

Large Project Building Reading

The Shop



Last Updated: 6/21/18



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TRAINING GOALS

This training will take about 30 minutes and includes training on the Large Project Building (LPB) and general safety and chemical precautions. When you are done with this training, you should be able to comfortably determine whether your work is appropriate for the large project building paint bay, and safely accomplish your work. If you have questions about what is allowed or recommended, please ask a large project building ninja or member of the shop staff. Access to the LPB will be given once an in-person training has been completed.

Physical access to the Composite Layup and Spray Paint Room will follow all of the existing posted rules of the Shop. The Layup/Paint booth is closed from 2AM to 6 AM due to safety considerations. Only approved epoxy composite resin and non-toxic spray paint can be used. Approved epoxies, finishes, and paints are listed at the end of this document. All Olin community members must be formally trained in safe composite layup and/or spray painting techniques to use this facility, which is an additional training. Working with a buddy present in the spray booth room and the large project assembly bay is required at all times.

Usage Policy

The LPB is the only public use space on campus where you are allowed to paint and lay epoxies. You can only use Olin approved epoxy systems and paints. The LPB accommodates short term fabrication and assembly of composite parts, spray painting parts, or sanding of large items. Due to fire safety concerns, there will be no sanding or cutting of wood or grinding of metals within this zone. All persons using the project building are required to follow this building usage policy.



Immediately contact Babson & Olin's Office of Public Safety @ 781-239-5555 for Emergency Assistance or at x5555 .

General Use

- You or your project sponsor must supply all materials. The project building has no common stock of parts or materials. This includes, but is not limited to, raw stock, fasteners, bonding agents, paints etc.
- Please do not use another team's tools or project materials.
- Please plan ahead to do your work in the appropriately scheduled block of time. Multiple groups need to share the same space on a tight timeframe.
- Please make sure to clean up after yourself, particularly in the spray bay. It is important to be even more vigilant about cleaning when using messy processes like painting and composite work.

- *Any activity that requires propping open either access door or leaving the garage doors open unmanned for any period of time is prohibited.*
- After completing work, you must clean up all tooling, parts and materials from the project space and return tooling, stock and waste to the appropriate locations.
- Do not remove any tooling or furniture from any of the Large Project Building facilities.
- In keeping with Olin's standing policy prohibiting work on personal vehicles anywhere on campus, no work on personal vehicles will be allowed inside or within close proximity of the project building.
- Do not swim in the pool.
- Know the locations of emergency equipment (i.e. first aid kits, eyewashes, landline phones).
- Immediately contact Facilities if there is a chemical spill.
- Please e-mail lpb@olin.edu if you notice any broken or missing tools or if PPE equipment (gloves, safety glasses, etc) is running low.

Space Requests

LPB can't fit every student/group that wants space, it's just not big enough. The space allocation system is prioritized by:

1. Active classes.
2. Sponsored faculty/student research.
3. Student clubs, building something large, long term, that are planning on going to a race/event this academic year
4. Student clubs, building something small, long term, that are planning on going to a race/event this academic year
5. Student clubs, groups, teams working on project inappropriate for Academic Center
6. Individual students working on projects inappropriate for academic center.

We can't store excess stuff from your dorm room, or faculty office, space is just too tight. Your project should really be a big thing, need a big space and be a full semester long or you should probably just use project storage outside the shop. If you have an old sleeping project you might work on again someday, but can't bear to toss out, we are sorry but it can't go in LPB. Too many active teams need the working space. Multiple student projects with large space needs have to take priority over single student projects with small space needs. That's what the LPB was built for.

Email David Barrett (David.Barrett@olin.edu) to for a space request form in the LPB.

Confidentiality

Due to both the confidential nature of some of the projects housed in the building as well as the potential risks involved in a project environment, the Olin Large Project Building is a controlled access facility. Each student, faculty or staff who have been trained and granted access, agrees to preserve the security and confidentiality of the building by keeping all building and bays doors closed (open garage doors must be manned, entrance doors must not be propped open) and by only admitting trained members of the Olin community to the building. No outside visitors please.

Personal Protective Equipment

- Any community member using the facility will wear appropriate safety equipment (safety glasses, nitrile gloves, and disposable aprons, etc.) at all times when working with wet and curing epoxy resin.
- Painting, finishing, and composite work all release particulates into the air. Consider using a dust mask, depending on the type of work you are doing.
- Hearing protection is encouraged while the vent is on.

Paint and Epoxy Use

- Use of the paint booth and the composite bay requires additional training.
- Use of the LPB will be restricted to the “West Epoxy” family of epoxy resins and traditional fiberglass, Kevlar and carbon fiber cloth. This resin system was designed to be worked in a small, closed indoor facility and presents no health risk when used as directed. No other resin or fabric systems will be allowed in the facility without direct written approval from the AFC and Olin’s Health and Safety Officer. All community members must supply their own epoxy resin and composite cloth for their projects.
- Please see below for a comprehensive list. *If you believe that a paint or finish should be on the list, please contact LPB@olin.edu.* Paints/epoxies/finishes may be prohibited for a reason that is not immediately obvious.
- All work benches must be protected from epoxy work by a dropcloth.
- All floor work must be protected by a dropcloth.
- Clean up all messes! Properly dispose of all waste in approved containers.
- All used rags must be disposed of in the proper fireproof rag disposal bin.
- Open the garage door before turning on the vent.

Mitigating Environmental Hazards

- Nothing except soap and water can be washed down the drain of the sink of the large project building.
- Only water-based latex spray paints may be used in the large project building.
- Do not use paints and other products that contain toxic chemicals, carcinogens, or reproductive hazards. Examples include paints that contain Cadmium, Chromium, Lead, and Mercury.
- Don’t use products containing Methylene Chloride (Dichloromethane).
- Use Gamsol instead of turpentine for cleaning paint brushes.
- Do all spray painting, solvent based adhesive work, and aerosol product work inside the spray booth.
- Use compressors/spray guns for acrylic and latex paints only. For very smelly products, try to find an equally effective low odor substitute.
- Keep all chemical containers closed when not in use.

Tools

- Do not use equipment without training and authorization.
- Use only approved tools, which include Dremel tools, cordless drills under 18V, palm sanders, soldering irons and guns, heat guns, hot melt glue guns, and manual hand tools. No other tools are allowed to be used in the LPB.

- Wear safety glasses with side shields when using tools.
- Inspect tools before every use.
- Use tools that are appropriate for the work performed. An incorrectly sized tool may lead to slippage, awkward postures, and ultimate injury.
- Secure all small and short work pieces with a vise or clamp.
- Position the work to minimize awkward postures.

Fire

- Keep a clear path to and through LPB at all times. Make sure that all emergency egress paths and doors are clear at all times.
- Keep areas in front of fire extinguishers and electrical panels clear and without obstructions.
- Don't use open flames or perform operations that will produce sparks.
- Pressurized spray cans are flammable, and also present an explosive danger. Store all pressurized spray cans in the flammables cabinet when not in use.
- Check the labels on the product you are using. If it says "flammable" on the container, it must be stored in the flammables cabinet.
- Used rags that have boiled linseed oil on them are highly likely to spontaneously combust. All used rags that have any sort of wood finish (boiled linseed oil, shellac, stain, etc) MUST be placed in the flammables disposal bin immediately after use.
- Label all spray paints and other flammable containers with your full name and the date opened before storing in the fire cabinet.
- All empty spray cans must be stored in the aerosols disposal bin.
- Gasoline cans and propane cylinders must *never* be stored inside. E-mail russell.zacharias@olin.edu if you need to store propane or gasoline. Even empty gasoline cans, if used, must not be stored inside.

Disposal of Waste

- Ensure the full polymerization of all mixed resin and carefully dispose of all solid waste, cured epoxy, drop cloths, and protective clothing in an approved waste collection container.
- Remove all work at the end of the day. If you must leave your work overnight, label it with your contact information and when you expect to be picking it up. No non-active projects should be left more than 24 hours to dry without approved special circumstances.
- Do not use unapproved tools, paints or epoxies without review and approval from the EHS.

Allowed Work:

- 1) Use of hand tools--use eye protection if there is any possibility of airborne chips.
- 2) Use of portable power tools, with the exception of grinders. Eye protection is required for all students within 10 feet of an active tool. If the tool involves any form of cutting, students must use the Olin "Buddy System" and have at least one other student present and within close proximity to the work.
- 3) All forms of assembly, debugging and construction of large projects.
- 4) For projects involving large weight or significant kinetic energy, students must use the Olin "Buddy System" and have at least one other student present and within close proximity to the work.

- 5) For projects involving AC power or DC voltages above 48VDC, students must use the Olin “Buddy System” and have at least one other student present and within close proximity to the work.
- 6) Use of the stationary power tools in the Project Building mini-shop, provided that the student has passed Olin safety training for that tool and a “Shop Buddy” is present and within close proximity to the shop.
- 7) Assembly and debug work on vehicles. Students may start a vehicle to move it in and out of the building, but must not run vehicles within the building or directly outside the roll up doors to prevent the dangerous buildup of fumes. Running outside with the doors closed is allowed.

Prohibited Work:

- 1) Any form of welding (including plasma cutting), either in or outside the project building.
- 2) Any form of grinding metals, either in or outside the project building.
- 3) Any form of painting, either in or outside the project building, except in the spray bay.
- 4) Any woodworking activity that generates sawdust, either in or outside the project building.
- 5) Any work on personal vehicles, for any reason.
- 6) Any work involving volatile liquids, toxic materials, or harmful chemicals except where explicitly permitted, with appropriate training, by Olin’s safety officer.
- 7) Any activity that would generate sound levels high enough to disturb the other occupants of the building or endanger hearing.
- 9) Any activity that requires propping open either access door or leaving the garage doors open unmanned for any period of time.

Materials List

Allowable Paints and Epoxy	Banned
- Water-based latex spray paints - Milk paint - Low VOC Acrylic and latex paints - West type Epoxy - Minwax oil-based Wood Finish - Sierra Performance Rustoleum Acrylic Paint - Krylon H2O Latex Spray paint - Liquitex Professional Spray paint - Unicorn Spit Stain - Water-based polyurethane	- Oil-based paints - Paints containing Cadmium, Chromium, Lead, and Mercury - Products containing Methylene Chloride [Dichloromethane]

Allowable Paint Strippers	Banned
- CitriStrip - Woodfinisher's Pride	- Methylene-chloride based removers

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| <ul style="list-style-type: none">- Ameristrip- Peel Away- RemovAll and Bio-Wash | |
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