ADVISORY NO. 29.6: CONSTRUCTION SAFETY SUPPORT

INTRODUCTION

The University of Cincinnati (U.C.) is committed to the safety, health, and protection of our students, faculty, staff, the public, as well as our construction management and subcontractor partners and their respective workforces. It is therefore expected that each person, of every tier and position are responsible for complying fully with all federal, state, and local laws, codes, standards and regulations as they relate to the safety of persons, environment, public, or property. This Advisory applies to all construction and renovation projects and is not intended to be all inclusive. It is merely a guide to outline some of the important concerns of UC, and protocols that must be followed by all contractors and suppliers when working on any UC Projects.

Construction sites are dynamic activities where workers engage in many activities that exposes them to a variety of safety hazards not only contractors and their employees working on the jobsite, but to all University of Cincinnati employees and students working in, adjacent to, or in buildings in which construction activities are taking place. Construction activities at the University of Cincinnati comprise a wide range of activities including construction of new buildings, renovation of existing facilities and major repair or alterations of building systems. This Advisory has been designed to provide consistent information about the minimum requirements for safety in construction areas.

General Safety Practices

It is the policy of the University of Cincinnati to comply with all Occupational Safety and Health Administration (OSHA) standards including the General Duty Clause, Ohio Fire Codes, Environmental Protection Agency (EPA), etc. The university expects all contractors, subcontractors, and their employees to comply with these regulations, and it is the responsibility of the general contractor to enforce these standards and practices. The general contractor will designate a qualified employee to be the Site Safety Supervisor. The Site Safety Supervisor will be the on-site contact person responsible for compliance with the UC Construction Safety Plan.

The University's Environmental Health and Safety Office (EH&S) is responsible for conducting safety orientation, training, monitoring, and ensuring compliance with all elements of the University of Cincinnati's Construction Safety Plan. EH&S is vested with the authority to intervene when construction activities cause conditions that pose a danger to the health and safety of UC staff, students, visitors and the public, or damage to university property. During monitoring activities when non-compliance issues are observed**, EH&S Site Safety Representative** will inform the University's **Project Manager** following the observation and take all necessary steps to ensure that all workplace conditions are corrected in a timely manner. Work may not resume until the **Project Manager, EH&S Site Safety Representative,** and contractor/manager **Field Safety Manager** have agreed to and completed the corrective action(s).

Gross violations of the UC Construction Safety Plan, including activities or behavior that is considered immediately dangerous to life and health, or repeat violations may result in the cessation of construction activities and the temporary or permanent removal of the offending contractor or worker(s) from the university project.

GENERAL GUIDELINES

1. The job site must remain secured at all times and protected against the entry of any unauthorized personnel.

2. Required personal protection equipment (PPE) must be worn at all times when on construction or renovation sites at the University of Cincinnati. At a minimum, each employee is required to wear a hard hat, safety glasses work shoes (boots). High visibility vests with reflective striping are required when employees are exposed to vehicular traffic. Anyone entering the construction site should be wearing head protection until the point when all overhead work is completed. In the absence of vehicular traffic, high visibility shirts should be worn at all times. All workers must wear shirts with sleeves, long pants, and sturdy work shoes or boots when working on a construction or renovation site. Sleeveless or tank top shirts, short pants, sweatpants, sneakers, sandals, and high-heeled or open-toed shoes are not permitted.

   Depending on the circumstances and potential hazards present, additional PPE may be required. This determination will be made by your supervisor based on the preliminary Job Hazard Analysis. Additional PPE may include:

   - Protective gloves
   - Hearing protection
   - Full face shields when cutting, grinding, or chipping.
   - Chemical splash goggles
   - Respiratory protection
   - Fall protections equipment when working above 6 feet.

3. OSHA 1926.252 prohibits dropping material or debris from more than 20 feet from a building without the use of an appropriate chute.

   AIR QUALITY

   Contractors shall prevent airborne transmission of dust, mists, and vapors at all times, including nonworking hours, weekends, and holidays. The job site must be properly separated from adjacent areas and precautions taken to keep construction dust and dirt from migrating outside the work site using barriers and engineering controls. All doorways, plenums, and penetrations will be sealed using 6 mil poly or comparable material to migrate the migration of dust and other particulates from the work site. The contractor shall use wet suppression or other means to control dust and vapors in accordance with the applicable specifications and drawings included in the contract documents.

   Contractors shall prevent excessive ambient noise to be generated at all times, including nonworking hours, weekends, and holidays. Contractor shall use appropriate means to control noise in accordance with the applicable Federal, State or local regulatory standards applicable to the project. Any public complaints of noise received by the General Contractor, Contractor or Subcontractor, or their representatives will be mitigated and communicated to the University **Project Manager** and **EH&S** immediately upon receipt of the complaint.

HAZARDOUS MATERIALS and HAZARDOUS WASTE GUIDELINES:

The University of Cincinnati shall **NOT** be responsible for materials and substances brought to the site by any contractor. If hazardous materials are being used on the work site, the general contractor will provide the UC Project Manager with applicable Safety Data Sheets (SDS's) prior to the materials' arrival. Each contractor is responsible for the proper storage and management of hazardous materials in accordance with Federal, State, and Local requirements. No chemicals that the contractor brings on-site shall remain on university property at the completion of the work without the consent of the UC Project Manager.

The General Contractor shall manage all hazardous waste in accordance with all applicable federal, state, and local regulations including but not limited to the Resource Conservation and Recovery Act (RCRA), 40 CFR Part 260. The Contractor shall have primary responsibility for all such hazardous waste, except for waste that is abated from University of Cincinnati property (e.g. lead paint, asbestos, and contaminated soil). Containers of hazardous waste shall be properly labeled, stored in/on a secondary containment device, maintained in good condition, and kept closed at all times. Each Contractor shall be responsible for coordinating the shipment of all hazardous waste where they have primary Generator responsibility, including signing all hazardous waste manifests. A copy of all hazardous waste manifests shall be provided to the UC Project Manager and EH&S.

CRANE SAFETY

Overhead cranes have a significant impact on university operations. The use of cranes, hoists and slings on construction sites to lift or move heavy equipment, building materials, protective systems, erect steel, etc. pose a serious safety hazard if not used properly. All parties who are responsible for the use of cranes while working at the University of Cincinnati are expected to comply with Subpart CC 29CFR 1926.1400 (et al) as the standard pertains to their work.

The responsibility for compliance with the standard in its entirety falls upon the individual crane contractor in so much as it is dictated by the standard.

EXCAVATIONS AND TRENCHING

Working in an excavation is one of the most hazardous jobs in construction. Most excavation accidents are the result of cave-ins or collapsing excavation walls. There are, however, a number of procedures and protective systems designed to protect individuals in and around excavations:

- Never enter an unprotected trench.
- Workers must be protected from cave-ins by an adequate protective system in trenches that are 5 feet deep or deeper.
- A daily inspection of the excavation, adjacent areas, and protective systems by a competent person is required.
- When used, sloping of the excavation walls must be adequate for the type of soil. A competent person must determine soil type.
- Trench boxes or shields must be used in accordance with the manufacturer's recommendations, or as designed and approved by a registered engineer.

- Ramps, runways, ladders, or stairs must be used for access if the trench is greater than four feet deep. Access must be provided within 25 feet of a work area.
- Any material or equipment, including spoils, that could fall or roll into an excavation must be placed at least two (2) feet from the edge of the excavation.
- A warning system for pedestrian and vehicular traffic must be in place around all excavations. The warning system must consist of barricades, hand or mechanical signals, or stop logs and flashing lights at night.
- Where workers or equipment are expected to cross over an excavation, walkways and standard guardrails must be provided.

FALL PROTECTION

When work is performed on elevated surfaces that are six (6) feet or more above the surrounding areas in a construction setting or four (4) feet or more in an industrial setting, protection against falls must be considered. Fall arresting systems, which include lifelines, retractables, lanyards, body harnesses, and other associated equipment are used when fall hazards cannot be controlled by railings, floors, nets, and other means. These systems are designed to stop a free fall of up to six (6) feet while limiting the forces imposed on the wearer. A variety of systems may be chosen from when providing fall protection and include:

- Guardrails
- Personal Fall Arresting Systems
- Positioning Device system
- Warning Line Systems
- Covers
- Safety Net Systems

LADDER SAFETY

Ladders are an essential tool for Contractors to complete tasks that require employees to work on an elevated level. Misuse of ladders can result in serious injuries from falls. Due to the risk of electric shock, the University does not permit the use of metal ladders on campus.

Portable ladders are used at the University of Cincinnati in a wide variety of settings, both academic and administrative. Portable ladders must be maintained in good condition at all times, and inspected at regular, frequent intervals. Selecting the proper type will depend on the task required:

- Stepladders are designed to be self-supporting. There are several important details when using a stepladder:
    - The spreaders must be fully extended and locked in place before climbing.
    - The maximum working height of a stepladder may not be exceeded.
    - Paint trays are not steps and should only be used for holding paint cans and trays.
    - Unless designed for such use, the back of the ladder may not be used for climbing.
    - Stepladders should never be leaned against a wall for use as a straight ladder.

- Straight or Extension Ladders should be positioned so that the ladder is set to a 75- degree angle from the ground. There are several ways to approximate this angle:

    - Extension ladders must be set at a 1 to 4 slope between the foot of the ladder and the support against which it is placed.
    - So that the ladder contact points rest firmly against the structure.
    - So that the ladder extends at least three feet above the point of support.
    - Make sure that both rung locking mechanisms are fully engaged on extension ladders.

- Fixed ladders are subject to different standards and requirements than portable ladders. Ladder safety devices, such as cage, safety climbing systems, or equipped with a person fall arrest system are required if the total length on a fixed ladder equals or exceeds 24 feet in length. Fixed ladders must be able to support at least two loads of 250 lbs. each. Rungs must be shaped to minimize slipping. For more information on the requirements for fixed ladders, see OSHA Standard 29 CFR 1910.28 (b)(9) Fixed Ladders.

- Job built ladders and stairs are permissible at the University of Cincinnati as long as they meet the requirements of the OSHA Standard.

SCAFFOLDING

Scaffolding is widely used during construction and renovations activities. In its simplest form, a scaffold is any temporary elevated or suspended work surfaces used to support workers and/or materials. There are many types of scaffolds, both supported and suspended. Included here are the general requirements for all scaffolds.

- The footing of scaffolding must be sound and rigid, capable of supporting the weight. Scaffolding must not be placed on unstable objects, such as bricks or blocks.
- Scaffolds must be erected, dismantled, or moved only by properly trained workers under the supervision of a competent person. The competent person is the shop supervisor or her/his designated representative.
- Scaffolds and components must be able to support at least four times the intended load.
- Per University Standards guardrails (e.g., handrail and midrails) and toeboards must be provided for all open sides of the scaffolding that are six (6) feet or more above the surrounding surfaces.
- To protect against falling objects, screens must be installed between the toeboard and midrail if anyone is required to pass under the scaffolding.
- Elevated platforms (scaffolding systems) must be inspected daily and any damaged or weakened components of the scaffold must be repaired or replaced immediately.
- A ladder or other safe means of access must be provided.
- Access must be provided when the scaffold platforms are more than 2 feet above or below a point of access.
- All scaffolds shall have a scaffold tag with the contractor’s name, dates and status of scaffold safety requirements.

HOT WORK PROCEDURES:

Burning, cutting, and welding operations (referred to as hot works) are commonly associated with renovation and construction activities. Potential health, safety, and property hazards result from the fumes, gases, sparks, hot metal, and radiant energy produced during hot work. Hot work equipment, which may produce high voltages or utilize compressed gases, also requires special awareness and training on the part of the worker to be used safely.

Areas where hot work is done should be properly designated and prepared. Combustible and flammable materials within the work area should be protected against fire hazards and the operation should not pose a hazard to others in nearby areas. The following controls should be used:

- Cutting and welding operations are performed only by authorized, trained individuals.
- The contractor shall have a 20 lb. A, B, C, Dry Chemical Extinguisher in the work area.
- If possible, hot work must be performed in a properly designed shop area equipped with all necessary controls and adequate ventilation.
- Move combustible materials at least 35 feet from the work site. If this is not possible, protect combustible materials with metal guards or by flameproof curtains of covers (other than ordinary tarpaulins).
- Cover floor and wall openings within 35 feet of the work site to prevent hot sparks from entering walls or falling beneath floors or to a lower level.
- Fire resistant curtains and/or tinted shields must be used to prevent fire, employee burns, and ultra-violet light exposure.
- The contractor shall provide a 30-minute fore watch after work is completed, including breaks.