



University of Kentucky[®]

Procurement Services

INVITATION FOR BIDS

CCK-2590.3-1-24

Asset Preservation - Pence Hall - BP#01

ADDENDUM #1

11/28/2023

IMPORTANT: BID AND ADDENDUM MUST BE RECEIVED BY: 12/14/2023 @ 3:00 P.M. LEXINGTON, KY TIME

Bidder must acknowledge receipt of this and any addendum as stated in the Invitation for Bids.

ITEM #1: BIDDER NOTICES

- The pre-bid attendance log is enclosed.
- To assist in outreach efforts, bidders are encouraged to use the following website for certified diverse firms providing goods and services in several relevant categories:
<https://www.mbdky.com/>

ITEM #2: MODIFICATIONS AND CLARIFICATIONS TO THE CONSTRUCTION DOCUMENTS

- Specification Section 00 24 13 – Scopes of Work, is enclosed.
- Specification Section 31 63 33 – Micropiles, is enclosed.
- The “Pre-Demolition Asbestos, Lead paint, and Hazardous Materials Inspection Report” is enclosed.

OFFICIAL APPROVAL
UNIVERSITY OF KENTUCKY

SIGNATURE

Ken Scott 11/28/2023

Contracting Officer / (859) 257-9102

Typed or Printed Name

University of Kentucky
Purchasing Division
322 Peterson Service Building
Lexington, KY 40506-0005

CCK-2590.3-1-24 Asset Preservation - Pence Hall - BP#01

Date/Time:

11/27/2023 2:00PM

Location:

Pence Hall - Room# 209









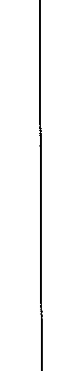
SIGN IN SHEET			
Name	Signature	Organization	E-mail address
Kev SCOTT		UK	
Marshall Gaddill		Green City Demolition	Mcardill@priestly.com
Tony Wiring		P'Rourke Wrecking	TWiring@proukewrecking.com
Austin Stori's		Glennwood Electric	dwz@glennwoodelectric.com
Michael Begans		TS Dyer.com	mbegans@TSDyer.com
Jeff Sizemore		Schlhorst	Jeff@schlhorst.com
NiRe Macless		Green City Valley	mnr@greenvalley.com
Michael Stouser		Valley	mstouser@buildwithvalley.com
Patrick Thurston		E.C. MARTENS	pthurston@ecmartens.com
Scott Klaus		EAT	sklaus@eat.com
Dennis Martin		Central Ky. Glass	dennis@ckglass.com
MATT MUEHLERS		HUSSUNG MECH.	michelm@hussung.com
Isaac Bacc		Sunasis	ibacc@sunasiscc.com
Nate Doty		Davis & Plewin	ndoty@davisandplewin.com
Jeff Draper		BS&O	wdraper@bsoc.com
Kathryn Sanders		KNBA	ksanders@knba.com
Patty Fisher		UKY CRM	patty.fisher@uky.edu

CCK-2590.3-1-24 Asset Preservation - Pence Hall - BP#01

Date/Time: 11/27/2023 2:00PM

Location: Pence Hall - Room# 209

SIGN IN SHEET

Name	Signature	Organization	E-mail address
Barry Humphrey		H&R Mech	bhumphrey@hrmech.com
Melissa Walker		LEI	mwalker@lelfi-eng.com
Rebecca Smith		Messer	rsmith@messer.com
Haley Rhodes		Kalkreuth Roofing	hrodes@krsn.net
Keith Sullivan		Suncois	ksullivan@suncoisenv.com
Jaclyn Isaacs		Innovative Demo	jaclyn@innovativedemo.com
Emily Edgington		Messer	eedgington@messer.com
Ramon Fry		Shenect	ramon@shenect-site.com
JR Martinez		Quantum Abatement	jrmartinez@quantumabatement.com



SECTION 00 24 13 – SCOPES OF WORK

GENERAL REQUIREMENTS APPLICABLE TO ALL TRADE CATEGORIES

GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and all provisions of the contract, including General and Special Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 DEFINITIONS

- A. Where items are specified by the use of Reference Standard Specifications, the date of the Reference Standard shall be the latest edition at the time of signing of the Contract, unless a specific edition is referenced in the Specifications or in an applicable code, in which case the specific reference shall govern. This summary should in no way be construed as being all-inclusive. It is issued as a guide to aid in the assignment of work. If conflicts regarding assignment of work exist between the drawings, the specifications, notes or these descriptions, the Bid Category Descriptions shall take precedence.
- B. The Specifications may contain incomplete sentences. Words, which do not contribute to clear and concise directions, may have been omitted. ("the Subcontractor shall", "shall be"; "as noted on the drawings", etc.). Omitted words and phrases may be supplied by inference, the word "shall be" and "shall" are indicated by a colon (:) i.e. "Color: Brown". The inferred subject of clauses or sentences starting with a verb shall be the Subcontractor, Sub-subcontractor, or Supplier responsible for the work of the Section in which it occurs.

1.3 GENERAL REQUIREMENTS

A. SCOPE

- 1. These general Requirements form a part of each Trade Category work description and apply to each bidder's scope of work. Refer to a specific description of the scope of work to be applied to individual Trade Categories elsewhere in this Volume 1 Project Manual.
- 2. The following is a Description of Trade Categories for the UK Pence Hall Renovation Project – **Bid Package 01**. All work relative to the project is identified on plans and specifications as prepared by K Norman Berry, and their design consultants. This section describes the work to be completed by each Bid Category as designated by the Construction Manager. Each subcontractor shall cooperate and coordinate with all other Bid Category Contracts for expedient completion of the work of this project. **Each Trade Category Description identifies the scope of work to be performed by the bidder in specific Bid categories.** This summary should in no way be construed as being all-inclusive. It is issued as a guide to aid in the assignment of work. If conflicts regarding assignment of work exist between the drawing notes and these descriptions, this section will take precedence.
- 3. The organization of the Trade Category Description into numbered or lettered paragraphs and subparagraphs is for ease of reference only. No limitation in, or on a requirement is

intended, implied or should be assumed due solely to its location within the Trade Category Description.

4. Each subcontractor is responsible for performing the Work described in the Trade Category Description, and as required by the Contract Documents for the Trade Category for which it is submitting a bid. Each subcontractor shall have taken all of the provisions herein into consideration when preparing its bid, and all costs associated with performing all work required by the Contract Documents shall be included in the subcontractors' s Contract Sum. Each subcontractor is responsible for knowing what Work has been assigned to any preceding or succeeding separate Subcontracts, as well as to other subcontracts within this Bid Package. No succeeding separate Subcontractor, as well as to other subcontracts within this Bid Package. No additional reimbursement or extensions of time will be allowed a subcontractor due to its lack of knowledge or understanding of the Work assigned to its subcontract or to any separate subcontract which may affect its Work.
5. Separate bids for this project shall be submitted for the following contracts. Bids will only be accepted for individual Trade Categories.

TRADE CATEGORY DESCRIPTORS

TC01 – STRUCTURAL DEMO/HAZARDOUS MATERIAL ABATEMENT
TC02 – GENERAL TRADES
TC03 – EARTHWORK
TC04 – MICRO PILES
TC05 – MASONRY
TC06 – STRUCTURAL & MISC. STEEL
TC07 - FINISH CARPENTRY
TC08 – WOOD FLOORING
TC09 – ROOFING
TC10 – NA
TC11 – GLASS AND GLAZING
TC12 – GYPSUM ASSEMBLIES
TC13 – FLOORING
TC14 – TILE
TC15 – PAINTING
TC16 – WINDOW TREATMENTS
TC17 – ELEVATORS
TC18 – FIRE PROTECTION
TC19 – MECHANICAL/PLUMBING
TC20 – ELECTRICAL AND COMMUNICATIONS
TC21 – LANDSCAPING

This summary should in no way be construed as being all inclusive. It is a guide to aid in the assignment of work. Refer to the drawings and specifications for a detailed accounting of any work not explicitly specified or noted. Each Trade Category lists specification sections included, in whole or in part, in that Trade Category. All work activates not explicitly specified or noted, but required to complete the work included in a Trade Category, are a part of the work scope. If conflicts regarding assignment of work exist between the drawing notes and these descriptions, this Trade Category Description shall take precedence.

6. The Bidder, having become thoroughly familiar with the requirements, conditions and intent of the Contract Documents, and with all conditions affecting the performance and cost of the Work at the place where the Work is to be completed, and having fully inspected the site in all particulars, hereby proposes and agrees to fully perform and work within the time stated and in strict accordance with the Contract Documents, without claims for additional time or compensation.
7. Except as may be specifically noted to the contrary in the Contract Documents, each subcontractor shall provide or cause to be provided, and shall pay for all labor, materials, equipment, tools, construction equipment and machinery, hoisting, rigging, scaffolding, ladders, planking, guying, shoring, bracing, temporary utilities, transportation, testing and all other facilities and services necessary for proper execution and completion of the Work of its Subcontract, whether temporary or permanent.
8. The Bidder's Lump Sum bid INCLUDES all applicable sales and/or use taxes and INCLUDES all insurance premiums required to meet the Insurance Limits specified elsewhere in this manual.
9. The Bidder agrees that upon written notice of the acceptance of its bid, the Bidder will arrange to meet with the CM within five (5) business days to review its bid and to execute the Subcontract. Failure to execute the Subcontract within ten (10) working days after receipt of the Subcontract may be considered a default under the obligation of the Bid Bond.
10. The Contract Documents shall be construed so as to require the Subcontractor to perform all Work reasonably inferable there from as being necessary in order to produce the indicated functional, operational, or finished result. It is understood that all bid submittal documents, Bidding Requirements, Contract Forms and Contract Conditions, General and Special Conditions and all detailed work not specifically mentioned but generally accepted as associated with and/or required for the completion of described scopes of work is/are considered a part of this Subcontract.
11. It is understood that the use of the terms Bidder, Contractor, Prime Contractor, Trade Contractor and Subcontractor within the documents shall refer to the same entity, and it is the entity that enters into a contract with the Construction Manager (CM) as a successful Trade Category Bidder.
12. There will be specific restrictions on the use of tools/equipment and personnel access to project areas with respect to interior construction activities. Upon completion of the Above Ceiling Inspection/Punchlist, there will be no ladders, scaffolds, gang boxes, etc. allowed in the areas without approval from the CM.
13. All necessary pumping and dewatering to facilitate or as a result of the contractor's work shall be by each contractor. All proposed dewatering activities shall first be approved by the CM. Dewatering effluent shall not be discharged directly into any storm water system, or pumped into any erosion controlled area without first being filtered and approved by CM. Minimally, subcontractors performing work that requires dewatering are to provide, replace and dispose of sediment filter bags discharged to an erosion controlled area on site. An Erosion control Area shall be provided, regularly maintained and repaired throughout construction; and removed when this function is no longer required for the project by the General Trades subcontractor.

14. As a condition to entering into this Subcontract, Contractor and Subcontractor agree not to hire any employee of the other party for 6 months following the completion of any project where the 2 parties are working together, without the express written approval of the other party. Any violation of this clause would constitute a breach of this Subcontract Agreement.

B. EXISTING CONDITIONS & MEASUREMENTS

1. Each subcontractor is responsible to review the site and to be familiar with all existing conditions within and around the Project including local conditions and requirements.
2. Subcontractors shall examine the conditions under which the work is to be installed and shall notify the Construction Manager in writing immediately of any discrepancies or conditions detrimental to the proper performance of the work. This Subcontractor in not to proceed until the required corrections are accomplished.

C. LAWS, PERMITS AND REGULATION

1. All work shall be completed in compliance with all rules, codes and regulations of all Local, State, Federal or other governing bodies having jurisdiction. Only skilled tradesmen having experience in performing the type of work being assigned shall perform the work.
2. All costs for permits, fees, bonds, tap-in fees, assessments and inspections (exclusive of special inspection and the Construction Authorization/plan review) applicable to the Work as levied or required by public authorities having jurisdiction shall be included. Obtain and pay the cost of all required permits for work on University of Kentucky streets and city streets, sidewalks, curbs and new driveway cuts required for the Work of the trade category subcontractor performing the work.
3. All required traffic control (signage, barricades, flag men, etc) and street permits required to perform the work and/or to transport equipment/materials (deliveries) to and from the work site shall be included. Include costs for lane closure permits, and for all mandated requirements of the permit, as needed to complete portions of the work. Provide and maintain required signage for lane and sidewalk closure.

D. SUPERVISION

1. Each subcontractor shall provide a full-time Superintendent, on site, throughout the duration of their scope of work. This Superintendent shall be authorized to make all decisions relative to the work on site, shall attend weekly Contractor's meetings and shall be the primary contact for all correspondence. Part time or token representatives who are not so authorized will not be permitted. Failure to comply with this requirement will result in rejection of this subcontractor's pay request. Any change of superintendent shall be pre-approved by the CM.
2. The full time on-site Superintendent must be a project manager level individual who is experienced in coordinating multiple subcontractors. This person will represent this subcontractor in all project meetings, and be able to commit resources and make decisions on behalf of their company.
3. Each Contractor must provide a 24-hour Emergency phone number to the CM prior to the start of work or the delivery of material to the jobsite.
4. Each subcontractor's project superintendent is required to have a cell phone in order to communicate with the CM.

E. ADMINISTRATION

1. Each subcontractor is required to submit an electronic copy (PDF Format) of all submittals and / or shop drawings (4) physical samples at time of review. Electronic copies of submittals shall not be scanned images, they shall be of ‘original’ PDF file quality. All submittals shall have the specification section referenced on each copy. One (1) electronic set of submittals and/or shop drawings with comments, and one (1) physical sample will be returned to subcontractor.
2. All shop drawings, submittals, and samples must be submitted to the CM within two weeks of contract award. Take note that some project shop drawings, submittals, and samples require earlier submission as dictated by the project schedule. In no way will submittals be allowed to delay the project or a specific work activity. All submittals must be submitted in advance and along with sufficient review time and procurement time shall not hold up construction. Each subcontractor is responsible for informing the CM of all necessary submittal return dates.
3. Any and all materials to be incorporated into the project shall be required to have a submittal, regardless of a submittal is specifically required in an individual specification section.
4. Each subcontractor shall have the capability of using ‘eComm’. This is an internet based project collaboration and management software. All project documentation such as submittal tracking, RFI, Meeting Minutes, Quality Issues Log, and other relevant project correspondence will be posted on a secure project web site. Subcontractors are required to access ‘eComm’ to obtain relevant project information. Claims or disputes based on missing information due to a failure to access the site will not be considered. Autodesk Build will also be utilized as noted elsewhere in the project documents.
5. Each subcontractor shall obtain an eComm ‘User’ account. To obtain a ‘User’ account, the subcontractor will be required to attend a training offered by Messer Construction. The training generally consists of a 1 hour training in the Messer Site Office that is offered at no cost to user. Labor costs and miscellaneous expenses (parking, etc), associated with the training shall be the responsibility of the subcontractor.
6. All Contractor Requests for Information (RFI) shall be submitted through eComm. RFIs that are not submitted through eComm will not be considered, and the subcontractor shall have no entitlement to a claim for additional cost or time due to its failure to submit through eComm. Submittals shall be submitted to the CM via email and all submittals shall have the specification section referenced on each copy. PDF combining software will be required by each subcontractor to use eComm effectively.
7. Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated. In addition to Shop Drawings, Product Data, and other required submittals, submit a statement, signed and sealed by the responsible design professional, for each project and system specifically assigned to the contractor to be designed or certified by a design professional.
8. All Operation and Maintenance (O&M) / Closeout documents specified to be provided shall be submitted to the CM as outlined in the Project Schedule. If this requirement is not completed, the subsequent pay application will be placed on hold until this requirement is met. Each contractor shall submit to the CM one (1) electronic copy of all O&M/Closeout documents for their work.

9. Regarding warranties for O&M/Closeout manuals, all contractors are to submit ‘sample’ warranties for each material/product specified to receive a warranty. Such ‘sample’ warranties are to be submitted to the CM as part of their submittals. Upon issuance of the project Substantial Completion each contractor is to submit final warranties to the CM within 30 calendar days post substantial completion. Each subcontractor shall submit to the CM one (1) electronic copy of all warranties (sample and final) for O&M/Closeout documents for their work.
10. All subcontractors are required to perform a subcontractor punchlist inspection of their own work and completion of same prior to the CM/Architect Punch and Above Ceiling Inspections/Punchlist. The durations for the subcontractor punchlists are included in the overall activity durations of the specific activity. Provide to the CM a copy of each subcontractor punchlist for each activity in each area.
11. Record drawings shall be updated on a weekly basis at the CM jobsite office in red ink. Record drawings shall show the actual installation where installation varies from that shown originally. This shall be delivered in PDF format.
12. Each subcontractor shall have an active e-mail account for the receipt of CM correspondence to the subcontractor.
13. Except as otherwise permitted in the Contract Documents or when direct communications have been specially authorized, communications by and with the Design Professionals or the Owner shall be through the CM. Communications by and with subcontractor and material suppliers shall be through the subcontractor.
14. Each subcontractor shall submit Daily Reports on a form provided by the CM. At a minimum, the Daily Reports shall include work activities performed, manpower, equipment used and weather conditions. Daily Reports shall be submitted daily at the end of the work day in Autodesk Build.
15. **All contractors will be required to participate in the CM’s Quality Control Plan.** Each contractor will be required to have an iPad tablet onsite for the Autodesk Build Program to operate from. Autodesk Build licenses will be provided by the CM. See Specification Section ‘Quality Requirements’ for more detail.

F. SAFETY

1. Each Trade Contract is required to provide and maintain an effective safety program and conform to all Federal and Local Safety Codes. Each Contractor shall conform to the Messer Construction Company Safety, Health, and Environmental Requirements. A copy of this program is included in this Project Manual.
2. All employees of all contractors, subcontractors or other entities who require access to the site are required to attend a pre-construction safety orientation meeting prior to starting work on site.
3. Each Subcontractor shall conduct a weekly Safety Meeting with all it’s on site employees, documented by attendance sheets, and typed safety topics, a copy of the agenda and the minutes to be submitted to the CM on a weekly basis. Daily huddles with crews’ review of JSAs are required and are to be submitted daily in Autodesk Build.
4. The project site requires 100% fall protection at heights of 6’ or greater. Platform ladders shall be utilized on this and all Messer Construction projects, no A-frame ladders will be allowed on site.

5. Comply with all requirements of the Williams-Steiger Occupational Safety and Health Act of 1970, as well as all subsequent amendments and revisions. Hard hats, work boots, long pants, shirts with a minimum of 4” sleeve, and safety glasses shall be worn by all employees, at all times while on site.
6. All personnel working on this project are required to wear reflective vests, shirts or other reflective apparel that covers the upper portion of the body.
7. All workers must display their first and last names on the front of their hardhats (no nicknames).
8. All equipment operators and truck drivers on the site are required to wear hard hats, work boots, safety glasses, shirts with 4” sleeves and long pants at all times, including in the open cab while running equipment.
9. Any barricade or safety device removed by a subcontractor’s employees in order to perform the work shall be immediately re-erected as soon as that work activity is complete. Temporary barricades and/or a controlled access zone must be established while the barricade is down. If the subcontractor fails to comply with this requirement, the CM or designee will cause the necessary work to be completed, and all associated costs will be deducted from costs due to the subcontractor.
10. All subcontractors performing any ‘hot work’ (grinding, welding, burning, etc) on this project are required to provide a fire watch, as well as obtain a hot work permit from the CM. This specifically includes hot work performed in or adjacent to existing buildings. Fire blankets are required where necessary; this is specifically required for work performed adjacent to any wooden materials, such as existing wood framing or temporary wooden construction. Applications for hot work permits shall be submitted and closed on a daily basis.
11. All accidents and safety incidents (ie property damage, near misses, etc) shall be reported to the CM immediately, a written report will be required to be completed prior to the end of that working day.

G. COORDINATION

1. Provide to the CM and to all other subcontractors, as designated by the CM, all information (drawings, technical data, diagrams, templates, embedment’s or other related work) necessary for the coordination of the work in a timely fashion.
2. Each subcontractor shall field verify dimensions, materials and conditions and coordinate with the work of other trades.
3. Each subcontractor is to coordinate all work of other trades through the CM for proper function and sequence to avoid construction delays and to omit conflicts. Coordinate and cooperate with all other subcontractors and their lower-tier subcontractors. If a conflict is observed, bring it to the attention of the CM immediately in order to avoid delays and finalize a resolution.
4. Each segment of work shall be coordinated with the CM prior to proceeding. ALL DELIVERIES MUST BE SCHEDULED THROUGH, AND APPROVED 24 HOURS IN ADVANCE OF DELIVERY BY THE CM. Any deliveries not scheduled in advance may be refused by the CM.
5. All subcontractors shall cooperate fully with any testing / inspection agency with inspections and with the gathering of samples by coordinating the time of the inspections and by providing safe access to the locations of the tests / inspections.

6. Where new work connects with existing, do all necessary cutting and fitting required to make a satisfactory connection with the work to be performed under the Contract Documents so as to leave the entire work in a finished and workmanlike condition. This requirement shall include all required work where new items connect, fit or otherwise interface with existing surfaces. Provide all labor and materials to this end, whether or not shown or specified. Verify and match existing conditions.

H. CLEANING

1. No vehicles of any kind shall be permitted to exit the work areas with mud on their tires. Subcontractors shall make provisions for the cleaning of equipment (tires) prior to exiting the work areas. Subcontractors who allow mud and dirt to be tracked off-site shall be responsible for the immediate clean-up of soiled surfaces. Any subcontractor not complying with this requirement will be back charged at a labor rate of \$95 per hour plus the cost of any necessary tools or equipment at the CM's discretion. This will be strictly enforced.
2. The washing out of concrete delivery trucks will not be permitted on site other than pre-designated wash out areas.
3. Roads and sidewalks used in the progress of the work, outside the limits of the Site and the adjacent areas leading to it, shall be maintained open to travel and kept in a clean condition by all subcontractors. Failure to maintain roads and sidewalks will result in the CM assigning the cleaning of the same in the most expedient manner with the costs deducted from the responsible subcontractor's contract amount.
4. Daily cleanup of each subcontractor's debris by the subcontractor's own craft force is mandatory for this project and is included in the subcontract. Each subcontractor will be responsible for the proper transportation of general debris to dumpster locations (on-site) and compaction of debris into said containers in a manner that allows containers to be fully utilized. Each crew is expected to have a cart or skid pan so that no materials hit the floor. Subcontractors failing to load dumpsters properly and/or failing to break down cartons will be charged for removal of partially filled dumpsters. Materials not removed by the subcontractor will be discarded, as directed by the CM, at the delinquent subcontractors' expense.
5. Each subcontractor is required at the end of each and every work day to clean-up and organize equipment, materials and debris from that day's work activities and empty trash to the dumpsters. The daily time allotted for this effort should be as required to maintain a clean, orderly, and professional jobsite. Each subcontractor is advised to include the costs of this work in its bid. Daily cleanup is to include general sweeping by each subcontractor. Any subcontractor who fails to adhere to the job site will have these services performed at the cost of the delinquent subcontractor.
6. Failure to clean up the site daily and/or failure to participate in daily cleaning responsibilities will result in a charge of \$95.00 per hour and costs shall be back charged to the appropriate subcontractor. Cleanliness during construction is of the utmost importance.

I. SITE UTILIZATION

1. Each subcontractor shall confine its operations to the defined site limits and/or approved site lay down and storage areas. Any work activities that require work outside of the site limits shall be coordinated in advance with the CM.

2. Each subcontractor is responsible for receiving all deliveries, unloading, hoisting, rigging, storage and subsequent moving of materials as required to complete its work. Upon delivery, all materials and equipment must be immediately located to approved storage locations. On-site storage locations of all materials, equipment, and operations must be coordinated with, and approved by the CM in advance. Staging areas will be designated by the CM to each subcontractor. Any materials, equipment, or operations found to be outside approved staging areas are subject to relocation by the Subcontractor at their expense as directed by the CM. Deliveries shall not interfere with normal traffic and pedestrian flow or block entrances / access to adjacent buildings. The ‘staging’ of delivery trucks on adjacent, public streets is prohibited.
3. There will be no long term on-site storage of materials allowed. The Subcontractor shall store no more material or equipment on-site than is necessary to complete one (1) week worth of work. The project Schedule indicates material fabrications and/or productions starting after submittal reviews. All material deliveries are to be timely coordinated with the start of the construction activities. Any costs associated with storing procured materials off site should be included in the subcontractor’s bid. Unneeded materials or equipment not in use must be removed from the site immediately. Any materials of such that are not removed from the site in a timely manner will be removed by the CM at the Subcontractor’s expense.
4. All costs with material delivery in small quantities, relocation of materials that impede work progress, and off site material storage and handling shall be included in the bid.
5. Each subcontractor shall be responsible for the protection of its own materials, tools, equipment and finished work. Damage to stored, finished or existing work and/or theft of any materials, tools or equipment shall be repaired or replaced at the Subcontractor’s expense. Each subcontractor shall take precautions to prevent damage to any adjacent properties or finished products. If any damage occurs, the subcontractor causing the damage will be responsible for the cost of replacement.
6. Fuel storage on-site is prohibited. No gasoline or diesel powered equipment is to be operated inside enclosed building areas.
7. Each subcontractor shall at all times maintain a clean and safe passageway for the Owner and personnel throughout the entire site. Each subcontractor shall be responsible for the proper protection of adjacent structures, public right of ways and emergency egresses while performing its scope of work.
8. Each subcontractor is responsible for maintaining drainage and grades of the site, affected by their work, during and after their work.
9. All work requiring a shutdown of existing streets and sidewalks and/or impeding public access in any way shall be coordinated with the CM in advance. All permits and costs associated with the shutdown or closure, including temporary structures, barricades, signage, and traffic control required by the owner and/or authority granting the shutdown or closure, shall be the responsibility of the Subcontractor requiring the shutdown or closure.
10. Any areas disturbed by subcontractors that are not specified/shown to receive new improvements shall be restored to the original conditions by the subcontractor responsible for creating such disturbance. It shall be each subcontractor’s responsibility to identify any such areas that will be disturbed from their original condition and are not specified / shown to receive new improvements and communicate to the CM in advance such that the pre-existing conditions can be examined and confirmed prior to any disturbance.

J. GENERAL WORK RULES AND MISCELLANEOUS PROVISIONS

1. **THERE WILL BE NO SCISSOR LIFTS, MAN LIFTS, OR HEAVY EQUIPMENT ALLOWED IN THE EXISTING BUILDING. Bidders shall take note of this and make necessary accommodations for overhead work.**
2. All subcontractors and all of their employees, including those of lower tier subcontractors and suppliers, shall abide by all rules the Owner or the CM may have in effect or hereafter put into effect, at the site of the work, including those pertaining to worker and Owner personnel safety, use of cameras, and security procedures or requirements. Subcontractors shall remove from the Project site any employee violating these rules at the request of the Owner or CM.
3. Normal working hours will be from 7:00 AM to 5:30 PM, Monday through Thursday unless the Construction Manger approves alternate arrangements. Off-hours work must be scheduled in advance with the CM. This does not alleviate the Subcontractor's responsibility to work overtime as required to maintain the schedule. Delays due to normal weather conditions are to be taken into consideration and anticipated when bidding this project. Saturdays are considered workdays as required to make up any weekdays lost due to weather, and are considered workdays required to maintain schedule.
4. Theft, abuse or destruction of property, tools, equipment or materials will not be tolerated and may be considered grounds for immediate removal from the project site.
5. Horseplay and/or fighting are prohibited and may be considered grounds for immediate removal from the project site. Workers shall be courteous to the public in and around the site at all times. Workers observed 'cat calling' or making obscene gestures towards the public will be removed from the site. Curing and swearing will not be permitted on site.
6. The University of Kentucky is a smoke free campus, therefore smoking, tobacco use, vaping is NOT permitted on this project site.
7. Two-way radios used for communication purposes only will be allowed on the project. All other radios, televisions or electronic sound devices are prohibited. Any radios, televisions, etc. found on site will be immediately discarded by the CM at the Subcontractor's expense.
8. Use of the CM's Office shall be limited to subcontractor's superintendents and foremen.
9. Items to be salvaged are to be delivered to the Owner to a location to be determined. Subcontractors are to assume the designated warehouse for salvage materials is within a ten (10) mile radius of the project site.
10. Harassment of any individual, at or around the jobsite, in any manner will be cause for immediate dismissal.
11. Parking at the University of Kentucky is very limited., including parking on construction sites. General Construction Parking will not be permitted on site. It is not the responsibility of the CM to obtain parking for construction personnel for this project. Each Trade Category subcontractor shall make arrangements for legal, off-site parking. All costs for parking including parking fines and fees, shuttle services and transporting shall be the responsibility of the subcontractors.
12. There will be strict limitations regarding eating and drinking on the project site. The CM will designate limited controlled areas for the purpose of breaks and lunch. No eating or drinking (other than trade contractor water cans) will be allowed anywhere in the building other than the designated controlled areas. Any contractor utilizing a water cooler must

- provide an adjacent trash can for the purpose of receiving water cups and be responsible for emptying this trash daily.
13. Signs of any type are prohibited, except as specifically assigned by the Construction Documents or approved by the CM.
 14. Beginning work shall be deemed acceptance of the existing or preceding conditions.
 15. All electrical cords are to be rolled up and stored daily by each contractor. Any electric cords not rolled up and stored in Subcontractor's gang box / staging area will be rolled up and / or retained by the CM at the Subcontractor's expense.
 16. Electrical cords in use must be free of walkways and pathways. Subcontractors are expected to suspend electrical cords as necessary so that cords are elevated so as not to create a tripping hazard and so that areas can be broom swept daily.
 17. All subcontractors are required to meet the University of Kentucky's Design Standards for all work items. These standards are available for review on the UK website.
 18. Any subcontractor in violation of the listed General Requirements (namely paragraph G thru K) will be required to through another site orientation before their employees may continue their work assignments. Any subcontractor not reporting for re-orientation and performing work within twenty-four hours of receiving a written notice of the reported violation will be responsible for any cost delays experienced by the CM or other subcontractors.
 19. All work requiring a utility outage(s) shall be completed on second shift or weekends unless noted otherwise. All costs associated with completing said activates on off-shift work shall be included. UK requires multiple weeks for approval of utility outages and this should be reviewed and factored in to not impact the project schedule.
 20. All work deemed by the Owner or CM to be an excessive noise or vibration creating activity shall be completed on second shift, weekends or during the hours the owner authorizes. This includes but is not limited to the following: use of powder actuated tools, hammer-drilling, core drilling, use of chipping hammer, etc. All costs associated with completing said activities on second shift shall be included.
 21. Storm water management and erosion control measures are to be established by TC-03 Earthwork subcontractor and will be transferred to TC-02 General Trades contractor at the completion of getting the building pad to grade. Trade category subcontractors shall comply with storm water management and erosion control per MSD, local governing codes and all requirements (permits, daily inspection reports, etc.), applicable specifications and as shown or indicated on the Civil Drawings. Additionally, comply with erosion control for the offsite storage areas and additional limits of site work identified on Messer's site logistics plan included in these documents. Endeavor to protect the installed facilities and pay for the restoration of any damage caused by this trade category subcontractor.
 22. Safety and security of the site is paramount. The quasi-permanent perimeter chain link fence and gates and the temporary movable chain link fence and barriers within the existing garage contribute to site security. Therefore the fencing and gates must be protected from damage that would allow unauthorized entry into the site. Any damage caused to the fence and gates must be immediately repaired and paid for by the Trade Category subcontractor responsible for the damage to allow proper closure of the perimeter in order to maintain site security.
 23. TC-02 General Trades subcontractor is to establish all surveying, surveying controls (line and grade), and benchmarks. All survey work shall be performed by or under the

supervision of a Licensed Professional surveyor with current professional liability insurance. The General Trades subcontractor shall be responsible for repairing or replacing benchmarks and controls damaged by its operations. All trade category subcontractors shall be responsible for elevations, grades, layout and line dimensions for their own work, but each of these trade category subcontractors will utilize the surveying controls and benchmarks established and maintained by the General Trades subcontractor.

24. Provide utility locating services at all areas of underground work of this trade category subcontractor. This trade category subcontractor shall assume full responsibility for the protection of all existing 'live' utilities located within the work areas associated with the Work of this trade category subcontractor.
25. Do not disconnect, cut-through, remove or otherwise disable any existing utility that is to be abandoned until after the new provisions are in place.
26. Each trade category subcontractor shall be responsible for all construction traffic exiting the site to utilize the wheel wash stations to minimize dirt, mud and debris from leaving the site and being deposited on roads adjacent to the site. Failure to comply with this responsibility will result in back charges for cleaning mud and debris from the streets.
27. Any work that is a nuisance or potentially harmful to others, such as fumes from the application of special coatings, excessive dust from grinding, sanding or similar activities, shall be performed in a manner that does not interfere with concurrent work activities. Special enclosures, temporary ventilation systems and/or performing work during an off-hour shift or on weekends shall be provided and included as necessary.
28. Provide all safety measures, protection and other procedures necessary to protect workers and the surrounding work from cutting and welding operations, overhead operations where cut-offs or debris is subject to falling, and other similar work. All specified fire watch practices shall be implemented and observed when cutting or welding and during the use of open flame tools such as cutting torches, plumber's torches, etc. Based on the project schedule, follow-on work may begin on the lower levels of the project prior to completion of the structure above. Each trade category subcontractor shall be responsible for safely coordinating its work with that of other trade category subcontractors.
29. Where details are referenced as an example within this Scope of Work, the noted or exemplified work shall be provided at all similar, typical conditions or locations. References to work on specific drawings shall not be interpreted to limit the included work to the referenced drawing only. All specified work included in the work of this trade category subcontractor shall be provided at all instances and at all locations shown or indicated in the documents.

K. ACCESS, WALKS AND ROADS, PARKING AND LAYDOWN AREA

1. Construction access will be established around the project site by TC-03 and maintained by TC-02 General Trades subcontractor. Primary access to the site will be from Library Drive. There will be no other entry or exit for the project site. Caution should be used when on Library Drive due to the amount of pedestrian traffic in the area.
2. Reference the site logistics plan included in the documents for site entry access and site transportability. Each trade category subcontractor shall provide their own arrangements for access to any part of the site to execute their work that extends beyond access shown on the site logistics plan documents.
3. Construction access roads are in place for access to the work. Any additional roads, grading, and/or staging areas required beyond what is available shall be the responsibility

of the subcontractor requiring it, and all costs associated shall be included in the Bid Amount. Any rework of existing access roads or crane pads required by this trade category subcontractor to complete its work shall be provided by this subcontractor. Excessive damage to construction access roads caused by this subcontractor shall be the responsibility of this subcontractor to repair.

4. All roads and sidewalks that are to remain in operation at the completion of the project that require removal to execute the Work of this trade category subcontractor shall be replaced and returned to their original condition immediately after the Work is installed and accepted. Provide crosswalk striping at all new entrances as indicated, if required.

END OF SECTION 00 24 13

SECTION 31 63 33 – MICROPILES

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes fabrication and erection of grout encased steel micropiles, as shown on drawings including schedules, notes, and details showing size and location of members, typical connections, and types of piles required.
- B. Special definitions which apply to this section include:
 - 1. Micropile: A small diameter pile consisting of steel core and grouted perimeter, in which most of the applied load is resisted by the central steel shaft and/or steel reinforcement. Load transfer to rock is primarily resisted via friction along the bond length. Consideration of added capacity acquired via end bearing is acceptable if accounted for in the micropile design.
- C. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Division 3 Section “Cast-in-place Concrete.”

1.3 MEASUREMENT AND PAYMENT

- A. Payment for Micropiles Basis will be made on a lump sum basis for all work defined herein including, but not limited to, design, fabrication, installation, pre-production load tests, and production load testing. All cost shall be included in the base bid.

1.4 REFERENCES

- A. General: Standards listed by reference, including revisions by issuing authority, form a part of this specification section to extent indicated. Standards listed are identified by issuing authority, authority abbreviation, designation number, title or other designation established by issuing authority. Standards subsequently referenced herein are referred to by issuing authority abbreviation and standard designation.
- B. ASTM International:
 - 1. ASTM A29/A29M Steel Bars, Carbon and Alloy, Hot-Wrought and Cold Finished.
 - 2. ASTM A36/A36M Structural Steel.
 - 3. ASTM A53 Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless.
 - 4. ASTM A153 Zinc Coating (Hot Dip) on Iron and Steel Hardware.
 - 5. ASTM A775 Electrostatic Epoxy Coating

6. ASTM A193/A193M Alloy-Steel and Stainless Steel Bolting Materials for High Temperature Service.
7. ASTM A252 Welded and Seamless Steel Pipe Piles.
8. ASTM A320/A320M Alloy-Steel Bolting Materials for Low Temperature Service.
9. ASTM A500 Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.
10. ASTM A572 HSLA Columbium-Vanadium Steels of Structural Quality.
11. ASTM A618 Hot-Formed Welded and Seamless High-Strength Low-Alloy Structural Tubing.
12. ASTM A656 Hot-Rolled Structural Steel, High-Strength Low-Alloy Plate with Improved Formability.
13. ASTM A1018 Steel, Sheet and Strip, Heavy Thickness Coils, Hot Rolled, Carbon, Structural, High-Strength, Low-Alloy, Columbium or Vanadium, and High-Strength Low-Alloy with Improved Formability.
14. ASTM C33 Concrete Aggregates.
15. ASTM C109 Compressive Strength of Hydraulic Cement Mortar.
16. ASTM C150 Portland Cement.
17. ASTM C494 Chemical Admixtures for Concrete.
18. ASTM C618 Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Concrete
19. ASTM C1240 Silica Fume for Use as a Mineral Admixture in Hydraulic-Cement Concrete, Mortar, and Grout
20. ASTM C1107 Packaged Dry, Hydraulic-Cement Grout (Nonshrink)
21. ASTM D1143 Method of Testing Piles Under Static Axial Compressive Load.
22. ASTM D1784 Specification for Rigid Poly Vinyl Chloride (PVC) Compounds and Chlorinated Poly Vinyl Chloride (CPVC) Compounds.
23. ASTM D1785 Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120.
24. ASTM D3034 Specification for Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
25. ASTM D3689 Method of Testing Individual Piles Under Static Axial Tensile Load.
26. ASTM D3966 Standard Test Method for Piles Under Lateral Load.

C. American Welding Society (AWS):

1. AWS D1.1 Structural Welding Code – Steel.
2. AWS D1.2 Structural Welding Code – Reinforcing Steel.

D. American Society of Civil Engineers (ASCE):

1. ASCE 20-96 Standard Guidelines for the Design and Installation of Pile Foundations.

1.5 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Engineer and fabricate piles and pile caps to resist forces specified. See drawings for loading criteria.
- B. Engineering Responsibility: Engage a manufacturer who utilizes a qualified professional engineer to prepare design calculations, shop drawings, and other structural data for micropiles.

- C. Design micropile to meet the specified loads and acceptance criteria as shown on the drawings.
- D. Design micropile cap plate to adequately transfer the required loading to the foundation element. See drawings for minimum cap plate plan dimensions.
- E. Minimum factor of safety shall for completed micropile (all components) shall be 2.0.

1.6 SUBMITTALS

- A. General: Furnish submittals in quantity, format, and other Conditions of the Contract and as specified in Division 1 of the Project Manual.
- B. Product Data including manufacturer's data product sheet for specified products and other data to show compliance with the specifications (including specified standards).
- C. Shop Drawings showing profiles and product components, including anchorages and accessories.
 - 1. Drawings shall indicate profiles and product components and accessories and indicate the following:
 - a. Micropile number, location and pattern by assigned identification number.
 - b. Micropile design load.
 - c. Type and size of central steel shaft.
 - d. Displacement plates/centralizers, if applicable, and their location.
 - e. Minimum overall length.
 - f. Inclination of Micropile.
 - g. Grout column length.
 - h. Minimum required bond length to rock.
 - i. Minimum cased length, if applicable.
 - j. Grout column diameter(s).
 - k. Cutoff elevation.
 - l. Micropile cap plate detailing and attachment to pile.
 - m. Micropile attachment to structure relative to grade beam, column pad, etc.
 - 2. Include Shop Drawings signed and sealed by a qualified professional engineer responsible for their preparation. The engineer shall be licensed to practice in the State of Kentucky.
 - 3. Shop drawings which show the Architect's or Engineer's title block, logo and/or seal will be rejected and returned unchecked.
 - 4. Computer generated electronic structural construction document files (ACAD exports from Revit) will be made available to the Contractor. The Contractor will be required to sign the Engineer's standard release of liability form prior to receiving the drawing files.
 - 5. Submit shop drawings in the form of five (5) sets of prints.
 - 6. Shop drawing resubmittals are reviewed for conformance with review marks only. Any changes or questions originating on a resubmittal shall be clearly clouded.
- D. Erection plan showing layout of all piles with dimensions between piles and to bearing walls and columns.

- E. Manufacturer’s installation instructions.
- F. Qualification data for firms and persons specified in the “Quality Assurance” Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
- G. Structural Calculations.
 - 1. Furnish electronic pdf copies of structural calculations of all micropiles at time of Shop Drawing submittal.
 - 2. Show loading, section modulus, assumed allowable stress, stress diagrams and calculations, rock surface bond stress, bond length and similar information needed for analysis and to ensure that piles comply with requirements.
 - 3. Calculations shall be signed and sealed by a qualified professional engineer licensed to practice in the State of Kentucky.
 - 4. Architects and Engineers review of the calculations is for general conformance with the contract documents. Actual calculations are the responsibility of the underpinning pile design engineer and shall not be reviewed for content or accuracy by the Architect or Engineer.
- H. Closeout Submittals:
 - 1. Warranty: Warranty documents specified herein.
 - 2. Record Documents: Project record documents for installed materials.
 - 3. Load certification: The contractor shall submit a letter certifying that the piles (as installed) meet or exceed the loading criteria shown on the drawings. The letter shall be sealed, signed and dated by the engineer in responsible charge of the design of the piling system.

1.7 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an experienced Installer who has completed steel micropile work similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance.
- B. Fabricator Qualifications: Engage a firm experienced in fabricating steel micropiles similar to that indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to fabricate steel piles without delaying the Work.
- C. Professional Engineer Qualifications: A professional engineer who is legally authorized to practice in the State of Kentucky and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for projects with micropiles that are similar to that indicated for this Project in material, design, and extent.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver steel micropiles and materials to Project site in such quantities and at such times to ensure continuity of installation.

- B. Handle and store steel micropiles with care and in accordance with manufacturer's instructions.
- C. Time delivery and installation of piles to avoid extended on-site storage and to avoid delaying work of other trades.

1.9 WARRANTY

- A. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under Contract Documents.
 - 1. Warranty period: 10 years commencing on Date of Substantial Completion.

PART 2 - PRODUCTS

2.1 FABRICATOR/INSTALLER

- A. Micropiles.
 - 1. Available Contractors: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the Work include, but are not limited to, the following:
 - a. The Dwyer Company, Southern Division ; 900 Contract Street, Suite 200, Lexington, KY 40505; (615) 456-6317 (Chris Griggs) (cgriggs@thedwyercompany.com) – Basis of Design
 - b. Alph C Kaufman (Atlas Piers), 114 N. 11th Street, Louisville, KY 40203; 800-552-8362 (Steve Leonard).
 - c. Hayward Baker, Inc., 1477 Barclay Boulevard, Buffalo Grove, IL 60089; 800-722-3926 (Steve Scherer)
 - d. Richard Geottle, Inc., 12071 Hamilton Avenue, Cincinnati, OH 45231; 800-248-8661.

2.2 PILE COMPONENTS

- A. Pile components shall be selected by the pile manufacturer and installer. The engineer responsible for the design of the pile system shall list applicable ASTM standards utilized for design of each component.
- B. Hollow steel pile shafts shall be perforated to allow grout to completely fill the shaft during installation.
- C. Pipe/Casing:
 - 1. For steel casing relied upon to carry compression or lateral loads, or to stiffen the Micropile, the casing/pipe shall conform to requirements of ASTM A53 Type E or S Grade B, ASTM A252 Grade 2, ASTM A500 Grade B or ASTM A618.
 - 2. For PVC casing relied upon for grout containment, fissured or void-filled soils, or as a bond breaker, the casing/pipe shall conform to ASTM D1784, ASTM D1785 and ASTM D3034.

3. Where pipe casing is to remain as a permanent part of the micropile installation, said casing shall be hot-dip galvanized.

2.3 CEMENT GROUT

- A. Portland Cement: ASTM C 150, Type I. High early strength (when specified), ASTM C150, Type III.
- B. Water: Potable.
- C. Aggregate:
 1. Sand fillers may be used in the grout mix as an extender with large diameter grout columns, subject to the approval of the Owner. Do not include aggregate in small diameter grout columns.
 2. Use fine sand only. Do not use medium or coarse sand.
- D. Admixtures and Chemical Admixtures:
 1. Conform to the requirements of ASTM C494. Do not use accelerators.
 2. Chemical admixtures, if used, shall be compatible with the central steel shaft and mixed in accordance with the grout manufacturer's recommendations.
 3. Chemical admixtures which control bleed water, improve consistency, reduce water/cement ratio and retard set may be used in the grout subject to the review and acceptance of the Owner.
 4. Expansive admixtures may be used to fill confined areas of the central steel shaft coupling joints or to compensate for drying shrinkage.

2.4 SOURCE QUALITY

- A. Source Quality: Obtain proprietary micropile products from a single manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Before erection proceeds, and with the micropile contractor present, verify elevations of concrete bearing surfaces and locations of anchorages for compliance with requirements.
- B. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Unless other satisfactory agreements are made between the Micropile contractor and the general contractor, all of the necessary mass site excavation and filling shall be performed by the General Contractor.

3.3 INSTALLATION

- A. General: The pile sections shall be installed per manufacturer's recommendations in conjunction with the calculations as performed by the engineer in responsible charge of the design of the micropile system.
1. The Micropile installation technique shall be consistent with the geotechnical, logistical, environmental and load carrying conditions of the project. Install technique shall adhere to general installation procedures as follows:
 - a. Advance casings of the micropiles into bedrock for the required depth.
 - b. Remove drill rod, leave steel casing in place.
 - c. Install reinforcement bar or other central steel loading carrying element in the casing as required per the pile design.
 - d. Fill the casing with cement grout using pressurized injection system.
 - e. Lift casing to top of rock surface, to permit grout bond to adjacent rock.
 - 1) If casing is not part of permanent pile system, remove casing entirely.
 - f. Cut off top of micropile at the required elevation for detailing.
 - g. Cap micropile per the design of the micropile design Engineer.
 - h. Load test micropiles as specified.
- B. Termination Criteria:
1. If the Micropile is refused or deflected by a subsurface obstruction, terminate the installation and remove the pile. Remove the obstruction, if feasible, and reinstall the Micropile. If not feasible to remove the obstruction, install the Micropile at an adjacent location, subject to review and acceptance by the Owner.
- C. Site Tolerances: Install Micropile to the following allowable variation:
1. Centerline of piling shall not be more than 3 inches (76 mm) from indicated plan location.
 2. Pile plumbness shall be within 2 degrees of design alignment.
 3. Top elevation of pile shall be within +1 inch (25 mm) to -2 inches (-50 mm) of the design vertical elevation.
 4. Centerline of central steel shaft shall not be more than 3/4 inch (19 mm) from the centerline of the pile.

3.4 FIELD QUALITY CONTROL

- A. Installation Records: Provide the Owner copies of Micropile installation records within 24 hours after each installation is completed. Include, at a minimum, the following information.
1. Name of project and Contractor.
 2. Name of Contractor's supervisor during installation.
 3. Date and time of installation.
 4. Name and model of installation equipment.
 5. Location of Micropile by assigned identification number.
 6. Actual Micropile type and configuration - including manufacturer's SKU numbers where

- applicable.
 - 7. Micropile installation duration and observations.
 - 8. Total length of installed Micropile.
 - 9. Cutoff elevation.
 - 10. Inclination of Micropile.
 - 11. Grout quantities pulled down on a per section basis.
 - 12. Actual grout column diameter and length.
 - 13. Comments pertaining to interruptions, obstructions or other relevant information.
 - 14. Rated load capacities.
- B. Load testing shall be the responsibility of the Micropile installation Contractor unless other arrangements are made with the General Contractor. The Special Inspector shall be present to observe, but not perform, all load tests.
- C. Pre – Production Load Test Procedures
1. The Contractor shall perform Pre-Production Load test on a minimum of 2 micropiles prior to the installation of the remaining piles. Pre-production micropiles are permitted to be part of the permanent structure subject to passing load testing.
 - a. If Pre-Production micropiles are not used as part of the permanent structure, they shall be cutoff 36-inches minimum below the finished grade surface.
 2. The hydraulic jack shall be positioned at the beginning of the test such that the unloading and repositioning of the jack during the test shall not be required. The jack shall also be positioned co-axial with respect to the pile-head so as to minimize eccentric loading. The hydraulic jack shall be capable of applying a load not less than two times the proposed design load (DL).
 3. An alignment load (AL) shall be applied to the Micropile prior to setting the deflection measuring equipment to zero or a reference position. The AL shall be no more than 10% of the design load (i.e., 0.1 DL). After AL is applied, the test set-up shall be inspected carefully to ensure it is safe to proceed.
 4. Micropile load tests shall be conducted by loading the Micropile in step-wise fashion as shown in Table-1 to the extent practical. Pile-head deflection shall be recorded at the beginning of each step and after the end of the hold time. The beginning of the hold time shall be defined as the moment when the load equipment achieves the required load step.

Table-1. Steps for Pre-Production Load Testing

LOAD STEP	HOLD TIME (MINUTES)
AL	2.5 Min.
0.20 DL	2.5 Min.
0.40 DL	2.5 Min.

0.50 DL	2.5 Min.
0.20 DL	1.0 Min.
AL	1.0 Min.
0.40 DL	1.0 Min.
0.60 DL	2.5 Min.
0.80 DL	2.5 Min.
1.0 DL	2.5 Min.
0.5 DL	1.0 Min.
0.2 DL	1.0 Min.
AL	1.0 Min.
0.5 DL	1.0 Min.
1.0 DL	1.0 Min.
1.2 DL	2.5 Min.
1.4 DL	2.5 Min.
1.6 DL	2.5 Min.
1.8 DL	2.5 Min.
2.0 DL	10 Min.
1.5 DL	1.0 Min.
1.0 DL	1.0 Min.
0.5 DL	1.0 Min.
AL	5.0 Min.

AL = Alignment Load; DL = Design Load

5. Test loads shall be applied until continuous jacking is required to maintain the load step or until the test load increment equals 200% of the design load (DL) (i.e., 2.0 DL), whichever occurs first. The observation period for this last load increment shall be 10 minutes. Displacement readings shall be recorded at 1, 2, 3, 4, 5 and 10 minutes (load increment maxima only).

6. The applied test load shall be removed in three approximately equal decrements per the schedule in Table-3. The hold time for these load decrements shall be 1 minute, except for the last decrement, which shall be held for 5 minutes.

D. Acceptance Criteria for Micropile Verification Load Tests

1. Both of the following criteria must be met for approval:
 - a. The Micropile shall sustain the design capacity (1.0 DL) with no more than 3/4-inch total vertical movement of the pile head as measured relative to the top of the Micropile prior to the start of testing.
 - b. Failure does not occur at the 2.0 DL maximum test loads. The failure load shall be defined by one of the following definitions – whichever results in the lesser load:
 - 1) The point at which the movement of the Micropile tip exceeds the elastic compression/tension of the pile shaft by 0.08 B, where B is defined as the diameter of the largest helix.
 - 2) The point at which the slope of the load versus deflection (at end of increment) curve exceeds 0.05 inches/kip.
2. The Contractor shall provide the Owner copies of field test reports confirming Micropile configuration and construction details within 24 hours after completion of the load tests. This written documentation will either confirm the load capacity as required on the working drawings or propose changes based upon the results of the pre-production tests.
3. When a Micropile fails to meet the acceptance criteria, modifications shall be made to the design, the construction procedures, or both. These modifications include, but are not limited to, de-rating the Micropile load capacity, modifying the installation methods and equipment, increasing or decreasing the grout column diameter, changing the pile configuration, increasing the grout column rock bond length, or changing the Micropile material (i.e., central steel shaft, grout mix, etc.). Modifications that require changes to the structure shall have prior review and acceptance of the Owner. Changes to Micropile system shall be made at no additional cost to Owner.

E. Production Pile Testing

1. The Contractor shall perform proof tests (Production Pile Tests) on a minimum of 10% of the total production Micropiles. The piles to be tested will be selected by the Owner.
2. The test sequence shall be as shown in Table-2 to the extent practical.

Table-2. Steps for Production Load Testing

LOAD STEP	HOLD TIME (MINUTES)
AL	0 Min.

0.20 DL	2.5 Min.
0.40 DL	2.5 Min.
0.60 DL	2.5 Min.
0.80 DL	2.5 Min.
1.00 DL	5 Min.
0.60 DL	1 Min.
0.40 DL	1 Min.
0.20 DL	1 Min.
AL	5 Min.

AL = Alignment Load; DL = Design Load

3. The acceptance criteria for production Micropile shall be per Load Test Acceptance stated above.
 4. If a production Micropile that is tested fails to meet the acceptance criteria, the Contractor shall be directed to proof test another Micropile in the vicinity. For failed piles and further construction of other piles, the Contractor shall modify the design, the construction procedure, or both. These modifications include, but are not limited to, replacing the deficient micropile/s, de-rating the Micropile load capacity, modifying the installation methods and equipment, increasing or decreasing the grout column diameter, changing the pile configuration, increasing the grout column rock bond length, or changing the Micropile material (i.e., central steel shaft, grout mix, etc.) Modifications that require changes to the structure shall have prior review and acceptance of the Owner. Changes to Micropile system shall be made at no additional cost to Owner.
- F. Site Test Records: Provide the Owner copies of field test reports within 24 hours after completion of the load tests. Include, at a minimum, the following information:
1. Name of project and Contractor.
 2. Name of Contractor’s supervisor during installation.
 3. Name of third party test agency, if required.
 4. Date, time and duration of test.
 5. Location of Micropile by assigned identification number.
 6. Type of test (i.e., tension or compression).
 7. Description of calibrated testing equipment and test setup.
 8. Actual Micropile type and configuration - including lead section, number and type of extension sections (manufacturer’s SKU numbers).
 9. Steps and duration of each load increment.
 10. Cumulative pile-head movement at each load step.
 11. Comments pertaining to test procedure, equipment adjustments or other relevant information.

12. Signed by third party test agency representative or registered professional engineer.

END OF SECTION 316333

PRE-DEMOLITION ASBESTOS, LEAD PAINT, AND HAZARDOUS MATERIALS INSPECTION

University of Kentucky – Pence Hall
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Project No. 241-22-S

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1.0 ASBESTOS INSPECTION

1.1 INTRODUCTION

CMec, LLC (CMec) has compiled this report following an inspection for asbestos containing materials (ACM) that may be potentially disturbed during the renovation of Pence Hall on the campus of the University of Kentucky (UK) on behalf of K. Norman Berry Architects (KNBA) and UK. CMec has prepared this report for use by KNBA and UK to outline identified environmental concerns associated with ACM at the subject property prior to the proposed renovation activities. A site location figure and selected site photographs are included as [Appendix A](#).

All inspection and sampling activities were conducted in accordance with the U.S. Environmental Protection Agency (EPA) National Emissions Standard for Hazardous Air Pollutants (NESHAP) General Inspection Procedures found within 40 CFR 61, Subpart M. Historic record reviews and owner/operator questionnaires were not part of this assessment. All on-site assessment activities were conducted between December 18, 2022 and January 6, 2023. This report provides background information, limitations and exceptions, scope-of-work performed, assessment results, and recommendations.

1.2 BACKGROUND AND SITE SUMMARY

KNBA has requested this ACM inspection as part of the preliminary design phase of the proposed renovation of Pence Hall located at 175 Funkhouser Drive Lexington, Kentucky.

Asbestos is a general term for a group of fibrous minerals (primarily chrysotile, amosite, and crocidolite) that have long been used as a fireproof insulation and as a strengthener in pipe insulation, roofing tiles, floor tiles, mastic, wall coverings, and other materials. Undisturbed ACMs are not dangerous. However, when ACMs are broken or torn, such as during demolition, the fibers can be spread into the air, especially if the material is friable. A material is considered an ACM if it is found to contain greater than 1% of asbestos. Studies have shown that inhaling these fibers can cause diseases such as asbestosis, lung cancer, and mesothelioma.

1.3 LIMITATIONS AND EXCEPTIONS

This assessment pertains directly to those areas observed and sampled within the subject property and is not intended to provide data or information for the entirety of the building. Only those areas accessible during the site visit including areas considered “typical” of those conditions and materials found throughout the property structure were sampled for laboratory analysis.

None of the work performed hereunder shall constitute or be represented as a legal opinion of any kind or nature but shall be a representation of findings from the site visit. There are no warranties or guarantees, expressed or implied, included or intended by the report, except that it has been prepared in accordance with the current generally accepted practices and standards consistent with the level of care and skill exercised under similar circumstances by professional

consultants or firms performing the same or similar service. Accessible areas within the site were accessed for sampling. Various components within locked areas of the building were not accessed for sampling. If materials are not included on the sample log, they were inaccessible for sampling. If laboratory analysis is not present for a material, it is considered to be positive for ACM and these materials are included within Section 1.5 of this report as “assumed”. Locations inaccessible during the inspection are noted on the diagrams included within [Appendix D](#).

Changes in the condition of the building may occur with time due to either natural processes or human activities. The findings presented in this report are based on site conditions existing at the time of the investigation. The potential exists for ACM to be present in areas that may not be revealed until installation activities begin. During renovation activities, if potential ACM materials are discovered that are not identified within this report, those materials should be sampled by a licensed inspector, analyzed by an accredited laboratory, and removed accordingly. This report was compiled for the sole use of KNBA and UK and is not intended to be distributed or relied upon by third parties without the written permission of CMec. This report is not to be utilized as a scope of work or bidding document as it does not identify quantities, accurate scope of work, or other requirements that are required in a technical specification for abatement activities.

1.4 SCOPE OF WORK

CMec performed the following scope-of-work, which was based, in part, upon information provided by persons deemed knowledgeable of the property and our experience with similar projects.

An assessment for ACM was conducted between December 18, 2022 and January 6, 2023. The survey was performed to collect and identify ACM at the property prior to demolition activities. Gregory Bailey, R. Doug Amshoff, and Suzanne Arnzen - Kentucky accredited asbestos inspectors, conducted the survey activities. Copies of CMec personnel’s credentials are included in [Appendix B](#).

Samples of potential ACM were collected from homogeneous areas, which consisted of materials that were similar in color, texture, and size. Homogenous areas for the following materials: plaster; window caulk/window glaze; thermal system insulation; and brick/mortar are considered as the entire building. As such, one sample of a similar material found to contain asbestos determines that all similar material is also considered asbestos containing. The suspect ACM samples were delivered to McCall and Spero Laboratory (McCall and Spero) in Louisville, KY for Polarized Light Microscopy (PLM) analysis under chain-of-custody protocols. The National Voluntary Laboratory Accreditation Program (NVLAP) accredits McCall for asbestos fiber analysis. A comprehensive list of all ACM samples taken from the subject properties can be found in [Appendix C](#). Location diagrams are included within [Appendix D](#).

1.5 RESULTS

Activities associated with the ACM inspection at the subject property generated the following results. Laboratory analytical results are included within [Appendix E](#).

ASBESTOS CONTAINING MATERIALS

SAMPLE #	LOCATION			MATERIAL	SAMPLED LOCATION*	ASBESTOS (%)
	Figure	Room #	Photo Ref			
B-01A/B	D.3	001	010	Pipe Wrap / TSI	Room 001	30% Chrysotile
B-13A/B	D.3	011	049	Pipe Wrap / TSI	Room 011	15% Chrysotile
B-24A/B	D.3	Stair-well	050	Residual Door Caulk	Basement (Interior)	3% Chrysotile
2-04A/B	D.5	205	048	Pipe Wrap / TSI	Room 205	15% Chrysotile
2-05A/B	D.5	204	046, 047	Pipe Wrap / TSI	Room 204	15% Chrysotile
Assumed	D.5	209	020, 021	12x12 VCT and Mastic Under Carpet	N/A – Historic from UK	Assumed
Assumed	N/A	N/A	052	9x9 VCT and Mastic <i>Potentially Present</i>	N/A – Historic from UK	Assumed
Assumed	N/A	N/A	051	Adhesive behind Chalkboards	N/A	Assumed

* Sampled location is NOT indicative of the location of material requiring removal – see technical specification for details

1.6 FINDINGS AND CONCLUSIONS

CMec has performed this assessment for ACM in accordance with the scope of services as defined in this report. Our assessment has revealed the following:

- Asbestos is present in the TSI/Pipe wrap throughout the structure. This material is friable and in intact-to-damaged condition. Damaged locations have been communicated to UK and this correspondence is included within [Appendix H](#).
- Asbestos is present in the residual door caulk in the stairwells. This door caulk is considered a Category II non-friable material.
- Asbestos is present in 12x12” VCT and associated mastic at various locations (see diagrams). This VCT and associated mastic is considered a Category I non-friable material.
- Asbestos is present in 9x9” VCT and associated mastic at various locations (see diagrams). This VCT has not been confirmed present but is *potentially* present under current flooring. This VCT and associated mastic is considered a Category I non-friable material.

1.7 RECOMMENDATIONS

Based upon the results of this assessment, CMec recommends the following:

ACM is subject to a variety of specific federal, state, and local regulatory requirements. The following summarizes the major regulatory requirements for asbestos:

- Because ACM was present in the above-mentioned materials, care should be taken to keep the materials in good condition through proper handling and maintenance. Abatement is required prior to all activities that may disturb asbestos material. ACM removal should occur in accordance with local, state, and federal regulations.
- Any damaged friable ACM must be abated/repared immediately. Prior to renovation activities, these areas will require full abatement.
- All contractors and employees should be alerted to the presence and location of the identified and presumed ACM and hazards, in accordance with applicable OSHA regulations.
- Various regulatory agencies (state and local) must be notified of any asbestos removal, to conducting said work. The licensed asbestos abatement contractor typically submits these notifications.
- Employees who work with asbestos should be provided with proper personal protective equipment, as well as the appropriate asbestos removal equipment, training, and licensure as applicable.
- All asbestos material must be disposed of in accordance with the federal, state, and local asbestos regulations.
- A standardized specification for abatement should be established for the removal of asbestos containing materials identified at the referenced property. It is recommended that a licensed asbestos designer develop the specification to address important issues including an accurate scope of work, regulatory requirements, insurance requirements, notification procedures, air sampling requirements and other pertinent information.
- If concealed ACM is observed during future demolition or renovation activities, it will be necessary to investigate and collect bulk samples to confirm the presence or absence of asbestos content. Should potential ACM be discovered during the demolition activities that have not previously been sampled, all activities shall cease until the suspect materials have been sampled. If suspect asbestos is discovered during demolition activities, the area shall be wetted, contained, doors sealed, and a certified asbestos abatement contractor contacted to abate the material in accordance with federal, state, and local regulations.

Implementation of these recommendations will help ensure compliance with regulatory requirements.

2.0 LEAD-BASED PAINT INSPECTION

2.1 BACKGROUND AND SITE SUMMARY

CMec has compiled this report following an inspection for lead containing paint (LCP) that may be potentially disturbed during the renovation of Pence Hall on the campus of UK on behalf of KNBA and UK. CMec has prepared this report for use by KNBA and UK to outline identified environmental concerns associated with LCP at the subject property prior to the proposed renovation activities. A site location figure and selected site photographs are included as [Appendix A](#).

This inspection was conducted in general accordance with the U.S. EPA documented protocols and methodologies. This inspection was performed to identify if LCP is present so contractors working on the project can be informed so they can adequately protect workers and document compliance with OSHA rules and regulations regarding occupational lead exposure. This inspection report provides background information, limitations and exceptions, scope-of-work performed, assessment results, findings, conclusions, and recommendations.

Historic record reviews and owner/operator questionnaires were not part of this assessment. The LCP inspection involved testing of painted components within the interior and exterior of the structures using an X-Ray Fluorescence (XRF) meter. CMec did not conduct dust sampling or soil sampling as part of this inspection. Onsite activities were conducted on January 4, 2023. This inspection report provides background information, limitations and exceptions, scope-of-work performed, assessment results, findings, conclusions, and recommendations.

2.2 LIMITATIONS AND EXCEPTIONS

This inspection pertains directly to those areas observed and sampled within the subject property and the conclusions and recommendations of this report are based solely upon the conditions present at the property during the sampling period. Only those areas accessible during the site visit including areas considered ‘typical’ of those conditions and materials found throughout the property structure were sampled for analysis. Analyses were limited to lead containing paint by XRF as they existed during the time of the investigation, including painted components that may be potentially disturbed in the course of planned work activities. This inspection was not conducted as a HUD or EPA lead-based paint inspection, but rather a general evaluation of the identified areas and building components for lead containing paint so conclusions on future use, or recommendations in regard to potential occupational lead exposure during demolition/renovation activities, could be appropriately derived from the results of the sampling.

The operating characteristics of the XRF preclude reporting the lead content of the measured and sampled surfaces below the instrument or analytical method reporting limits. The potential presence of lead in any sampled material below the reporting limits cannot be eliminated. XRF measurements are mean averages at a 99% confidence interval within an error range. The upper limit of the error range represents the lowest concentration of lead that can definitively be determined by XRF analysis.

None of the work performed hereunder shall constitute or be represented as a legal opinion of any kind or nature but shall be a representation of findings from the site visit. There are no warranties or guarantees, expressed or implied, included or intended by this report, except that it has been prepared in accordance with the current generally accepted practices and standards consistent with the level of care and skill exercised under similar circumstances by professional consultants or firms performing the same or similar services.

Changes in the condition of building and property may occur with time due to either natural processes or human activities. The findings presented in this report are based on site conditions existing at the time of the investigation. CMec was unable to access certain areas within walls and ceilings, therefore, the potential exists for lead containing paint to be present in these areas, which should be sampled and properly removed, if needed, during demolition/renovation activities. This report was compiled for the sole use of KNBA and UK. This report is not intended to be distributed or relied upon by third parties without the written permission of CMec.

2.3 SCOPE OF WORK

CMec performed the following scope-of-work, which was based, in part, upon information provided by persons deemed knowledgeable of the property and our experience with similar projects.

Since LCP was potentially used during the time the structure was constructed and maintained, there is the potential that painted surfaces contain LCP. CMec conducted an inspection on the interior of and exterior of the where it is probable that LCP could have been used on January 4, 2023.

The Environmental Protection Agency (EPA) uses a level of 1.0 mg/cm² or higher of lead by XRF or 0.5% by laboratory analysis to determine if the lead level in paint is considered lead-based paint (LBP). Potential occupational exposure to airborne concentrations of lead is regulated by the OSHA Construction Standard for Lead (29 CFR 1926.62). Lead locations and measured concentrations of lead in paint are components in the required exposure evaluations.

The inspection was performed by R. Douglas Amshoff (KY Lead Risk Assessor 41-208) of CMec. A copy of Mr. Amshoff's credentials is included as [Appendix F](#).

This LBP inspection involved a screening of the subject property using a Hueresis, XRF meter, model Pb00i Serial 2063 (app version pb00i-rel-4.0-29). Prior to the inspection, and periodically throughout inspection activities, CMec performed a field calibration check of the XRF meter against known reference standards.

A total of 290 XRF readings, including calibration readings, were taken from painted surfaces throughout the assessed areas. Tested components were assigned a test location and room side if applicable within the XRF recording software with side "A" being representing the main front doors and sides "B", "C", and "D" following in a clockwise direction. A comprehensive list of all substrates shot with the XRF, including results, is included in [Appendix G](#). Diagrams of the

site are included within [Appendix D](#) and the XRF spreadsheet locations are consistent with the room and orientation noted in the diagrams.

2.4 RESULTS

LBP above EPA standard of 1.0 mg/cm² or higher of lead by XRF or 0.5% by weight paint chip sample analysis was detected on the following materials and locations:

LEAD-BASED PAINT LOCATIONS

COMPONENT	SUBSTRATE	LOCATION
All Door Components	Wood	Throughout Including Interior/Exterior
All Window Components	Wood	Throughout Including Interior/Exterior
All Baseboards	Wood	Throughout
Radiator	Metal	All Floors in Stairwell B
Walls	Brick, Wood, Plaster	Rooms 100, 200, 202, 204
Chalkboard Casing	Wood	Room 204
Trim Components	Wood	Exterior, All

LCP, above the sampling / laboratory analysis method reporting limit, but below the EPA standard to be considered LBP, was detected on the following materials and locations:

LEAD-CONTAINING PAINT LOCATIONS

COMPONENT	SUBSTRATE	LOCATION
Walls	Brick, Wood, Plaster	All Walls Not Included as LBP Above
Stair Components (Riser, Baluster, Stringer, etc.)	Metal	All Floors in Stairwell B
Radiators	Metal	All Radiators Not included as LBP Above
Fire Escape Components	Metal	Exterior Side C

2.5 CONCLUSIONS AND RECOMMENDATIONS

CMec has performed this inspection for LBP/LCP at Pence Hall in accordance with the scope of services as defined in this report. Our assessment has revealed that LBP as defined by the US EPA and LCP was detected on the interior and exterior at the subject property.

Based upon the results of this assessment, CMec recommends the following:

- All contractors and employees should be alerted to the presence and location of the identified lead containing paint and hazards, in accordance with (29 CFR 1926.62) and applicable Occupational and Safety Health Administration regulations.
- Employees who work with lead containing materials should be provided with proper personal protective equipment, as well as the appropriate removal equipment, training, and licensure as applicable to all local, state, and federal regulations.

- Activities that may potentially generate airborne concentrations of lead should be monitored to quantify employee exposure. Air monitoring must be performed in accordance with (29 CFR 1926.62) and applicable regulations.
- All lead containing waste must be disposed of in accordance with the federal, state, and local regulations. As required by the disposal facility, a toxicity characteristic leaching procedure (TCLP-lead) analysis of the renovation debris may be required in order to characterize the waste as hazardous or non-hazardous waste material. If the result of the analysis yields a lead level of greater than 5 parts per million, the waste is classified as hazardous waste and must be transported to a properly licensed and regulated hazardous water treatment, storage, or disposal facility.
- A standardized specification/design plan for the disturbance of substrates coated in lead containing paint / materials should be established for the activities where lead containing paint has been identified at the referenced property.
- If concealed paint is observed during renovation activities, it will be necessary to assume it to be lead containing paint or collect samples to confirm the presence or absence of lead containing paint.

Implementation of these recommendations will help ensure compliance with regulatory requirements.

3.0 HAZARDOUS MATERIALS INSPECTION

3.1 BACKGROUND AND SITE SUMMARY

CMec was authorized in a work order authorized by KNBA to perform a hazardous materials inspection to assess potential environmental concerns that may be potentially disturbed during the renovation of Pence Hall on the campus of UK on behalf of KNBA and UK. CMec has prepared this report for use by KNBA and UK to outline identified environmental concerns associated with hazardous/potentially hazardous materials at the subject property prior to the proposed renovation activities. A site location figure and selected site photographs are included as [Appendix A](#).

The objective of this investigation was to identify regulated materials that may have an environmental impact to the property or workers during renovation activities. This assessment included an inspection for previously unidentified environmental concerns, other than asbestos, non-liquid PCBs, and LBP/LCP that may be disturbed during the renovation. Any environmental concerns identified within this report are based on visual observations present at the time of this assessment.

3.2 LIMITATIONS AND EXCEPTIONS

This inspection pertains directly to those areas observed within the subject property and conclusions and recommendations of this report are based solely upon the conditions present at the facility during the sampling period. Only those areas accessible during the site visit including living areas considered ‘typical’ of those conditions and materials found throughout the property structure were observed.

None of the work performed hereunder shall constitute or be represented as a legal opinion of any kind or nature but shall be a representation of findings from the site visit. There are no warranties or guarantees, expressed or implied, included or intended by this report, except that it has been prepared in accordance with the current generally accepted practices and standards consistent with the level of care and skill exercised under similar circumstances by professional consultants or firms performing the same or similar services.

Changes in the condition of the building may occur with time due to either natural processes or human activities. The findings presented in this report are based on site conditions existing at the time of the investigation. CMec was unable to access certain areas within walls and ceilings. Therefore, the potential exists for environmental hazards to be present in these areas, which should be sampled and properly removed, if needed, during renovation activities. This report was compiled for the sole use of KNBA and UK. This report is not intended to be distributed or relied upon by third parties without the written permission of CMec.

3.3 SCOPE OF WORK

The purpose of the site investigation was to visually inspect areas of the subject building for the below listed potential environmental concerns in addition to ACM and LBP/LCP. Additional testing may be deemed necessary if waste characterization is required. Accessible areas were inspected by CMec personnel for the presence of the following hazardous materials:

- Materials and equipment potentially containing PCB including transformers, capacitors, oil containing circuit breakers, and light ballasts.
- Materials and equipment potentially containing mercury including thermostats, thermometers, switches, relays, and high intensity lights.
- Equipment potentially containing radioactive materials including exit signs, smoke detectors, and controls.
- Materials and equipment potentially containing used oils including HVAC systems and hydraulic door closers.
- Equipment potentially containing Chlorofluorocarbons (CFCs) and / or Hydrochlorofluorocarbons (HCFCs) including components associated with the HVAC system and other cooling equipment; and
- Other potentially hazardous materials including spent cleaning solvents, paints, and batteries.

3.4 RESULTS

The investigation yielded the following results:

- Transformers and other various electrical components were noted at the subject property.
- Petroleum products were noted within the hydraulic door closers, HVAC systems, emergency backup generator(s), and elevator systems at the subject property.
- Petroleum products were noted within equipment at the building used as part of classroom activities.
- Emergency lighting, which may contain various types of batteries, were found throughout the subject building.
- Smoke detectors were found within the subject building that may contain a small amount of radioactive material.
- 'EXIT' signs were found within the subject building that may contain a small amount of radioactive material.

- Mercury containing thermometers, thermostats, and/or switches were found within the subject building.
- Refrigerators, HVAC systems, water fountains, and window air conditioning units were found within the subject building that contain various refrigerants CFCs and other chemicals.
- Fluorescent light bulbs were found within the subject building that contain a small amount of Mercury.
- Various stored cleaners, degreasers and other various chemicals used as part of classroom activities were present at the subject site.

3.5 CONCLUSIONS AND RECOMMENDATIONS


- Segregation, characterization, removal, and proper disposal of the above-mentioned items must occur in accordance with all applicable local, state, and federal regulations prior to the proposed renovation activities. The selected contractor must be trained to segregate, characterize, handle, transport, and dispose of the materials.
- All contractors and employees should be alerted to the presence and locations of the identified and presumed hazards, in accordance with applicable OSHA regulations.
- If applicable, various regulatory agencies (state and local) must be notified of any work prior to conducting said work. The licensed contractor typically submits these notifications.
- Employees who work with hazardous materials should be provided with proper personal protective equipment, as well as the appropriate removal equipment, training, and licensure as applicable.
- All hazardous materials must be disposed of in accordance with the federal, state and local regulations.
- Removal of hazardous materials should be monitored to ensure that no hazardous material is released into the environment.
- A standardized specification for hazardous materials removal should be established for the removal of hazardous materials identified at the referenced property. It is recommended that the specification address important issues including an accurate scope of work, regulatory requirements, insurance requirements, notification procedures, air sampling requirements, and other pertinent information.

- If renovation activities extend to any area outside of the project scope, it will be necessary to further investigate the areas in order to confirm the presence or absence of hazardous materials.
- If concealed hazardous materials are observed during renovation activities, it will be necessary to investigate. Should potential hazardous materials be discovered during the renovation activities that have not previously been identified, all activities shall cease until the suspect materials have been identified/sampled/characterized.

Implementation of these recommendations will help ensure compliance with regulatory requirements.

4.0 SIGNATURES AND QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONALS

Prepared by:



Gregory Bailey
Environmental Scientist

February 10, 2023

Mr. Bailey is an Industrial Hygienist and Environmental Site Supervisor for CMec and has more than fourteen years of environmental management, industrial hygiene and remediation experience. Mr. Bailey holds a Bachelor's degree in Environmental Science and Industrial Hygiene from Western Kentucky University. Mr. Bailey is a Kentucky Accredited Asbestos Inspector and Lead Hazard Risk Assessor with additional experience including characterization, profiling, coordination, and disposal of hazardous and nonhazardous waste.

Reviewed by:



Suzanne Arnzen
Project Manager

February 10, 2023

Ms. Suzanne Arnzen is a Principal at CMec and has more than seventeen years of experience in the environmental field. Ms. Arnzen holds a degree in Environmental Health Science. Ms. Arnzen's experience includes experience performing and managing federal A/E CERCLA, RCRA, and UST contracts (NAVFAC) and HTRW MEGA, and ECIP contracts (USACE) as a project manager, contract manager, and program manager (HTRW, MEGA) as well as performing various hazardous materials assessments, asbestos containing materials assessments, lead based paint risk assessments, microbial assessments, and other various consulting services for commercial and governmental clients. She also has experience performing Phase I and Phase II Environmental Site Assessments for a wide variety of residential and commercial sites and has experience designing and managing large scale soil, water, lead, asbestos, and mold remediation projects.

5.0 APPENDICES

- 5.1 Appendix A: Site Location Figure & Selected Site Photographs
- 5.2 Appendix B: Asbestos License and Certification
- 5.3 Appendix C: Asbestos Field Sample Logs
- 5.4 Appendix D: Location Diagrams
- 5.5 Appendix E: Asbestos Laboratory Analytical Results
- 5.6 Appendix F: Lead License and Certification
- 5.7 Appendix G: Lead XRF Results
- 5.8 Appendix H: Referenced Correspondence

APPENDIX A

SITE LOCATION FIGURE AND SELECTED SITE PHOTOGRAPHS



Figure 1-1

NTS

University of Kentucky – Pence Hall

Lexington, Kentucky

January 2023



Figure 1-2

NTS

University of Kentucky – Pence Hall

Lexington, Kentucky

January 2023

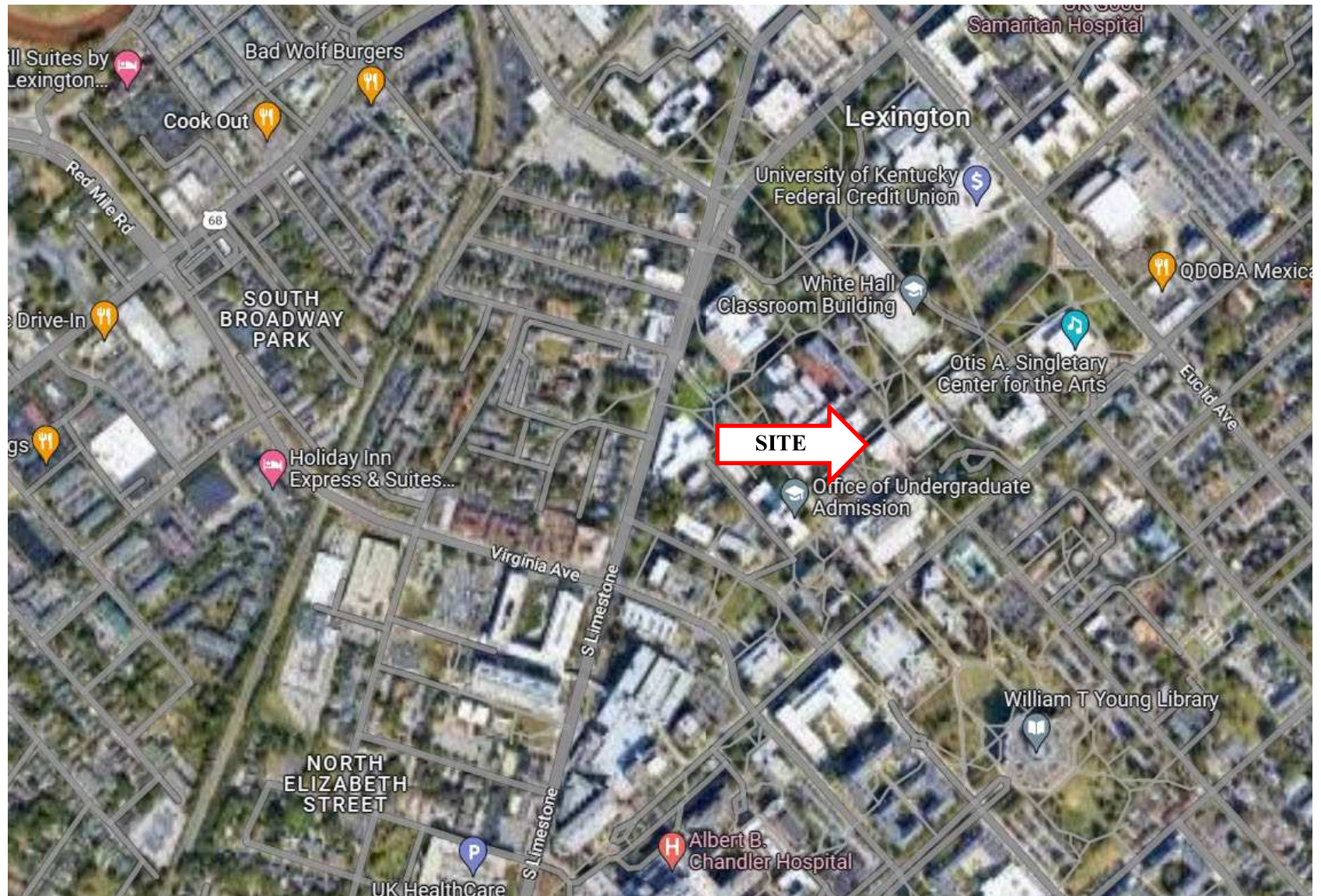


Figure 1-2

NTS

University of Kentucky – Pence Hall

Lexington, Kentucky

January 2023

Project Location: UK Pence Hall, 175 Funkhouser Drive Lexington, Kentucky

CMec Project Number: 353-22-K

Date: December 2022 / January 2023

Photo No:

001

Photo Date:

12/2022 – 1/2023

Description:

View of the exterior of Pence Hall from Funkhouser Drive.



Photo No:

002

Photo Date:

12/2022 – 1/2023

Description:

View of the exterior of Pence Hall from Funkhouser Drive.



Project Location: UK Pence Hall, 175 Funkhouser Drive Lexington, Kentucky

CMec Project Number: 353-22-K

Date: December 2022 / January 2023

Photo No:
003

Photo Date:
12/2022 – 1/2023

Description:
View of Side A and
B of Pence Hall.



Photo No:
004

Photo Date:
12/2022 – 1/2023

Description:
View of the rear
(Side C) of Pence
hall showing
various levels of
roofs and the fire
escape.



Project Location: UK Pence Hall, 175 Funkhouser Drive Lexington, Kentucky

CMec Project Number: 353-22-K

Date: December 2022 / January 2023

Photo No:
005

Photo Date:
12/2022 – 1/2023

Description:
View of Side D of
Pence Hall.



Photo No:
006

Photo Date:
12/2022 – 1/2023

Description:
View of the interior
lobby stair well.



Project Location: UK Pence Hall, 175 Funkhouser Drive Lexington, Kentucky

CMec Project Number: 353-22-K

Date: December 2022 / January 2023

Photo No:
007

Photo Date:
12/2022 – 1/2023

Description:
View of the
basement lobby
area (Room 001).



Photo No:
008

Photo Date:
12/2022 – 1/2023

Description:
View of the
basement lobby
area (Room 001).



Project Location: UK Pence Hall, 175 Funkhouser Drive Lexington, Kentucky

CMec Project Number: 353-22-K

Date: December 2022 / January 2023

Photo No:
009

Photo Date:
12/2022 – 1/2023

Description:
View of the
basement lobby
area (Room 001)
showing elevcator.



Photo No:
010

Photo Date:
12/2022 – 1/2023

Description:
View of the
basement lobby
area (Room 001).
This large pipe
wrap/canvas cover
(ref. sample B-
01A/B) is positive
for asbestos.



Project Location: UK Pence Hall, 175 Funkhouser Drive Lexington, Kentucky

CMec Project Number: 353-22-K

Date: December 2022 / January 2023

Photo No:
011

Photo Date:
12/2022 – 1/2023

Description:
View of piping
above suspended
ceiling in room
009C showing
asbestos containing
piping.



Photo No:
012

Photo Date:
12/2022 – 1/2023

Description:
View of room 010
showing various
overhead piping,
etc.



Project Location: UK Pence Hall, 175 Funkhouser Drive Lexington, Kentucky

CMec Project Number: 353-22-K

Date: December 2022 / January 2023

Photo No:
013

Photo Date:
12/2022 – 1/2023

Description:
View of room 010 showing various overhead piping, etc.



Photo No:
014

Photo Date:
12/2022 – 1/2023

Description:
View of room 010 showing various overhead piping, etc.



Project Location: UK Pence Hall, 175 Funkhouser Drive Lexington, Kentucky

CMec Project Number: 353-22-K

Date: December 2022 / January 2023

Photo No:
015

Photo Date:
12/2022 – 1/2023

Description:
View of basement
classroom showing
overhead piping.



Photo No:
016

Photo Date:
12/2022 – 1/2023

Description:
View of basement
classroom showing
overhead piping.



Project Location: UK Pence Hall, 175 Funkhouser Drive Lexington, Kentucky

CMec Project Number: 353-22-K

Date: December 2022 / January 2023

Photo No:
017

Photo Date:
12/2022 – 1/2023

Description:
View of room
006A showing
various pipe and
mechanical
components.



Photo No:
018

Photo Date:
12/2022 – 1/2023

Description:
View of room
006A showing
various pipe and
mechanical
components.



Project Location: UK Pence Hall, 175 Funkhouser Drive Lexington, Kentucky

CMec Project Number: 353-22-K

Date: December 2022 / January 2023

Photo No:

019

Photo Date:

12/2022 – 1/2023

Description:

View of second floor main hallway (201).



Photo No:

020

Photo Date:

12/2022 – 1/2023

Description:

View of second floor lecture room (209).



Project Location: UK Pence Hall, 175 Funkhouser Drive Lexington, Kentucky

CMec Project Number: 353-22-K

Date: December 2022 / January 2023

Photo No:

021

Photo Date:

12/2022 – 1/2023

Description:

View of second floor lecture room (209).



Photo No:

022

Photo Date:

12/2022 – 1/2023

Description:

View of room 203 showing various wrapped mechanical components containing asbestos.



Project Location: UK Pence Hall, 175 Funkhouser Drive Lexington, Kentucky

CMec Project Number: 353-22-K

Date: December 2022 / January 2023

Photo No:
023

Photo Date:
12/2022 – 1/2023

Description:
View of classroom
202 showing
damaged asbestos.
Other pipes within
this room have
similar issues.

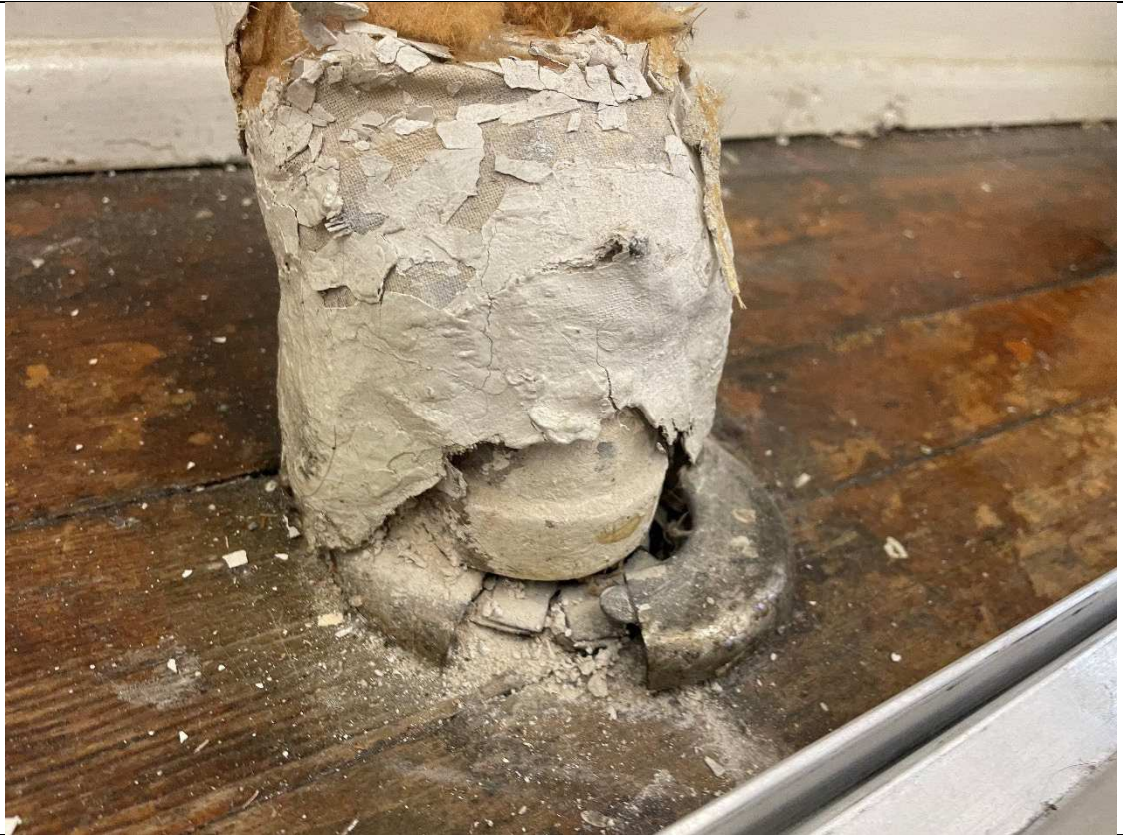


Photo No:
024

Photo Date:
12/2022 – 1/2023

Description:
View of classroom
202 showing
damaged asbestos.
Other pipes within
this room have
similar issues.



Project Location: University of Kentucky Pence Hall

CMec Project Number: 353-22-K

Date: January 2023

Photo No:
025

Photo Date:
January 6, 2023

Description:
View of the attic space
above the 3rd floor /
below the main roof #1.



Photo No:
026

Photo Date:
January 6, 2023

Description:
View of the attic space
above the 3rd floor /
below the main roof #1.



Project Location: University of Kentucky Pence Hall

CMec Project Number: 353-22-K

Date: January 2023

Photo No:

027

Photo Date:

January 6, 2023

Description:

View of the attic space
above the 3rd floor /
below the main roof #1.



Photo No:

028

Photo Date:

January 6, 2023

Description:

View of the main roof
looking from side B to
side D.



Project Location: University of Kentucky Pence Hall

CMec Project Number: 353-22-K

Date: January 2023

Photo No:

029

Photo Date:

January 6, 2023

Description:

View of the main roof looking from side to D side B alongside C.



Photo No:

030

Photo Date:

January 6, 2023

Description:

View of the side A / B corner on the upper roof #1.



Project Location: University of Kentucky Pence Hall

CMec Project Number: 353-22-K

Date: January 2023

Photo No:
031

Photo Date:
January 6, 2023

Description:
View of the parapet wall cap at the side C / D corner on the upper roof #1.



Photo No:
032

Photo Date:
January 6, 2023

Description:
View of roof #2.



Project Location: University of Kentucky Pence Hall

CMec Project Number: 353-22-K

Date: January 2023

Photo No:
033

Photo Date:
January 6, 2023

Description:
View of roof #3 and
roof #4.



Photo No:
034

Photo Date:
January 6, 2023

Description:
View of the roof core
location for sample
R-01A



Project Location: University of Kentucky Pence Hall

CMec Project Number: 353-22-K

Date: January 2023

Photo No:

035

Photo Date:

January 6, 2023

Description:

View of DWV flashing
– Location of sample
R-02B.



Photo No:

036

Photo Date:

January 6, 2023

Description:

View of a concrete
capped brick and
mortar chimney on roof
#1.



Project Location: University of Kentucky Pence Hall

CMec Project Number: 353-22-K

Date: January 2023

Photo No:

037

Photo Date:

January 6, 2023

Description:

View of a chimney and vent cap along side D of the upper roof #1. Sample location for R-06A-C



Photo No:

038

Photo Date:

January 6, 2023

Description:

View of roof #4.



Project Location: University of Kentucky Pence Hall

CMec Project Number: 353-22-K

Date: January 2023

Photo No: 039

Photo Date: January 6, 2023

Description:

View of the core sample location on roof #4.



Photo No: 040

Photo Date: January 2023

Description:

View of the core sample location on roof #4.



Project Location: UK Pence Hall, 175 Funkhouser Drive Lexington, Kentucky

CMec Project Number: 353-22-K

Date: December 2022 / January 2023

Photo No:

041

Photo Date:

12/2022 – 1/2023

Description:

View of classroom 202 showing damaged asbestos. Other pipes within this room have similar issues.



Photo No:

042

Photo Date:

12/2022 – 1/2023

Description:

View of classroom 202 showing damaged asbestos. Other pipes within this room have similar issues.



Project Location: UK Pence Hall, 175 Funkhouser Drive Lexington, Kentucky

CMec Project Number: 353-22-K

Date: December 2022 / January 2023

Photo No:

043

Photo Date:

12/2022 – 1/2023

Description:

View of classroom 202 showing damaged asbestos. Other pipes within this room have similar issues.



Photo No:

044

Photo Date:

12/2022 – 1/2023

Description:

View of classroom 202 showing damaged asbestos. Other pipes within this room have similar issues.



Project Location: UK Pence Hall, 175 Funkhouser Drive Lexington, Kentucky

CMec Project Number: 353-22-K

Date: December 2022 / January 2023

Photo No:

045

Photo Date:

12/2022 – 1/2023

Description:

View of classroom 202 showing damaged asbestos. Other pipes within this room have similar issues.



Photo No:

046

Photo Date:

12/2022 – 1/2023

Description:

View of classroom 204 (Reference Room) showing damaged asbestos near radiator. Other pipes within this room have similar issues.



Project Location: UK Pence Hall, 175 Funkhouser Drive Lexington, Kentucky

CMec Project Number: 353-22-K

Date: December 2022 / January 2023

Photo No:

047

Photo Date:

12/2022 – 1/2023

Description:

View of classroom 204 (Reference Room) showing damaged asbestos near radiator. Other pipes within this room have similar issues.



Photo No:

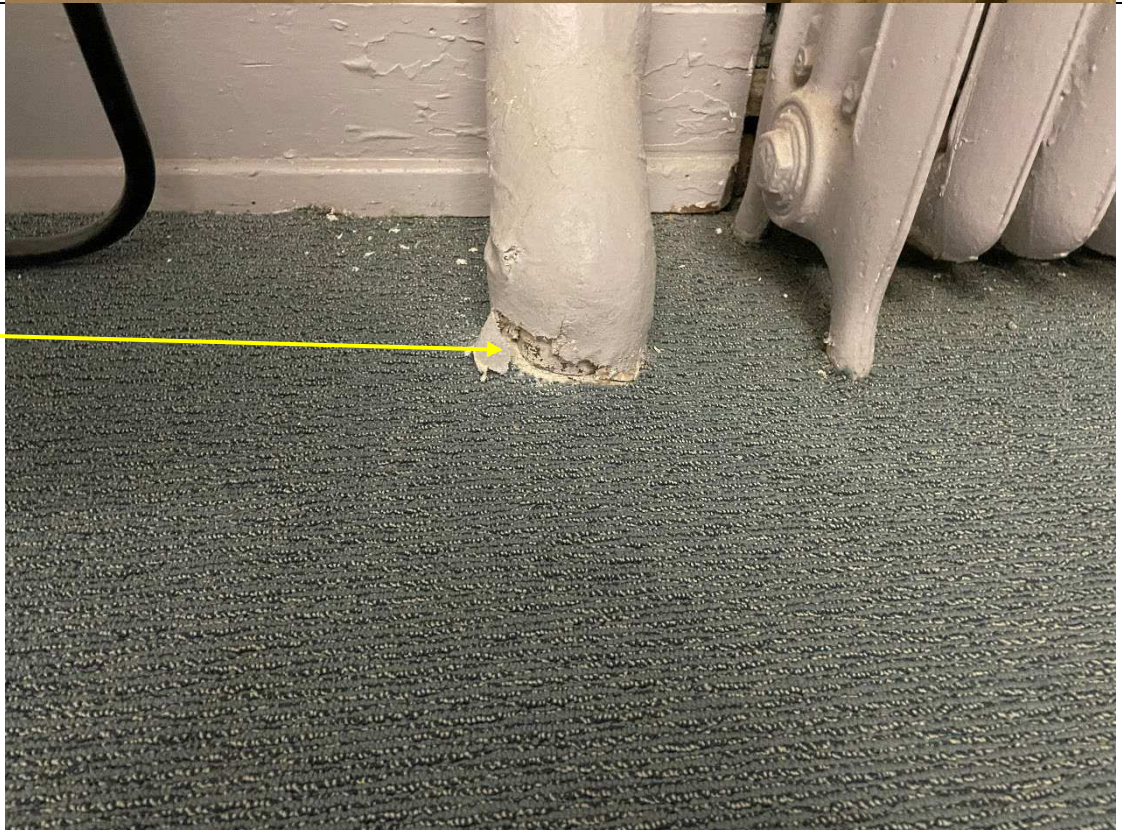
048

Photo Date:

12/2022 – 1/2023

Description:

View of room 205 showing damaged asbestos near radiator.



Project Location: UK Pence Hall, 175 Funkhouser Drive Lexington, Kentucky

CMec Project Number: 353-22-K

Date: December 2022 / January 2023

Photo No:
049

Photo Date:
12/2022 – 1/2023

Description:
View of room 205
showing damaged
asbestos near
radiator.

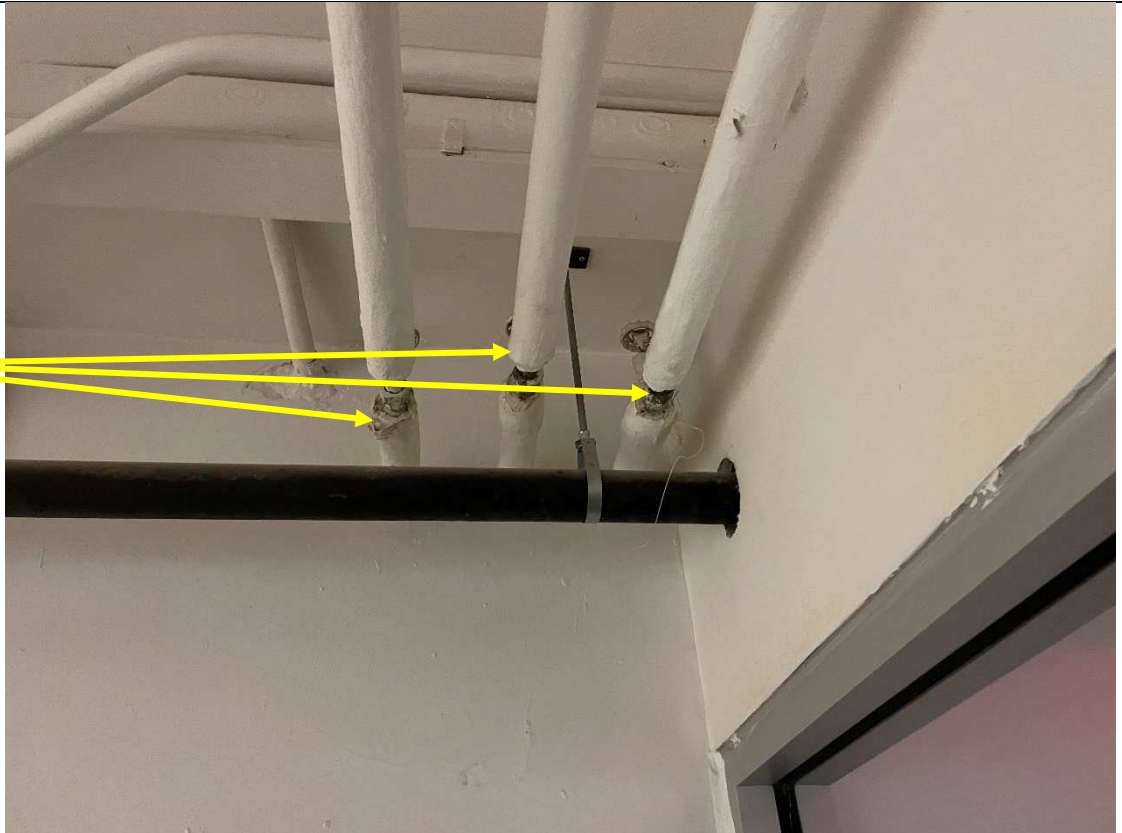


Photo No:
050

Photo Date:
12/2022 – 1/2023

Description:
Location of
Residual Door
Caulk.



Project Location: UK Pence Hall, 175 Funkhouser Drive Lexington, Kentucky

CMec Project Number: 353-22-K

Date: December 2022 / January 2023

Photo No:

051

Photo Date:

12/2022 – 1/2023

Description:

Chalk boards were not disturbed as part of the inspection; however, it is assumed adhesive behind is asbestos containing.

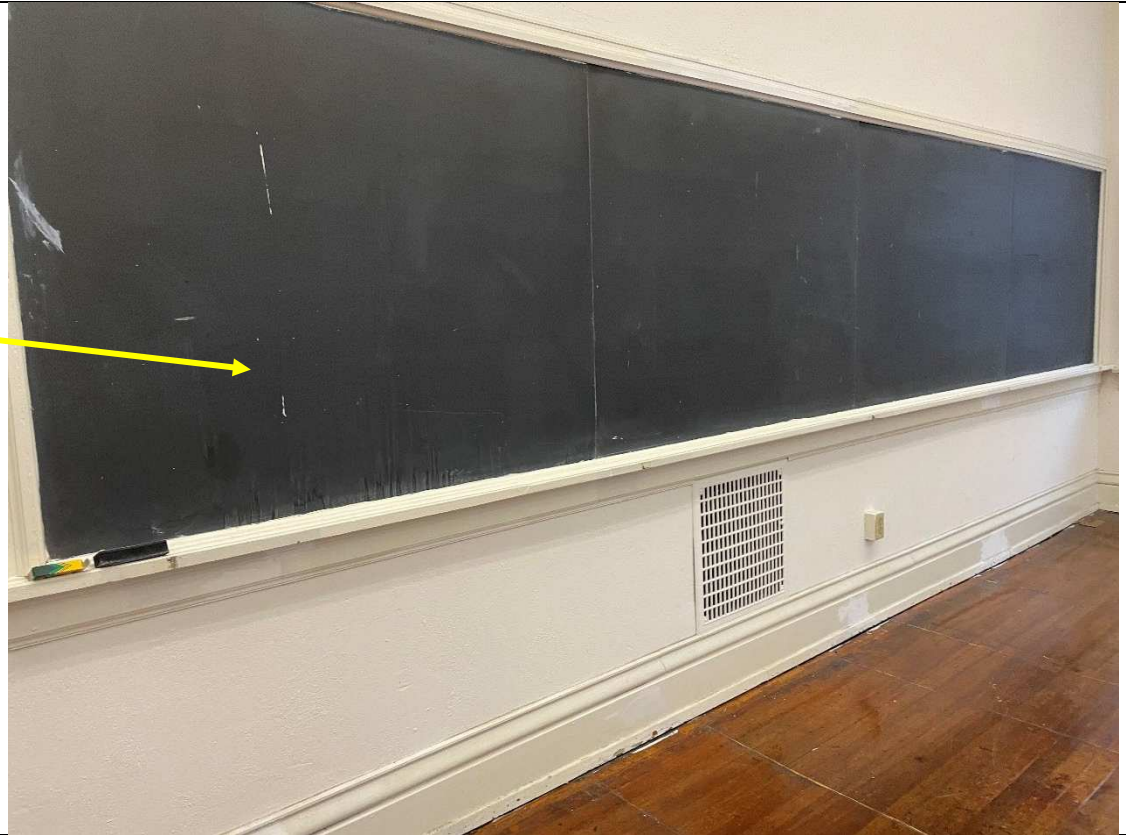


Photo No:

052

Photo Date:

12/2022 – 1/2023

Description:

Location of new flooring that could potentially be over asbestos containing tile per information received from UK. This area appears built up approximately 1". This area is assumed to contain 9x9" floor tile and mastic until confirmation/area disturbance can occur.



APPENDIX B

ASBESTOS LICENSE AND CERTIFICATION

ANDY BESHEAR
GOVERNOR



REBECCA W. GOODMAN
SECRETARY

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

ANTHONY R. HATTON
COMMISSIONER

300 SOWER BOULEVARD
FRANKFORT, KENTUCKY 40601

April 18, 2022

Suzanne Arnzen
3704 Norbourne Blvd
Louisville, Kentucky 40207

Asbestos Inspector
AI Number: 142070
License Number: 67663
Expires: April 5, 2023

Dear Suzanne Arnzen:

This is to acknowledge receipt of your application for accreditation as an asbestos abatement professional. Your application has been approved and the above-referenced card is enclosed.

Initial accreditation fee is \$100.00 per person per discipline, except for abatement worker (\$20.00). Renewal fees for accreditations within one year of the expiration date are one-half of the initial fees. Renewals for accreditations expired over one year require the initial fee. There is a \$10.00 duplication charge to replace a lost card. Please also note that the expiration date on your license is determined by the expiration date on the training certificate submitted with your application.

When submitting application packets, please note the following:

- do not staple any of the application materials;
- make sure to fill out the application completely, including your signature; and
- include current proof of training for the discipline(s) for which you are applying

If you have any questions regarding this matter, please call our office at (502) 782-6717.

Sincerely,

Emma Moreo
Field Support Section
Field Operations Branch



ANDY BESHEAR
GOVERNOR



REBECCA W. GOODMAN
SECRETARY

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

ANTHONY R. HATTON
COMMISSIONER

300 SOWER BOULEVARD
FRANKFORT, KENTUCKY 40601

June 10, 2022

Robert Douglas Amshoff
3704 Norbourne Blvd
Louisville, Kentucky 40207

Asbestos Inspector
AI Number: 138381
License Number: 61792
Expires: June 1, 2023

Dear Robert Douglas Amshoff:

This is to acknowledge receipt of your application for accreditation as an asbestos abatement professional. Your application has been approved and the above-referenced card is enclosed.

Initial accreditation fee is \$100.00 per person per discipline, except for abatement worker (\$20.00). Renewal fees for accreditations within one year of the expiration date are one-half of the initial fees. Renewals for accreditations expired over one year require the initial fee. There is a \$10.00 duplication charge to replace a lost card. Please also note that the expiration date on your license is determined by the expiration date on the training certificate submitted with your application.

When submitting application packets, please note the following:

- do not staple any of the application materials;
- make sure to fill out the application completely, including your signature; and
- include current proof of training for the discipline(s) for which you are applying

If you have any questions regarding this matter, please call our office at (502) 782-6717.

Commonwealth of Kentucky
Department for Environmental Protection
Division for Air Quality

Robert Douglas Amshoff
Has met the requirements of 401 KAR 58.005 and is accredited as an:

Asbestos Inspector

Agency Interest Id: **138381**
License Number: **61792**
Issue Date: **06/09/2022**
Expiration Date: **06/01/2023**

Sincerely,

Emma Moreo

Emma Moreo
Field Support Section
Field Operations Branch



ANDY BESHEAR
GOVERNOR

REBECCA W. GOODMAN
SECRETARY

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

ANTHONY R. HATTON
COMMISSIONER

300 SOWER BOULEVARD
FRANKFORT, KENTUCKY 40601

October 13, 2022

Gregory Bailey
3759 Stanton Blvd
Louisville, Kentucky 40220

Asbestos Inspector
AI Number: 157056
License Number: 61783
Expires: September 14, 2023

Dear Gregory Bailey:

This is to acknowledge receipt of your application for accreditation as an asbestos abatement professional. Your application has been approved and the above-referenced card is enclosed.

Initial accreditation fee is \$100.00 per person per discipline, except for abatement worker (\$20.00). Renewal fees for accreditations within one year of the expiration date are one-half of the initial fees. Renewals for accreditations expired over one year require the initial fee. There is a \$10.00 duplication charge to replace a lost card. Please also note that the expiration date on your license is determined by the expiration date on the training certificate submitted with your application.

When submitting application packets, please note the following:

- do not staple any of the application materials;
- make sure to fill out the application completely, including your signature; and
- include current proof of training for the discipline(s) for which you are applying

If you have any questions regarding this matter, please call our office at (502) 782-6717.

Sincerely,

Emma Moreo
Field Support Section
Field Operations Branch

Commonwealth of Kentucky
Department for Environmental Protection
Division for Air Quality

Gregory Bailey
Has met the requirements of 401 KAR 58.005 and is accredited as an:

Asbestos Inspector

Agency Interest Id: **157056**
License Number: **61783**
Issue Date: **10/12/2022**
Expiration Date: **09/14/2023**



APPENDIX C

ASBESTOS FIELD SAMPLE LOGS



ASBESTOS BUILDING SURVEY SAMPLE LOG

FACILITY: University of Kentucky Pence Hall

BUILDING/AREA: Roof Systems

DATE: January 2023

PROJECT NO: 353-22-K

SAMPLE #	DESCRIPTION
R-01A	Roof Core – Upper Roof #1
R-01B	Roof Core – Upper Roof #1
R-01C	Roof Core – Upper Roof #1
R-01D	Roof Core – Lower Roof #4
R-02A	Flashing - Chimney
R-02B	Flashing - DWV
R-02C	Flashing – Parapet Wall
R-03A	Mortar – Parapet Wall Cap
R-03B	Mortar – Parapet Wall Cap
R-03C	Mortar – Parapet Wall Cap
R-04A	Brick & Mortar – Chimney – Roof #1
R-04B	Brick & Mortar – Chimney – Roof #1
R-04C	Brick & Mortar – Chimney – Roof #1
R-05A	Cap Mortar – Chimney – Roof #1
R-05B	Cap Mortar – Chimney – Roof #1
R-05C	Cap Mortar – Chimney – Roof #1
R-06A	Caulk – Vent Cap
R-06B	Caulk – Vent Cap
R-06C	Caulk – Panel
R-07A	Caulk – Metal Wall Cap – Roof #4
R-07B	Caulk – Metal Wall Cap – Roof #4



ASBESTOS BUILDING SURVEY SAMPLE LOG

FACILITY: University of Kentucky Pence Hall

BUILDING/AREA: Interior - Basement

DATE: January 2023

PROJECT NO: 353-22-K

SAMPLE #	DESCRIPTION
B-01A	Basement Room 001 – Large Pipe Wrap
B-02A	Basement Room 001 – Plaster over Brick
B-02B	Basement Room 001 – Plaster over Brick
B-03B	Basement Room 001 – Coating over FG Insulation
B-04A	Basement Room 001– Fire Stop
B-04B	Basement Room 001– Fire Stop
B-05A	Basement Room 001 – Gypsum Board Tape and Mud
B-05B	Basement Room 001 – Gypsum Board Tape and Mud
B-06A	Basement Room 006 – Concrete @ Baseboard
B-06B	Basement Room 006 – Concrete @ Baseboard
B-07A	Basement – Skim Coat over Brick
B-07B	Basement – Skim Coat over Brick
B-08A	Basement – Above Ceiling @ Display – Old Brick Mortar
B-08B	Basement – Above Ceiling @ Display – Old Brick Mortar
B-09A	Basement – Plaster over Wood Lathe
B-09B	Basement – Plaster over Wood Lathe
B-10A	Basement Room 009C – East Restroom Suspended Ceiling Tile
B-10B	Basement Room 009C – East Restroom Suspended Ceiling Tile
B-11B	Basement Room 010 – Canvas Over Fiberglass Wrap
B-12A	Basement Room 010 – Window Caulk (old) below silicone
B-12B	Basement Room 010 – Window Caulk (old) below silicone
B-13A	Basement Room 011 – TSI @ Glass Door
B-13B	Basement Room 011 – TSI @ Glass Door
B-14A	Basement Room 010 @ Office – Gypsum Board
B-14B	Basement Room 010 @ Office – Gypsum Board
B-15A	Basement Room 010 – Old Window Caulk
B-15B	Basement Room 010 – Old Window Caulk
B-16A	Basement Room 010 – Concrete Floor
B-16B	Basement Room 010 – Concrete Floor
B-17A	Basement Room 002 – Plaster and Skim Coat
B-17B	Basement Room 002 – Plaster and Skim Coat
B-18A	Basement Room 002 – Brick Int. Wall @ Door
B-18B	Basement Room 002 – Brick Int. Wall @ Door
B-19A	Basement Room 014 – Skim Coat on Brick
B-19B	Basement Room 014 – Skim Coat on Brick

APPENDIX D

LOCATION DIAGRAMS

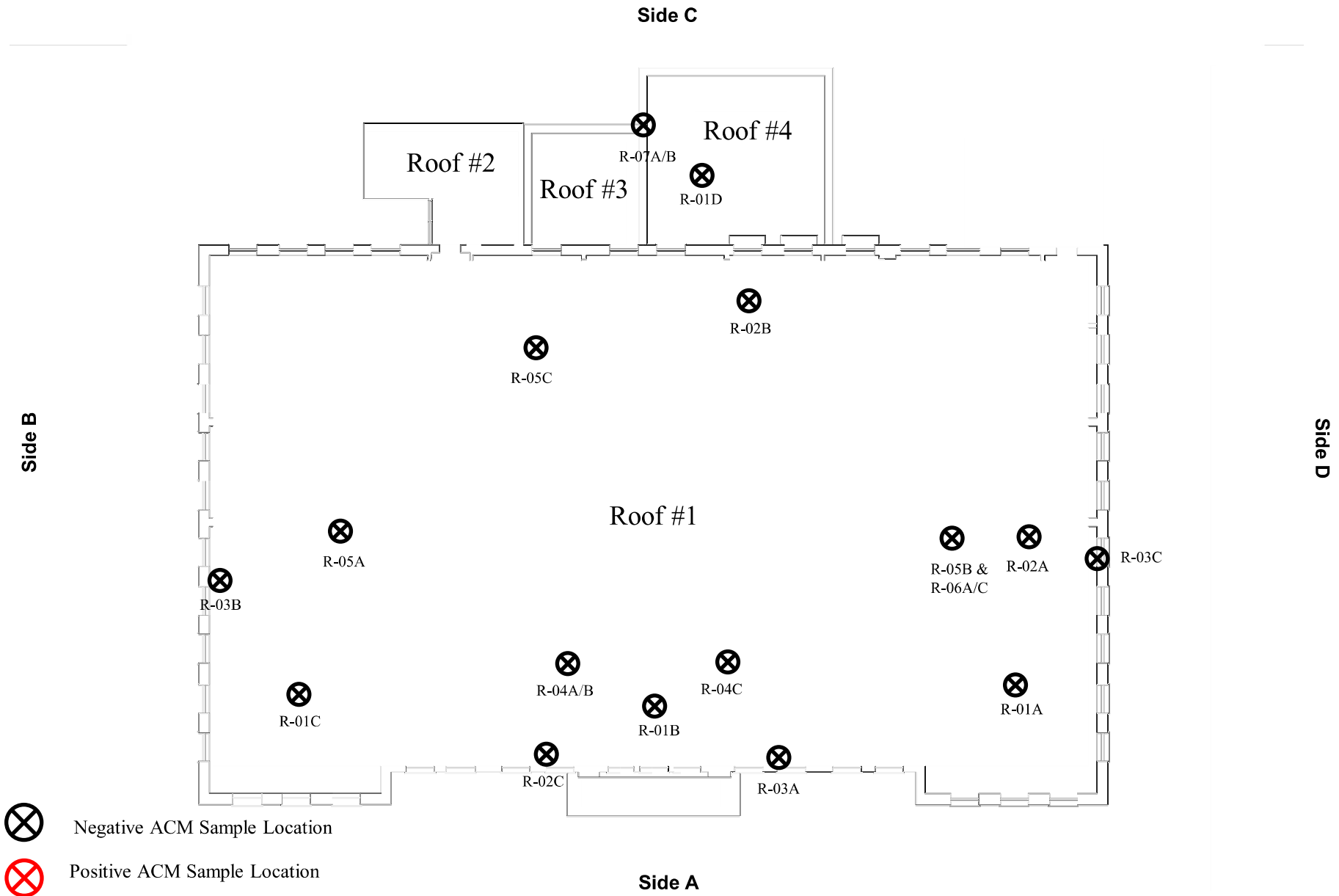
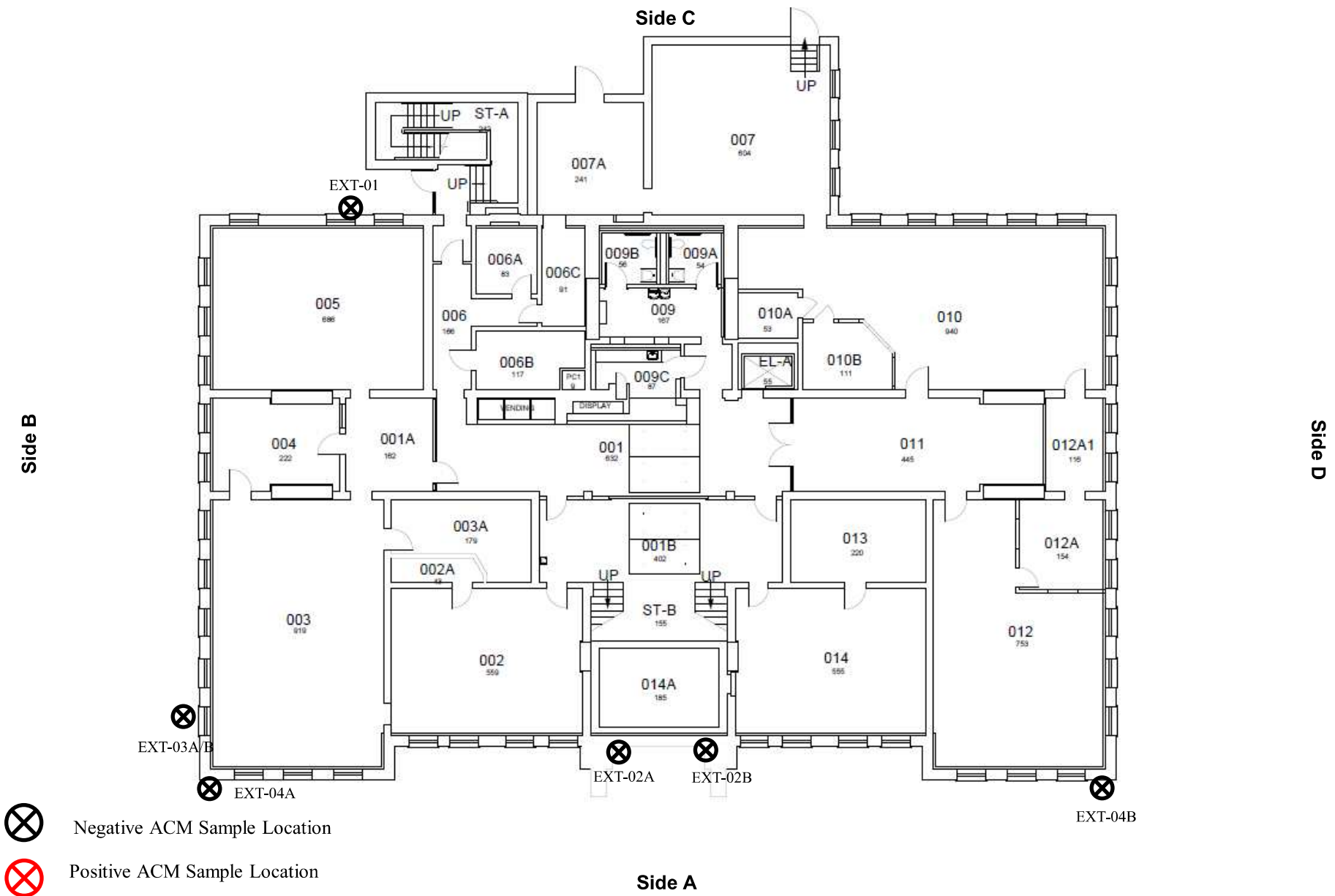


	Figure D.1	University of Kentucky Pence Hall Roof Sample Location Diagram
	NTS	Date: January 2023





 Negative ACM Sample Location
 Positive ACM Sample Location

Figure D.2	University of Kentucky Pence Hall Exterior Sample Location Diagram
NTS	Date: December/January 2023

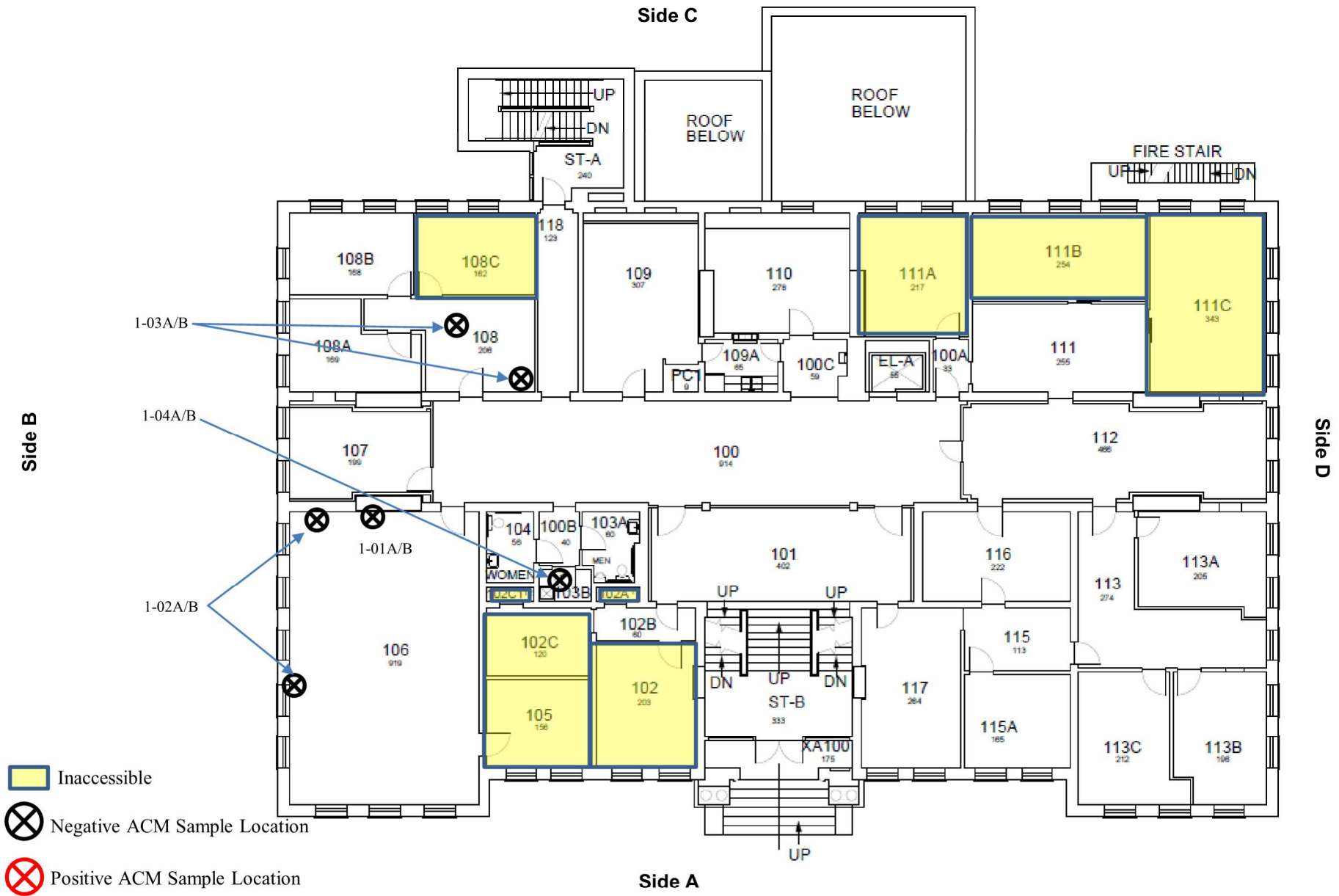


Figure D.4

**University of Kentucky Pence Hall
First Floor Sample Location Diagram**

NTS

Date: December/January 2023

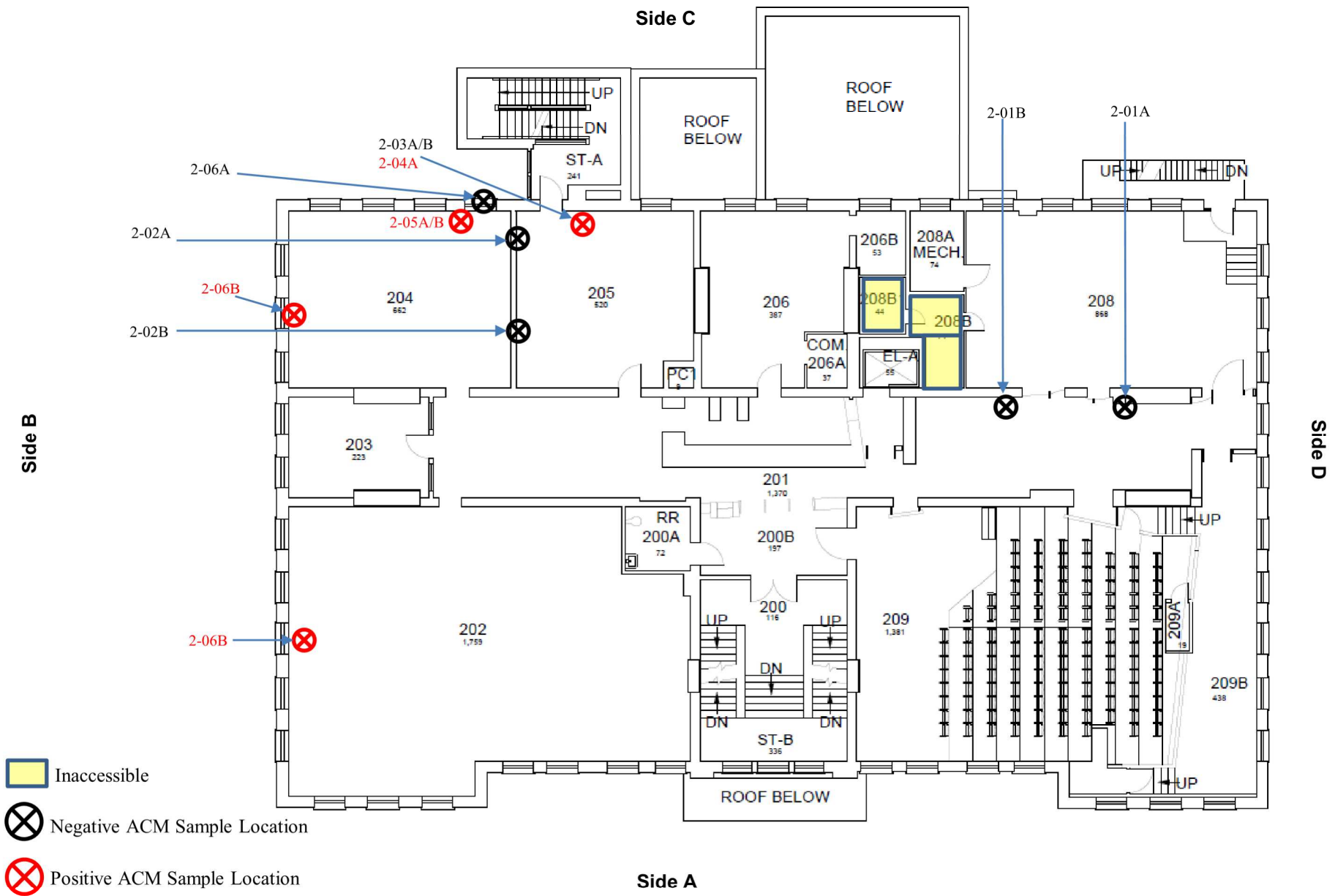


Figure D.5

**University of Kentucky Pence Hall
Second Floor Sample Location Diagram**

NTS

Date: December/January 2023

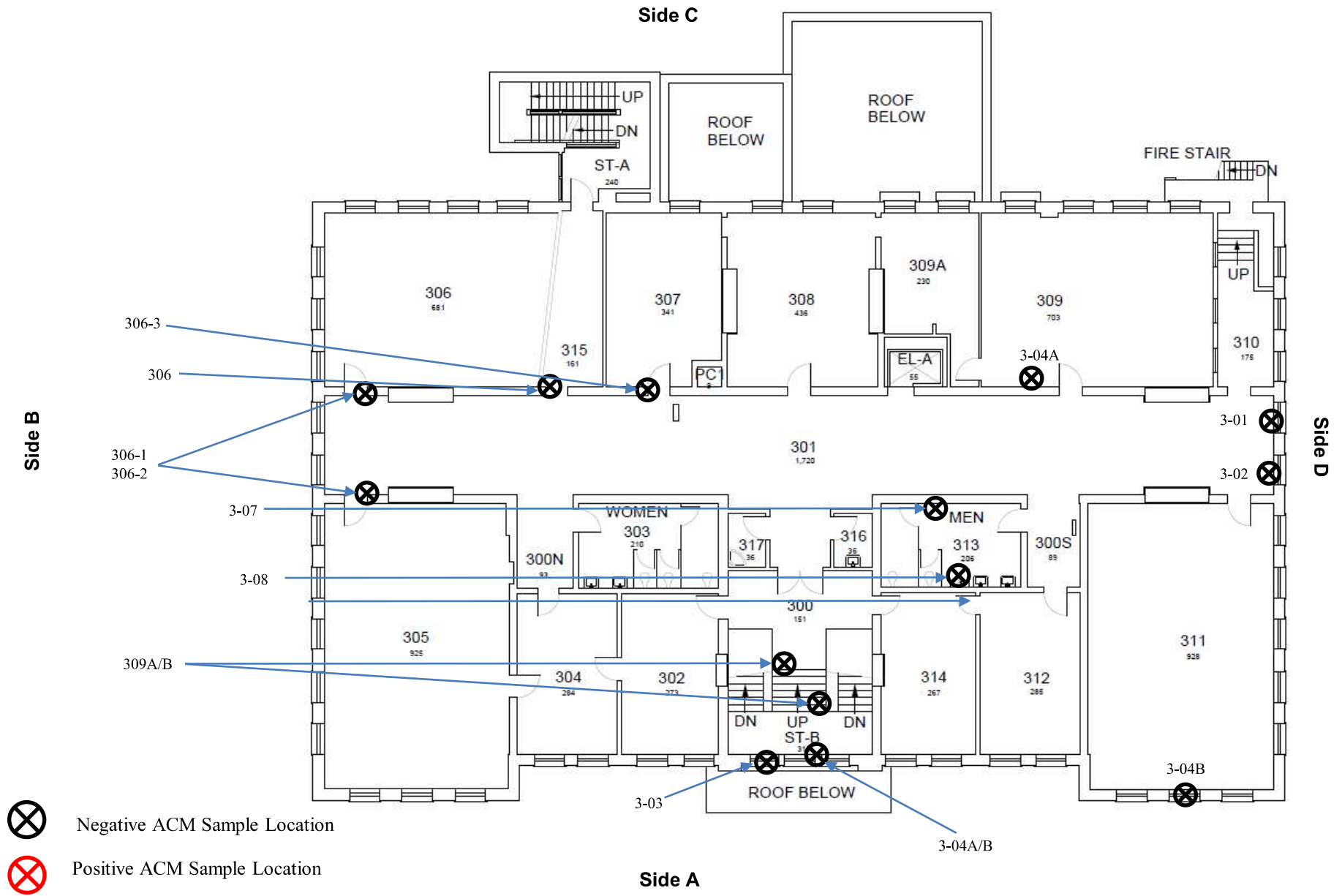


Figure D.6

**University of Kentucky Pence Hall
Third Floor Sample Location Diagram**

NTS

Date: December/January 2023

APPENDIX E

ASBESTOS LABORATORY ANALYTICAL RESULTS



McCall and Spero
Environmental, Inc.

Specialists in Microanalysis

1831 Williamson Court • Suite 100 • Louisville, KY 40223
Phone (502) 244-7135 • FAX (502) 244-7136

E-mail: customerservice@mse-labs.com • Website: www.mse-labs.com

Date: January 25, 2023

Attention: Gregory Bailey
CMEC Environmental

Subject: Analysis of bulk samples for asbestos mineral fibers by Polarized Light
Microscopy (PLM) with Dispersion Staining (EPA/600/R-93/116)

RE: MSE-P1203CMEC.1
UK Pence Hall Roof Systems Project
CMEC# 353-22-K

Dear Mr. Bailey:

McCall & Spero Environmental, Inc. has completed the analysis of the bulk samples we received from your offices on January 20, 2023. These samples represent the bulk samples from the UK Pence Hall Roof Systems Project.

The PLM bulk analysis was performed according to the "Method of the Determination of Asbestos in Bulk Building Materials", R. L. Perkins and B. W. Harvey (EPA/600/R-93/116).

The results for the twenty-eight (28) samples are summarized in the following report. Please note that for samples consisting of two or more distinct components, each component is analyzed and reported individually (EPA 40 CFR Part 61 [FRL-4821-71]).

Thank you for consulting McCall & Spero Environmental, Inc. Should you have any questions concerning these results, please contact our office.

Sincerely,

Kevin R. Bean, B.A.
PLM Laboratory Director

SUMMARY OF PLM BULK ANALYSIS RESULTS

Page 1

Project Name: UK Pence Hall Roof Systems Project
McCall & Spero Environmental Project No. MSE-P1203CMEC.1

MSE # P1203CMEC.1	SAMPLE # DESCRIPTION	ASBESTOS TYPE & %	OTHER FIBROUS MATERIAL & %	% NON-FIBROUS MATERIAL	COLOR
001 (A)	R-01A (A) Roof Core	ND**	Cellulose / 5% Glass / 10%	85%	Black
001 (B)	R-01A (B) Insulation	ND**	Cellulose / 5% Synthetics / 45%	50%	Yellow
002 (A)	R-01B (A) Roof Core	ND**	Cellulose / 5% Glass / 10%	85%	Black/White
002 (B)	R-01B (B) Insulation	ND**	Cellulose / 5% Synthetics / 45%	50%	Yellow
003 (A)	R-01C (A) Roof Core	ND**	Cellulose / 5% Glass / 10%	85%	Black/White
003 (B)	R-01C (B) Insulation	ND**	Cellulose / 5% Synthetics / 45%	50%	Yellow
004 (A)	R-01D (A) Roof Core	ND**	Cellulose / 5% Glass / 10%	85%	Black/White
004 (B)	R-01D (B) Insulation	ND**	Cellulose / 5% Synthetics / 45%	50%	Yellow/ Brown
005	R-02A Flashing	ND**	Cellulose / 5%	95%	White/Gray
006	R-02B Flashing	ND**	Cellulose / 5%	95%	White/Gray
007	R-02C Flashing	ND**	Cellulose / 5%	95%	White/Gray
008	R-03A Mortar	ND**	Cellulose / 3%	97%	Gray
009	R-03B Mortar	ND**	Cellulose / 3%	97%	Gray
010	R-03C Mortar	ND**	Cellulose / 3%	97%	Gray
011 (A)	R-04A (A) Brick	ND**	Cellulose / 2%	98%	Red

McCall & Spero Environmental, Inc.

SUMMARY OF PLM BULK ANALYSIS RESULTS

Page 2

MSE # P1203CMEC.1	SAMPLE # DESCRIPTION	ASBESTOS TYPE & %	OTHER FIBROUS MATERIAL & %	% NON-FIBROUS MATERIAL	COLOR
011 (B)	R-04A (B) Mortar	ND**	Cellulose / 3%	97%	Gray
012 (A)	R-04B (A) Brick	ND**	Cellulose / 2%	98%	Red
012 (B)	R-04B (B) Mortar	ND**	Cellulose / 3%	97%	Gray
013 (A)	R-04C (A) Brick	ND**	Cellulose / 2%	98%	Red
013 (B)	R-04C (B) Mortar	ND**	Cellulose / 3%	97%	Gray
014	R-05A Cap Mortar	ND**	Cellulose / 3%	97%	Gray
015	R-05B Cap Mortar	ND**	Cellulose / 3%	97%	Gray
016	R-05C Cap Mortar	ND**	Cellulose / 3%	97%	Gray
017	R-06A Caulk	ND**	Cellulose / 5%	95%	White
018	R-06B Caulk	ND**	Cellulose / 5%	95%	White
019	R-06C Caulk	ND**	Cellulose / 5%	95%	Gray
020	R-07A Caulk	ND**	Cellulose / 5%	95%	White/Black
021	R-07B Caulk	ND**	Cellulose / 5%	95%	White

SUMMARY OF PLM BULK ANALYSIS RESULTS

Page 3

NOTES:

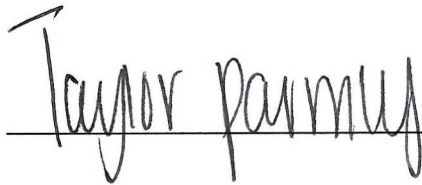
ND = None Detected CH = Chrysotile A = Amosite AC = Actinolite
CR = Crocidolite AN = Anthophyllite TR = Tremolite

For samples consisting of separate components, each component is analyzed and reported separately.

Results apply only to items tested. Quantification is accurate to within $\pm 10\%$. Results from this report must not be reproduced, except in full, with the approval of McCall & Spero Environmental, Inc. This report must not be used to claim product endorsement by NVLAP or any agency of the U.S. Government.

** EPA recommends that bulk materials found negative for asbestos or less than one percent asbestos by polarized light microscopy that fall into one of five dominantly nonfriable categories be reanalyzed by an additional method, such as transmission electron microscopy. (EPA Notice of Advisory, FR Vol. 59, No. 146 & Test Method EPA 600/ R-93/ 116).

Analyst: Taylor B. Parmly

A handwritten signature in black ink that reads "Taylor Parmly". The signature is written in a cursive style and is positioned over a horizontal line.



ASBESTOS BUILDING SURVEY SAMPLE LOG

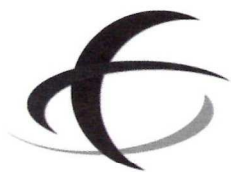
FACILITY: University of Kentucky Pence Hall

BUILDING/AREA: Roof Systems

DATE: January 6, 2023

PROJECT NO: 353-22-K

SAMPLE #	DESCRIPTION
R-01A	Roof Core – Upper Roof #1
R-01B	Roof Core – Upper Roof #1
R-01C	Roof Core – Upper Roof #1
R-01D	Roof Core – Lower Roof #4
R-02A	Flashing - Chimney
R-02B	Flashing - DWV
R-02C	Flashing – Parapet Wall
R-03A	Mortar – Parapet Wall Cap
R-03B	Mortar – Parapet Wall Cap
R-03C	Mortar – Parapet Wall Cap
R-04A	Brick & Mortar – Chimney – Roof #1
R-04B	Brick & Mortar – Chimney – Roof #1
R-04C	Brick & Mortar – Chimney – Roof #1
R-05A	Cap Mortar – Chimney – Roof #1
R-05B	Cap Mortar – Chimney – Roof #1
R-05C	Cap Mortar – Chimney – Roof #1
R-06A	Caulk – Vent Cap
R-06B	Caulk – Vent Cap
R-06C	Caulk – Panel
R-07A	Caulk – Metal Wall Cap – Roof #4
R-07B	Caulk – Metal Wall Cap – Roof #4



McCall and Spero
Environmental, Inc.

Specialists in Microanalysis

1831 Williamson Court • Suite 100 • Louisville, KY 40223
Phone (502) 244-7135 • FAX (502) 244-7136

E-mail: customerservice@mselabs.com • Website: www.mselabs.com

Date: January 19, 2023

Attention: Suzanne Arnzen
CMEC Environmental

Subject: Analysis of bulk samples for asbestos mineral fibers by Polarized Light
Microscopy (PLM) with Dispersion Staining (EPA/600/R-93/116)

RE: MSE-P1163CMEC.1
UK - Pence Hall Project
P1163CMEC.1

Dear Ms. Arnzen:

McCall & Spero Environmental, Inc. has completed the analysis of the bulk samples we received from your offices on January 16, 2023. These samples represent the bulk samples from the UK - Pence Hall Project.

The PLM bulk analysis was performed according to the "Method of the Determination of Asbestos in Bulk Building Materials", R. L. Perkins and B. W. Harvey (EPA/600/R-93/116).

The results for the nine (9) samples are summarized in the following report. Please note that for samples consisting of two or more distinct components, each component is analyzed and reported individually (EPA 40 CFR Part 61 [FRL-4821-71]).

Thank you for consulting McCall & Spero Environmental, Inc. Should you have any questions concerning these results, please contact our office.

Sincerely,

Kevin R. Bean, B.A.
PLM Laboratory Director

SUMMARY OF PLM BULK ANALYSIS RESULTS

Page 1

Project Name: UK - Pence Hall Project

McCall & Spero Environmental Project No. MSE-P1163CMEC.1

MSE # P1163CMEC.1	SAMPLE # DESCRIPTION	ASBESTOS TYPE & %	OTHER FIBROUS MATERIAL & %	% NON- FIBROUS MATERIAL	COLOR
001	EXT-01 Window & Brick Caulk	ND**	Cellulose / 5%	95%	White
002	EXT-02A Paint	ND**	Cellulose / 2%	98%	White/Tan
003	EXT-02B Paint	ND**	Cellulose / 2%	98%	White/Tan
004	EXT-03A Pipe Interior	ND	Cellulose / 10% Synthetics / 5%	85%	Gray
005	EXT-03B Pipe Interior	ND	Cellulose / 10% Synthetics / 5%	85%	Gray
006 (A)	EXT-04A (A) Mortar	ND**	Cellulose / 3%	97%	Gray
006 (B)	EXT-04A (B) Caulk	ND**	Cellulose / 5%	95%	White
007 (A)	EXT-04B (A) Mortar	ND**	Cellulose / 3%	97%	Gray
007 (B)	EXT-04B (B) Caulk	ND**	Cellulose / 5%	95%	White

SUMMARY OF PLM BULK ANALYSIS RESULTS

Page 2

NOTES:

ND = None Detected CH = Chrysotile A = Amosite AC = Actinolite
CR = Crocidolite AN = Anthophyllite TR = Tremolite

For samples consisting of separate components, each component is analyzed and reported separately.

Results apply only to items tested. Quantification is accurate to within $\pm 10\%$. Results from this report must not be reproduced, except in full, with the approval of McCall & Spero Environmental, Inc. This report must not be used to claim product endorsement by NVLAP or any agency of the U.S. Government.

** EPA recommends that bulk materials found negative for asbestos or less than one percent asbestos by polarized light microscopy that fall into one of five dominantly nonfriable categories be reanalyzed by an additional method, such as transmission electron microscopy. (EPA Notice of Advisory, FR Vol. 59, No. 146 & Test Method EPA 600/ R-93/ 116).

Analyst: Taylor B. Parmly

A handwritten signature in black ink that reads "Taylor Parmly". The signature is written in a cursive style and is positioned over a horizontal line.



McCall and Spero
Environmental, Inc.

Specialists in Microanalysis

1831 Williamson Court • Suite 100 • Louisville, KY 40223
Phone (502) 244-7135 • FAX (502) 244-7136

E-mail: customerservice@mse-labs.com • Website: www.mse-labs.com

Date: January 11, 2023

Attention: Suzanne Arnzen
CMEC Environmental

Subject: Analysis of bulk samples for asbestos mineral fibers by Polarized Light
Microscopy (PLM) with Dispersion Staining (EPA/600/R-93/116)

RE: MSE-P163CMEC.3
UK - Pence Hall Basement Project
CMEC# 353-22-K

Dear Ms. Arnzen:

McCall & Spero Environmental, Inc. has completed the analysis of the bulk samples we received from your offices on January 6, 2023. These samples represent the bulk samples from the UK - Pence Hall Basement Project.

The PLM bulk analysis was performed according to the "Method of the Determination of Asbestos in Bulk Building Materials", R. L. Perkins and B. W. Harvey (EPA/600/R-93/116).

The results for the fifty-one (51) samples are summarized in the following report. Please note that for samples consisting of two or more distinct components, each component is analyzed and reported individually (EPA 40 CFR Part 61 [FRL-4821-71]).

Thank you for consulting McCall & Spero Environmental, Inc. Should you have any questions concerning these results, please contact our office.

Sincerely,

Kevin R. Bean, B.A.
PLM Laboratory Director

SUMMARY OF PLM BULK ANALYSIS RESULTS

Page 1

Project Name: UK - Pence Hall Basement Project
McCall & Spero Environmental Project No. MSE-P163CMEC.3

MSE # P163CMEC.3	SAMPLE # DESCRIPTION	ASBESTOS TYPE & %	OTHER FIBROUS MATERIAL & %	% NON-FIBROUS MATERIAL	COLOR
001	B-01B Pipe Wrap	CH / 30%	Cellulose / 50%	20%	Gray
002 (A)	B-02A (A) Plaster	ND**	Cellulose / 2% Hair / 2%	96%	Gray
002 (B)	B-02A (B) Skim Coat	ND**	Cellulose / 2%	98%	White
003 (A)	B-02B (A) Plaster	ND**	Cellulose / 2% Hair / 2%	96%	Gray
003 (B)	B-02B (B) Skim Coat	ND**	Cellulose / 2%	98%	White
004	B-03B Coating	ND	Cellulose / 10%	90%	White
005	B-04A Fire Stop	ND**	Cellulose / 3% Glass / 7%	90%	Red
006	B-04B Fire Stop	ND**	Cellulose / 3% Glass / 7%	90%	Red
007	B-05A Tape & Mud	ND	Cellulose / 10%	90%	White
008	B-05B Tape & Mud	ND	Cellulose / 10%	90%	White
009	B-06A Concrete	ND**	Cellulose / 2%	98%	Gray
010	B-06B Concrete	ND**	Cellulose / 2%	98%	Gray
011	B-07A Skim Coat	ND**	Cellulose / 2%	98%	White
012	B-07B Skim Coat	ND**	Cellulose / 2%	98%	White
013	B-08A Mortar	ND**	Cellulose / 2%	98%	Gray

McCall & Spero Environmental, Inc.

SUMMARY OF PLM BULK ANALYSIS RESULTS

Page 2

MSE # P163CMEC.3	SAMPLE # DESCRIPTION	ASBESTOS TYPE & %	OTHER FIBROUS MATERIAL & %	% NON-FIBROUS MATERIAL	COLOR
014	B-08B Mortar	ND**	Cellulose / 2%	98%	Gray
015 (A)	B-09A (A) Plaster	ND**	Cellulose / 2%	98%	Gray
015 (B)	B-09A (B) Skim Coat	ND**	Cellulose / 2%	98%	White
016 (A)	B-09B (A) Plaster	ND**	Cellulose / 2%	98%	Gray
016 (B)	B-09B (B) Skim Coat	ND**	Cellulose / 2%	98%	White
017	B-10A Ceiling Tile	ND	Cellulose / 50% Glass / 30%	20%	Gray
018	B-10B Ceiling Tile	ND	Cellulose / 50% Glass / 30%	20%	Gray
019	B-11B Canvas	ND	Cellulose / 60%	40%	White
020	B-12A Window Caulk	ND**	Cellulose / 2%	98%	Gray
021	B-12B Window Caulk	ND**	Cellulose / 2%	98%	Gray
022	B-13A TSI	CH / 15%	Cellulose / 10%	75%	White
023	B-13B TSI	CH / 15%	Cellulose / 10%	75%	White
024	B-14A Gypsum Board	ND	Cellulose / 5%	95%	White
025	B-14B Gypsum Board	ND	Cellulose / 5%	95%	White
026	B-15A Window Caulk	ND**	Cellulose / 2%	98%	Gray

SUMMARY OF PLM BULK ANALYSIS RESULTS

Page 3

MSE # P163CMEC.3	SAMPLE # DESCRIPTION	ASBESTOS TYPE & %	OTHER FIBROUS MATERIAL & %	% NON-FIBROUS MATERIAL	COLOR
027	B-15B Window Caulk	ND**	Cellulose / 2%	98%	Gray
028	B-16A Concrete	ND**	Cellulose / 2%	98%	Gray
029	B-16B Concrete	ND**	Cellulose / 2%	98%	Gray
030 (A)	B-17A (A) Plaster	ND**	Cellulose / 2%	98%	Gray
030 (B)	B-17A (B) Skim Coat	ND**	Cellulose / 2%	98%	White
031 (A)	B-17B (A) Plaster	ND**	Cellulose / 2%	98%	Gray
031 (B)	B-17B (B) Skim Coat	ND**	Cellulose / 2%	98%	White
032	B-18A Brick	ND**	Cellulose / 2%	98%	Red
033	B-18B Brick	ND**	Cellulose / 2%	98%	Red
034	B-19A Skim Coat	ND**	Cellulose / 2%	98%	White
035	B-19B Skim Coat	ND**	Cellulose / 2%	98%	White
036	B-20A Adhesive	ND**	Cellulose / 3%	97%	Yellow
037	B-20B Adhesive	ND**	Cellulose / 3%	97%	Yellow
038	B-21A Skim Coat	ND**	Cellulose / 2%	98%	White
039	B-21B Skim Coat	ND**	Cellulose / 2%	98%	White

McCall & Spero Environmental, Inc.

SUMMARY OF PLM BULK ANALYSIS RESULTS

MSE # P163CMEC.3	SAMPLE # DESCRIPTION	ASBESTOS TYPE & %	OTHER FIBROUS MATERIAL & %	% NON-FIBROUS MATERIAL	COLOR
040	B-22A Plaster/Gypsum	ND	Cellulose / 5%	95%	White
041	B-22B Plaster/Gypsum	ND	Cellulose / 5%	95%	White
042	B-23A Insulation	ND	Cellulose / 2%	98%	White
043	B-23B Insulation	ND	Cellulose / 2%	98%	White
044	B-24A Door Caulk	CH / 3%	Cellulose / 2%	95%	Gray
045	B-24B Door Caulk	CH / 3%	Cellulose / 2%	95%	Gray

NOTES:

ND = None Detected
CR = Crocidolite

CH = Chrysotile
AN = Anthophyllite

A = Amosite

AC = Actinolite

TR = Tremolite

For samples consisting of separate components, each component is analyzed and reported separately.

Results apply only to items tested. Quantification is accurate to within $\pm 10\%$. Results from this report must not be reproduced, except in full, with the approval of McCall & Spero Environmental, Inc. This report must not be used to claim product endorsement by NVLAP or any agency of the U.S. Government.

** EPA recommends that bulk materials found negative for asbestos or less than one percent asbestos by polarized light microscopy that fall into one of five dominantly nonfriable categories be reanalyzed by an additional method, such as transmission electron microscopy. (EPA Notice of Advisory, FR Vol. 59, No. 146 & Test Method EPA 600/ R-93/ 116).

Analyst: Kevin R. Bean, B.A.





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Specialists in Microanalysis

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E-mail: customerservice@mselabs.com • Website: www.mselabs.com

BULK SAMPLE CHAIN OF CUSTODY FORM

Company: <u>CMec</u>	Telephone # <u>502-489-0850</u>	Fax #: <u>n/a</u>
Contact: <u>Suzanne Arzen</u>	Client Project Number: <u>353-22-K</u>	
Relinquished by: <u>"</u>	Date: <u>1-5-23</u>	Time: <u>1900</u>
Written Report To: <u>CMec</u>		
Project Name: <u>UK-Fence Hall BASEMENT</u>		
Turn-Around (Circle One): Same Day 24 Hour <u>2-5 Day</u> 4-5 Day Weekend Rush After Hour Rush		
Analysis Requested (Circle One): PLM <u>Bulk</u> Analysis TEM Qualitative Analysis TEM Quantitative Analysis (4-5 Day)		

For Laboratory Use Only

MSE Project # <u>P163CMEC.3</u>	Method: <u>EPA/600/R-93/116</u>
Samples Received by: <u>[Signature]</u>	Date: <u>1/6/23</u> Time: <u>8:00</u>

Client Sample Number	Location	Sample Description	Sampled By
B-01A	Basement Rm. 001	Large Pipe wrap	SA
B-02A	Basement Rm. 001	Plaster over brick	↓
B-02B	Basement Rm. 001	Plaster over brick	
B-03B	Basement Rm. 001	Coating over FG insulation	
B-04A	Basement Rm. 001	Fire Stop	
B	"	"	
B-05A	Basement Rm. 001	Gyp. tape & mud	
B	"	"	
B-06A	Basement Rm. 006	concrete @ baseboard	
B	"	"	
B-07A	Basement	Skim over brick	
B	"	"	
B-08A	Basement	Above ceiling @ display - old brick mortar	
B	"	"	
B-09A	Basement	plaster over wood lathe	
B	"	"	
B-10A	Basement 009C	Last restroom sus. ceiling tile	
B	"	"	
B-11 B	Basement 010	canvas over FG wrap	



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Client Sample Number	Location	Sample Description	Sampled By
B-12A	Basement Rm. 010	Window caulk (old) below silicone	SA
B	"	"	↓
B-13A	Basement Rm. 011	TSI @ glass door	
B	"	"	
B-14A	Basement Rm. 010 @ office	Gypsum Board	
B	"	"	
B-15A	Basement Rm. 010	old window caulk	
B	"	"	
B-16A	Basement Rm. 010	concrete floor	
B	"	"	
B-17A	Basement Rm. 002	plaster + skim	
B	"	"	
B-18A	Basement Rm. 002	Brick Int. wall @ door	
B	"	"	
B-19A	Basement Rm. 014	Skim on Brick	
B	"	"	
B-20A	Basement Rm. 014	yellow adhesive on Brick	
B	"	"	
B-21A	Basement Rm. 006	Skim over plaster @ door	
B	"	"	
B-22A	Basement, Mech.	Gypsum® Plaster / Gyp.	
B	"	"	
B-23A	Basement, Mech.	Foam-Type Insulation	
B	"	"	
B-24A	Basement @ Stairwell	Residual old door caulk	
B	"	"	

Results Transmitted/Date: _____ Fax/Phone By: _____



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E-mail: customerservice@mse-labs.com • Website: www.mse-labs.com

Date: January 11, 2023

Attention: Suzanne Arnzen
CMEC Environmental

Subject: Analysis of bulk samples for asbestos mineral fibers by Polarized Light
Microscopy (PLM) with Dispersion Staining (EPA/600/R-93/116)

RE: MSE-P163CMEC
UK - Pence Hall First Floor Project
CMEC# 353-22-K

Dear Ms. Arnzen:

McCall & Spero Environmental, Inc. has completed the analysis of the bulk samples we received from your offices on January 6, 2023. These samples represent the bulk samples from the UK - Pence Hall First Floor Project.

The PLM bulk analysis was performed according to the "Method of the Determination of Asbestos in Bulk Building Materials", R. L. Perkins and B. W. Harvey (EPA/600/R-93/116).

The results for the twelve (12) samples are summarized in the following report. Please note that for samples consisting of two or more distinct components, each component is analyzed and reported individually (EPA 40 CFR Part 61 [FRL-4821-71]).

Thank you for consulting McCall & Spero Environmental, Inc. Should you have any questions concerning these results, please contact our office.

Sincerely,

Kevin R. Bean, B.A.
PLM Laboratory Director

SUMMARY OF PLM BULK ANALYSIS RESULTS

Page 1

Project Name: UK - Pence Hall First Floor Project
McCall & Spero Environmental Project No. MSE-P163CMEC

MSE # P163CMEC	SAMPLE # DESCRIPTION	ASBESTOS TYPE & %	OTHER FIBROUS MATERIAL & %	% NON-FIBROUS MATERIAL	COLOR
001	1-01A Mastic	ND**	Cellulose / 3%	97%	Brown
002	1-01B Mastic	ND**	Cellulose / 3%	97%	Brown
003 (A)	1-02A (A) Plaster	ND**	Cellulose / 2% Hair / 5%	93%	Gray
003 (B)	1-02A (B) Skim Coat	ND**	Cellulose / 2%	98%	White
004 (A)	1-02B (A) Plaster	ND**	Cellulose / 2% Hair / 5%	93%	Gray
004 (B)	1-02B (B) Skim Coat	ND**	Cellulose / 2%	98%	White
005	1-03A Ceiling Tile	ND	Cellulose / 50% Glass / 30%	20%	Gray
006	1-03B Ceiling Tile	ND	Cellulose / 50% Glass / 30%	20%	Gray
007 (A)	1-04A (A) Floor Tile	ND**	Cellulose / 3%	97%	Gray
007 (B)	1-04A (B) Mastic	ND**	Cellulose / 3%	97%	Yellow
008 (A)	1-04B (A) Floor Tile	ND**	Cellulose / 3%	97%	Gray
008 (B)	1-04B (B) Mastic	ND**	Cellulose / 3%	97%	Yellow

McCall & Spero Environmental, Inc.

SUMMARY OF PLM BULK ANALYSIS RESULTS

Page 2

NOTES:

ND = None Detected CH = Chrysotile A = Amosite AC = Actinolite
CR = Crocidolite AN = Anthophyllite TR = Tremolite

For samples consisting of separate components, each component is analyzed and reported separately.

Results apply only to items tested. Quantification is accurate to within $\pm 10\%$. Results from this report must not be reproduced, except in full, with the approval of McCall & Spero Environmental, Inc. This report must not be used to claim product endorsement by NVLAP or any agency of the U.S. Government.

** EPA recommends that bulk materials found negative for asbestos or less than one percent asbestos by polarized light microscopy that fall into one of five dominantly nonfriable categories be reanalyzed by an additional method, such as transmission electron microscopy. (EPA Notice of Advisory, FR Vol. 59, No. 146 & Test Method EPA 600/ R-93/ 116).

Analyst: Kevin R. Bean, B.A. 



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BULK SAMPLE CHAIN OF CUSTODY FORM

Company: <u>CMec</u>	Telephone # <u>502-489-0850</u>	Fax #: <u>n/a</u>
Contact: <u>Suzanne Arnzen</u>	Client Project Number: <u>353-22-K</u>	
Relinquished by: <u>"</u>	Date: <u>1-5-23</u>	Time: <u>1900</u>
Written Report To: <u>CMec</u>		
Project Name: <u>UK - Pence Hall First Floor</u>		
Turn-Around (Circle One): Same Day 24 Hour <u>2-3 Day</u> 4-5 Day Weekend Rush After Hour Rush		
Analysis Requested (Circle One): PLM Bulk Analysis TEM Qualitative Analysis TEM Quantitative Analysis (4-5 Day)		

For Laboratory Use Only

MSE Project # <u>P163CMEC</u>	Method: <u>EPA/600/R-93/116</u>
Samples Received by: <u>NR</u>	Date: <u>1/6/23</u> Time: <u>10:00</u>

Client Sample Number	Location	Sample Description	Sampled By
1-01A B	First Floor, Rm. 106 "	Residual mastic "	SA
1-02A B	First Floor, Rm. 106 "	plaster "	↓
1-03A B	first floor "	2x2 SUS. padding CT "	
1-04A B	Janitor closet "	12x12 VCT + mastic "	
<i>SA</i>			



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E-mail: customerservice@mse-labs.com • Website: www.mse-labs.com

Date: January 11, 2023

Attention: Suzanne Arnzen
CMEC Environmental

Subject: Analysis of bulk samples for asbestos mineral fibers by Polarized Light
Microscopy (PLM) with Dispersion Staining (EPA/600/R-93/116)

RE: MSE-P163CMEC.2
UK Pence Hall, Second Floor Project
CMEC# 353-22-K

Dear Ms. Arnzen:

McCall & Spero Environmental, Inc. has completed the analysis of the bulk samples we received from your offices on January 6, 2023. These samples represent the bulk samples from the UK Pence Hall, Second Floor Project.

The PLM bulk analysis was performed according to the "Method of the Determination of Asbestos in Bulk Building Materials", R. L. Perkins and B. W. Harvey (EPA/600/R-93/116).

The results for the eleven (11) samples are summarized in the following report. Please note that for samples consisting of two or more distinct components, each component is analyzed and reported individually (EPA 40 CFR Part 61 [FRL-4821-71]).

Thank you for consulting McCall & Spero Environmental, Inc. Should you have any questions concerning these results, please contact our office.

Sincerely,

Kevin R. Bean, B.A.
PLM Laboratory Director

SUMMARY OF PLM BULK ANALYSIS RESULTS

Page 1

Project Name: UK Pence Hall, Second Floor Project
McCall & Spero Environmental Project No. MSE-P163CMEC.2

MSE # P163CMEC.2	SAMPLE # DESCRIPTION	ASBESTOS TYPE & %	OTHER FIBROUS MATERIAL & %	% NON-FIBROUS MATERIAL	COLOR
001 (A)	2-01A (A) Plaster	ND**	Cellulose / 2%	98%	Gray
001 (B)	2-01A (B) Skim Coat	ND**	Cellulose / 2%	98%	White
002 (A)	2-01B (A) Plaster	ND**	Cellulose / 2%	98%	Gray
002 (B)	2-01B (B) Skim Coat	ND**	Cellulose / 2%	98%	White
003	2-02A Residual Plaster	ND**	Cellulose / 5%	95%	White
004	2-02B Residual Plaster	ND**	Cellulose / 5%	95%	White
005	2-03A TSI	ND**	Cellulose / 2%	98%	Gray
006	2-03B TSI	ND**	Cellulose / 2%	98%	Gray
007	2-04B TSI	CH / 15%	Cellulose / 10%	75%	White
008	2-05B TSI	CH / 15%	Cellulose / 10%	75%	White
009	2-06B Window Caulk	ND**	Cellulose 2%	98%	White

McCall & Spero Environmental, Inc.

SUMMARY OF PLM BULK ANALYSIS RESULTS

Page 2

NOTES:

ND = None Detected
CR = Crocidolite

CH = Chrysotile
AN = Anthophyllite

A = Amosite
TR = Tremolite

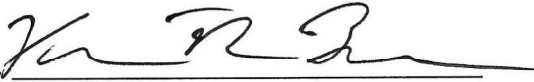
AC = Actinolite

For samples consisting of separate components, each component is analyzed and reported separately.

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Analyst: Kevin R. Bean, B.A.





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E-mail: customerservice@mselabs.com • Website: www.mselabs.com

Date: January 11, 2023

Attention: Suzanne Arnzen
CMEC Environmental

Subject: Analysis of bulk samples for asbestos mineral fibers by Polarized Light
Microscopy (PLM) with Dispersion Staining (EPA/600/R-93/116)

RE: MSE-P163CMEC.1
UK - Pence Hall, Third Floor Project
CMEC# 353-22-K

Dear Ms. Arnzen:

McCall & Spero Environmental, Inc. has completed the analysis of the bulk samples we received from your offices on January 6, 2023. These samples represent the bulk samples from the UK - Pence Hall, Third Floor Project.

The PLM bulk analysis was performed according to the "Method of the Determination of Asbestos in Bulk Building Materials", R. L. Perkins and B. W. Harvey (EPA/600/R-93/116).

The results for the sixteen (16) samples are summarized in the following report. Please note that for samples consisting of two or more distinct components, each component is analyzed and reported individually (EPA 40 CFR Part 61 [FRL-4821-71]).

Thank you for consulting McCall & Spero Environmental, Inc. Should you have any questions concerning these results, please contact our office.

Sincerely,

Kevin R. Bean, B.A.
PLM Laboratory Director

SUMMARY OF PLM BULK ANALYSIS RESULTS

Page 1

Project Name: UK - Pence Hall, Third Floor Project
McCall & Spero Environmental Project No. MSE-P163CMEC.1

MSE # P163CMEC.1	SAMPLE # DESCRIPTION	ASBESTOS TYPE & %	OTHER FIBROUS MATERIAL & %	% NON-FIBROUS MATERIAL	COLOR
001 (A)	3-01 (A) Brick	ND**	Cellulose / 2%	98%	Red
001 (B)	3-01 (B) Mortar	ND**	Cellulose / 2%	98%	Gray
002 (A)	3-02 (A) Plaster	ND**	Cellulose / 2% Hair / 2%	96%	Gray
002 (B)	3-02 (B) Skim Coat	ND**	Cellulose / 2%	98%	White
003	3-03 Window Frame Caulk	ND**	Cellulose / 2%	98%	White
004	3-04A Window Glaze	ND**	Cellulose / 2%	98%	White
005	3-04B Window Glaze	ND**	Cellulose / 2%	98%	White
006 (A)	3-05 (A) Cove Base	ND**	Cellulose / 2%	98%	Black
006 (B)	3-05 (B) Adhesive	ND**	Cellulose / 2%	98%	White
007	3-06 Adhesive	ND**	Cellulose / 3%	97%	Tan
008 (A)	3-07 (A) Drywall	ND	Cellulose / 15%	85%	White
008 (B)	3-07 (B) Tape	ND	Cellulose / 70%	30%	White
008 (C)	3-07 (C) Mud	ND	Cellulose / 5%	95%	White
009	3-08 Sink Caulk	ND**	Cellulose / 2%	98%	White
010	3-09A Stair Tread	ND**	Cellulose / 2%	98%	Black

McCall & Spero Environmental, Inc.

SUMMARY OF PLM BULK ANALYSIS RESULTS

Page 2

MSE # P163CMEC.1	SAMPLE # DESCRIPTION	ASBESTOS TYPE & %	OTHER FIBROUS MATERIAL & %	% NON-FIBROUS MATERIAL	COLOR
011	3-09B Stair Tread	ND**	Cellulose / 2%	98%	Black

NOTES:

ND = None Detected CH = Chrysotile A = Amosite AC = Actinolite
CR = Crocidolite AN = Anthophyllite TR = Tremolite

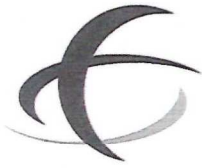
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Analyst: Kevin R. Bean, B.A.





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Environmental, Inc.

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E-mail: customerservice@mselabs.com • Website: www.mselabs.com

Date: January 3, 2023

Attention: Suzanne Arnzen
CMEC Environmental

Subject: Analysis of bulk samples for asbestos mineral fibers by Polarized Light
Microscopy (PLM) with Dispersion Staining (EPA/600/R-93/116)

RE: MSE-P133CMEC
UK - Pence Hall Project
CMEC# 353-22-K

Dear Ms. Arnzen:

McCall & Spero Environmental, Inc. has completed the analysis of the bulk samples we received from your offices on January 3, 2023. These samples represent the bulk samples from the UK - Pence Hall Project.

The PLM bulk analysis was performed according to the "Method of the Determination of Asbestos in Bulk Building Materials", R. L. Perkins and B. W. Harvey (EPA/600/R-93/116).

The results for the six (6) samples are summarized in the following report. Please note that for samples consisting of two or more distinct components, each component is analyzed and reported individually (EPA 40 CFR Part 61 [FRL-4821-71]).

Thank you for consulting McCall & Spero Environmental, Inc. Should you have any questions concerning these results, please contact our office.

Sincerely,

Kevin R. Bean, B.A.
PLM Laboratory Director

SUMMARY OF PLM BULK ANALYSIS RESULTS

Page 1

Project Name: UK - Pence Hall Project
McCall & Spero Environmental Project No. MSE-P133CMEC

MSE # P133CMEC	SAMPLE # DESCRIPTION	ASBESTOS TYPE & %	OTHER FIBROUS MATERIAL & %	% NON- FIBROUS MATERIAL	COLOR
001	B-01A Pipe Wrap	CH / 10%	Cellulose / 10%	80%	White
002	B-03A Coating Over Insulation	ND**	Cellulose / 5%	95%	White/Yellow
003	B-11A Canvas Over Insulation	ND	Cellulose / 10% Synthetics / 10%	80%	White
004	2-04A TSI	CH / 10%	Cellulose / 10%	80%	White
005	2-05A TSI	CH / 10%	Cellulose / 10%	80%	White
006	2-06A Window Caulk	ND**	Cellulose / 5%	95%	White

NOTES:

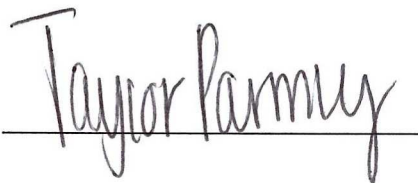
ND = None Detected CH = Chrysotile A = Amosite AC = Actinolite
CR = Crocidolite AN = Anthophyllite TR = Tremolite

For samples consisting of separate components, each component is analyzed and reported separately.

Results apply only to items tested. Quantification is accurate to within $\pm 10\%$. Results from this report must not be reproduced, except in full, with the approval of McCall & Spero Environmental, Inc. This report must not be used to claim product endorsement by NVLAP or any agency of the U.S. Government.

** EPA recommends that bulk materials found negative for asbestos or less than one percent asbestos by polarized light microscopy that fall into one of five dominantly nonfriable categories be reanalyzed by an additional method, such as transmission electron microscopy. (EPA Notice of Advisory, FR Vol. 59, No. 146 & Test Method EPA 600/ R-93/ 116).

Analyst: Taylor B. Parmly



McCall & Spero Environmental, Inc.

APPENDIX F

LEAD LICENSE AND CERTIFICATION



Kentucky Department for Public Health

Division of Public Health Protection and Safety

This is to certify that

Robert Amshoff

Having satisfied the requirements of the Kentucky Lead-Hazard Detection and Abatement Act is hereby certified on 3/27/2021 as a

Lead-Hazard Risk Assessor

To perform lead-hazard detection and abatement activities for the Commonwealth of Kentucky

Certification Number: 41-208

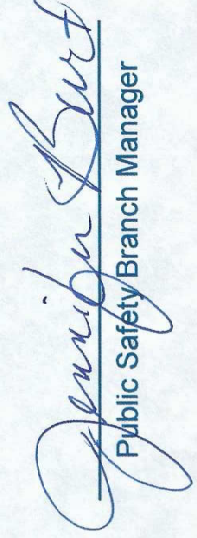
Expiration Date: 3/27/2023

Certification Type: Renewal

This certificate is subject to revocation, suspension, modification or amendment by the Department for causes including evidence of noncompliance for reasons listed in KRS 211.9063(4); or for any misrepresentation made in the application.



Kentucky Public Health
Prevent. Promote. Protect.


Public Safety Branch Manager

APPENDIX G

LEAD XRF RESULTS

Reading	Concentration (mg/cm ²)	Result	Room	Component	Substrate	Location	Color
1	0.1	Negative		Calibration			
2	0.1	Negative		Calibration			
3	0.1	Negative		Calibration			
4	1.1	Positive		Calibration			
5	1.1	Positive		Calibration			
6	1.1	Positive		Calibration			
7	0	Negative	301	Wall	Plaster	A	White
8	0	Negative	301	Wall	Plaster	A	White
9	0.5	Negative	301	Wall	Brick	A	White
10	0.5	Negative	301	Wall	Brick	A	White
11	0.1	Negative	301	Wall	Drywall	A	White
12	0	Negative	301	Baseboard	Wood	A	Gray
13	0	Negative	301	Baseboard	Wood	A	Gray
14	0.1	Negative	301	Quarter Round	Wood	A	Gray
15	0.1	Negative	301	Quarter Round	Wood	A	Gray
16	0.1	Negative	304	Door	Wood	A	Red
17	0	Negative	304	Door Frame	Wood	A	Gray
18	0.1	Negative	304	Door Casing	Wood	A	Gray
19	0.1	Negative	304	Door Header	Wood	A	Gray
20	10	Positive	305	Door Header	Wood	A	Gray
21	11	Positive	305	Door Header	Wood	A	Gray
22	9.1	Positive	305	Door	Wood	A	Red
23	9	Positive	305	Door Frame	Wood	A	Gray
24	9.3	Positive	305	Door Casing	Wood	A	Gray
25	0.6	Negative	301	Wall	Concrete	B	White
26	0.4	Negative	301	Wall	Concrete	B	White
27	0.8	Negative	301	Window Stile	Wood	B	White
28	0.5	Negative	301	Window Stile	Wood	B	White
29	0.2	Negative	301	Window Stile	Wood	B	White
30	11.2	Positive	301	Window Apron	Wood	B	White
31	9.8	Positive	301	Window Apron	Wood	B	White
32	10.4	Positive	301	Baseboard	Wood	B	Gray
33	0.9	Negative	301	Baseboard	Wood	B	Gray
34	0.1	Negative	301	Wall	Plaster	C	White
35	0.5	Negative	301	Wall	Plaster	C	White
36	10.4	Positive	301	Baseboard	Wood	C	Gray
37	0.2	Negative	301	Radiator	Metal	B	White
38	0	Negative	301	Radiator	Metal	B	White
39	0	Negative	301	Radiator	Metal	B	White
40	0.1	Negative	306	Door	Wood	C	Red
41	10.4	Positive	306	Door Header	Wood	C	Gray
42	9.9	Positive	306	Door Frame	Wood	C	Gray
43	10	Positive	306	Door Casing	Wood	C	Gray
44	0	Negative	301	Wall	Plaster	D	White

Reading	Concentration (mg/cm ²)	Result	Room	Component	Substrate	Location	Color
45	0.2	Negative	301	Wall	Plaster	D	White
46	0.2	Negative	301	Window Stile	Wood	D	White
47	0.3	Negative	301	Window Stile	Wood	D	White
48	0.5	Negative	301	Window Stile	Wood	D	White
49	10.6	Positive	301	Window Frame	Wood	D	White
50	10	Positive	301	Window Frame	Wood	D	White
51	9.6	Positive	301	Window Apron	Wood	D	White
52	0.6	Negative	301	Window Stile	Wood	D	White
53	0.2	Negative	301	Window Stile	Wood	D	White
54	6.1	Positive	301	Baseboard	Wood	D	Gray
55	0	Negative	301	Radiator	Metal	D	White
56	0	Negative	310	Wall	Drywall	B	White
57	0.2	Negative	310	Window Sash	Wood	B	White
58	0.3	Negative	310	Window Sash	Wood	B	White
59	0.1	Negative	310	Window Sash	Wood	B	White
60	0	Negative	310	Window Stile	Wood	B	White
61	0.1	Negative	310	Window Stile	Wood	B	White
62	0.4	Negative	310	Window Apron	Wood	B	White
63	0	Negative	310	Window Apron	Wood	B	White
64	0.2	Negative	310	Wall	Drywall	C	White
65	0	Negative	310	Door	Metal	C	Red
66	0	Negative	310	Door Casing	Wood	C	Gray
67	0.5	Negative	310	Wall	Plaster	C	White
68	0.4	Negative	310	Wall	Plaster	C	White
69	13.9	Positive	310	Window Frame	Wood	C	White
70	0.4	Negative	310	Window Stile	Wood	C	White
71	0.5	Negative	310	Window Stile	Wood	C	White
72	11.4	Positive	310	Window Apron	Wood	C	White
73	10.2	Positive	310	Baseboard	Wood	C	Gray
74	0.1	Negative	310	Floor	Wood	Lower	Gray
75	0	Negative	310	Floor	Wood	Lower	Gray
76	0	Negative	310	Radiator	Metal	C	Gray
77	0.1	Negative	310	Door Threshold	Wood	Lower	Gray
78	0	Negative	309	Wall	Plaster	A	White
79	13.2	Positive	309	Baseboard	Wood	A	White
80	0.1	Negative	309	Door	Wood	A	Red
81	11.3	Positive	309	Door Frame	Wood	A	White
82	9.2	Positive	309	Door Casing	Wood	A	White
83	0.1	Negative	309	Wall	Drywall	B	White
84	0.2	Negative	309	Wall	Plaster	C	White
85	0.2	Negative	309	Window Stile	Wood	C	White
86	16	Positive	309	Window Apron	Wood	C	White
87	16.2	Positive	309	Window Casing	Wood	C	White
88	0	Negative	309	Wall	Drywall	D	White
89	7.9	Positive	309	Window Sash	Wood	D	White

Reading	Concentration (mg/cm ²)	Result	Room	Component	Substrate	Location	Color
90	8.7	Positive	309	Window Sash	Wood	D	White
91	0.2	Negative	309	Window Casing	Wood	D	White
92	0.7	Negative	309	Window Stile	Wood	D	White
93	0	Negative	309	Window Stile	Wood	D	White
94	7.7	Positive	309	Header	Wood	A	White
95	0.3	Negative	309A	Wall	Plaster	A	White
96	11.6	Positive	309A	Baseboard	Wood	A	White
97	0.6	Negative	309A	Window Stile	Wood	C	White
98	12.4	Positive	309A	Window Frame	Wood	C	White
99	9.4	Positive	309A	Window Casing	Wood	C	White
100	0.3	Negative	309A	Wall	Plaster	B	White
101	0.4	Negative	309A	Wall	Plaster	B	White
102	11.6	Positive	309A	Baseboard	Wood	B	White
103	0	Negative	309A	Radiator	Metal	C	White
104	0.2	Negative	309A	Radiator	Metal	C	White
105	10	Positive	309A	Window Apron	Wood	C	White
106	12.6	Positive	309A	Door Casing	Wood	B	White
107	0	Negative	301	Door Casing	Wood	A	Gray
108	0.1	Negative	301	Door Casing	Wood	A	Gray
109	0.2	Negative	301	Door Casing	Wood	A	Gray
110	0.2	Negative	300	Door Frame	Wood	A	Gray
111	0	Negative	300	Door Frame	Wood	A	Gray
112	0.3	Negative	300	Door Casing	Wood	A	Gray
113	0	Negative	300	Window Stile	Wood	A	Gray
114	0.4	Negative	300	Window Stile	Wood	A	Gray
115	0.2	Negative	300	Window Apron	Wood	A	Gray
116	0.5	Negative	300	Radiator	Metal	A	White
117	10	Positive	300	Radiator	Metal	A	White
118	0.7	Negative	300	Radiator	Metal	A	White
119	0.8	Negative	300	Wall	Brick	A	White
120	0.5	Negative	300	Wall	Brick	A	White
121	0.5	Negative	300	Wall	Brick	B	White
122	0.8	Negative	300	Wall	Brick	B	White
123	0.6	Negative	300	Wall	Brick	D	White
124	0.9	Negative	300	Wall	Brick	D	White
125	0.5	Negative	300	Newel Post	Metal	Middle	Gray
126	0.5	Negative	300	Newel Post	Metal	Middle	Gray
127	0.3	Negative	300	Baluster	Metal	Middle	Gray
128	0.3	Negative	300	Baluster	Metal	Middle	Gray
129	0.3	Negative	300	Stair Riser	Metal	Middle	Gray
130	0.4	Negative	300	Stair Riser	Metal	Middle	Gray
131	0.4	Negative	300	Stair Stringer	Metal	Middle	Gray
132	0.3	Negative	300	Stair Stringer	Metal	Middle	Gray
133	0.1	Negative	201	Wall	Plaster	A	White
134	0.4	Negative	201	Wall	Brick	A	White

Reading	Concentration (mg/cm ²)	Result	Room	Component	Substrate	Location	Color
135	0	Negative	201	Wall	Brick	A	White
136	0	Negative	201	Wall	Plaster	A	White
137	8.7	Positive	201	Baseboard	Wood	A	White
138	0	Negative	202	Door Casing	Wood	A	White
139	0	Negative	202	Door	Wood	A	White
140	14	Positive	202	Door Casing	Wood	A	White
141	12.6	Positive	202	Door Header	Wood	A	White
142	13.7	Positive	202	Wall	Wood	B	White
143	13.7	Positive	200	Wall	Wood	B	White
144	16	Positive	200	Window Sash	Wood	B	White
145	17.6	Positive	200	Window Stile	Wood	B	White
146	12.2	Positive	200	Window Frame	Wood	B	White
147	7.2	Positive	200	Window Casing	Wood	B	White
148	15.1	Positive	203	Door	Wood	B	White
149	6	Positive	203	Door Header	Wood	B	White
150	10.7	Positive	203	Door Frame	Wood	B	White
151	10	Positive	203	Door Casing	Wood	B	White
152	1.4	Positive	200	Wall	Plaster	C	White
153	0.5	Negative	200	Wall	Plaster	C	White
154	0.4	Negative	200	Wall	Plaster	C	White
155	0	Negative	200	Crown Moulding	Wood	C	White
156	0.1	Negative	200	Crown Moulding	Wood	C	White
157	0	Negative	200	Crown Moulding	Wood	C	White
158	0.2	Negative	200	Wall	Brick	C	White
159	0.1	Negative	200	Wall	Brick	C	White
160	0.2	Negative	200	Pipe	Metal	C	White
161	0	Negative	200	Window Casing	Wood	D	White
162	2.4	Positive	200	Window Frame	Wood	D	White
163	1.9	Positive	200	Window Stile	Wood	D	White
164	2.7	Positive	200	Window Apron	Wood	D	White
165	0.1	Negative	200	Column	Metal	D	Black
166	4.5	Positive	204	Wall	Plaster	A	White
167	0.5	Negative	204	Wall	Plaster	A	White
168	1.3	Positive	204	Wall	Plaster	B	White
169	0.5	Negative	204	Wall	Plaster	C	White
170	0.5	Negative	204	Wall	Plaster	D	White
171	0	Negative	204	Door	Wood	A	White
172	9.4	Positive	204	Door Frame	Wood	A	White
173	20.8	Positive	204	Door Casing	Wood	A	White
174	16.5	Positive	204	Transom	Wood	A	White
175	13.1	Positive	204	Baseboard	Wood	A	White
176	14.6	Positive	204	Chalkboard Casing	Wood	D	White
177	17.1	Positive	204	Chalkboard Casing	Wood	A	White
178	15.3	Positive	204	Window Frame	Wood	C	White
179	14	Positive	204	Window Sill	Wood	C	White

Reading	Concentration (mg/cm ²)	Result	Room	Component	Substrate	Location	Color
180	12.1	Positive	204	Window Apron	Wood	C	White
181	0.9	Negative	205	Wall	Plaster	A	Light Blue
182	0.4	Negative	205	Wall	Plaster	B	Light Blue
183	1.1	Positive	205	Wall	Plaster	C	Light Blue
184	0.7	Negative	205	Wall	Plaster	D	Light Blue
185	5.6	Positive	205	Baseboard	Wood	D	Gray
186	0.2	Negative	205	Door	Wood	A	Red
187	8	Positive	205	Door Frame	Wood	A	Red
188	11.6	Positive	205	Door Casing	Wood	A	Red
189	10.3	Positive	205	Transom	Wood	A	Red
190	12.1	Positive	205	Window Sill	Wood	C	Gray
191	0.4	Negative	205	Window Casing	Wood	C	Gray
192	11.6	Positive	205	Window Apron	Wood	C	Gray
193	0.3	Negative	205	Radiator	Metal	C	Gray
194	0	Negative	241	Wall	Block	A	White
195	0	Negative	241	Wall	Block	D	White
196	0.2	Negative	241	Column	Metal	Middle	Light Gray
197	0.1	Negative	241	Handrail	Metal	Middle	Light Gray
198	0.2	Negative	241	Stair Riser	Metal	Middle	Light Gray
199	0.2	Negative	241	Stair Stringer	Metal	Middle	Light Gray
200	0	Negative	241	Radiator	Metal	A	Gray
201	1.3	Positive	209B	Window Casing	Wood	A	White
202	1	Positive	208	Window Stile	Wood	C	White
203	1.5	Positive	208	Window Apron	Wood	C	White
204	0	Negative	208	Wall	Plaster	C	White
205	0.4	Negative	208	Wall	Plaster	C	White
206	0.1	Negative	100	Wall	Drywall	A	White
207	0.6	Negative	100	Wall	Brick	A	White
208	0.7	Negative	100	Wall	Brick	A	White
209	0.1	Negative	100	Baseboard	Wood	A	Gray
210	0.3	Negative	100	Quarter Round	Wood	A	Gray
211	0.1	Negative	103	Door Casing	Wood	A	Gray
212	0.1	Negative	103	Door Frame	Wood	A	Gray
213	7.1	Positive	100	Wall	Brick	C	Gray
214	0.1	Negative	100	Board Trim	Wood	C	Gray
215	0.2	Negative	100	Board Trim	Wood	C	Gray
216	0.1	Negative	100	Baseboard	Wood	C	Gray
217	0.2	Negative	100	Baseboard	Wood	C	Gray
218	0.1	Negative	100	Quarter Round	Wood	C	Gray
219	0	Negative	109	Door Frame	Metal	C	Gray
220	0.1	Negative	109	Door Casing	Wood	C	Gray
221	0.2	Negative	109	Door Casing	Wood	C	Gray
222	0.3	Negative	109	Wall	Plaster	A	White
223	0	Negative	109	Wall	Drywall	B	White
224	0.1	Negative	109	Wall	Drywall	C	White

Reading	Concentration (mg/cm ²)	Result	Room	Component	Substrate	Location	Color
225	0.1	Negative	109	Wall	Plaster	D	White
226	7.9	Positive	109	Baseboard	Wood	A	Light Gray
227	11.3	Positive	109	Door Casing	Wood	A	Light Gray
228	0.5	Negative	106	Wall	Plaster	A	White
229	0.4	Negative	106	Wall	Plaster	B	White
230	0.8	Negative	106	Wall	Plaster	C	White
231	0.2	Negative	106	Wall	Plaster	D	White
232	0.7	Negative	106	Baseboard	Wood	D	White
233	1.6	Positive	106	Baseboard	Wood	A	White
234	1.6	Positive	106	Window Casing	Wood	A	White
235	2.3	Positive	106	Window Sill	Wood	A	White
236	2.8	Positive	106	Window Apron	Wood	A	White
237	0	Negative	106	Door Frame	Metal	C	Gray
238	1.5	Positive	106	Door Casing	Wood	C	Gray
239	0.6	Negative	117	Wall	Plaster	A	White
240	0.6	Negative	117	Wall	Plaster	A	White
241	1.3	Positive	117	Baseboard	Wood	A	White
242	1	Positive	117	Window Frame	Wood	A	White
243	0.8	Negative	117	Window Stile	Wood	A	White
244	1.6	Positive	117	Window Apron	Wood	A	White
245	0.1	Negative	1	Wall	Drywall	A	White
246	0.2	Negative	1	Wall	Plaster	A	White
247	0	Negative	1	Baseboard	Wood	A	Gray
248	0.1	Negative	1	Baseboard	Plaster	A	Gray
249	0	Negative	1	Baseboard	Wood	C	Gray
250	0	Negative	1	Wall	Drywall	C	White
251	0.1	Negative	1	Pipe	Metal	Upper	White
252	0.1	Negative	1	Wall	Brick	C	White
253	0.5	Negative	11	Wall	Plaster	C	White
254	0.3	Negative	11	Baseboard	Plaster	C	Gray
255	1.1	Positive	13	Door Casing	Wood	C	Gray
256	1.3	Positive	13	Door Frame	Wood	C	Gray
257	0.1	Negative	13	Door	Wood	C	Light Blue
258	0.6	Negative	1B	Wall	Brick	B	White
259	0.6	Negative	1B	Wall	Brick	D	White
260	0.6	Negative	1B	Newel Post	Metal	D	Gray
261	0.4	Negative	1B	Baluster	Metal	D	Gray
262	0.4	Negative	1B	Riser	Metal	D	Gray
263	0.7	Negative	1B	Stringer	Metal	D	Gray
264	4.4	Positive	6B	Door	Wood	D	Red
265	3.8	Positive	6B	Door Casing	Wood	D	Gray
266	4.3	Positive	6B	Door Header	Wood	D	Gray
267	0.1	Negative	6B	Radiator	Metal	B	Gray
268	0.2	Negative	101	Radiator	Metal	D	White
269	0	Negative	101	Door	Metal	A	Light Gray

Reading	Concentration (mg/cm2)	Result	Room	Component	Substrate	Location	Color
270	0.1	Negative	101	Door Frame	Metal	A	Gray
271	0	Negative	101	Pipe	Metal	Upper	Gray
272	0.3	Negative	200	Window Stile	Wood	A	Gray
273	0.2	Negative	200	Window Stile	Wood	A	Gray
274	7.1	Positive	200	Radiator	Metal	A	White
275	0.6	Negative	3rd Fl Ext	Window Stile	Metal	A	White
276	0.4	Negative	3rd Fl Ext	Window Casing	Metal	A	White
277	0.1	Negative	Exterior	Handrail	Metal	A	Black
278	0.2	Negative	Exterior	Fire Escape Column	Metal	C	Black
279	0.9	Negative	Exterior	Fire Escape Column	Metal	C	Black
280	0.9	Negative	Exterior	Fire Escape Column	Metal	C	Black
281	0.1	Negative	Exterior	Door	Metal	C	Black
282	0	Negative	Exterior	Door Frame	Metal	C	Black
283	1.9	Positive	Exterior	Door Frame	Metal	C	Black
284	11.6	Positive	Exterior	Door	Metal	C	Black
285	0	Negative		Calibration			
286	0	Negative		Calibration			
287	0	Negative		Calibration			
288	1	Positive		Calibration			
289	1.1	Positive		Calibration			
290	1.1	Positive		Calibration			

APPENDIX H

REFERENCED CORRESPONDENCE

From: [Carole Yocum](#)
To: sarnzen@cmecenvironmental.com
Cc: [Bob Haffermann](#)
Subject: FW: UK Pence Hall Update and Issue Requiring Immediate Attention
Date: Thursday, January 5, 2023 10:24:57 AM
Attachments: [image001.png](#)
[image003.png](#)
[image004.png](#)
[image006.png](#)
[Photolog_Pence Hall.pdf](#)
Importance: High

Suzanne,

FYI, below. Thanks,

Carole Yocum, Architect
AIA, KY-CID, LEED AP
PRINCIPAL

O 502.582.2500 C 502.303.6530



LOUISVILLE | LEXINGTON | knbarch.com

From: Redmon, Sandy <sredmon@uky.edu>
Sent: Wednesday, January 4, 2023 4:55 PM
To: Carole Yocum <cyocum@knbarch.com>
Cc: Thomas, Wayne A. <Wayne.Thomas@uky.edu>; Tackett, Phillip R. <phillip.tackett@uky.edu>; Sandford, Harold R. <hsandfor@email.uky.edu>; Blackwell, James H. <jblackwe@uky.edu>
Subject: FW: UK Pence Hall Update and Issue Requiring Immediate Attention
Importance: High

Carole.

Thank you for the preliminary report. Via cc on this reply, I am advising maintenance of the issue that should be resolved promptly.

Thanks again,
Sandy

From: Carole Yocum <cyocum@knbarch.com>
Sent: Wednesday, January 4, 2023 2:31 PM
To: Redmon, Sandy <sredmon@uky.edu>
Subject: FW: UK Pence Hall Update and Issue Requiring Immediate Attention
Importance: High

CAUTION: External Sender

Sandy,

Attached is a preliminary report from CMec, with a concern about existing ACM at Pence Hall. Their recommendation is that this is an immediate problem to be remediated. Please feel free to call to discuss with either myself and/or Suzanne Arnzen.

Thank you,

Carole Yocum, Architect
AIA, KY-CID, LEED AP
PRINCIPAL

O 502.582.2500 C 502.303.6530



LOUISVILLE | LEXINGTON | knbarch.com

From: sarnzen@cmecenvironmental.com <sarnzen@cmecenvironmental.com>
Sent: Tuesday, January 3, 2023 2:33 PM
To: Carole Yocum <cyocum@knbarch.com>
Cc: damshoff@cmecenvironmental.com; greg@cmecenvironmental.com
Subject: UK Pence Hall Update and Issue Requiring Immediate Attention
Importance: High

Hi Carole

We will be complete with all the onsite activities this week; however, following yesterday's sampling I found some issues that need to be brought up to UK asap. See attached photolog. This isn't all inclusive of the issues within the building, but a representation of a problem throughout the structure that needs to be corrected prior to continued occupancy of the building. The areas in the attached photolog are friable, contain 10% asbestos, and are currently damaged. We will be back onsite tomorrow to sample the roof and finish the lead-based paint sampling, and I can take a full inventory of damaged locations similar to the photos and get it over to you. Feel free to call and discuss. Do you want me to call Sandy and discuss with her or leave that with you?

Thank you,
Suzanne

Suzanne Arnzen
CMec
502-489-0850 | sarnzen@cmecenvironmental.com
www.cmecenvironmental.com



Project Location: UK Pence Hall, 175 Funkhouser Drive Lexington, Kentucky

CMec Project Number: 353-22-K

Date: January 2023

Photo No:

001

Photo Date:

January 2, 2023

Description:

Classroom 202 showing damaged asbestos. Other pipes within this room have similar issues. These issues need to be repaired prior to occupancy of this room by a Kentucky Certified Asbestos Abatement Company including air clearance sampling.



Photo No:

002

Photo Date:

January 2, 2023

Description:

Classroom 202 showing damaged asbestos. Other pipes within this room have similar issues. These issues need to be repaired prior to occupancy of this room by a Kentucky Certified Asbestos Abatement Company including air clearance sampling.



Project Location: UK Pence Hall, 175 Funkhouser Drive Lexington, Kentucky

CMec Project Number: 353-22-K

Date: January 2023

Photo No:

003

Photo Date:

January 2, 2023

Description:

Classroom 202 showing damaged asbestos. Other pipes within this room have similar issues. These issues need to be repaired prior to occupancy of this room by a Kentucky Certified Asbestos Abatement Company including air clearance sampling.



Photo No:

004

Photo Date:

January 2, 2023

Description:

Classroom 202 showing damaged asbestos. Other pipes within this room have similar issues. These issues need to be repaired prior to occupancy of this room by a Kentucky Certified Asbestos Abatement Company including air clearance sampling.



Project Location: UK Pence Hall, 175 Funkhouser Drive Lexington, Kentucky

CMec Project Number: 353-22-K

Date: January 2023

Photo No:

005

Photo Date:

January 2, 2023

Description:

Classroom 202 showing damaged asbestos. Other pipes within this room have similar issues. These issues need to be repaired prior to occupancy of this room by a Kentucky Certified Asbestos Abatement Company including air clearance sampling.



Photo No:

006

Photo Date:

January 2, 2023

Description: Room 204 (Reference Room) showing damaged asbestos near radiator. Other pipes within this room have similar issues. These issues need to be repaired prior to occupancy of this room by a Kentucky Certified Asbestos Abatement Company including air clearance sampling.



Project Location: UK Pence Hall, 175 Funkhouser Drive Lexington, Kentucky

CMec Project Number: 353-22-K

Date: January 2023

Photo No:
007

Photo Date:
January 2, 2023

Description: Room 204 (Reference Room) showing damaged asbestos near radiator. Other pipes within this room have similar issues. These issues need to be repaired prior to occupancy of this room by a Kentucky Certified Asbestos Abatement Company including air clearance sampling.



Photo No:
008

Photo Date:
January 2, 2023

Description: Room 205 showing damaged asbestos near radiator. These issues need to be repaired prior to occupancy of this room by a Kentucky Certified Asbestos Abatement Company including air clearance sampling.

