

DRAFT PRE-DEMOLITION PCB REMOVAL/REMEDICATION PLAN
SANTA MONICA HIGH SCHOOL
601 Pico Boulevard
Santa Monica, CA 90405
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Prepared For:

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SMSD-20-9871

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1.0 INTRODUCTION

The Santa Monica-Malibu Unified School District (Owner) will undertake a renovation project to demolish and remodel select buildings on the Santa Monica High School campus, located at 601 Pico Boulevard, Santa Monica, California 90405 (herein identified as “Site”). The Site History and Cafeteria buildings have been identified to contain regulated levels of polychlorinated biphenyls (PCBs).

The Owner has retained Alta Environmental LP, dba NV5 (NV5) to prepare this site-specific Pre-demolition PCB Removal/Remediation Plan (Plan) for implementation prior to planned demolition activities. PCB-impacted building materials identified for remediation/removal are presented in Table 1, below.

Table 1 – PCB-Impacted Building Materials

Material/Description	Location	Disposal	Specification Section
Stairway flooring mastic and associated substrate (concrete stairway assembly), adjoining wall covering to 6-inches	History Building Northwest interior stairway - Basement/1 st Floor Northeast interior stairway - Basement/1 st Floor	Bulk Product Waste	8.2
Stairway/Wall seam caulking and associated substrate (concrete stairway assembly), adjoining wall covering to 6-inches	History Building Northwest interior stairway - Basement/1 st Floor	Bulk Product Waste	8.1
Concrete walkway/stairway non-slip coating (blue-gray texture coat) and associated substrate	History Building Southern exterior entrance way	Bulk Product Waste	8.2
Horizontal wall seam caulking and adjoining wall covering to 3-inches (stucco and brick)	Cafeteria Building Exterior wall seam, northwest building corner	Bulk Product Waste	8.1

The scope of work described in this Plan shall be completed by a remediation contractor (Remediation Contractor) qualified to perform PCB removal/remediation work using Hazardous Waste Operations and Emergency Response (HAZWOPER)-trained workers. Furthermore, it should be noted that asbestos containing materials (ACM) and lead based paints (LBP) have also been identified within the boundaries of the PCB related work. Requirements for ACM and LBP remediation work are not included in this Plan. The Remediation Contractor should consult with the Owner to obtain the ACM and LBP abatement work plan.

The PCB removal work may be completed concurrently and in conjunction the ACM and LBP removal work where necessary, if feasible and cost effective. All PCB related work shall be completed using

proper worker protection which may include air purifying respirators, disposable clothing, hand, foot, eye, and head protection, as required.

PCB removal/remediation work shall be completed in accordance with all applicable regulations. Waste must be properly segregated, characterized, labelled, transported, and disposed at an approved waste disposal facility.

The Remediation Contractor shall comply with all applicable regulatory requirements including but not limited to worker training, personal protective equipment and waste disposal. The selected Remediation Contractor shall provide a written Site-specific Remediation Work Plan which complies with this Plan.

By submitting a bid, the Remediation Contractor warrants its intent to conduct said work properly and in compliance with all applicable regulations, using qualified personnel.

The Remediation Contractor shall furnish all necessary labor, materials, services, and equipment required to perform the work as described in this Plan to address PCB-impacted building materials such as those presented in Table 1. In addition, the Remediation Contractor shall obtain insurance, as specified in the Contract Bid Documents, prior to Site mobilization, which specifically covers the performance of all Remediation Contractor work as described in this Plan

2.0 PCB REMOVAL/REMEDIATION SCOPE OF WORK

It is the intent of the Owner to safely and efficiently remove source material containing PCB concentrations greater than 50 part per million (ppm), including adjacent porous surfaces impacted by those source materials that contain at PCB concentrations greater than 1 ppm, in full compliance with all applicable regulations.

The following materials have been identified for removal/remediation:

- Caulking material associated with the vertical wall joint at the southwest exterior corner of the Cafeteria Building.
- Wall joint and seam caulking material associated with the northwest interior stairway between the basement and first floor of the History Building.
- Floor covering mastic and glue associated with the northwest and northeast interior stairways between the basement and first floor of the History Building.
- Non-slip concrete coating (blue-gray) on the exterior stairway and walkway of the southern entrance to the History Building.

3.0 WASTE CHARACTERIZATION

Waste generated during this project should be segregated and classified as presented in Table 2, in accordance with 40 CFR 761.3, and as described in Section 11.0.

Table 2 - Waste Characterization

Waste Classification	Materials	PCB Concentration (ppm)
PCB Bulk Product Waste	Joint Caulking Flooring Mastic/Glue Non-slip Floor Coating	Source material concentration equal to or greater than 50 PPM
	Porous building materials adjoining identified PCB-impacted source material	Greater than 1 ppm
PCB Remediation Waste	Personal Protective Equipment	
	Rags and Other Cleaning Products Used for Decontamination	

If segregation and separation of non-impacted porous materials in direct contact with impacted material is determined to be infeasible during remediation, the non-impacted porous materials shall also be handled as a PCB Bulk Product Waste.

4.0 ENGINEERING CONTROLS

An integral step in implementing effective protective measures is to build a containment area at each location where removal/remediation work is completed, in a manner that minimizes airborne dust from migrating outside of the abatement area.

4.1 Work Area Containment

The containment area(s) shall be maintained under constant negative air pressure by installing localized fan systems equipped with high efficiency particulate air filters (HEPA). The filtered exhaust from the fans will be routed outside the containment area and vented outside of the building. A minimum pressure differential of 0.02 inches water column shall always be maintained during the work and documented using a recording manometer.

All plastic, spray-on strippable coatings and structural materials used to construct the containment shall be UL-certified as fire retardant or non-combustible. Polyethylene sheeting utilized for worker decontamination and construction/containment barriers shall be designated fire-retardant and have a minimum thickness of six-mil.

Appropriate warning signs shall be utilized at all entrances to the containment.

4.2 HEPA Filtration

A sufficient quantity of HEPA vacuums and/or differential pressure air filtration devices equipped with HEPA filtration shall be used during the removal/remediation work activities to maintain adequate negative pressure within the containment. HEPA units shall be tested throughout the project using a particle counter or other appropriate device to document the efficacy of the filtration system.

All powered tools should be equipped with appropriate tool guards and dust/debris collection point-of-capture HEPA filtration systems.

All filters shall be disposed of as PCB remediation waste at the end of the project and shall not be taken offsite for re-use.

4.3 Worker Decontamination

A worker decontamination unit shall be constructed and maintained at the work area exit, as further described in Section 6.0. A hand and face wash station shall be provided for use by all workers prior to exiting the work area. Waste rinse-water must be disposed in accordance with applicable regulations.

5.0 AIR MONITORING

5.1 Occupational Exposure

To verify the effectiveness of dust minimization and engineering controls, air monitoring for respirable airborne particulates will be conducted using data-logging, real-time monitors. Particulate concentrations shall be maintained below the California Division of Occupational Safety and Health (Cal-OSHA) permissible exposure limits (PELs), based on an 8-hour time-weighted average (8-hour TWA).

Table 3 - Permissible Exposure Limits

Contaminant	Permissible Exposure Limit
Total Dust	10 milligrams per cubic meter (mg/m ³)
Respirable Fraction	5 mg/m ³
PCBs (42% Chlorine)	1 mg/m ³
PCBs (54% Chlorine)	0.5% mg/m ³

5.2 Environmental Monitoring

Environmental air sampling will be conducted by the Project Environmental Consultant to document the efficacy of the Remediation Contractor's engineering controls, in accordance with the following:

1. A total airborne particulate action limit for the areas outside of the exclusion zone has been established for the PCB remediation work to be conducted at the Site, with consideration of specific receptors, PCB concentrations, work activities, and Cal/OSHA permissible exposure limits. The action limit applies only to air monitoring at the perimeter of the work zone; an action limit has not been set for the active work zones (exclusion zones), as engineering controls will be used within these zones.

2. An action limit of 0.1 mg/m³ above background must not be exceeded during site work. The action limit will be determined based on real-time monitoring at a location representative of background/ambient conditions (i.e. a location upwind of the work area). The action limit will be used to determine when additional engineering controls and/or work stoppages are necessary, if any.
3. Should the action limit be exceeded during remediation, work procedures will be evaluated for potential corrective actions, including additional engineering controls or modified work practices. Any recommended changes to work practices shall be documented.
4. Air monitoring stations will be established along the work zone perimeter, at upwind and downwind locations, and within the designated work area, if feasible. Air monitoring will be conducted at all times during PCB remediation activities. NV5 will review monitoring data at a minimum of once per hour during the work. The logged data will be downloaded and reviewed daily so that changes to the work practices can be recommended based on observable trends in airborne dust concentrations.
5. If monitoring indicates that particulate matter concentrations are not maintained below the action level, remediation activities shall cease until work practices can be evaluated and adjusted to be in compliance with applicable action levels.

6.0 WORKER PROTECTION

6.1 Personal Protective Equipment

Appropriate personal protective equipment (PPE) shall be selected based on the nature of the work performed and the condition on the work area. At a minimum, all personnel entering controlled work areas shall wear disposable, non-porous full-body coveralls (Tyvek or equivalent) and shall utilize air purifying respirators equipped with High Efficiently Particulate Air (HEPA) P-100 filters. In addition, appropriate hand (chemical resistant gloves), foot, eye and hearing protection should always be worn.

6.2 Worker Decontamination Systems

Worker decontamination enclosure systems shall be provided at all locations where workers will enter or exit PCBs work areas, in accordance with the following:

- A Worker decontamination enclosure system shall consist of at least a cleansing station in accordance with the requirements of 8 CCR 1527 and 8 CCR 1529, and which is equipped with adequate water, towels and cleansing agents to accommodate all users.
- Worker decontamination enclosure systems constructed at the Site shall utilize six-mil, fire-retardant polyethylene sheeting, or other approved materials for privacy.
- Worker decontamination enclosure systems shall not be located inside the work area(s) unless specifically authorized by the Project Environmental Consultant.

- Alternate methods of providing decontamination facilities may be submitted to the Project Environmental Consultant for approval. Do not proceed with any such method(s) without prior written authorization.

7.0 EQUIPMENT DECONTAMINATION

All non-disposable equipment used for the removal/remediation of PCB Bulk Product Waste and PCB Remediation Waste materials included in this work plan must be properly decontaminated prior to removal from any controlled work area. Decontamination procedures shall be implemented in accordance with 40 CFR 761.79.

Any equipment utilizing, or otherwise containing, HEPA filters shall have the HEPA filters removed and properly packaged for disposal prior to demobilizing from the controlled work area. In addition, the equipment's filter compartment and drum should be thoroughly wet-wiped and HEPA vacuumed while still within the controlled work area. The subject filters shall be subsequently disposed in accordance with this document, and all applicable regulations.

Equipment should be inspected by both the Remediation Contractor Supervisor overseeing the remediation/removal work and the Project Environmental Consultant. Equipment shall only be removed from the work area once the equipment has been inspected and found to be acceptably clean and free of visible dust and debris.

8.0 REMOVAL ACTIVITIES

Removal/remediation of PCB impacted materials shall be conducted under controlled conditions. At each removal location, establish a controlled work area which includes a negative pressure enclosure in accordance with Section 4.1, above. In addition, surface preparation for removal activities will include surficial wetting in order to prevent fugitive dust generation.

Wet wiping and/or vacuuming of all tools and equipment in the work area shall be performed at the completion of the work activity, prior to removal from the containment. Any non-disposable equipment and tools that handled PCB material shall be decontaminated following the procedures described in 40 CFR 761.79.

All waste materials shall be handled and transported for disposal in accordance with all applicable regulatory requirements. Waste characterization shall be completed in accordance with Section 3 of this document.

8.1 Joint & Seam Caulking

1. Establish a containment work area including a negative pressure enclosure.
2. Pre-clean all surfaces within the proposed work area by HEPA vacuuming and wet-wiping.
3. Surface preparation for caulk removal shall include surficial wetting of visibly dry and/or deteriorating material to minimize dust generation.

4. At locations where PCB-impacted caulking materials are to be removed, polyethylene sheeting shall be placed on the ground surface and removal shall be conducted using hand tools to the maximum extent practicable while minimizing dust or other airborne particulates generated. Any mechanical grinding or saw cutting shall only be performed in a manner that does not disturb PCB-impacted caulking or other materials.
5. Porous substrate on either side of a joint containing PCB-impacted caulk shall be removed to a distance of 6-inches, as determined by previous characterization sampling.
6. Debris generated during this project shall be immediately collected in waste bags or similar containers and stored in a labeled PCB Bulk Product Waste container at the end of each work shift.

8.2 PCB-Impacted Floor Covering and Associated Concrete Slab

1. Establish a containment work area including a negative pressure enclosure.
2. Pre-clean all surfaces within the proposed work area by HEPA vacuuming and wet-wiping.
3. Surface preparation for caulk removal shall include surficial wetting of visibly dry and/or deteriorating material to minimize dust generation.
4. The identified PCB-impacted flooring materials shall be removed using a combination of hand tools and power tools.
5. Upon the completion of the initial floor covering removal activities, the concrete slabs shall be cut into manageable pieces using a combination of hand tools and power tools, and placed in lined, marked, and covered roll-off containers pending offsite disposal.
6. Upon completion of the removal activities, any small pieces of the slab which may have broken off during removal shall be collected and placed in the bins.
7. All removed materials shall be stored on site in lined, marked, and covered roll-off containers or DOT 55-gallon drums prior to off-site disposal.

9.0 POST REMEDIATION CONFIRMATION SAMPLING

Upon completion of the PCB related work, the Project Environmental Consultant and the Remediation Contractor will conduct a post-remediation visual inspection of the controlled work area. If any material designated for removal is observed, including loose dust or debris, the Remediation Contractor shall be required to re-clean the area until it is free of dust and deemed acceptably clean by the Project Environmental Consultant, and in compliance with applicable cleanup standards.

9.1 Bulk Sampling

Following removal activities, sampling of materials immediately adjacent to the removal area may be conducted. Analytical results of the post-removal samples will be evaluated to determine whether the task has been successfully completed.

9.2 Air Sampling

Representative air sampling within Building B will be conducted following the completion of removal activities and successful visual inspection. The Remediation Contractor is advised that air sample analysis may take several days for sampling and analysis. It should be noted that containment areas must be maintained until all sample results are received from the laboratory and reviewed by the Project Environmental Consultant.

Each air sample will be collected utilizing a calibrated pump to draw air through laboratory-supplied polyurethane foam cartridges at a flow rate of approximately 5 liters per minute, for approximately 24 hours. The air samples will be collected at breathing zone height and without the use of pre-filters. All samples will be prepared for analysis by the laboratory using EPA Method 3540 (Soxhlet extraction) and analyzed for PCBs using EPA Method TO-10A.

The results of the post-remediation air samples will be compared to the USEPA's criteria for evaluating exposure levels in indoor air at school sites. The criteria are as follows:

Age in Years Range	1 to <2	2 to <3	3 to <6	6 to <12	12 to <15	15 to <19	19 +
PCBs ng/m ³	100	100	200	300	500	600	500

If these conditions are not met, decontamination shall be deemed incomplete and the cleaning procedures shall be repeated. The area shall be re-cleaned and re-tested at no additional cost to Owner until satisfactory levels are obtained.

9.3 Wipe Sampling

Post removal/remediation wipe samples will be collected on gauze pads (or similar sampling media) using the Standard Wipe Test described in 40 CFR 761.123. Following collection, each sample will be properly packaged, labeled, and recorded on a chain-of-custody for transport to the laboratory for analysis. All wipe samples will be prepared for analysis by the laboratory using EPA Method 3540 (Soxhlet extraction) and analyzed for PCBs using EPA Method 8082.

A total PCB comparison threshold of 1 microgram per 100 square centimeters (1µg/100 cm²) or less must be met for wipe samples collected at the Site. Clearance will be issued when all wipe samples results have met these levels.

If these conditions are not met, decontamination shall be deemed incomplete and the cleaning procedures shall be repeated. The area shall be re-cleaned and re-tested at no additional cost to Owner until satisfactory levels are obtained.

The Remediation Contractor is advised that wipe sample analysis turnaround time will be dependent on the laboratory capacity, and results may not be known for up to 48 hours. It should be noted that containment areas must be maintained until all sample results are received from the and reviewed by the Project Environmental Consultant.

9.4 Quality Control

A quality control (QC) assessment of all samples analyzed will be completed. This assessment will include a complete check of field documentation, including sample collection and preservation methods, a completeness check of the laboratory data and documentation, a review of the internal laboratory QA/QC procedure and results including surrogate recoveries, MS/MSD results, blank results, and laboratory control standard results, and an evaluation of sample holding times, and field duplicate results, as necessary.

10.0 RESERVED CONTINGENCY PLAN

If unanticipated elevated PCB concentrations or a larger distribution of PCB-impacted materials are found, or if other obstacles force changes to the remediation approach, contingencies shall be developed and included in the Remediation Contractor's Site-specific Work Plan.

11.0 WASTE MANAGEMENT AND DISPOSAL

Waste management and disposal includes on-site handling, accumulation, containerizing and labelling, profiling, and off-site transportation (including providing and preparing manifest, bills of lading, etc.) and disposal of PCB waste streams. PCB waste streams shall be transported by a licensed waste hauler to the appropriate waste disposal facility.

Secured, lined, and covered waste containers (roll-off containers or equivalent) or 55-gallon DOT-approved steel drums shall be staged for the collection of PCB wastes generated during the work activities in accordance with applicable requirements in 40 CFR 761.65 and 40 CFR 761, Subpart K. All containers shall be properly labelled and marked in accordance with 40 CFR 761.40 and 22 CCR 66262.34.

The Remediation Contractor shall develop waste sampling and management protocols in the contractor's Site-specific Work Plan to the Owner and the Project Environmental Consultant for review and approval prior to start of the project. At a minimum, the plan shall include: the name, location and contact information for the Disposal Facility, certification from the Disposal Facility that the PCB waste will be accepted, approved hazardous waste transporter information, a plan for disposal of PCB waste streams, a description of the sampling procedures and sample frequencies, etc. for acceptance by the Disposal Facility.

PCB Bulk Product Waste shall be segregated from other wastes for disposal and transported under a proper manifest to a disposal facility in accordance with 40 CFR 761.62 and 22 CCR 66262.23.

PCB Remediation Waste with a total PCB concentration greater than or equal to 50 ppm shall be segregated from other wastes for disposal and transported under a hazardous waste manifest to a hazardous waste landfill in accordance with 40 CFR 761.61 and 22 CCR 66262.23.

Excluded PCB Product (e.g. concrete, plaster, wood, stucco etc.) containing <50 ppm PCBs shall be segregated separately from other wastes, further evaluated for other potential hazardous waste characteristics unrelated to PCB concentration, as applicable, and transported offsite under manifest or bill of lading to an appropriate hazardous or nonhazardous waste disposal facility.

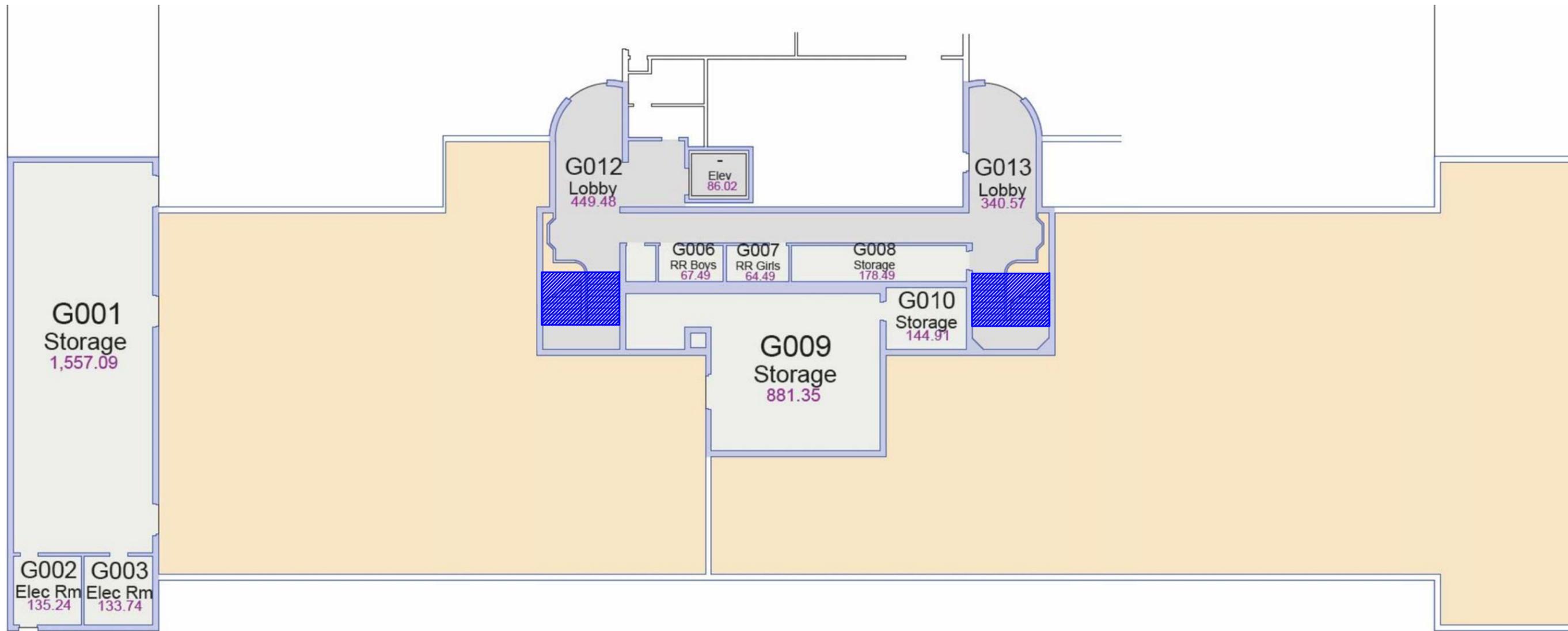
Water generated during decontamination (or as part of dust suppression) that is collected on polyethylene sheeting shall be containerized onsite, sampled for PCBs and other potential constituents as necessary, and characterized for off-site disposal in accordance with 40 CFR 761.79 and/or California hazardous waste regulations, as applicable. Polyethylene sheeting, PPE, and non-liquid cleaning materials shall be managed and disposed of offsite in accordance with 40 CFR 761.61 (a)(5)(v).

12.0 RECORDKEEPING AND DOCUMENTATION

Following completion of the work activities, applicable records and documents shall be generated and maintained at one location. A post-remediation report will be prepared which will contain a detailed description of the remediation activities, post clean up samples, appropriate figures and drawings, and analytical data tables presenting results and post-clean-up samples. In addition, the report will include volumes of disposed materials and all waste disposal records from the Remediation Contractor. The post-remediation report will be prepared for the purpose of providing a full account of activities performed, including documentation necessary to support the conclusion that the remedial activities met the project objectives.

13.0 CERTIFICATION

A certification form signed by both the Owner and by the party conducting the clean-up shall be developed stating that all sampling plans, sample collection procedures, sample preparation procedures, extraction procedures, and instrumental/chemical analysis procedures used to assess or characterize the PCB contamination at the clean-up site will be maintained at a centralized designated location, available for USEPA inspection.



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Legend

 Flooring Mastic and Wall
 Seam Caulking

**Homogeneous Figure - History Building,
Basement Level**

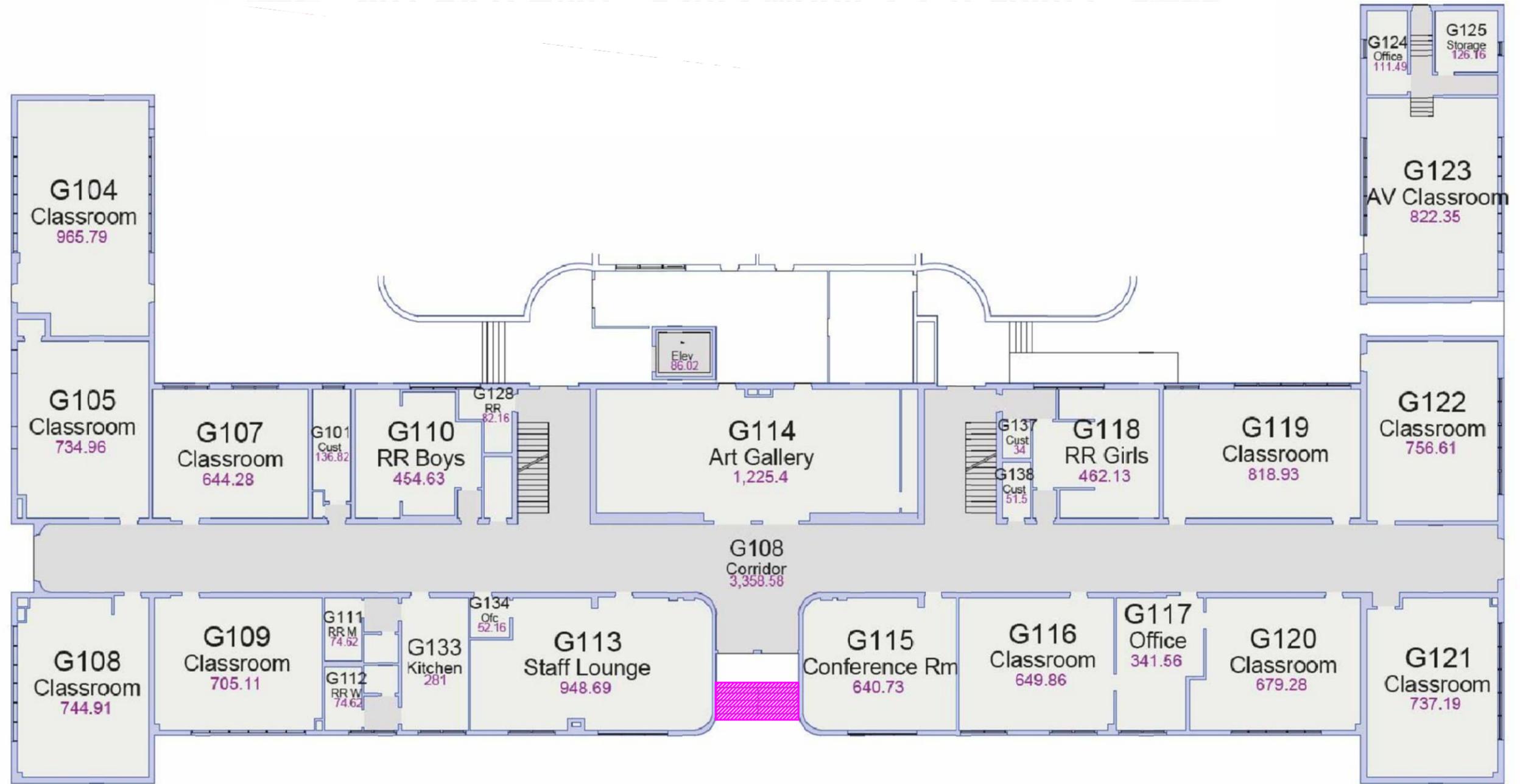
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Legend

 Non-slip coating

**Homogeneous Figure - History Building,
1st Floor Level**

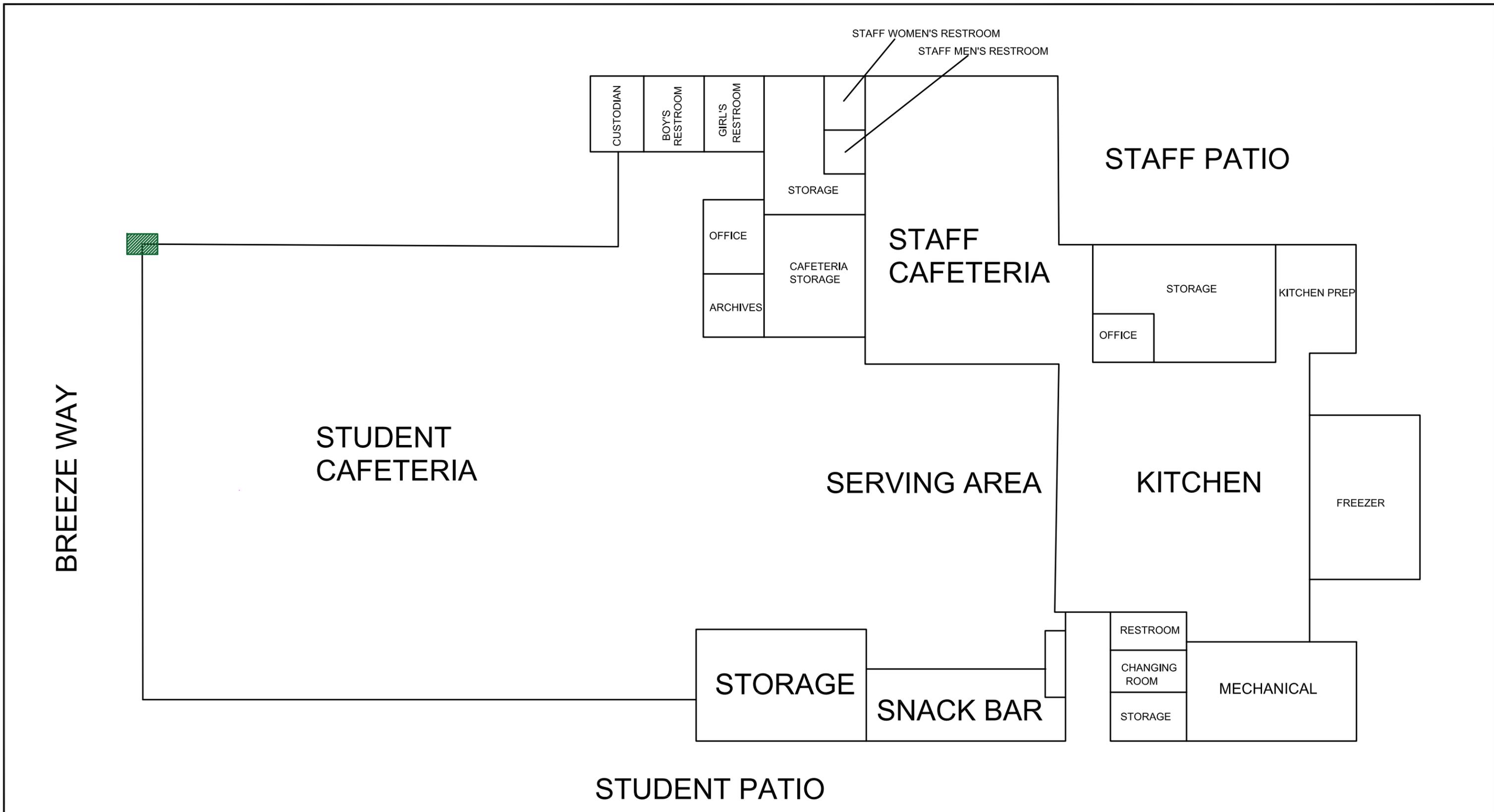
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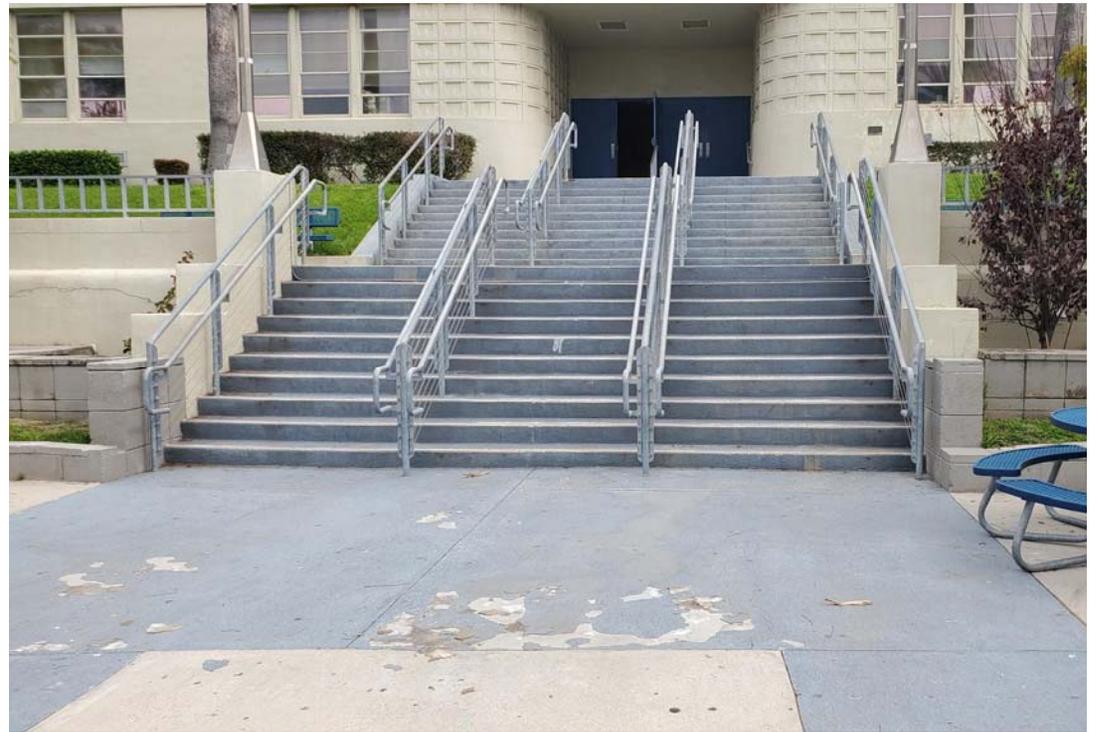
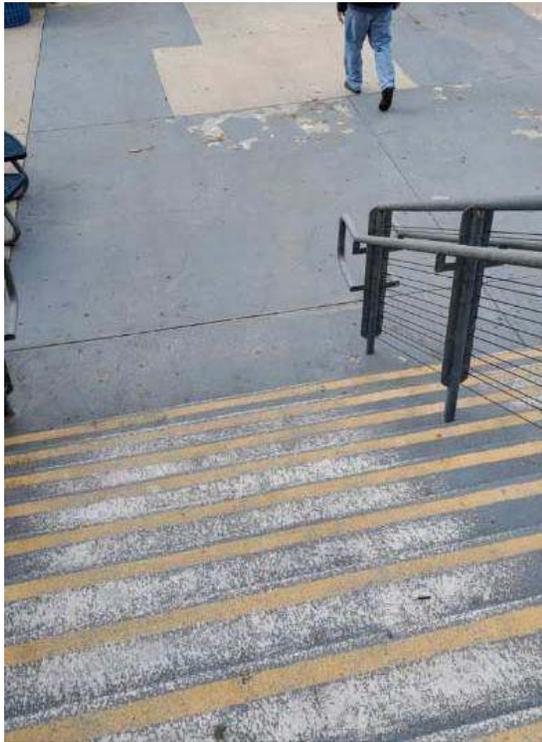
Santa Monica High School – Cafeteria Building

Horizontal wall seam caulking



Santa Monica High School – History Building

Concrete walkway non-slip coating



Santa Monica High School – History Building

Flooring mastic



Santa Monica High School – History Building

Stairway/wall seam caulking



