Guidance Document: Project Hazmat Procedures

**Purpose:** Outline procedures, resources, and expectations for Project Managers with regard to hazmat waste (asbestos, lead, mercury, PCBs, chlorofluorocarbons, radioactive sources, chromium, other toxic metals, mold, contaminated PPE, used oil, solvents, etc.) as it relates to new construction, renovation, and utility projects.

**Note:** Regardless existing facility age, current EPA and NYSODOL regulations require an asbestos survey for any demolition or renovation project (An existing survey may be sufficient for the project work area).

**Pre-RFP / Project Scoping Phase:**
- Reach out to FCS Asbestos Coordinator and review existing pertinent hazmat surveys for project area. PM can also go to http://www.fs.cornell.edu/fs_facilFind.cfm to find information about the facility and review information filed under “Asbestos Survey Information”
- If existing survey does not exist, cover project area(s), or does not meet current EPA or NYSODOL regulations, work with Asbestos Coordinator on project approach. This could include:
  - PM, with assistance from Asbestos Coordinator, hires hazmat testing firm (blanket contract – activity is $10k or under) to complete whole building survey, or work area survey, or limited testing to augment an existing survey report. (Service request / work order in Maximo). Asbestos Coordinator on small asbestos projects set up a blanket contract for all activities under $10k (Survey, design, air-test monitoring, and post construction survey)
  - PM incorporates scope in the A/E RFP for hazmat testing and design (And potentially air-test monitoring plus post-construction survey). Actual testing may occur in early DD when project scope is better defined (Asbestos Coordinator reviews contract/RFP language).
  - Unit/College is currently working towards a complete whole building survey that can be used by the AE team commissioned for the specific project.
- Scheduling project – provide sufficient time for survey/design work during the design phase. During construction allocate time for “posting the project”, abatement prior to demolition, testing to confirm clear/safe, etc.

**Recommendation:** PM also reaches out to College/Unit building coordinator, FCS Energy and Sustainability/Utilities, EH&S, Planning Office GIS Coordinator as appropriate to determine what other hazards may be within the project area. This information may help define project scope and cost. This may include:
- Prior building activities (perchloric use in fume hood/ductwork exhaust, research that may have used mercury, radioactive isotopes, animal research, de-greasing agents, etc.)
- Site utilities - transite pipe (asbestos-cement), orangeburg pipe/conduit, coated gas line, steam line insulation
• Lessons learned from previous building renovations not apparent to visual inspection (Number of layers of roofing, covered floor finishes (VAT), ACM acoustic plaster above drop ceiling, vermiculite insulation, foundation water proofing, etc.)
• Historic maps may illustrate prior building or site usage (Foundation of old chemistry building, rail/service yard, etc.)
• Laboratory or research haz material considerations due to previous building activity

**Design Phase:**

**Identify:** Hazmat material impacted or need to be addressed by the project and documented as required to provide mechanism to procure removal or encapsulation during construction. Preference is to remove hazmat materials so that future work does not encounter these materials. Not always possible due to budget or other circumstances. Consultant and PM to understand and anticipate the types and quantities of hazardous wastes that may be generated on the project.

**Asbestos identification/survey:** if not completed during pre-design, should occur near the end of SD or early DD to best define project impacts/work area. When hazmat consultant fee is projected to be over 10k per activity (testing, design, air-test monitoring), PM would need to competitively seek these services (2 – 3-week process when non-State funds). Asbestos Coordinator can assist PM with this process.

**Destructive Testing:** Determine benefit to confirm hazmat conditions prior to bid with potential costs and disruption to site or building occupants, etc. Roof cores or opening up a mechanical chase can be very useful. Sample fire proofing and paint on structural steel. Best to have locations/quantities of abatement for competitive bidding plus unit prices for unforeseen conditions.

**Scheduling testing:** Sampling/testing duration for a small renovation project could be accomplished within 3-5 work days. An entire building survey could take up to 4 weeks. Testing for PCBs in sealant and other construction material shall wait until project is about to begin construction. If the building age/project impact lends itself to confronting potential non-conforming use of PCBs, it should be assumed within the bid documents to be contaminated and to be disposed of accordingly. (See appendix)

**Define Universal Waste GC and CU Responsibilities:** Bid documents should clearly outline requirements for both GC and CU expectations and protocols align. (Clearly indicate the contractor’s responsibilities regarding haz waste) Cornell R5 program will provide boxes for Universal Waste disposal (lamps, mercury containing switches, etc.) to the job site and contractor fill boxes. PM issues work order to R5 for cost of delivering boxes and proper disposal with their CU vendor. Existing wet lab facilities, typically have GC removal all “P-traps” and place in containers provided by and disposed by EH&S. (Provide project account number for haz waste disposal charges)

**PCBs:** Testing and finding PCBs in EPA banned uses triggers the need to remediate, even if project is canceled. Therefore, early testing for PCBs is not a practical approach to early project planning. Rule out caulking administratively based on facility age and renovation history; caulk installed post 1980 may be assumed PCB-free. Meet with EH&S to weigh risks/benefits of analyzing samples vs. assuming PCBs>50 ppm. Quantify pre-1980 caulking and sample like materials during asbestos/regulated materials survey, BUT HOLD
SAMPLES FOR LATER LABORATORY ANALYSIS! If a project plans on sampling/analysis, assume worst case (PCBs >50 ppm) when preparing construction PAR budget.

Bidding Phase:
Bid documents need to cover hazmat material by either:
- **Documents**: drawings and specifications identifying hazmat materials (asbestos, etc.) in building materials, locations, quantities that will be encountered by Contractor
- **Letter**: from Consultant confirming there are no hazmat materials within the work scope area to be sent to Contract’s Office with requesting bid

Construction Phase:
There are many items to be coordinated during the construction phase regarding hazmat material.

**Abatement permit**: City of Ithaca requires Licensed Abatement Contractor to apply directly for a permit (Not through GC permit). Cornell blanket Abatement Contractor’s already have annual permits with the City of Ithaca for abatement work on campus and do not need project specific permits within City. Electronic copy should be sent to FCS Abatement Coordinator.

**Posting**: Occupant/State/EPA Notification Requirement is 3 days for Minor Project Size (<10 SF, <25 LF asbestos) or Small Project Size (10 – 160 SF, 25 – 260 LF asbestos). For larger projects the posting duration is 10 calendar days for NYS and 10 business days for EPA.

**Variance Required**: If work cannot be completed in compliance with Code Rule 56 – variance may take 4 – 6 weeks for variance preparation, submission, and approval from NYSDOL.

**Coordination**: With by GC, PM and Shops, etc. – depending on type and size of project. Typical coordination items include building access, removal of all items from work area, electrical and water/sewer connections, shutdowns (steam, HVAC, sprinkler, fire detection, lockout/tag out electrical, etc.). Also coordinate waste storage and handling with EH&S.

**Incidental Disturbance**: If asbestos materials (ACM) are damaged (Or presumed asbestos containing materials - PACM), alert Asbestos Coordinator ASAP and they will submit an emergency project notification to NYSDOL. Abatement / clean up can commence upon NYSDOL approval by licensed asbestos abatement contractor. (Posting/occupant notification is required, but durations may be waived (3 – 10 days))
- Contractor is not to attempt clean up of ACM or PACM
- Immediately vacate room and restrict access using signage and barrier/caution tape
- Issue emergency request for service to Asbestos Coordinator by contacting Customer Service at 255-5322 and state you have an “Asbestos Incidental Disturbance”. (If outside normal business hours – contact CUPD at 255-1111)

**Haz Waste Handling**: Have contractor submit CWMDP early in project. Schedule pre-abatement briefing with contractor and EH&S prior to abatement activities to review scope, responsibilities, waste container storage, labeling, etc. Submit chemical waste pick-up request using online tool (Netid required)

Pre-Occupancy Phase:
PM coordinates final asbestos testing of the completed construction area(s) to confirm that no new asbestos containing materials were added and updates the project asbestos survey and is submitted electronically to the FCS Asbestos Coordinator. This typically includes two samples per
The cost to complete this work is dependent on the size of the project and materials used in the new work. (Cost range from $1,500 to $5,000) Although certain uses of asbestos have been banned in the US for some time, some imported drywall, floor tiles, and similar building materials may still contain this hazard.

**Options for obtaining a post-construction asbestos report:**
1. A/E agreement has post-construction asbestos report as base contract work with sub-consultant
2. Amend A/E agreement to include post-construction asbestos report - Ideal when hazmat testing/engineering firm that conducted the pre-construction report provides the post-construction services, integrating findings into a single final electronic report.
3. PM works with FCS Asbestos Coordinator to utilize a blanket contract to execute a post-construction asbestos survey (Non-State funds)

**Closeout:**
Post-construction asbestos report needs to be submitted to the FCS-FM Asbestos Coordinator in electronic format (Includes all asbestos survey: pre and post asbestos abatement and inventory documentation). PCB analytical results to be shared with EH&S.

**Resources:**
- Cornell EH&S:
  - [Cornell EH&S](https://ehs.cornell.edu/campus-health-safety/occupational-health/asbestos)
  - HS16: Cornell’s Asbestos Management Program
    - [https://ehs.cornell.edu/system/files/private/resource-files/HS16_AsnbestosManagementProgram_0.pdf](https://ehs.cornell.edu/system/files/private/resource-files/HS16_AsnbestosManagementProgram_0.pdf)
  - Potential Asbestos Containing Material Building Products (SOP 001)
  - Incidental Asbestos Disturbance (SOP 002)
  - Asbestos Labeling (SOP 003)
  - Asbestos Awareness Training
  - Asbestos Awareness Toolbox Talk
    - Greg Smith (EH&S) (gjs25) Asbestos Subject Matter Expert
    - Derek Franklin (dmf249) or Mike Harders (mdh296) for lab P-trap disposal
- Cornell FCS – FM:
  - Dale Houseknecht (dwh5) (FCS – FM) Asbestos Subject Matter Expert
  - Barbara Wood Walpole (FCS – FM) Asbestos Assistant
- R5:
  - George Wood, [gkw1@cornell.edu](mailto:gkw1@cornell.edu), 607-254-1666
  - recycle@cornell.edu
- Cornell Design Standards:
  - 01 35 43 General Environmental Requirements
  - 01 35 44 Spill Control
  - 01 35 45 Refrigerant Compliance
  - 01 57 13 Soil Erosion and Sediment Control
Appendix:

Common building materials with hazardous content may include:

- **Asbestos** – Common Bldg. Materials:
  - Roofing material, flashings and coatings
  - Coatings and compounds (water proofing, damp proofing, adhesives/glues)
  - Drywall, drywall compound, plaster, acoustical plaster, popcorn ceiling finish
  - Insulation, pipe insulation, fire doors, sealant, window glazing putty, floor tiles (especially 9”x9”), sheet goods, mastics
  - Vermiculite insulation may contain asbestos fibers (Libby Mine in Montana)

- **Lead** (Toxic Metal) – Common Bldg. Materials: (typically before 1978)
  - Paints and varnishes
  - Window glazing putty, batteries for lighting, exit signs and security systems
  - Solders and pipes, acoustical materials, mortar, flashings, plastic coloring (wiring and blinds)
  - Ceramic glazing (wall tile, glazed block, etc.)
  - Test by XRF or TCLP (Contact gjs25 for XRF facility survey data)
  - Require OSHA-mandated written abatement plan (Forward to EH&S for review)
  - “Lead-Out” paint stripper by EHP

- **Mercury** (Toxic and bioaccumulative)
  - 1 lb. – just over 1 fluid ounce spill triggers a federal reporting requirement
  - Batteries (smoke detectors, emergency lighting systems, elevator control panels)
  - Lighting (fluorescent and high intensity discharge lamps)
  - HVAC controls (thermostats, fire stats, manometers, thermometers)
  - Switches (sump pumps, pneumatic controls)
  - May be encountered during demolition activities in laboratories (drain traps, cabinets, flooring). Identify potential issues during lab decommissioning.
  - Consider Shops personnel complete exploratory work versus assumptions
  - Mercury disposal is expensive!

- **Polychlorinated Biphenyls (PCBs)**: (Toxic and bioaccumulative)
  - EPA banned certain uses of PCBs in 1978 (plasticizers, adhesives, paints, and waterproofing)
  - Manufacture and importation of PCBs banned in 1978 with TSCA
  - Materials containing >50ppm PCBs is considered hazardous waste in NY
  - PCBs may still be present in old transformers, capacitors, and light ballasts
  - Sealants with PCBs may leach into masonry and others building materials (depending on parts per million – additional encapsulation or removal may be required)

- **Chlorofluorocarbons and Radioactive Sources**
  - Chlorofluorocarbons (ozone-depleting substances) used in refrigeration and air-conditioning systems must be recovered by certified technicians.
  - Radioactive Sources – smoke detectors and some exit signs

- **Building Wash Water**:
  - Cleaning to remove lead staining from roof
  - Using any additives
General Environmental Requirements:
- Refer to General Requirements in contract of GC’s obligations for:
  - Hazardous or Toxic Materials
  - Disposal of water Material and Title
  - Contractor Waste Material Disposal Plan – form

Laboratory Decommissioning Tips:
- Researcher’s responsibility to:
  - Clean work and storage surfaces with soap and water, with special attention given to areas with visible contamination.
  - Identify biological/chemical contaminated area(s) that cannot be cleaned by researchers and work with EH&S to facilitate deconcamination of these area(s)
  - Decontamination may require specialized constructor (time and cost factor) – contact EH&S early for guidance and do not rely on Building Care staff.
  - See “Lab Move Guide” in Appendix E of Cornell’s Laboratory Safety Manual

FAQ:
- What is “Hazardous Waste”?
  - Hazardous waste is devined by the Resource Conservation and Recovery Act (RCRA) and analogous NYS regulations in 6 NYCRR part 373. Lists wastes and characterizes wastes as: ignitable, corrosive, reactive, toxix (TCLP)
- Who generates most Hazardous Waste at Cornell?
  - Vast majority of hazardous waste is generated in laboratories by researchers
- Typical Hazardous Wastes generated by Capital Projects?
  - Lead-based paint abatement, PCBs, Mercury in Labs, Building wash waters