**Introduction**

This Project Checklist (“Checklist”) should be completed by Project Managers to identify regulatory requirements which may impact the design, budget, and/or schedule of the project, such as:

* Occupational Safety and Health Administration (OSHA);
* Environmental Protection Agency (EPA);
* State of Illinois;
* City of Chicago; or
* Environmental Health and Safety (“EHS”) policies.

**Instructions for Completing Checklist**

The Checklist is divided into four sections, each of which should be completed during the specific phases of the Project Delivery process as illustrated in Figure 1.

**Figure 1: Project Delivery and EHS Project Checklist Process Flow Diagram**

**Section 4**

**Section 2**

**Section 1a & 1b**

**EHS Planning**

**Section 3**

Campus Planning

**Pre-Design**

**Design**

**Construction**

**Turnover**

EHS impacts which are evident early on

EHS impacts which are evident as scope is more defined

Pre-construction review

Commissioning of final project delivery

EHS develops rough cost estimates based on project concepts

***Checklist Sections 1a and 1b and Section 2***

* Sections 1a and 1b and Section 2 should be completed as early as possible in the Pre-Design and Design Phases, respectively, and submitted to EHS (contact EHS for assistance);
* Section 1b needs to be completed only for projects which may disturb soil;
* Potential impacts to the project budget and schedule are identified for each question in Sections 1a, 1b, and 2;
* Where applicable, EHS commissioning requirements are identified for each question in Sections 1a, 1b, and 2;
* The purple and blue columns will be completed during the Construction and Project Turnover Phases, respectively;
* All questions answered “Yes” in Sections 1a, 1b, and 2 will be reviewed by EHS (please do not leave any questions blank); and
* Please answer “Yes” for any questions which are “to be determined” or have a potential to occur.

***Checklist Section 3***

* Section 3 should be completed upon selection of General Contractor/Construction Manager (GC/CM);
* The first item in Section 3 requires the Project Manager to identify any changes which have been made to the project scope since the initial Pre-Design and Design Phase. Review by checking Yes, No, or N/A in the purple columns for Sections 1a, 1b, and 2;
* All questions answered “Yes” will be reviewed by EHS; and
* The remainder of Section 3 are items Project Managers should verify prior to commencement of construction activities.

***Checklist Section 4***

* Section 4 will be completed by EHS for all projects and includes verification of Design-specific commissioning requirements and general turnover review;
* Some of the EHS commissioning requirements identified in Sections 1a, 1b, and 2 may need to be completed prior to the Project Turnover Phase;
* The Project Manager should schedule a final walkthrough with EHS as early as possible in the Project Turnover Phase; and
* EHS cannot certify project turnover forms until all the items are marked “Yes” or “N/A” in Section 4.

Contact EHS via email ([safety@uchicago.edu](mailto:safety@uchicago.edu)) or call 773.702.9999 if you have any questions while completing this Checklist.

If there are lab related issues, then contact the Office of Research Safety via email ([resarchsafety@uchicago.edu](mailto:resarchsafety@uchicago.edu))

**Please include Environmental Health and Safety on the project’s design team, along with invitation to the initial design meeting, so that we may effectively support all phases of project-planning.**

**Project Information and Scope**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Building Name:** |  | | | | | |
| **Project Name:** |  | | **Project Number:** |  | | |
| **Project Manager:** |  | | **Assistant PM:** |  | | |
| **PM e-mail:** |  | | **Assistant PM email:** |  | | |
| **PM phone #:** |  | | **Assistant PM phone #:** |  | | |
| **Anticipated Start Date:** |  | | **Anticipated End Date:** |  | | |
| **Initial Scope:** | | | | | | |
| **Scope Change #1** | |  | | | **Date:** |  |
| **Detailed scope change:** | | | | | | |
| **Scope Change #2 Short Name:** | |  | | | **Date:** |  |
| **Detailed scope change:** | | | | | | |
| **Scope Change #3 Short Name:** | |  | | | **Date:** |  |
| **Detailed scope change:** | | | | | | |
| **Scope Change #4 Short Name:** | |  | | | **Date:** |  |
| **Detailed scope change:** | | | | | | |

**Project Information and Scope**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Section 1a Review** | **Section 1b Review** | **Section 2 Review** | **Section 3 Review** |
| **PM Reviewer** |  |  |  |  |
| **PM Date** |  |  |  |  |
| **EHS Occ** |  |  |  |  |
| **Occ Date** |  |  |  |  |
| **EHS Env** |  |  |  |  |
| **Env Date** |  |  |  |  |
| **EHS Fire** |  |  |  |  |
| **Fire Date** |  |  |  |  |
| **Notes:** | | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Section 4 Review: EHS has verified all EHS-specific commissioning requirements have been completed** | | | |
| **Project Role** | **Name** | **Signature** | **Date** |
| **PM or Assistant PM** |  |  |  |
| **EHS: Occupational** |  |  |  |
| **EHS: Environmental** |  |  |  |
| **EHS: Fire & Life Safety** |  |  |  |

| **Section 1a: Pre-Design Phase Review** | | | | | **Pre-Construction Phase Review:**  **Check YES if there were any changes from Initial Project Design and review with EHS** | | | | **Project Commissioning Requirements for Pre-Design Question** | **YES** | **NO** | **N/A** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **No.** | **Planning/Design Question** | **YES** | **NO** | **N/A** | **Project Impacts and Considerations** | **YES** | **NO** | **N/A** |
|  | Will project activities potentially include hot work activities? |  |  |  | * All hot work related to application of roofing systems requires **two hours** of fire watch. Contractors must account for this when submitting bids. |  |  |  | 1. Hot work equipment removed |  |  |  |
|  | Will project activities potentially impact emergency egress routes or exit doors for neighboring buildings? |  |  |  | * EHS may recommend special accommodations, such as construction of temporary exits or egress routes, in order to maintain access to emergency exits and egress routes during demolition or renovation activities. * The Fire Department Information Center (FDIC) may need to be temporarily relocated during project activities. |  |  |  | 1. Egresses for neighboring buildings which were re-routed during construction activities have been restored 2. Signage which was posted to mark temporary exits or egress routes during construction activities have been removed   The Fire Department Information Box (FDIC) box has been placed back in its designated location |  |  |  |
|  | Will any portion of a connected and/or neighboring buildings, be occupied during construction activities? |  |  |  | * When submitting bids for this project, contractors must account for developing dust, noise, odor, and vibration control plans for construction which will occur in or near occupied buildings. * Odor control plans may also be required if air intakes of the building or neighboring buildings are in close proximity to construction activities |  |  |  | There are no Pre-Design specific commissioning requirements for this question.  Please complete **SECTION 4: PROJECT TURNOVER REVIEW** for general commissioning items. |  |  |  |
|  | Does the scope of the project include demolition and renovations activities?  Note: renovation activities include upgrades or installation of new building finishes, equipment or landscaping. |  |  |  | * **If yes,** complete the remaining questions **Section 1a**. Otherwise, skip to **Section 2b**. * Please submit an asbestos request form (<http://safety.uchicago.edu/tools/asbestos-request-form/>) to EHS.   + EHS will review project scope with project manager to determine impacts to asbestos-containing materials (ACM);   + If abatement is required, allow at least 3-4 weeks to complete abatement design, bidding, and notification processes (schedule of actual abatement work will depend upon the types and amount of ACM);   + EHS will assist Project Managers in selecting environmental consultants and asbestos abatement contractors   + Asbestos evaluation, abatement scope development, and subsequent asbestos abatement must be funded by the project; and   + Please review Asbestos Pre-Abatement Checklist for further guidance on preparations required for abatement. |  |  |  | All required documents have been provided to EHS if the project scope included asbestos abatement  Asbestos-containing materials remaining in project location are free from damage  Changes made to the project location do not increase the potential for damage asbestos-containing material  The building asbestos survey has been updated to reflect any abatement performed in the project area  Any contractor working in pre-1990 structures are required to designate a Competent Person. |  |  |  |
|  | Will project activities occur in a structure originally constructed prior to **1978**? |  |  |  | * If damaged paint is present, EHS will arrange for an environmental consultant to conduct a lead risk assessment and, if necessary, develop a lead mitigation plan for an environmental contractor. * EHS will assist the Project Manager to select a contractor to perform lead mitigation * The University is not required to test paint for lead content prior to project activities (OSHA does not accept paint testing). * Lead risk assessment and any subsequent lead mitigation must be funded by the project.   + Waste generated from lead mitigation could potentially be characterized as hazardous waste * Inform all contractors of the potential presence of lead-based paint.   All contractors are responsible for conducting work in compliance with the OSHA Lead Construction Standard (29 CFR 1926.62) which includes assigning a Competent Person to supervise work. |  |  |  | 1. Copies of lead risk assessment reports have been provided to EHS  2. Waste characterization reports have been provided to EHS if the project scope included lead abatement or mitigation  3. Waste manifests have been provided to EHS if waste from lead mitigation was characterized as hazardous waste |  |  |  |
|  | If “Yes” was answered to the previous question, is the building a Residential Property or does it contain spaces where children **six years or under** will be present (e.g., nursery, school, residence, recreational center, etc.) during or after project construction activities? |  |  |  | * The EPA’s Lead Renovation, Repair, and Painting (RRP) requirements may be triggered if the painted surfaces impacted by renovation activities exceeds specific thresholds (e.g., Interior: >6 Sq. Ft., Exterior: > 20 Sq. Ft., any window project) These requirements include:   + Distribution of the EPA’s “The Lead-Safe Certified Guide to Renovate Right” brochure, at least 7 days and no more than 60 days prior to start of construction work, to tenants;   + Signed forms from all affected tenants acknowledging that they have received the brochure; and * Supervision of work by EPA-Certified Lead Renovator. |  |  |  | 1. Copies of signed acknowledgement forms have been provided to EHS if the EPA brochure “The Lead-Safe Certified Guide to Renovate Right” was distributed to building occupants  2. RRP project reports have been provided to EHS |  |  |  |
|  | Will project activities potentially require temporary impairments of fire alarm or detection systems? |  |  |  | * Coordination with the Facilities Services Electrical Shop or Physical Plant may result in re-charge of labor costs depending on the frequency of disabling fire alarm or detection systems. |  |  |  | 1. Fire protection systems have been restored  2. FM Global and Chicago Fire Department haven been informed about the restoration of the fire alarm and/or detection system |  |  |  |
|  | Will work be performed on building electrical systems? |  |  |  | * Per EHS policy, **work on live electrical systems 50 volts or greater is prohibited** except when live systems are required for testing and troubleshooting or de-energizing the electrical systems creates a greater hazard. * De-energizing and re-energizing electrical systems may require prior planning and coordination if building occupants are located in the impacted areas. |  |  |  | 1. Contractor lockout/tagout (LOTO) devices have been removed  2. Electrical hazards are protected by fixed guards or covers |  |  |  |
|  | Will demolition scope include removal of building fixtures which are known to contain hazardous materials? Examples include:   * Thermostats; * Boiler switches; * Light fixtures; * Batteries; * Smoke detectors; or * Exit signs. |  |  |  | * Liquid mercury is considered hazardous waste. Depending upon the quantity, EHS will cover disposal costs for building-related items containing liquid mercury. This does not apply to lab equipment (i.e., bulk quantities of mercury). * Intact fluorescent light bulbs (mercury vapors), PCB-containing light ballasts, and batteries are universal wastes and disposal can be managed by Facilities Services. A recharge fee may be applicable. * Leaking PCB-containing ballasts and batteries may be classified as hazardous waste and must be managed by EHS: * EHS must sign waste manifests and retain waste shipment records; * Hazardous waste can only be transported off-site by the University’s hazardous waste vendor (currently Stericyle); * If the property is not contiguous with the Hyde Park campus, as defined in the University’s hazardous waste permit, then a separate IEPA and EPA identification number may be required to ship hazardous waste from the site; and * Please allow 6-8 weeks to submit the application and receive the IEPA and EPA ID numbers. * The Office of Radiation Safety will manage disposal of radiation waste such as Americium-containing smoke detectors and tritium-containing exit signs. * EHS can arrange for an environmental consultant to conduct a pre-renovation hazardous materials survey of the project area to create an inventory of materials. * The consultant’s labor related to the inspection is considered a project cost. * See Appendix D for further details |  |  |  | There are no Pre-Design specific commissioning requirements for this question.  Please complete **SECTION 4: PROJECT TURNOVER REVIEW** for general commissioning items. |  |  |  |
|  | Will plumbing and/or plumbing fixtures be removed from laboratory spaces or buildings containing laboratory spaces? |  |  |  | * Due to potential historic use of mercury thermometers in laboratories, drain traps must be tested for mercury prior to removal. * EHS will arrange for an environmental consultant to evaluate drains and, if present, containerize and dispose of the mercury. * Consultant’s evaluation costs will be charged to the project. |  |  |  | There are no Pre-Design specific commissioning requirements for this question.  Please complete **SECTION 4: PROJECT TURNOVER REVIEW** for general commissioning items. |  |  |  |
|  | Will any chemicals (e.g. solvents, cleaners, water treatments, compressed gas cylinders, etc.) need to be removed and disposed from the project area(s) prior to demolition?  Note: This question does not apply to laboratory spaces (see Question 1.13). |  |  |  | * Waste chemicals generally cannot be disposed as general refuse and EHS must determine legal requirements for disposal of waste chemicals. * Disposal of chemicals classified as hazardous waste must be managed by EHS: * EHS must sign waste manifests and retain waste shipment records; * Hazardous waste can only be transported off-site by the University’s hazardous waste vendor (currently Stericyle); * If the property is not contiguous with the Hyde Park campus, as defined in the University’s hazardous waste permit, then a separate IEPA and EPA identification number may be required to ship hazardous waste from the site; * Please allow 6-8 weeks to submit the application and receive the IEPA and EPA ID numbers; and * Depending upon the quantity, EHS will cover disposal costs for building-related hazardous wastes. * Please generate a list of waste materials and their quantity and provide to EHS. * See Appendix D for further details   Note: Disposal of chemicals in bulk storage tanks or containers are further described in Question 1.12. |  |  |  |  |  |  |  |
|  | Will bulk storage tanks or containers be removed and disposed? |  |  |  | * Disposal of the tank contents will be charged to the project. * The general contractor or construction manager (GC/CM) is responsible for managing the draining and decommissioning of tanks/equipment. * The tank contents can be containerized by a trained vendor, but all special waste or hazardous waste can only be transported off-site by an approved hazardous waste vendor (currently Stericycle). * Tank contents which are classified as hazardous waste must be managed by EHS.   + EHS must sign waste manifests and retain waste shipment records;   + Hazardous waste can only be transported off-site by the University’s hazardous waste vendor (currently Stericyle);   + If the property is not contiguous with the Hyde Park campus, as defined in the University’s hazardous waste permit, then a separate IEPA and EPA identification number may be required to ship hazardous waste from the site; and   + Please allow 6-8 weeks to submit the application and receive the IEPA and EPA ID numbers. * All liquid waste must be quantified and reported to EHS for annual reporting required by the City. * The University shall furnish safety data sheets (SDSs) for the contents of tank in the bid documents of the project. * Depending upon tank contents, removal of tanks may trigger requirements for the University to report this project activity to the Illinois Environmental Protection Agency (IEPA) or update its Air Operating Permit (Question 3.5 provides further information about scheduling and budgetary impacts). * See Appendix D for further details |  |  |  | 1. Copies of EPA notifications have been submitted to EHS if the tank(s) which were removed were covered by the University’s Air Operating Permit  2. The University’s Air Operating Permit has been updated to reflect the removal of covered-tanks |  |  |  |
|  | Will the scope of demolition include laboratory space(s)? |  |  |  | * Project managers and the research Division must determine who will be responsible for disposal costs of waste chemicals present in the impacted laboratory spaces. * The Project Manager must work the Office of Research Safety (ORS) to decommission affected laboratory space(s) prior to demolition to verify chemicals, biological hazards, and radiological hazards have been removed from the laboratory. Please contact ORS directly to initiate the Laboratory Decommissioning process. |  |  |  | Please contact ORS for commissioning of research laboratories and support spaces. |  |  |  |
|  | Will project scope include removal or modification of fuel-burning equipment, such as boilers or generators? |  |  |  | * Removal or modification of fuel-burning equipment may trigger requirements for the University to report this project activity to the IEPA or update its Air Operating Permit. Question 3.4 provides further information about scheduling and budgetary impacts. * See Appendix A for further details |  |  |  | 1. Notifications have been submitted to EPA  2. Copies of EPA notifications have been provided to EHS |  |  |  |
|  | Will project scope include removal or modification of refrigerant-containing equipment such as chillers or air-conditioners? |  |  |  | * Removal or modification of equipment containing greater than 5 pounds of refrigerant must be reported to EHS to update the refrigerant inventory, as required by the IEPA and EPA. * Draining of refrigerants from equipment containing greater than 5 pounds of refrigerant must be performed by a certified refrigerant technician prior to removal from University property. Vendor must provide disposal/recovery documentation to the Facilities Services-Operations shop or Physical Plant. |  |  |  | 1. Copies of records for disposal/recovery of refrigerants have been provided to EHS  2. Copies of refrigeration licenses for contractors have been provided to EHS |  |  |  |
|  | Will project scope include removal or modification of underground storage tanks (USTs)? |  |  |  | * Permits are required for removing or modifying USTs from the Illinois Office of the State Fire Marshall (OSFM) for USTs containing petroleum products and the Chicago Department of Public Health (CDPH) for USTs containing hazardous materials:   + The OFSM permit application fee, for both UST modification and removals, is $200 (per facility) and typically requires 20 days to review.   + The CDPH permit application fee, for both UST modification and removal, is $200 (per facility) must be submitted at least 30 days prior to the date activity. * Contractors performing the UST modification or removals must be registered with the OSFM and CDPH. * Disposal of the UST contents will be charged to the project (see Question 1.12). * Depending upon contents, removal or modifications of USTs may trigger requirements for the University to report this project activity to the IEPA or update its Air Operating Permit (Question 3.5 provides further information about scheduling and budgetary impacts). * Soil remediation will be required if contaminated soil is discovered during the UST removal   + Soil testing and subsequent remediation costs must be funded by the project * EHS will assist with selecting an environmental consultant to oversee the removal of UST systems.   + Consulting costs may include soil testing and oversight of soil remediation * The environmental consultant costs associated with UST removals must be funded by the project * See Appendix B for further details |  |  |  | 1. Copies of permits, notifications, and contractor OSFM licenses have been provided to EHS  2. A “Certificate of Removal” has been submitted to the OSFM for each UST removed and copies of the certificate(s) have been provided to EHS  3. Copies of soil sampling reports performed during UST removals have been provided to EHS  4. Waste manifests have been provided to EHS for disposal of UST contents  5. If soil remediation was required during the removal of USTs, then No Further Remediation (NFR) letter has been issued from the IEPA and a copy has been submitted to EHS  6. Special conditions listed in the NFR have been addressed and, where applicable, work requests have been established in Maximo or CMS to maintain oversight of the conditions |  |  |  |
|  | Will project scope include removal above-ground storage tanks (ASTs) or equipment containing 55 gallons or more of petroleum products, hydraulic oil, food oils/greases, or other types of oil? |  |  |  | * The University’s Spill Prevention Control and Countermeasure (SPCC) plan must be updated to reflect changes. * Disposal of the AST contents will be charged to the project (see Question 2.11). * See Appendix D for further details |  |  |  | 1. SPCC Plan has been updated to reflect the removal of SPCC-covered equipment  2. Copies of manifests or shipping records for liquid wastes have been provided to EHS |  |  |  |
|  | Will the project involve sandblasting, grinding, or chemical cleaning of the outer surfaces of a building? |  |  |  | * “Architectural Surface Cleaning Permits” must be obtained from both the Chicago Department of Buildings (CDOB) and the CDPH. * The general contractor is responsible for obtaining these permits from the CDOB and CDPH. |  |  |  | There are no Pre-Design specific commissioning requirements for this question.  Please complete SECTION 4: PROJECT TURNOVER REVIEW for general commissioning items. |  |  |  |
|  | If yes to the previous question, will these activities on the exterior portion of the building impact painted surfaces? |  |  |  | * According to City Code, paint must be analyzed by an Illinois Department of Public Health (IDPH) Licensed Lead Inspector to determine if the paint contains greater than 0.5% lead by weight/5,000 ppm. * EHS will coordinate testing with an approved environmental consultant.   + Costs associated with lead testing must be funded by the project   + If the paint is lead-containing, then a dust mitigation lead work plan must be developed by an IDPH-Licensed Lead Risk Assessor and notifications must be distributed to building occupants and neighbors. |  |  |  | 1. Lead risk assessment report has been provided to EHS  2. If this work required a lead dust mitigation plan, then all of the applicable commissioning requirements from Questions 1.5 and 1.6 have been completed |  |  |  |
|  | Does the building contain any open continual improvement action items on the EHS Risk Assessment Plan?  If unsure, then please mark “Yes” |  |  |  | * EHS identifies continual improvement opportunities from risk assessments of building operations and maintenance activities. * Certain continuous improvement opportunities may require funding which exceeds operational budgets (e.g., waiting for capital funding). EHS in collaboration with Campus Planning may provide a list of open items (risks) within the building for review and consideration by the Project Management team to determine if they could be cost effectively absorbed into the project scope (i.e., open items that are similar in scope or adjacent to project activities). |  |  |  | 1. Open continual improvement action items been completed |  |  |  |
|  | Will the floor layout change due to the addition or removal of walls, doors, or other permanent building structural components? |  |  |  | * EHS and FM Global must review design plans for the renovated spaces. This review will require up to two weeks for EHS to complete. * Budget must include updating the building evacuation plans. |  |  |  | The Design-specific commissioning requirements for this question will be covered in **SECTION 4: PROJECT TURNOVER REVIEW** |  |  |  |
|  | Will the renovated space contain new or upgraded life and fire safety systems, such as: fire sprinklers, detection systems, alarm systems, or emergency lighting systems? |  |  |  | * EHS and FM Global must review design plans for installations and upgrades of life and fire safety systems. This review will require up to two weeks for EHS to complete. * Shutting down water mains for fire sprinkler installations will require planning and coordination with the Chicago Department of Water Management and neighboring buildings. |  |  |  | The Design-specific commissioning requirements for this question will be covered in **SECTION 4: PROJECT TURNOVER REVIEW** |  |  |  |

| **Section 1B: Pre-Design Phase Review (Geotechnical investigation)** | | | | | **Pre-Construction Phase Review:**  **Check YES if there were any changes from Initial Project Design and review with EHS** | | | | **Project Commissioning Requirements for Pre-Design Question** | **YES** | **NO** | **N/A** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **No.** | **Planning/Design Question** | **YES** | **NO** | **N/A** | **Project Impacts and Considerations** | **YES** | **NO** | **N/A** |
|  | Will any amount of soil be disturbed at the project site? |  |  |  | * If yes, please answer the remaining questions in this section. Otherwise, skip to Section 2. * A Phase I Environmental Site Assessment (ESA) must be performed to determine, based on a review of historic site records, if there is potential for:   + Soil contamination; or   + Existence of an underground storage tank (UST) * Based on the results of the Phase I ESA, a Phase II ESA may be recommended to sample and analyze the soil to identify the presence and extent of contamination. * A Phase III ESA will be required to develop a site remediation plan if the Phase II ESA identifies soil contaminants present at concentrations exceeding threshold levels established by the EPA. * Refer to Question 1.16 if the USTs will need to be removed if they are discovered during ESA reviews. * Please note: ESA reports and soil sampling results are valid for 180 days from the date of sample collection. * Budget and schedule should include subsurface clearance evaluation to identify the presence of buried utilities such as electrical, water, communication, steam, or natural gas lines. * Dust Control Plan must be developed for excavation activities * See Appendix F for further details |  |  |  | 1. Environmental Site Assessment (Phase I and II) and soil testing reports have been provided to EHS 2. If soil remediation was required, then a NFR letter has been issued from the IEPA and a copy has been submitted to EHS 3. Special conditions listed in the NFR have been addressed and, where applicable, work requests have been established in Maximo or CMS to maintain oversight of the conditions |  |  |  |
|  | If the ESA uncovers an UST, then will it need to be removed? |  |  |  | * Permits are required for removing USTs from the Illinois Office of the State Fire Marshall (OSFM) for USTs containing petroleum products and the Chicago Department of Public Health (CDPH) for USTs containing hazardous materials:   + The OFSM permit application fee, for both UST modification and removals, is $200 (per facility) and typically requires 20 days to review.   + The CDPH permit application fee, for both UST modification and removal, is $200 (per facility) must be submitted at least 30 days prior to the date activity. * Contractors performing the UST removals must be registered with the OSFM and CDPH. * Disposal of the UST contents will be charged to the project. * Soil remediation will be required if contaminated soil is discovered during the UST removal   + Soil testing and subsequent remediation costs must be funded by the project * EHS will assist with selecting an environmental consultant to oversee the removal of UST systems.   + Consulting costs may include soil testing and oversight of soil remediation * The environmental consultant costs associated with UST removals must be funded by the project |  |  |  | 1. Copies of permits, notifications, and contractor OSFM licenses have been provided to EHS 2. A “Certificate of Removal” has been submitted to the OSFM for each UST removed and copies of the certificate(s) have been provided to EHS 3. Copies of soil sampling reports performed during UST removals have been provided to EHS 4. Waste manifests have been provided to EHS for disposal of UST contents 5. If soil remediation was required during the removal of USTs, then No Further Remediation (NFR) letter has been issued from the IEPA and a copy has been submitted to EHS 6. Special conditions listed in the NFR have been addressed and, where applicable, work requests have been established in Maximo or CMS to maintain oversight of the conditions |  |  |  |
|  | Will the soil be removed from campus or relocated to another site on campus? |  |  |  | * EHS must retain soil testing results and can assist the Project Manager with coordinating sample collection and testing of the soil. * Excavated soil which will be landfilled must be tested per EPA protocol and the requirements of the receiving landfill. * Soils which will be reused at another location on campus must be tested per EPA protocol to verify it is not contaminated with hazardous substances. * Soil testing and disposal or relocation costs will be charged to the project. * Standard turn-around-time (TAT) for soil testing is 5-7 days (testing can be expedited for a 75-200% surcharge depending upon the TAT requested). * Please provide EHS with the approximate volume of soil to be removed and the landfill which will receive the excavated soil. * Please note: soil sampling results are valid for 180 days from the date of sample collection. |  |  |  | 1. Soil testing results have been provided to EHS 2. Waste shipment records for soil wastes have been provided to EHS |  |  |  |
|  | Are buried steam pipes present in the area to be excavated?  **If unsure**, please review project scope with Facilities Services Central Utility Plans. |  |  |  | * Project budget and schedule should account for potential abatement of asbestos-containing insulation on buried steam pipes. * EHS can obtain cost estimates from an environmental consultant to abate potential asbestos-containing insulation.   + Asbestos abatement contractors will not excavate soil in order to expose buried pipes. |  |  |  | All required documents have been provided to EHS if the asbestos was abated from buried steam pipes  Asbestos-containing materials remaining in project location are free from damage  Changes made to the project location do not increase the potential for damage asbestos-containing material  The building asbestos survey has been updated to reflect any abatement performed in the project area |  |  |  |
|  | Will the project disturb more than 15,000 square feet of land, create an at-grade impervious surface of more than 7,500 square feet, or discharge stormwater into any body of water or separate sewer system? |  |  |  | * A stormwater management plan must be submitted to and approved by the Chicago Department of Buildings (CDOB). * The general contractor or construction manager (GC/CM) is responsible for developing and submitting the site stormwater management plan for approval. |  |  |  | There are no Pre-Design specific commissioning requirements for this question.  Please complete **SECTION 4: PROJECT TURNOVER REVIEW** for general commissioning items. |  |  |  |
|  | Will the project disturb more than one acre of land?  Measurements typically include all areas inside the construction site limit for the project. |  |  |  | * A Storm Water Pollution Prevention (SWPP) Plan and Permit may be required by the EPA. * The GC/CM is responsible for reviewing permit requirements and applying for a permit when required. |  |  |  | There are no Pre-Design specific commissioning requirements for this question.  Please complete **SECTION 4: PROJECT TURNOVER REVIEW** for general commissioning items. |  |  |  |

| **Section 2: Design Phase Review** | | | | | **Pre-Construction Phase Review:**  **Check YES if there were any changes from Initial Project Design and review with EHS** | | | | **Project Commissioning Requirements for Pre-Design Question** | **YES** | **NO** | **N/A** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **No.** | **Planning/Design Question** | **YES** | **NO** | **N/A** | **Project Impacts and Considerations** | **YES** | **NO** | **N/A** |
|  | Will the project result in a newly-constructed structure?  **Note**: additions to existing buildings are not considered a new construction. |  |  |  | * **If yes,** complete the remainder of this section. * EHS and FM Global must review design plans for the new structure. EHS will require up to two weeks to complete their review. * Budget must include development of building evacuation plans.   Please note: shutting down water mains for fire sprinkler installations will require planning and coordination with the Chicago Department of Water Management and neighboring buildings. |  |  |  | The Design-specific commissioning requirements for this question will be covered in **SECTION 4: PROJECT TURNOVER REVIEW** |  |  |  |
|  | Will new generators and/or boilers be installed? |  |  |  | * A construction permit from the IEPA is required for “significant” generators (**engine size** greater than or equal to **1,118 kW** for emergency generators OR **112 kW** for non-emergency generators) and “significant” boilers (greater than or equal to **2.5 mmBTU/hr** for only natural gas, propane, or liquefied petroleum gas OR **1.0 mmBTU/hr** for only oil or combination of oil and other fuels).   + **Prior to ordering the unit**, provide the Environmental Engineer with the following information: equipment and process diagrams, materials used, and anticipated usage rate.   + The GC/CM, their sub-contractors, and the Project Manager must work with the Environmental Engineer to complete and submit the construction permit application. Please allow a lead time of **9-12 months**.   + Application fee to the Illinois EPA is $7,500. Estimated cost for the Environmental Engineer to complete and submit the air permit application is between $2,000-5,000. * While a construction permit is not required for insignificant generators and boilers, the IEPA does require a **seven business-day** courtesy notification prior to construction. * An Air Pollution Control (APC) permit is required by the CDPH:   + The APC permit application fees are incorporated as part of the building permit fees, provided the generators and/or boilers were included as part of the building permit review.   + Otherwise, the stand alone permit application fee is $150 per generator and/or boiler. * EHS and FM Global must review the fire safety design plans for the spaces in which generators and boilers will be installed * See Appendix A for further details |  |  |  | 1. Preventative maintenance tasks for newly-installed emergency generators have been added to Maximo or CSM, linked to Mostardi’s CMP, and fully described the maintenance, testing, and recordkeeping requirements 2. Preventative maintenance tasks for newly-installed boilers have been added to Maximo or CSM, linked to Mostardi’s CMP, and fully described the maintenance, testing, and recordkeeping requirements 3. Generator cut-sheet with EPA 40 CFR 98 certification has been provided to EHS 4. Fuel certification for initial diesel delivery has been provided to EHS 5. Picture of the equipment plate has been provided to EHS 6. Secondary containment is installed for SPCC-covered equipment and is sufficiently-sized to prevent discharges from entering drains or escaping the mechanical room 7. Spill kits have been mounted or staged in locations where SPCC-covered equipment were installed 8. All SPCC-covered equipment (oil-containing bulk storage containers and oil-filled operational equipment) have been added to the SPCC Plan 9. All tanks are labeled with product identifiers and applicable GHS pictograms 10. Air Pollution Control (APC) permits have been obtained from the Chicago Department of Public Health (CDPH) for all newly-installed pressure vessels 11. APC permits have been obtained from the CDPH for all air-emissions equipment and pollution control devices (may be incorporated in the building permit) 12. Copies of construction permits for emergency generators, boilers, or any other equipment covered by the University of Chicago Title V permit have been provided to EHS 13. Permit-required confined space signage has been posted on all access points to the boiler 14. Emergency shut-offs for fuel lines have been installed and are clearly marked |  |  |  |
|  | Will the project include the installation of new equipment, besides boilers or generators, which will potentially emit air pollutants?  Examples include:   * Fuel-burning furnaces used for comfort heating or process equipment; * Printing operations; * Tanks containing organic liquids or fuels; * Fuel dispensing equipment; * Non-steam sterilizers; and * Equipment used for processing or producing materials. |  |  |  | * Construction permits from the IEPA may be required for significant air emissions sources.   + **Prior to ordering equipment**, provide the Environmental Engineer with the following information: equipment and process diagrams, materials used, and anticipated usage rate.   + The GC/CM, their sub-contractors, and the Project Manager must work with the Environmental Engineer to complete and submit the construction permit application. Please allow a lead time of **9-12 months**.   + Application fee to the Illinois EPA is $7,500. Estimated cost for the Environmental Engineer to complete and submit the air permit application is between $2,000-5,000. * While a construction permit is not required for insignificant equipment, the Illinois EPA does require a **seven** business-day courtesy notification prior to construction. * An APC permit must be obtained from the CDPH for each air emission equipment.   + The APC permit application fees are incorporated as part of the building permit fees, provided the air emission equipment were included as part of the building permit review.   + Otherwise, the stand alone permit application fee is $150 per equipment. * EHS and FM Global must review the fire safety design plans for the spaces in which fuel-burning equipment will be installed. * See Appendix A for further details |  |  |  | 1. APC permits have been obtained from the CDPH for all air-emissions equipment and pollution control devices (may be incorporated in the building permit) 2. Emergency shut-offs for fuel lines have been installed and are clearly marked for fuel-burning equipment 3. All conditions of the construction permit specific to the equipment have been met |  |  |  |
|  | Will air-pollution control devices be installed in the new structure? Examples include dust collectors, baghouses, scrubbers, cyclones, electrostatic precipitators, etc. |  |  |  | * An APC permit must be obtained from the CDPH for each air pollution control device.   + The APC permit application fees are incorporated as part of the building permit fees, provided the pollution control devices were included as part of the building permit review.   + Otherwise, the stand alone permit application fee is $150 per device. * Please consult with EHS during the project design phase to identify feasible options for Facilities Services or Physical Plant employees to safely maintain the equipment.   + Consult with EHS to select equipment or design enclosures to minimize noise pollution and exposure to building occupants.   + See Appendix A for further details |  |  |  | 1. APC permits have been obtained from the CDPH for all air-emissions equipment and pollution control devices (may be incorporated in the building permit) 2. Permit-required confined space signage has been posted at all of the access points into the equipment 3. Air-pollution control equipment is grounded to dissipate buildup of static charge 4. Noise surveys have been performed to verify noise does not exceed municipal limits or OSHA Permissible Exposure Limits (PELs) and the results have been provided to EHS |  |  |  |
|  | Will the project include installation of refrigerant-containing equipment, such as chillers or air conditioners? |  |  |  | * Installation of new refrigerant-containing equipment must be reported to EHS to update the Refrigerant-Containing Equipment inventory as required by the EPA. * Exhaust points of condensers or cooling towers must be installed at the minimal setback distance from building air intakes as required per the City of Chicago Building Code. |  |  |  | 1. The Equipment Input Form has been submitted to EHS 2. PM tasks for refrigerant containing equipment have been added to Maximo or CSSM and have been linked to Mostardi’s CMP 3. Copies of worker certifications who performed work on refrigeration systems (modifications, installation, etc.) have been provided to EHS 4. Records of refrigerant disposal and/or recovery have been provided to EHS 5. Oxygen sensors have been installed in the location of the refrigerant-containing equipment and have been connected to the BAS 6. Emergency shut-offs have been installed and are clearly marked |  |  |  |
|  | Will exhaust systems, such as  those for laboratory fume hoods,  be installed? |  |  |  | * Fume hood installations inside of laboratories must be reviewed by the Office of Research Safety * Air exhaust stacks must meet minimal height specifications and be installed at the minimal setbacks distances from building air intakes as required per the City of Chicago Building Code. * Please consult with EHS during the project design phase to identify feasible options for protecting Facilities Services or Physical Plant employees from exposure to hazardous substances when performing filter changes or system maintenance. |  |  |  | 1. Stacks for the exhaust systems meet the minimal stack height and setback distances from building air intakes as required by the Chicago Building Code 2. Exhaust systems, installed for non-research activities, have been tested and certified and the results have been provided to EHS 3. Note: please contact ORS for commissioning fume hoods installed in research laboratories and support spaces. |  |  |  |
|  | Will the project include installation of underground storage tanks (USTs)? |  |  |  | * Installation of USTs containing petroleum products require a permits from the Illinois Office of the State Fire Marshall (OSFM) and the CDPH.   + Both the OSFM and CDPH permit application fees are $200 per UST and typically require 20 days to review.   + The CDPH will complete inspections at specific points during the UST installation process. * Additional IEPA air-permitting requirements may apply depending upon the size and contents of the UST (please refer to Question 3.3 for further information). * Please provide EHS with the size and contents of the UST. * See Appendix B for further details |  |  |  | 1. An UST O&M Plan has been developed for the new UST system 2. Class A, B, and C Operators have been designated for the new UST system and these employees have completed required training 3. Copies of OFSM and CDPH permits and notifications for UST activities (installations, modification, or removals) have been provided to EHS 4. Copies of licenses provided to EHS for OSFM-licensed contractors performing UST activities 5. A “Notification of Underground Storage Tanks” has been submitted to OSFM for each UST installed and copies of the notification(s) have been provided to EHS 6. Emergency shut-offs tied to alarm system has been installed and clearly marked if the UST system is a fuel dispensing system |  |  |  |
|  | Will the project include installation of above-ground storage tanks (ASTs) or equipment containing 55-gallons of petroleum products, oil-based coolants, hydraulic oils, or food oils/greases? |  |  |  | * Tanks and equipment which contain 55 gallons or greater of oil are covered by the University’s Spill Prevention, Containment and Control (SPCC) Plan and the locations housing them must be designed to prevent spills or leaks from entering the sewer system. * A permit is required from the OSFM prior to installing ASTs containing greater than 110 gallons of flammable or combustible materials (note: this requirement applies to generator fuel tanks).   + The OSFM does not charge a permit application fee and will require up to 10 days to review. * Additional air-permitting requirements may apply depending upon the size and contents of the AST (please refer to Question 3.3 for further information). * Please provide EHS with an inventory of ASTs and/or equipment which identifies their contents and capacities. * EHS and FM Global must review the fire safety design plans for the interior spaces in which tanks containing flammable or combustible liquids will be installed. |  |  |  | 1. All tanks are labeled with product identifiers and applicable GHS pictograms 2. All SPCC-covered equipment (oil-containing bulk storage containers and oil-filled operational equipment) have been added to the SPCC Plan 3. Spill kits have been mounted or staged in locations where SPCC-covered equipment were installed 4. Secondary containment is installed for SPCC-covered equipment and is sufficiently-sized to prevent discharges from entering drains or escaping the mechanical room |  |  |  |
|  | Will any of the spaces be used for chemical storage or contain equipment which will result in permanent storage of chemicals? Examples include:   * Water pretreatment and wastewater treatment chemicals; * Boiler and chiller treatment chemicals; * Paints; * Bulk storage of laboratory chemicals; or * Cryogenic liquids and compressed gases. |  |  |  | * Chemical storage areas must be compliant with applicable City of Chicago Codes which may require secondary containment to be designed into the plan. * City of Chicago Code does not permit storage of hazardous chemicals in basements and sub-basement levels unless authorized by a variance to the building license issued by CDOB. * Eyewashes and, in certain instances, emergency showers must be installed in areas where corrosive liquids will be stored or handled. * EHS and FM Global must review spaces which will be used for bulk storage of flammable and combustible materials as areas may require additional fire-protection measures. * Please provide EHS with a list of chemicals, along with quantities and locations within the structure, which will be permanently maintained onsite. * See Appendix E for further details |  |  |  | 1. Appropriate fire protection measures, as described in NFPA 30, have been installed for locations where flammable and combustion liquids will be stored in bulk quantities 2. Secondary containment has been installed for bulk-storage containers of corrosive liquids 3. Bulk-storage containers of hazardous materials (corrosives, flammable liquids, oxidizers, etc.) have been sufficiently segregated from incompatible materials as described by NFPA 30 4. Eyewash stations and, if appropriate, emergency showers have been installed in locations where corrosive chemicals are stored or handled 5. New chemicals have been added to the Tier II Chemical Inventory for the current calendar year 6. Storage of compressed gas cylinders and cryogenic liquids meet the requirements of the EHS Compressed Gas Policy 7. Air-monitoring devices, such as oxygen sensors, are installed and connected to the BAS where chemical storage create potential for hazardous atmosphere 8. Bulk-storage containers are labeled with product identifiers and appropriate GHS pictograms 9. SARA 302 reports have been submitted to IEMA, CPD, and Chicago LEPC for chemicals which are classified as “Extremely Hazardous Substances” and will be stored in quantities greater than their “Threshold Planning Quantity” 10. All tanks and bulk-storage containers are labeled with product identifiers and applicable GHS pictograms 11. Safety data sheets (SDSs) for tank contents have been provided to EHS |  |  |  |
|  | Will the project scope include installation of wastewater treatment systems or introduction of non-sanitary water discharges to the sewer system? |  |  |  | * The Metropolitan Wastewater Reclamation District (MWRD) does not require permits for discharges, but discharges to the sewer system must comply with the requirements of Appendix B of the Sewage and Waste Control Ordinance * Please note: the Facilities Services Energy & Utilities Manager is the point of contact for MWRD. * See Appendix B for further details |  |  |  | 1. Please contact the Facilities Services Energy & Utilities Manager to advise on commissioning requirements. |  |  |  |
|  | Will equipment be installed on the roof? |  |  |  | * Is it feasible to have a parapet wall at least 39” high to avoid fall protection systems which require maintenance, certification, and training. EHS will prioritize designs which eliminate fall hazards over the installation of personal fall protection systems listed below.   + Guardrail systems or personal fall protection systems may be required if employees would potentially be exposed to fall hazards while accessing the roof to maintain equipment   + Personal fall protection systems must be certified by a professional Engineer (PE), who is competent in personal fall protection systems, to verify installation meets the requirements of the most recent American National Standards Institute Fall Protection Standard (ANSI) Z359 Fall Protection Standard   + The written certification must be provided by the contractor who installed the fall protection system.   + Guardrail systems must the requirements of the OSHA Walking and Working Surfaces Standard (29 CFR 1910, Subpart D). * Work with EHS during the project design phase to identify feasible options for protecting employees from fall hazards when accessing rooftop equipment * See Appendix C for further details |  |  |  | 1. Employees who will access the roof are protected against fall hazards via guardrail systems or personal fall protection systems 2. Permanent anchorages for personal fall protection systems and rope descent systems have been certified and documentation has been provided to EHS for each anchorage 3. Employees who will potentially use personal fall protection systems when accessing the roof have been trained on the use of the specific fall protection systems installed for this building 4. Employees who will be maintaining green roofs are sufficiently protected from fall hazards when accessing or performing work in the green roof sections 5. All access points to the roof are secured against unauthorized entry |  |  |  |
|  | Will any spaces contain elevated platforms, walkways, or other surfaces which could potentially be accessed by employees?  Examples of other elevated surfaces includes any surfaces on which an employee can climb to perform work (e.g. top of the boilers, tanks, air-handling units, etc.). |  |  |  | * Guardrail systems which meet the requirements of the OSHA Walking and Working Surfaces Standard (29 CFR 1910, Subpart D) must be installed on open-sided floors with a side or edge that is 4 feet or more above a lower level.   If guardrails are not feasible, then personal fall protection systems must be installed (see Question 3.11 for further requirements).  See Appendix C for further details |  |  |  | 1. All walking-working surfaces with unprotected sides or edges which are 4 feet or more above a lower level are equipped with guardrail systems or personal fall protection systems. 2. Elevated surfaces, 4 feet or higher above a lower level, onto which employees could potentially climb are protected to prevent access or provided guardrail systems or personal fall protection systems 3. Employees are able to access critical equipment and energy-isolating devices without exposure to fall hazards |  |  |  |
|  | Will skylights be installed on any of the roofs of the new structure? |  |  |  | * If employees will access the roofs with skylights for maintenance activities, then they must be protected from falling through skylights (see Questions 3.11 and 3.12 for further information). * See Appendix C for further details |  |  |  | Employees are sufficiently protected from falling through skylights |  |  |  |
|  | Will fixed ladders be installed? |  |  |  | * Fixed ladders must meet the design requirements of the OSHA Walking and Working Surfaces Standard. * Fixed ladders which extend more than 24 feet above a lower level installed prior to November 19, 2018 must be equipped with a personal fall protection system, ladder safety system, cage, or well. Those installed after November 19, 2018 must be equipped with a personal fall protection system or ladder safety system. * See Appendix C for further details |  |  |  | 1. Newly installed fixed ladders which extend more than 24 feet are equipped with ladders safety systems or personal fall arrest systems 2. Self-swinging gate has been installed at the ladder opening |  |  |  |
|  | Will electrical equipment be installed in the new structure? |  |  |  | * Include an evaluation of arc flash and electrical safety hazards, per the requirements of the most recent NFPA 70E standard, in the project scope. |  |  |  | 1. All electrical panels in the newly renovated or constructed spaces are labeled to identify the voltage, purpose, and shock and arc flash hazards, per the requirements of NFPA 70E |  |  |  |
|  | Will potable water supply piping be installed in the new structure? |  |  |  | * Per City of Chicago Code, solder used for water supply lines must not contain more than 0.2% lead. * Flushing and cleaning and follow-up testing for lead must be performed for affected water supply piping if the water main will be shut down. EHS will arrange for an environmental consultant to collect water samples. |  |  |  | 1. Water sampling has been conducted for drinking water sources and results have been provided to EHS |  |  |  |
|  | Will Food Establishments be installed or renovated as part of this project? |  |  |  | * Inform EHS who the intended occupant of the food establishment will be: Student-Run Café, UChicago Dining, or a third-party contractor |  |  |  | 1. If applicable, the food establishment has been added to the EHS inspection schedule |  |  |  |
|  | Will metal, wood, art studio, or other craft shops be installed in the new building? |  |  |  | * Inform EHS who the intended occupant will be: Facilities Services, Physical Plant, students, or faculty. * Consult with EHS when purchasing and selecting equipment for space to ensure equipment includes safe-guarding features required by the OSHA Machine Guarding Standard. * Inform EHS who will be purchasing or selecting the shop equipment if this not part of the project scope. |  |  |  | 1. EHS has reviewed the machine shop and associated equipment and all action items identified from the review have been completed 2. If exhaust ventilation equipment was installed, then all of the commissioning requirements for Question 3.9 have been completed |  |  |  |

| 1. PRE-CONSTRUCTION Review | | | | | |
| --- | --- | --- | --- | --- | --- |
| **No.** | **General Pre-Construction Review Items** | **YES** | **NO** | **N/A** | **Notes** |
|  | Please review Sections 1a, 1b, and 2 and verify no changes have been made to the scope or design of the project. |  |  |  | Notify EHS if any changes have been made to the design or scope since the Pre-Design and Design Phase reviews. |
|  | Review EHS Contractor Pamphlet with GC/CM. |  |  |  | The EHS Contractor Pamphlet summarizes the EHS policies which are potentially applicable to project activities. The GC/CM should be directed to the EHS website to review policies in detail. |
|  | EHS provided project-specific kick-off guide |  |  |  | EHS will develop a kick-off guide specific to the project activities for the project manager to review with the GC/CM. |
|  | Verify measures described by dust, noise, odor, and/or vibration control plans have been implemented. |  |  |  | See Questions 1.3 and 1.23 for further information |
|  | Verify temporary egress routes have been implemented and appropriate signage has been posted. |  |  |  | See Question 1.2 for further information |
|  | Verify subsurface assessments have been completed prior to activities which will impact soil. |  |  |  | See Question 1.23 for further information |

| 1. pROJECT tURNOVER | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **No.** | **Post-Construction Question** | **YES** | **NO** | **N/A** | **Commissioning Questions** | **YES** | **NO** | **N/A** |
|  | Have all applicable Pre-Design and Design-specific commissioning requirements been completed (please review Sections 1a, 1b, and 2). |  |  |  |  |  |  |  |
|  | Conduct a walkthrough with EHS to evaluate general condition of newly-constructed building. |  |  |  | 1. Corridors and stairwells are free of tools and equipment 2. All spaces are free of construction-related debris 3. Chemicals used during construction activities (e.g. paints, solvents, epoxies, fuels, welding gases, etc.) have been removed from the building 4. All spaces are free of chemical residues, spills, or damage caused by spills 5. Scaffolds have been removed from inside and outside of the building 6. Contractor LOTO devices have been removed from energy-isolating devices 7. Wall penetrations are sealed with fire-rated caulk 8. All spaces are free of exposed electrical hazards |  |  |  |
|  | EHS to review the fire suppression systems in the newly-constructed building. |  |  |  | 1. Fire sprinklers heads are free from obstructions, provided at least 18 inches of clearance 2. Standpipes are free from obstructions and are easily accessible 3. Pipes and valves for the fire suppression system have been labeled 4. Fire suppression valves are locked in the open position 5. Newly-installed fire pumps have been inspected and approved 6. Entry door(s) to the fire pump room(s) is/are labeled |  |  |  |
|  | EHS to conduct a fire and life safety review of the newly-constructed building. |  |  |  | The Fire Department Information Cabinet (FDIC) for the building has been installed  Updated evacuation plans have been posted throughout the building  Areas of rescue assistance have been registered with EHS  AEDs have been registered with EHS and inspection tasks has been established on Maximo or CMS  Fire extinguishers have been installed throughout the building, as required by Chicago Fire Code, and inside of all mechanical rooms and elevator machine rooms  Specifications and drawings for the fire alarm and detection systems have been provided to EHS  Carbon monoxide detectors have been installed as required by Chicago Fire Code for residential areas  Adequate ventilation precautions taken for atriums (e.g. smoke ejection system, beam detection) when required |  |  |  |
|  | EHS to review signage in the newly-constructed building. |  |  |  | Emergency exits are identified by signage  Stairwells are identified by signage  Signage is provided as needed to identify direction to emergency egresses  Signage provided to adequately identify fire pump room, AS shutoff valves, and stand-pipe connections  Fire extinguishers are identified by signage  AEDs are identified by signage  Occupancy placards have been posted outside of assembly areas  Building address sign is clearly visible from the street |  |  |  |
|  | EHS to review applicable permits issued by the City of Chicago for the newly-constructed building. |  |  |  | 1. Permits have been obtained for all elevators 2. Variances have been clearly documented on the building permit 3. Occupancy placards have been obtained for assembly areas |  |  |  |
|  | EHS to review the applicable documentation required for the newly-constructed building. |  |  |  | 1. Code review pages and Life Safety plans have been submitted to EHS 2. Copies of certificates of flame resistance or proof of fire retardant treatment all interior finishes and draperies have been provided to EHS 3. Fire pump acceptance has been submitted to EHS 4. The Facility Classification Questionnaire has been completed for the new renovation and submitted to EHS 5. Architectural plans to define occupancy ratings (e.g. chairs vs. no chairs) have been submitted to EHS |  |  |  |
|  | EHS to review any life safety special features installed in the newly-constructed building. |  |  |  | 1. Gas detection systems have been installed in locations with potential for hazardous atmospheres 2. Oxygen monitoring systems have been installed in locations with potential for oxygen depletion, such as mechanical rooms containing refrigerants 3. Gas detection and oxygen monitoring systems are connected to the BAS 4. Keys for elevators, stand pipe cabinets, and other special equipment are stored in designated locations which are marked by signage 5. Building Plan identifies presence of pre-action systems, FM200 flooding systems, and other specialty fire suppression systems 6. Microwaves, coffeemakers, space heaters, and other electrical appliances are UL-rated 7. Walk-through has been scheduled with the Chicago Fire Department 8. Schematics have been provided for domestic water shut-offs 9. Special instructions to operate unique systems under normal and emergency operations (e.g. fire shutters, Class II FACP, smoke ejection systems) have been provided to EHS and identified in the Building Plan |  |  |  |
|  | EHS to determine if Job Safety Analyses need to be modified or created for the newly-constructed building. |  |  |  | 1. EHS and Facilities Services have conducted job safety analyses of new maintenance activities to be performed and corrective actions identified have been completed 2. EHS has scheduled industrial hygiene monitoring if required 3. EHS has scheduled noise surveys if required 4. Hazard communication signage posted where required (e.g. noise, chemical storage, etc.) |  |  |  |
|  | EHS to survey the newly-constructed building to identify and evaluate potential confined spaces. |  |  |  | 1. Confined spaces have been evaluated to determine if they are permit-required confined spaces (“permit spaces”) 2. Signage, as required by 1910.147, has been affixed to all permit spaces 3. All permit spaces are secured against unauthorized entry |  |  |  |
|  | Were new equipment related to building operations (e.g. HVAC equipment) installed in the newly-constructed building? |  |  |  | 1. Local disconnect switches haven been installed for all electrically-powered equipment 2. All equipment are equipped with energy-isolating devices which are readily-accessible and labeled for all energy sources 3. All equipment are equipped with appropriate guards to prevent contact with machine hazards 4. LOTO procedures have been developed for all new equipment |  |  |  |
|  | Does the newly-constructed building contain newly-purchased powered industrial trucks (PITs)? |  |  |  | 1. Newly-purchased PITs have been added to the EHS inspection schedule 2. PIT training program has been updated to include newly-purchased PITs 3. Lead-acid batteries for newly-purchased PITs have been added to the EPCRA Chemical Inventory |  |  |  |
|  | Were cranes and/or hoists installed in the newly-constructed building? |  |  |  | Initial inspections have been completed on each newly installed crane and/or hoist to verify they comply with 1910.179 and documentation has been provided to EHS  Operational tests have been performed on each newly-installed crane and/or hoist and test results have been provided to EHS  Rated loads are clearly marked on each side of all newly-installed cranes and/or hoists  Periodic inspections for newly-installed cranes and/or hoists have been added to Maximo or CMS |  |  |  |

**Appendix A: Air Permit Guidance for Projects**

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| **Overview of Regulations** | * Equipment which are sources of air emissions are potentially subject to the US Environmental Protection Agency (EPA) Clean Air Act (CAA) regulations * The University of Chicago has a Title V Air Operating Permit since it is considered a major source per the CAA Regulations * Construction involving the installation, removal, or modification air emissions sources must comply with the University’s Title V Permit |
| **Examples of Impacted Equipment at the University** | * Boilers * Generators * Fuel-burning furnaces used for comfort heating or process equipment; * Printing operations; * Tanks containing organic liquids or fuels; * Fuel dispensing equipment; * Non-steam sterilizers; and * Equipment used for processing or producing materials * Air pollution control devices |
| **Significant Sources** | * Emergency generators with engine size greater than or equal to 1,118 kW * Non-emergency generators with engine size greater than or equal to 112 kW * Natural gas, propane, or liquified petroleum gas boilers greater than or equal to 2.5 mmBTU/hr * Oil or oil-fuel combination boilers greater than or equal to 1.0 mmBTU/hr * Other air emissions sources which exceed equipment-specific thresholds |
| **Permitting and Notification Requirements** | Illinois Environmental Protection Agency (IEPA):   * Construction permits are required prior to construction of any significant source * Permits may be required prior to modification of air emissions equipment * Notifications required prior to construction of any insignificant source * Notifications required prior to removal of significant or insignificant equipment   Chicago Department of Public Health (CDPH) air pollution control (APC) permits required for each:   * Air emission equipment * Air pollution control device * Pressurized vessel |
| **Design Review for New Air Emissions Equipment** | * Prior to ordering new air emissions equipment, the University’s Title V Consultant must review the proposed equipment to determine regulatory impacts * Project manager must provide the Title V consultant with the following: equipment and process diagrams, materials used (e.g. fuel, sterilizer, ink, etc.), and anticipated usage rate * The Title V Consultant will complete the construction permit application with input from the Project Manager, General Contractor/Construction Manager, and sub-contractors |
| **Design Review for Modifications to Existing Air Emissions Equipment** | * Prior to modifying the air emissions equipment, the University’s Title V Consultant must review the proposed modifications to determine regulatory impacts * Project manager must provide the Title V consultant with the following: equipment and process diagrams for the proposed modifications, materials used (e.g. fuel, sterilizer, ink, etc.), and anticipated changes to usage rate or other operating parameters * The Title V Consultant will complete the construction permit application with input from the Project Manager, General Contractor/Construction Manager, and sub-contractors |
| **Timelines** | * Completion and submission of construction permit application and issuance of construction permit: **9-12 months**. * Notifications to the IEPA for installation of insignificant sources or removal of significant sources: due **7 business days** prior to construction * APC Permit: due |
| **Costs** | * Application fee to the Illinois EPA: **$7,500** * Estimated cost for the Title V Consultant to complete and submit the air permit application: **$2,000-5,000** * APC Permit: **$150** per equipment (APC fee is incorporated into the building permit fees if the equipment were included as part of the building permit review) |
| **Other Design Considerations** | * **Fire and Life Safety:** EHS and FM Global must review the fire safety design plans for the spaces in which generators and boilers will be installed * **Operations and Maintenance Safety:** Please consult with EHS during the project design phase to identify feasible options for Facilities Services or Physical Plant employees to safely maintain the equipment. * **Oil-Pollution Prevention:** Secondary equipment * **Noise:** Consult with EHS to select equipment or design enclosures to minimize noise pollution and exposure to building occupants. |

**Appendix B: Underground Storage Tank Guidance for Projects**

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| **Overview of Regulations** | * Installations, modifications, and removals of Underground Storage Tank (UST) systems may be subject to the regulatory requirements of the Illinois Office of the State Fire Marshall (OFSM) and Chicago Department of Public Health (CDPH) * Removals of UST systems can further be subject to the Illinois Environmental Protection Agency (IEPA) regulations if the UST was found to be leaking |
| **Permitting and Notification Requirements** | * **OSFM:** Permit required for installation, modifications, and removal of USTs * **CDPH:** Permit required for installation, modifications, and removal of USTs |
| **Planning for Removal of USTs** | * Contractors performing installations, modifications, or removals of UST systems must be licensed by the OSFM * Project manager must arrange for removal and containerization of UST contents * EHS will arrange for disposal of the materials removed from the UST * Notifications to the IEPA may be required if the UST is covered by the University’s Air Operating Permit * Environmental consultant will oversee UST removal and perform soil testing as needed * EHS will assist the Project Manager with selecting the environmental consultant * The UST removal must be coordinated with CDPH to allow them to inspect the soil for signs leaks after the UST is uncovered * Soil remediation maybe required if contaminated soil is discovered during the UST removal * NFR letter required for remediation prior to further site development |
| **Design Review for Installation of New USTs or Modifications to Existing USTs** | * Contractors installing the UST and associated equipment must be licensed by the OSFM * Additional IEPA air-permitting requirements may apply depending upon the size and contents of the UST (please refer to Question 3.3 for further information). |
| **Timelines** | * OSFM Permit issuance: **20 days** * CDPH Permit submission: **at least 30 days prior** to the date activity * Installation of USTs containing petroleum products require a permits from the Illinois Office of the State Fire Marshall (OSFM) and the CDPH. * Both the OSFM and CDPH permit application fees are **$200 per UST** and typically require **20 days** to review. |
| **Costs** | * Fee for OSFM Permit: Application fee to the Illinois EPA: **$200** * Fee for CDPH Permit: Application fee to the Illinois EPA: **$200** * Disposal of UST contents * Environmental consultant for UST removals * Soil testing and remediation |
| **Other Design Considerations** | * **Fire and Life Safety:** EHS and FM Global must review the fire safety design plans for the spaces in which the UST and associated equipment will be stored * **Operations and Maintenance Safety:** Please consult with EHS during the project design phase to identify feasible options for Facilities Services or Physical Plant employees to safely maintain the equipment. * **Air Permit:** the UST system may be subject to air permitting requirements (see Air Permit Guidance for further information) * **Emergency Shut Off:** UST systems which dispense fuels must have an emergency shut-off which will notify University of Chicago Police Department (UCPD) Dispatch when activated |

**Appendix C: Fall Protection Design Guidelines**

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| **Overview of Regulations** | * The Occupational Safety and Health Administration (OSHA) Walking and Working Surfaces Standard (29 CFR 1910, Subpart D) requires employees to be protected from falls of 4 feet or higher. * The OSHA Walking and Working Surfaces Standard also includes requirements for ladders, personal fall protection systems, and skylights |
| **Guidelines for Roofs** | * Control rooftop entry points to prevent unauthorized access. * Design should allow engineers to access rooftop equipment without exposure to fall hazards (i.e., parapet walls at least 39” tall to eliminate the need to install, maintain, train users and certify fall protection equipment.) * Guardrail systems are the preferred fall protection measure when a parapet wall is not present and should be installed at all leading edges 4 feet or more above a lower level. The standard bright yellow color is not required. * Fall warning systems and/or personal fall protection systems must be installed where guardrail systems are not feasible. * All roof access hatches must have guard rails on three sides with a swinging gate on the fourth side to provide fall protection when hatch is open |
| **Guidelines for Elevated Walking & Working Surfaces** | * Building design should allow engineers to access critical equipment and controls without being exposed to fall hazards. * All floor openings and edges inside a building which are 4 feet above the lower level must be protected by guardrail systems (e.g., open shafts) * Personal fall protection systems must be installed where fall hazards cannot be protected by guardrail systems. * Project design review should also focus on surfaces which may inadvertently become elevated walking or working surfaces, such as the tops of tanks or air-handling units |
| **Guidelines for Personal Fall Protection Equipment** | * Personal fall protection systems must be certified by a professional Engineer (PE), who is competent in personal fall protection systems, to verify installation meets the requirements of the most recent American National Standards Institute Fall Protection Standard (ANSI) Z359 Fall Protection Standard * The written certification must be provided by the contractor who installed the fall protection system to demonstrate compliance with the ANSI Z359 Standard * The certification requirement applies to all personal fall protection systems including those used by university employees and window-washing contractors. * Project scope must include training for fall protection systems which will be used by university employees |
| **Guidelines for Skylights** | * Must be designed to prevent employees from falling through. * Can be achieved with guardrails or reinforced glass, provided documentation is available demonstrating the load limits of the glass |
| **Guidelines for Fixed Ladders** | * Fixed ladders which extend more than 24 feet above a lower level must be equipped with a personal fall protection system or ladder safety system. * Self-closing gates must be installed at the ladder openings. * All fixed ladders must be secured against unauthorized access |

**Appendix D: Waste Disposal Guidance for Projects**

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| **Overview of Regulations** | * Disposal of chemicals and items containing hazardous materials must be reviewed by Environmental Health and Safety (EHS) to ensure disposal meets compliance with Federal, Illinois, and City of Chicago regulations * Items disposed as “Hazardous Waste” are subject to recordkeeping and reporting requirements, which are managed by EHS * Disposal of hazardous wastes must be coordinated with EHS through the University’s preferred vendor. * If a new research building is being constructed, we must evaluate the potential waste demand and ensure the central accumulation area has the capacity to receive the additional waste streams. |
| **Chemical and Oil Wastes** | * Waste chemicals generally cannot be disposed of as general refuse and EHS must determine legal requirements for disposal of waste chemicals. * Examples include hydraulic oils, fuels, solvents, cleaners, water treatment chemicals, compressed gas cylinders, etc. |
| **Mercury-Containing Devices** | * Devices such as thermostats and boiler switches must be disposed as hazardous waste if they contain mercury * Thermometers and other research-related equipment containing mercury are considered Laboratory Wastes |
| **Batteries** | * Batteries which are damaged or leaking must be disposed as hazardous waste * Facilities Services can help with disposal of intact lead-acid batteries and all other types of batteries |
| **Fluorescent Light Bulbs** | * Facilities Services can assist with collection and disposal of fluorescent light bulbs |
| **Light Fixture Ballasts** | * EHS will arrange for disposal of PCB-containing ballasts * Facilities Services can assist with collection and disposal of non-PCB ballasts |
| **Refrigerant-Containing Appliances** | * Refrigerant must be recovered by a Certified Refrigerant Technician prior to disposing a refrigerant-containing appliance * Recovered refrigerants can either be reused in another appliance or disposed as hazardous waste * Certified refrigerant technicians in Facilities Services, Physical Plant, or their 3rd party vendors can perform refrigerant recoveries * If contractors perform refrigerant recoveries, then they must provide the following:   + Copies of the certifications of the certified refrigerant technicians performing the recovery and of the equipment being used;   + List of appliances from which the refrigerants were recovered; and   + Amounts and types of refrigerants recovered from the appliances * Any equipment with a circuit > 50 pounds must be registered with EHS and the maintenance shop to ensure a leak rate calculation log and maintenance log is in place. * Contact EHS with questions regarding disposal and/or sale of small appliances (<5 lbs of refrigerant and hermetically sealed) |
| **Radiological Waste** | * Contact the Radiation Safety Office for assistance with Americium-containing smoke detectors and tritium-containing exit signs * Only radiation safety can remove radiation warning signs and/or stickers |
| **Chemical and Oil Storage Tanks** | * The University’s hazardous waste vendor cannot transport tanks or evacuate materials from tanks * The Project Manager must arrange for a contractor to transfer tank contents to containers which are 55 gallons or smaller * The University must furnish safety data sheets (SDSs) for the contents of tank to the contractor in the bid documents of the project * Removal of tanks may impact the University’s Air Operating Permit (see Air Permit Guidance for further information) |
| **Waste Shipments from off-campus buildings** | * The University must obtain identification numbers from the IEPA and EPA to collect/ship hazardous wastes from properties which are not contiguous with the Hyde Park campus, as defined in the University’s hazardous waste permit. As of 2023, contiguous property is 55th to 61st and Cottage Grove to Stony Island. * EHS will submit applications to the IEPA and EPA for these identification numbers * Hazardous waste shipments from these properties cannot occur until the identification numbers are issued for the properties * The ID numbers are linked to the property and cannot be relocated to a new facility. * If a facility has non-UC occupants and/or affiliates, then they must request their own ID numbers, or else we own their waste forever as it would be manifested under our number and future landfill remediation would be the liability of the University. |
| **Research Labs and Laboratory Waste** | * For renovations of research spaces, the Project Manager must contact ORS to initiate the Laboratory Decommissioning Process * The Office of Research Safety (ORS) will coordinate the disposal of laboratory chemicals with the lab occupants during the Laboratory Decommissioning Process. Once the waste is containerized and properly labeled, ORS or the lab occupants will submit a waste pick-up request to EHS |
| **Timeline** | * Survey of chemical inventories coordinated by ORS (**1 week** small, **2 weeks** large) * ORS and/or lab personnel containerize and label waste (**1 week** small, **2-4 weeks** large or multiple abandoned unknown chemicals) * If property is not contiguous with the Hyde Park campus. Then EHS will create and submit application of IEPA and EPA ID numbers: Creation of application**: 1 week,** Review by the IEPA and EPA **6-8 weeks.** |
| **Costs** | * EHS will cover disposal of small amounts non-Laboratory hazardous wastes * EHS will NOT cover the costs for disposal of Laboratory Wastes. EHS only covers the cost of waste generated during normal research operations. * For a decommissioning involving abandoned or stockpiled chemical inventories, the Project Manager must determine who will be responsible for payment * The following must be funded by the project: * Environmental consultant labor for hazardous material survey; * Labor for transferring from tanks to containers; and * Disposal of contents from tanks, equipment, secondary containers |
| **Project Planning** | * EHS can arrange for an environmental consultant to conduct a survey to provide an inventory of non-lab/ non-research related materials which might be subject to special waste disposal requirements (e.g., lead, asbestos, mercury, PCBs. * For renovations of research spaces, the Project Manager must contact ORS to initiate the Laboratory Decommissioning Process * For a large decommissioning involving abandoned or stockpiled chemical inventories, then a funding source will need to be identified by the responsible department or FS-CPD as EHS only covers the cost of waste generated during normal research operations. |
| **Chemicals Used by Contractors During Project** | * The University is NOT responsible disposing chemicals used by contractors during the construction project * Contractors must remove all their chemicals, including compressed gases, from the project site upon completion of construction, unless they are required for building operation and maintenance, such as water treatment chemicals. However, they must provide Safety Data Sheets for all chemicals that will remain. |

**Appendix E: Chemical Storage Design Guidelines**

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| **Chemical Storage Regulations** | * Chemical storage must comply with City of Chicago Building Code which is based on the International Fire Code * Please provide EHS with a list of chemicals, along with quantities and locations within the structure, which will be permanently maintained in the building to ensure compliance with EPA Tier II annual reporting and Emergency Planning Community Right to Know Act (EPCRA) (e.g., battery pack-up systems, water treatment, hydraulic oil, acid tanks) * Provide copy of safety data sheets |
| **General Requirements** | * Chemical storage limitations are based on the hazard class, location, available safety measures * Chemicals are not permitted to be stored in below-grade levels without a variance to the building license issued by the Chicago Department of Buildings * Secondary containment may be required based on proximity to incompatible chemicals, floor drains, sensitive equipment, public corridors * Chemical storage areas must be designed to allow for segregation of incompatible chemicals |
| **Flammable and Combustible Liquids** | * EHS and FM Global must review spaces which will be used for bulk storage of flammable and combustible materials as these areas may require additional fire-protection measures |
| **Oils** | * Secondary containment is required for containers which:   + Contain 25 gallons or more of petroleum-based fuel oils (e.g. diesel or gasoline); or   + Contain 55 gallons or more of all other types of oils. * These secondary containment requirements also apply to hydraulic elevators and grease traps. |
| **Corrosives** | * Eyewashes and, in certain instances, emergency showers must be installed in areas where corrosive liquids will be stored or handled * Corrosive chemicals must be stored within secondary containment * The shower and eyewashes must have a floor drain. |
| **Compressed Gases and Cryogenic Liquids** | * EHS can provide further design guidelines for safe storage and usage of compressed gases outside of lab * Oxygen monitoring systems could be required for locations where there is a risk for oxygen deficiency from compressed gases or cryogenic liquids. Contact ORS for research labs and EHS for non-research space. |

**Appendix F: Soil Excavation Guidance**

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| **General** | * Soil excavations may be subject to certain regulatory requirements if:   + The excavated soils will be disposed or relocated to another site; or   + Underground storage tanks (USTs) will be impacted by excavation activities * Please see Real Estate Transfer Policy for review of Environmental Site Assessments |
| **Disposal of Excavated Soils** | * Excavated soil which will be landfilled must be tested per EPA protocol and the requirements of the receiving landfill * Environmental consultant will perform soil testing determine the disposal criteria and create waste profiles for the excavated soils * Environmental consultant can mark the project site delineate the various soil designations * EHS will sign the waste profiles * EHS must be provided copies of the manifests and disposal records for soils * The General Contractor/Construction Manager must arranged for the disposal of the excavated soil |
| **Reuse of Excavated Soil** | * There are no testing requirements if the excavated soil will remain and be used to refill the excavation * Excavated soils which will be moved to another location on campus must be tested per EPA protocol to verify it is not contaminated with hazardous substances |
| **Underground Storage Tanks** | * Environmental consultant and scanning for USTs * See UST Guidance for guidance if USTs must be removed from project site |
| **Buried Steam Lines** | * Buried steam lines could be insulated with asbestos-containing material * Environmental consultant and asbestos abatement contractors should be present for excavations which may impact steam lines (abatement contractors will not perform the actual abatement) |
| **Excavation Planning** | * EHS can assist Project Manager select an environment consultant * Submit request to the excavation review committee to identify presence of buried utilities, such as: electrical, water, communication, steam, or natural gas lines |
| **Timeline** | * Standard turn-around-time (TAT) for soil testing: **5-7 days** (testing can be expedited for a 75-200% surcharge depending upon the TAT requested). * Please note: soil sampling results are valid for 180 days from the date of sample collection. * See UST Guidance for timeline on UST removals |
| **Costs** | **The following will be funded by the project:**   * Environmental consultant services for soil analysis and subsurface investigation (including surcharges for expedited TAT requests) * Soil disposal * Asbestos abatement for buried asbestos-insulated steam lines will be charged to the project * UST removal (see UST Guidance for costs associated with UST removals) |
| **Employee Safety** | * University employees, including Project Managers, may not enter excavations * Temporary egresses must be constructed for occupied buildings it’s emergency egresses are impacted by excavations |
| **Contractor Safety** | * Excavation contractors must notified about the presence of contaminants which are present in the soils at concentrations exceeding the Environmental Protection Agency’s limits for work safety * The General Contractor/Construction Manager is responsible for managing the safety of construction workers entering the excavation |
| **Dust Control Plan** | * The General Contractor/Construction Manager must develop and implement a Dust Control Plan for excavation activities |
| **Stormwater Management** | * **Chicago Department of Buildings (CDOB):** stormwater management plan for projects which will:   + Disturb more than 15,000 square feet of land;   + Create an at-grade impervious surface of more than 7,500 square feet; or   + Discharge stormwater into any body of water or separate sewer system * **Illinois Environmental Protection Agency (IEPA):** Storm Water Pollution Prevention (SWPP) Plan and Permit for projects which will disturb more than 1 acre of land (measurements typically include all areas inside the construction site limit for the project) * The general contractor or construction manager (GC/CM) is responsible for:   + Developing and submitting the site stormwater management plan for approval from the CDOB; and   + Applying for SWPP Permit from the IEPA |