)</p> <p><u>Proved organization and responsibility.</u> Identifies key field and laboratory personnel or organizations that are necessary for each analytical activity during the study. A table or chart showing the organization and lines of authority should be included. The organizational chart should also include all subcontractors and their key points of contact. The QA officer should be organizationally independent of project management so that the risk of conflict of interest is minimized.</p> <p><u>Data quality objectives.</u> Describes the QA objectives for the data so that the data can achieve their intended use. Project-specific data quality objectives that have been identified for the project, short-term decisions that will be made during the project planning phase, and long-term decisions that will be made prior to project closeout should be highlighted.</p> <p><u>Sampling locations and procedures.</u> References the sections of the field sampling plan that discuss the general rationale for choosing sampling locations and the sampling procedures proposed for each matrix.</p> <p><u>Sample custody and holding times.</u> References the appropriate sections (e.g., sample custody/ documentation) of the field sampling plan for all custody and holding requirements pertaining to the field and laboratory activities.</p> <p><u>Sampling and analytical procedures.</u> Identifies the appropriate sampling and analytical test methods that should be used for each environmental sample.</p>	<p><u>Calibration procedures and frequencies.</u> Discusses the calibration procedures to be used, the number and concentration of calibration standards, and the calibration range and procedures to establish and verify the calibration of instruments.</p> <p><u>Internal QC checks.</u> Identifies the specific internal QC methods to be used, including analyses of method blanks; use of laboratory control samples, and use of environmental samples as duplicates, matrix spikes, and duplicates.</p> <p><u>Calculation of data quality indicators.</u> Discusses how precision, accuracy, completeness, representativeness, and comparability goals are to be calculated from the project data.</p> <p><u>Corrective actions.</u> Addresses corrective actions that must be implemented if QA specifications are not met. Corrective actions could include resampling, reanalyzing samples, or auditing laboratory procedures. Persons responsible for initiating these actions should be identified.</p> <p><u>Data reduction, review, validation and reporting.</u> Discusses the data review process that is required to assure the validity of the data. Data reduction procedures should be summarized and the persons responsible for data reduction identified. The format for reporting the data and the data reporting schedule should be specified.</p> <p><u>Preventive maintenance.</u> Discusses the preventive maintenance plan that will be implemented to minimize downtime of field and laboratory instrumentation.</p> <p><u>Audits.</u> Describes the performance, systems, data quality, and management audits that will be performed onsite and at the laboratory.</p> <p><u>QC reports to management.</u> Discusses QC reports that will be prepared. These reports typically include an assessment of accuracy, precision, completeness, representativeness, and comparability; audit results; and significant QA problems encountered.</p>
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Source: Design, Installation and Utilization of Fixed-Fenceline Sample Collection and Monitoring System, US Army Corps. of Engineers, EM 200-1-5 – 1 October 1997

### **10.3 LMDC Oversight Role**

LMDC, through its consultants, will conduct specified oversight of the Quality Assurance/Quality Control measures to be implemented by Contractor /Contractor Environmental Subcontractor in performance of the 130 Liberty Street Deconstruction Ambient Air Monitoring Program. The specific responsibilities of LMDC and its consultants will be identified in more detail in the QAPP. These will include but not be limited to the following types of activities and measures:

- Collocated Field Samples
- Data Validation
- Field Systems and Calibration Audits
- Data Quality Audits
- Performance Evaluation Samples (“Blind” Reference Samples NIST/EPA)

## **11.0 ELECTRONIC DATA MANAGEMENT AND REPORTING**

### **11.1 Data Acquisition Systems**

The primary data acquisition system for the continuous monitors and the meteorological system will be the CSI CR510 data logger. The data logger has inputs for 4 single-ended analog channels. Each data channel will be sampled once per second with an accuracy of  $\pm 0.1$  percent of full scale. Both 5-minute and hourly averages will be calculated. The data loggers are programmable, and additional information such as maxima, minima, and frequency histograms can be collected.

### **11.2 Data Management**

The current Contractor Environmental Subcontractor has developed an ensemble of systems for electronic data management of nearly all phases of environmental monitoring projects that will be used to manage the collection and reporting of data from this project. These systems, or equivalent, will be utilized for the management of data:

- EnviroData<sup>®</sup> provides a standardized means for porting laboratory electronic data deliverables (EDDs) into Microsoft<sup>®</sup> Access<sup>®</sup> databases;
- MonitorFast<sup>SM</sup> provides a framework for automated data retrieval from monitoring stations to standardized SQL Server databases either periodically or in real-time;
- FieldFast enables direct electronic entry of field sampling data from the Asbestos, PUF and TSP samplers; and
- TeamLink<sup>SM</sup> provides a secure Web-based data access portal and project management tool.

Each of these technologies is described further in Appendix A of this document.

### **11.3 Reporting**

Samples will be shipped overnight to the laboratory the day after the sample period. Please refer to Table 7 for proposed laboratory turnaround times on a parameter specific basis. Data reporting schedules and frequencies are also provided. PAHs, PCB, and D/F's data collected are loaded to the EnviroData<sup>®</sup> database, or equivalent on Contractor Environmental Subcontractor's server within 48 hours of receipt of the EDD from the laboratory. The data can be viewed in tabular format through the Teamlink<sup>SM</sup> Website, or equivalent.

For continuous monitors and the meteorological station, the data loggers will record data at 5minute and 60-minute intervals. The data will be downloaded from the loggers to the databases on a minimum of once daily, and reviewed by the Contractor Environmental Subcontractor Project Scientists. The frequency of data retrieval can be increased in MonitorFast<sup>SM</sup>, or equivalent to obtain access to results in near-real time.

A data analysis report will be submitted to Contractor at the end of the program. Data will be stored in a central database in a standard format. The data analysis will review the meteorological, PM, PAH's, PCB, and D/Fs data.

The data collected during the demolition segment of the monitoring program will be primarily used for real-time data display and triggering notification when action levels are exceeded (See Sections 7 and 8). All continuous monitoring data will be archived in Microsoft SQL Server databases maintained on a secure Internet server in the Contractor Environmental Subcontractor's offices.

Basic summary information and real-time displays of the monitoring data will be available interactively on-line. The Website will allow the Contractor Environmental Subcontractor personnel to interactively view the monitoring data via charts, maps, or tables. Reports viewed in tabular format on the Web can also be saved to Excel spreadsheets. Additional required information, such as daily calibration information and wind roses, will also be available on the website.

Authorized personnel from USEPA Region 2, NYCDEC, NYSDEC and NYSDOL will also be provided direct access to the website where all air monitoring data will be posted. In addition, once the air monitoring data has been subject to QA/QC review validated results will also be posted on the website in a dedicated location for direct access by the general public.

#### ***11.3.1 Electronic Communication Equipment and Software***

As previously described, communications with the CSI data loggers will be via cellular CDMA modems at each station. The loggers will be polled automatically from Contractor Environmental Subcontractor's office and the retrieved data will be automatically uploaded immediately after receipt. Data can be downloaded by users directly to Microsoft® Excel® or Access®.

<b>Table 7. Data Reporting Schedule and Frequency for Each Program Phase</b>			
<b>Analyte</b>	<b>Lab Turnaround Time (TAT)</b>	<b>Reporting Frequency</b>	<b>Sample Period</b>
<b>Background Phase</b>			
Metals	3 Days	Every Day	24 Hours
Asbestos	24 Hours	Every Day	Work Shift
Semivolatiles	5 Days	Every Day	24 Hours
Silica	3 Days	Every Day	24 Hours
Real-time PM <sub>10</sub>	NA	Every Day	Continuous 24/7
Real-time Hg	NA	Every Day	Instantaneously
<b>Phase I - Abatement</b>			
Metals	3 Days	Every Day	24 Hours
Asbestos	24 Hours	Every Day	Work Shift
Semivolatiles	5 Days	Every Day	24 Hours
Silica	3 Days	Every Day	24 Hours
Real-time PM <sub>10</sub>	NA	Every Day	Continuous 24/7
Real-time Hg	NA	Every Day	Instantaneously
<b>Phase II – Structural Deconstruction</b>			
Metals	3 Days	Every Day	24 Hours
Asbestos	24 Hours	Every Day	Work Shift
Semivolatiles	5 Days	Every Day	24 Hours
Silica	3 Days	Every Day	24 Hours
Real-time PM <sub>10</sub>	NA	Every Day	Continuous 24/7
Real-time Hg	NA	Every Day	Instantaneously

**APPENDIX A**  
**ELECTRONIC COMMUNICATION-SOFTWARE**  
**TOOLS**

### **Data Management Program**

An environmental data management program will be provided that facilitates the processing of current and historical analytical data collected across multiple work areas. Contractor Environmental Subcontractor will provide analytical sampling results via EDD's compatible to export results to a standardized Microsoft<sup>®</sup> Access datamart for end-users of the data. The datamarts can be accessed to provide interactive data queries, charting, and summaries.

### **Automated Data Collection**

Contractor Environmental Subcontractor's system will be used to automate data collection from the real-time monitoring network (PM<sub>10</sub> monitors, as well as the meteorological station) by sending the data via a wireless phone connection to a secure Internet database. The data can then be viewed in real time over secure Web pages in tabular, graphical, and spatial formats. The system architecture consists of three tiers: field data collection, database storage, and Web-based data access and reporting.

The system uses digital data loggers and software for data collection and retrieval. These loggers were described previously and will transmit their data to Contractor Environmental Subcontractor via wireless modems.

Contractor Environmental Subcontractor developed a standard database structure that is the system's foundation for maximizing efficient transfer and management of data. For example, the database uses stored procedures to send e-mail notifications when incoming data trigger alarm conditions, and to warn when data are not received on schedule. Because monitoring data are stored in standardized databases, information retrieval and editing processes are very efficient. Data reside on a secure server that is backed up daily and stored off-site. Through Contractor Environmental Subcontractor's system, data can be manipulated and viewed in real time in tabular, graphical, or spatial formats.

### **Data Tracking Software**

Contractor Environmental Subcontractor will utilize a software program for tracking samples and data, electronically generating chain-of-custodies (COC) and sample labels, data reports, and capturing sample attributes and field parameters. The program operates in tandem with personal computers (generating labels and COCs, and managing the database) and portable digital assistants (PDAs) for collecting data in the field. The Program eliminates most typographical errors in the field and ensures that laboratories and engineering staff can clearly read paperwork and data. Additional data such as field measurements can be exported to various environmental data management systems (EDMS), including Geographical Information Systems (GIS), Microsoft® Access® and Excel®, and more.

### **Virtual Private Network**

The Contractor Environmental Subcontractor will develop a Web-based collaborative workspace that is accessible from a computer with Internet access, a Web browser, and a user account. Project data can be viewed from office or home 24 hours a day. The data can be manipulated and viewed in real time in tabular, graphical, or spatial formats enabling easier reporting of data. charts and data can be imported into other programs such as Microsoft® Excel, Word, and PowerPoint.

Data are secured by Secured Socket Layer (SSL) encryption technology and by individual member IDs and passwords, making the site as secure as an online banking account.

This system will be used to:

- Organize, store, and review electronic files, including documents, photos and video, maps, and data.
- View and query data in tabular and spatial formats.
- Manage project schedules, contractor invoices, resource management, and commitment tracking/scheduling.
- Submit and receive reports and invoices from subcontractors (if requested).

TeamLink<sup>SM</sup>'s Filing Cabinet provides a project-specific organizational structure for easier management of project documents and includes the following features:

- Multiple Security Levels—Various levels of security control which team, subgroup, or user can view which information.
- Document Response/Review Capabilities—Each document's complete lifecycle can be managed by posting responses/reviews to documents in a threaded hierarchy structure.



**Emergency Action Plan**  
**for**  
**Phase I of Deconstruction Operations**  
**at**  
**130 Liberty Street**  
**New York, NY**

Lower Manhattan Development Corporation  
One Liberty Plaza, 20<sup>th</sup> Floor  
New York, NY 10006



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## **SECTION 1 INTRODUCTION**

The 130 Liberty Street site is occupied by a 40 story, approximately 1.4 million square foot office building (Building). Interior and exterior portions of the Building were severely damaged and/or impacted as a result of the collapse of the World Trade Center Towers. The Lower Manhattan Development Corporation (LMDC) took ownership of the Building on August 31, 2004.

The deconstruction of the Building shall be performed in two phases – Phase I is limited to non-structural, interior building deconstruction tasks. Removal of the structure is to be undertaken in Phase II. This Emergency Action Plan (EAP) has been developed for Phase I activities only. All Phase II activities, including emergency preparedness, will be developed and documented in a future Phase II Deconstruction Plan. Phase I activities include the general cleanup of asbestos and contaminants of potential concern and removal of the interior non-structural components of the building. Complete detail of the work is contained in the overall Phase I Deconstruction Plan for 130 Liberty Street.

## **SECTION 2 PURPOSE**

This EAP is designed to lessen the impact of any emergency that might occur during the deconstruction process through proper planning and the establishment of a suitable response structure. The Plan designates the appropriate personnel responsible for implementing and monitoring the EAP and identifies those who need to be contacted in the event of an emergency. It outlines the education and training required by all on-site personnel so that all understand the requirements and expectations of the EAP.

This EAP will apply to all contractors working on the site (e.g. Contractor, Abatement Subcontractor, Environmental Consultant, Demolition Subcontractor, Mechanical Subcontractor, Electrical Subcontractor, etc.), their employees and any visitors to the site.

## **SECTION 3 LOCATION OF PLAN**

A copy of this EAP will be provided to LMDC, all Contractor employees working at the Building, and all subcontractors working on the site. It will be available at all field offices, the Building Security Desk and at the entrance to the remote personnel decontamination unit located in cellar “A” as indicated in Section 4 (Asbestos and COPC Abatement and Removal Plan) of the Phase I Deconstruction Plan. It will also be provided to the following city, state and federal governmental agencies: New York City Fire Department (FDNY), Police Department (NYPD), Office of Emergency Management (OEM), Department of Buildings (DOB), Health Department (DOH), Department of Environmental Protection (DEP), Department of Transportation (DOT), (collectively “the City Agencies”); New York State Department of Health (NYSDOH), New York State Department of Labor (DOL) and Department of Environmental Conservation (DEC);

and the United States Environmental Protection Agency (EPA) and Occupational Health and Safety Administration (OSHA) (in total, the “Governmental Agencies”).

Any questions concerning this plan should be directed to Kate Millea, LMDC Project Manager, Community Development and Relations, 212-962-2300.

This EAP will be revised as necessary during the course of the project. All revisions will be marked by date and revision number and conveyed to all on-site personnel, the Governmental Agencies listed above and to LMDC for distribution as appropriate.

The EAP will also be accessible on the LMDC website, [www.renewnyc.com](http://www.renewnyc.com).

#### **SECTION 4 CONTRACTOR EMERGENCY COORDINATOR**

John Graves, Gilbane’s Senior General Superintendent has been designated as the Contractor Emergency Coordinator. John Graves holds a current New York City Site Safety Manager (NYCSSM) license (No. 1423, exp. 6-30-2006) and has extensive training and experience in the execution of similar work in New York City. His contact numbers are (646)772-5522 or (212) 267- 1700 as indicated in Attachment A. These are the primary Contractor emergency contact phone numbers, and both are 24-hour contact numbers. The Contractor Emergency Coordinator’s base of operations will be the Contractor’s field office (trailer).

In the event that John Graves is not on site, an alternate Contractor Emergency Coordinator will be designated and will be responsible for ensuring proper implementation of this EAP. The name and contact information of the alternate Contractor Emergency Coordinator will be provided to LMDC and all Subcontractor Emergency Coordinators.

The Contractor Emergency Coordinator has overall responsibility for this EAP and will ensure that all required activities of the EAP are met. In addition the Contractor Emergency Coordinator has the lead role in directing all responses to circumstances covered under this EAP. Further, the Contractor Emergency Coordinator will be the liaison to the First Responder agencies for pre-planning collaboration, regular contact throughout the work, notifications and for coordinating the Contractor’s support of any agency response to an emergency. Further details of the responsibilities of this role are outlined throughout this EAP.

#### **SECTION 5 PRE -EMERGENCY RESPONSE ACTIVITIES**

##### **5.1 Pre-Planning**

The following actions below will be implemented prior to the initiation of the Phase I deconstruction activities to minimize the potential for incident occurrence and to ensure proper preparation for emergency response if needed.

- Prior to the commencement of work activities, the Contractor Emergency Coordinator will meet with appropriate representatives from the City Agencies to:
  - present and discuss the EAP;
  - discuss any required collaborative preparation (practice drills, etc.); and
  - ensure they are informed regarding existing building conditions as well as the potential for the removal of contaminated victims during Phase I.
- A complete set of Building drawings will be available within the Contractor field office (trailer) and LMDC's office located at 1 Liberty Plaza for use in an emergency situation. Copies of the drawings will also be provided to FDNY and DOB. As conditions change within the building that may impact egress patterns, updated information will be added to the building drawings and provided to FDNY and DOB. Note: The Contractor will ensure drawings indicate the location of all elevator operations and panels as well as all Fire Department connections.
- All Subcontractors will provide to the Contractor the names, contact information and any required training documentation for the individuals they propose to fulfill the roles of the subcontractor Emergency Coordinator (and substitutes).
- A schedule for regular emergency preparedness meetings will be established by the Contractor Emergency Coordinator. Attendance by all Subcontractor Emergency Coordinators is required. The LMDC and First Responder agencies shall be informed of the meeting schedule in advance so they have the opportunity to attend as desired.
- Emergency points of contact list will be posted within the Contractor's Field Office (see Appendix A), the Building Security Checkpoint Desk and at the entrance to the remote personnel decontamination unit.
- Site evacuation maps will be posted throughout the facility for emergency evacuation (see Appendix D). Exits will be clearly marked, and signs reflecting changing egress patterns as the works proceeds will be prominently posted.
- First aid kit(s) will be placed within the Contractor's field office and the Building Security Checkpoint Desk. An automated external defibrillator (AED) will be located within the Contactor field office.
- Rally points or meeting places have been established and are shown on the evacuation map (see Appendix C).
- The Contractor will ensure that all subcontractors that have an on-site field office trailer have placed at least one (1) fire extinguisher in each trailer.
- The Contractor will ensure fire extinguishers will be strategically positioned at designated locations within the Building as required by governing regulations. Note: the Contractor shall insure that all portable fire extinguishers shall be inspected periodically and maintained in accordance with Maintenance and Use of Portable Fire Extinguishers, NFPA No. 10A-1970.
- The Contractor will ensure that a system is in place to track site personnel and visitors to provide an accurate site head count at any moment in time.

- An audible evacuation signal compliant with the most stringent regulatory requirements will be established and tested daily with documentation of each test recorded within the project log by the Contractor Emergency Coordinator.
  - Two (2) long blasts of the site air horn will sound through a temporary radio communication system to be installed and maintained by the Demolition Subcontractor. To ensure the evacuation alarm is audible throughout the Building, a loudspeaker will be strategically positioned on each floor.
  - This audible evacuation signal will be tested daily by the Contractor Emergency Coordinator or his designee and the performance of this test documented in the project log.
  - The Contractor Emergency Coordinator will notify LMDC in advance of the drills so that appropriate community notification can be given consistent with the Community Notification Plan, attached as Appendix F (pending).
  - At the conclusion of the test each day, all Subcontractor Emergency Coordinators will poll their personnel to ensure the alarm was audible in all locations and report back to the Contractor Emergency Coordinator.
  - Corrective measures, if necessary, will be implemented immediately.
- All communications systems will be tested prior to the commencement of any work activities.
- Steam and Gas are being disconnected and capped in the street. The remaining utilities will be cut and capped in the street as necessary, i.e., water, electric and sewer. The Contractor will coordinate access to the site for Con Edison.

## **5.2 Training**

### **5.2.1 Contractor Emergency Coordinator**

The Contractor's designated Emergency Coordinator shall hold a current NYCSSM license. The Contractor shall insure that its Emergency Coordinator or a designated representative has been trained in the OSHA Disaster Site Worker Outreach Program.

### **5.2.2 Subcontractor Emergency Coordinators**

Prior to Phase I deconstruction activities, all subcontractors working on the site will identify an Emergency Coordinator and one alternate who will be responsible for the performance of emergency preparedness responsibilities as outlined herein, including coordinating the emergency evacuation of their personnel. In addition, the subcontractor emergency coordinator will be required to assist the Contractor Emergency Coordinator with the dissemination of information relating to an emergency.

All designated Subcontractor Emergency Coordinators shall have successfully completed the OSHA 30 hour course and must provide the Contractor with proof of this certification.

All subcontractors working on the site shall have a minimum of one (1) Red Cross Certified

First Aid trained individual on the site at all times. Training will include basic first aid, CPR, OSHA blood-borne pathogens, and use of an AED. A list of names with copies of their certifications must be provided to the Contractor at time of mobilization.

In addition, on a daily basis, each Subcontractor Emergency Coordinator will be required to designate one foreman and/or superintendent per active work floor to serve as an evacuation coordinator. In the event of an evacuation, this evacuation coordinator will be responsible for ensuring the complete evacuation of their personnel from the floor for which they have responsibility. This evacuation coordinator will be required to maintain a head count of the personnel under their supervision.

### **5.2.3 All Site Personnel**

Prior to the start of on-site activities, all site personnel will be required, at a minimum, to attend the following site-specific safety orientations:

- Contractor on-site Construction Safety orientation
- Contractor Health and Safety Plan orientation
- Contractor Emergency Action Plan orientation
- Job Hazard Analysis (JHA) specific training - to be provided by the applicable trade Subcontractor

All such training will be documented by the applicable training provider. Signed copies of all orientation attendance sheets, EAP acknowledgement forms and HASP acknowledgment forms must be provided to the Contractor and will be maintained on site within the Contractor's field office.

If site conditions warrant a modification to the EAP, all personnel working on the site will be informed of these changes either at a general site safety orientation conducted by the Contractor or at the individual subcontractors' required weekly toolbox talks. All personnel will be required to sign an attendance sheet acknowledging the EAP modification.

### **5.2.4 Drills**

The Contractor Emergency Coordinator will be responsible for setting up and coordinating spontaneous drills of this Emergency Action Plan. For the duration of the deconstruction work, such spontaneous drills involving all occupants of the building will occur as warranted. The Contractor Emergency Coordinator will notify LMDC in advance of the drills so that appropriate community notification can be given consistent with the Community Notification Plan, attached as Appendix F (pending).

### **5.3 Emergency Response Coordination**

The Contractor Emergency Coordinator will function as the on-site representative to the First responders (e.g. FDNY, NYPD, etc.) in the event of an emergency. The main security check point at the Building, located at Washington and Albany Streets, has been designated as the

location for first responders to meet the Contractor Emergency Coordinator to be briefed on the scope and nature of the emergency. During an emergency which requires activation of this Emergency Action Plan the Contractor Emergency Coordinator will be clearly identified by means of a reflective vest. This vest will prominently display the words Contractor Emergency Coordinator on both the front and back.

As part of pre-planning activities the Contractor will meet with the City Agencies prior to the commencement of any Phase I related work. The Contractor will provide the City Agencies with information on the type and location of hazardous materials that may be in the Building. By providing this information prior to the commencement of work activities, the First responders will be able to address any special PPE requirements necessary for conducting emergency rescue services within the Building.

The Contractor Emergency Coordinator will obtain Site Personnel logs from each Subcontractor Emergency Coordinator on a daily basis by 7:30am. These will be updated throughout the day as personnel arrive at or leave the site. These logs will be used by the Contractor Emergency Coordinator in the event of an emergency to account for all trade personnel.

## **SECTION 6 EMERGENCY RESPONSE MEASURES**

This section describes the actions that will be taken in the event of an on-site emergency to minimize the effect of that "event" or emergency on on-site personnel, the neighboring community and the environment.

### **6.1 Reporting Emergencies**

All site personnel, upon discovering an emergency situation, shall immediately call 911. The Contractor Emergency Coordinator shall be notified immediately thereafter and will assume responsibility as the onsite representative to the First Responders.

The Contractor Emergency Coordinator shall immediately notify LMDC. LMDC, will, as necessary activate the community notification plan. Refer to Appendix F (pending) for Community Plan. Refer to Appendix A for a copy of the point of contact flow chart.

### **6.2 Building Evacuation**

Any explosion, regardless of size or type, any structural failure, fires and certain power failures will require a complete building evacuation. 911 will be notified in the event of an evacuation.

### **6.3 Designated Assembly Area**

In the event of an evacuation the designated assembly points for site personnel are:

- #1 – Edgar Street between Trinity Place and Greenwich Street
- #2 – Southwest corner of Rector Street and Washington Street



During the EAP orientation, all personnel will be instructed to locate and assemble in a manner that will not impede the operations of any business or agency in the area.

No visitors or trade personnel shall leave the assembly point until directed by the Contractor Emergency Coordinator. Following an evacuation, nobody shall be allowed to re-enter the Building until cleared by appropriate First Responder, safety, agency or technical personnel investigating the impact of the incident to the Building. The Contractor Emergency Coordinator will provide the “all clear” signal to the Subcontractor Emergency Coordinators once it is safe to return to normal work operations.

#### **6.4 Site Evacuation Process**

The Contractor Emergency Coordinator will be responsible, in conjunction with the applicable Subcontractor Emergency Coordinators, to initiate the following procedures.

The Contractor Emergency Coordinator will:

- Call 911
- Signal the audible evacuation alarm (two (2) long blasts of the site air horn will sound through the Building’s temporary radio communication system).
- Contact all Subcontractor Emergency Coordinators via cellular phone and/or site radio system to inform them of the nature and location of the emergency and the actions being initiated including whether it is safe for personnel evacuating the Building to decontaminate.
- Retrieve the daily Visitor Logs and daily Site Personnel Log
- Designate a Contractor employee to account for all logged visitors at the assembly points, the Contractor Security Detail will manage entry and exit to site. Overall accountability will be the responsibility of the Contractor Emergency Coordinator.
- Support and coordinate with First Responders as directed/requested

The Subcontractor Emergency Coordinator will:

- Secure all manpower (e.g., safely stop work)
- Secure all operating equipment
- Assist in the removal of personnel under their supervision from the Building (the designated evacuation coordinators shall perform a sweep to ensure that everyone has left their floor of responsibility before exiting the floor themselves)
- If conditions allow, ensure all personnel properly decontaminate
- Ensure personnel under their control proceed to the closest assembly point and remain there to await further direction
- Conduct a head count of their personnel at each location

#### **6.5 Surrounding Community Notification**

The Contractor Emergency Coordinator will immediately notify LMDC of an emergency situation resulting in the implementation of any aspect of this EAP. In emergency situations where First Responders will assume control, all community notifications will be coordinated

with the First Responders Incident Commander. In situations where that is not the case, LMDC will determine and implement appropriate notification to the community pursuant to the Community Notification Plan attached as Appendix F (pending). The Contractor Emergency Coordinator will advise, cooperate, participate, assist and provide support as requested by LMDC in community notification efforts.

## **6.6 Key Agency Notification**

In the event of an emergency situation resulting in the implementation of any aspect of this EAP, LMDC will notify the appropriate Government Agencies as warranted by the situation.

## **SECTION 7 RESPONSE TO SPECIFIC EMERGENCY EVENTS**

Below is a list of unplanned events that may occur during Phase I of the deconstruction project. This list may not be all encompassing, but represents “events” related to similar projects. These events include:

- Fire or explosion
- Power failure
- Structural failure
- Unplanned, sudden or non-sudden release of hazardous waste or constituents
- Worker injury or illness
- Falling or dropped building debris
- Work Stoppages or demonstrations.

### **7.1. Fire or Explosion**

In the event of an explosion or a fire, the Contractor Emergency Coordinator shall immediately:

- Call 911
- Meet First responders at the predesignated location (unless circumstances dictate otherwise, it is the security desk at the Building) for briefing on the scope and nature of the emergency
- Notify LMDC

### **7.2 Power Failure**

In the event of a power failure, the Contractor Emergency Coordinator shall immediately:

- Call 911, if warranted
- Notify on site Electrician to evaluate issue
- Start Emergency Generator
- Coordinate with the Abatement Subcontractor Emergency Coordinator to initiate containment isolation activities (e.g. both the Personnel and Waste Load Out Decontamination units must be immediately sealed to prevent a fiber release).
- Coordinate with the Abatement Subcontractor Emergency Coordinator to initiate back-up power generation.

- All containment isolation barriers are to remain secure until the required negative pressure has been re-established.

### **7.3 Structural Failure**

In the event of a structural failure, the Contractor Emergency Coordinator shall immediately:

- Call 911
- Initiate Emergency Action Plan, including Building evacuation procedures

### **7.4 Unplanned Release of Hazardous/Regulated Waste**

In the event of an unplanned release of a hazardous and/or regulated waste, the Contractor Emergency Coordinator shall, in conjunction with the responsible party, the Environmental Consultant, and others as appropriate shall make a determination whether to implement a Building evacuation or control and remediate the release. No untrained personnel shall attempt to remediate any release of hazardous/regulated wastes. Specific procedures for notification to the appropriate regulatory agencies and remediating any releases are addressed in the Phase I Deconstruction Plan.

In accordance with the New York State Asbestos Rules, if visible emissions occur outside the work area or any air sample within the building but outside the work area indicates a level of fiber concentration at or greater than the 0.01 fibers per cubic centimeter or background levels, work shall stop for inspection and repair of barriers and clean-up of surfaces. Any barriers disturbed will be restored, and clean up of surfaces outside the work area using HEPA vacuums and/or wet-cleaning methods, shall be performed prior to the resumption of abatement activity. Work will not resume until the onsite Environmental Consultant verifies that appropriate corrective actions have been taken. Airborne levels of asbestos fibers outside the work area will be closely monitored to ensure that they are below background /action levels.

In addition, this project will have in place an exterior air sampling program, as presented in Section 2- Ambient Air Monitoring Program of the Deconstruction Plan. Per this plan, the USEPA Region 2 office, NYCDEP, NYSDEC and the NYSDOL will be notified promptly of any exceedance of either a Target Air Quality Level or a USEPA Site Specific Trigger Level and will be notified of any corrective actions taken in connection with the Target Air Quality Level exceedance and the implementation of corrective actions in connection with USEPA Site Specific Trigger Level exceedance.

If exterior ambient air monitoring detects any potential contaminants of concern (COPC) as identified within Section 2 (Ambient Air Monitoring Program) of the Phase 1 Deconstruction Plan above the USEPA Site Specific Trigger Levels, all work within the Building will stop and the USEPA Region 2, NYSDOL and NYSDEP will be notified with regards to the exceedance and the implemented corrective measures. Work will not start until a cause of the release has been determined and corrective measures have been undertaken.

For any significant release of hazardous/regulated wastes to the exterior of the Building, the Contractor Emergency Coordinator shall call 911. LMDC will also notify EPA, NYSDOL, DEP, OSHA, DEC and DOB.

## **7.5 Medical Emergency and Rescue**

Potential injuries that may result in a medical emergency include:

- Slips, trips, falls, lacerations
- Trauma injuries caused by being struck by heavy equipment, building components, waste containers, etc.
- Eye injuries
- Burns from electrical, fire or explosion
- Electrical contact or electrocution
- Heat stress/stroke
- Chemical exposures
- Cardiac emergencies
- Respiratory emergencies

The Contractor and its subcontractors will respond to minor injuries requiring first aid only; major injuries or requirements for search and rescue will be handled by First Responders.

If a worker is showing signs of distress or obvious injury or illness, the applicable trade Subcontractor Emergency Coordinator shall immediately notify the Contractor Emergency Coordinator and provide the following information:

- Location of victim
- Nature of Emergency
- Whether the victim is conscious
- Specific details regarding the injury or illness
- Whether the victim is in need of decontamination

The Contractor Emergency Coordinator will suspend work within the immediate area until the emergency situation has been corrected. If possible the subcontractors' first aid attendant shall treat the injured employee as necessary until a decision is made to seek outside medical assistance or to remove the victim from the Building.

The Contractor Emergency Coordinator will be responsible for calling 911 and will inform the First Responders whether asbestos abatement activities are taking place within the Building, and whether or not the injured employee has been brought through the decontamination chamber.

Upon arrival at the Building, qualified First Responders will make a decision to enter into the project work area or request that the applicable Subcontractor Emergency Coordinator and personnel remove the victim from the Building. In addition, the qualified First Responder will determine the extent of emergency decontamination to be performed, if any, depending on the

severity of the injury or illness. If the injury or illness is such that emergency decontamination of the victim cannot be performed safely, the victim shall be given necessary first-aid treatment and wrapped in a blanket prior to transportation to emergency medical services.

## **7.6 Falling or Dropped Building Components**

This section will address procedures that must be followed in the event that any building component(s), construction material(s), equipment, etc. has either unintentionally been dropped, falls or has the potential to fall from the building:

- Call 911 if warranted
- The applicable Subcontractor Emergency Coordinator must immediately notify the Contractor Emergency Coordinator either verbally or via cellular telephone.
- The Contractor Emergency Coordinator shall immediately contact LMDC via cellular phone and verbally inform them of the situation as well as the corrective measures. LMDC will notify DEP, NYSDOL, EPA, OSHA and DEC.
- The Contractor Emergency Coordinator will contact NYC Department of Buildings.

### **7.6.1 Protective Measures in Place**

The following protective measures are currently being utilized at the site to reduce risks associated with the potential for building components to drop/fall from the Building:

- Plywood construction fence to restrict site access
- Sidewalk closures and/or installation of overhead protection
- 24/7 security guards on-site (fire watch activities, general site security around the Building perimeter, Building access)
- Survey of building exterior and selective removal of spandrel glass in danger of falling from building.

The Contractor Emergency Coordinator (or other Contractor designee) will be responsible for ensuring these protective measures remain intact and implementing any corrective measures.

## **SECTION 8 EAP INVESTIGATION AND REPORT**

The Contractor Emergency Coordinator in conjunction with the involved trade contractor shall commence an investigation immediately after stabilization of the emergency. The Contractor standard protocols for accident investigation shall be followed. The details of the investigation procedures are contained within the standard protocol. The Contractor will cooperate and assist any agency also investigating the incident.

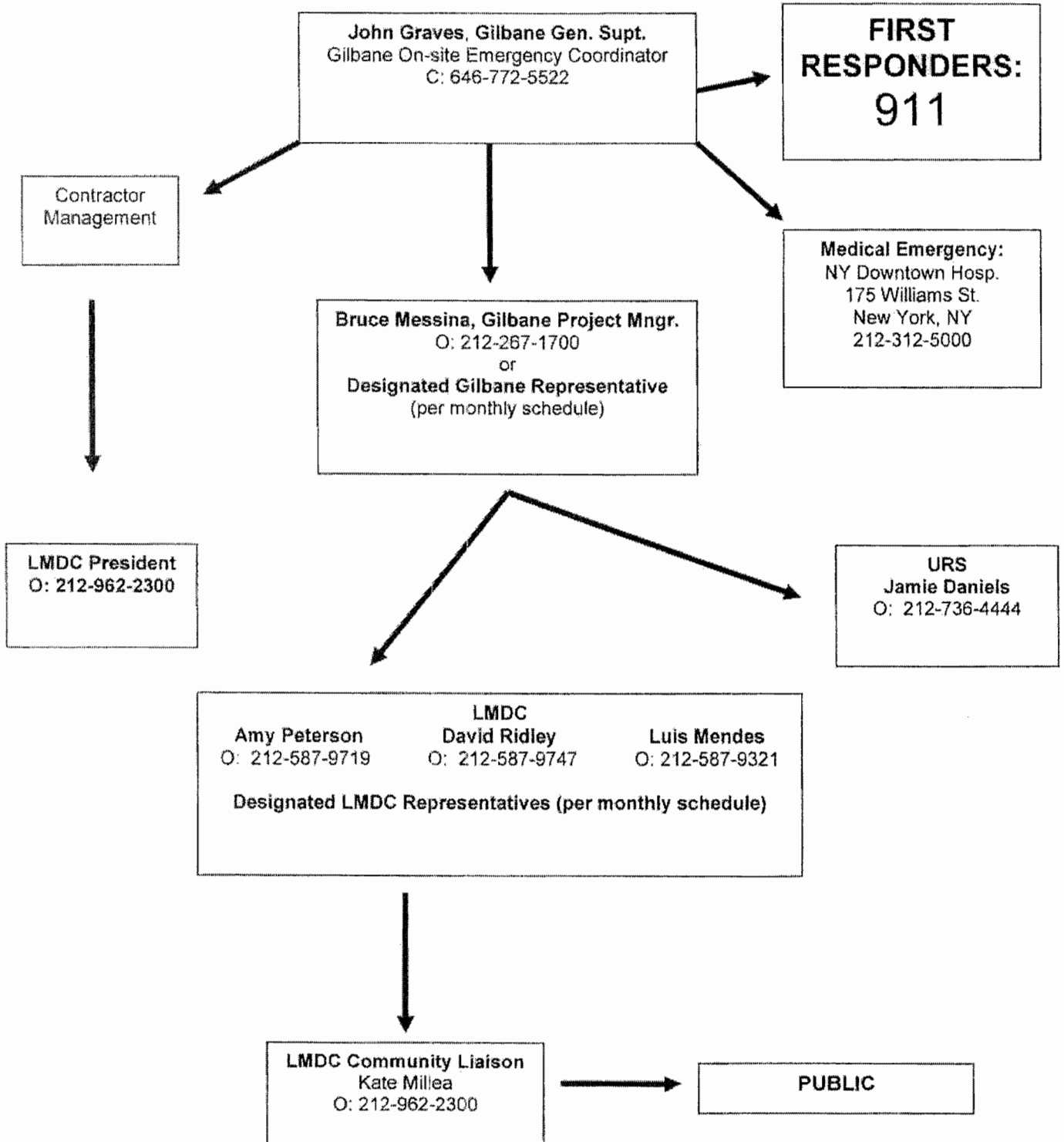
Within twenty-four (24) hours of the emergency a review meeting will be held. This review meeting will include an evaluation of the emergency, response to the emergency action and, if necessary, address the need to modify any emergency action protocols. The applicable trade

contractors will be required to prepare a written analysis of the emergency as well as provide recommended corrective measures. The Contractor Emergency Coordinator will use this information to prepare the report which shall be submitted to LMDC within forty-eight (48) hours of the review meeting. Implementation of any corrective measures shall take place immediately. LMDC will be informed of all investigation related events in advance so they have the opportunity to attend as they deem appropriate.

If warranted community briefings will occur as outlined in the Community Notification Plan at Appendix F (pending).

## **APPENDIX A**

# EMERGENCY RESPONSE COMMUNICATION CHART





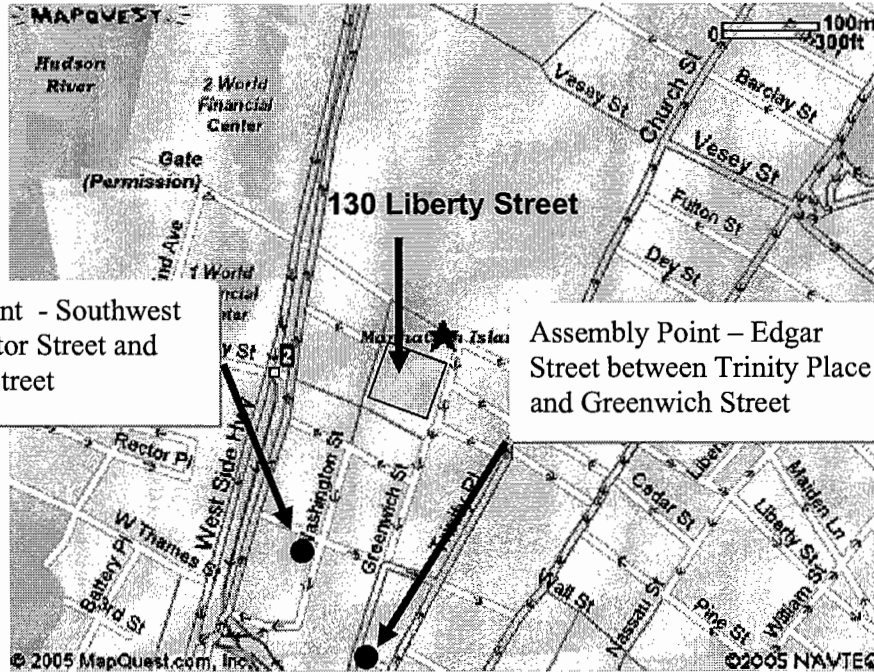
## **APPENDIX B**

## Agency Contact Information

<p><b><u>MEDICAL EMERGENCY</u></b>          NYU Downtown          69 Gold St # 15F          New York, NY          212-312-5108</p>	<p><b><u>POLICE DEPARTMENT</u></b>          1st Precinct          16 Ericsson Place          New York, NY 10013          212-334-0611</p>
<p><b><u>BURNS</u></b>          The NY Hospital--Cornell Medical Center          525 East 68th Street          New York, NY          212-746-5454</p>	<p><b><u>US DEPARTMENT OF LABOR (OSHA)</u></b>          Gil Gillen          345 Hudson Street          New York, NY 10014          212-337-2378</p>
<p><b><u>EYE INJURY</u></b>          New York Ear &amp; Eye Infirmary          310 E. 14th Street          New York, NY          212-598-1313</p>	<p><b><u>DEPARTMENT OF BUILDINGS (NYC)</u></b>          Robert Iulo          280 Broadway          New York, NY 10014          Emergency number: 212-566-3364</p>
<p><b><u>AMBULANCE—FDNY</u></b>          Telephone number: 911</p>	<p><b><u>ADM. CHIEF INSPE.: (B.E.S.T. SQUAD)</u></b>          Rudy Hahn          210 Joralemon Street, Room 819          Brooklyn, NY 11201          718-802-3713</p>
<p><b><u>FIRE DEPARTMENT EMERGENCY</u></b>          Dispatch: 212-628-2900 or 911</p>	<p><b><u>US ENVIRONMENTAL PROTECTION AGENCY</u></b>          Pat Evangelista          ORA/NYC RRO, Region 2          290 Bdwy, 26th floor          NY 10007-1866          212-637-3000</p>
<p><b><u>NYS DEPT. OF ENVIRONMENTAL CONSERVATION</u></b>           Richard Fram          11-15 47th Ave.          Long Island City, NY 11101          718-482-4944</p>	<p><b><u>NYS DEPARTMENT OF LABOR</u></b>          Christopher G. Alonge, P.E.          State Office Building Campus          Albany, NY 12240          518-457-2857</p>

## **APPENDIX C**

# 130 Liberty Street Emergency Evacuation Assembly Locations

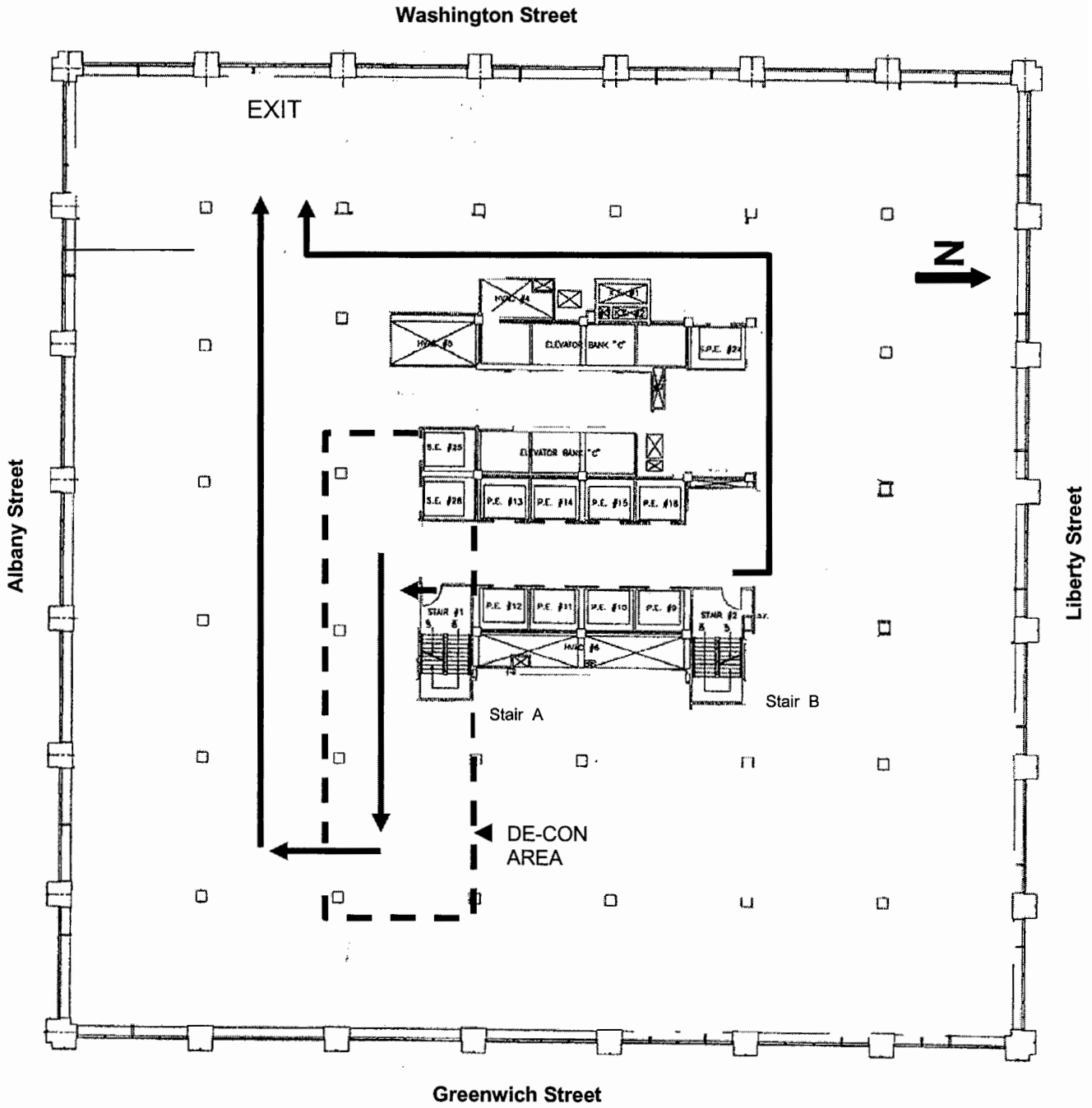


Assembly Point - Southwest corner of Rector Street and Washington Street

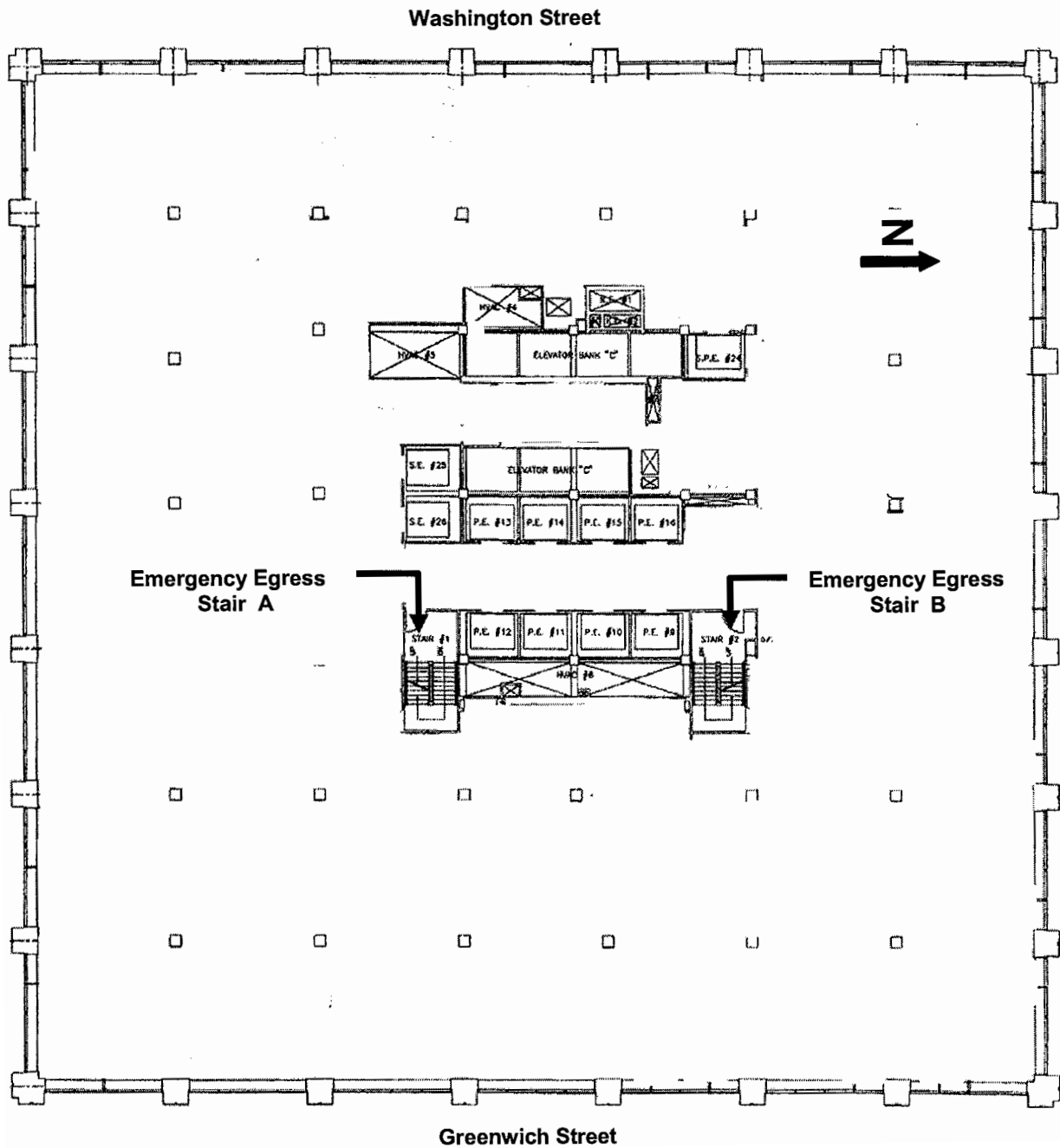
Assembly Point – Edgar Street between Trinity Place and Greenwich Street

## **APPENDIX D**

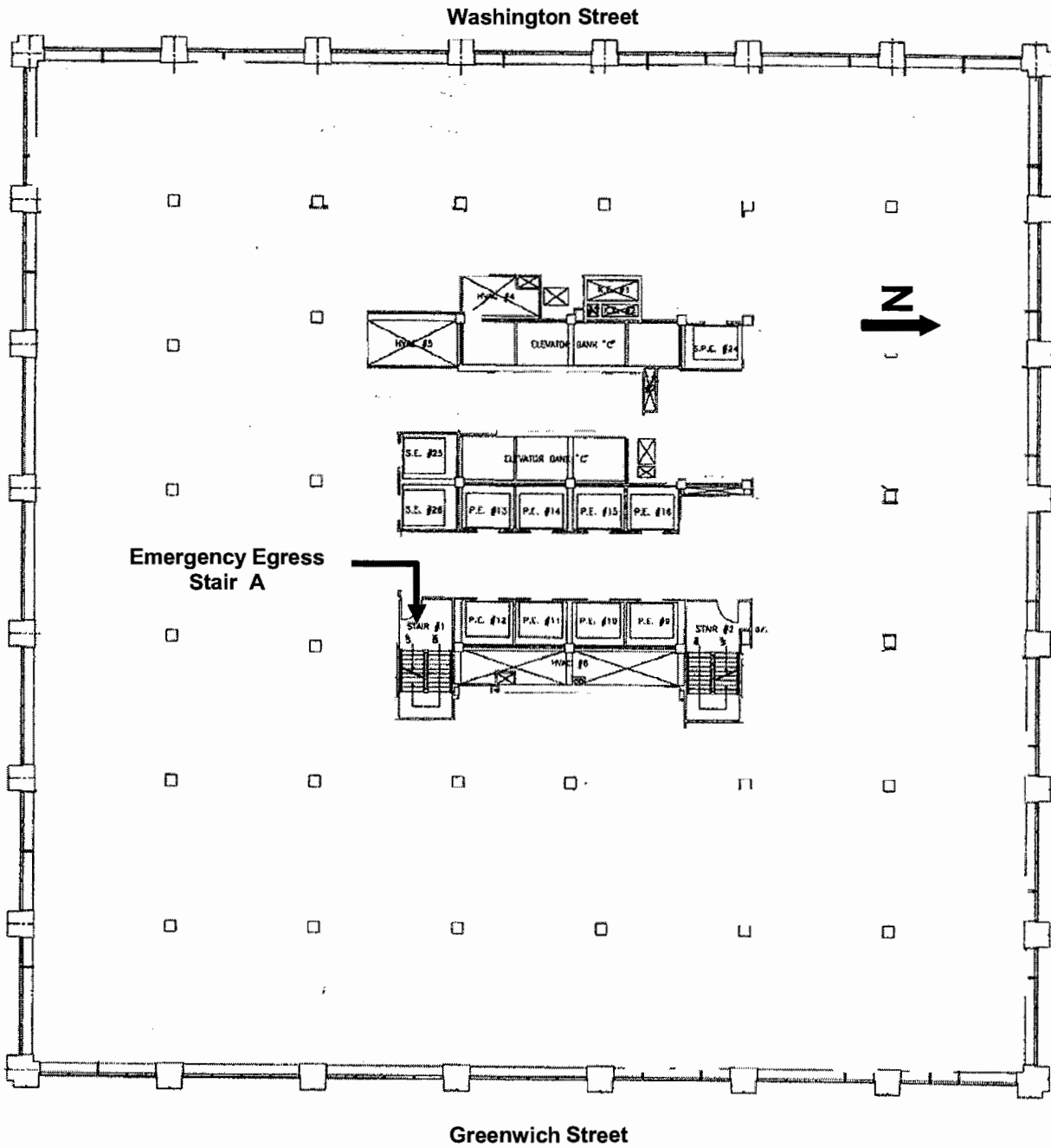
# Emergency Egress from Building Ground Floor Layout



# Emergency Egress from Building Typical Floor Layout - Floors 1 thru 24



# Emergency Egress from Building Typical Floor Layout - Floors 25 thru 39





## **APPENDIX E**

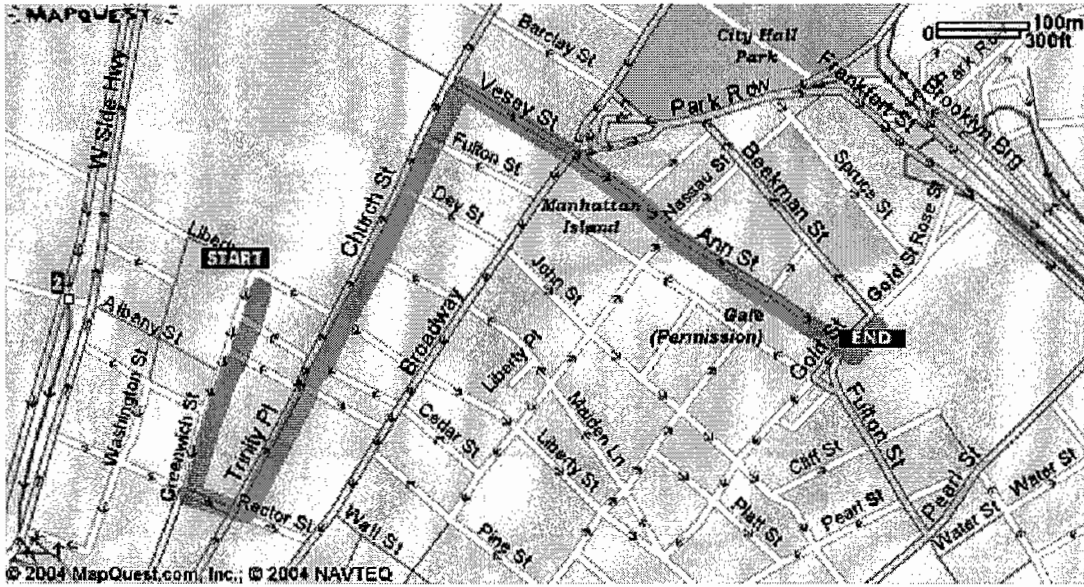
## **Hospital Directions With Route Map**

### Hospital Directions

When an injury occurs, the on-site Gilbane Emergency Coordinator (or their designee) shall determine the response actions. If based on the severity of the injury, emergency response personnel shall not be summoned; the injured personnel should be taken to NYU Downtown Hospital, 69 Gold Street, # 15F, New York, NY. The hospital is approximately 0.9 miles from the site. The approximate travel time between 130 Liberty Street and NYU Downtown Hospital is 4 minutes, depending on the traffic. A map showing the route to the hospital is provided below. Directions to the hospital from the 130 Liberty Street are:

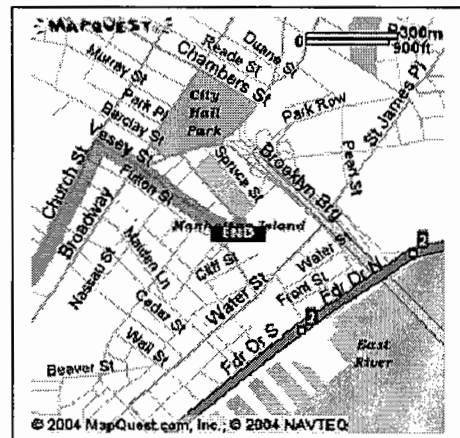
1. Start out going SOUTH on GREENWICH ST toward CEDAR ST
2. Turn LEFT onto RECTOR ST
3. Turn LEFT onto TRINITY PL
4. TRINITY PL becomes CHURCH ST
5. Turn RIGHT onto VESEY ST
6. VESEY ST becomes ANN ST
7. Turn LEFT onto GOLD ST

**ROUTE TO THE HOSPITAL FROM 130 LIBERTY STREET**



**Start:**  
 130 Liberty St  
 New York, NY 10006-1101

**End:**  
**NYU Downtown Hospital** [212-312-5108]  
 69 Gold St # 15f  
 New York, NY 10038



HEALTH AND SAFETY PLAN  
FOR THE  
130 LIBERTY STREET BUILDING  
PHASE I DECONSTRUCTION PROJECT

May 2005



Lower Manhattan Development Corporation  
1 Liberty Plaza  
New York, New York 10006

HASP approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Affiliation: \_\_\_\_\_

HASP approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Affiliation: \_\_\_\_\_

HASP approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Affiliation: \_\_\_\_\_

Revised by: \_\_\_\_\_ Date: \_\_\_\_\_

Affiliation: \_\_\_\_\_

Revised by: \_\_\_\_\_ Date: \_\_\_\_\_

Affiliation: \_\_\_\_\_

NYCSSM approval: \_\_\_\_\_ Date: \_\_\_\_\_

Affiliation: \_\_\_\_\_

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## LIST OF ACRONYMS

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ABIH	American Board of Industrial Hygiene
ACGIH	American Conference of Governmental Industrial Hygienists
ACBM	Asbestos Containing Building Materials
AL	Action Level
ANSI	American National Standards Institute
APR	Air-Purifying Respirator
CFR	Code of Federal Regulations
CGI	Combustible Gas Indicator
CIH	Certified Industrial Hygienist
COPCs	Contaminants of Potential Concern
CPR	Cardiopulmonary Resuscitation
CRZ	Contamination Reduction Zone
dba	decibels adjusted (decibels on the “A” scale)
EC	Emergency Coordinator
EMS	Emergency Medical Service
EMT	Emergency Medical Technician
ER	Emergency Response
ERT	Emergency Response Team
EZ	Exclusion Zone
f/cc	Fibers per cubic centimeter
FEC	Facility Emergency Coordinator
GFCI	Ground Fault Circuit Interrupter
H&S	Health and Safety
HAZWOPER	Hazardous Waste Operations and Emergency Response
HCP	Hazard Communication Program
HCS	Hazard Communication Standard
HEPA	High Efficiency Particulate Air
HMTA	Hazardous Materials Transportation Act
IC	Incident Commander
IDLH	Immediately Dangerous to Life and Health
lbs	pounds

---

## LIST OF ACRONYMS (CONTINUED)

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LEL	Lower Explosive Limit
LMDC	Lower Manhattan Development Corporation
MAWP	Maximum Allowable Working Pressure
mg/m <sup>3</sup>	milligrams per cubic meter
MSDS	Material Safety Data Sheet
MSHA	Mine Safety and Health Administration
NIOSH	National Institute for Occupational Safety and Health
NYCDEP	New York City Department of Environmental Protection
NYCSSM	New York City Site Safety Manager
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limits
PM	Project Manager
ppm	parts per million
psia	pounds per square inch, absolute
psig	pounds per square inch, gauge
Q&P	Quality and Protection
SAR	supplied air respirator
SCBA	self-contained breathing apparatus
SOW	Scope of Work
SSHO	Site Safety and Health Officer
STEL	Short-Term Exposure Limit
SZ	Support Zone
TWA	Time-Weighted Average
WTC	World Trade Center



## 1.0 INTRODUCTION

This Health and Safety Plan (HASP) presents the practices and procedures that the Contractor shall implement and enforce during the deconstruction of the building located at 130 Liberty Street in New York City (the Building). This HASP will be applicable to all persons entering the Building and to all persons working in and around the Building. The deconstruction of the Building will occur in two phases:

Phase I of the Deconstruction Project will occur while the work area is placed under negative pressure containment and includes the following general categories: (a) the general area cleanup of WTC dust and debris, (b) removal and disposal of installed porous and certain non-porous building materials and components, (c) cleaning and salvage of certain installed non-porous building equipment and components, (d) removal of building materials containing asbestos which were present in the Building prior to September 11<sup>th</sup>, 2001 (referred to herein as “ACBM”), primarily within the Building interior, (e) packaging of asbestos and other regulated waste including, but not limited to light bulbs, lighting ballasts, batteries, mercury-containing thermostats, etc.) at generation points, movement of containers to the decontamination unit and movement of decontaminated containers to waste loading using an exterior hoist or crane, and (f) cleaning of limited, exterior surfaces as necessary to facilitate the erection of the man-hoist and the crane.

The proposed clean-up and abatement will be conducted so that the Building can be safely deconstructed in compliance with applicable law to allow for redevelopment of the WTC site.

This HASP covers the activities to be undertaken as part of Phase I; a separate HASP will address Phase II Deconstruction activities. The Contractor shall be supported on this project by various subcontractors. Subcontractors shall:

- Provide environmental testing, air sampling and asbestos and COPC project monitoring (Contractor’s Environmental Consultant including the function of Environmental Consultant Project Monitor)
- Perform cleaning activities to remove WTC dust, perform ACBM abatement and removal of building materials/components (Abatement Subcontractor)

- Provide miscellaneous support of the Phase I Deconstruction activities, e.g., plumbers, electricians, elevator operators; service personnel, etc.

The organization chart for Phase I of the 130 Liberty Street project can be found in Attachment-1. The Contractors and first tier Subcontractors, Standard Safety Operating Procedures will be submitted to the Owner prior to start of work.

## **1.1 BACKGROUND**

The events of September 11, 2001, which caused the destruction of the WTC Towers, physically destroyed portions of the interior and exterior of the 130 Liberty Street Building. The massive debris generated from the collapse of the WTC South Tower broke numerous windows and opened a gash (“Gash Area”) in the Building’s north wall extending from the 7<sup>th</sup> to 24<sup>th</sup> floors, thereby exposing portions of the interior of the north side of the Building allowing dust and debris to enter into the Building. The Building has remained idle since September 11, 2001.

Subsequent to September 11, 2001, operations were undertaken to clear debris from the plaza in front of the building, lobby and interior spaces in the Gash Area. Porous geosynthetic mesh or “netting” was hung on the outside of the Building. The Gash Area was cleaned to permit the construction of columns, beams and floor decks to stabilize the Gash Area. Once the initial limited cleaning and stabilization measures were in place, office furniture, equipment and other non-attached items in the Building were removed and disposed of by then-owner Deutsche Bank.

As part of the WTC area redevelopment, the Lower Manhattan Development Corporation (LMDC) purchased the Building from Deutsche Bank. The LMDC plans call for removing the Building and using the property for the development of the WTC complex.

### **1.1.1 Environmental Study**

LMDC retained The Louis Berger Group, Inc. to conduct an Initial Building Characterization Study for the 130 Liberty Street building. As part of that characterization, the settled dust in and on the Building was sampled throughout the Building and analyzed for five COPCs designated by the United States Environmental Protection Agency (USEPA) as being associated with the WTC dust (i.e., asbestos, dioxin, lead, polycyclic aromatic hydrocarbons [PAHs] and crystalline

silica) as well as other contaminants suspected of being present in the Building including polychlorinated biphenyls (PCBs) and heavy metals (barium, beryllium, cadmium, copper, manganese, mercury, nickel and zinc). The findings of the characterization concluded that COPCs in varying concentrations, are present throughout the WTC dust found within and on the Building.

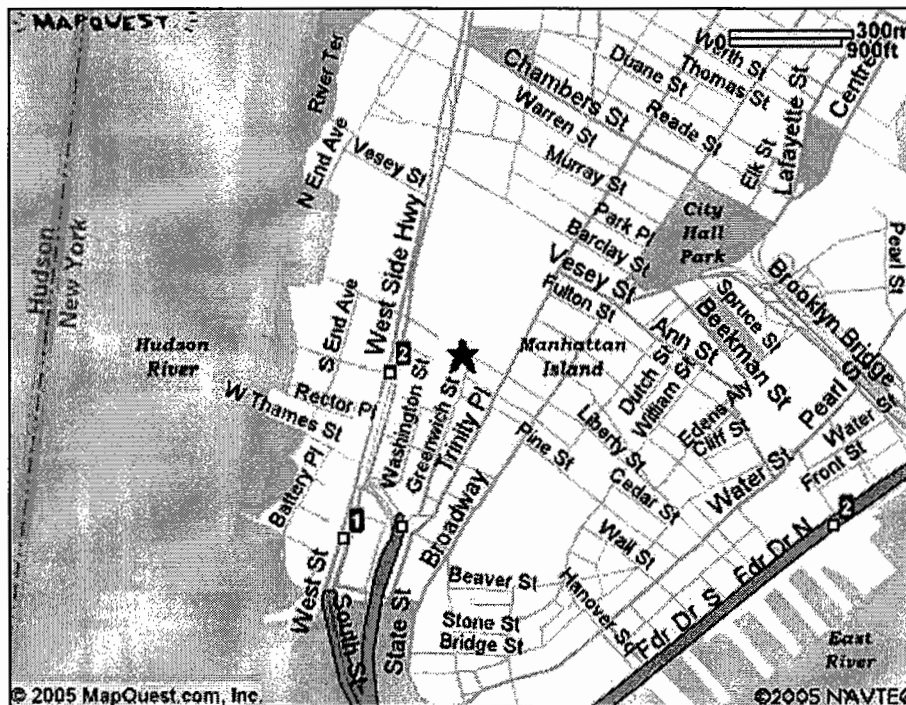
To supplement the data collected in the Initial Building Characterization Study, LMDC retained TRC Environmental Corporation (TRC) to conduct a Supplemental Investigation of the Building. This Supplemental Investigation included a survey sampling for additional unidentified asbestos-containing building materials (ACBM) as well as WTC dust impacted surfaces (both accessible and inaccessible and interior and exterior), mold, and included a preliminary waste characterization of the WTC dust, glass and WTC dust contaminated porous building materials. The findings of this report identified (i) additional ACBM, (ii) additional surfaces with COPC contamination, (iii) additional mold contamination, and (iv) in one composite sample collected from the 40<sup>th</sup> floor mechanical space, cadmium within the dust in excess of 40 CFR 261.24 limits. TRC's preliminary waste characterization testing within the small number of samples collected and analyzed revealed no COPCs within dust contaminated porous materials that were above the 40 CFR 261.24 limits. The Supplemental Investigation also determined that the exterior glass (once cleaned) associated with the Building would not be considered a hazardous waste for selenium.

The requirements outlined within this Phase I Health and Safety Plan are based upon the data collected to date. As additional information is obtained during the course of the Phase I activities, these requirements will be amended if necessary to protect workers or the public.

## **1.2 SITE DESCRIPTION**

130 Liberty Street is a 40-story, 565 foot tall, approximately 1.4 million square foot (SF) office building, with two basement levels, located in Lower Manhattan, one block south of the WTC site. Until 1999, the Building, which was built between 1973 and 1974, was owned by the Banker's Trust Corporation. In 1999, Deutsche Bank acquired the Building and owned it until August 31, 2004, when it was sold to LMDC.

**Figure 1-1  
Site Location Map**



### 1.3 PURPOSE

This document presents the safety procedures and practices to be followed during all Phase I site activities to ensure the safe completion of tasks. The procedures and practices herein are designed to prevent occupational injuries and exposures to chemical, physical and biological hazards to workers at the Site. The procedures are presented to ensure compliance with all applicable government agencies and regulations, including requirements and protocols established by: the Occupational Safety and Health Administration (OSHA); the National Institute of Occupational Safety and Health (NIOSH); the United States Environmental Protection Agency (USEPA); the New York State Department of Conservation (NYSDEC); the State of New York, New York State Department of Labor (NYSDOL); the New York City Department of Environmental Protection (NYCDEP); and the City of New York.

This document incorporates relevant health and safety guidance outlined in the August 2003 “Health and Safety Plan for Protection Against Environmental Contaminants,” written by RJ Lee

Group, Inc., and amended by TRC Environmental Corporation in August 2004 (known as the “Site Specific Health and Safety Plan For 130 Liberty Street”). All relevant hazards and protective standards referenced therein are incorporated into this document.

Once this HASP is approved by the regulators as part of the Phase I Deconstruction Plan, the requirements outlined in the Site Specific Health and Safety Plan for 130 Liberty Street will be superseded by the requirements of this HASP. This HASP is no less stringent than the current Site Specific Health and Safety Plan for 130 Liberty Street. This HASP has been developed by the Contractor’s Environmental Consultant; however, the Contractor’s New York City Site Safety Manager (NYCSSM) is responsible for its implementation (directly or through a subcontractor) and enforcement.

Compliance with this HASP is required due to structural and environmental damage suffered by the Building on September 11, 2001, hazards associated with the Building’s current condition and anticipated Phase I activities. This HASP is based upon current knowledge of conditions at the Site and shall be updated as new information becomes available and/or conditions change within the Building.

#### **1.4 OBJECTIVES**

This HASP addresses the initial phase of deconstruction (Phase I).. The entire interior of the Building with the exception of the steel, concrete deck, non-porous stairs, shafts and large scale MEP components, will be removed under Phase I.

During all Phase I activities, a minimum buffer zone of three floors initially for the top three floors and then two floors thereafter, will be maintained between the active abatement and clean-up (Phase I) area and the structural deconstruction (Phase II) portion of the project.

It is anticipated that approximately four floors shall be placed under containment in accordance with Section 4 - Asbestos and COPC Abatement and Removal Plan, at any given time. Additionally, the Abatement Subcontractor shall coordinate with all involved parties to assure that a three-floor buffer zone is maintained for the initial top three floors and there after a two-floor buffer zone will be maintained between the work activities of the Abatement Subcontractor and the Demolition



Subcontractor. Both Subcontractors must closely coordinate to ensure that the Phase II work that will be occurring above poses no potential for negative impact to the Phase I operations and protective measures.

The Environmental Consultant Project Monitor (as defined in Section 4 - Asbestos and COPC Abatement and Removal Plan) shall conduct regular safety inspections to assure that the work is conducted in accordance with this HASP. During the Phase I activities, the Abatement Subcontractor shall perform personnel air sampling for asbestos and COPCs, as required by OSHA, to evaluate the exposures to all personnel and to ensure use of the proper personal protective equipment (PPE), i.e., respirators, gloves and protective clothing. Additionally, the Environmental Consultant Project Monitor shall collect daily area air samples for asbestos as required by NYSDOL and as described in Section 4 - Asbestos and COPC Abatement and Removal Plan.

## **2.0 HEALTH AND SAFETY PROCEDURES**

This section identifies the principle hazards associated with the tasks to be performed during the cleaning, asbestos and COPC abatement, and interior component removal activities, and establishes standard safety and health procedures for the Contractor, the Subcontractors and anyone who comes onto the site. The content of this HASP is designed to anticipate, identify, evaluate, and control safety and health hazards for the work activities to be performed during this project. All on-site work activities by any Subcontractors and their designees shall be performed in accordance with this HASP, and in accordance with applicable federal, state, and local regulations.

The levels of personal protection and the procedures specified in this Plan are based on the best information available from validated reference sources (i.e., OSHA, NIOSH) and current site data. Therefore, the guidelines presented in this HASP represent the minimum health and safety requirements to be observed by all on-site personnel engaged in this project. Discovery of currently unknown site conditions or changes in the scope of work will necessitate the reassessment of the protection levels, controls, and procedures stated herein. All amendments to this HASP must have prior written approval by the Environmental Consultant's Certified

Industrial Hygienist (CIH) and the Contractor's Project Manager; all modifications/amendments shall be enforced by Contractor's New York City Site Safety Manager (NYCSSM).

## **2.1 PERSONNEL RESPONSIBILITIES**

The Contractor, Subcontractor and other personnel on-site shall review and understand this document prior to working on-site. All personnel shall:

- Participate in initial site orientation/training as described in Section 2.9.1, and daily safety meetings, and shall provide any required documentation, medical clearance, fit test, asbestos certification, etc. prior to starting work on the site. Documentation requirements are determined by activities to be performed.
- Sign the HASP Acknowledgement Form and other required documents after orientation to indicate that they participated in orientation and understood the information presented in orientation.
- Follow the designated safety and health procedures; be alert to the hazards associated with working on the site, and exercise reasonable caution at all times.

Any questions or concerns about this HASP shall be directed to the on-site Contractor NYCSSM and/or HASP Administrative Monitor.

The Contractor and Subcontractors personnel involved in the 130 Liberty Street deconstruction project are responsible for:

- Taking all reasonable precautions to prevent injury to themselves and to their fellow employees, and being alert to potentially harmful situations.
- Obeying all applicable laws and regulations relating to health and safety.
- Ensuring that activities do not impact the neighboring community.
- Performing only those tasks that they have been trained to complete and can do safely.
- Notifying their supervisor of any special medical conditions (i.e., allergies, contact lenses, diabetes) that may affect their ability to perform certain tasks.
- Notifying their supervisor of any prescription and/or non-prescription medication that they may be taking that might cause drowsiness, anxiety, or other unfavorable side effects.
- Learning and complying with Site security requirements.

- Complying with the Site's prohibition on drug and alcohol use, smoking, horseplay, and restricted eating/drinking areas.
- Practicing good housekeeping by keeping the work areas neat, clean and orderly.
- Immediately reporting all injuries, incidents and near-misses to the designated supervisor.
- Properly using PPE specified by the contractor and this HASP, based on the results of air monitoring.
- Properly maintaining their designated PPE per manufacturers' recommendations.
- Complying with the HASP and all health and safety recommendations and precautions.
- Notifying their supervisor of any Site conditions or concerns which are not addressed by the protective measures specified in this HASP, or which are addressed but the employee does not understand the protective requirements specified herein.

### **2.1.1 Contractor**

The Contractor Project Manager shall have overall responsibility for ensuring health and safety protection on the site and for ensuring that all elements of the HASP are implemented during all phases of the daily on-site activities of this project.

A licensed NYCSSM shall be on-site throughout the project and shall have the primary daily responsibility for ensuring the implementation of this HASP. The Contractor NYCSSM shall notify the Environmental Consultant's CIH of any need to change or amend any aspect of this HASP and/or seek input with regard to interpretations of the HASP in concert with the designated Safety Officers of the Subcontractors. The Contractor NYCSSM shall coordinate the health and safety activities of all the Contractor and Subcontractor personnel to ensure the requirements of the HASP are followed and shall communicate with all parties when changes occur on-site or when conditions impacting the site occur concerning the response actions to be taken.

### **2.1.2 Subcontractors**

Each Subcontractor on the job is responsible for:

- Preparing a Subcontractor HASP specific for their scope of work (SOW)

- Having a supervisor on-site who understands the scope of the work to be performed, potential health and safety issues associated with that SOW and the strategies for managing and controlling the health and safety issues.
- Planning all work activities to prevent personal injury, health impairment and property damage.
- Providing a Subcontractor Safety Officer and Alternate Safety Officer who shall remain on-site for the entire duration of the Subcontractor's SOW and ensure employee compliance with the provisions of this HASP and the Subcontractor HASP.
- Ensuring that Subcontractor personnel are qualified to perform the SOW that they are assigned.
- Communicating with the Contractor NYCSSM and other potential affected Subcontractors when work on-site conditions are identified that can impact health and safety on the job.
- Ensuring training (asbestos, HAZWOPER, Hazard Communication, etc.) of the Subcontractor's employees in the recognition, avoidance and control of chemical, biological and physical hazards present at the Site.
- Maintaining records for Subcontractor employees as required by this HASP (including but not limited to) medical, training and fit-test records.
- Providing daily health and safety briefings to their personnel.
- Providing specified PPE, including training for correct use and maintenance of that equipment.
- Providing adequate weather protective gear for their personnel as required for their work activities.
- Maintaining a system of prompt detection and correction of unsafe practices and conditions for their SOW and employees.
- Ensuring that Subcontractor's subcontractors and suppliers comply with the conditions of this HASP upon entrance to the Site.
- Collecting personal air samples for both asbestos and other COPCs for HASP and OSHA compliance. Each Subcontractor's CIH or qualified Industrial Hygienist (IH) is responsible for the development and implementation of a personal air-monitoring program in accordance with OSHA Standard 29 CFR§1926.1101 and 29 CFR §1910.1000 and good industrial hygiene practices.

### **2.1.3 New York City Site Safety Manager (NYCSSM)**

The Contractor NYCSSM is an experienced safety and health professional who maintains current HAZWOPER training, American Red Cross Cardiopulmonary Resuscitation (CPR) training, first aid certification and automated external defibrillator (AED) training, and has completed at least eight hours of Safety Officer training. Additionally, the Contractor NYCSSM has the relevant site experience and training (with respect to asbestos and other hazardous materials identified) as necessary to oversee all work activities associated with the cleaning and demolition effort.

The Contractor NYCSSM has the following responsibilities:

- Direct the implementation and enforcement of this HASP and consult with the Subcontractors regarding the health and safety procedures and practices to be used on this project.
- Enforce the requirements of this HASP with respect to health and safety, air monitoring requirements and waste management requirements.
- Have the authority to suspend work activities if actions occur that may affect safety and health conditions for personnel or the environment. The Contractor NYCSSM shall act as the primary contact during any on-site emergency situation.
- Assist and represent the Contractor Project Manager in performing on-site training and the day-to-day on-site implementation and enforcement of the HASP.
- Be on-site during the project on a full time basis for the entire duration of on-site field activities. If operations are performed during more than one work shift per day, a qualified Contractor NYCSSM shall be present for each shift.
- Ensure site compliance with federal/state/local regulations and all aspects of this HASP including, but not limited to:
  - Performing activity hazard analyses
  - Providing guidance concerning the use of PPE
  - Ensuring site control
  - Developing standard operating procedures to minimize hazards such as the use of engineering controls
- The authority to stop any and all work activities if unacceptable health and safety conditions exist.

- Consult with and coordinate any modifications to the HASP with the Contractor Project Manager and the Environmental Consultant's CIH; recommend corrective actions for identified deficiencies; and oversee the implementation of any corrective actions.
- Conduct accident investigations and prepare accident reports.
- Investigate and analyze "near-miss" incidents.
- Prepare and maintain records of corrective actions taken on-site and document safety and health findings into a project-dedicated logbook.

#### **2.1.4 Administrative Monitor**

The Administrative Monitor (AM) is a support position provided by the Environmental Consultant. The AM performs all orientation on-site health and safety procedures for new employees and visitors. Additionally, the AM is responsible for logging all site visitors, checking for current medical and fit test certifications and applicable federal/state/local asbestos training for all those entering containment. The AM does not provide specialized training for specific cleaning, abatement or interior component removal portions of the work. This shall be provided by each Subcontractor for its personnel.

The AM documents each orientation performed and requires that each person receiving the orientation complete, sign and date the HASP acknowledgement form. The AM receives the following documentation from each Subcontractor to complete the administrative record for the site: name of Subcontractor's safety officer; list of emergency contact phone numbers; confirmation of current worker fit tests, medical clearances and asbestos training for each Subcontractor employee; and Subcontractor HASP, including Hazard Communication Program, Fall Protection Program, Respiratory Protection Program, personal air monitoring program, and confined space program (when necessary).

The AM is responsible for the execution and monitoring of any health and safety activities at the Site related to Environmental Consultant activities.

## **2.2 HEALTH AND SAFETY HAZARD ANALYSIS AND RISK ASSESSMENT**

### **2.2.1 Preliminary Evaluation**

The work to be conducted at 130 Liberty Street comprises construction activities and, as such, falls under Title 29 of the Code of Federal Regulations, Part 1926 (29 CFR 1926), the OSHA Construction Standard.

An evaluation of the anticipated general work activities was performed (discussed later in this section) that included a Hazard Analysis for each general task/activity to identify associated hazardous conditions, appropriate employee protection methods and PPE requirements. The evaluation of potential site conditions and activity hazards is an ongoing process and shall continue throughout the duration of the project.

Potential hazards during Phase I effort include the following:

- Physical – Excessive noise; inclement weather; heat stress; cold stress; manual lifting; slips and falls; structural integrity; working at elevation; electrical safety; heavy equipment operation; and other general construction hazards.
- Chemical – Asbestos, silica, PAHs, dioxins, man-made vitreous fibers (MMVF), cadmium, nickel, lead, barium, chromium, zinc, manganese, copper, beryllium, PCBs, mercury, copper, zinc, cristobalite and quartz.
- Biological – Mold; rodents; insects; Legionella.
- Radiological – None anticipated.

### **2.2.2 Task Hazard Analysis**

The scope of work for the 130 Liberty Street project consists of four general tasks, as follows:

- Task 1: Environmental Consultant monitoring including work area air sampling during Phase I activities; clearance air sampling when cleaning of each floor is completed; and waste characterization sampling.
- Task 2: Maintain temporary services including water risers, fire protection systems building communication system, GFCI protected electrical systems and elevator operation.
- Task 3: General area cleanup of WTC dust and debris, which as stated by the regulators must be treated as asbestos (at a minimum) and which may contain other COPCs;

removal and disposal of installed porous and certain non-porous building materials and components contaminated by WTC dust and debris; cleaning and salvage of certain installed non-porous building equipment and components contaminated by WTC dust and debris; removal of ACBM primarily within the Building interior; packaging of regulated waste as identified during the implementation of the Waste Sampling and Management Plan found within Section 1 of the Phase I Deconstruction Plan at generation points movement of containers to decontamination unit and movement of decontaminated containers to waste loading area; and cleaning of limited, designated exterior surfaces to facilitate the erection of the man-hoist and the crane.

Task 4: General site work, including fencing, paving and drainage.

Summaries of the potential physical, chemical and biological hazards that may be encountered during these tasks and the associated hazard control methods are presented in Table 2-1.



**Table 2-1**

Task 1: Environmental Consultant Air Monitoring and Waste Characterization  
 Equipment Required: Air sampling equipment, Waste Characterization e.g. (scoops, bowls, scale, safety blades, sample containers), PPE

Subtask #	Activities	PPE Requirements*	Hazards	Preventative Mechanism	Procedure**
1	Mobilization (Transporting employees, materials and equipment to site)	Level D	Use of vehicles	Vehicle and driving safety	Contractor Specific
2	Unloading equipment on the ground level	Level D	Lifting	Proper lifting techniques	Contractor Specific
			Site security	Site security	Contractor Specific
			Pinch points	Materials handling	Contractor Specific
			Insects	Biological hazard monitoring	
3	Waste characterization sampling	Level C***	Chemical COPC	Hazard Communication PPE	Contractor Specific
			Heat stress	Heat monitoring	Contractor Specific
			Cold stress	Cold monitoring	Contractor Specific
			Slip/trip/fall	Housekeeping	Contractor Specific
			Trespassers	Site security	Contractor Specific
			Pinch points	Materials handling	Contractor Specific
			Hand tools	Proper use techniques	Contractor Specific
			Inadequate lighting	Illumination	Contractor Specific
			Asbestos	Avoidance/monitoring	Contractor Specific
			Noise	Hearing protection	Contractor Specific
			Heat stress	Heat monitoring	Contractor Specific
4	Area air sampling during abatement activities	Level C***	Cold stress	Cold monitoring	Contractor Specific
			Slip/trip/fall	Housekeeping	Contractor Specific
			Trespassers	Site security	Contractor Specific
			Pinch points	Materials handling	Contractor Specific
			Hand tools	Proper use techniques	Contractor Specific
			Inadequate lighting	Illumination	Contractor Specific
			Mold	Avoidance	Contractor Specific
			Asbestos	Avoidance/Monitoring	Contractor Specific

Task 1: Con't

Subtask #	Activities	PPE Requirements*	Hazards	Preventative Mechanism	Procedure**
5	Clearance air sampling	Level C***	Chemical COPC Heat stress Cold stress Slip/trip/fall Trespassers Pinch points Hand tools Inadequate lighting Asbestos	Hazard Communication pPE Heat monitoring Cold monitoring Housekeeping Site security Materials handling Proper use techniques Illumination Avoidance/monitoring	Contractor Specific Contractor Specific Contractor Specific Contractor Specific Contractor Specific Contractor Specific Contractor Specific Contractor Specific Contractor Specific

\*As described in Section 2.5

\*\* Procedures are part of Contractors Safety Program

\*\*\*Per 2.7.2 Personal Monitoring

Task 2: Maintaining Temporary Services  
 Equipment required: Hand and power tools, ladders, PPE

Subtask #	Activities	PPE Requirements*	Hazards	Preventative Mechanism	Procedure**
1	Mobilization (Transporting employees, materials and equipment to site)	Level D	Vehicle Incidents	Vehicle and driving safety	Motor Vehicles and Equipment Program
2	Unloading equipment on the ground level	Level D	Lifting Heat Stress Cold Stress Slip/trip/fall Trespassers Pinch points Hand tools Chemical COPC plus plumbing chemicals	Proper lifting procedures Heat monitoring Cold monitoring Housekeeping Site security Materials handling Proper use techniques Hazard Communication PPE	Housekeeping Program Hazard Communication Program, 29 CFR 1910.120 (a) (i) Housekeeping Program
3	Maintain basic utilities to include: - Temporary GFCI protected electrical systems - Elevator Operation stand pipe - Building communication system, etc.	Level C ***	Slip/trip/fall Pinch points Work from elevation Hand tools Hot Work Wet feet Electrical safety Stored hazardous energy Elevator malfunction	Housekeeping Materials handling Fall protection. Proper ladder use. Proper use techniques Hot Work permitting Fire prevention Avoidance/techniques Electrical safety - LO/TO LO/TO program Maintain certification and operate according to manufacturer instructions	Elevated work-Fall Protection Program Welding, Cutting and Burning - Hot-Work Procedure Electric -Temporary Lockout/Tagout Procedures

\*As described in Section 2.5

\*\* Procedures are part of Contractor's Project Safety Plan.

\*\*\* Per 2.7.2 Personal Monitoring

Task 3: General area cleanup of WTC dust and debris, as stated by the regulators must be treated as asbestos (at a minimum) and which may contain other COPCs; removal and disposal of installed porous and certain non-porous building materials and components contaminated by WTC dust and debris; cleaning and salvage of certain installed non-porous building equipment and components contaminated by WTC dust and debris; removal of ACBM primarily within the Building interior; packaging of regulated waste as identified during the implementation of the Waste Sampling and Management Plan found within Section 1 of the Phase I Deconstruction Plan at generation points movement of containers to decontamination unit and movement of decontaminated containers to waste loading area; and cleaning of limited, designated exterior surfaces to facilitate the erection of the man-hoist and the crane.

Equipment required: Heavy cleaning equipment, HEPA vacuums, hand/power tools, ladders, scaffolding, lifting equipment, PPE

Subtask #	Activities	PPE Requirements*	Hazards	Preventative Mechanism	Procedure**
1	Mobilization (Transporting employees, materials and equipment to site)	Level D	Vehicle use	Vehicle and driving safety	Contractor Specific
2	Unloading equipment on the ground level	Level D	Lifting	Proper lifting techniques	Contractor Specific
			Heat Stress	Heat monitoring	Contractor Specific
			Cold Stress	Cold monitoring	Contractor Specific
			Slip/trip/fall	Housekeeping	Contractor Specific
			Trespassers	Site security	Contractor Specific
			Pinch points	Materials handling	Contractor Specific
			Hand tools	Proper use techniques	Contractor Specific
3	Constructing containment areas and placing air handling units on the floors	Level C***	Chemical COPC plus adhesives	Hazard Communication PPE	Contractor Specific
			Heat Stress	Heat monitoring	Contractor Specific
			Cold Stress	Cold monitoring	Contractor Specific
			Use of ladders	Ladder safety	Contractor Specific
			Noise	Hearing protection	Contractor Specific
			Slip/trip/fall	Housekeeping	Contractor Specific
			Electrical sources	Electrical safety - LO/TO	Contractor Specific
			Lifting	Proper lifting techniques	Contractor Specific
			Pinch points	Materials handling	Contractor Specific
			Work from elevation	Fall protection	Contractor Specific
			Use of scaffolds	Scaffold safety	Contractor Specific
			Hand and power tools	Proper use techniques	Contractor Specific
Inadequate lighting	Illumination	Contractor Specific			

Task 3: Cont'd:

Subtask #	Activities	PPE Requirements*	Hazards	Preventative Mechanism	Procedure**
4	Area cleanup of WTC dust and debris	Level C***	Chemical COPC Heat Stress Cold Stress High pressure water Electrical sources Pinch points Use of ladders Hand tools Noise Inadequate lighting Asbestos Lead PCBs Mercury Other chemicals Mold Cranes/Lifting Equipment	Hazard Communication PPE Heat monitoring Cold monitoring Pressurized systems Electrical safety - LO/TO Materials handling Ladder safety Proper use techniques Hearing protection Illumination Avoidance/monitoring/PPE Avoidance/monitoring/PPE Avoidance/monitoring/PPE Avoidance/monitoring/PPE Avoidance/monitoring/PPE Avoidance/monitoring/PPE Crane/lifting safety	Contractor Specific Contractor Specific Contractor Specific Contractor Specific Contractor Specific Contractor Specific Contractor Specific Contractor Specific Contractor Specific Contractor Specific Contractor Specific Contractor Specific Contractor Specific Contractor Specific Contractor Specific Contractor Specific Crane, Hoist, and Rigging Standard Operating Procedure

Task 3: Cont'd:

Subtask #	Activities	PPE Requirements*	Hazards	Preventative Mechanism	Procedure**
5	Removal and disposal of installed porous and certain non-porous building materials and components contaminated by WTC dust and debris	Level C***	COPC, silica and lead Lifting Noise Heat stress Cold stress Slip/trip/fall Structural damage	Follow procedures Proper lifting techniques Hearing protection Heat monitoring Cold monitoring Housekeeping Structural integrity / PE inspection	Contractor Specific
6	Cleaning and salvage of certain installed non-porous building equipment and components contaminated by WTC dust and debris	Level C ***	Demolition Pinch points Work at elevation Hand tools Inadequate lighting Cranes/Lifting Equipment COPC, silica and lead Lifting Noise Heat stress Cold stress Slip/trip/fall Structural damage	Follow demolition plan Materials handling Fall protection Proper use techniques Illumination Crane/lifting safety Follow procedures Proper lifting techniques Hearing protection Heat monitoring Cold monitoring Housekeeping Structural integrity / PE inspection	General Safety Regulations Fall Protection Plan Crane, Hoist, and Rigging Standard Operating Procedure Contractor Specific
			Demolition Pinch points Work at elevation Hand tools Inadequate lighting Cranes/Lifting Equipment Torch Cutting	Follow demolition plan Materials handling Fall protection Proper use techniques Illumination Crane/lifting safety Generation of lead or other toxics, Fire	General Safety Regulations Fall Protection Plan Crane, Hoist, and Rigging Standard Operating Procedure Compliance with OSHA Lead and cadmium in Construction Standard, Hot work procedures, Cutting procedures

Task 3: Cont'd:

Subtask #	Activities	PPE Requirements*	Hazards	Preventative Mechanism	Procedure**
7	Removal of building materials contaminated with asbestos and ACBM.	Level C***	Chemical COPC Working Elevations from Heat Stress Cold Stress High pressure water Electrical sources Pinch points Use of ladders Hand tools Noise Inadequate lighting Asbestos Lead PCBs Mercury Other chemicals Mold Cranes/Lifting Equipment	Hazard PPE Fall Protection Heat monitoring Cold monitoring Pressurized systems Electrical safety - LO/TO Materials handling Ladder safety Proper use techniques Hearing protection Illumination Avoidance/monitoring/PPE Avoidance/monitoring/PPE Avoidance/monitoring/PPE Avoidance/monitoring/PPE Avoidance/monitoring/PPE Avoidance/monitoring/PPE Crane/lifting safety	Contractor Specific Crane, Hoist, and Rigging Standard Operating Procedure

Task 3: Cont'd:

Subtask #	Activities	PPE Requirements*	Hazards	Preventative Mechanism	Procedure**
8	<p>Packaging of regulated waste as identified during the implementation of the Waste Management and Sampling Plan found within Section 1 of the Phase I Deconstruction Plan at generation points, movement of containers to decontamination unit and movement of decontaminated containers to waste loading area.</p>	<p>Level C***</p>	<p>Chemical COPC                      Working from Elevations                      Heat Stress                      Cold Stress                      High pressure water                      Electrical sources                      Pinch points                      Use of ladders                      Hand tools                      Noise                      Inadequate lighting                      Asbestos                      Lead                      PCBs                      Mercury                      Other chemicals                      Mold                      Cranes/Lifting Equipment</p>	<p>Hazard PPE                      Communication                      Fall Protection                      Heat monitoring                      Cold monitoring                      Pressurized systems                      Electrical safety - LO/TO                      Materials handling                      Ladder safety                      Proper use techniques                      Hearing protection                      Illumination                      Avoidance/monitoring/PPE                      Avoidance/monitoring/PPE                      Avoidance/monitoring/PPE                      Avoidance/monitoring/PPE                      Avoidance/monitoring/PPE                      Avoidance/monitoring/PPE                      Crane/lifting safety</p>	<p>Contractor Specific                      Contractor Specific                      Contractor Specific                      Contractor Specific                      Contractor Specific                      Contractor Specific                      Contractor Specific                      Contractor Specific                      Contractor Specific                      Contractor Specific                      Contractor Specific                      Contractor Specific                      Contractor Specific                      Contractor Specific                      Contractor Specific                      Contractor Specific                      Contractor Specific                      Contractor Specific                      Contractor Specific                      Crane, Hoist, and Rigging Standard Operating Procedure</p>





Task 3: Cont'd:

Subtask #	Activities	PPE Requirements*	Hazards	Preventative Mechanism	Procedure**
10	Bulk removal of sprayed on fire proofing using manual and mechanical means, i.e. scraping or a pressure wash system.	Level C***	Chemical COPC Working from Elevations Heat Stress Cold Stress High pressure water Electrical sources Pinch points Use of ladders Hand tools Noise Inadequate lighting Asbestos Lead PCBs Mercury Other chemicals Mold Cranes/Lifting Equipment	Hazard Communication PPE Fall Protection Heat monitoring Cold monitoring Pressurized systems Electrical safety - LO/TO Materials handling Ladder safety Proper use techniques Hearing protection Illumination Avoidance/monitoring/PPE Avoidance/monitoring/PPE Avoidance/monitoring/PPE Avoidance/monitoring/PPE Avoidance/monitoring/PPE	Contractor Specific Contractor Specific Contractor Specific Contractor Specific Contractor Specific Contractor Specific Contractor Specific Contractor Specific Contractor Specific Contractor Specific Contractor Specific Contractor Specific Contractor Specific Contractor Specific Contractor Specific Contractor Specific Contractor Specific Crane, Hoist, and Rigging Standard Operating Procedure

Task 3: Cont'd

Subtask #	Activities	PPE Requirements*	Hazards	Preventative Mechanism	Procedure**
11	Clean limited, designated exterior surfaces to facilitate the erection of the man-hoist and the crane and installation of interior concrete chute	Level C*** for Tower Crane and for Man-hoist, concrete chute construction+	Working from Elevations Heat Stress Cold Stress Slip/Trip/Fall Lifting Electrical Sources Pinch Points Hand Tools Inadequate Lighting  COPCs and asbestos  Structural damage Noise Demolition Stored hazardous energy/Gravity Materials handling Cranes/Lifting Equipment	Fall Protection Heat monitoring Cold monitoring Housekeeping Proper lifting techniques Electrical Safety/LOTO Materials Handling Proper use techniques Illumination  Hazard Communication/PPE  Structural integrity/PE inspection Hearing protection Follow demolition plan Follow proper procedures Materials handling Crane/lifting safety	Fall Protection Plan     Lock-Out/Tag-Out Program     Hazardous Materials Communication Program and <b>29 CFR 1910.120 (a) (i)</b>

\*As described in Section 2.5

\*\* Procedures are part of Contractors Project Safety Plan

\*\*\*Per 2.72

+Due to enclosure and unknown airborne silica concentrations work will have to be performed using PAPR with P100 cartridges and local exhaust ventilation or work will be performed under Level B until air sampling allows otherwise.

Task 4: Site Work (Fencing, Back filling, Paving, and Drainage)  
 Equipment required: Trackloaders, Skidsteer Loaders, Small Tilt Sladers, Vibratory Rollers, Roller Compactor Truck  
 Paving: Asphalt Paving Equipment, Smooth Barrel Roller, Forklift, Crane, Area lift.

Subtask #	Activities	PPE Requirements	Hazards	Preventative Mechanism	Procedure
1	Installation of Site fences	Level D	*Moving Equipment *Open excavation * Evacuation of excavations before backfilling	* Hand signals * Barricades * Safety watch	See Items 1-5 Below
2	Back filling	Level D	*Moving Equipment *Open excavation * Evacuation of excavations before backfilling	* Hand signals * Barricades * Safety watch	See Items 1-5 Below
3	Paving	Level D	*Moving Equipment *Open excavation * Evacuation of excavations before backfilling	* Hand signals * Barricades * Safety watch	See Items 1-5 Below
4	Drainage	Level D	*Moving Equipment *Open excavation * Evacuation of excavations before backfilling	* Hand signals * Barricades * Safety watch	See Items 1-5 Below

- General Precautions- Site specific precautions to be determined as the detailed scope and schedule are developed. Care must be taken to reduce the risk of worker injury and property damage during backfilling or paving operations.
1. No backfill shall commence until all workers are clear of the working areas.
  2. The operators of any machines or vehicles being used in backfilling operations shall keep other employees in sight at all times.
  3. The operators of any truck employed in backfilling operations shall ensure that all workers are in the clear before approaching the ditch or dumping the load.
  4. No equipment shall back closer than 1 meter to the edge of any excavation and this set-back shall be increased commensurately with the depth of the excavation unless trenching sleds or other retention devices are employed.
  5. No equipment shall dump material closer than 1 meter to the edge of an excavation.

If site conditions change during the course of the deconstruction project, the Environmental Consultant's Safety Officer shall evaluate the new conditions and discuss appropriate amendments to the HASP with the Contractor NYCSSM. The proposed amendments shall be reviewed and approved by the Environmental Consultant's CIH and the Contractor Project Manager.

### **2.2.3 Physical Hazards**

The damage suffered by the building at 130 Liberty Street has resulted in numerous physically hazardous conditions, including damaged electrical sources and components, falling hazards due to openings in the floors, or the possibility of materials falling from overhead. The primary physical hazards that may be encountered during this project are related to the Phase I activities and include: heavy equipment operation; excessive noise; excessive heat or cold; inclement weather; manual lifting/handling of heavy objects; poor housekeeping; rough terrain; compromised structural integrity; traffic; cranes, hoists and other lifting equipment; aerial lifts and manlifts; working at elevation; use of scaffolding; hazardous materials use; potential utility and electrical sources; use of hand and power tools; slips and falls; etc.

Due to the existence of these hazards, the Contractor NYCSSM shall ensure that all site employees receive hazard awareness training. Additionally, the Contractor NYCSSM shall insure that Subcontractors perform the following operations under the direct on-site supervision of OSHA Competent Persons (provided by the Subcontractors for each task as necessary):

- General Construction (29 CFR 1926.20)
- Unsanitary Conditions (29 CFR 1926.27)
- Rigging (29 CFR 1926.251)
- Scaffolding (29 CFR 1926.450)
- Ladders (29 CFR 1926.1053)
- Personal Fall Arrest Systems (29 CFR 1926.500 and .502)
- Ear Protection (29 CFR 1926.101)

- Cranes and Derricks (29 CFR 1926.550)
- Materials Hoists, Personnel Hoists and Elevators (29 CFR 1926.552)
- Demolition (29 CFR 1926.850)
- Welding/Cutting on surfaces covered by protective coatings (29 CFR 1926.354)
- Excavation (29 CFR 1926.650)
- Lead (29CFR 1926.62)
- Asbestos (29 CFR 1926.1101)
- Cadmium 1926.1127
- Powered Platforms for Building Maintenance, 29 CFR 1910.66
- Hazardous Waste Operations and Emergency Response, 29 CFR 1926.65

#### **2.2.4 Chemical Hazards**

A chemical hazard that may be encountered during this project is asbestos. Based upon the most recent pre-demolition asbestos survey conducted by TRC, approximately 2,336,407 square feet of asbestos-containing material, including WTC dust with varying concentrations of some COPCs, has been identified. Therefore, the Contractor NYCSSM shall ensure that all site employees receive the required training concerning asbestos as well as all applicable Hazard Communication training.

In addition, personnel who have the potential to disturb ACBM shall be trained concerning the procedures to be used and requirements for notifications in accordance with federal, state and local regulations. Personnel who handle ACBM on this job shall have the required documented training and certificates. Each employee involved in abatement activities must have completed City of New York asbestos training, shall be a certified asbestos worker and/or supervisor by the City of New York, and shall be certified asbestos handler and/or supervisor by the New York State Department of Labor. Additionally, personnel who will conduct cleaning and abatement activities must have additionally received the required 40-hour training as outlined by 29 CFR 1910.120(a) (i) (HAZWOPER requirement) and appropriate annual refresher training as required. This HAZWOPER training requirement may be removed, should sampling indicate

training requirement downgrade is appropriate. Training, medical and license documentation for each Subcontractor employee shall be verified by the HASP AM prior to start of work by the Subcontractor.

#### *2.2.4.1 Additional Identified Chemicals*

Other chemicals identified as potential contaminants that may be encountered during the initial site cleaning activities are PAHs, dioxins, cadmium, nickel, barium, chromium, zinc, manganese, copper, beryllium, PCBs, mercury, copper, zinc, cristobalite and quartz. Environmental sampling in the 130 Liberty Street Building has verified the presence of these chemical contaminants in concentrations exceeding USEPA's Residential Cleanup Criteria as discussed in Berger's September 2004 "Initial Building Characterization Study Report."

Additional chemical hazards generated from deconstruction activities would be lead, cadmium, and chromium from coated surfaces. Subcontractors shall perform personnel monitoring for all COPCs as required by OSHA. In addition, Subcontractors must provide applicable OSHA training for the identified hazards. Documentation of this training must be provided by the Subcontractor.

Additional precautions to be taken in work areas with these contaminants include personnel and area air monitoring. Any torching or cutting of painting surfaces creates risk of lead, cadmium and chromium release. During these operations, additional monitoring and PPE will be necessary as required by the Lead in Construction Standard [29 CFR 1926.62(d)(2)(iv)] and the Cadmium in Construction Standard [29 CFR 1926.112].

Precautions to be taken during the removal of miscellaneous hazardous materials (bulbs, ballasts, batteries, mercury-containing thermostats, etc) are found in Table 2-1, Task 3.

Respiratory protection, as identified within Table 2-1, represents the minimum level of protection for all identified tasks.

There may also be hazardous chemicals brought on-site and used in the deconstruction. The requirements of the OSHA Hazard Communications Standard (29 CFR 1910.1200) shall apply.

Section 2.8 provides information concerning the management of hazardous chemicals on-site and the site Hazard Communication Program.

## **2.2.5 Biological Hazards**

Biological concerns in the work area are primarily, insects, rodents, mold/fungi, and Legionella.

### **2.2.5.1 *Insects***

The presence of insects shall be addressed by personnel as the insects are encountered. When a stinging or poisonous insect, such as a bee or spider, is identified, personnel should exercise caution to avoid being bitten or stung for example by using tools to move material. In the event that a person is stung or bitten, the incident shall be reported to the Site Manager for the Subcontractor who shall report the incident to the Contractor NYCSSM. The Site Manager for the Subcontractor shall initiate actions to manage and address the bite or sting. Personnel who are allergic to insect bites and stings should identify their allergy to their employer.

### **2.2.5.2 *Rodents***

In the event that rodents or animal pests are identified or observed on-site, the Subcontractor Manager should report the incident to the Contractor NYCSSM. The Contractor NYCSSM shall be responsible for evaluating the condition and implementing steps to eliminate rodents on the site.

### **2.2.5.3 *Mold/Fungi***

The Initial Building Characterization Study prepared by Berger and the Supplemental Investigation Report prepared by TRC identified mold contaminated building materials/components within the Building. The identification of additional mold/fungi on-site will be made based on visual inspections of building materials. When mold/fungi are identified, the removal of impacted materials shall be addressed concurrently with Asbestos Abatement Activities. Removal and handling measures shall be consistent with the NYC Department of Health and Mental Hygiene “Guidelines on Assessment and Remediation of Fungi in Indoor Environments.”



#### 2.2.5.4 *Legionella*

The presence of legionella, disease-causing bacteria, has been previously identified in the Northeast secondary water supply on site through historical sampling data. At no time shall any person utilize water from any remnant building structure, including sinks, showers, water fountains or fire connections. Only city supplied water shall be used for Site clean-up activities. No persons shall use any water source that has not been pre-approved and marked for potable use by the Contractor NYCSSM.

### **2.3 ENGINEERING CONTROLS**

Engineering controls will be used as primary protective mechanisms to protect the safety and health of all employees whenever technically feasible, and prior to the implementation of Administrative Controls and/or personal protective equipment. Each Subcontractor shall be responsible for the provision and implementation of the following:

- HEPA-filtered air filtration devices to reduce area dust levels.
- Vacuum cleaners equipped with HEPA filters.
- Fume extractors attached to HEPA filters for all hand-powered tools.
- Removal of all lead-based painted materials (if necessary), and adequate exhaust ventilation provided during torching or cutting activities.
- A buffer zone of at least three (3) floors will be maintained between the work activities of the Abatement Subcontractor and the Demolition Subcontractor on the top three floors, thereafter the buffer zone will be two floors.
- Barricades, railings or other devices to prevent employee exposure to fall hazards or moving equipment per 29 CFR 1926.
- Other task-specific engineering controls as recommended by OSHA guidelines or as recommended by the Contractor NYCSSM.

### **2.4 ADMINISTRATIVE CONTROLS AND WORK PRACTICES**

Each Subcontractor shall utilize administrative controls and work practices as a secondary means of ensuring worker health and safety when engineering controls do not provide sufficient

protection or are technically infeasible. Each Subcontractor shall be responsible for the provision and/or implementation of the following:

- Ensuring all employees are enrolled in a medical monitoring program as required by OSHA, including medical monitoring for blood lead levels as outlined in Section 2.13 of this HASP.
- Ensuring all employees have current fit-test and training certifications.
- Implementing work practices that avoid generating dust whenever possible.
- Requiring that all employees implement decontamination procedures, including washing hands, face, hair and neck upon leaving the work area and before eating, drinking or smoking.
- Removing lead based paint or coatings before cutting, grinding or other activities that would be expected to disturb the lead-based materials, or complying with the provisions of 29 CFR 1926.62.
- Use of the Buddy System will be required for all employees working within the Exclusion Zone, as defined in Section 2.8.1 below, or while performing non-standard tasks as designated by the Subcontractor's Safety Officer.

## **2.5 PERSONAL PROTECTIVE EQUIPMENT (PPE)**

Personal protective equipment will be used to provide adequate personnel protection only after feasible engineering and administrative control options have been exhausted. All personnel engaged in the project work activities will use the appropriate level of protection as required by the activity to be performed and are presented in the "Activity Hazard Analysis" presented in Table 2-1.

All PPE requirements for site activities are based upon available historical site characterization data and knowledge of the anticipated hazards. Changes in levels of PPE and changes in the PPE requirements for specific areas shall be made based upon the results of monitoring, visual observations and the nature of the site operations, including the presence of or potential for previously unidentified chemicals or conditions.

In accordance with OSHA 29 CFR 1910.132-138 and 1926.28 (Personal Protective Equipment), all PPE shall be provided, used, and maintained in a sanitary and reliable condition. All PPE

shall be of construction, design, and material to protect employees against known or anticipated hazards. PPE shall be selected that properly and appropriately fits the employee.

### **2.5.1 Basic PPE Requirements**

Each employee will wear a hard hat and safety glasses or other eye protection at all times while on-site, except for designated “safe” areas. Eye protection includes safety glasses, safety goggles, welding goggles, welding hoods, or full-face respirators. Prescription or non-prescription eyeglasses and sunglasses are not approved for eye protection. All acceptable eye protection must include side shields and must be ANSI-approved.

Unless in designated safe locations, all personnel shall have with them and/or wear the following PPE when entering the site:

- Work clothes without loose sleeves and cuffs
- American National Standards Institute (ANSI) - approved safety boots
- ANSI - approved safety glasses
- ANSI - approved hard hat with bill facing forward
- Work gloves (either leather or cotton)
- Hearing protection (as necessary)

The above listed PPE ensemble, defined as Level D, shall be worn during all outdoor site activities and inside of the building after clearance testing has been completed.

### **2.5.2 Level C PPE**

Level C PPE shall be worn when working inside of the building (with the exception of previously cleaned areas such portions of the basement occupied by field offices) during all Phase I activities, except for concrete jack hammering in enclosures . Level C PPE consists of:

- Full-face powered air-purifying respirator (PAPR) with HEPA filter approved by the National Institute for Occupational Safety and Health (NIOSH)/Mine Safety and Health

Administration (MSHA)<sup>1</sup>. Half-face air-purifying respirators (APR) may be used during work preparation activities.

- Gloves - nitrile inner; chemical resistant outer (nitrile or neoprene)
- ANSI-approved safety boots
- ANSI-approved Eye protection – safety glasses or goggles
- ANSI-approved Hard hat with bill facing forward
- Tyvek coveralls with head cover (Two layers Tyvek or equivalent)
- Water-resistant overboots which are treaded to provide slip protection
- Hearing protection (as necessary)

### **2.5.3 Level B PPE**

Level B PPE may be required during jack hammering concrete in enclosures during the installation of the cement chute unless engineering controls are instituted incorporating local exhaust ventilation at the point of dust generation until personal air monitoring confirms that the level of silica is below the OSHA action level. Level B PPE consists of:

- Self-Contained Breathing Apparatus (SCBA) or combination airline/SCBA approved by the National Institute for Occupational Safety and Health (NIOSH)/Mine Safety and Health Administration (MSHA).
- Gloves - nitrile inner; chemical resistant outer (nitrile or neoprene)
- ANSI-approved safety boots
- ANSI-approved Eye protection – safety glasses or goggles
- ANSI-approved Hard hat with bill facing forward
- Tyvek coveralls with head cover (Two layers Tyvek or equivalent)
- Water-resistant overboots which are treaded to provide slip protection

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<sup>1</sup> If air sampling data proves that the level of asbestos and COPCs are consistently below the action level, respiratory protection may be downgraded to an appropriate level of protection.

- Hearing protection (as necessary)

#### **2.5.4 Level A PPE**

Use of this type of PPE is not anticipated at this site. Should work conditions and personnel sampling exceed action levels for a PPE upgrade to Level A, operations shall cease in that area until site conditions can be re-evaluated by the Contractor NYCSSM and the Environmental Consultant's CIH.

### **2.6 SAFETY EQUIPMENT**

The requirements for PPE on this job may be refined and changed to address the conditions identified when tasks are performed. The Subcontractors will work with the Contractor NYCSSM to ensure the proper PPE is maintained and available on-site at all times, and that personnel are trained to use the PPE and understand the procedures and practices for the safe and effective use of PPE. The Subcontractors will provide the required PPE for their employees.

The PPE requirements presented in this HASP are the minimally acceptable for the specified activity. Subcontractors can make individual decisions to upgrade the equipment requirements for each PPE level to ensure the hazards presented by an activity are controlled and exposure is minimized. Engineering and administrative controls will be identified and implemented for each activity prior to use of PPE.

#### **2.6.1 Respiratory Protection Program**

Respiratory protection is required whenever work is performed inside the building to protect the workers from exposures to contaminants, primarily asbestos, that may be present. Half-face negative pressure air purify respiration particulate filters that are HEPA or P100 shall be required during work preparation activities (i.e. installation of isolation barriers) and PAPR will be used during other Phase I activities, unless Level B is required. Qualified subcontractor IH personnel will evaluate the need for additional protection such as adding organic vapor cartridges based on their respiratory protection programs and chemicals they may be using. The following practices will be conveyed to all employees and enforced by the

Contractor NYCSSM and the HASP AM with respect to respiratory equipment for this project:

- Subcontractors whose personnel may have the need to wear respiratory protection on this job, shall have a written respiratory protection program that meets the requirements of the OSHA Standard (29 CFR 1910.134) and has been developed by a Competent Person as defined by OSHA.
- Personnel who may need to wear respiratory protection shall be fit-testing, medically qualified and trained, as required by the Standard, to use respiratory protection. The Subcontractor shall identify personnel who may use respiratory protection and documentation of fit-testing, medical qualification and training shall be provided for each person who may need to wear respiratory protection on the job.
- The Subcontractor shall review with the Contractor NYCSSM the procedures for the handling, storage and maintenance of respiratory protective equipment to be used on-site, including the process for reporting and repairing or replacing defective equipment and the locations where respiratory equipment will be stored.
- Subcontractors will provide employees with adequate respiratory protection as required by each task.
- A respirator of lesser protection than is required for the task/activity may not be used.
- Each employee will change his/her respirator filter at the end of each work shift. The Subcontractor will provide an adequate supply of approved filters for daily replacement for each employee's respirator.
- Each Subcontractor will ensure the adequacy of respiratory protection for his employees based upon the verified results of personal air sampling.
- If at any time air sampling data indicates airborne exposures exceeding one-half the OSHA Permissible Exposure Limit, all affected employees' respiratory protection will be upgraded.

#### *2.6.1.1 Respirator Testing*

Each individual who must wear a respirator will be required to be clean-shaven where the sealing areas of the respirator face piece contacts the face. Each respirator user will be respirator fit-tested in accordance with 29 CFR 1910.134 at least annually. Upon donning the respiratory device or before entering any restricted work area, each respirator wearer will be required to perform a manual negative and positive-pressure test. Subcontractor employees who fail the negative/positive

pressure test because they are not clean shaven will be required to leave site for the day or to shave on-site immediately preceding entry into the work area.

#### **2.6.1.2 Respirator Inspection, Sanitization, and Maintenance**

All respirators will be cleaned, sanitized, inspected, assembled, and maintained ready for use on a daily basis. Each respirator will be stored in a clean and sanitary container. Prior to use, the wearer will inspect the respirator, including the valves, valve covers, nosepiece, straps, eyepiece (for full-face respirators), face piece and its snaps, cylinders, and canisters to insure that the respirator can be worn. The Subcontractor will provide initial training concerning the use of respirator equipment, but each employee will be responsible for cleaning, inspecting, maintaining, sanitizing, and storage of his/her respirator equipment.

If a respirator becomes chemically contaminated or malfunctions, the respirator will be replaced by the employer with a clean and sanitized respirator, and the contaminated/defective respirator shall be decontaminated and repaired before reuse, or tagged “out of service” and disposed of. The respirator wearer shall inspect the replacement respirator for defective parts and leaks and will be fit tested if the replacement respirator is of a different make, model or size than the original.

#### **2.6.2 Medical Response Equipment**

The following medical response equipment shall be available on-site for the duration of the site activities. The locations of these equipment stations shall be determined at the site and incorporated into this HASP upon initiation of each task. The Contractor NYCSSM shall maintain responsibility for the incorporation of this information into this HASP.

- **Eyewash Stations:** The location of emergency eyewash stations shall be determined. Each station shall provide a continuous spray of a rate of 0.4 gallons per minute for at least 15 minutes. This station shall be inspected daily to ensure proper operation.
- **First Aid Kits:** The locations of fixed and/or portable kits shall be determined. As a general guideline, each Subcontractor shall provide, at minimum, one first aid kit for every 20 employees and shall station it within the work area (for Level D operations) or directly outside the decontamination area (contaminant reduction zone) (for Level C or Level B operations).

- Automated External Defibrillator (AED): an AED shall be located within the Contractor's on-site field office.

The locations of eyewashes, first aid kits, AED, and the procedures for using and reporting an incident shall be presented during the initial on-site training. The Contractor NYCSSM shall make all personnel aware of the locations and use of this equipment prior to engaging in site work activities.

## 2.7 PERSONAL AIR MONITORING

Each Subcontractor and trade employer shall perform personnel air sampling for the following contaminants during Phase I of the project: particulates as TSP, metals as TSP, asbestos, PAHs, D/Fs, PCBs, mercury, lead and silica. Additionally, daily personnel sampling for lead, cadmium, chromium and mercury shall be performed during all cutting and torching operations as required by 29 CFR 1926.62(d)(2)(iv) and the Cadmium in construction standard [29 CFR 1926.112]. The results of personnel monitoring will be reviewed on a daily basis by the Subcontractor Safety Officer to determine if current levels of respiratory protection are adequate. The subcontractor safety officer shall provide written documentation of this review to Gilbane's NYCSSM and the subcontractor must immediately report any results that trigger PPE upgrades. The following table lists the OSHA PEL, site specific Action Level, and trigger levels:

**Table 2-2**

Contaminants	OSHA PEL	Action Level (Half value of OSHA PEL)	10 X OSHA PEL (Protection factor for Half- face APR)	100 X OSHA PEL (Protection Factor for Full- face PAPR)
Asbestos	0.1 f/cc	0.05 f/cc	1 f/cc	10 f/cc
Antimony	0.5 mg/m <sup>3</sup>	0.25 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>	50 mg/m <sup>3</sup>
Barium	0.5 mg/m <sup>3</sup>	0.25 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>	50 mg/m <sup>3</sup>
Beryllium	0.002 mg/m <sup>3</sup>	0.001 mg/m <sup>3</sup>	0.02 mg/m <sup>3</sup>	0.2 mg/m <sup>3</sup>
Cadmium	0.005 mg/m <sup>3</sup>	0.0025 mg/m <sup>3</sup>	0.05 mg/m <sup>3</sup>	0.5 mg/m <sup>3</sup>
Chromium (III)	0.5 mg/m <sup>3</sup>	0.25 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>	50 mg/m <sup>3</sup>
Copper	1 mg/m <sup>3</sup>	0.5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	100 mg/m <sup>3</sup>
Lead	0.05 mg/m <sup>3</sup>	0.025 mg/m <sup>3</sup>	0.5 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>
Manganese	5 mg/m <sup>3</sup>	2.5 mg/m <sup>3</sup>	50 mg/m <sup>3</sup>	500 mg/m <sup>3</sup>
Mercury	0.1 mg/m <sup>3</sup>	0.05 mg/m <sup>3</sup>	1 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>
Nickel	1 mg/m <sup>3</sup>	0.5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	100 mg/m <sup>3</sup>
Zinc	5 mg/m <sup>3</sup>	2.5 mg/m <sup>3</sup>	50 mg/m <sup>3</sup>	500 mg/m <sup>3</sup>



## **2.8 SITE CONTROL**

Site control measures shall be implemented to protect the public and personnel working on-site. The aspects of site control shall address:

- General access to the site; and
- Access to the building and site during the deconstruction phase.

Fences, guardrails and access devices, including ladders, stairways, and walking surfaces shall be provided and maintained throughout the project activities in accordance with 29 CFR 1926. In addition, barricades, warning signs and devices, temporary lighting and other safety measures shall be provided, as required, to protect site personnel.

All visitors to the site shall report first to the Contractor field office. Visitor access shall be limited to the Support Zone and Level D operation areas only, and shall be allowed only with the prior consent of the Contractor NYCSSM and the Contractor Site Manager. No visitor shall enter a work area unescorted by a Subcontractor or Contractor representative. The presence of any regulatory agency on-site shall be reported immediately to the Contractor Site Manager.

### **2.8.1 Work Zones**

Entry into the work zones begins once a person comes on-site. This approach reflects the dynamic nature of the operations and the need for everyone to be aware of the conditions while on-site. Using the concept of three zones for the site, the following areas are identified on each individual floor:

- Support Zone – This area starts at the project/property fence line and extends to the entry to where personnel enter the building to complete the work tasks. This area includes the ground outside of the building and any office spaces. In this area all personnel shall wear Level D PPE. Within this area exclusion zones may be established depending on the operations, for example: where material handling is performed, where hoisting equipment is located or where equipment is staged.
- Contamination Reduction Zone (CRZ) – Subject to approval of the variance, this area shall be located at the pre-existing Personnel and Waste Decontamination Facilities located in Cellar “A” and the 1<sup>st</sup> floor will be utilized for the duration of this project. The CRZ shall exist until the completion of Phase I activities.

Personnel shall be aware of and follow all site control procedures with respect to entering and exiting the CRZ, to ensure that they are not exposed to contaminants and to minimize the potential for contamination of personnel and the spread of contamination outside the Exclusion Zone (EZ). These measures include having personnel follow the proper procedures for donning and doffing PPE and washing in the CRZ. The measures also address the decontamination procedures for use when moving equipment between zones.

The CRZ shall consist of an area to drop off equipment, plastic bags to dispose of protective clothing, adequate soap and water for personnel and equipment decontamination and a means of capturing wash water generated during decontamination. The CRZ shall also have a first-aid kit, fire blanket and fire extinguisher (20-lb ABC-type).

- Exclusion Zone (EZ) – This area extends from the side of the CRZ facing the building and includes all areas on each floor of the building. This definition of the EZ shall remain effective until Phase I activity on each floor is completed. No employee shall enter the Exclusion Zone without the required training and PPE. No employee shall eat, drink, chew gum, apply cosmetics, smoke or use other tobacco products while in the Exclusion Zone. The employee must first exit the Exclusion Zone and follow decontamination procedures (Section 2.8.2.1) in the CRZ before engaging in any of the above actions. In the event that an employee in the EZ requires a replacement or his/her protective suit or respirator filters, the employee shall exit the EZ and utilize proper decontamination procedures in the CRZ, replace or repair the defective PPE, then re-enter the EZ.

## **2.8.2 Personnel and Equipment Decontamination**

When exiting the EZ, personnel shall be aware of and follow the procedures used to decontaminate personnel, equipment, and sampling containers. Subcontractors shall ensure that their employees follow proper decontamination and waste disposal procedures. Disposal of PPE and other items shall be performed in accordance with Section 3 of this HASP, with material placed in appropriately sized and labeled containers. Specific decontamination procedures are presented in the following subsections.

### **2.8.2.1 Personnel Decontamination Procedure**

Personnel entering containment are required to follow proper decontamination procedures. All employees who leave the Exclusion Zone shall follow the decontamination process as outlined below.

All employees shall remove all gross contamination and debris from disposal protective clothing and equipment by vacuuming prior to leaving the EZ. All employees must be HEPA vacuumed before entering the elevator that leads to the CRZ. Upon entering the CRZ, each employee shall remove the first layer of protective clothing and place it in the appropriate container. If the employee performs duties and becomes “grossly contaminated”, the decontamination procedure will include an Alconox (soapy) wash and a tap water rinse of the outer suit, gloves and overboots prior to removal of the outer layer.

After employees remove the first layer of tyvek and gloves, they shall then move into a second decon area where the second tyvek and gloves shall be removed and placed in the appropriate waste container. After this decontamination, personnel shall proceed to a washing facility to take full showers. The employee shall dispose of all protective clothing upon exiting the decontamination unit; all half-face APR respirator cartridges, if used, shall be changed out, as needed, but on a daily basis at a minimum. Full-face PAPR cartridges may be utilized more than one day if functioning as designed and sealed and decontaminated after each use.

#### *2.8.2.2 Equipment Decontamination Procedure*

Since equipment decontamination is difficult, unnecessary equipment shall not be brought into the controlled areas. All materials used in the regulated area shall be properly HEPA vacuumed and wet-wiped before leaving the first decontamination zone. All equipment that becomes “grossly contaminated”, will require an Alconox wash and tap rinse.

#### **2.8.3 Safety Meetings**

A safety meeting shall be held each day with the Contractor and each Subcontractor prior to initiating the scheduled activities and at the beginning of each day. The topics and content for the Safety Meeting shall be prepared in advance by the subcontractors and submitted to the Contractor NYCSSM for approval. The safety meeting shall review elements in the site HASP and the procedures for working on-site, and address the impacts of changes to the site conditions. Topics to be addressed include:

- Use and maintenance of PPE
- Evacuation routes;
- Warning signals;
- Maintaining line-of-sight and communications;
- Rehearsal of scheduled activities;
- Hospital routes;
- Locations of safety equipment;
- Previous violations of the safety plan and procedures or changes to the program to correct the violation;
- Anticipated hazards for the day's work activities;
- Any changes to the requirements for levels of PPE;
- The locations of work zones; and
- General site conditions.

All safety meetings shall be documented in the site H&S logbook. Meeting participants shall sign an attendance sheet.

## **2.9 TRAINING PLAN**

All personnel directly involved in the project site activities shall be trained for the tasks they will perform, as required by applicable federal/state/local regulations. Refresher training will be performed at least yearly. In addition, all site personnel shall participate in site-specific training and participation of personnel in training shall be documented, with proof of training maintained on-site. The topics of training required are dependent on the SOW. This training shall be administrated by the Contractor, the Subcontractor, or certified training facilities.

### **2.9.1 Health and Safety Awareness Training**

Each Subcontractor shall be responsible for presenting and discussing the elements of this HASP with their personnel and subcontractors, and ensuring that personnel follow the elements of this HASP when working on-site. Prior to the start of work activities, or whenever a new hazard is

introduced into the work area, employees shall be provided with the information indicated below. The Contractor NYCSSM or HASP AM shall be available to address any questions or assist in the presentation of the HASP information to project employees. Information to be addressed during this training shall include, but not be limited to:

- Hazardous chemicals present at the work site and their associated health risks.
- Potential physical hazards associated with the work activities, and proper safe working practices.
- Proper use of all tools and equipment to complete the scope of work activities.
- Requirements of the site Hazard Communication Program, including the labeling of containers.
- Site alarm system, emergency response procedures, and location of emergency lay down area.
- Proper PPE to be used during work activities.
- Location of the MSDS files.
- How to reduce or prevent exposure to hazardous chemicals through the use of controls procedures, work practices, and personal protective equipment.

### **2.9.2 Asbestos Training**

ACBM was determined to be in several building components per the Berger “Initial Building Characterization Study Report” and as verified by TRC. Personnel entering containment shall be trained to identify ACBM and the hazards associated with asbestos in accordance with the OSHA Asbestos Standards (29 CFR 1910.1001 and 29 CFR 1926.1101) and state/local certification requirements. This training provides personnel with a better understanding of asbestos and the steps to be taken to protect themselves and the public. In areas that ACBM was identified, required NYSDOL and NYCDEP procedures shall be followed.

### **2.9.3 HAZWOPER Training**

Personnel entering the exclusion or contamination zones for the purpose of performing cleanup-abatement activities must have received the required 40 hour training as outlined by 29 CFR 1910.120(a) (i) and appropriate annual refresher training as required. This HAZWOPER training

requirement may be removed, should sampling indicate training requirement downgrade is appropriate.

## **2.10 PERSONAL PROTECTIVE EQUIPMENT TRAINING**

Each Subcontractor shall provide training concerning the use of PPE to their personnel, as specified by this plan, to address the general PPE requirements and any specific requirements for PPE they may use, such as fall protection. The Contractor NYCSSM or HASP AM can assist with this training, and any concerns regarding the use of appropriate PPE shall be brought the attention of the Contractor NYCSSM. Further discussion of the types of PPE is presented in Subsection 2.5 of this HASP.

### **2.10.1 Emergency Response Training**

Emergency response training, in accordance with the Emergency Action Plan found within Section 3 of the Phase I Deconstruction Plan, shall be provided to all on-site-personnel as part of the site-specific safety and health awareness training. The emergency response training shall be conducted by each Subcontractor's Safety Officer for his/her respective employees. At a minimum, the topics of this training shall include the following:

- Location of all site emergency equipment
- Response procedures for fires
- Response procedures for injuries and accidents
- On-site/off-site response resources
- Emergency site operations shut down procedures
- On-site "Chain of Command"
- Designated on-site emergency meeting location
- Recognition of evacuation signals and alarms

### **2.10.2 Visitor Training**

Site visitors are defined as persons who are not employed at the project site, who do not routinely enter restricted work areas, or whose presence is of short duration (i.e., one to two days per month).

During Phase I, all visitors entering the EZ must provide proof of an up-to-date fit-testing and medical clearance, and completion asbestos certifications required for the employee's scope of work. In addition each visitor will receive site-specific training by the Contractor NYCSSM or HASP AM that includes:

- Location and description of potential hazards and risks
- Required PPE
- Areas of the site that may be closed to visitors
- The site evacuation plan and emergency procedures
- Other topics as deemed appropriate by the Contractor NYCSSM

### **2.10.3 Other OSHA Specific Standard Training**

Because of lead and cadmium being identified as COPCs and the potential for lead fumes or dust to be produced in deconstruction from building materials, subcontractors will provide proof of training required in OSHA Specific Standards 29 CFR1926.65 (Lead in Construction) and 1926.1127 (Cadmium)

## **2.11 HAZARD COMMUNICATION**

The Contractor and Subcontractors shall notify the Contractor NYCSSM of any hazardous products prior to bringing the chemical on site and shall provide a MSDS for each product. These MSDSs shall be maintained by the Contractor NYCSSM and shall be kept in a site master file. In addition, each Subcontractor shall maintain a copy of the MSDS for each product that they bring on-site.

The Subcontractor shall review with the Contractor NYCSSM the procedures for handling, using and storing the chemicals brought on-site, and shall review with their personnel the proper procedures for handling, using and storing the chemicals before the product is used on-site. This includes but is not limited to all commercial products brought on-site by Subcontractors, including commercial cleansers, degreasers, lubricants and paints.

### **2.11.1 Container Labels**

All containers of hazardous materials shall be labeled in accordance with appropriate standards. The labels on containers provided by the manufacturer, importer, or distributor shall be used. Labels affixed to containers of hazardous materials shall:

- Identify the material using a name with which workers are familiar.
- Identify the hazards associated with the material, including toxicity information that indicates symptoms and target organs.
- Identify the name, address, and telephone number of the manufacturer, importer, or distributor where more information may be obtained.

Labels shall not conflict with Hazardous Materials Transportation Act (HMTA) labeling requirements and shall meet the requirements of OSHA substance-specific health standards, where required.

Labels are not required on portable containers filled from a correctly labeled container if the worker uses the material from that container only during that work shift. However, the subcontractor shall prepare a container label when the contents of the container are not used on the shift during which the container was filled and when the container label is defaced or illegible. The prepared temporary label shall indicate pertinent chemical identification and health information as required by OSHA.

### **2.11.2 Material Safety Data Sheets (MSDSs)**

All MSDSs shall be submitted by the Subcontractors and shall be maintained by the Contractor NYCSSM within a site master file. In addition, each Subcontractor shall maintain a copy of the MSDS for each product that they bring on-site. In addition, each Subcontractor shall also retain a log of MSDSs for chemicals used on this project and this log shall be kept on-site. The location of the MSDS folder shall be made known to all project employees.

Each Subcontractor shall review incoming MSDSs for new or significant health and safety information and shall ensure that any new information is communicated to affected employees, the Contractor NYCSSM and other subcontractors. If an MSDS is not received at the time of



initial shipment of materials, the material may not be used until the MSDS has been obtained from the manufacturer.

Employees shall be instructed to notify their Site Manager if an MSDS is not available. When a revised MSDS is received, the Site Manager shall immediately replace the old MSDS. Subcontractors shall insure that the MSDSs on file for their chemicals are current (updated within last two years).

## **2.12 ACCIDENT PREVENTION & INVESTIGATION**

A vital element of maintaining safe work practices is accident prevention. The following four actions are instrumental to accident prevention, and shall be communicated to all project personnel:

- Eliminate unsafe conditions. Efforts shall be initiated and implemented throughout the project to identify conditions that can contribute to an accident, and to remove exposure to these conditions. Each Subcontractor Safety Officer shall audit the work area prior to each shift to identify and correct any unsafe conditions.
- Reduce unsafe acts. Personnel shall make a conscious effort to work safely. A high degree of safety awareness shall be maintained so that safety factors are an integral part of each task. Daily safety briefings shall be designed to heighten general safety awareness and will be tailored to the individual audiences and tasks each day.
- Inspect frequently. Regular safety inspections of the work site, material, equipment, and operations by qualified persons (i.e., Contractor NYCSSM) shall be performed to ensure early detection of unsafe conditions. Safety and health deficiencies shall be corrected as soon as possible, or site activities shall be suspended. All inspections shall be documented and the records retained by the Subcontractor for, at a minimum, the duration of the project. Copies of the inspection reports shall be provided to the Contractor NYCSSM or Contractor Project Manager upon request,
- Educate personnel concerning the requirements of the HASP. The HASP and all site health and safety education shall be provided by each Subcontractor, the Contractor NYCSSM and HASP AM.

All minor accidents (i.e., small fires, injuries, and near misses) shall be investigated by the Subcontractor Site Manager or Safety Officer and communicated to the Contractor NYCSSM immediately when reported to the Subcontractor. The Contractor should also be contacted as soon as possible. An accident investigation shall include reviewing the accident/incident report,

questioning the injured employee(s) as well as other personnel witnessing the occurrence, identifying all contributing acts and conditions, determining underlying reasons for their existence or occurrence, and implementing corrective actions. A report documenting the investigation shall be written and forwarded by the Subcontractor to the Contractor NYCSSM and the Contractor Project Manager. Recommendations for accident prevention shall also be made in the report and communicated to all site personnel during periodic safety briefings and training sessions.

## **2.13 MEDICAL SURVEILLANCE PLAN**

All persons involved in Phase I, activities shall be enrolled in an HAZWOPER and/or asbestos medical monitoring program, as appropriate, prior to working on-site. This requirement ensures that personnel are protected from asbestos and other COPCs that have been identified. In the event that air sampling confirms the presence of air-borne asbestos and workers are exposed to asbestos levels above the OSHA PEL, then guidance concerning the requirements for annual medical examinations shall be provided by the Contractor NYCSSM.

The “Initial Building Characterization Study Report”, dated September 14, 2004, and published by The Louis Berger Group, Inc. shows elevated levels of lead; therefore, all employees shall also take part in biological monitoring for lead in accordance with 29 CFR 1926.62. This includes baseline blood work within 48 hours of the start of exposure and every 2 months for the first 6 months of exposures over the action level for more than 30 days per year. After the first 6 months, the blood levels should be checked every 6 months. This shall insure that the levels of respiratory protection used by employees properly protect them from lead exposure.

In addition, medical monitoring will be conducted for any COPCs that have an OSHA standard.

### **2.13.1 Respiratory Protection**

All personnel having to wear a respirator must have a medical evaluation as required by 29 CFR 1910.134 to determine fitness to use respiratory protective equipment prior to initiation of work activities. Documentation indicating medical clearance for respirator use must be provided to the HASP AM by each Subcontractor prior to entrance into the work area, should respirator use be

required by that employee. Each Subcontractor shall maintain a written Respiratory Protection Program developed by a Competent Person as required by 29 CFR 1926.103.

### **2.13.2 Hearing Conservation**

All personnel exposed to noise levels above 85 dBA must have a baseline audiometric evaluation in accordance with 29 CFR 1926.52 and 101. Personnel shall receive awareness training concerning the hazards of noise and the procedures to properly use and maintain hearing protection. If any Subcontractor exposes his employees the noise levels above 85 dBA, the Subcontractor must establish a written Hearing Conservation Program developed by a competent person as required by 29 CFR 1926.101 and 29 CFR 1910.95

### **2.13.3 First Aid**

On-site First Aid/CPR/AED support shall be provided by the Contractor NYCSSM. Additionally, each Subcontractor shall have on-site at least one person who has current training in first aid, CPR, and AED use.

### **2.13.4 Medical Emergency and Personal Injury**

The first worker who notices that a medical emergency or personal injury has occurred shall immediately make a subjective decision as to whether the emergency is life threatening and/or otherwise serious.

#### Life-Threatening and/or Otherwise Serious Incident

If a life-threatening incident occurs, those persons recognizing the situation should do whatever actions in their capabilities to reduce the threat and then the Contractor NYCSSM shall be contacted. The Contractor NYCSSM shall immediately notify the Emergency Medical Services (EMS) and implement emergency action procedures to have someone meet and guide EMS to the incident location. The Contractor shall be notified of the incident as early as possible.

The Contractor NYCSSM shall be kept apprised of the situation and the location of the victim(s). As the Contractor NYCSSM proceeds to the accident scene, communications channels shall be

opened and kept on standby until the Contractor NYCSSM has surveyed the scene and performed a primary survey of the victim.

The Contractor NYCSSM shall provide emergency action guidance consistent with the injury and shall relay the appropriate information to the site person meeting the EMS.

Depending on the nature of the injury and the location at which the injury occurred, the Contractor NYCSSM shall determine whether the person can be moved or whether the EMS team will need to come into the work area to assist the victim. Should the victim be injured in the Exclusion Zone, all appropriate life-saving methods shall be exercised in that area before attempting decontamination of the victim. The extent of emergency decontamination performed shall depend on the severity of the injury or illness and the nature of the contamination. If the emergency is such that emergency decontamination cannot be performed safely, the victim shall be given necessary first-aid treatment and wrapped in a blanket prior to transportation by EMS. If heat stress is a factor in a victim's injury/illness, all protective clothing shall be removed from the victim immediately.

#### Non-Life-Threatening Incident

Should it be determined that no threat to life is present, a co-worker will assist the injured person and contact the Contractor NYCSSM as soon as reasonably possible. Should the victim be injured in the Exclusion Zone, a rapid decontamination consisting of Tyvek, glove and respirator removal shall be performed in the Contamination Reduction Zone prior to initiation of medical assistance. For all non-life-threatening injuries, all medical assistance shall be provided in the Support Zone to reduce the spread of contamination to medical personnel or equipment.

#### **2.13.5 Bloodborne Pathogens**

When an emergency occurs that involves the potential for contact with bodily fluids, personnel shall use procedures and PPE that minimize the potential for exposure.

All personnel who provided direct support to an injured person shall participate in a post-incident exposure review during which their role in the event and the potential for contact with bodily fluids shall be evaluated. The information relating to exposure shall be documented for

each individual. The procedures for the post-exposure consultation identified in the OSHA Bloodborne Pathogens Standard (29 CFR 1910.1030) shall be followed.

All personnel on-site shall receive awareness training concerning Bloodborne Pathogens (BBP) and the procedures to be followed to respond to emergencies that occur on-site. This awareness training shall be provided by each Subcontractor prior to the initiation of work activities and when new employees are introduced to the Site. In addition, each Subcontractor must have a BBP plan.

### **3.0 DOCUMENTATION**

Each Subcontractor shall maintain documentation, as established by the Contractor, which shall record, at a minimum, the following information:

- The Subcontractor employees on Site, including arrival and departure times and their destination at the Site.
- Information required to be maintained by the OSHA respiratory protection standard, including medical clearance documents, training and certification records, fit-test records, and the results of personal air monitoring used to determine employee exposures. Additionally, all medical and sampling documentation required by OSHA's Lead in Construction standard must be maintained.
- Area air testing results
- Incidents and unusual activities that occur at the Site, including but not limited to injuries, illnesses, accidents, spills, breaches of security, equipment failures, weather-related problems and near-misses.
- Records of daily safety briefings, including attendance documentation for all employees required to attend.
- Records of health and safety inspections by governmental agencies.
- Records of corrective actions performed in response to any deficiencies noted through government agency inspection or by the Contractor NYCSSM.

# ATTACHMENT 1

## 130 Liberty Street Organization Chart

