



The Barn

Blacksmith Shop and Wood Shop

Self-Guided Tour



The Barn

This self-guided tour is designed to give you a more detailed look at the displays here in this part of the museum.

You'll notice that the page numbers in this pamphlet match the numbers on signs posted throughout the museum.

As you take a look at the objects in our collection, also take a moment to read and learn even more about Lisle's past.

**Want to know what we have going on?
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www.lisleparkdistrict.org/museumsatlislestationpark



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FREE ADMISSION

Suggested Donation \$5

The Barn

In 2001, the Lisle Park District obtained a grant and other financial aid which helped us to create a barn workshop at the museum. It is made mostly from the structure of a 19th century barn originally located 200 miles north in Wisconsin. Volunteer master blacksmith, Bob Goodwin, worked with a few other volunteers to design the structure. The Park District hired an architectural restoration company to disassemble the old barn and rebuild it here.

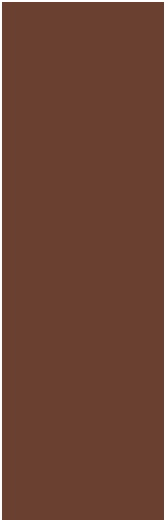
The Barn is made of timber frame construction with mortises and tenons, which means some pieces have pegs and some pieces have holes to all fit together. One side of the building is a working smithy, or blacksmith shop, and the other portion is working wood turning shop. This craftworker combination was common in the 1800s. The center display area contains various tools and finished pieces, with double barn doors on each end that swing open to accommodate large items and let in more sunlight. The large forge was designed with two firepots inside and built using stones from the Beaubien Tavern's original foundation.

Lisle Heritage Society volunteers completed most of the interior work, built railings, hauled logs to the sawmill and returned with rough cut lumber, provided tools, installed the bellows, and more. Volunteers dedicate their time and skills to provide demonstrations, teach classes, and make custom items for the museum and the Lisle Heritage Society.

For information on taking blacksmithing classes with us, please take home a copy of our blacksmithing brochure. Visit our smiths during an open work night, watch a class, or schedule a private demonstration with museum staff.

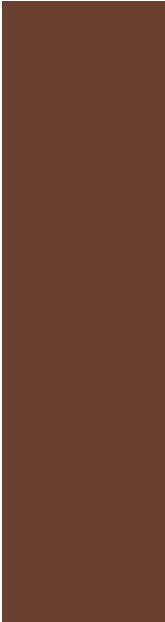
Trades and Craftworking

People who practiced trades and craftwork were very important for most of human history. Until the department store and the Internet were invented, people had to have experienced, trained people working with their hands to craft the different types of items they needed to live and work. People had to visit their local community's different trade workers for different items. This involved everything from tools for farmers, pots and pans for cooking, woven rugs and blankets, nails and wood beams for making houses, and even toys for children. Some examples of trade workers are blacksmiths, weavers, construction workers, stone masons, and brick masons. Master trade workers knew how to work with raw materials and recycled objects to complete these orders.



Young students, called apprentices, trained for years to learn the skills required to work with specific materials such as wood, metals, clay, stone, and more. These students sometimes lived with their teacher's family in order to spend more time training.

Some materials were cheaper and easier to gather from the environment while others were not so easily found. It is reported that when moving to another area, a family could burn their home down to collect iron nails and other metal pieces, since they could be recycled into other objects and wood was easier to replace.



Blacksmithing: An Ancient Craft

Blacksmiths shape iron by heating it and hitting it. That is why we call them “blacksmiths” – they *smite* (or strike) dark colored iron metal to make tools and art. Blacksmiths learn a specific set of skills that they use in different combinations to make items. People have been shaping iron in this fashion for at least 6000 years. So by the time James Hatch built Lisle’s first blacksmith shop in 1833, blacksmithing was already an ancient craft.

“Father of All Craftsmen”

Before the machine age, blacksmiths used their tools to make just about any product that was metal. In fact, towns people and farmers depended upon blacksmiths for everything from tools to metal decorations. Thus, Hatch’s smithy was probably a center of activity in early Lisle along with Lisle’s the other blacksmith shops. This was certainly true of most village smithies throughout the world.

The legend on the opposite page illustrates one blacksmith’s high station in pre-industrial society. It shows how many things he made and how many other craftsmen needed him.

England’s 17th century Guild of Blacksmiths echoed this sentiment succinctly. They declared:

“By hammer and hand all arts do stand.”⁺⁺

⁺⁺ From Alex Bealer’s *The Art of Blacksmithing*, (New York: Funk & Wagnalls, 1969), p. 34.

^{**} Based on an English legend found in Ronal Webber’s *The Village Blacksmith*, (New York: Great Albion Books, 1971), p. 29-31.

King Alfred considered himself a great judge of character and talent. He also enjoyed contests. Thus, few were surprised when he issued a challenge to the craftsmen of his realm. It stated that each was to bring a sample of his best work to the royal palace. The sample that most impressed the king would earn its maker the title "Father of All Craftsmen."

As instructed, each craftsman brought a piece of his finest work to King Alfred. Everyone had done such a marvelous job that the king could not decide who should win the contest. In the end, he arbitrarily bestowed the title on his tailor, who had made a beautiful coat. This angered the blacksmith greatly and he protests by not returning to his forge. As a result, the mason could not get trowels, the carpenter could not get nails, the tailor could not get scissors, their horses could not get shoes... In brief, anyone who needed metal goods suffered.

Despite the suffering, King Alfred was unmoved by the blacksmith's protest. He simply encouraged the other craftsmen to do the smith's work in their spare time. Though the craftsmen tried earnestly to do this, they failed miserably. In fact, the smithy was a scene of daily chaos during the blacksmith's absence. Someone even managed to break the anvil.

With this, King Alfred realized his error. He summoned all craftsmen, including the blacksmith, to his palace. "I have made a great mistake," he admitted. "My judgement in this matter was clouded by the gaudy color and stylish cut of the tailor's coat. In justice to the blacksmith, without whom none of us can do, I proclaim him Father of All Craftsmen." **

The “Smithy”

Little is known about Hatch’s blacksmith shop specifically. A typical blacksmith shop has eight types of equipment that are central to any “smithy,” or smith’s workshop area, some of which they make themselves! If we were to go back in time and visit Hatch, we would probably find him hard at work with the following tools:

- | | |
|-----------------------------|-------------------------------|
| 1) Forge | 5) Anvil Tools |
| 2) Bellows | 6) Set Tools |
| 3) Anvil | 7) Slack Tub |
| 4) Hammers and Tongs | 8) Bench and Post Vise |

Blacksmiths cannot shape iron unless they get it very hot. The **(1) Forge**, a fireplace that reaches extremely high temperatures, is probably the most important part of the smithy. Blacksmiths heat their forges by carefully combining fire and air. The fire comes when they ignite charcoal – a specially prepared wood that burn very hot with little smoke. Air must blow over the burning charcoal to maintain this heat. That is what the **(2) Bellows** does. It pushes a controlled stream of air into the forge and over the coals.

You will also find a dizzying array of hand tools around a smithy. Not surprisingly, many of these tools have long handles, which keep the blacksmith's hands away from fire and hot iron. **(4) Hammers and Tongs** are perhaps the most important hand tools. As you might guess, blacksmiths hold iron with their tongs and pound it against the **(3) Anvil** with various hammers.

Smiths use a number of **(5) Anvil Tools** during this process. These items, like the "hardy" and the "half penny snub-end scroll," fit into a square "hardy hole" near the anvil's read edge. Blacksmiths can shape and cut iron by placing it onto such anvil tools and hammering it out.

(6) Set Tools are another important group of hand tools. They resemble hammers because they are metal pieces with long handles. However, blacksmiths do not swing set tools. Instead, they "set" these tools onto a piece of heated iron and strike them with hammers. This helps the blacksmiths to cut or shape the iron underneath.

Once blacksmiths use their tools to pound hot iron into shape, they cool it or "quench" it in water. That is why you will find a **(7) Slack Tub** in any smithy. Blacksmiths place these tubs beside their forges. They are often wine or whiskey barrels cut in half.

The “Smithy” (cont’d)

The blacksmith’s **(8) Bench**, like those of other craftspeople, consists of heavy planks and is home to many special tools, including bench shears, hacksaws, nippers, and pliers. The most interesting part of the workbench may be the **Post Vise**. This name is quite appropriate, for unlike ordinary bench vises, the “post” vise has a long column that the blacksmith buries into the smithy’s floor. Because blacksmiths work with heavy iron, they must anchor equipment like this so they don’t fall over.

These are just some of the tools essential to general blacksmithing. James Hatch may have also performed specialized tasks like shoeing horses and fixing wheels. Such jobs required tools too numerous to cover here. Learn more about these implements by referring to blacksmithing brochure “Suggestions for Further Reading.” These sources were invaluable in creating our exhibits: they will bring you further insights into the world of blacksmithing.

Blacksmithing's Future

Industrial Revolution showed that it was quicker and easier to make large amounts of items, compared to the time and care it takes by “hammer and hand.” Machines have reduced the need for independent of the village blacksmiths and their smithies.

Nevertheless, blacksmithing changed how people live and work just as much as the industrial Revolution, and we can still learn from the craft in modern times. For example, blacksmiths recycled and repaired items for thousands of years. They often looked for old, unwanted iron and made it new. A rusty gun barrel could meet a smith's fire and become a new hammer. That is the magic of the blacksmiths and their smithies: they give new life to what is old.

Our purpose at The Museums at Lisle Station Park is similar. We hope that this exhibit revives interest in the blacksmiths and their ancient craft. While they are no longer the center of village life, they will always remain an important part of human history.

Wood Shop

This area of our barn is a wood turning workshop. This means that experienced craftworkers spin wood using machines called lathes to create useful and decorative items. These include pieces of furniture, tools for working at home or on farms, ornaments for decoration, toys, and more. Turning wood has a different set of skills than wood carving, but there are people who specialize in both of these trades by spending years practicing with experts.

The items you see on display were created by experienced volunteers who practice this craft. Many of our wood shop volunteers visit us from the Windy City Woodturners, a local chapter of the American Association of Woodturners. This organization meets at the Lisle Park District Recreation Center and is always looking for members who are interested in learning the craft. Visit their website at www.windycitywoodturners.com for more information about becoming a member and volunteer.

Double Spring Pole Lathe

This Double Spring Pole Lathe is both the oldest and newest in the wood shop collection. Oldest, because the design dates back to the 17th century. Roy Underhill (PBS Woodwright Shop) adapted the design from an encyclopedia of that era. Underhill has held week-long classes where students can build a lathe. Mark McCleary of Villa Park attended one of those classes and donated the lathe he built in 2014 to the Heritage Society. Therefore, it is the newest lathe in our collection.

This lathe is operated by stepping on a pedal at the floor, and a cord around a wooden spindle, or spinning rod, is fastened to the spring pole above. Pushing on the pedal rotates the spindle one direction, allowing the operator to make cuts with a chisel. When the peddle travels as far as it can, the spring pole on the top pulls the cord back up causing the spindle to rotate in the opposite direction to make cuts. The operator can only make cuts on the down stroke of the pedal, then wait for the pedal to come back up before pushing it down to make another cutting stroke.

Double Spring Pole Lathe (cont'd)

This type of lathe uses intermittent motion – back and forth rather than continuous rotation. All other lathes in our wood shop create a continuous rotation of the spindle in the same direction, making the operator's job of pedaling and carving a little easier.

The Spring Pole lathe does have some unique advantages that gave it a solid place in wood turning history. First, it is a simple design that can be created using simple hand tools (as this one was). Second, it can be easily disassembled and carried from place to place a lot easier than heavier designs. The frame is held together with mortise and tenon joints, just like our Barn, and secured by wedges.

Both Mark McCleary's and Roy Underhill's signatures are visible on the tall end frame.

Treadle Powered Lathe

A treadle is a type of pedal that allows something to rotate in one direction, unlike a regular pedal that goes one way when you press down and another way when you let go. Regular pedals on lathes were replaced by treadles as the technology was improved to make a wood turner's job of carving and pedaling a little easier.

Sometime in the 17th century, the treadle lathe concept was improved and developed into the form seen here. The flywheel was balanced with internal weights to provide a smooth, continuous motion for the object being turned. The speed was increased by driving the large flywheel with a much smaller pulley. This allowed the cutting tool to be worked continually on the turned object instead of only in one direction, as with the spring pole lathe.

This treadle powered wood lathe was purchased in a northern Wisconsin Lake Superior shore town. It had been deaccessioned from a local museum.

Sheldon Lathe

The E. H. Sheldon & Company operated in the late 1800s and early 1900s in Chicago, Evanston, and later in Muskegon, Michigan. The company manufactured vises and workbenches, specializing in school laboratory equipment. This lathe design may have been created by the company for use in vocational training.

One way this design was powered was by an overhead drive shaft. This arrangement was common in early electrified shop settings. Our Sheldon is powered from below by a 1-hp electric motor. The current drive arrangement allows only one speed setting, whereas a pulley arrangement at the spindle, or spinning rod, could allow three speed settings. The lathe is not long enough to turn a spindle for the wood shop gallery spindle in a single cutting pass. Therefore, spindles are turned in two pieces and joined together later.

Although this is a working shop tool, we take special care in using this lathe since it is over 100 years old. The bearings are made of a metal alloy, either as bronze or poured “white metal” babbitt. These bearings were never intended for high rotation speeds and require frequent oiling.

We think this Sheldon lathe was built around 1910. It was donated by Fred Kalkirtz who also played a huge part in inventing, machining and providing parts to make the lathe operational. Volunteer blacksmiths Bob Goodwin and James Fousek were also heavily involved in bringing this machine back to life.

The Forge

Blacksmiths cannot shape iron unless they heat it up to very high temperatures. The forge is the central feature of the smithy, a fireplace that reaches thousands of degrees Fahrenheit.

Fire needs three things to burn: heat, fuel, and air. Blacksmiths ignite charcoal – a specially prepared wood that burns very hot and does not produce a lot of smoke. Coal is used as the fire’s main fuel. The forge’s design allows air to flow into the fire in different ways to control the fire’s temperature.

Our forge uses a combination of large bellows on either side and an electric fan near the top to control airflow. It was constructed using the stone bricks from the Beaubien Tavern’s original foundation. If you look closely at the bottom, you will see a tiny brick with the handprint of a cat in it. This brick was found in the walls of the Netzley/Yender House Summer Kitchen and was probably pressed in by a wandering pet during the room’s construction.

Bellows

A bellows is a tool used to puff air. It pushes a controlled stream of air into the forge and over the coals. Some bellows are smaller and made for household fireplaces, but forge bellows must be large and easy to control by smiths. They pull on a rope to flatten the bellows. When they let go of the rope, it expands and sucks air into the forge.

Our bellows are made of wooden frames with leather coverings and are installed on either side of the forge. The smaller bellows (left) was donated by the Aurora Historical Society. The larger bellows (right) was used in the Haumesser blacksmith shop, a Lisle smithy along the Southwest Plank Road. That shop was located at the current-day northwest corner of Ogden Avenue and Main Street in the mid-1800s. It was donated by the Beals family, descendants of the Haumessers.

Our mission is to preserve and interpret the dynamic history of Lisle that inspires and involves the community through research, programs, and exhibits.

The museum campus was created in 1978 to provide a home for the community's historic train depot. Over the decades, volunteers and staff have collected artifacts, restored historic structures moved to the site, and shared research with visitors through educational programs and exhibits.

A cooperative effort of:

Lisle Park District

Village of Lisle

Lisle Heritage Society

September 1-May 31

Guided tours:

Tuesdays and Saturdays
10 am, 11 am, 12 pm

**Closed December 23rd
through January 31 for
routine maintenance.**

June 1-August 31

Guided tours:

Tuesdays and Saturdays
10 am, 11 am, 1 pm, 2 pm, 3 pm

Thursdays
1 pm, 2 pm, 3 pm

Self-guided tours available during all hours.