The Fabrication Laboratory at the School of Architecture Planning and Preservation emphasizes the notion of learning to design through the process of making. By better understanding the physical nature of the built environment, our students learn ways to influence its form and meaning. We stress the integration of digital and hand fabrication methods, and explore how traditional technology is affected and transformed by new materials and technique.

The FabLab provides a wide range of resources for creating three-dimensional physical models for the study of architectural design and construction. Detail is approached at many scales and in diverse materials. The Lab also collaborates with members of the School community on research projects and competition entries.

Our Workshop provides an extensive selection of hand and power tools for the manipulation of wood and other media. Our staff offers instruction in the safe use of tools and machinery and provides assistance, training, and supervision in the processes and materials explored by our students.

Digital Modeling facilities complement traditional equipment and greatly expand the possibilities in research and design education.

Instructors of courses who wish to use the Workshop are encouraged to contact Workshop staff to arrange for an introduction to Workshop capabilities and procedures. Regular communication with the Workshop Director helps assure our ability to effectively complement specific educational goals.

A thorough safety training class is required before anyone is given access to the Workshop. We offer skills seminars in a wide range of methods and materials. Experience with specific hand and machine technique provides insight into how things come together—the way things work.

Unsafe use of Workshop facilities or equipment may result in revocation of access to the facility.

Operating Hours are established at the beginning of each semester and are posted at the Workshop entrance and on our website.

The Workshop phone number is 301.405.6324
Email address is currently: swift@umd.edu

ARCHITECTURE PLANNING & PRESERVATION
Shop Access Privileges
• All Workshop users must be currently registered Students, Faculty or Staff of the School of Architecture, Planning and Preservation.
• Only those who have attended the Workshop Safety Class are permitted to use the shop. The Shop Card you receive on completion will be stamped to indicate your level of access to the equipment.
• Access Level is determined by demonstration of proven ability with individual machines, and will be decided by the Workshop Director.
• Sign in EVERY time you use the shop. Workshop Monitors will collect your Shop Card when you sign in and return it when you sign out.
• Shop Access Privileges can be revoked at any time at the Shop Attendant’s discretion.
• Revocation of Shop Access Privileges must be reconciled with the Shop Director.

Shop Hours
• Hours of Operation are established each semester. Hours are posted at the shop and on the webpage.
• The Workshop is available for use only when overseen by a Fabrication Lab Graduate Assistant or its Director. The Workshop will be open only during posted hours or by arrangement with the Director.

Personal Protective Equipment
• Safety glasses or goggles MUST be worn during the operation of any stationary or portable power equipment (non-tinted, plastic-lens prescription glasses are also acceptable).
• Ear muffs and ear plugs are available and should be worn during sustained use of noise generating equipment.
• Dust masks are available and should be worn when generating significant dust.

Policies and Procedures

Tool Check-Out
• Your Shop Card is retained by the Workshop Attendant when a tool is checked out. It will be handed back when the tool is safely returned.
• You are responsible for any tools you check out. If Workshop equipment is lost, stolen or damaged while checked out to you, you are responsible for replacement.
• Obtain approval from Shop Attendant before removing ANY tool from the shop.
• Obtain special permission for periods longer than 2 hours.
• Tools should be returned to the shop promptly upon completion of use.
• Tools checked out overnight should be removed less than 1 hour before closing.
• Tools checked out overnight must be returned within one hour of opening the next day.
• Tool Check-Out privileges can be revoked at any time at the Shop Attendant’s discretion.

Housekeeping
• A clean shop is an effective shop. Be considerate of other shop users by keeping your work area neat.
• ANY materials sitting on the floor at ANY time will be considered trash and treated accordingly.
• Sweep up any significant dust or wood chips as you produce them. Throw away scraps as you make them as well.
• Daily clean-up starts fifteen minutes before closing. Please help us clean up by stopping work, returning tools and removing/storing your materials at least fifteen minutes before closing time.
General Workshop Safety

Report any injury, however minor, to a Shop Attendant.

Consult with a Shop Attendant before performing any procedure that is unfamiliar to you. He or she is the one to decide if the work can and should be done, and will be able to suggest the safest, most efficient way to do it.

Stay alert and aware of what is happening around you. Working with tools and machines is like driving a car. You are part of an environment that is always in flux. Check your surroundings at every opportunity.

Clothing: Dress properly for your work. Remove coats and jackets, roll up loose sleeves, remove loose jewelry and tie back long hair. Wear shoes, NO SANDLES ALLOWED!

Book bags, back packs, purses, etc, are not to be brought into the shop.

Food and Drink are not permitted in the Workshop.

Eye Protection: Wear safety glasses, goggles or a face shield when operating any power tools. Be sure you have enough good light to see what you are doing.

Headphones: When operating machines, you need to be able to hear what’s going on around you. The use of headphones is prohibited when operating power tools.

Be thoughtful and helpful toward other shop users. Be sure the work you are doing doesn't endanger yourself or anyone else.

Caution other students if they are not following safe operating procedures.

Floor safety: The floor should be clear of scrap blocks and excessive litter. Keep projects, work benches and other equipment and materials you are using out of traffic aisles. Immediately wipe up any liquids spilled on the floor.

Working Speed: Give yourself enough time to complete your work. Rushing can lead to accidents and seldom produces quality work.

Tools: Select the proper size and type of tool for your work. Never use a tool unless it is sharp and in good condition. Inform a Shop Attendant if tools are damaged, dull or in need of adjustment.

Tools shall be used exclusively for their designed purpose (i.e. screwdrivers are not pry-bars, chisels are not scrapers.)

Tools and materials should not be placed on machines while they are running. Machines should never be used as worktables.

Always keep sharp-edged and pointed tools turned down. Do not swing or raise your arms over your head while carrying tools. Do not carry sharp tools in the pockets of your clothes.

Clamping Stock: Whenever possible, mount the work in a vise, clamp or special holder. This is especially important when using chisels, gouges, portable electric tools, or drill press.
Workshop Occupancy Policy
The maximum safe occupancy capacity of the Workshop is 8 users. This policy takes into account space, equipment and staff limitations of the Workshop.

The primary responsibility of Shop Attendants is monitoring the safety of shop users. The number of users which an individual Shop Attendant is able to effectively monitor is affected by many factors. It shall be each Shop Attendant's responsibility to determine how many users they can effectively monitor under any given circumstances. The nature of the work conducted in the Workshop requires significant space for each machine and user. Each machine requires a clear space for safe operation. Aisles must be kept clear for the safe movement of people and materials. This limit may be adjusted upward or downward at the Shop Attendant/s discretion dependant upon conditions.

If occupancy limits are exceeded:

The Workshop door will be locked. Shop users will be asked to wait in the hall, and establish a queue amongst themselves. As users leave or machines become available, the shop attendant will admit users from the hall. If a safe environment cannot be established through the application of this procedure, the Workshop may be CLOSED to establish order at the discretion of the Shop Attendant/s on duty. Application of this policy will be left to the discretion of Shop Attendant/s on duty. Resolution of any disputes regarding the application of this policy shall be the responsibility of the Workshop Director.

Air Quality and Dust Collection
• In order to maintain the air quality in the shop and neighboring areas an extensive dust collection system is provided.
• NEVER allow sparks or other incendiary material to enter the dust collection system.
• Sawdust is a known carcinogen; collectively the shop staff is in the shop over 120 hrs/wk: please help to minimize our exposure to this and other toxic substances.
• The generation of harmful fumes outside of properly ventilated areas is against Federal law.
• Never use finishes adhesives, resins and similar products in the Workshop or in the Building!!

Materials Usage Guidelines
• The task of providing Fabrication Lab users with a safe, efficient and cost effective work environment is a challenge. Certain materials, processes and/or practices have a detrimental effect on the Workshop’s ability to do so. These Materials Use Guidelines are intended minimize the potential of the Workshops’ capacities being overwhelmed by particular materials, processes or practices. Please consider these guidelines when developing assignments. Feel free to contact workshop management if you have any questions about these guidelines or other workshop related issues.

• Obtain permission from a Shop Attendant before leaving any materials unattended in the shop.
• Clearly mark any materials with name, date and contact information.
• Store any materials neatly and out of the way of other shop users.
• Unidentified materials may be disposed of at Shop Staff’s discretion.

Sheet Stock
• Sheet stock should be employed only in the thicknesses in which it is commercially available. The widespread practice of planning or thickness sanding of sheet materials will not be allowed.
• Shaping of rectilinear objects into organic forms through sanding should be kept to a minimum. Such activities are the root cause of the majority of shop accidents and overwhelm our dust collection system. Additive processes rather than reductive processes should be explored when developing assignments involving organic forms.
• We have no mechanism for the containment of dust generated by significant contouring of site models or other organic forms. Students conducting such modeling will only be allowed to do it outside the building.

Plaster/HydroCal
• Unless it is absolutely dry, the manipulation of cast plaster/hydrocal elements in the workshop is not allowed. Dry plaster may be machined only with the permission of shop staff.

Toxic Materials
• The employment of toxic materials must be kept to a bare minimum. Please review the Material Safety Data Sheet for any material before assigning its use.

Spraying
• The Fabrication Lab currently has NO facilities for the use of substances that generate harmful vapors. Never use spray adhesive, spray paint, solvents or other volatile materials anywhere in the building.

Material Safety Data Sheets (MSDS)
• MSDSs provide information about the health hazards that may be associated with manufactured products as well as recommendations for limiting exposures and treating potential exposures. The Fabrication Lab maintains a library of MSDSs for materials used in our facility.
Portable Power Tool Safety

Wear appropriate personal protective equipment. (safety glasses, ear plugs, dust masks, etc.)

Never attempt to use a tool that you are unfamiliar with. Seek the assistance of a Shop Attendant if you have any questions about the safe operation of any tool.

Think through an operation before performing it. Know what you are going to do and what the machine will do in response.

Make all the necessary adjustments before turning a tool on.

Never remove or adjust a safety guard on any machine or tool without permission.

You must be wide awake and alert. Never operate a power tool when you are tired.

Allow the tool to reach its full operating speed before feeding it into your stock. Work the tool carefully and only as fast as the material will be cut easily.

Most cutting tools should work without the use of excessive force. If a tool does not cut cleanly and easily, it is probably dull or damaged. Please bring it to a Shop Attendant’s attention.

If a tool is not working properly, shut off the power immediately and inform a Shop Attendant.

Do not allow your attention to be distracted while using a tool. Do not distract other shop users while they are using power tools.

When you’re done using the shop, put away all tools, clean up your workspace and sign out.
Stationary Power Tool Safety

Never operate a machine or power tool without the approval and/or instruction of a Shop Attendant.

Tell us what you want to do and we will suggest the safest, most efficient way to get it done.

Think through an operation before performing it. Know what you are going to do and what the machine will do in response.

Make all the necessary adjustments before turning on the machine. Adjustments on certain machines will require approval.

Never remove or adjust a safety guard on any machine or tool without permission.

Use approved push sticks, feather boards and safety devices. Some operations require the use of a special jig or fixture.

You must be wide awake and alert. Never operate a machine when you are tired or impaired.

Keep the machine tables and working surfaces clear of tools, stock and project materials. Also keep the floor free of scraps and excessive litter.

Allow the machine to reach its full operating speed before feeding in the work.

Feed the work carefully and only as fast as the machine will easily cut it.

Most cutting tools should work without the use of excessive force. If a tool does not cut cleanly and easily, it is probably dull or damaged. Please bring it to the Shop Attendant’s attention.

If a machine is not working properly, shut off the power immediately and inform a Shop Attendant.

When you are operating the machine, you are the only one to control it. If someone is helping you, be sure they understand what you are doing and what they will be doing.

Do not allow your attention to be distracted while operating a machine. Do not distract other shop users while they are operating equipment.

When you have completed an operation on a machine, shut off the power. Wait until it stops before leaving the machine or setting up another cut.

When you’re done using the shop, put away all tools, clean up your workspace and sign out.