Regulatory Submittal Part I(R)
Remediation Work Plan

Project:
Remediation of
Fiterman Hall – 30 West Broadway
New York, New York

Prepared for:
The Dormitory Authority of the State of New York
City University of New York

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1.0 General

PAL Environmental Safety Corp. has been retained by the Dormitory Authority of the State of New York (DASNY), and The City University of New York (CUNY) to prepare a Project Plan to conduct the environmental remediation of the Fiterman Hall Building located at 30 West Broadway, New York, NY (Fiterman Hall, the Building, the Site or 30 West Broadway). The Building is a fifteen-story, three hundred seventy thousand square foot classroom building owned by DASNY and operated prior to 9/11 by CUNY/Borough of Manhattan Community College. The Building was physically damaged by the collapse of 7 World Trade Center, and impacted by the environmental effects of the World Trade Center Collapse.

The purpose of Regulatory Submittal Part I(R) – Remediation Work Plan, is to provide an overview of the procedures to be followed for:

- Establishment of interior clean zone for project command center, staging and storage;
- Removal of all furniture and construction materials located inside of the Building;
- Dismantling and removal of all interior Building components;
- Cleaning of residual dust accumulated on interior surfaces;
- Removal, packaging, transport and disposal of all Universal Waste, all other regulated waste and all conventional waste;
- Abatement of asbestos containing materials and lead-painted materials from the interior and exterior of the Building.

The information contained in this Work Plan relates to all procedures required to complete the environmental remediation and prepare the structure for deconstruction.

Please note that the remediation is mostly interior work. This Work Plan has been designed with particular attention to personal protection and engineering measures to be implemented to prevent contaminants from migrating into the surrounding environment during remediation activities.

2.0 Related Documents

2.1 Informational Documents

2.1.1 Environmental Characterization Report

Airtek was retained by PCF-P on behalf of DASNY/CUNY to conduct an environmental characterization study of the Fiterman Hall Building. The Environmental Characterization Report is provided under separate cover.
2.1.2 Façade Characterization Report

Airtek was retained by PCF-P on behalf of DASNY/CUNY to conduct a façade characterization study of the Fiterman Hall Building. The Façade Characterization Report is provided under separate cover.

2.2 Regulatory Submittal Part II – Environmental Community Air Monitoring Program

Prior to initiation of any remediation operations, an environmental community air monitoring program (ECAMP) approved by the USEPA, and detailed in the related document, Regulatory Submittal Part II- Environmental Community Air Monitoring Program, will be established and operational. The Program will consist of daily air monitoring at eight points on the perimeter of the project site. Community Monitoring will continue until Building demolition is complete. A Quality Assurance Project Plan (QAPP) is included as Attachment D to the ECAMP.

2.3 Regulatory Submittal Part III(R) – Health & Safety Plan (HASP)

A site-specific HASP has been developed to be applied to the project. The HASP details requirements for access/egress and requirements for Personal Protective Equipment (PPE) for workers at the Site. All subcontractors performing any work on the Site are required to adopt the HASP into their operations and abide by all procedures described therein. The HASP is included as Part III of the submittal package.

2.4 Regulatory Submittal Part IV – Waste Sampling and Management Plan

A site-specific Waste Sampling and Management Plan (WSMP) to be applied to all waste operations for the remediation has been developed. The WSMP provides details on how, and by whom, waste determinations and categorizations will be made, and provides detail on sampling and analysis protocols. The WSMP is included as Part IV of the submittal package. A QAPP for the WSMP is included as Attachment D to the WSMP.

3.0 Environmental Regulatory Notifications

3.1 Asbestos Survey

To comply with New York State Department of Labor (NYS DOL) requirements for building demolition, Airtek has undertaken an asbestos survey intended to coordinate and complete previous survey work that was conducted at the Site. All previous documentation was reviewed and a site survey and bulk sampling were
conducted. Based on this survey work, an inventory of in-place asbestos has been developed. Please refer to Attachment VIII – Asbestos Survey Table to review asbestos survey results. The results of this survey are also included in Appendix IV to the Environmental Characterization Report.

3.2 NYS DOL Notification

Various federal, state and city agencies have joint regulatory jurisdiction for this remediation project. Regulatory Submittal Part I shall comply with Industrial Code Rule 56 (ICR56) as amended on March 21, 2007. Procedures requiring variance are outlined in Attachment II – NYS DOL Remediation Variance Decision. The remediation work constitutes a ‘Large Project’ according to the criteria outlined in ICR56, written notification of the entire project will be made to the NYS DOL prior to the commencement of any remediation activities. Notifications will be submitted prior to the commencement of work. New York State DOL Regulatory notification is included as Attachment I of this plan.

3.3 NYS DOL Variance Decision

The remediation at the Site requires a site specific variance be granted by NYS DOL. Copies of the variance application letter and decision are included as Attachment II of this Work Plan.

3.4 NYC DEP Notification

A copy of the Regulatory Submittal package will be provided and ACP7 notification will be made to the NYC DEP for the remediation operations. However, jurisdiction for work practices and variances is under the NYS DOL guidelines. ACP7 notification is included as Attachment IV of this Work Plan.

3.5 USEPA Notification

The remediation work constitutes a ‘Large Project’ according to the criteria outlined in EPA NESHAP, written notification of the entire project will be made to the US EPA prior to the commencement of any remediation activities. Sample notification is included as Attachment III of this Work Plan.

4.0 Utilities - General:

4.1 Electric

Electrical power will be supplied by the existing Con Edison transformer located on the south side of the Building (Barclay Street). Power will be fed into a Basement level electrical closet and run up floor by floor through the central electrical closet supplying two hundred amps of power to each level.
Building electrical system is equipped with the capability to shut down the electricity from the Basement level electrical control switch. GFCI equipped electric panels will be installed on each floor and attached directly to the electrical closet on that level.

Electric panels will be installed at each level required in Stairwell C after cleaning and clearance is completed in the stairwell. The panels will be attached to the electrical closets through the adjoining wall in Stairwell C. Please refer to Section 6.1.1 Cleaning and Clearance of Stairwell C for details regarding the installation of electrical panels. The entrances of the electrical closets shall be sealed off prior to the commencement of the remediation operation segregating the live electric from the work areas. Licensed electricians installing the panels will have valid NYS DOL allied trades handler certification.

Additionally, the Building is fed with a temporary electrical service consisting of 800 Amps, 120 / 208 VAC electric power off of a Con Edison meter located in a protective enclosure and shed situated at the northwest corner of the Site. The power presently feeds a switch providing emergency power for emergency lighting, a single service elevator, and temporary light stringers. This current electrical service will be used as needed to supplement the interior service.

4.2 Plumbing

For the remediation procedure, water will be obtained from the Building pump via a riser pipe that has been installed in the A-Stairwell. This riser pipe runs from the ground level through the Fifteenth Floor of the Building. Decontamination facilities installed for use during remediation activities will be operated off of water fed from an existing hydrant on Greenwich Street. PAL currently holds valid permits from NYC DEP to utilize and operate the hydrant (Permit Nos. 420640 & 420643). Permitting for hydrant usage will be kept current for the duration of the remediation activities.

At the beginning of work on the Remediation Operations, a characterization of waste water will be performed to determine proper disposal methodology. Waste water will be filtered to five (5) microns and containerized in a drum for testing. Drums for waste water storage will be 55 gallon metal drums. Drums shall be stored on site in the existing exterior material and equipment storage area established on the east side of the Building during the SEO. Should the characterization determine that there are no contaminants present in the waste water it will be discharged into the existing sanitary sewage system in the Building. The procedure for the disposal of water for the entire Remediation Operations will then be to filter down to five (5) microns and discharge to the existing sanitary sewage system in the Basement Level. Waste water will be filtered at the discharge point.
Should characterization detect the presence of contaminants, the waste water generated during the Remediation Operations will be containerized and disposed as required by the characterization analysis.

4.3 HVAC

The HVAC system will not be operated at any time during the remediation procedures. Please refer to Section 6.0 for details on the dismantling of the HVAC system.

4.4 Fire Suppression

The existing standpipe system, comprised of two connected risers, has been tested and is functional. Standpipes are located in Stairwell B and Stairwell C and siamese connectors are located at the construction fence line, outside of the fence, on the northeast (corner of Park Place & West Broadway) and southwest (corner of Barclay & Greenwich) sides of the Building. The siamese locations are marked by the required signage and lighting. The standpipe system will be maintained as a dry system and will be tested regularly. The standpipe system will remain intact and operational for the duration of the remediation operations. The entire standpipe system can be filled with water from either one of the siamese connections. In the event of an emergency, the FDNY would use a pumper truck connected to a street hydrant to deliver water through the standpipe. For additional information regarding fire suppression please refer to Section 9.0 Fire Protection.

4.5 Elevator Service

It will be necessary to utilize the existing Building elevators for work access to all floor levels and for the removal of waste from all floors. Installed shortly before the Building sustained damage on 9/11, the elevators are new and remain in good operating condition. Prior to commencing remediation activities, power will be restored to the existing passenger and freight elevator cars. It will be necessary to utilize all elevator cars during the remediation phase. Elevator banks have been assigned names in order to clearly identify each one. The elevator banks for the remediation are as follows:

Bank A: North Passenger Lobby (High Rise)
Bank B: South Passenger Lobby (Low Rise)
Bank C: Central Freight Car
Bank D: Basement Freight Car (Not Operational)

In the Elevator Machine Rooms throughout the Building there are vents that handle air pushed up shafts during car operation. These vents cannot be sealed since the usage of the elevators is required to perform the remediation operations.
Negative air filtration units are currently operating in these Elevator Machine Rooms maintaining negative pressure in order to prevent contaminated air from migrating out of the elevator shafts. Negative pressure will be maintained in the Elevator Machine Rooms during remediation operations. The contractor will install sufficient negative air ventilation equipment, as calculated according to the micro trap efficiency field test conducted under DOL variance re-opening (File No. 06-0852, approved Oct 19, 2007) to provide eight (8) air volume changes per hour in the elevator machine rooms. One manometer will be installed at the entrance to each elevator machine room in order to document pressure differential in these areas.

Please note that there is an existing elevator shaft adjacent to the high rise cars. This shaft runs from the Second Floor to the Fifteenth Floor. An elevator has not been installed in this shaft. PAL will install a construction hoist in this shaft in order to provide an additional car for upper level access. The hoist will be properly equipped to securely stop at every level between the Second and Fifteenth Floors. Throughout this Work Plan this car will be referred to as the construction hoist. The purpose of the hoist is to provide additional means of controlled vertical transport for materials, equipment and removed items and/or waste. The portable hoist to be installed is a Scaffold Monorail System. It is mounted on a seven foot (7’) long pipe scaffold frame for support during operation. The portable hoist weighs one hundred ten pounds (110 lbs). Dimensions of the portable hoist are forty-seven and a half inches (47.5”) wide and seventy-six inches (76”) long. The distance the portable hoist overhangs the scaffold mount is by forty-two inches (42”). The weight capacity of the portable hoist is one thousand pounds (1,000 lbs). The portable hoist will be installed and operated by personnel utilizing the same level of PPE to be utilized during the remediation operations and detailed below in Section 6.0.

It will be necessary for all elevators and the construction hoist to run through upper floor containment areas during remediation.

5.0 Monitoring:

5.1 Personal Monitoring:

Personal Exposure Monitoring will be performed during all remediation activities as required by OSHA CFR 1926 and DASNY. Results will be posted at the Site on a daily basis.

5.2 Work Area Monitoring:

Work Area Monitoring and asbestos air sampling will be conducted throughout the Remediation Phase of the Project. Work Area Monitoring will be conducted in strict accordance with ICR 56, subsection 56-4, 56-6, 56-7.1, 56-8.1, 56-9.2 and
any provisions set forth in the Variance Application. All sample analyses will be by TEM. Project air monitoring is further detailed in Regulatory Submittal Part II – Environmental Community Air Monitoring Plan.

5.3 Environmental Community Air Monitoring

Community Monitoring will be conducted as detailed in Regulatory Submittal Part II – Environmental Community Air Monitoring Plan.

5.4 Visual Inspection

The purpose of this section is to define the parameters to be followed when performing visual inspection of interior and exterior work areas. Visual inspection will be performed by the Contractor NYS DOL and NYC DEP certified asbestos supervisor and the Owner’s Environmental Consultant NYS DOL certified project monitor. Visual inspection will be performed in accordance with ICR 56. After removals and cleanings are complete in a work area, the contractor NYS DOL and NYC DEP certified asbestos supervisor will conduct a visual inspection of the work area. Once the work area conditions are acceptable to the contractor NYS DOL and NYC DEP certified asbestos supervisor the Owner’s Environmental Consultant NYS DOL certified project monitor and Contractor NYS DOL and NYC DEP certified asbestos supervisor will perform a visual inspection of the area. The Owner’s Environmental Consultant representative performing a visual inspection shall be an NYS DOL certified project monitor. OEC NYS DOL certified project monitor visual inspection will be conducted as per the provisions of ASTM Standard 1368 “Standard Practice for Visual Inspection of Asbestos Abatement Projects” in accordance with ICR 56 Section 56.9(d)(1). Once a work area has passed the OEC visual inspection, an OEC representative will contact the regulators to schedule a regulatory visual inspection of the work area. Twenty-four (24) hour notice shall be provided to the regulators prior to the date of inspection. After the area has passed regulatory visual inspection, aggressive clearance air sampling will be performed by the Owner’s Environmental Consultant NYS DOL certified air sampling technician. Please refer to the below Section 6.19 for clearance criteria.

Visual inspection of remediated areas shall be performed in the following manner:

- Initial inspection of the work area involves a thorough inspection of all substrates and surfaces that are the subject of the inspection.
- Areas and locations that have not been cleaned to the satisfaction of the inspector will be clearly identified and logged.
- Any areas that are identified during the initial inspection will then be subject to re-cleaning procedures.
- A secondary inspection will be performed on completion of the re-cleaning activities to determine that all areas identified in the initial inspection have been properly cleaned.
• This procedure shall be followed by all parties who hold authority over the release of work areas for the Owner.

6.0 Remediation Operations

For all asbestos abatement activities on this project, asbestos contractor licensing and handler certification shall be consistent with NYS DOL ICR56 requirements, as well as NYC DEP requirements.

This project has been designed in response to the existing condition of Fiterman Hall. The overall concept of the remediation operations is for the entire interior of the Building to be placed under one comprehensive negative pressure containment for the removal of non-fixed items, building components and asbestos containing materials. In order to accomplish these removals a Clean Zone will be established on the First Floor to provide an area free of contamination for logistical operations in support of remediation activities. Cleaning activities shall follow directly after removals. In order accomplish the post-removals cleaning, the one containment will then be divided into separate, three floor blocks. Each three floor block will be segregated from the neighboring three floor blocks via the installation of critical barriers on all vertical means of air transfer. Cleaning activities will not begin on any floors until all remediation and abatement activities have been fully completed on all levels (interior & exterior) throughout the entire building. Barriers dividing the three floor blocks will remain in place until all adjacent three floor blocks have been cleaned and cleared. Please refer to the below Section 6.19 for the clearance criteria for this project.

All personnel entering the Building during remediation operations are required to utilize the proper personal protective equipment (PPE) at all times. No personnel will be allowed to enter the Building without proper PPE. The minimum PPE required for remediation operations is as follows:

• Disposable coverall suits with hoods
• Respirators (Half-Face APR, Full Face APR, PAPR)*
• Nitrile gloves
• Safety goggles
• Work boots
• Rubber boots or rubber boot covers
• Hard hats
• Hearing Protection (only if noise will exceed OSHA decibel limits)**

*Any work exterior to the building will be performed utilizing half-face APR. Full face APR will be utilized during the first three days of interior work in order to gather enough data from OSHA personal sampling to perform a negative exposure assessment for asbestos. Respirator type will then be determined based on the results of this assessment.
**Noise in remediation work area will be monitored by the designated site safety manager utilizing a decibel meter.

If changes to the level of PPE are determined, the regulators will be notified and documentation provided in support of the determination.

The personal and waste decontamination facilities referenced in Section 6.0 will remain functional for the remediation work only. Any decontamination facilities to be installed during the deconstruction will be detailed in Regulatory Submittal Part I(D) – Deconstruction Operations to be submitted under separate cover.

Please note that all items and components defined as porous or non-porous, non-fixed and exposed are the same for all work, on all levels of the Building under the remediation operations.

Remediation work processes will be controlled by the Contractor so that directly after Gaylord boxes are full and sealed they will be moved from the work area, decontaminated and loaded into asbestos waste trailers. All full boxes will be moved out of the work area by the end of every day.

In the event of an emergency where waste trailers are unavailable and boxes of debris will remain in the work area the Contractor will immediately cease generation of further waste. Remaining boxes of debris will be organized in a manner that does not impede egress. The Contractor will notify the FDNY immediately and inform the FDNY’s designated representatives of the situation and the location and quantity of all boxes of debris in the building. The Contractor will work diligently to resolve the emergency in an expeditious manner so that waste flow can resume.

6.1 Establishment of Clean Zone

A Clean Zone will be established on the First Floor of the Building in order to provide interior areas for staging, waste and material storage and project administration. Additionally, the Clean Zone will extend up a stairwell to provide clean access to all floors. The Clean Zone will be comprised of all areas of the First Floor with the exception of the Building Core (including Elevator Banks A, B, C) and the East Side Lobby. Remediation of the core and Stairwells A & B will not take place at this time because it will be necessary to utilize the elevators and stairwells during remediation operations on the upper floors. The core and Stairwells A & B will be incorporated into the modified full containment of all upper interior floors. Modified full containment refers to a containment consisting of negative pressure ventilation equipment and critical barriers installed on windows and openings or penetrations leading to the outdoor environment. In order to leave access for either decontamination or disposal as asbestos containing
material at a minimum or in accordance with waste characterization results, plastic will not be installed on interior surfaces and other building components which have been deemed contaminated. The East Side lobby will not be cleaned at this time so that access to the upper floors will be available via the elevators. For more details on the upper floor access plan, please refer to Section 6.2. All remediation activities related to the establishment of the Clean Zone will be performed by NYS DOL and NYC DEP certified asbestos handlers.

The Clean Zone shall include:

- Existing Loading Dock
- Entrance Area at the corner of Greenwich Street and Park Place
- The northeast corner
- The West Broadway Lobby Area
- The southeast corner
- C Stairwell (Floors: One through Fifteen)

Drawings demarcating the Clean Zone are included in the Attachment V Remediation Operations Logistics Plans of this Work Plan. Entry to the area will be restricted to allow access only to certified personnel while decontamination activities are in progress on the First Floor Clean Zone. The established decontamination facility at the northwest entrance to the Building will remain in place and will serve as the personal decontamination facility for the remediation of the Clean Zone. A waste decontamination facility will be constructed outside the building Loading Dock on the western sidewalk (Greenwich Street).

NYS DOL and NYC DEP certified asbestos handlers will install a modified full containment enclosing the First Floor Clean Zone areas listed above. Prior to the installation of critical barriers, NYS DOL and NYC DEP certified asbestos handlers will install negative air filtration equipment and then will clean the interior surfaces of all windows in the First Floor Clean Zone Work Area by HEPA vacuuming and wet-wiping. Following cleaning, all windows, openings and building penetrations will be sealed with two layers of six-mil poly (poly, poly sheeting or plastic sheeting). It is not anticipated that any selective demolition will be required to complete the installation of critical barriers to completely isolate the work area from the exterior environment. If selective demolition is determined to be necessary to complete the installation of critical barriers, it will be performed at the conclusion of work area preparation, including the establishment of negative pressure and the installation of the remainder of the critical barriers in that area. In order to clean and decontaminate all building surfaces and components, floor, wall and ceiling surfaces will not be plasticized. Environmental barriers constructed of five layers of poly (arranged two layers of 6mil fire retardant poly/one layer 6mil reinforced fire retardant poly / two layers of 6mil fire retardant poly) and metal studs spaced sixteen inches on center with a thirty-six inch wide by eighty inch high emergency cut away panel will be
installed on the west side of the elevator lobbies on the First Floor in order to seal them off during the remediation work. Existing structural walls will form the remainder of the boundaries of the First Floor Clean Zone work area. All stairwells, with the exception of the cleaned and cleared Stairwell C, will be sealed off from the Clean Zone with low adhesive tape around the seams between the doors and the frames from the stair side. Stairwell C will provide a clean area to install electrical panels and provide clean access to the upper floors. The electrical closet adjacent to Stairwell C will be sealed off with a critical barrier consisting of two layers of 6mil poly and duct tape installed over the door of each electrical closet. Stairwells A and B will be incorporated into the modified full containment of the upper floors. The shredder area will be established on the north side of the First Floor Clean Zone. (Park Place). This area will be cleaned and decontaminated at this time to allow for the installation of an industrial grade shredding machine. The north side of the First Floor is open to the mezzanine tiers of the two floors above (Second & Third Floors). These openings will be sealed off prior to the commencement of remediation activities on the First Floor Clean Zone. The shredder area will be cleaned to its full height. Workers will utilize frame scaffolding to perform the remediation in this area.

Negative pressure ventilation equipment (micro traps) will be installed to establish negative pressure within the First Floor Clean Zone work area and the C Stairwell. Air volume shall be changed four times per hour in the First Floor Clean Zone work area and negative air pressure differential of point zero two inch (0.02”) water column maintained. Evidence of negative air pressure shall be demonstrated by manometers in the First Floor Clean Zone work area. One manometer will be installed in the First Floor Clean Zone. The locations of this manometer will be outside the work area at the entrance to the personal decon at the northwest entrance. The hose of this manometer will be run into the work area. The Owners Environmental Consultant NYS DOL certified Project Monitor will perform regular smoke testing inside the C Stairwell and First Floor Clean Zone work areas to ensure that negative pressure is maintained at all times. The calculation to determine the number of micro traps required to achieve four air changes per hour within the C Stairwell and First Floor Clean Zone work areas is (cubic footage x number of air changes per hour/sixty minutes/capacity of negative air ventilation unit = number of negative air ventilation units required). Additionally, one back up negative air filtration unit will be installed for each five units on a floor. The calculation for the C Stairwell work area is 38,902 x 4 / 60 / 1,500 (2,000 x .75 safety factor) = 1.7. With one back up negative air unit added, the minimum number of micro traps that will be installed in the C Stairwell work area to implement four air volume changes per hour is 3 units. The calculation for the First Floor Clean Zone work areas is: 323,690 x 4 / 60 / 1,500 (2,000 x .75 safety factor) = 14.38. With four back up negative air units added, the minimum number of micro traps that will be installed in these areas to implement four air volume changes per hour is 18 units.
Section 6.1.1 Cleaning and Clearance of Stairwell C

The construction of Stairwell C is of the following materials:

Painted Masonry Block Walls
Concrete Floor Landings
Concrete Deck
Steel Stairs
Steel Handrails
Stand Pipe
Light Fixtures
Light Bulbs
Electrical Conduit

For details regarding the cleaning and clearance of Stairwell C refer to Attachment V – Remediation Operations Logistics Plans. Prior to the cleaning and clearance of the First Floor Clean Zone, PAL will commence the cleaning and clearance of Stairwell C. It is necessary to clear the Stairwell C at the beginning of the remediation operations in order to install electric panels for the remediation work on the upper floors of the Building. All electrical power to the Stairwell C will be shutdown prior to the commencement of Cleaning and Clearance activities. Electrical power will be shutdown in the adjacent electrical closets situated south of the Stairwell C on each floor. A worker and waste decontamination facility will be constructed exterior to the Building on the ground level on the South Side in the Gash Area. NYS DOL and NYC DEP certified asbestos handlers will construct an access tunnel from the decontamination facility into the Building via the Gash Area. The tunnel will extend from floor to deck and will be constructed of three layers of poly and metal studs on each side. The access tunnel will remain in place for the duration of the establishment of the First Floor Clean Zone. The tunnel will meet the Stairwell C at the south side of the First Floor landing. The existing painted sheetrock wall into the Stairwell C will be demolished by NYS DOL and NYC DEP certified asbestos handlers in order to create and opening from the south side. The access tunnel will be fully connected to this opening so that there is no air transfer into the tunnel from the First Floor. In order to connect the tunnel to the opening into Stairwell C it will also be necessary to demolish a masonry block wall that is in the path of the tunnel. Localized negative pressure machines exhausted to the exterior of the Building will be installed and operated as a means of dust control in the area while the demolition of the existing painted sheetrock wall and masonry block wall take place. Prior to commencing the demolition of the painted sheetrock and masonry block walls, the surfaces will be wetted down with amended water to control dust. The painted sheetrock and masonry block walls will not be fully saturated with water during demolition. Water will be applied continuously as a means of dust control prior to and during the
removal of painted sheetrock and masonry block walls required to connect the access tunnel to Stairwell C. The painted sheetrock and masonry block walls will be demolished using a combination of manual and mechanical means. Any power tools used to disturb asbestos containing material or potentially contaminated material will be equipped with HEPA filter exhaust ventilation. Debris generated from the painted sheetrock and masonry block walls will be handled and disposed of as asbestos waste or in accordance with any waste characterization results. The doors in Stairwell C will be closed and sealed with one layer of low adhesive tape around the seam between the door and the frame installed on the stair side. All other openings and penetrations into Stairwell C be sealed with two (2) layers of poly. Four (4) air changes with negative pressure differential of point zero two inch (0.02") water column will be established within the Stairwell C and the attached access tunnel. Pressure differential will be demonstrated by a manometer installed on the First Floor level at the entrance to Stairwell C. Make up air will be drawn from the decontamination unit. Negative air units will be installed in the stairwell on the Fifteenth Floor and vented onto the main roof level via the existing doorway.

The southern wall on each landing in Stairwell C is shared with an adjacent electrical closet on each floor. The electrical closets are situated immediately south of the Stairwell C. After the Stairwell C is placed under negative pressure, NYS DOL and NYC DEP certified asbestos handlers will perform the removal of a portion of the masonry block wall to create an approximately six inch (6") by six inch (6") opening on the south side of each landing opening the Stairwell C to the adjacent electrical closets on each floor. Prior to commencing the removal of a portion of the masonry block walls, the surface at each location will be wetted down with amended water to control dust. The portion of masonry block wall on each landing will not be fully saturated with water during demolition. Water will be applied continuously as a means of dust control prior to and during the removal of the portion of masonry block wall required to open the southern walls of Stairwell C to the adjacent electrical closets. The masonry block wall will be demolished using a combination of manual and mechanical means. Any power tools used to disturb asbestos containing material or potentially contaminated material will be equipped with HEPA filter exhaust ventilation. Debris generated from the masonry block walls will be handled and disposed of as asbestos waste or in accordance with any waste characterization results. Prior to access by electricians, NYS DOL and NYC DEP certified asbestos handlers will clean all surfaces and electrical components within the Stairwell C and adjacent electrical closets by HEPA vacuuming to remove residual dust that may be present. After an opening is created between the Stairwell C and the adjacent electrical closets and the openings and components are cleaned in a given location, electricians, holding NYS DOL allied trades handler certification and utilizing the proper PPE as outlined in Section 6.0 will mobilize into the Stairwell C via the decon and access tunnel. Electricians holding NYS DOL allied trades handler certification will connect electrical cables to the
electrical power panel in each electrical closet. The electrical cable will be run from the power panel through the approximately six inch (6”) by six inch (6”) opening and into the Stairwell C on the landing of each floor within the stairwell. After an electrical cable is connected to the power panel in the electrical closet on a given floor, NYS DOL and NYC DEP certified asbestos handlers will seal the approximately six inch (6”) by six inch (6”) openings air tight with two layers of poly and fire stop caulk around the electrical cable leaving a length of cable on each landing in the Stairwell C for the future connection of GFCI electrical panels following clearance in the Stairwell. After the approximately six inch (6”) by six inch (6”) openings are sealed, NYS DOL and NYC DEP certified asbestos handlers will seal the doors to the electrical closets from the floors with critical barriers consisting of two layers of 6mil poly attached with duct tape. These critical barriers will isolate the electrical closets from each floor. The electrical closets will remain isolated for the duration of removals, cleaning and clearance on the Basement and upper floors. The cleaning and clearance of the electrical closets will be performed separately as the final activity in the remediation operations after the cleaning and clearance of the Basement and upper floors is completed.

Please note that at this time electrical power into Stairwell C and the adjacent electrical closets shall remain shutdown. Electrical power required to perform the cleaning and clearance of Stairwell C will be obtained from the exterior temporary electrical service and the roof level elevator machine rooms.

All light bulbs and fixtures will be detached. Light bulbs and fixtures will be handled and disposed of as universal waste. All interior surfaces of the stairwell and the attached access tunnel will be HEPA vacuumed and wet wiped to remove any residual dust and debris. The installed electrical cables on each landing will also be cleaned at this time via wet wiping. All used cleaning materials generated during the remediation in the C Stairwell and access tunnel will be double bagged, properly labeled, processed through the waste decontamination facility and disposed of as asbestos waste or in accordance with any waste characterization results. Please note that there are no asbestos containing materials present within Stairwell C. Wall, ceiling and floor surfaces will remain in place within the Stairwell C once remediation activities have been completed. After cleaning activities are completed one twelve hour settling/drying period will then be observed in order to allow all surfaces to dry. At the end of this settling/drying period, the contractor NYS DOL and NYC DEP certified asbestos supervisor will conduct a visual inspection of the work area. Once the work area conditions are acceptable to the contractor NYS DOL and NYC DEP certified asbestos supervisor the Owner’s Environmental Consultant NYS DOL certified project monitor will perform a visual inspection of the C Stairwell work area. After the area has passed visual inspection by the Owner’s Environmental Consultant NYS DOL certified project monitor, the regulators will be contacted to perform a regulatory visual inspection. Twenty-four (24) hour notice will be provided prior to the regulatory visual inspection. After the Stairwell C work area has
passed regulatory visual inspection, aggressive clearance air sampling will be performed by the Owner’s Environmental Consultant NYS DOL certified air sampling technician. Prior to sampling, pre-sampling agitation will be performed by the OEC NYS DOL certified air sampling technician. Before starting the air sampling pumps, the exhaust of forced air equipment (i.e., leaf blowers) will be directed at all walls, ceilings floors, ledges, and other surfaces in the room(s). This will continue for at least five (5) minutes per 1000 sf of floor space. The C Stairwell work area is 3,705 square feet. Pre-sampling agitation will be performed for 20 minutes prior to the activation of sampling pumps. Ongoing agitation will be maintained during sampling. At least a 20-inch fan will be placed in the center of each area. One fan per 10,000 cubic feet of room space will be used. The fan will be operated on slow speed and pointed toward the ceiling. The total cubic feet of the Stairwell C work area is 38,902. In order to maintain ongoing agitation, 4 20-inch box fans will be installed in this work area.

Sampling will be performed as follows: 1 TEM air sample per floor or a minimum of 10 TEM samples and 1 metals air sample per floor or a minimum of 10 metals samples will be run for the entire C Stairwell. Sample locations will be evenly distributed vertically through the stairwell. Clearance testing for all work areas will be consistent with the work area Clearance Criteria noted in section 6.19.

Once successful clearance is achieved the modified full containment in the C Stairwell will remain in place in order to prevent recontamination from yet-to-be-cleaned areas. After decontaminated floors have been cleared the entrances into Stairwell C will be unsealed to provide clean access to clean areas.

After the Stairwell C has been cleared GFCI equipped electrical panels will be installed on each floor level within the stairwell by licensed electricians holding NYS DOL allied trades handler certification. Power will be restored to the electrical closets in order to provide power via the GFCI electrical panels to the upper floor levels for performed during the remediation of the upper floors. Please refer to Attachment XIII to view diagrams regarding the electrical logistics for the remediation operation.

The following list of items will remain in Stairwell C after cleaning and clearance has been completed:

- Steel Structurals
- Metal Hangers and Attachment Mechanisms
- Steel Stairs
- Steel Handrails
- Stand Pipe
- Concrete Deck
• Concrete Slab  
• Masonry Walls  
• Installed Electrical Cable  
• Installed GFCI Electrical Panels

Please note that all masonry surfaces that will remain will have been cleaned by HEPA vacuuming and wet wiping during remediation operations. These surfaces will have passed visual inspection and final air clearance and been encapsulated.

6.1.2 Non-Fixed Items

All non-fixed items will be removed from the First Floor Clean Zone work area. All non-porous items, including furniture and construction materials will be transported to the wash room of the waste decontamination facility. Asbestos handlers will use wet washing methods to clean all non-porous, non-fixed items. Once these items have been cleaned of all residual dust and debris and visually inspected by the Owner’s Environmental Consultant NYS DOL certified project monitor, they will be transported out of the waste decontamination facility for disposal as conventional waste. Conventional waste shall refer to any non-asbestos containing non-porous material that is free of any dust or debris. During the First Floor Clean Zone remediation activities, all conventional waste will be live-loaded into compactor trucks or conventional waste dumpsters on the Greenwich Street side of the Building. Below is a list of non-fixed items that are non-porous and that are suitable to be cleaned and disposed of as conventional waste:

• Metal Furniture (chairs, filing cabinets, desks)  
• Unused Non-Porous Construction Materials (duct work, metal items, piping, rebar)

Any non-porous items with inaccessible voids shall be wrapped in two layers of poly, properly labeled and processed through the waste decontamination facility for disposal as asbestos waste or in accordance with any waste characterization results. Non-porous items with voids that are capable of being opened for access to perform cleaning may be opened by manual and/or mechanical means and cleaned by HEPA vacuuming and wet-wiping. Any power tools used to disturb asbestos containing material or potentially contaminated material will be equipped with HEPA filter exhaust filtration. Opened and decontaminated non-porous items will be visually inspected by the Owner’s Environment Consultant NYS DOL certified project monitor. Once visual inspection is passed these items will be disposed of as conventional waste. If attempts to clean the above listed non-fixed items are not successful or possible due to compromised
condition or inaccessible void spaces within the items/components, they will be wrapped in two layers of poly, properly labeled, processed through the waste decontamination facility and disposed of as asbestos waste or in accordance with waste characterization results.

Any non-fixed items that are porous or otherwise incapable of being cleaned will be wrapped in two layers of poly, properly labeled, processed through the waste decontamination facility and disposed of as asbestos waste or in accordance with any waste characterization results. During the First Floor Clean Zone remediation, asbestos waste will be live-loaded into waste trucks on the Greenwich Street side of the Building. All trucks transporting asbestos waste will have valid permits to transport this material. Below is a list of non-fixed items that will be wrapped and disposed of as asbestos waste or in accordance with any waste characterization results:

- Carpeting
- Chalk Board
- Unused Porous Construction Materials (Sheetrock, Floor Tile)
- Artwork
- Wooden Furniture
- Raised Flooring
- Cubicle Partitions
- Construction Equipment (Hand Tools, Power Tools)
- Radiator covers (with applied ACM mastic)

6.1.3 Exposed Building Components

Any exposed building components will be manually or mechanically dismantled and detached. Water will be applied continuously as a means of dust control prior to and during the removal of interior sheetrock walls, ceiling systems and other non-asbestos materials that do not absorb water. Any power tools used to disturb asbestos containing material or potentially contaminated material will be equipped with HEPA filter exhaust ventilation. Once detached, building components, with the exception of light fixtures, will be transported to the wash room of the waste decontamination facility where they will be either steam cleaned or wet washed by NYS DOL and NYC DEP certified asbestos handlers. Below is a list of items that are capable of being cleaned:

- Duct Work
- Doors
- Radiator Covers (no ACM mastic present)
Once clean of all residual dust and debris, these components will be transported out of the waste decontamination facility and live-loaded into compactor trucks or conventional waste dumpsters for disposal as conventional waste. If attempts to clean these building components are not successful, they will be wrapped in two layers of poly, properly labeled, processed through the waste decontamination facility and disposed of as asbestos waste or in accordance with any waste characterization results. Additionally, please note that it is not possible to clean the following items:

- Radiator Coil
- Electrical Conduit
- Piping
- Any wood doors and/or wood radiator covers.

These items will be manually or mechanically detached, wrapped in two layers of poly, properly labeled, processed through the waste decontamination facility and disposed of as asbestos waste or in accordance with any waste characterization results. If found in the building during remediation operations these items will be handled and disposed as asbestos waste at a minimum and depending on any final waste characterization. Any porous materials existing on exposed building components will be removed by manual methods, loaded into plasticized Gaylord boxes, sealed, wrapped in poly or fitted plastic sleeves, properly labeled and processed through a waste decontamination facility for disposal as asbestos containing waste or in accordance with any waste characterization results. Any power tools used to disturb asbestos containing material or potentially contaminated material will be equipped with HEPA filter exhaust ventilation.

An inspection and inventory of existing light ballasts has been performed. Potting material in some ballasts throughout the Building have tested positive for PCBs. As a precautionary measure, all ballasts will be disposed of as PCB waste. Detached ballasts will be cleaned of exterior dust by HEPA vacuuming and wet wiping and containerized in drums for proper disposal as PCB Waste. Drums for ballast disposal will be fifty-five gallon metal drums. Full drums will be sealed and processed through the waste decontamination facility. Once they have been decontaminated drums will be removed from the Building to the exterior waste storage facility. To view a diagram of the waste storage facility refer to Attachment XV – Configuration of the Waste Storage Facility. Within two weeks or when a full truckload of PCB Waste has accumulated, whichever occurs first, the drums of ballasts will be live loaded onto trucks for disposal. All vehicles transporting PCB Waste will have valid permits to transport these items. Fluorescent light bulbs are considered Universal
Waste. Bulbs will be disposed of as such in accordance with all applicable regulations. Bulbs will be removed from fixtures and cleaned of all surface dust via wet-wiping and HEPA vacuuming. Cleaned bulbs will be containerized in drums for proper disposal as Universal Waste. Full drums will be sealed and processed through the waste decontamination facility. Once they have been decontaminated drums will be removed from the Building to the existing exterior waste storage facility. When a full truckload of Universal Waste has accumulated the drums of bulbs will be live loaded onto trucks for disposal. All vehicles transporting Universal Waste will have valid permits to transport these items.

All exposed building components in the First Floor Clean Zone work area will be removed in accordance with this procedure leaving interior walls and ceiling systems remaining in place.

6.1.4 Interior Walls and Ceiling Systems

Cardboard Gaylord boxes will be brought to the First Floor Clean Zone Work Area. The boxes will range from a half cubic yard to one and a half cubic yards in size. Prior to use, each Gaylord box will be made leak tight by lining the interior with either fitted plastic inserts or two layers of poly. Gaylord boxes will be sealed by securing fitted lids into place on each box with duct tape. The exterior surface of full and sealed Gaylord boxes will be wrapped in two layers of poly or fitted plastic sleeves to render the outer surface cleanable. The interior walls throughout the Building are composed of sheetrock that has painted finished surfaces. The ceiling systems are consist of tiles, made from non-asbestos composite materials, suspended from metal grid systems that are attached to the decking. The sheetrock and ceiling tiles are porous materials. The surface of interior walls and ceilings will be HEPA vacuumed and wet wiped to remove all residual dust and debris. The painted sheetrock walls and ceiling tiles throughout the Building are not asbestos containing. Please note that it is not possible to fully saturate painted sheetrock, ceiling systems or other materials that do not absorb water. These items will not be fully saturated with water during removal. Water will be applied continuously as a means of dust control prior to and during the removal of interior sheetrock walls, ceiling systems and other non-asbestos materials that do not absorb water. Sheetrock walls will be demolished and ceiling system components will be disassembled using a combination of manual and mechanical means. Shaft walls between the First Floor and Basement will be opened at this time by manual and mechanical means. Manifolds constructed of plywood with two layers of 6mil poly attached to each side will be installed horizontally in the shafts between the First Floor and Basement where negative air machine exhaust hoses will be run from the Basement to the building exterior. The manifold will have ports for the hoses to be run through.
Refer to Section 6.4 for details regarding the installation of engineering controls in the Basement. Sheetrock and ceiling system debris will be loaded into plasticized Gaylord boxes. The exterior surface of full and sealed Gaylord boxes will be wrapped in two layers of poly or fitted plastic sleeves to render the outer surface cleanable. Full, sealed and wrapped boxes will be properly labeled, processed through the waste decontamination facility and disposed of as asbestos waste or in accordance with any waste characterization results. Metal studs and ceiling grid will be separated from the sheetrock and ceiling tile debris. Studs will be stacked and wrapped in two layers of poly. Wrapped studs will be properly labeled, processed through the waste decontamination facility and disposed of as asbestos waste or in accordance with any waste characterization results. Ceiling grid will be transported to the waste decontamination facility wash room where it will be cleaned by wet washing. Once clean of all residual dust and debris and inspected by the Owner’s Environmental Consultant Industrial Hygienist/NYS DOL certified Inspector/NYS DOL certified Project Monitor, ceiling grid will be transported out of the waste decontamination facility and loaded into compactor trucks or conventional waste dumpsters for disposal as conventional waste. If attempts to clean ceiling grid are not successful, it will be wrapped in two layers of poly, properly labeled, processed through the waste decontamination facility and disposed of as asbestos waste or in accordance with any waste characterization results. Any building components existing behind interior walls or within ceiling systems, such as duct work or sprinkler pipes, will be manually or mechanically dismantled and detached. Any porous materials existing within interior walls and ceiling systems will be removed by manual methods, loaded into plasticized Gaylord boxes, sealed, wrapped in poly or fitted plastic sleeves, properly labeled and processed through a waste decontamination facility for disposal as asbestos containing waste or in accordance with any waste characterization results. Any power tools used to disturb asbestos containing material or potentially contaminated material will be equipped with HEPA filter exhaust ventilation. Detached components and their corresponding supports will be transported to the waste decontamination facility wash room where they will be cleaned of residual dust and debris by wet washing. Once cleaned these remaining components will be transported out of the decontamination facility and loaded into compactor trucks or conventional waste dumpsters for disposal as conventional waste. Below is a list of building components that are capable of being cleaned and disposed of as conventional waste:

- Duct Work
- Ceiling Grid
- Doors
Please note that if attempts to clean any items or components are not successful, the items will be wrapped in two layers of poly, properly labeled, processed through the waste decontamination facility and disposed of as asbestos waste at a minimum or in accordance with waste characterization results. This applies to all materials listed above. Additionally, please note that it is not possible to clean the following items:

- Radiator Coil
- Electrical Conduit
- Piping
- Any wood doors and/or wood radiator covers.

These items will be manually or mechanically detached, wrapped in two layers of poly, properly labeled, processed through the waste decontamination facility and disposed of as asbestos waste or in accordance with any waste characterization results. If found in the building during remediation operations these items will be handled and disposed of as asbestos waste at a minimum and depending on any final waste characterization. Any power tools used to disturb asbestos containing material or potentially contaminated material will be equipped with HEPA filter exhaust ventilation.

To the extent possible, workers will not disturb asbestos containing materials during the removal of non-ACM systems. If it becomes necessary to remove ACM to access non-ACM systems, the ACM removal will be performed as outlined in Section 6.1.5 prior to removal of the affected non-ACM systems.

**6.1.5 Asbestos Containing Materials**

There is assumed asbestos containing floor tile present in various locations in the First Floor Clean Zone and minor quantities of asbestos containing pipe insulation in various locations around this level. There is a minor quantity of window caulking in the First Floor Clean Zone. There is also non-friable ACM tar on the perimeter kneewall in the First Floor Clean Zone. Once all non-fixed items, interior walls, ceiling systems and building components have been removed, abatement activities will take place. All critical and environmental barriers previously installed will remain in place. The First Floor Clean Zone work area will be pre-cleaned by HEPA vacuuming and wet wiping to remove any residual dust and debris that may be present. In any areas where both friable and non-friable ACM are present within the same, immediate working area, all of the friable ACM in that area will be removed first. Following the removal of the friable ACM, the immediate working area will be cleaned by HEPA
vacuuming and wet wiping. After this intermediate cleaning, the non-friable ACM in that immediate working area will be removed.

Any power tools used to disturb asbestos containing material or potentially contaminated material will be equipped with HEPA filter exhaust ventilation. NYS DOL and NYC DEP certified asbestos handlers will thoroughly wet down the tile and pipe insulation at each location on the First Floor Clean Zone where it exists with amended water using airless and/or pump sprayers. Removal of asbestos pipe insulation will be performed by manual methods utilizing hand held cutting tools. Removed pipe insulation will be placed into plasticized Gaylord boxes directly upon detachment from the substrate. Removal of the assumed asbestos tile will be performed by manual methods utilizing hand held scraping tools. Removed tiles will be placed into plasticized Gaylord boxes upon detachment from the floor surface. Removal of caulking will be performed by manual means with a poly drop cloth below the affected surface.

Once full, each box will be sealed by placing a fitted lid onto it and securing the lid with duct tape. The exterior surface of full and sealed Gaylord boxes will be wrapped in two layers of poly or fitted plastic sleeves to render the outer surface cleanable. Full, sealed and wrapped boxes will be properly labeled, processed through the waste decontamination facility and disposed of as asbestos waste.

Kneewall tar will be left in place for removal during the structural deconstruction phase. The procedure for the removal of kneewall tar is outlined in Regulatory Submittal Part I(D) – Deconstruction Work Plan. Aside from this non-friable kneewall tar there will be no other asbestos containing materials remaining in the First Floor Clean Zone after the completion of asbestos abatement in this area.

6.1.6 Cleaning and Clearance of the First Floor Clean Zone

All surfaces of the First Floor Clean Zone work area, including environmental barriers, will be subject to HEPA vacuuming and wet wiping upon completion of asbestos abatement. The exterior surface of the access tunnel constructed to Stairwell C will be cleaned by HEPA vacuuming and wet-wiping at this time. The access tunnel will remain in place during the establishment of the First Floor Clean Zone in order to maintain clean access to Stairwell C. At the end of this settling period, the contractor NYS DOL and NYC DEP certified asbestos supervisor will conduct a visual inspection of the work area. Once the work area conditions are acceptable to the contractor NYS DOL and NYC DEP certified asbestos supervisor the Owner’s Environmental Consultant NYS DOL certified project monitor will perform a visual inspection of the First Floor Clean
Zone work area. The Owner’s Environmental Consultant NYS DOL certified project monitor will make a determination as to whether or not the area passes visual inspection. Once the work area has passed the OEC NYS DOL certified project monitor visual inspection, an OEC representative will contact the regulators to schedule a regulatory visual inspection of the work area. Twenty-four (24) hour notice shall be provided to the regulators prior to the date of inspection. After the area has passed regulatory visual inspection, aggressive clearance air sampling will be performed by the Owner’s Environmental Consultant NYS DOL certified air sampling technician.

**Aggressive Sampling Techniques:**

The following aggressive sampling techniques will be utilized for clearance of every work area:

**Pre-Sampling Agitation:** Before starting the air sampling pumps, the exhaust of forced air equipment (i.e., leaf blowers) will be directed at all walls, ceilings, floors, ledges, and other surfaces in the room(s). This will continue for at least five (5) minutes per 1000 sf of floor space. The First Floor Clean Zone work area is 23,120 square feet. Pre-sampling agitation will be performed for 120 minutes prior to the activation of sampling pumps.

**Ongoing Agitation:** At least a 20-inch fan will be placed in the center of each room. One fan per 10,000 cubic feet of room space will be used. The fan will be operated on slow speed and pointed toward the ceiling. The First Floor Clean Zone work area is 323,690 cubic feet in volume. The number of fans to be installed to maintain ongoing agitation is 33.

**Begin Sampling:** The sampling pumps will then be turned on.

**End Sampling:** When the sampling has been completed, the sampling pumps will be turned off first, followed by the fan(s).

After the area has been cleared, all surfaces will be encapsulated. Once successful clearance is achieved the modified full containment on the First Floor Clean Zone will be broken down leaving in place the barrier walls isolating the Clean Zone from the Elevator Banks. At this time the Shredder Area will be sealed off from the rest of the First Floor Clean Zone with environmental barriers consisting of three layers of poly with metal studs and airlocks as it will be incorporated into the containment of the upper floors.
6.1.7 First Floor Clean Zone Clearance Criteria

The clearance criteria to be applied to the First Floor Clean Zone work area will consist of visual inspection by the Contractor’s NYS DOL and NYC DEP certified asbestos supervisor, visual inspection by the Owner’s Environmental Consultant NYS DOL certified project monitor and visual inspection by the regulators in accordance with Section 5.4 of this work plan and aggressive air sampling for asbestos and metals as follows:

After visual inspection of the First Floor Clean Zone by the Contractor NYS DOL and NYC DEP certified asbestos supervisor the Owner’s Environmental Consultant NYS DOL certified project monitor will be contacted to perform OEC visual inspection. Upon notification by the Contractor that a Remediation Phase work area is clean and ready for visual inspection, the Owner’s Environmental Consultant NYS DOL certified project monitor will conduct a thorough visual inspection of all surfaces and areas of the subject work area. If the visual inspection reveals that dust and debris remain, these specific areas will be identified by marking and logged for future reference. The Contractor will be required to re-clean the identified areas. When work area conditions are acceptable to the Owner’s Environmental Consultant NYS DOL certified project monitor, the regulators will be contacted to perform visual inspection. Twenty-four (24) hour notice will be provided to the regulators when a work area is ready for regulatory visual inspection. Once the work area has passed regulatory visual inspection then aggressive air sampling will be conducted the OEC NYS DOL certified air sampling technician.

The work areas will be considered cleared and can be removed from containment when area air measurements, performed using aggressive air sampling procedures which re-suspend residual settled dusts, are at or below each of the following airborne concentrations in every sample, respectively, for the metals noted below and for asbestos. Air testing for asbestos shall be in accordance with applicable regulations and applicable permits and variances for this project. If any one sample is above any of these limits, then the Remediation Phase will be considered incomplete, and the effected areas shall be re-cleaned and re-tested until the airborne concentrations are at or below the levels noted for asbestos and metals.

All air testing shall be performed by an NYS DOL certified air sampling technician in compliance with ICR 56. Clearance testing for asbestos will be conducted by work area, and will be acceptable when all samples for a given work area are less than the seventy structures per square millimeter TEM standard. Clearance testing for metals will be acceptable when all samples meet the following criteria:
Antimony  250 ug/m3  
Barium    250 ug/m3  
Beryllium 1.0 ug/m3  
Cadmium   5.0 ug/m3  
Chromium (III) 250 ug/m3  
Copper    500 ug/m3  
Lead      25 ug/m3  
Manganese 100 ug/m3  
Mercury   12.5 ug/m3  
Nickel    50 ug/m3  
Zinc      1,000 ug/m3

Clearance sampling will be conducted in the First Floor Clean Zone and Stairwell C work areas as follows:

**Asbestos:** Five inside work area (IWA) asbestos samples will be collected from the First Floor Clean Zone work area. A minimum of two out of the five IWA samples will be collected in the vicinity of stairwells inside work area. Five outside work area (OWA) asbestos samples will be collected for the First Floor Clean Zone work area from areas outside the work area (ground level building exterior.). In Stairwell C a total of ten TEM samples will be collected.

**Metals:** Five inside work area (IWA) samples will be collected from the First Floor Clean Zone work area. A minimum of two out of the five IWA samples will be collected in the vicinity of stairwells inside work area. In Stairwell C a total of ten metals samples will be collected.

All samples will be collected using aggressive sampling techniques in compliance with applicable clearance sampling criteria. All clearance samples for the First Floor Clean Zone work area will be run simultaneously.

**6.1.8 Lead-Painted Item**

In the existing loading dock there is one lead painted bumper pole present. This lead abatement will be performed in immediately following the completion of cleaning and clearance of the First Floor Clean Zone. NYS DOL and NYC DEP certified asbestos handlers who also hold valid US EPA Lead Certification will remove the paint from the pole utilizing chemical means. Workers will utilize proper PPE for the duration of lead paint abatement activities. Peel-Away chemical will be applied to the painted surface. Adequate time will be allowed for the chemical application to loosen the painted surface. Once prepared, the loosened lead paint will be scraped from the surface of the pole. Removed paint chips
will be containerized in large drums designed to transport lead waste. The drum will be properly labeled, processed through the waste decontamination facility and moved to the existing exterior waste storage facility. Lead waste will be transported by a properly licensed hauler and disposed of at a properly licensed disposal facility.

6.1.9 First Floor Clean Zone and Stairwell C Post Clearance Activities

With clearance achieved in the Clean Zone it will not be necessary to utilize a decontamination facility or PPE to access this area. After the remediation and abatement work on the First Floor Clean Zone and C Stairwell is completed and cleared, the decontamination facility at the northwest corner of the First Floor Clean Zone will be dismantled. The waste decontamination facility at the existing loading dock will be dismantled when the Primary Waste Decontamination Facility, described below in Section 6.6 is fully operational. The access tunnel connected to Stairwell C will also be broken down at this time. Two layers of poly on the First Floor Clean Zone side of the five layer environmental barriers segregating the First Floor Clean Zone from the East Side elevator lobbies will be removed at this time leaving environmental barriers consisting of one layer of 6mil reinforced fire retardant poly on the First Floor Clean Zone side and two layers of 6mil fire retardant poly and metal studs on the elevator lobby side, in place to maintain segregation between the First Floor Clean Zone and the elevator lobbies. These environmental barriers sealing off the elevator lobbies and the environmental barrier on the electrical closet will remain in place. The elevator barriers will function as containment barriers for the interior remediation on Floors Two through Fifteen as outlined in Section 6.4.

At the completion of Remediation Operations on the First Floor Clean Zone, the following items will be remaining:

- Steel Structurals
- Metal Hangers and Attachment Mechanisms
- Masonry Walls
- Concrete Deck
- Concrete Floor Slab
- Glass Window Wall
- Steel & Masonry Columns
- Cables

Please note that all masonry surfaces that will remain will have been cleaned by HEPA vacuuming and wet wiping during remediation operations. These surfaces will have passed visual inspection and final air
clearance and been encapsulated after receiving satisfactory air clearance sample results.

Once cleared, the northeast corner (Park Place and West Broadway) of the First Floor Clean Zone will be used as the Project Command Center. All documents, permitting and project records will be stored in this area. Administrative and communications equipment will be located in the Command Center. This area will serve as a security checkpoint. All personnel entering the Building must first check in at the Command Center and present valid identification and licensing (if necessary) before being granted access. The southeast corner (West Broadway and Barclay Street) will serve as a staging area. The north side of the First Floor Clean Zone will become the Shredder Area. A waste storage facility will be established on the outside of the building on the west side of the site. The waste storage facility will be constructed of plywood with wood studs and will be equipped with lockable doors. The waste storage facility will be segmented into chambers with solid wall barriers in order to store different classifications of waste individually prior to removal from the site. Different classifications of waste will not be stored together in the same chamber. Prior to loading any waste into the waste storage facility, the wall and floor surfaces of all chambers will be plasticized and made water tight with two layers of poly. To view diagrams of the waste storage facility refer to Attachment V, Diagram SS-2 and Attachment XV. All waste moved to the waste storage facility will first be fully decontaminated.

In the event of a power failure or other electrical problem where it becomes necessary to perform repairs within the electrical closets adjacent to Stairwell C, all work in the affected areas will be stopped. Remediation work will be prohibited in the affected areas until the electrical repairs are complete and the closets are re-isolated from the work area. The power to the affected closet or closets will be shut down from the Basement level electrical control switch. Power to a floor with the affected electrical closet will be provided from an upper or lower floor on which electrical power will remain active by running electric cables or extension cords down or up the C Stairwell and onto the affected floor. After electrical power has been shut down to the affected electrical closet or closets, NYS DOL and NYC DEP certified asbestos handlers will remove the critical barrier from the door of the affected closet or closets and open the door to the closet or closets. Prior to access by electricians, NYS DOL and NYC DEP certified asbestos handlers will clean all surfaces and electrical components within the electrical closets by HEPA vacuuming to remove residual dust that may be present. Please note that at this time both the affected electrical closet and the floor will be in a contaminated condition. Once clearance is achieved in the interior work area air locks will be installed at the entrances to the electrical closets so the closets can be accessed from cleared areas in the event electrical repair work
is required. HEPA vacuums will be installed for negative air during all post-clearance access. Licensed electricians holding NYS DOL allied trades handler certification will enter the affected closet or closets and perform the necessary electrical repairs. After the electrical repairs are complete, NYS DOL and NYC DEP certified asbestos handlers will close the door of the affected closet and install a critical barrier of two layers of 6mil poly attached with duct tape over the door, re-isolating the affected electrical closet or closets from the floor. Once the critical barrier is installed on the affected electrical closet or closets, power will be restored to that electrical closet or closets from the Basement level electrical control switch. After power is restored to the affected closet or closets, the power to the floor will be provided from the repaired and restored electrical closet or closets.

6.2 Upper Level & Basement Level Access

This section details how access to the interior upper levels and Basement Level shall be obtained during the Remediation Operations. For details regarding the installation of containment and removal activities on the interior upper levels and Basement, please refer to the below Sections 6.4 through 6.11. For details regarding access to the upper levels and Basement, refer to the drawing titled Decontamination of the Clean Zone and Upper Level Access in Attachment V–Remediation Operations Logistics Plans. In order to maintain access to the upper floors and Basement Level via the elevators, the East Side Lobby and Elevator Banks A, B and C will not be decontaminated as part of the establishment of the First Floor Clean Zone. This area will be separated from the Clean Zone by structural walls and the environmental barriers installed to establish the modified full containment of the Clean Zone work area. All openings between the Clean Zone work area and the East Side Lobby/Elevator Banks will be sealed air tight. A personal decontamination facility will be constructed under the overhang at the south entrance to the East Side Lobby on West Broadway. This decontamination facility will be designated as the Primary Personal Decontamination Facility. A waste decontamination facility will be constructed at the northern entrance to the East Side Lobby. Access to the upper levels and Basement Level will be established simultaneously with the commencement of remediation operations on the First Floor Clean Zone. Please note that there is an existing elevator shaft adjacent to the high rise cars. This shaft runs from the Second Floor to the Fifteenth Floor. An elevator has not been installed in this shaft. PAL will install a construction hoist in this shaft in order to provide an additional means to move materials, equipment and waste from the upper levels to the Second Floor. The hoist will be properly equipped to securely stop at every level between the Second and Fifteenth Floors. Throughout this Work Plan this hoist will be referred to as the construction hoist. Additionally, a secondary personal decontamination facility will be installed in the First Floor Clean Zone at the west side stairwell that runs between the First Floor and the Basement Level only. The purpose of this secondary decontamination facility is to provide an additional means of access for personnel to the Basement Level. To view a diagram of the secondary
personal decontamination facility refer to Attachment V, Diagram entitled “Configuration of the Clean Zone.”

6.3 Establishment of Secondary Loading Dock

In order to implement the most efficient waste removal procedure it is necessary to establish a secondary loading dock. In order to view the location of the Secondary Loading Dock, refer to the drawing titled Configuration of the Clean Zone in Attachment V – Remediation Operations Logistics Plans. The secondary loading dock will be created in the existing lounge area immediately north of the existing loading dock on the Greenwich Street side of the Building. The secondary loading dock area is included within the First Floor Clean Zone and will have been cleaned with the rest of the First Floor Clean Zone, passed inspections and final clearance prior to the establishment of the Secondary Loading Dock. Once the Clean Zone is established, PAL will remove part of the curtain wall to open the lounge area to the street. There are no exterior ACMs present at the west side curtain wall. This area of the Building is double height and was previously a loading dock when the Building was built. The lounge area will require only the removal of the curtain wall to convert it back to a loading dock. Both the existing loading dock and the secondary loading dock will be located inside the Clean Zone. The existing loading dock will be used as the location for one hundred yard asbestos waste trailers that will be parked on Site for the disposal of waste as asbestos during the remediation and abatement of the Basement Level and the upper floors (Two through Fifteen). The secondary loading dock will be used as a docking bay for compactor trucks or conventional waste dumpsters that will be live-loaded with conventional waste during the remediation of the Basement Level and upper floors (Two through Fifteen). Please note that access to the loading docks from outside will only be allowed once the First Floor Clean Zone has been cleared. All vehicles entering the loading docks will be entering clean areas that will be free of all environmental contaminants and documented in clearance testing results performed by the Owner’s Environmental Consultant NYS DOL certified Air Sampling Technician. Loading docks will be equipped with chain link fence gates at the perimeter of the high bridge sidewalk shed on the Greenwich Street side of the Building.

6.4 Establishment of Interior Containment (Basement Level & Second Floor through Fifteenth Floor)

The containment of the Basement Level and upper floors will take place simultaneously with the establishment of the Clean Zone. All interior areas on the Basement Level and upper floors, including Stairwells A & B, will be incorporated into one modified full containment. To view the layout of a typical upper floor, refer to the drawing titled Typical Upper Floor Work Area in Attachment V – Remediation Operations Logistics Plans. To view a diagram of
the Basement Level work area refer to Attachment IX – Work Area Engineering Controls Diagrams

The construction of Stairwells A & B are of the following materials:

- Painted Masonry Block Walls
- Concrete Floor Landings
- Concrete Deck
- Steel Stairs
- Steel Handrails
- Stand Pipe
- Light Fixtures
- Light Bulbs
- Electrical Conduit

Modified full containment refers to a containment consisting of negative pressure ventilation equipment and critical barriers installed on windows and openings or penetrations leading to the outdoor environment. Plastic will not be installed on interior surfaces and other building components which have been deemed contaminated and will either be decontaminated or disposed of as asbestos waste at a minimum or in accordance with waste characterization results. Negative air filtration equipment will be installed and functional prior to the beginning of any work area preparation. It is not anticipated that any selective demolition will be required to complete the installation of critical barriers to completely isolate the work area from the exterior environment. If selective demolition is determined to be necessary to complete the installation of critical barriers, it will be performed at the conclusion of work area preparation, including the establishment of negative pressure and the installation of the remainder of the critical barriers in that area.

The barrier walls erected on the west side of the elevator lobbies during the establishment of the First Floor Clean Zone containment will remain in place and function to isolate the East Side Lobby, which shall serve as the means of access to the Basement Level and upper floors. The Primary Personal Decontamination Facility installed at the south entrance to the East Side lobby will be used during the Basement Level and upper floors containment installation until the First Floor Clean Zone and Shredder Area have been established. The waste decontamination facility installed at the north entrance to the East Side lobby will be utilized during the Basement Level and upper floors containment installation until the First Floor Clean Zone and Shredder Area have been established. These decontamination facilities will remain in place until the Clean Zone is established, at which time a waste decontamination facility for the Basement Level and upper level access will be established within the Building. The Primary Personal Decontamination Facility will remain in place for the duration of work on the upper floors. Please refer to Attachment V to view the Remediation Operations
Logistics Plans which include the decontamination facilities and barrier location layout as well as the boundaries of the Clean Zone. Please refer to Attachment XII – Configuration of Decontamination Facility Chambers for the specifics of decon layout.

Negative pressure ventilation equipment (micro traps) will be installed to establish negative pressure within the Basement Level and Floors 2 through 15 work area. Air volume shall be changed four (4) times per hour in the work area and negative air pressure differential of point zero two inch (0.02”) water column maintained. Evidence of negative air pressure shall be demonstrated by manometers in the Basement Level and Floors 2 through 15 work area. For the Basement Level one manometer will be installed outside the work area at the Secondary Personal Decontamination Facility located in the First Floor Clean Zone at the west side basement stairwell. The hose of the manometer will be run down the basement stairwell into the work area. For the upper levels work area, manometers will be installed inside the cleaned and cleared Stairwell C. The hose of each manometer will be run into the work area. The Owner’s Environmental Consultant NYS DOL certified project monitor will perform regular smoke testing inside the containment to ensure that negative pressure is maintained at all times. The calculation to determine the number of micro traps required to achieve four air changes per hour on each floor is (cubic footage x number of air changes per hour/sixty minutes/capacity of negative air ventilation unit = number of negative air ventilation units required). Please note that all calculations will be rounded up. Additionally, one back up negative air filtration unit will be installed for every five units required on a floor. Below is a list of the calculations for each floor as determined by size and the minimum number of negative air units to be installed on each floor:

Basement: 317,904 x 4 / 60 / 1,500 (2,000 x .75 safety factor) = 14.13 + 3 back up units = 18 units. ICR 56 Applicable Variance AV-A-2 will be followed for the venting of negative air units from the Basement to the building exterior where exhaust hose lengths exceed twenty-five feet (25’) in length.

Shredder Area: 55,200 x 8 / 60 / 1,500 (2000 x .75 safety factor) = 4.9 + 1 back up units = 6 units

Second Floor through Fifth Floor: 317,904 x 4 / 60 / 1,500 (2,000 x .75 safety factor) =14.13 + 3 back up units = 18 units

Sixth Floor through Fourteenth Floor: 252,732 x 4 / 60 / 1,500 (2,000 x .75 safety factor) =11.24 + 3 back up units = 15 units

Fifteenth Floor: 210,216 x 4 / 60 / 1,500 (2,000 x .75 safety factor) = 9.34 + 2 back up units = 12 units
Elevator Machine Room: 18,144 x 8 / 60 / 1,500 (2,000 x .75 safety factor) = 1.61 + 1 back up unit = 3 units

In the Basement Level, negative air ventilation units will be installed around the perimeter of the floor. The units will be vented outside of the work area by running exhaust hoses up shaftways to the first floor through the manifolds installed in the shafts during the establishment of the First Floor Clean Zone. The basement is part of the modified full containment of the entire building interior and the shafts where exhaust hoses will be run are in the First Floor Clean Zone. The manifolds installed in the shafts will function as environmental barriers to prevent any contamination from migrating from the work area to the First Floor Clean Zone. The manifolds will be installed leaving enough room in these shafts to allow for cleaning of the shaft surfaces and the manifold surfaces by HEPA vacuuming and wet wiping around the exhaust hoses. For details regarding the cleaning of shafts please refer to Sections 6.10 and 6.14 below. In the event that negative air exhaust hoses exceed twenty-five feet (25’) in length, metal expander attachments shall be installed on the affected negative air machine exhaust vents to increase the diameter of the exhaust vents to correspond with the length of the exhaust hose required to reach the building exterior. Negative air unit exhaust will be expanded two inches for every successive twenty-five feet (25’) above the first twenty-five feet (25’). Negative air machine exhaust expansion will be performed in compliance with ICR56 Applicable Variance AV-A-2. In locations where exhaust hoses pass through cleared areas daily abatement barrier air sampling will be collected by the Owner’s Environmental Consultant NYS DOL certified air sampling technician. On the upper floors, negative air ventilation units will be installed at the perimeter of the Building on the east side of each floor. The units will be vented at the northeast, east and southeast sides of each floor. Negative air ventilation units will not be exhausted within fifty (50) feet of other building air intakes or subway vents or grates. Manifolds will be installed over two windows on the northeast, east and southeast sides of a floor. The windows will be directly adjacent to the northeast, east and southeast side stair towers on the exterior scaffolding system in order to provide access to the vent locations for air monitoring to be performed by the Owner’s Environmental Consultant. The Owner’s Environmental Consultant NYS DOL certified air sampling technician will run one air sample at each manifold exhaust location. When all negative air units in the work area are in place, air intakes will be installed to provide adequate make up air. To view details regarding engineering controls and air flow on the upper floors, refer to Attachment IX Work Area Engineering Controls Diagrams. To view a diagram of a typical air intake, please refer to Attachment X – Air Intake Assembly.

The Basement Level will draw make up air from the Primary Personal Decontamination Facility and the Secondary Decontamination Facility. Air intakes will not be required on the Basement Level to provide make up air. A minimum of two air intakes will be installed on the west side of each upper floor
to provide additional make up air. Negative air machines will be used to force make up air through the air intakes and into the work area. Negative pressure units will be installed directly adjacent to the make up air intakes. Manifolds will be installed over the intake side of the negative pressure units to allow for the attachment of non-collapsible flexible hose to this side of the units. Non-collapsible flexible hose will be attached to the air intake on one side and attached to the intake manifold on the adjacent negative air unit. The negative air units providing forced make up air to the work area will be equipped with HEPA filters with the filter flow direction facing out of the work area so that in the event that the work area becomes positively pressured due to negative pressure system shut down any air pushed out of the work area will be filtered by passing through the forced make up air negative pressure units before transfer to the exterior environment. Once the negative pressure system is in place the negative air units will be activated. Once the negative pressure system is activated, the air intake assemblies will be activated. Contractor NYS DOL and NYC DEP certified asbestos supervisor will regularly inspect the filters on the air intake assemblies and change them as needed. If HEPA filters need to be replaced, remediation activities will be prohibited on the floors while replacement is performed. Negative air units will continue to operate during filter replacement. HEPA filters will be replaced from the inside of the building. Remediation activities will only resume on that floor when the filter replacement is completed. Refer to Attachment X to view a drawing of a typical air intake assembly.

The modified containment of the Basement Level and upper floors shall be established as follows:

- All elevator shafts will be inside of the containment.
- Prior to the installation of critical barriers, NYS DOL and NYC DEP certified asbestos handlers will clean the interior surfaces of all windows on each floor by HEPA vacuuming and wet-wiping.
- Windows, openings, vents and penetrations will plasticized with two layers of six-mil poly and made air tight.
- Wall, ceiling and floor surfaces will not be plasticized because these surfaces must be cleaned, decontaminated and removed.
- Negative pressure will be established. The Owner’s Environmental Consultant NYS DOL certified Project Monitor will perform regular smoke tests within the containment to ensure negative pressure is maintained at all times.
- Elevator machine rooms will remain under negative pressure with sufficient number of micro traps installed to provide for eight air changes in these areas.

6.5 Shredder Installation
In order to facilitate the remediation operation, a one hundred horse power, thirty-five thousand pound, electrically powered, industrial grade shredder manufactured by Protoworks Inc. will be installed on the north side of the Building in the double height area along Park Place directly under the Second Floor Mezzanine Tier after final clearance of the First Floor Clean Zone has been achieved. A heavy duty forklift will be used to move the shredder machine into the building. To support the weight of the shredder and heavy duty forklift it will first be necessary to shore the floor underneath the First Floor Clean Zone Shredder Area. Shoring plans will be signed off by the engineer of record for the shredder installation prior to installation activities. The required engineering will be submitted to NYC Department of Buildings for review and permitting prior to the installation of the shredder. For details of the shredder area and shredder machine location please refer to the drawing titled Configuration of the Clean Zone in Attachment V – Remediation Operations Logistics Plans and Attachment IX – Work Area Engineering Controls Diagrams, Diagram ECD-03. Work practices and conditions of the shredder installation will be monitored by the Owner's Environmental Consultant NYS DOL certified project monitor.

The modified containment and engineering controls, as outlined above in Section 6.4 will be in place in the Basement Level prior to the installation of shoring in support of the shredder machine and shall remain in place until the Basement Level has been cleared. Lolly columns and steel beams will be installed on the Basement Level to shore the floor. Access to the Basement for the shredder shoring installation will be through the Primary Personal Decon attached to the East Side Lobby as described above in Section 6.2. Access to the Basement will be provided via the elevators or via Stairwells A & B. All shredder shoring installation activities will be monitored by an NYS DOL certified project monitor. The required shoring will be performed by scaffold/shoring installation personnel who have valid medical examination, fit test documents and are equipped with remediation operations abatement work area PPE. The Primary Waste Decontamination Facility will be used for the decontamination of waste generated during the shredder shoring installation. Refer to the Attachment V - Logistics Plan entitled “Configuration of Clean Zone and Upper Level Access” to see the layout of the decontamination units for the shredder shoring installation. Shoring to be installed will be made of steel. The exact location and layout of shoring will be determined by the engineer of record for the shredder installation. NYS DOL and NYC DEP certified asbestos handlers equipped with abatement work area PPE will perform pre-cleaning of the surfaces at each location where the shoring will be installed. Pre-cleaning activities to be performed will include HEPA vacuuming and wet-wiping. In addition, depending on the exact location of the shoring, minor removals of raised flooring, ceiling tiles, and/or ceiling grid may be necessary prior to installation. Any waste generated will be containerized, properly labeled and decontaminated for disposal as asbestos waste at a minimum, and in accordance with any waste characterization testing deemed necessary by the Owner's Environmental Consultant. Limited ACM removal (i.e. VAT) if
necessary, will be performed at shoring installation areas only at this time. Should
limited abatement be necessary, NYS DOL and NYC DEP certified asbestos
handlers will wet down the ACM with amended water and remove it by manual
means. Any asbestos waste generated will be containerized, properly labeled and
decontaminated for disposal as asbestos waste at a minimum, or in accordance
with any waste characterization testing deemed necessary by the Owner's
Environmental Consultant. Any ACM abated areas will be cleaned by HEPA
vacuuming and wet-wiping. After pre-cleaning and removals are complete, the
installation areas will be visually inspected by the Owner's Environmental
Consultant NYS DOL certified project monitor. The visual inspection will be
performed by the NYS DOL certified project monitor. The project monitor will
verify that the installation areas have been properly cleaned and are free of bulk
debris, dust and/or residue. If limited ACM abatement is performed, the
Contractor NYS DOL and NYC DEP certified asbestos supervisor will perform a
visual inspection. Once the conditions are satisfactory to the Contractor NYS
DOL and NYC DEP certified asbestos supervisor, the Owner’s Environmental
Consultant NYS DOL certified project monitor will also visually inspect all
abated areas. Once the installation areas have passed OEC NYS DOL certified
project monitor visual inspection, the steel shoring will be installed based on the
engineer of record for the scaffolding specifications by shoring installation
personnel equipped with abatement work area PPE. Shoring installation personnel
will be instructed that disturbance of ACM is prohibited during the installation
procedure. The shoring will be installed in, and remain in, non-cleaned areas until
the Final Cleaning and Clearance of the Remediation Operations reaches the
Basement Level where the shredder shoring is installed.

Once the floor is shored, a sixteen foot wide by twelve foot high segment of the
north side curtain wall will be removed. There are no exterior ACMs present at
the north side curtain wall. This area of the Building is double height with no
kneewall present. Window stops will be disconnected from the framing. Window
panes will be manually detached using suction methods. Removed panes will be
sealed in cardboard and disposed of as conventional waste. The exposed framing
will be dismantled by mechanical means and the disposed of as conventional
waste. The shredder will be moved into position inside the Building directly
adjacent to the Second Floor Mezzanine tier by a heavy duty forklift. Once in
place the shredder will be extended to its maximum height of twelve feet, six
inches. PAL will install a barrier constructed of a wood alternative such as
gypsum, fiberglass or concrete over the opening made in the curtain wall and seal
it airtight with a fire retardant expanding foam material. The inside of this barrier
will be plasticized to its full height with two layers of poly during the installation
of the interior containment in the Shredder Area. After the modified containment
is established on all floors, shreddable materials will be loaded into the top of the
shredder hopper from the Second Floor level. At this point, the environmental
barrier sealing off the First Floor Clean Zone Shredder Area from the Second
Floor mezzanine tier will remain in place. The shredder will be equipped with a
wet misting system for dust control. The misting system consists of a plastic attachment for a water hose. The attachment spreads water from the hose in an even and repetitive manner across the shredder loading hopper. The misting system shall be running continuously at all times while the shredder is being operated. Materials processed through the shredder shall be wetted before and during shredding operations and during packaging for disposal. The shredder area will be placed under negative pressure as part of the containment of the upper levels. Shredded materials will be loaded into plasticized Gaylord boxes. Boxes will be sealed, wrapped in poly or fitted plastic sleeves, properly labeled, decontaminated and moved to an asbestos waste container that will be parked in the existing loading dock. Further details regarding the shredding procedure are included below in Section 6.7.1.

Materials that will be shredded during the remediation are as follows:

- Sheetrock
- Duct Work
- Ceiling Tile
- Wood
- Metal Studs
- Black Iron
- Porcelain
- Ceiling Grid

The above list of items will be referred to collectively as shreddable material in this Work Plan. Once the shredder is in place the area will be designated as the First Floor Clean Zone Shredder Area. It will be sealed off from the First Floor Clean Zone and incorporated into the containment of the upper floors. The shredder will remain under negative pressure for the duration of its usage in the remediation operations. The contractor will install sufficient negative air ventilation equipment, as calculated according to the micro trap efficiency field test conducted under DOL variance re-opening (File No. 06-0852, approved Oct 19, 2007) to provide eight (8) air volume changes per hour. in the Shredder Zone. One manometer shall be installed, outside of the work area at the north side perimeter wall in the shredder zone to document pressure differential in this area. The hose of the manometer will be run inside the work area.

Only NYS DOL and NYC DEP certified asbestos handlers will have access to the Shredder Area. The area from which items will be loaded into the shredder shall be equipped with a guard rail system. Individuals operating the shredder will be properly trained in its usage. OSHA air sampling will be performed as required.

Should any non-porous, non-asbestos materials be encountered that cannot be processed through the shredder, they will be cleaned for disposal as conventional waste after inspection by the Owner’s Environmental Consultant Industrial
Hygienist/NYS DOL certified Inspector/NYS DOL certified Project Monitor or otherwise disposed of as asbestos waste or in accordance with any waste characterization results. Should any porous, non-asbestos materials be encountered that cannot be processed through the shredder, they will be disposed of as asbestos waste or in accordance with any waste characterization results.

Please note that neither asbestos containing materials, lead-painted items, Universal Waste, nor any regulated waste will be shredded at any time during the remediation operations. Only non-ACM, non-regulated materials will be placed into the shredder. Even though all items within the Building are assumed to be asbestos-contaminated due to the infiltration of WTC dust, they are not considered ACM as defined by law and may be processed through the shredder. Manufactured items with asbestos content of one percent or greater shall not be subject to shredding. All waste generated by shredding operations will be disposed of as asbestos waste at a minimum or in accordance with waste characterization results.

6.6 Simultaneous Work Procedures

In order to implement the most efficient work procedures, it will be necessary to perform work on several floors within the Building simultaneously. While work continues on the establishment of the Clean Zone, PAL will proceed with the removal of non-fixed items utilizing the Primary Personal Decontamination Facility and the waste decontamination facility at the north entrance of the East Side Lobby once the containment of the Basement Level and upper floors has been completed. Remediation operations on the Basement Level and upper floors will be performed simultaneously with the establishment of the Clean Zone work area. Sufficient shower facilities will be provided for all abatement personnel performing the remediation operations.

With the clearance achieved in the Clean Zone it will not be necessary to utilize a decontamination facility to access this area. The Primary Personal Decontamination Facility will remain in place for use during the remediation work on the Basement Level and upper floors. A waste decontamination facility will be constructed west of Elevator Bank A. The waste decontamination facility will have three entrances. One entrance will be through the existing doorway leading to the Shredder Area. The second entrance will be established at the western barrier isolating Elevator Bank A from the Clean Zone. The third entrance will be from the existing doorway to the B Stairwell. The waste decontamination facility will be constructed with a large wash room in order to accommodate the large quantity and size of materials to be decontaminated. The dimensions of the waste decontamination facility wash room will be approximately forty feet wide by fifteen feet long. This waste decontamination facility will be known as the Primary Waste Decontamination Facility. Once the Primary Waste Decon is fully operational, the waste decontamination facility at
the existing loading dock on Greenwich Street, which was utilized for the remediation of the Clean Zone, will be broken down. Additionally, the waste decontamination facility on the East Side of the Building for Basement Level and upper floor waste out will be broken down. Once all openings and penetrations area sealed and both the Primary Personal Decontamination Facility and the Primary Waste Decontamination Facility are operational, the environmental barrier isolating the Second Floor mezzanine tier will be removed open it to the First Floor Clean Zone Shredder Area below. At this time, the First Floor Clean Zone Shredder Area will become part of the modified containment of the Basement Level and upper floors. The First Floor Clean Zone Shredder Area will no longer be considered a clean area and will remain separated from the First Floor Clean Zone by barrier walls and airlocks. All access to the Shredder Area will be from inside of the containment. The Second Floor mezzanine tier loading area will be designated as the Shredder Processing Area.

Work procedures for the remediation operations on the upper floors are separate operations and are designated as follows:

- First procedure will be the removal of non-fixed items
- Second procedure will be the removal of exposed building components
- Third procedure will be the removal of interior walls and ceiling systems (including the removal of the building components existing within such systems and the opening of ventilation shafts for cleaning and component removal)
- Fourth procedure will be the abatement of asbestos containing materials. Asbestos waste will be processed through the Primary Waste Decontamination Facility separately from all other types of waste.

Interior work procedures will be performed from the uppermost floor downwards and simultaneously in the Basement Level. Remediation operations on the upper floors will be performed in three floor blocks. Remediation on the Basement Level will be performed individually and will not be part of any three floor block. The above sequence of work procedures will not occur simultaneously on any individual floor. However, the sequence may overlap in different blocks within the containment. For instance, after all non-fixed items have been removed from floors Fifteen, Fourteen and Thirteen, the removal of exposed building components will begin on those floors while the removal of non-fixed items will begin on the next three floor work block (which in this example would be Twelve, Eleven and Ten). These two different procedures will occur simultaneously in different three floor blocks, but not within the same three floor work zone block. Remediation of Stairwells A & B will occur simultaneously with the remediation of the upper floors. More detail on the procedures for the decontamination and abatement of the upper floors is outlined below.

### 6.7 Removal of Non-Fixed Items
Non-fixed item removal operations will begin on the Basement Level and on Fifteenth Floor and will proceed downward block by block. On each floor the first procedure to take place will be the removal of all non-fixed items including furniture and construction materials. All personnel performing the cleaning and removal of non-fixed items and building components will have valid NYS DOL asbestos handling licenses and NYC DEP asbestos handling licenses. All personnel will be required to present their license prior to being granted access to the work area.

6.7.1 Shreddable Material

Any non-fixed shreddable materials present on Basement Level and Floors Two through Fifteen will be manually loaded into wheeled carts. The carts will be constructed of a cleanable material such as heavy duty plastic or metal. All carts used for transport of ACM or potentially contaminated materials will be water tight and have doors or tops that will be closed and secured during transport. Full carts will be transported to the Second Floor level via the elevator cars and construction hoist. Once on the Second Floor, carts will be brought to the Shredder Processing Area on the north side of the floor and queued for shredding. Shreddable materials will be wet down with amended water and loaded into the hopper of the shredder. All loading of materials into the shredder will be performed by NYS DOL and NYC DEP certified asbestos handlers. Once the materials have been shredded, these materials will be released from the shredder hopper directly into plasticized Gaylord Boxes. The Gaylord Boxes will be capable of holding a half cubic yard to one and a half cubic yards of shredded waste. The boxes are made of durable cardboard material and made water tight via the insertion of fitted plastic inserts or two layers of poly. Boxes have fitted tops that will be sealed prior to their decontamination. The exterior surface of full and sealed Gaylord boxes will be wrapped in two layers of poly or fitted plastic sleeves to render the outer surface cleanable. Wrapped boxes will be properly labeled. Decontamination of full boxes will occur after the boxes have been wrapped. Full, sealed and wrapped boxes will be processed through the Primary Waste Decontamination Facility or the waste decontamination facility at the east side lobby. Once decontaminated, boxes of shredded waste will be loaded into an asbestos waste trailer parked in the existing loading dock. Individual Gaylord boxes will be transported in the building and loaded onto trailers utilizing pallet jacks. If it is necessary to move Gaylord boxes between floors, the elevator cars shall be used. Pallet jacks will be used inside of the work area and in the First Floor Clean Zone. Workers inside the work area will load a full, sealed Gaylord box onto a pallet jack. The pallet jack will then be moved via the elevators to the Primary Waste Decontamination Facility on the First Floor.
Gaylord boxes will be loaded into the wash room of a decon and fully decontaminated. After decontamination, the Gaylord box will be transported into the air lock between the wash room and the holding area of the Primary Waste Decontamination Facility and moved off of the pallet jack. Workers with pallet jacks in the First Floor Clean Zone will enter the Primary Waste Decontamination Facility holding area from the Clean Zone, enter the air lock from the holding area and load the decontaminated Gaylord box onto the pallet jack. The box will then be transported out of the Primary Waste Decontamination Facility, into an asbestos waste trailer in the Primary Loading Dock. Pallet jacks used inside of the work area are made of a cleanable, metal material. All pallet jacks will be full cleaned and decontaminated before being removed from the work area.

Non-fixed items comprised of any of the following materials may be processed through the shredder:

- Wood
- Metal
- Upholstered
- Plastic
- Glass
- Any other non-ACM material determined to be uncleanable by the Owner’s Environmental Consultant Industrial Hygienist/NYS DOL certified Inspector/NYS DOL certified Project Monitor.

**6.7.2 Non-Porous, Cleanable Material**

All non-fixed items on the Basement Level and Floors Two through Fifteen that are not shreddable but capable of being cleaned will be transported to the wash room of the either the Primary Waste Decontamination Facility or the waste decontamination facility at the east side lobby. These items will be cleaned and decontaminated by either steam cleaning or wet washing. Any items with interior cavities, such as duct work, will be cut open by mechanical means and subject to both interior and exterior decontamination. Any power tools used to disturb asbestos containing material or potentially contaminated material will be equipped with HEPA filter exhaust ventilation. Once cleaned, these items will be visually inspected by the Owner’s Environmental Consultant NYS DOL certified project monitor. After passing OEC NYS DOL certified project monitor visual inspection, cleaned items will be moved out of the waste decontamination facility and live-loaded into compactor trucks or conventional waste dumpsters that will dock in the Secondary Loading Dock or within the West Broadway lane closure for disposal of as
conventional waste. If attempts to clean any items are not successful, they will be wrapped in two layers of poly, properly labeled, processed through the Primary Waste Decontamination Facility or the waste decontamination facility at the east side lobby and transported to an asbestos waste trailer in the Primary Loading Dock or to an asbestos waste trailer within the West Broadway lane closure for disposal as asbestos waste or in accordance with any waste characterization results. Any items with inaccessible, uncleanable voids, such as hollow core doors, shall be either processed through the shredder or wrapped in poly for disposal as asbestos waste or in accordance with any waste characterization results.

Non-Porous, Cleanable items anticipated to be encountered during the remediation operations are:

- Metal Furniture (chairs, filing cabinets, desks)
- Unused Non-Porous Construction Materials (duct work, metal items, piping, rebar)
- Any other non-porous, non-ACM material determined to be cleanable by the Owner’s Environmental Consultant Industrial Hygienist/NYS DOL certified Inspector/NYS DOL certified Project Monitor.

If any non-porous, non-fixed items that are not capable of being shredded and not capable of being cleaned are discovered in the Building, they will be wrapped in 2 layers of poly for disposal as asbestos waste as a minimum, or according to waste characterization analysis.

6.7.3 Porous Items for Disposal

If it is more practical to shred porous items for disposal then these items will be shredded and containerized in Gaylord boxes for disposal as asbestos waste at a minimum and in accordance with any waste characterization results. If it is more practical to dismantle porous items for disposal then these items will be manually or mechanically dismantled. Any power tools used to disturb asbestos containing material or potentially contaminated material will be equipped with HEPA filter exhaust ventilation. Dismantled components of porous items will then be containerized in boxes or wrapped in two layers of poly for disposal as asbestos waste at a minimum and in accordance with any waste characterization results. Any porous items encountered that are not practical to shred or to manually dismantle for disposal will be wrapped in two layers of six-mil poly, properly labeled, processed through the either the Primary Waste Decontamination Facility or the waste decontamination facility at the east side lobby and loaded into an asbestos waste trailer parked in the existing loading dock or an asbestos waste trailer parked within the West

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Broadway lane closure for disposal of asbestos waste or in accordance with any waste characterization results. The wrapping of these items will take place on the floor on which they are found. They will be wrapped prior to transportation to the Primary Waste Decontamination Facility via the elevators and/or construction hoist.

6.8 Exposed Building Components (Basement Level and Floors Two through Fifteen)

After all non-fixed items within the Basement Level and/or a three floor block have been removed; any exposed building components (duct work, electrical conduit, doors, light fixtures) will be manually or mechanically dismantled and detached. Any power tools used to disturb asbestos containing material or potentially contaminated material will be equipped with HEPA filter exhaust ventilation. Once detached, shreddable building components such as duct work, electrical conduit and doors will be transported to the Shredder Processing Area for shredding, boxing, decontamination and disposal as asbestos containing waste at a minimum and depending on any final waste characterization.

The following list of materials are considered shreddable:

- Any Metal (Duct Work, Supports, Hangers)
- Any Plastic
- Any Wood
- Wiring

Please note that fluorescent light bulbs and light ballasts will not be subject to shredding. Fluorescent light bulbs are considered Universal Waste. Bulbs will be disposed of as such in accordance with all applicable regulations. Bulbs will be removed from fixtures and cleaned of all surface dust via wet-wiping and HEPA vacuuming. Cleaned bulbs will be containerized in drums for proper disposal as Universal Waste. Full drums will be sealed and processed through the Primary Waste Decontamination Facility or the waste decontamination facility at the east side lobby. Once they have been decontaminated drums will be removed from the Building to the exterior waste storage facility. When a full truckload of Universal Waste has accumulated the drums of bulbs will be live loaded onto trucks for disposal. All vehicles transporting Universal Waste will have valid permits to transport these items. Potting material in some ballasts throughout the Building have tested positive for PCBs. As a precautionary measure, all ballasts will be disposed of as PCB waste. Detached ballasts will be cleaned of exterior dust by HEPA vacuuming and wet wiping and containerized in drums for proper disposal as PCB Waste. Drums for ballast disposal will be fifty-five gallon metal drums. Full drums will be sealed and processed through the Primary Waste Decontamination Facility or the waste decontamination facility at the east side lobby. Once they have been decontaminated drums will be removed from the

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Building to the exterior waste storage facility. To view a diagram showing the exterior waste storage area please refer to Attachment XV – Configuration of the Waste Storage Facility. Within two weeks or when a full truckload of PCB Waste has accumulated, whichever occurs first, the drums of ballasts will be live loaded onto trucks for disposal. All vehicles transporting PCB Waste will have valid permits to transport these items.

Non-shreddable building components that are capable of being cleaned will be manually or mechanically detached and transported to the wash room of either the Primary Waste Decontamination Facility or the waste decontamination facility at the east side lobby where they will be cleaned and decontaminated by steam cleaning or wet washing. Any power tools used to disturb asbestos containing material or potentially contaminated material will be equipped with HEPA filter exhaust ventilation. Depending on the type of material, items will be either steam cleaned or wet washed depending on which methodology proves more effective at decontaminating that particular material. In situations where it is more practical to shred cleanable items, such items will be shredded and disposed as ACM waste at a minimum or in accordance with any waste characterization results. Once clean of all residual dust and debris, components will be inspected by the Owner’s Environmental Consultant NYS DOL certified project monitor in either the Primary Waste Decontamination Facility or in the waste decontamination facility at the east side lobby. After components pass OEC NYS DOL certified project monitor visual inspection, they will be transported out of the Primary Waste Decontamination Facility or the waste decontamination facility at the east side lobby and live-loaded into compactor trucks or conventional waste dumpsters docked at the Secondary Loading Dock or within the West Broadway lane closure for disposal as conventional waste. No material shall be loaded until it has passed visual inspection by the Owner’s Environmental Consultant NYS DOL certified project monitor. If attempts to clean building components are not successful or possible due to compromised condition or inaccessible voids, they will be wrapped in two layers of poly, properly labeled, processed through the either the Primary Waste Decontamination Facility or the waste decontamination facility at the east side lobby and disposed of as asbestos waste or in accordance with any waste characterization results.

If any non-porous exposed building components that are not capable of being shredded, have inaccessible voids and/or are not capable of being cleaned are discovered in the Building, they will be wrapped in 2 layers of poly upon detachment for disposal as asbestos waste at a minimum or in accordance with any waste characterization results.

If any porous, non-asbestos exposed building components are discovered during the remediation operations, they will be processed through the shredder and loaded into Gaylord boxes or wrapped in two layers of poly upon detachment for disposal as asbestos waste at a minimum or in accordance with any waste
characterization results. If porous, non-asbestos insulation materials are found on non-porous exposed building components, the insulation will be stripped off of the affected components and disposed of as asbestos waste at a minimum or in accordance with any waste characterization results. The affected non-porous components will then be detached and either cleaned for disposal as conventional waste after passing visual inspection by the Owner’s Environmental Consultant NYS DOL certified project monitor, processed through the shredder and loaded into Gaylord boxes for disposal as asbestos waste at a minimum or in accordance with any waste characterization results or wrapped in 2 layers of poly for disposal as asbestos waste at a minimum or in accordance with any waste characterization results.

All exposed building components will be removed in accordance with this procedure leaving interior walls and ceiling systems remaining on the upper floors.

6.9 Interior Walls and Ceiling Systems (Basement Level and Floors Two through Fifteen)

Gaylord boxes will be brought to the Basement Level and upper floor work areas. Prior to use, each Gaylord box will be made leak tight by lining the interior with either fitted plastic inserts or two layers of poly. Gaylord boxes will be sealed by securing fitted lids into place on each box with duct tape. The exterior surface of full and sealed Gaylord boxes will be wrapped in two layers of poly or fitted plastic sleeves to render the outer surface cleanable. Some interior walls on the Basement Level are comprised of sheetrock and some of masonry block. Sheetrock walls will be removed as outlined below. Masonry block walls shall be decontaminated and remain in place for removal during the deconstruction phase. The interior walls on the upper floors are composed of painted sheetrock. The ceiling systems are composed of tiles, made from composite material, suspended from metal grid systems that are attached to the structural decking. The sheetrock and ceiling tiles are considered porous materials. The surface of interior sheetrock walls and ceilings will be HEPA vacuumed and wet wiped to remove all residual dust and debris. These items will not be fully saturated with water during removal. Water will be applied continuously as a means of dust control prior to and during the removal of interior sheetrock walls, ceiling systems and other non-asbestos materials that do not absorb water. Sheetrock walls will be demolished and ceiling system components will be disassembled using a combination of manual and mechanical means. Any power tools used to disturb asbestos containing material or potentially contaminated material will be equipped with HEPA filter exhaust ventilation.

Two methods will be employed during the removal of interior sheetrock walls and ceiling systems on the upper floors. In the first method, sheetrock and ceiling tile debris will be loaded into plasticized Gaylord boxes. Full boxes will be sealed,
wrapped in poly or fitted plastic sleeves, properly labeled and processed through either the Primary Waste Decontamination Facility or the waste decontamination facility at the east side lobby for disposal as asbestos waste or in accordance with any waste characterization results. In the second method, sheetrock and ceiling tile debris will be loaded into carts and transported to the Shredder Processing Area. All carts used for transport of ACM or potentially contaminated materials will be water tight and have doors or tops that will be closed and secured during transport. The debris will be shredded and loaded into plasticized Gaylord boxes. Full boxes will be sealed, wrapped in poly or fitted plastic sleeves, properly labeled and processed through either the Primary Waste Decontamination Facility or the waste decontamination facility at the east side lobby for disposal of as asbestos waste or in accordance with any waste characterization results. Metal studs and ceiling grid will be separated from the sheetrock and ceiling tile debris. Studs will be stacked and wrapped in two layers of poly. Wrapped studs will be properly labeled, processed through the either the Primary Waste Decontamination Facility or the waste decontamination facility at the east side lobby and disposed of as asbestos waste or in accordance with any waste characterization. Ceiling grid will be transported to the wash room of either the Primary Waste Decontamination Facility or the waste decontamination facility at the east side lobby where it will be cleaned by a combination of steam cleaning and/or wet washing. Once clean of all residual dust and debris, ceiling grid will be visually inspected by the Owner’s Environmental Consultant NYS DOL certified project monitor to verify that all potential contaminants have been remediated prior to disposal as conventional waste. Once cleaned, ceiling grid will be transported out of the Primary Waste Decontamination Facility or the waste decontamination facility at the east side lobby and loaded into compactor trucks or conventional waste dumpsters docked in the Primary Loading Dock or within the West Broadway lane closure for disposal as conventional waste. If attempts to clean ceiling grid are not successful, it will be wrapped in two layers of poly, properly labeled, processed through either the Primary Waste Decontamination Facility or the waste decontamination facility at the east side lobby and disposed of as asbestos waste or in accordance with any waste characterization results.

Any Building components existing behind interior walls or within ceiling systems, such as duct work, radiator covers and piping will be dismantled and detached. Detached components will be transported to the wash room of either the Primary Waste Decontamination Facility or the waste decontamination facility at the east side lobby where they will be cleaned of residual dust and debris by a combination of steam cleaning and/or wet washing. Once cleaned these remaining components will be visually inspected by the Owner’s Environmental Consultant NYS DOL certified project monitor and then transported out of the Primary Waste Decontamination Facility or the waste decontamination facility at the east side lobby and loaded into compactor trucks or conventional waste dumpsters docked in the Primary Loading Dock or the West Broadway lane closure for disposal as conventional waste. If attempts to clean any components are not
successful, they will be wrapped in two layers of poly, properly labeled, processed through either the Primary Waste Decontamination Facility or the waste decontamination facility at the east side lobby and disposed of as asbestos waste or in accordance with any waste characterization results. Additionally, please note that it is not possible to clean the following items:

- Radiator Coil
- Electrical Conduit
- Piping

These items will be manually or mechanically detached, wrapped in two layers of poly, properly labeled, processed through the either the Primary Waste Decontamination facility or the waste decontamination facility at the east side lobby and disposed of as asbestos waste or in accordance with any waste characterization results. Any power tools to disturb asbestos containing material or potentially contaminated material will be equipped with HEPA filter exhaust ventilation.

Any porous building components and/or materials existing behind interior walls or within ceiling systems will be handled and disposed of as asbestos waste at a minimum, and depending on any final waste characterization results.

To the extent possible, workers will not disturb asbestos containing materials during the removal of non-ACM systems. If it becomes necessary to remove ACM to access non-ACM systems, the ACM removal will be performed as outlined in Section 6.11 prior to removal of the affected non-ACM systems.

### 6.10 Ventilation Shafts

There are several ventilation shafts present within the Building. To view plans indicating the location of ventilation shafts please refer to Attachment XI – Configuration of Fine Cleaning Work Areas. Concurrent with the removal of interior walls and ceiling systems, NYS DOL and NYC DEP certified asbestos handlers will also demolish openings into the ventilation shafts on each floor including the Basement Level. Debris from the demolition of openings will be processed through the shredder and disposed of as asbestos waste or in accordance with any waste characterization results. Any porous materials existing within ventilation shafts will be removed by manual methods, loaded into plasticized Gaylord boxes, sealed, wrapped in poly or fitted plastic sleeves, properly labeled and processed through either the Primary Waste Decontamination Facility or the waste decontamination facility at the east side lobby for disposal as asbestos containing waste or in accordance with any waste characterization results. Any building components existing within ventilation shafts, such as duct work, piping and electrical conduit will be dismantled and detached. Detached duct work components will be transported to the wash room.
of either the Primary Waste Decontamination Facility or the waste decontamination facility at the east side lobby where they will be cleaned of residual dust and debris by a combination of steam cleaning and wet washing. Once clean of all residual dust and debris, components will be inspected by the Owner’s Environmental Consultant in the either the Primary Waste Decontamination Facility or the decontamination facility at the east side. After components pass OEC NYS DOL certified project monitor visual inspection, they will be transported out of the Primary Waste Decontamination Facility or the waste decontamination facility at the east side lobby and live-loaded into compactor trucks or conventional waste dumpsters docked at the Secondary Loading Dock or in the West Broadway lane closure for disposal as conventional waste. If attempts to clean duct work are not successful, they will be wrapped in two layers of poly, properly labeled, processed through either the Primary Waste Decontamination Facility or the waste decontamination facility at the east side lobby and disposed of as asbestos waste or in accordance with any waste characterization results. Additionally, please note that it is not possible to clean the following components that may be present in ventilation shafts:

- Electrical Conduit
- Piping

These items will be manually or mechanically detached, wrapped in two layers of poly, properly labeled, processed through either the Primary Waste Decontamination Facility or the waste decontamination facility at the east side lobby and disposed of as asbestos waste or in accordance with any waste characterization results. Any power tools used to disturb asbestos containing material or potentially contaminated material will be equipped with HEPA filter exhaust ventilation.

Abatement, cleaning and clearance of ventilation shafts will occur simultaneously with the abatement, cleaning and clearance of the Basement Level and upper floors. When the upper floors are divided into three floor blocks for cleaning, the shafts will be segmented at every three floors with isolation barriers. Ventilation shafts will be cleaned and decontaminated from the top down on each block of floors. Solid wood barriers will be installed in each vent shaft at three floor intervals (top of third floor in a block and bottom first floor in a block) in order to segment the vent shafts. Ventilation shafts in the Basement will be sealed off at the Basement Level and cleaned separately from the rest of the ventilation shafts. The ventilation shafts with the installed manifolds for the negative air exhaust from the basement to the building exterior will be decontaminated at this time by HEPA vacuuming and wet wiping. The manifolds will be installed leaving enough room in these shafts to allow for cleaning of the shaft surfaces by HEPA vacuuming and wet wiping around the exhaust hoses.
Workers performing the decontamination of interior shaft surfaces will utilize proper fall protection as defined in Part III(R) Remediation Operations HASP. Open shafts will be equipped with guardrails. All interior shaft surfaces will be subject to wet cleaning methods in order to remove all residual debris. Run off water will be collected in basins at the bottom level of each shaft work area. Basins used to collect excess water will be either portable metal shower pans or will be constructed of poly. Collected water will be absorbed utilizing mops and rags. All used water collection materials will be loaded into plasticized Gaylord boxes, sealed, wrapped in poly or fitted plastic sleeves, properly labeled and processed through either the Primary Waste Decontamination Facility or the waste decontamination facility at the east side lobby for disposal as asbestos containing waste or in accordance with any waste characterization results. Barriers will remain in place until the remediation activities inside the entire span of all vent shafts have been completed.

Please note that at no time and under no circumstances during remediation activities will any material, equipment, debris or items be dropped down or allowed to fall down any ventilation shaft for any distance.

6.11 Asbestos Abatement

There is assumed asbestos containing floor tile present throughout the Basement Level and upper floors of the Building. Additionally, there is a thin coating of non-friable asbestos containing mastic applied to the surface of block kneewall around the interior perimeter of the all floors. There is also a minor quantity ACM caulking present on the upper floors. Once all non-fixed items and building components have been removed, abatement of the assumed and asbestos containing materials will take place. The Basement Level and upper floor work areas will be pre-cleaned by HEPA vacuuming and wet wiping to remove any residual dust and debris that may be present. In any areas where both friable and non-friable ACM are present within the same, immediate working area, all of the friable ACM in that area will be removed first. Following the removal of the friable ACM, the immediate working area will be cleaned by HEPA vacuuming and wet wiping. After this intermediate cleaning, the non-friable ACM in that immediate working area will be removed.

Any power tools used to disturb asbestos containing material or potentially contaminated material will be equipped with HEPA filter exhaust ventilation. NYS DOL and NYC DEP certified asbestos handlers will thoroughly wet down ACM and assumed ACM at each location where it exists with amended water using airless and/or pump sprayers. Removal of the assumed asbestos tile and caulking will be performed by manual methods utilizing hand held scraping tools. Removed ACM and assumed ACM will be placed into plasticized Gaylord boxes upon detachment from the substrate.
Once full, each box will be sealed by placing a fitted lid onto it and securing the lid with duct tape. Sealed boxes will be wrapped in poly or fitted plastic sleeves, clearly labeled, processed through the either the Primary Waste Decontamination Facility or the waste decontamination facility at the east side lobby and disposed of as asbestos waste in an asbestos trailer docked in the Primary Loading Dock or an asbestos waste trailer within the West Broadway lane closure.

Clearance testing on the Basement Level and upper floors will not be performed at this time. It will first be necessary to decontaminate the elevator shafts and A & B Stairwells before any clearance sampling can be run.

Asbestos mastic on block kneewall will be removed during the deconstruction operations. The removal procedure for this material will be detailed in Part I(D) – Deconstruction Operations Work Plan which will be submitted to the regulators for review under separate cover.

6.11.1 Lead Containing & Lead Painted Item

Workers will utilize proper PPE for the duration of lead removal activities. In the Basement Level there is one porcelain sink that contains lead. On the 4th Floor there is one lead painted column. The entire sink will be removed and disposed of as lead containing material. The lead paint will be removed from the column and disposed of as lead containing waste. This lead removal will be performed during the asbestos abatement activities on the Basement Level and the 4th Floor. A drop cloth consisting of a single layer of 6mil poly will be placed in an area adjacent to the sink in the Basement. NYS DOL and NYC DEP certified asbestos handlers who also hold valid US EPA Lead Certification will remove the sink from its mounting utilizing manual means and transport it to the Primary Waste Decontamination Facility. The exterior surfaces of the sink will be cleaned by HEPA vacuuming and wet wiping in the Primary Waste Decontamination Facility wash room. Once it has been decontaminated, the sink will be placed in a lead waste drum and transported to the exterior waste storage facility for temporary storage prior to disposal as lead waste. If sizing (breaking up of the sink) is required prior to packaging of the sink, sizing will be conducted in an environmental tent containment outside the building. Wet methods will be utilized to control dust within the tent.

The lead paint on the 4th Floor column is applied to plaster material which is assumed asbestos contaminated. The affected lead painted plaster will be removed from the 4th Floor column during the asbestos abatement activities on the 4th Floor. The affected lead painted plaster will be removed from the column by manual or mechanical means. Plaster debris from the lead painted column will be kept separate from other waste,
collected and double bagged in asbestos bags. Bags of lead painted column debris will be sealed with duct tape and placed into drums made of a durable and cleanable material. The drums will be transported to the Primary Waste Decontamination Facility and fully decontaminated. After decontamination, the drums containing lead painted plaster debris will be TCLP’d for lead. The drums will then be transported to the lead chamber of the exterior waste storage facility for temporary storage. If TCLP results indicate there is lead present, the drums of lead containing plaster debris will be disposed of as lead waste. If TCLP results are negative for lead the drums of lead containing plaster debris will be disposed of as asbestos waste at a minimum or in accordance with any waste characterization results.

6.12 Gash Area Abatement Procedures

Results of the Owner’s Environmental Consultant NYS DOL certified project monitor visual inspection of all scaffold attachment façade openings will be applied to work procedure planning. The scaffold attachment is substantially completed and visual inspections have not found Gash Area brick impacted with suspect WTC dust requiring environmentally-controlled handling and removal. Visual inspections will continue to be performed during the completion of scaffold installation by the Owner’s Environmental Consultant NYS DOL certified project monitor. Further, seven additional façade openings have been created in locations in the Gash Area where it was not required to create openings in the brick for scaffold attachment. These additional façade openings were created for further visual inspection for suspect WTC dust within the façade to be performed by the OEC NYS DOL certified project monitor. These additional openings were subject to visual inspection by the OEC NYS DOL certified project monitor. No suspect WTC dust was found to be present in the seven additional façade openings.

The following list of surfaces, items, components and materials have been documented by the Owner’s Environmental Consultant NYS DOL certified project designer as existing in various locations throughout the Gash Area on the south façade of the Building and requiring environmental remediation:

- Fiberglass Pipe Insulation
- Fiberglass Duct Insulation
- Non-ACM Spray/Trowel Applied Fireproofing Material
- VAT
- Brick
- Windows
- Concrete Floor Slab/Deck
- Concrete/Masonry Block Columns
- Plaster
• Metal Hangers/Attachment Mechanisms
• Wooden Barriers
• Steel Spandrel
• Non-Friable Asbestos Mastic (Applied to Spandrel Web)

Please note that the Gash Area was subject to two previous cleaning efforts performed by others. Any friable and/or porous items, components or materials listed above (as determined by a detailed inspection conducted by the OEC) are assumed to be contaminated by WTC dust and will be subject to environmentally controlled removal as outlined in this Section.

The Contractor and OEC NYS DOL certified project designers have determined the procedures to be used to remediate the Gash Area based on the concentration of surfaces, items, components and materials in relation to the size and layout of the areas where they are present. Given that the conditions in the Gash Area vary from level to level, the below set of procedures will be implemented as deemed necessary by the Contractor and OEC NYS DOL certified project designers to address the removal of impacted surfaces, items, components and materials that are not capable of being cleaned. For instance areas where there is a large concentration of the above listed surfaces, items, components and materials that are not capable of being cleaned in close proximity to each other the interior containment will be extended. In areas where the above listed surfaces, items, components and materials that are not capable of being cleaned are spread sporadically making the extension of the interior containment inefficient, the remediation will be performed by tent procedures. In areas where there are only surfaces, items, components and materials that are non-porous and capable of being cleaned, the focused cleaning procedure will be performed. All penetrations between floors in the Gash Area will be sealed with either two (2) layers of poly or fire retardant expanding foam.

Please note that on some levels in the Gash Area it will be necessary to perform multiple remediation procedures. Which procedures to be implemented will be decided by the Contractor and OEC NYS DOL certified project designers. To view diagrams of the Gash Area indicating which remediation procedures will be utilized, refer to Attachment XIV - Gash Area Containment Diagrams.

6.12.1 Extension of Interior Containment

The extension of the interior containment to incorporate the Gash Area will be performed on the First, Fourth, Seventh and Eighth Floors of the Gash Area.

On these floors in the Gash Area there are large quantities of the above listed items, components and materials present in close proximity to one another. The interior containment on these floors will be extended to
include these areas. To view diagrams detailing the configuration of the Gash Area to be included in the extension of the interior containment, please refer to Attachment XIV – Gash Area Containment Diagrams.

During the installation of the modified full containment on these floors, NYS DOL and NYC DEP certified asbestos handlers will install additional solid wall containment barriers on the Gash Area façade in order to enclose the materials within the interior of the Building. These additional solid wall barriers will be installed from the exterior scaffolding platforms or from the affected floors and will be exterior to the existing wooden barriers installed to isolate the interior of the Building from the Gash Area. The focused cleaning procedure outlined below in Section 6.12.3 will be performed in areas where walls will be installed to remove any dust that may be present prior to installation of the barriers. The additional barriers will be sealed air tight with fire retardant expanding foam so that there is no air transfer between the interior of the Building and the outside environment. No removals or abatement work will be performed on affected Floors where the interior containment will be extended before the exterior solid wall barriers on those floors are secured in place. On the First Floor south side double height area the barriers will be installed up to the underside of the Third Floor slab in order to fully enclose this area within the interior containment. The stairwell between the 1st and 2nd Floors in the Gash Area will be incorporated in the extension of the interior containment on the First Floor. The Stairwell will be sealed off from the Second Floor level with critical barriers. Once the additional barriers on the affected Floors are in place, NYS DOL and NYC DEP certified asbestos handlers working on the installation of the modified containment inside the Building will remove the existing wooden barriers (which at this point will be interior to the Building) on these floors. The wood from these existing barriers will be wrapped in poly for disposed of as asbestos waste or in accordance with any waste characterization results. Once the existing barriers are removed, the Gash Area on the affected floors will be placed under modified full containment by the same procedures as outlined in Section 6.4. The abatement of impacted materials interior to the modified containment in the Gash Area on will be performed by the same procedure as the rest of the items, components, systems and materials within the Building. These removal procedures are outlined above in Sections 6.7 through 6.11. Cleaning and clearance of Gash Area sections within the extended modified full containment of the interior of the Building will be performed as outlined below in Section 6.18 To view diagrams of the locations where the Gash Area will be incorporated into the interior containment refer to Attachment XIV – Gash Area Containment Diagrams.

6.12.2 Tent Procedures
In areas of the Gash where impacted materials are not extensive and not localized (making the extension of the interior containment inefficient), or where there location makes extension of the interior containment unsafe, the remediation will be performed by tent procedures.

Tent procedures will be performed on the following floors in the Gash Area:

First Floor, Second Floor, Third Floor, Fifth Floor, Sixth Floor, Ninth Floor, Tenth Floor, Eleventh Floor, Twelfth Floor, Thirteenth Floor, Fourteenth Floor and Fifteenth Floor.

Air locks will be installed by NYS DOL and NYC DEP certified asbestos handlers at locations to be determined based on field conditions on each floor of the Gash Area at the existing barrier to the Building interior. Once an air lock is in place on a floor NYS DOL and NYC DEP certified asbestos handlers will remove a section of the existing barrier by manual and/or mechanical means to allow access from the interior of the Building into the air lock. Access onto the Gash area will be obtained from the interior of the Building through the air locks and onto the Gash Area for the tent procedures. The Primary Personal Decontamination Facility will be utilized by NYS DOL and NYC DEP certified asbestos handlers performing the tent procedure remediation on the Gash Area. Please refer to Attachment XIV – Gash Area Containment Diagrams to view diagrams depicting the Gash Area access locations.

Access onto the Gash Area for the remediation operation will be obtained as follows:

NYS DOL and NYC DEP certified asbestos handlers wearing proper PPE will enter the Basement and Upper Floors work area via the Primary Personal Decontamination Facility. These personnel will utilize the interior elevators to gain access to an upper floor where tent procedures will be performed on the Gash Area. Once on the affected floor, the NYS DOL and NYC DEP certified asbestos handlers will pass through the opening created in the existing barrier and enter the air lock. Once in the air lock, the NYS DOL and NYC DEP certified asbestos handlers will remove one (1) layer of disposable coverall suit and place it in an asbestos bag located within the air lock. After one (1) layer of disposable coverall suit has been removed, the NYS DOL and NYC DEP certified asbestos handlers will utilize HEPA vacuums to clean the surface of the one (1) layer of disposable coverall suit that they are still wearing. Once full, bags of suits will be sealed with duct tape and left in the air lock for disposal with waste generated during the tent procedures. After completing the cleaning of their disposable coverall suits, NYS DOL and NYC DEP
certified asbestos handlers will exit the air lock onto the Gash Area. Once on the Gash Area, NYS DOL and NYC DEP certified asbestos handlers will proceed to a tent location.

At each location where porous surfaces, items, components and materials are present NYS DOL and NYC DEP certified asbestos handlers will perform the focused cleaning procedure outlined below in Section 6.12.3 on non-porous surfaces to remove any residual dust in areas where tent enclosures will be constructed. NYS DOL and NYC DEP certified asbestos handlers will then construct tent enclosures of two layers of poly and metal studs fully enclosing the affected impacted items, components and materials. Tents shall have double folded seams which shall be duct taped airtight and then duct taped flush to the adjacent tent wall. Tent enclosures on the First Floor south/southeast side will be constructed up to the underside of the Third Floor slab to fully enclose this area within the tent. Airlocks will be constructed at the entrance to each tent enclosure. Access to each tent and airlock constructed in the Gash Area shall be restricted to allow only NYS DOL and NYC DEP certified asbestos handlers within 25 feet of the enclosures. NYS DOL and NYC DEP certified asbestos handlers on the Gash Area will enter an air lock attached to a tent enclosure and don a second layer of disposable coverall suit. Once double suited, the NYS DOL and NYC DEP certified asbestos handlers will enter the tent enclosure.

Prior to removal of items, components and materials, the tent enclosures will be placed under negative pressure with HEPA vacuums or negative air units depending on the size of an individual tent enclosure. The installation procedure for negative pressure engineering controls in tent enclosures will be determined by the NYS DOL and NYC DEP certified asbestos supervisor based on field conditions in the Gash Area. Affected items, components and materials shall be wet down with amended water before and during removal. NYS DOL and NYC certified asbestos handlers will remove the affected items, components and materials by manual and mechanical means. Removed items will be double bagged and the bags sealed with duct tape. Sealed bags will be placed in the air lock attached to the tent enclosure. NYS DOL and NYC DEP certified asbestos handlers will then enter the air lock. The exterior surface of sealed bags will be cleaned in the air lock by HEPA vacuuming. Once all bags in the air lock are cleaned the NYS DOL and NYC DEP certified asbestos handlers will remove one (1) layer of disposable coverall suit and place it in an asbestos bag located within the air lock. Once full, bags of suits will be sealed with duct tape and disposed with waste generated during the tent procedures. Personnel and waste will not pass through the air locks at the same time. Once all bags of waste are sealed and decontaminated, the NYS DOL and NYC DEP certified asbestos handlers will pass the bags to
NYS DOL and NYC DEP certified asbestos handlers outside of the air lock on the Gash Area. Only after all bags of waste have been passed out of a tent enclosure air lock, the NYS DOL and NYC DEP certified asbestos handlers inside the tent enclosure air lock will clean their PPE and remove one suit and then exit onto the Gash Area. NYS DOL and NYC DEP certified asbestos handlers receiving the bags of waste from the tent enclosure air lock will transport them to the entrance to the interior of the Building on that level and place them inside the air lock connected to the entrance. These NYS DOL and NYC DEP certified asbestos handlers will then enter the air lock at the entrance and remove one (1) layer of disposable coverall suit and place it in an asbestos bag located within the air lock at the entrance to the Building. After one (1) layer of disposable coverall suit has been removed, the NYS DOL and NYC DEP certified asbestos handlers will utilize HEPA vacuums to clean the surface of the one (1) layer of disposable coverall suit that they are still wearing. Once full, bags of suits will be sealed with duct tape. Once all bags of waste are sealed, NYS DOL and NYC DEP certified asbestos handlers inside of the air lock at the entrance to the Building will pass the bags of waste to NYS DOL and NYC DEP certified asbestos handlers on the inside of the Building. Only after all bags of waste have been passed out of the air lock at the entrance to the building will the NYS DOL and NYC DEP certified asbestos handlers don a second layer of disposable coverall suit and exit the air lock into the interior of the Building. Once in the Building, waste will be transported in wheeled carts and/or on pallet jacks. NYS DOL and NYC DEP certified asbestos handlers will utilize the elevators to transport the waste to the First Floor east side lobby. All carts used for transport of ACM or potentially contaminated materials will be water tight and have doors or tops that will be closed and secured during transport. Bags of waste generated during the tent procedures and suit removal will be processed through either the Primary Waste Decontamination Facility or the waste decontamination facility at the east side lobby for disposal as asbestos waste or in accordance with any waste characterization results.

Once abatement activities are completed within a tent work area, the Contractor NYS DOL and NYC DEP certified asbestos supervisor will perform a visual inspection of the tent area. Once the conditions of a tent work area are satisfactory to the Contractor NYS DOL and NYC DEP certified asbestos supervisor the tent work areas will then be visually inspected by the Owner’s Environmental Consultant NYS DOL certified project monitor. After the tent work area passes OEC visual inspection, air clearance tests will be run for asbestos and metals.

Air clearance of gash area tents will be conducted according to the amount of material (ACM or WTC Dust-contaminated) that is removed from the work area, as determined by the OEC Project Monitor. If a minor
(<10sf/<25lf) quantity of material is removed, sampling will be performed as follows: 1 inside the work area (IWA) TEM asbestos air sample and 1 outside the work area (OWA) TEM asbestos air sample per tent work area. A tent work area will be considered cleared once TEM results are less than seventy (70) structures per millimeter squared (mm2). An equal number of metals samples will be collected IWA. No OWA metals samples will be collected. If a small (<160sf/<260lf) quantity of material is abated from the tent, small project sampling (3 IWA ACM/3 OWA ACM plus 3 IWA metals) will be performed. Similarly, if a large (>160sf/>260lf) quantity of material is abated from the tent, large project sampling (5 IWA ACM/5 OWA ACM plus 5 IWA metals) will be performed.

Once successful clearance is achieved in a Gash Area tent work area, that work area will be broken down.

To view diagrams of the Gash Area where tent procedures will be performed refer to Attachment XIV – Gash Area Containment Diagrams.

6.12.3 Gash Focused Cleaning Procedure

The Gash Area focused cleaning procedure will be performed on the following floors:

First Floor, Second Floor, Third Floor, Fourth Floor, Fifth Floor, Sixth Floor, Seventh Floor, Eighth Floor, Ninth Floor, Tenth Floor, Eleventh Floor, Twelfth Floor, Thirteenth Floor, Fourteenth Floor and Fifteenth Floor.

Access to Gash Area focused cleaning work areas will be obtained via the air locks installed on the existing barrier wall between the Gash Area and the Building interior. Please refer to the above Section 6.12.2 to review the procedure to be followed for Gash Area access.

NYS DOL and NYC DEP certified asbestos handlers will utilized the Primary Personal Decontamination Facility to access the Gash Area focused cleaning work areas. Please note that all surfaces within the Gash Area where the above listed impacted materials do not exist or are being removed by the tent procedure will be cleaned by the following focused cleaning procedure. Focused cleaning will be performed on all surfaces slab to slab on any exposed, non-porous Building components that are present in the gash area including the external facing surface of the solid wall barriers that are sealing the Building interior. The external facing surface of existing solid wall barrier will not be cleaned by the focused cleaning procedure in areas where they will be incorporated into the interior containment. On containment extension floors, the focused
cleaning procedure will be performed in areas where barrier walls will be installed to extend the interior containment. Cleaning will be performed manually by HEPA vacuuming and wet wiping utilizing a combination of rags, mops and/or sponges. The progression of focused cleaning activities will be from the top floor downward in order to prevent potential cross contamination of previously cleaned areas. Run off water will be controlled to prevent the migration of residual dust from the Gash Area into the exterior environment. Only minor amounts of run off water are anticipated to be generated by Gash Area focused cleaning activities. Used cleaning materials will be double bagged or otherwise wrapped in 6mil poly, clearly labeled, processed through either the Primary Waste Decontamination Facility or the waste decontamination facility at the east side lobby for disposal as asbestos waste or in accordance with any waste characterization results.

Once the focused cleaning is completed, a visual inspection will be performed by the NYS DOL and NYC DEP certified asbestos supervisor. Once the focused cleaning work areas are acceptable to the NYS DOL and NYC DEP certified asbestos supervisor, the Owner’s Environmental Consultant will be contacted to perform visual inspection of the focused cleaning work areas. The OEC NYS DOL certified project monitor will perform visual inspection of the Gash Area focused cleaning work areas. Once the Gash Area focused cleaning work areas have passed OEC NYS DOL certified project monitor visual inspection, the regulators will be contacted to perform regulatory visual inspection. Twenty-four (24) hour notice will be provided to the regulators prior to visual inspection. Once the work area has passed regulatory visual inspection and the most recent daily abatement air sample results meet ICR 56-4.11 clearance criteria, the work area shall be dismantled to allow access by other trades.

To view diagrams of the Gash Area focused cleaning work areas please refer to Attachment XIV – Gash Area Containment Diagrams

After being subject to the focused cleaning procedure cleanable surfaces, items, components and materials in the Gash Area, including brick and mortar, will be disposed of as conventional construction and demolition (C&D) waste if visual inspection determines that they are not impacted by ACM or suspect WTC dust.

6.13 Remediation of Roof Levels

The Building Roof Levels consist of the following:

- Cooling Tower Roof
- Main Roof
Remediation operations on the Roof levels shall be performed from the uppermost roof down to the lowest level roof. Workers will access the Cooling Tower Roof, Main Roof and Fourteenth Floor Set Back Roof levels through the C Stairwell. A personal decontamination facility will be installed on the Main Roof at the entrance into the C Stairwell. Once on the Main Roof, workers will access the upper Cooling Tower roof via the mechanical room stairway located west of the C Stairwell. Workers will access the Fourteenth Floor Set Back Roof via an extension ladder from the north side of the Main Roof. Access to the Fifth Floor Set Back Roof will be gained from a doorway on the west side of the Sixth Floor. Workers will take the elevator cars up to the Sixth Floor. There is a layer of quarry stone ballast on the surface of all roof levels. The cleaning of this stone will be the first procedure performed on any roof level in conjunction with the NYC Office of the City Medical Examiner (OCME) search activities. Critical barriers will be installed over all roof drains in each area where OCME activities will be performed prior to the commencement of search and cleaning activities on that level. Only drains in the immediate working area will be sealed leaving others open to handle rainwater. As the search and cleaning procedure progresses, drains in the immediate search and cleaning area will be sealed. Drains in areas where search and cleaning activities have been completed will be unsealed to handle rainwater. To view diagrams of the roof levels, refer to Attachment V – Remediation Operations Logistics Plans.

6.13.1 Loose Stone (Ballast) Re-Cleaning & OCME Operations

OCME has indicated that it will be necessary to perform search operations on the various roof levels of the Building. OCME will be supported by NYS DOL and NYC DEP certified asbestos handlers during their operations. The surface of the roof levels at the Building have been previously cleaned by others during WTC recovery operations. The contractor shall re-clean the ballast and surface of the membrane in conjunction with the Office of the City Medical Examiner investigation as outlined below. After cleaning and OCME inspection, the ballast material will be loaded into bags. Full bags of ballast will be left in place on the roof levels in order to provide weight to hold the membrane in place. Bags of ballast will be removed during the deconstruction operations and disposed of as conventional waste.

The following procedure will be used during OCME inspection of roof levels:
A screen filtration system consisting of a heavy duty rectangular screen laid flat over four cinder blocks leaving space of approximately one foot to the surface of the roof will be established.

A decontamination unit will be installed on each roof level where OCME inspection will take place.

NYS DOL and NYC DEP certified asbestos handlers will move sections of stone ballasts and accompanying fines onto the filtration screen.

OCME personnel will inspect ballast and fines on the screen as well as the surface of roof membrane for the presence of human remains.

Once directed by OCME personnel, NYS DOL and NYC DEP certified asbestos handlers will clean the ballast and fines on the screen with water. The surface of roof membrane where ballast and fines were removed from will also be cleaned by HEPA vacuuming and wet wiping.

Run off water will be collected in basins set up below the screen. Collected water will be absorbed on a regular basis utilizing mops and rags or otherwise containerized in drums. Drummed water will be tested for NYC Sewer discharge parameters and eventual filtration to the NYC Sewer if analytical results allow. All used water collection materials will be double bagged, properly labeled, processed through the decontamination facility and removed from each roof level via the exterior pipe scaffolding system for disposal as asbestos waste or in accordance with any waste characterization results.

Once cleaned ballast and fines will be moved from the screen and placed into bags and put back onto the roof surface.

After the cleaning of stone ballast and roof surfaces in conjunction with OCME, the Contractor NYS DOL and NYC DEP certified asbestos supervisor will perform a visual inspection of the roof levels. Once the conditions on the roof levels work areas are satisfactory to the Contractor NYS DOL and NYC DEP certified asbestos supervisor the Owner’s Environmental Consultant NYS DOL certified project monitor will then perform a visual inspection of the roof levels to verify the cleaning has been fully completed. Once the work area has passed OEC NYS DOL certified project monitor visual inspection the regulators will be contacted to perform regulatory visual inspection of the work area. Twenty four (24) hour notice will be provided to the regulators prior to the visual inspection. The stone ballast and roof surface cleaning procedure in conjunction with OCME inspection will be complete after all stone ballast and roof surface work areas have passed regulatory visual inspection.

This procedure will be repeated until OCME has completed their inspections on the roof levels.

With the exception of the Gash Area, the functionality of the roof levels has not been compromised and the roof systems effectively prevent water incursion to the building interior. The sub-surface of the roof levels, with exception to the Gash Area, will not be cleaned as they are effectively
sealed by the membrane allowing no transfer for contaminants to migrate to the subsurface of the roofs.

6.13.2 Fifth Floor Set Back Roof

There is no asbestos material present on the Fifth Floor Set Back Roof. The remediation procedures on this roof will be the loose stone removal and decontamination of the underlying roof membrane surface. These activities will be performed as outlined in Section 6.13.1. Once decontaminated, the surface of the Fifth Floor Set Back Roof will be left intact for removal during the structural deconstruction phase.

6.13.3 Cooling Tower

The cooling tower is located on the uppermost roof level of the Building. The tower contains non-asbestos plastic fill material. A waste decontamination facility will be established in an area directly adjacent to the cooling tower unit. Panels will be removed from the tower in order to gain access to the plastic fill. The cooling tower panels are made of metal and will be cleaned by HEPA vacuuming and wet wiping. Once cleaned, the panels will be placed on the roof surface adjacent to the cooling tower and secured. The panels will be removed during the structural deconstruction phase and disposed of as conventional construction and demolition (C&D) waste. The fill material will be manually loaded into asbestos waste bags, double bagged, properly labeled and disposed of as asbestos waste or in accordance with any waste characterization results since it is not possible to effectively clean. The interior and exterior surfaces of the cooling tower will be decontaminated by HEPA vacuuming and wet wiping. Once cleaned, the tower structure will be left in place, to be removed during the structural deconstruction phase with other heavy machinery and equipment. If it is not possible to effectively clean the cooling tower unit while it is intact, NYS DOL and NYC DEP certified asbestos handlers will dismantle the tower and clean all the components which will be left where the tower was located for removal during the deconstruction phase. All detached cooling tower components will be secured to the roof to prevent from being blown off prior to disposal during the deconstruction phase. Any components that cannot be cleaned will be removed from the tower, double bagged or wrapped in two layers of poly, processed through the waste decontamination facility and disposed of as asbestos waste or in accordance with any waste characterization results during the Remediation Phase.
6.13.4 Main Roof

The first remediation procedures on this roof will be the loose stone removal and decontamination of the underlying roof membrane surface. These activities will be performed as outlined in Section 6.13.1. Once decontaminated, the surface of the Main Roof Level will be left intact for removal during the structural deconstruction phase.

There is asbestos containing window caulking on one window to the Elevator Machine Room bulkhead on the Main Roof Level. NYS DOL and NYC DEP certified asbestos handlers will install a critical barrier consisting of two layers of poly on the inside surface of the affected window. NYS DOL and NYC DEP certified asbestos handlers will then install two layers of poly on the surface of the Main Roof directly underneath the affected window opening. The asbestos caulking material will be wet down with amended water and manually removed with handheld scraping tools. Caulking material will be placed into asbestos bags directly upon detachment from the window frame. Once full, bags will be placed inside a second bag, sealed and properly labeled. The exterior of the bags will be decontaminated and removed from the area via the exterior pipe scaffolding system. Once at ground level, bags of ACM caulking will be live-loaded into asbestos waste trucks waiting at the site.

ACM air sampling in support of this operation will be in full compliance with the air sampling requirements of the NYC DEP EC (Exterior Caulk) Method. One “During Abatement” sample will be collected both inside and outside the window being abated, along with the daily decon and barrier samples being run on a daily basis at the site.

6.13.5 Fourteenth Floor Set Back Roof

The first remediation procedures on this roof will be the loose stone removal and decontamination of the underlying roof membrane surface. These activities will be performed as outlined in Section 6.13.1. Once decontaminated, the non-ACM surface on the west side of the Fourteenth Floor Set Back Roof Level will be left intact on this for removal during the structural deconstruction phase.

There is asbestos containing roof membrane on the north side of the Fourteenth Floor Set Back Roof. Upon the completion of loose stone removal and roof surface decontamination on this level, workers will begin the removal of the asbestos containing roofing. A decontamination facility will be installed on the Fourteenth Floor Set Back Roof level adjacent to the section of ACM roofing membrane. Critical barriers installed during interior remediation operations on all openings within
twenty feet (20’) of the Fourteenth Floor Set Back Roof will remain in place. The surface of ACM roofing membrane will be wetted down with amended water. NYS DOL and NYC DEP certified asbestos handlers will utilize manual scraping tools to perform the removal. ACM roofing material will be bagged on detachment from the roof surface. Once full, bags will be placed inside a second bag, sealed and properly labeled. The exterior of the bags will be decontaminated and removed from the area via the exterior pipe scaffolding system. Once at ground level, bags of ACM roofing will be live-loaded into asbestos waste trucks waiting at the site.

Section 6.13.6 Gash Area Roofing

In Gash Areas on all affected roof levels, WTC impact is assumed for the edge of the roof system at the Gash only. As stated above, the rest of the roof levels are sealed and non-porous. The contractor shall observe a ten foot (10’) demarcation from the Gash Area on all affected roof levels. Due to the fact that the physical damage to the building included certain areas of roof on the fifth, 14th and 15th floors, it was decided by the Owner’s Environmental Consultant to assume that some contamination of roof components such as roof membrane and insulation was possible. It was decided that the wet removal of all roofing system components down to the roof slab would be advisable at the gash area edge of the roofs. It was decided based on site inspection that these removals to a distance of ten feet from the roof edge at the gash area would be sufficient to ensure the abatement of all suspect WTC-contamination that might have infiltrated the edge of the roofing system. The roofing materials in these areas were tested for their integral asbestos content, and are non-asbestos. The purpose of the demarcation area is to provide a remediation zone for the assumed WTC impact based on the condition of the compromised roof areas. All ballast in the demarcation area will be cleaned in conjunction with The Office of the City Medical Examiner inspection operations on all affected roof levels. Cleaned ballast will be removed from the ten foot (10’) demarcation area onto adjacent areas of the roof levels where it will remain for disposal during the deconstruction phase. All roofing membrane in the ten foot (10’) demarcation area will be removed, handled and disposed as asbestos waste or in accordance with any waste characterization results. ACM roofing material will be bagged on detachment from the roof surface. Once full, bags will be placed inside a second bag, sealed and properly labeled. The exterior of the bags will be decontaminated and removed from the area via the exterior pipe scaffolding system. Once at ground level, bags of ACM roofing will be live-loaded into asbestos waste trucks waiting at the site. “Upon completion of roofing removal from the demarcated area in all Gash Area roof levels, an additional visual inspection by the Owner’s Environmental Consultant NYS DOL certified project monitor will be conducted at the
edge of the roofing that remains. This inspection will be conducted and documented in a similar manner to the scaffold tie-in inspections conducted during the Scaffold Erection Operation. If it is determined that WTC dust/debris exists at any of the subject locations, additional abatement by wet methods will be conducted of an additional demarcated area out to a distance to be determined in consultation with the regulators.

After removals and cleanings are complete and a minimum drying period has elapsed, a visual inspection of the work area will be performed by the Contractor NYS DOL and NYC DEP certified asbestos supervisor. After the conditions are satisfactory to the Contractor NYS DOL and NYC DEP certified asbestos supervisor the Owner’s Environmental Consultant NYS DOL certified project monitor will perform a visual inspection of the work area to determine if the area is dry and free of visible asbestos debris and/or residue. Once the work area has passed OEC NYS DOL certified project monitor visual inspection the regulators will be contacted to perform regulatory visual inspection. Twenty-four (24) hour notice will be provided to the regulators prior to the visual inspection. Once the work area has passed regulatory visual inspection and the most recent daily abatement air sample results meet ICR 56-4.11 clearance criteria, the work area shall be dismantled to allow access by other trades.

6.14 Elevator Shafts

After all remediation removal activities have been completed on the interior floors above the Basement Level, the decontamination of all elevator shafts within the Building will be performed. To view plans indicating the location of elevator shafts please refer to Attachment XI – Configuration of Fine Cleaning Work Areas. The existing Primary Waste Decontamination Facility will be utilized for during the remediation of the elevator shafts. Elevator cars will no longer be used for the duration of the project and they will be dismantled at this time. The work area for the dismantling of the elevator cars shall be the Basement Level. Workers will access the Primary Waste Decontamination Facility via the Stairwell B. Elevator Machine Rooms shall remain under negative pressure with eight air changes during the remediation of the elevator shafts and dismantling of the elevator cars. Prior to the start of elevator shaft decontamination activities, all elevator cars will be brought to the bottom of the shafts and secured in the elevator pits at the Basement Level. The elevator cars will be dismantled within the one modified full containment work area of the entire Building interior. This will be the last gross removal operation. Please refer to Attachment V – Remediation Operations Logistics plans to view diagrams of the elevator car locations.

Critical barriers and engineering controls installed in the Basement Level shall remain in place during the dismantling of the elevator cars. NYS DOL and NYC DEP certified asbestos handlers will employ mechanical and manual means to
dismantle the cars using saws and hammers, prying tools. Any power tools used to disturb asbestos containing material or potentially contaminated material will be equipped with HEPA filter exhaust ventilation. Elevator car components will wrapped in two layers of poly, double bagged or containerized in plasticized Gaylord boxes; properly labeled; processed through the waste decontamination facility and disposed of as asbestos waste or in accordance with any waste characterization results. The construction hoist will be dismantled at this time. Hoist components will be transported to the wash room of the waste decontamination facility. These items will be cleaned and decontaminated by either steam cleaning or wet washing. At this time access to all floors will be obtained through the A & B Stairwells. An exterior emergency and readiness hoist will be installed on the exterior of the Building at the northeast corner (corner of Park Place and West Broadway) before elevator access is eliminated during the dismantling of the elevator cars.

Elevators shafts on the upper floors will be cleaned and decontaminated from the top down in three floor blocks. The elevator shafts will be sealed off in three floor intervals (top of the third floor in a block and the bottom of the first floor in a block) corresponding with the segmentation of the floors during the remediation and abatement. Temporary support beams will be installed across existing structural supports at each floor level within each elevator shaft. Supports will be made of a durable material that will be capable of sustaining the load of workers decontaminating the interior of the elevator shafts. Solid wood work platforms will be secured to the support beams in the elevator shafts on each floor in order to provide access to the interior surfaces to perform decontamination. Workers performing the decontamination of interior shaft surfaces will utilize proper fall protection as defined in Regulatory Submittal Part III(R) - Remediation HASP when working off of the platforms within the elevator shafts. Guardrails will be installed at open elevator shafts. The elevator shafts in the Basement Level will be cleaned separately from the elevator shafts on the upper floors.

Please note that there are no asbestos containing materials present within the elevator shafts. All interior shaft surfaces, including elevator cables will be subject to a combination of steam and wet cleaning methods in order to remove all residual grease, dust and debris. Run off water will be collected in basins at the bottom level of each shaft work area. Collected water will be absorbed utilizing mops and rags. All used water collection materials will be loaded into plasticized Gaylord boxes. Boxes will be sealed, wrapped in poly or fitted plastic sleeves, properly labeled and processed through a waste decontamination facility for disposal as asbestos containing waste or in accordance with any waste characterization results. Once the decontamination of all shafts is complete, the working platforms will be removed leaving only the three floor barriers in place.

Please note that at no time and under no circumstances during remediation operations will any material, equipment, debris or items be dropped down or
allowed to fall down any elevator shaft for any distance. All required permitting for the decommissioning of the elevators will be obtained and maintained by the contractor.

6.14.1 Provision of Access from Exterior Readiness Hoist

Prior to the dismantling of the last active elevator car, an exterior readiness hoist will be provided for use by emergency personnel to gain access to the building interior during the remediation operation. The readiness hoist will not be used to transport remediation personnel, materials or equipment. The readiness hoist will be located at the northeast corner of the site where two bays of scaffolding have been left out on each floor to allow for the hoist installation.

The exterior readiness hoist will be equipped to stop at every floor. At the hoist landing point on each floor, a section of window will be removed and replaced with an emergency kick-away panel constructed of plywood and attached over the window opening from the outside with screws. NYS DOL and NYC DEP certified asbestos handlers will mobilize to each hoist landing point interior to the Building and perform the following remediation procedure in order to install the kick-away panels.

The Primary Personal Decontamination Facility will be used by NYS DOL and NYC DEP certified asbestos handlers working interior to the Building during the provision of hoist access remediation activities. NYS DOL and NYC DEP certified asbestos handlers will remove the existing critical barrier that was installed during the installation of the modified full containment for remediation activities. The window will remain closed but will be left unlatched for cleaning from the exterior of the building. Once the barrier is removed from the affected window, NYS DOL and NYC DEP certified asbestos handlers will clean the surface of the window by HEPA vacuuming and wet wiping. After the window surface has been cleaned, a frame constructed of wood studs and poly will be installed interior to the Building around the entire section of window to be removed. The frame will be installed so that approximately three to four inches (3” to 4”) of space remains between the poly on the frame and the window surface. The frame barrier will sealed around the affected window so that there is no air transfer between the building interior and the affected window.

NYS DOL and NYC DEP certified asbestos handlers outside of the Building will mobilize to a suspended scaffolding system installed at the roof level and accessed from the ground level. The suspended scaffold system will be operated in the area on the northeast corner of the site.
where the scaffold bays have been left out for the hoist installation. All remediation personnel utilizing the suspended scaffolding system will hold valid certification to operate the system. The Owner’s Environmental Consultant NYS DOL certified air sampling technician will run asbestos air sampling on the suspended scaffold platform during the window removal work exterior to the Building. NYS DOL and NYC DEP certified asbestos handlers will move the suspended scaffolding system to the affected window. The window will be opened from the outside and cleaned by HEPA vacuuming and wet wiping. The poly frame barrier will also be cleaned at this time be HEPA vacuuming and wet wiping. The NYS DOL and NYC DEP certified asbestos supervisor will then perform a visual inspection of the affected window work area. Once the work area is acceptable to the NYS DOL and NYC DEP certified asbestos supervisor, the Owner’s Environmental Consultant NYS DOL certified project monitor will perform a visual inspection of the affected window work area. Once the work area passes OEC visual inspection, the window will be removed.

Prior to the window removal, NYS DOL and NYC DEP certified asbestos handlers will prepare kick out panels for installation. The panels will be made of three-eighth inch (3/8”) plywood and scored with circular saws to allow them to be breeched in the event that emergency personnel require access to the Building interior from the readiness hoist. The surface of the scored panels that will be installed facing the Building interior will be plasticized with two layers of 6mil poly to render this surface cleanable. Once prepared, the panels will be stored on site until installation.

After the affected window has passed visual inspections, NYS DOL and NYC DEP certified asbestos handlers will access it from the outside via the suspended scaffolding system. NYS DOL and NYC DEP certified asbestos handlers will use manual and mechanical means to remove the window. Any power tools used to disturb asbestos containing material or potentially contaminated material will be equipped with HEPA filter exhaust ventilation. Once removed the affected window will be wrapped in two layers of 6mil poly and lowered to the ground level on the suspended scaffold system for disposal as asbestos waste or in accordance with any waste characterization results. NYS DOL and NYC DEP certified asbestos handlers will then install the prepared kick-away panels over the removed windows. The prepared panels will be installed with the poly side facing in to the Building and the scored side facing out of the Building. Panels will be fastened directly to the mullions with screw guns sealing the window opening. Once installed, the exterior surface of the kick-away panels will be marked with fluorescent paint for identification by emergency personnel. After all kick away panels are installed, NYS DOL and NYC DEP certified asbestos handlers will enter the interior of the
Building and remove the poly frame barriers from the kick-away panel locations. The barriers will be broken down and containerized in Gaylord boxes or 6mil asbestos bags for disposal as asbestos waste or in accordance with any waste characterization results.

6.15 Remediation of the First Floor East Side Lobby & Elevator Banks

Once the electrical closets have been decontaminated and the work areas decontaminated on all floors above the Basement Level, work will commence on the decontamination of the First Floor East Side Lobby and Elevator Banks. To view the layout of the East Side Lobby and Elevator Banks refer to the drawing titled Decontamination of the Clean Zone and Upper Level Access in Attachment V – Remediation Operations Logistics Plans. The personal and waste decontamination facilities used for the remediation of the upper floors will remain in place and be utilized during this operation. The removal of Building components will be performed in the same manner as detailed above in Sections 6.7 through 6.11. All surfaces will be cleaned by HEPA vacuuming and wet wiping.

6.16 Heavy Machinery & Equipment Removal

Heavy machinery and equipment, such as elevator machines, cooling towers and water heaters are constructed of many intricately operable components. In some cases this machinery and equipment utilizes a lubricant such as oil or grease on operable components. It is not believed that it is possible to fully decontaminate all components, particularly those affected by oil, grease or other lubricants. It is the Contractor’s belief that heavy machinery and equipment must be disposed of as asbestos waste at a minimum or in accordance with any waste characterization results. These items will be dismantled into sections and wrapped with two layers of poly and decontaminated prior to disposal. Given the weight of these items, it is necessary to perform the removal of heavy machinery and equipment during the deconstruction phase in order to utilize rigging equipment that will be on site for deconstruction activities. Large items that cannot be decontaminated or dismantled will be wrapped in poly for rigging and removal. Heavy machinery and equipment such as generators, air handling units, elevator motors and cooling tower components that cannot be decontaminated will also be removed during the deconstruction phase. These items will require that some structural demolition be performed prior to their removal. The items will be wrapped in two layers of poly during the Remediation Phase so that air clearances can be obtained. This procedure will be detailed in full in Regulatory Submittal Part I (D) – Deconstruction Operation to be submitted under separate cover.

6.17 Spandrel Mastic, Kneewall, Brick & Mortar Removal
In order to access spandrel beam mastic, it will be necessary to deconstruct certain structural components prior to its abatement. Additionally, it is the intent of the project design that block kneewall (including any affiliated asbestos mastic), fascia brick and affiliated mortar will be removed during deconstruction operations. This procedure will be detailed in full in Regulatory Submittal Part I (D) – Deconstruction Operation to be submitted under separate cover.

Results of the Owner’s Environmental Consultant NYS DOL certified project monitor visual inspection of all scaffold attachment façade openings and waste characterization results obtained during the SEO will be applied to work procedure planning. Please refer to Attachment D of Regulatory Submittal Part IV- Waste Sampling and Management Plan to view the waste characterization results. If Gash Area and Non-Gash-Area brick is determined to require environmentally-controlled handling, removal and disposal it will be performed during the Deconstruction Phase. Exact scope, procedure and sequence for this work, if required will be detailed in Regulatory Submittal Part I(D) – Deconstruction Operations submitted under separate cover.

The Owner’s Environmental Consultant NYS DOL certified project monitor’s visual inspection of all scaffold attachment façade openings and waste characterization results have determined that Gash Area and Non-Gash Area brick and mortar are not impacted by suspect WTC dust and that provided these materials are not impacted by ACM they will be suitable for disposal as conventional construction and demolition (C&D) waste. The conclusion to dispose brick and mortar as C&D waste is based on a report documenting the results of the visual inspection of the entire façade and façade penetrations and the waste characterization results obtained by the Owner’s Environmental Consultant NYS DOL certified Inspectors during the SEO that determined that the brick and mortar are not impacted by suspect WTC dust and therefore are suitable for disposal as C&D waste provided these materials are not impacted by ACM. Refer to Attachment D of Regulatory Submittal Part IV- Waste Sampling and Management Plan to view the waste characterization results.

6.18 Final Cleaning & Clearance – Basement Level & Upper Floors

Although the interior of the Building will be one large containment area, PAL will clear floors in blocks of three at a time. It is our belief that this measure of clearance is more stringent than clearing the entire containment at once.

Negative air ventilation units will continue to operate in all locations until successful air clearance is achieved. All access throughout the Building will be via the Stairwells A & B. Cleaning activities will begin on the uppermost floor and progress downward in three floor block intervals. The cleaning and clearance of Stairwells A & B will occur simultaneously with the cleaning and clearance of the upper levels in blocks of three floors. Refer to Attachment XI – Configuration
of Fine Cleaning Work Areas to view elevations of Stairwells A & B configuration during final cleaning and clearance. All surfaces and all barriers will be subject to HEPA vacuuming and wet wiping including all surfaces within Stairwells A & B and the interior surfaces of the kick-away panels installed for access from the readiness hoist as the cleaning activities progress downward. All residual dust and debris that remains on all floors, including the Basement and Stairwells A & B will be cleaned by these methods. All used cleaning materials generated during the final cleaning throughout the entire Building will be double bagged, properly labeled, processed through either the Primary Waste Decontamination Facility or the waste decontamination facility at the east side lobby and disposed of as asbestos waste or in accordance with any waste characterization results.

Cleaning activities will be performed by NYS DOL and NYC DEP certified asbestos handlers utilizing the PPE outlined above in Section 6.0. Access to the interior of the Building for cleaning will be obtained as follows. After the completion of removals on all floors, a decontamination unit will be installed on the main roof level at the entrance to Stairwell A. Workers will access the main roof level by either the exterior scaffolding system or by Stairwell C from the First Floor Clean Zone. Once the decontamination facility is in place at the main roof level entrance to Stairwell A, workers will proceed down to the 13th Floor level and install critical barriers at all points of vertical air transfer. Environmental barriers for work area segregation during final cleaning activities shall be constructed of three layers of poly and metal studs. Please refer to Attachment XI – Configuration of Fine Cleaning Work Areas to see locations of these barriers. Low adhesive tape installed around the seams of doors into Stairwell C on Floors 15 through 13 during the establishment of the interior containment will remain in place. The environmental barriers to be installed in Stairwells A & B to segregate the interior containment into three floor blocks for cleaning shall be made in two parts. The stairwell barrier shall be installed down the railing from the ceiling to the stairs and across the landing to segregate the work area from the stairs going down. After all environmental barriers are in place at the 13th Floor Level cleaning activities will commence as outlined above. After the uppermost block of floors (15 through 13) have been cleaned, passed visual inspection by the Contractor NYS DOL and NYC DEP certified asbestos supervisor, passed visual inspection by the Owner’s Environmental Consultant NYS certified project monitor and passed visual inspection by the regulators and passed air clearance, as outlined below, cleaning activities will progress to the adjacent three floor block (floors 12 through 10). Environmental barriers segregating cleaned and cleared Floors 15 through 13 shall remain in place until the adjacent three floor block (12 through 10) has passed clearance. After clearance is achieved on Floors 15 through 13 the low adhesive tape around the doors to the C Stairwell will be removed on these floors to provide clean access to the cleaned and cleared floors from the First Floor Clean Zone. The decontamination facility at the roof level entrance to Stairwell A will be broken down. A decontamination facility will then be installed.
inside the building at the 13th Floor entrance to Stairwell B. All interior decontamination facilities installed on the upper floors for fine cleaning activities will be equipped with FDNY emergency access doors. Emergency access doors will be clearly marked and will lead directly out of the decons from the equipment room chambers and onto the environmentally cleared floors. Once this decontamination facility is in place workers will install another environmental barrier across the stairs going up and attached directly to the existing barrier across the landing and up the railing to segregate the cleaned and cleared work area above from the block of floors to be cleaned (Floors 12 through 10 in this example). After the barrier over the stairs going up is installed, the barrier on the landing will be breached, leaving the barrier up the railing in place and opening up access to the stairs going down to the work area below. Workers will then proceed down to the 10th Floor level and install environmental barriers at all points of vertical air transfer. Low adhesive tape installed around the seams of the doors into Stairwell C on Floors 12 through 10 during the establishment of the interior containment will remain in place. After all environmental barriers are in place at the 10th Floor Level cleaning activities will commence. After this block of floors (12 through 10) has been cleaned, passed visual inspection by the Contractor NYS DOL and NYC DEP certified asbestos supervisor, passed visual inspection by the Owner’s Environmental Consultant NYS certified project monitor and passed visual inspection by the regulators and passed air clearance, as outlined below, cleaning activities will progress to the adjacent three floor block (floors 9 through 7). Environmental barriers segregating cleaned and cleared Floors 12 through 10 will remain in place until the adjacent three floor block (9 through 7) has passed clearance. After clearance is achieved on Floors 12 through 10 the low adhesive tape around the doors to Stairwell C will be removed on these floors to provide clean access to the cleaned and cleared floors from the First Floor Clean Zone. The decontamination facility at the 13th Floor entrance to the B Stairwell will be broken down. A decontamination facility will then be installed inside the building on the 10th Floor at the entrance to Stairwell B. Once this decontamination facility is in place workers will install an environmental barrier across the stairs going up and remove the part of the environmental barrier across the landing, leaving the barrier up the railing in place to open up access to the stairs going down into the work area. This procedure will be repeated as the cleaning activities progress downward until the entire Building has been cleaned and cleared.

Shoring in support of the scaffolding on the 5th & 14th Floor Setback Roofs will be decontaminated by HEPA vacuuming and wet-wiping once cleaning activities progress down to those areas. The Primary Waste Decon will be utilized during the decontamination of shoring. After cleaning, the shoring beneath the Setback Roof Levels will remain in place since the scaffold must remain in place for the deconstruction. As the deconstruction activities proceed down the Building, the scaffolding will be taken down level by level by deconstruction personnel. Once the deconstruction activities reach a Setback Roof Level and the exterior
scaffolding on that Roof Level has been removed, the deconstruction personnel will remove the shoring beneath the affected level.

When cleaning activities reach the shedder area, the shredder will be cleaned of all residual dust and debris that may accumulate during its operation. NYS DOL and NYC DEP certified asbestos handlers will HEPA vacuum and wet-wipe the shredder. This cleaning will coincide with the cleaning activities in the First Floor Clean Zone Shredder Area. Once the shredder has been cleaned, the Owner’s Environmental Consultant certified project monitor will perform a visual inspection of the machine to ensure all residual dust and debris has been removed. The machine will remain in place until the Shredder Area has passed final air clearance at which time it will be removed by the same rigging operation used for installation. Please note that the engine unit on the shredder is fully sealed.

Since the cleaning procedure will progress from the top floor downward, the last area where cleaning activities will commence be the Basement Level. Critical barriers and engineering controls installed in the Basement shall remain in place until clearance is achieved on this level. All means of vertical air transfer between the Basement and cleared areas above will remain sealed with critical barriers. After the Shredder Zone on the First Floor has been cleared and the shredder removed, the shoring in Basement in support of the machine will be dismantled. Shoring installed in the Basement to support the shredder will be decontaminated by HEPA vacuuming and wet-wiping. Any adjustable shoring for the shredder will be dismantled so that the individual sections can be decontaminated. The structural surfaces where shredder shoring had been installed will be cleaned by HEPA vacuuming and wet-wiping. Structural surfaces remaining in the Basement Level will be cleaned via HEPA vacuuming and wet wiping. The Primary Waste Decon will be utilized during the decontamination of the shredder shoring and the cleaning of the Basement Level.

Upon completion of final cleaning activities in each work area, a visual inspection of the subject block of floors will be performed by the Contractor NYS DOL and NYC DEP certified asbestos supervisor. Once the subject block of floors is deemed satisfactory to the Contractor NYS DOL and NYC DEP certified asbestos supervisor a visual inspection will be performed by the Owner’s Environmental Consultant certified project monitor. These visual inspections will also include visual inspection of cleaned shoring. To review the visual inspection procedure, please refer to Section 5.4. Once a three floor block has passed the Owner’s Environmental Consultant’s NYS DOL certified project monitor visual inspection, the regulators will be contacted to perform regulatory visual inspection of the subject block of floors. Twenty-four (24) hour notice will be provided to the regulators prior to the date of regulatory visual inspection. After the subject block of floors has passed regulatory visual inspection, final aggressive air clearance will be run by the Owner’s Environmental Consultant.
NYS DOL certified air sampling technician. Please refer to Section 6.19 for clearance criteria.

**Aggressive Sampling Techniques:**

The following aggressive sampling techniques will be utilized for clearance of every work area:

**Pre-Sampling Agitation:** Before starting the air sampling pumps, the exhaust of forced air equipment (i.e., leaf blowers) will be directed at all walls, ceilings, floors, ledges, and other surfaces in the room(s). This will continue for at least five (5) minutes per 1000 sf of floor space. The following is a list of pre-sampling agitation durations by floor:

The Basement is 26,492 square feet. Pre-sampling agitation will be performed for 135 minutes prior to the activation of sampling pumps in this area.

The Shredder Area is 1,840 square feet. Pre-sampling agitation will be performed for 1 minute prior to the activation of sampling pumps in this area.

Each floor in the range from the Second Floor to Fifth Floor is 26,492 square feet. Pre-sampling agitation will be performed for 135 minutes prior to the activation of sampling pumps in these areas.

Each floor in the range from the Sixth Floor to Fourteenth Floor is 21,061 square feet. Pre-sampling agitation will be performed for 110 minutes prior to the activation of sampling pumps in these areas.

The Fifteenth Floor is 17,518 square feet. Pre-sampling agitation will be performed for 90 minutes prior to the activation of sampling pumps in this area.

Elevator Machine Room is 1,512 square feet. Pre-sampling agitation will be performed for 10 minutes prior to the activation of sampling pumps in this area.

**Ongoing Agitation:** At least a 20-inch fan will be placed in the center of each room. One fan per 10,000 cubic feet of room space will be used. The fan will be operated on slow speed and pointed toward the ceiling. The following is a list of the number of fans to be installed throughout the building in order to maintain ongoing agitation:

The Basement is 317,904 cubic feet. The number of fans to be installed in this area to maintain ongoing agitation is 32.
The Shredder Area is 55,200 cubic feet. The number of fans to be installed in this area to maintain ongoing agitation is 6.

Each floor in the range from the Second Floor to Fifth Floor is 317,904 cubic feet. The number of fans to be installed in these areas to maintain ongoing agitation is 32.

Each floor in the range from the Sixth Floor to Fourteenth Floor is 252,732 cubic feet. The number of fans to be installed in these areas to maintain ongoing agitation is 32.

The Fifteenth Floor is 210,216 cubic feet. The number of fans to be installed in this area to maintain ongoing agitation is 21.

Elevator Machine Room is 18,144 cubic feet. The number of fans to be installed in this area to maintain ongoing agitation is 2.

**Begin Sampling:** The sampling pumps will then be turned on.

**End Sampling:** When the sampling has been completed, the sampling pumps will be turned off first, followed by the fan(s).

After successful clearance is achieved lockdown encapsulant will be applied. After encapsulation, the modified full containment on the subject three floor block will be broken down. This procedure will be repeated until all floors have passed visual inspection, successful air clearance has been achieved on all floors, all floors have been encapsulated and all critical barriers and barrier walls have been removed. Upon completion of the final clearance of all floors the Primary Personal Decontamination Facility and the Primary Waste Decontamination Facility will be dismantled.

The following items will remain on the upper floors in the Building after the completion of removals, cleaning and clearance:

- Steel Structurals
- Metal Hangers and Attachment Mechanisms
- Masonry Walls
- Concrete Deck
- Concrete Floor Slab
- Glass Window Wall
- Steel & Masonry Columns
- Cables

The following asbestos containing materials will remain on the upper floors in the Building after the completion of removals, cleaning and clearance:
• Non-friable ACM mastic on interior masonry block kneewall surfaces
• Non-friable ACM mastic on exterior spandrel beam web surfaces

The following items will remain in Stairwells A & B after the completion of removals, cleaning and clearance:

• Steel Structurals
• Metal Hangers and Attachment Mechanisms
• Steel Stairs
• Steel Handrails
• Stand Pipe
• Concrete Deck
• Concrete Slab
• Masonry Walls

Please note that all masonry surfaces that will remain will have been cleaned by HEPA vacuuming and wet wiping during remediation operations. These surfaces will have passed visual inspection and final air clearance and been encapsulated.

6.19 Work Area Clearance Criteria

The clearance criteria to be applied to all Remediation Phase work areas will consist of visual inspection by the Contractor’s NYS DOL and NYC DEP certified asbestos supervisor, visual inspection by the Owner’s Environmental Consultant NYS DOL certified project monitor in accordance with Section 5.4 of this work plan, visual inspection by the regulators and aggressive air sampling for asbestos and metals.

After visual inspection of the Remediation Phase work areas by the Contractor NYS DOL and NYC DEP certified asbestos supervisor the Owner’s Environmental Consultant NYS DOL certified project monitor will be contacted to perform OEC visual inspection. Upon notification by the Contractor NYS DOL and NYC DEP certified asbestos supervisor that a Remediation Phase work area is clean and ready for visual inspection, the Owner’s Environmental Consultant NYS DOL certified project monitor will conduct a thorough visual inspection of all surfaces and areas of the subject work area. If the visual inspection reveals that dust and debris remain, these specific areas will be identified by marking and logged for future reference. The Contractor will be required to re-clean the identified areas. When work area conditions are acceptable to the Owner's Environmental Consultant, the regulators will be contacted to perform regulatory visual inspection. Twenty-four (24) hour notice will be provided to the regulators prior to a visual inspection. After the area has passed regulatory visual inspection,
aggressive air sampling will be conducted by the OEC NYS DOL certified air sampling technician.

The work areas will be considered cleared and can be removed from containment when area air measurements, performed using aggressive air sampling procedures which re-suspend residual settled dusts, are at or below each of the following airborne concentrations in every sample, respectively, for the metals noted below and for asbestos. Air testing for asbestos shall be in accordance with applicable regulations and applicable permits and variances for this project. If any one sample is above any of these limits, then the Remediation Phase will be considered incomplete, and the affected areas shall be re-cleaned and re-tested until the airborne concentrations are at or below the levels noted for asbestos and metals.

All air testing shall be performed by an NYS DOL certified air sampling technician in compliance with ICR 56 Clearance testing for asbestos will be conducted by floor, and will be acceptable when all samples for a given floor area are less than the seventy structures per square millimeter TEM standard. Clearance testing for metals will be acceptable when all samples meet the following criteria:

<table>
<thead>
<tr>
<th>Substance</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antimony</td>
<td>250 ug/m3</td>
</tr>
<tr>
<td>Barium</td>
<td>250 ug/m3</td>
</tr>
<tr>
<td>Beryllium</td>
<td>1.0 ug/m3</td>
</tr>
<tr>
<td>Cadmium</td>
<td>5.0 ug/m3</td>
</tr>
<tr>
<td>Chromium (III)</td>
<td>250 ug/m3</td>
</tr>
<tr>
<td>Copper</td>
<td>500 ug/m3</td>
</tr>
<tr>
<td>Lead</td>
<td>25 ug/m3</td>
</tr>
<tr>
<td>Manganese</td>
<td>100 ug/m3</td>
</tr>
<tr>
<td>Mercury</td>
<td>12.5 ug/m3</td>
</tr>
<tr>
<td>Nickel</td>
<td>50 ug/m3</td>
</tr>
<tr>
<td>Zinc</td>
<td>1,000 ug/m3</td>
</tr>
</tbody>
</table>

Clearance sampling will be conducted in blocks of a maximum of three floors as follows:

**Asbestos:** Five inside work area (IWA) asbestos samples will be collected from each floor (fifteen total for a block of three floors). A minimum of two out of the five IWA samples will be collected in the vicinity of stairwells inside work area. Five outside work area (OWA) asbestos samples will be collected for each block of three floors from areas outside the block of floors (roof, scaffold, negative air exhaust, previously cleared areas, etc.).
**Metals:** Five inside work area (IWA) samples will be collected from each floor (fifteen total for a block of three floors). A minimum of two out of the five IWA samples will be collected in the vicinity of stairwells inside work area.

All samples will be collected using aggressive sampling techniques in compliance with applicable clearance sampling criteria. All clearance samples for each block of floors will be run on all floors simultaneously. Details on sampling methodologies are included in the ECAMP document (Regulatory Submittal Part II).

### 6.20 Cleaning and Clearance of the Electrical Closets

The cleaning and clearance of the electrical closets will be performed by modified full containment. The Building electrical system is equipped with the capability to shut down the electricity from the Basement level electrical control switch. Prior to the cleaning and clearance of an electrical closet the power to that closet will be shut down from the Basement Level electrical control switch. Power required to complete the cleaning and clearance of the affected electrical closet will be run up the Stairwell C from a lower floor with cables or extension cords. To view diagrams of the location of electrical closets on each floor please refer to Attachment XIII – Electrical Logistics. A remote personal decontamination facility will be used for the remediation of the electrical closets. This remote decontamination facility will be exterior to the Building on the west side of the site. After the clearance of the Basement Level and Upper Floors NYS DOL and NYC DEP certified asbestos handlers will install modified full containments in the electrical closets. The modified full containments will be equipped with air locks sized to allow the decontamination of minimal amount of waste to be generated during the cleaning and clearance of the electrical closets. HEPA vacuums will be installed at each electrical closet modified full containment to provide negative pressure of 0.02” water column. When the exterior remote decontamination facility is in place and operational NYS DOL and NYC DEP certified asbestos handlers will enter the modified full containments and remove the critical barrier over the electrical closet where cleaning and clearance will be performed. All electrical panels, components and conduits will be removed by manual or mechanical methods. Any power tools used to disturb asbestos containing material or potentially contaminated material will be equipped with HEPA filter exhaust ventilation. After all electrical components have been removed from within a closet, all of the interior surfaces will HEPA vacuumed and wet wiped to remove all residual dust and debris. All waste generated during the remediation of electrical closets will be double bagged, properly labeled, processed through the exterior remote decontamination facility for disposal as asbestos waste or in accordance with any waste characterization results.

After cleaning activities are completed in an electrical closet work area, one twelve hour settling/drying period will then be observed in order to allow all surfaces to dry.
At the end of this settling/drying period, the contractor NYS DOL and NYC DEP certified asbestos supervisor will conduct a visual inspection of the modified full containment work area. Once the work area conditions are acceptable to the contractor NYS DOL and NYC DEP certified asbestos supervisor the Owner’s Environmental Consultant NYS DOL certified project monitor will perform a visual inspection of an electrical closet work area. After an electrical closet work area has passed OEC visual inspection, aggressive clearance air sampling will be performed by the Owner’s Environmental Consultant NYS DOL certified air sampling technician. Prior to sampling, pre-sampling agitation will be performed by the OEC NYS DOL certified air sampling technician. Before starting the air sampling pumps, the exhaust of forced air equipment (i.e., leaf blowers) will be directed at all walls, ceilings floors, ledges, and other surfaces in the room(s). This will continue for at least five (5) minutes per 1000 sf of floor space. An electrical closet work area is work area is 25 square feet. Pre-sampling agitation will be performed for five (5) minutes prior to the activation of sampling pumps. Ongoing agitation will be maintained during sampling. One 20-inch fan will be placed in each electrical closet work area. One fan per 10,000 cubic feet of room space will be used. The fan will be operated on slow speed and pointed toward the ceiling. The total cubic footage of an electrical closet work area is 250 cubic feet.

Air clearance of electrical closets will be conducted according to the amount of material (ACM or WTC Dust-contaminated) that is removed from the work area, as determined by the OEC Project Monitor. If a minor (<10sf/<25lf) quantity of material is removed, sampling will be performed as follows: 1 inside the work area (IWA) TEM asbestos air sample and 1 outside the work area (OWA) TEM asbestos air sample per electrical closet work area. An electrical closet work area will be considered cleared once TEM results are less than seventy (70) structures per millimeter squared (mm²). An equal number of metals samples will be collected IWA. No OWA metals samples will be collected. If a small (<160sf/<260lf) quantity of material is abated from the closet, small project sampling (3 IWA ACM/3OWA ACM plus 3 IWA metals) will be performed. It is not anticipated that large project quantities will be removed from electrical closets.

Once successful clearance is achieved in an electrical closet work area, that work area will be broken down.

7.0 Anticipated Waste Generation

It is anticipated that remediation operations will generate six thousand cubic yards of conventional waste, seven thousand cubic yards of asbestos waste, two drums of lead waste and two hundred fifty drums of Universal Waste. Where uncharacterized or unanticipated waste streams require RCRA characteristic
testing, the waste will be characterized according to any exceedances of RCRA parameters.

After asbestos waste has been decontaminated, it will be brought directly to asbestos waste trailers parked in the Primary Loading Dock or the West Broadway lane closure.

Remediation work processes will be controlled by the Contractor so that directly after Gaylord boxes are full and sealed they will be moved from the work area, decontaminated and loaded into asbestos waste trailers. All full boxes will be moved out of the work area by the end of every day.

In the event of an emergency where waste trailers are unavailable and boxes of debris will remain in the work area the Contractor will immediately cease generation of further waste. Remaining boxes of debris will be organized in a manner that does not impede egress. The Contractor will notify the FDNY immediately and inform the FDNY’s designated representatives of the situation and the location and quantity of all boxes of debris in the building. The Contractor will work diligently to resolve the emergency in an expeditious manner so that waste flow can resume.

After conventional waste has been cleaned it will be transported on wheeled carts and/or pallet jacks to the Secondary Loading Dock or to the West Broadway lane closure and either stored until enough conventional waste is accumulated for a truckload or live-loaded directly into compactor trucks or conventional waste dumpsters in the Secondary Loading Dock or the West Broadway lane closure. All carts used for transport of ACM or potentially contaminated materials will be water tight and have doors or tops that will be closed and secured during transport.

After lead waste has been decontaminated it will be brought directly to the lead waste chamber of the exterior waste storage facility. Once lead waste is prepared for transport, trucks will be docked in the Greenwich Street lane closure. Lead waste will be moved on wheeled carts and/or pallet jacks to the Greenwich Street lane closure and loaded onto the transport trucks.

After universal waste has been decontaminated it will be brought directly to the universal waste chamber of the exterior waste storage facility. Once enough universal waste is accumulated, transport trucks will be docked in the Greenwich Street lane closure. Universal waste will be moved on wheeled carts and/or pallet jacks to the Greenwich Street lane closure and loaded onto the transport trucks.

After assumed PCB waste has been decontaminated it will be brought directly to the assumed PCB chamber of the exterior waste storage facility. Once enough assumed PCB waste is accumulated, transport trucks will be docked in the
Greenwich Street lane closure. Assumed PCB waste will be moved on wheeled carts and/or pallet jacks to the Greenwich Street lane closure and loaded onto the transport trucks.

To view a diagram of the waste storage facility, refer to Attachment XV – Configuration of Waste Storage Facility.

### 8.0 Site Work:

PAL Environmental will perform proper dust control at all times during the remediation and abatement work. The procedures to be followed with regards to visible emissions are specified in the ECAMP.

PAL Environmental will comply with all federal and local laws regarding noise control.

All work will be done by appropriately qualified labor. PAL Environmental will be responsible for employing qualified tradesmen for the duration of the PAL’s contract work on this project.

Once the remediation operation is completed, the contractor will leave a clean site with the scaffolding fully in place.

The following list of the surfaces to remain after the completion of remediation and the clearance of the Building:

- Steel Structurals
- Steel Stairs and Handrails
- Metal Hangers and Attachment Mechanisms
- Masonry Walls (including kneewall with ACM mastic)
- Concrete Deck
- Concrete Floor Slab
- Glass Window Wall
- Steel & Masonry Columns
- Cables

Please note that all surfaces that will remain will have been cleaned by HEPA vacuuming and wet wiping during remediation operations. These surfaces will have passed visual inspection, the work areas will have passed final air clearance and all surfaces will have been encapsulated. Details for the removal of ACM mastic will be provided in Part I(D) – Deconstruction Operations Work Plan to be submitted to the regulators under separate cover.

### 9.0 Fire Protection
The following fire protection measures will be implemented and maintained during the remediation operations at Fiterman Hall.

- A zero tolerance policy regarding smoking and open fires has been implemented and will be enforced at all times during the remediation operations.
- The existing standpipe system, comprised of two connected risers, has been tested and is functional. Standpipes are located in Stairwell B and Stairwell C and siamese connectors are located at the construction fence line, outside of the fence, on the northeast (corner of Park Place & West Broadway) and southwest (corner of Barclay & Greenwich) sides of the Building. The siamese locations are marked by the required signage and lighting. The standpipe system will be maintained as a dry system and will be inspected regularly. The standpipe system will remain intact and operational for the duration of the remediation operations.
- Siamese connections and hydrants at the site will be maintained free of obstructions. NYC DEP – Water Board Hydrant Use Permits are currently in effect on site. Hoses will be attached to hydrants when in use.
- FDNY guidelines for fire extinguisher availability will be complied with.
- Access to the Building interior for FDNY will be maintained free of obstruction at the West Broadway ground floor entrance identified by FDNY personnel as the designated point of FDNY access. Please refer to Attachment V – Remediation Operations Logistics Plans and Attachment IX – Work Area Engineering Controls Diagrams to view the FDNY access point.
- Plywood brought to the building for use during the remediation operations will be fire retardant. Where practicable non-wood, non-combustible wallboard products will be considered for use in place of plywood.
- Partition studs to be installed interior to the building will be of metal construction.
- Only fire retardant polyethylene sheathing will be used during the remediation operations.
- A project status board will be kept at the entrance level to provide updates on the progress of the work including the locations of environmental barriers and decontamination facilities.
- Pull stations will be installed at the entrances to fire stairs on all floors. Pull stations will be connected to the Fiterman Hall guard booth. In the event of an alarm the guard on duty will be responsible for contacting first responders by calling 911.
- Decontamination facilities to be installed interior to the building for usage during the remediation operations will be constructed of metal studs, 3/8 inch fire retardant plywood panels, and double 5/8 inch fire retardant sheetrock outer sheathing. The interior surfaces of the decontamination facilities will be lined with two layers of fire retardant polyethylene sheeting attached to the
plywood. The interior areas of the decontamination facilities will be segregated into chambers by fire retardant polyethylene curtains as required by the environmental regulations under which the remediation operations will be performed. The exterior surfaces of the decontamination facilities will be clad with two layers of 5/8 inch fire-rated sheetrock forming a shell around the entirety of each structure. The joints of the sheetrock cladding will be sealed with firestop caulking. If any damage occurs to the sheetrock decontamination facility enclosures during remediation the damaged sheetrock will be repaired or replaced. Each decontamination facility will be equipped where practicable with a self-closing metal fire doors and frames or will utilize existing fire doors. Where work processes and/or work area configuration makes the use of commercially-available doors impractical, doors will be self closing and constructed of 3/8 inch plywood with metal hinges and clad on the exterior surface with two layers of 5/8 inch sheetrock. A system to provide the automated closure of doors on decontamination facilities in the event of a fire emergency will be installed at each decon location identified by FDNY. The specifications of the system to be installed will be provided to FDNY for review prior to installation.

- Interior decontamination facilities installed on the upper floors for fine cleaning activities will be equipped with emergency access doors. Emergency access doors will be clearly marked and will lead directly out of the decons from the equipment room chambers and onto the environmentally cleared floors.

- Waste storage facility will be constructed exterior to the building, within the site on the Park Place & Greenwich corner. Exterior waste storage facility will be constructed of fire retardant wood studs and 3/8 inch fire retardant plywood panels. The interior plywood surfaces of waste storage facilities will be lined with two layers of fire retardant polyethylene sheeting.

- Fireguard personnel, holding valid certificates of fitness, will patrol the site and building from the completion of the last shift of the day until midnight. At midnight, firewatch personnel will patrol the site and building from midnight to the beginning of the first shift of the day. On days when there are double shifts, fireguard personnel will patrol the site and building from the conclusion of the second shift until the beginning of the first shift the next day. On days when no work is being performed such as weekends, firewatch personnel will patrol the site and building twenty-four (24) hours a day. Fireguard and firewatch tours will be recorded with a Detex System, or similar recording system.

- An electrical shut down control switch, or bank of switches, will be installed exterior to the Building at the ground level in the temporary electric shed at the northwest corner of the site (corner of Greenwich Street and Park Place), to allow power to the negative pressure ventilation system to be shut down from one location. Temporary lighting will not be connected to this shut down so that lighting will remain on in the event the negative pressure system is shut down.
The fire doors to the cleaned stairwell (Stairwell C) will be sealed off from the dirty work area on the stair side using only low adhesive tape around the seam between the door and the frame.

On Floors 3, 13 and 14, where access to and from doors in Stairwell C currently leads onto an exterior area on the south side gash, the plywood barriers will be reconfigured so that access to and from Stairwell C will lead directly into the interior of the building on these floors.

Fire doors to the two dirty stairwells inside the work area (Stairwells A & B) will remain in place for the duration of the remediation operations and will not be sealed with environmental barriers. These doors will remain closed when not in use. During fine cleaning vertical environmental barriers will be installed on stair landings. Please refer to Attachment XI, Configuration of Stair A & B for Cleaning Phase (Floors 15, 14, 13) for a drawing of typical vertical environmental barriers.

Vertical environmental barriers to be installed in Stairwells A & B during the fine cleaning and clearance phase of the remediation operation will be constructed of three layers of fire retardant polyethylene sheeting, one directly on top of another and metal studs. These barriers will be vertical in orientation only. Each barrier will be framed with a clearly marked emergency cut-away panel that is a minimum of 36 inches in width and 80 inches in height. Please refer to Diagram ECD-C1 to view a detail of a typical barrier. Environmental barriers segregating the First Floor Clean Zone from the containment of the upper floors will be constructed of five layers of poly (arranged two layers of 6mil fire retardant poly/one layer 6mil reinforced fire retardant poly / two layers of 6mil fire retardant poly) and metal studs. These barriers will be vertical in orientation only. Each barrier will be framed with a clearly marked emergency cut-away panel that is a minimum of 36 inches in width and 80 inches in height. Please refer to Diagram ECD-03 to view the location of these barriers. A clearly marked emergency cut-away panel that is a minimum of 36 inches in width and 80 inches in height will be installed in the access tunnel (constructed of fire retardant poly and metal studs) on the first floor from the south side of the building exterior to Stairwell C. Utility knives will be hung next to all vertical environmental barriers on both sides for use to breech the cut-away panels in the event of an emergency.

All tent enclosures and air locks to be installed for the remediation of the Gash Area will be constructed exterior to the building.

Remediation work processes will be controlled by the Contractor so that directly after Gaylord boxes are full and sealed they will be moved from the work area, decontaminated and loaded into asbestos waste trailers. All full boxes will be moved out of the work area by the end of every day. In the event of an emergency where waste trailers are unavailable and boxes of debris will remain in the work area the Contractor will immediately cease generation of further waste. Remaining boxes of debris will be organized in a manner that does not impede egress. The Contractor will notify the FDNY immediately and inform the FDNY’s designated representatives of the situation and the
location and quantity of all boxes of debris in the building. The Contractor will work diligently to resolve the emergency in an expeditious manner so that waste flow can resume.