MACHINE SHOP BUILDING IMPROVEMENT PROJECTS

By Dave McClary

The Machine Shop at the Zagray Farm Museum had been operated by Stanley Zagray, the oldest of the three Zagray brothers, as a business before 1990. Since acquiring the use of the propert in 2001, QVEA has renovated and improved the Machine Shop buildings to create a presentable museum setting. The shop was found in poor condition inside as well as outside. Inside, it was dirty with piles of debris on the floor and the electrical circuits were not in condition to safely energize. Outside, the building and its attachments were in dilapidated condition and lacking weather tightness in the case of a so-called Quonset hut, a home-made enclosure of corrugated sheet metal over a wooden frame. The restored and replaced buildings and structures now house a display of the tools used by Stanley and other period machine tools since donated to the museum. The Colchester Historical Society (CHS) provided some financial and contractor support for this work. Descriptions and pictures below illustrate the work involved to reach the current status of completion.

In addition to ongoing work related to the machine tool displays, there was nearly continuous work on the buildings and sheds. The CHS initiated and funded an initial upgrade to the concrete building, including new roofing, a cement block chimney, repairing the windows, repairing the cupola, adding an inside ladder to the cupola and replacing the roll-up door. QVEA replaced two shed roofs and replaced the original Quonset hut with a modern structure approximately the same size. QVEA obtained the three building permits and with contractor support for concrete work, the members accomplished these projects. In addition, numerous repairs and alterations were made to improve the integrity and appearance of the buildings. What follows is a summary of the work previously covered in newsletter articles reporting on the progress.

More specifically, the improvements made to buildings and structures are described as follows.

1. The CHS engaged a contractor to re-roof the building and refurbish the so called cupola, a small, second floor room. Inside access to the cupola was provided where climbing a ladder and crossing a shed roof was previously required. Also, a new concrete stove chimney replaced rusty stovepipes, and a new roll-up door was installed. Steel factory style windows were refurbished. See the picture on the next page.

2. An existing shed roof roughly 40 feet by 16 feet at the rear of the Machine Shop building was in danger of collapsing under a heavy snow load. The main supports were eight telephone poles set in the ground and two six inch channel iron columns anchored on a cement slab. These items were in good condition and were retained. The old beams and rafters were rough sawn oak and sagging or split. Roof covering was corrugated iron sheets partially fastened in place. The roof was removed and replaced by members using properly sized structural timbers. Some of the iron sheets were reused and others found stored on the Farm replaced those in poor condition.

Machine Shop with new roof and electric service before later painting

3. A failed ground water drainage in back of the shop was repaired and enhanced by members to include a dry well and catch basin along with new drain pipes.

4. Four machine shop access doors were repaired or replaced by members to improve security.

5. A new separate electrical power line was brought in from the street to supply the Machine Shop and extensions to the repair shop and food trailer were included. All existing wiring in the shop was removed. New interior lighting and distribution of power was installed using conduit. A contractor was hired by QVEA to install the power connection and exterior cable runs. Members dug the trenches and completed interior work for lighting and power outlets.

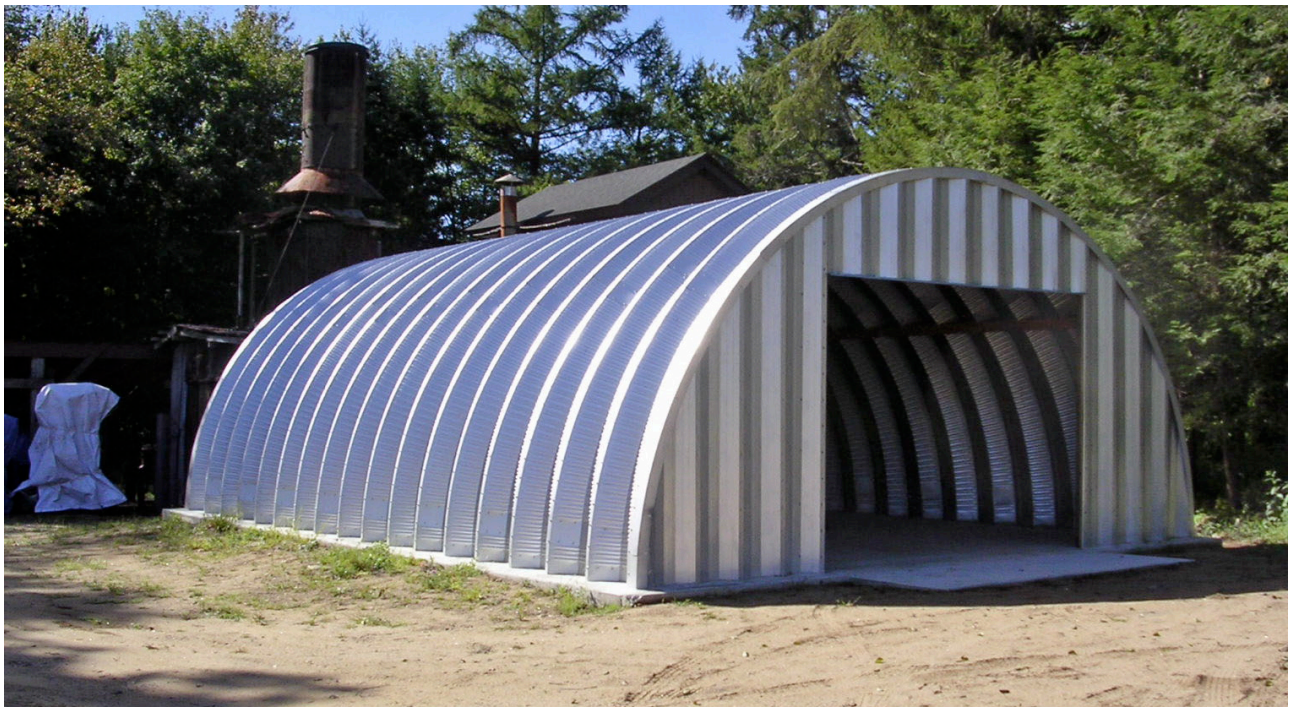
6. The outside of the machine shop was painted by members to improve the appearance of the old concrete walls and wooden trim. The major portion of the outside of the machine shop had not been painted and it showed in the discolored appearance. Because of its exposure to the weather, the concrete was coated with a paint intended for use in damp environments. The south side had been coated so it was left as is with some minor touchup. Inaccessible areas on the back wall were completed at a later times when the foundry shed was replaced. This painting greatly improved the shop appearance as seen in the picture on the next page.

Paint greatly improved the appearance of the building. Seen at the left is the end of the new Quonset hut described below.

7. An existing “Quonset” hut shaped building 35 feet long by approximately 22 feet wide was situated at the northeast corner of the Machine Shop. It was not a true Quonset hut in that it was internally supported by telephone poles set in the ground and longitudinal beams. The covering was arched corrugated iron sheets loosely fastened together and to the support structure. One end was mostly open and the other closed with flat sheets of corrugated iron fastened to a wood frame. The floor was a mixture of small cement slabs, wooden planks and steel plates laid over a bed of loose stone, some not covered. The building was used as an annex to the Machine Shop with several machine tools set up for operation and some simply stored there. Machine tools and a quantity of tooling were removed to storage areas and the building was demolished. The area was filled and graded to bring the floor level even with the main shop floor. A new surplus commercially available Quonset hut was purchased. This type of building meets building codes and was erected on a concrete foundation meeting the design criteria of the manufacturer. The building was to be used primarily to store and display machine tools in a protected environment.

Members erected the new building which is made up of seventeen arches bolted together with the ends of the arches set in a four inch deep trough of the perimeter foundation. Poured concrete was used for the interior floor. The trough was grouted in with cement when the structure was complete and the ends installed. A roll-up door was installed on one end and a double door on the other. Lighting completed the building and allowed the door to be closed if inclement weather occurred during shows. See the pictures on the next page.

The perimeter foundation for the new Quonset hut. Note the dilapidated foundry shed.

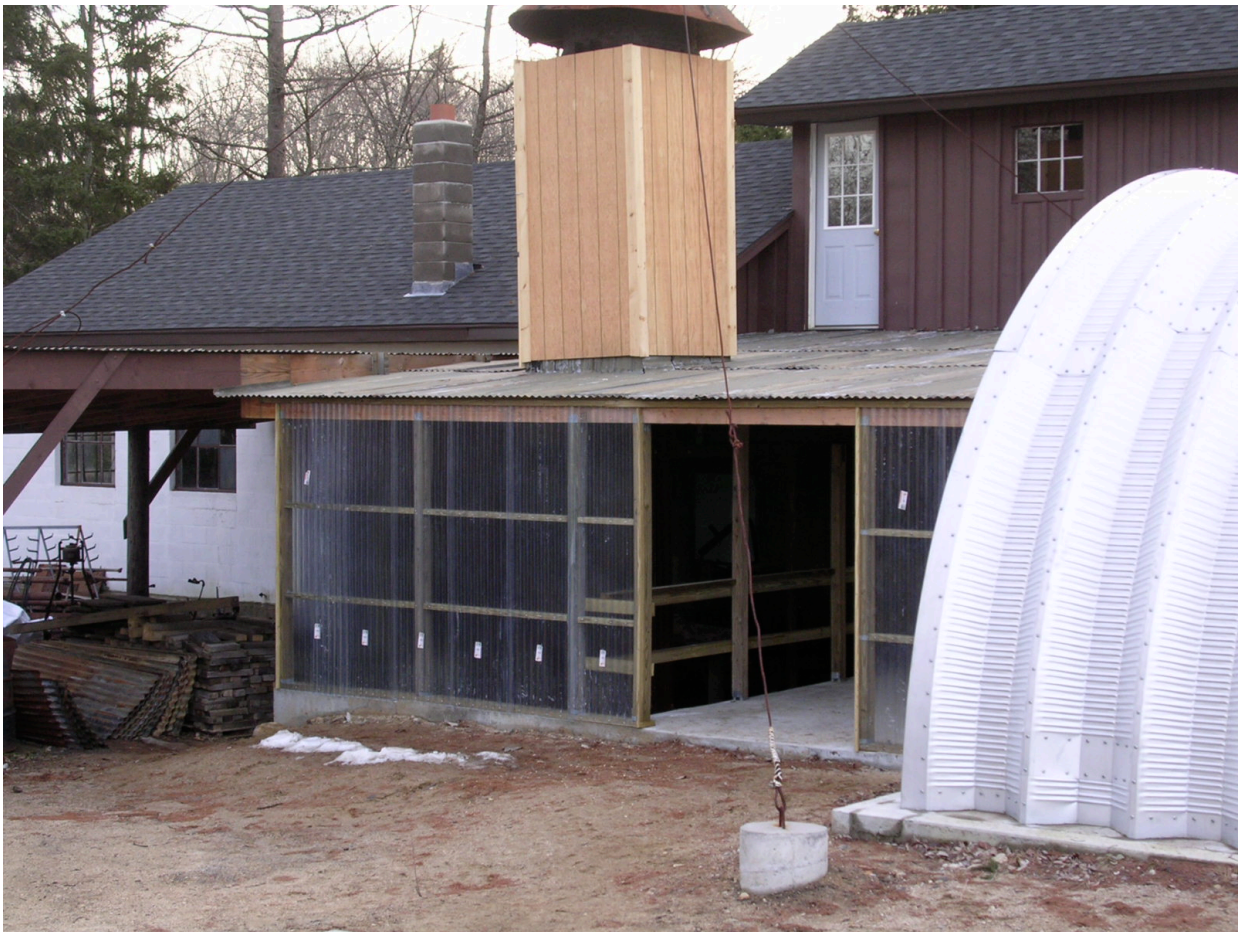


The nearly completed new Quonset hut with floor poured and grouting completed

8. A dilapidated shed roof and enclosure around the cupola furnace in back of the shop is seen in the top picture on the previous page. It was removed and replaced using properly sized structural timbers and corrugated iron sheets for covering. The roof slope was changed to be towards the roadway for water run-off away from the shop and Quonset hut. Approximately half of the area under the roof was brought up to the level of the shop and Quonset hut floors with new concrete. A railing separates the upper level from the area used to display foundry tools. New clear fiberglass siding was installed for the shed that enhanced the visibility of foundry equipment stored there. This improvement was completed by members with contractor assistance for the concrete floor.

A new concrete floor for half of the foundry shed and a foundation for the back shed wall are in place ready for construction of the new shed.

The new foundry shed is shown essentially complete on the next page. Clear corrugated fiberglass panels make up the wall to provide natural light under the roof. Two doors for the opening are wide enough to allow access for movement of small but heavy equipment into the Machine Shop or Quonset hut . A new wooden enclosure around the furnace stack now painted brown improves appearance and weather tightness. The skirt above that enclosure has since been upgraded with an overlay of galvanized sheet metal.



Picture shows the completed building and shed complex that makes up the Machine Shop museum