

Lakeport Plantation Restoration

Technical Report No. 7

Cornice, Siding & Paint



This photo was taken in March, 2003, before restoration had begun on Lakeport Plantation house. Painted white, the decorative trim blended with the siding and was hardly noticeable.



When restoration began, Lakeport Plantation house had been painted white for many years. The paint was worn, the siding weathered. The decorative trim that helped to define the Greek Revival architectural style of the house blended with the lap siding and was hardly noticeable. At a glance, the house appeared to be a plain and ordinary farmhouse suffering from years of neglect. With a closer look, however, one began to notice embellishments that hinted of the house's former beauty. With the completion of the first phase of restoration, the creamy white cornice, dentil molding and wide frieze board stood out against the golden yellow siding, framing the house. It was then that the house began to tell of its grand beginnings.

In early America, the trim on houses was plain. Strictly functional, its purpose was to keep the rainwater off the walls of the house. Early builders did not have time for fancy details. Flat boards were used to enclose the ends of the rafters and finish out the eaves of the house. As the early Americans became settled, their interests turned toward style rather than function. Influenced by European architecture during the eighteenth century, house designs began to change. Simple trim boards soon evolved into layers of decorative moldings, now referred to as cornices.

Although designs were more elaborate, cornices still served the basic purpose of protecting the walls of

The photo at right shows a close up view of the cornice assembly for Lakeport Plantation house. The fascia molding, fascia boards and soffit make up the roof overhang. The dentil molding forms a decorative band below the overhang. The frieze boards, defined by simple bed moldings, set beneath the dental molding.

Ogee Fascia Molding

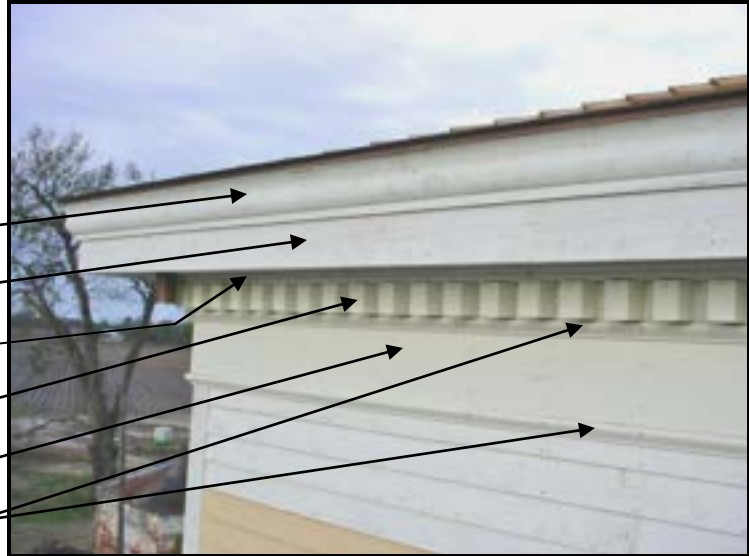
Fascia Board

Soffit

Dentil Molding

Frieze board

Bed Molding



the house from the rain. Cornices were built with eaves to hold outside gutters or, as with Lakeport Plantation house, the gutters were built into the eaves of the house. Built-in, or “box” gutters were hidden from sight by the cornice moldings and did not interfere with the architectural details of the house.

The cornice assembly for Lakeport Plantation house is made up of the fascia moldings, fascia boards and soffit, the dentil moldings and wide frieze boards. The ogee, or S-shaped, fascia moldings and flat, horizontal fascia boards below set at the eave of the roof overhang. The soffit makes up the underside of the overhang. The dentil moldings are the small, projecting blocks that form the decorative band below the cornice. The wide frieze board that sets below the dentil molding is decorated with a simple bed molding above and below.

Wood moldings were originally made by hand, using special molding planes for each type of molding. The blade and sole of each plane was cut to fit the shape of the desired molding design. Holding the molding plane by hand, the craftsman would run the plane along a piece of wood repetitively, gradually removing the unwanted wood until the desired molding profile was obtained. Elaborate moldings would often require the use of many different types of molding planes.



The photo at left shows the deterioration of the cornice before restoration began. The cornice assembly was rebuilt using reproduction moldings that were custom milled to match the profiles of the original moldings.



The photo at left shows Lakeport restoration workers putting up new dental molding on the west side of the house. The dental molding on this side of the house had been removed in earlier years and was never replaced.

When removing what remained of the original cornice moldings from Lakeport Plantation house, saw marks were found on the back of the moldings indicating that they had been machine produced. At the time that Lakeport house was built, around 1858 to 1860, specialized mill shops had begun manufacturing structural components for houses using machinery powered by steam. Because the original trim was made from a northeastern white pine material, it is believed that they were produced at the same mill shop, in Madison, Indiana, that produced the interior trim boards, mantels, doors and flooring.

Although much of the woodwork was machine produced, hand planes were used by the carpenters who built the house. Hand planes were used for many different purposes. Molding planes were used for the installation of the molding, to reproduce or repair damaged moldings and to make moldings that had not been machine produced. Smoothing planes were used to put a smooth finish on boards. Jointer planes were used to straighten long edges when joining two boards together.

The original cornice, dentil moldings and frieze boards were removed for restoration of the box gutters. Plans were to reuse as much of the original material as possible. Most of the cornice moldings and frieze boards were in poor condition and could not be salvaged. The dentil moldings on the west side of the



These photos show a nineteenth century molding plane that would have been used by craftsmen of that period to produce decorative moldings. The photo at right shows the molding profile of this plane. This molding plane is a part of the Sam Strauss Collection of Historic Woodworking Tools, a collection belonging to the Arkansas State University Museum in Jonesboro, Arkansas.

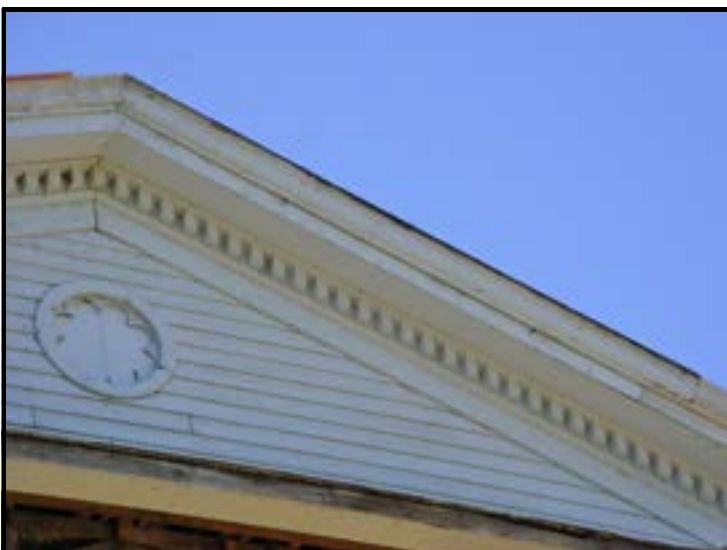
The photo at right shows restoration workers laying the frieze board and bed moldings below the front porch pediment of Lakeport Plantation house.



house had been removed in earlier years and never replaced. Most of the remaining blocks of dentil molding were in good condition and suitable for reuse. A single piece of original cornice molding was left on the front porch pediment, north side. It was found to be in good condition and did not need to be replaced. The dentil moldings and frieze boards in this area were also in good condition. Reproduction moldings were custom milled to match the profiles of the original moldings and the cornice assembly was rebuilt using the new moldings, and original moldings when possible.

The siding's function is to protect the house from the weather. Not only does it protect from rain, but it also protects from wind. Depending on the building method, the siding can keep a house cooler in the summer and warmer in the winter. The siding also helps to define the architectural style of the house. There are many different types of siding, each giving the house a different look.

Because of its abundance, wood was widely used in construction by early craftsmen. The earliest wood siding was a clapboard siding that originated in early New England. Early clapboard siding was made of short, narrow boards that were thicker along one edge than the other. Laid horizontally, the thicker edges were laid to overlap the thinner edges. Other names used for clapboard siding today are bevel siding, lap



This photo shows the single piece of original cornice molding left on the house. Found on the north side of the front porch pediment, it was in good condition and did not need to be replaced. The dentil molding and frieze board in this area were also in good condition.



The photo at left shows the profile of the original lap siding for Lakeport Plantation house. The recess cut along the inside bottom of the board is called a rabbet. When lapped over the board below, the rabbet provides a tighter joint than other siding types.

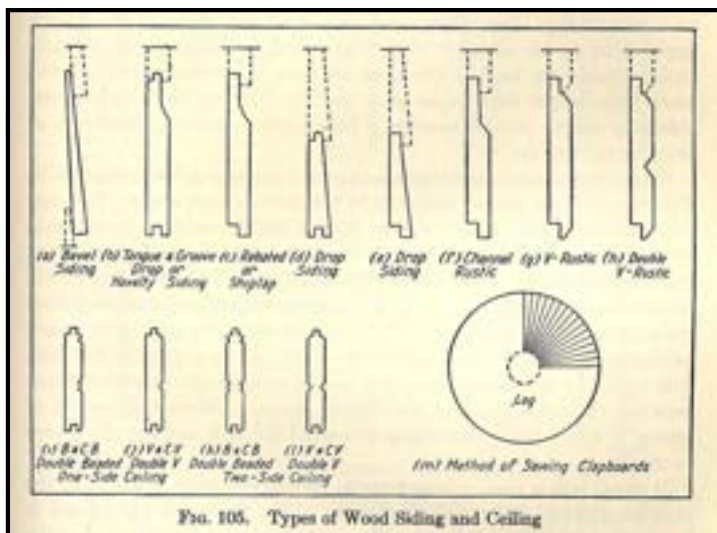
siding and weatherboard.

The siding on Lakeport Plantation house is an unusual type of lap siding. Built from six inch wide boards, approximately one-half inch thick, each board, instead of being fully beveled, has a slight bevel at the top back side of the board. Each board has been rabbeted, meaning a recess has been cut on the inside bottom of each piece of siding. When laying this type of siding, the rabbeted edge of the top board fits over the top edge of the board underneath. Siding with a rabbet edge can be

laid with greater accuracy and gives a tighter joint than other siding types.

The slight bevel, cut on the top back side of each board, is not consistently even, which is a sign that the bevel was cut by hand using a bench plane. The thickness of the siding is not consistently the same either, meaning that the rabbeting would have to be cut a different depth for each piece. This indicates that the rabbeting would also have been done with the use of a hand plane. This type of hand plane is called a rabbet plane and was made specifically for this purpose.

The original siding is quarter-sawn cypress heartwood, harvested from the surrounding area. Cypress is one of the most durable woods for siding use. Unlike other trees, the cypress tree does not produce sap but instead produces an oil called cypressine. This oil helps to preserve the wood and makes it resistant to decay and insect infestation. The cypress material used in the construction of Lakeport Plantation



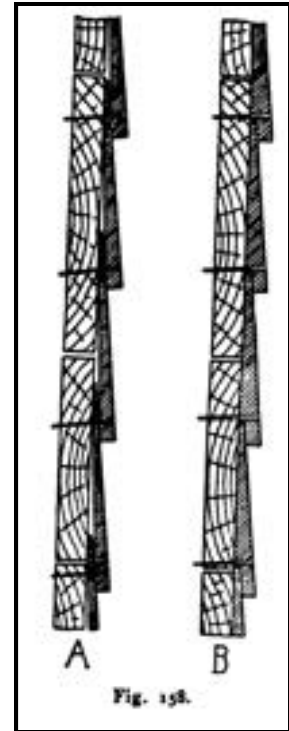
The illustration at left was taken from the book, *Building Construction, Materials and Types of Construction*, by Whitney C. Huntington, C.E. The first edition of this book was published in 1929. This illustration shows the profiles of various types of wood siding for that era.

In the illustration at right, Fig. 158-B demonstrates the nailing pattern used for the original siding on Lakeport Plantation house. The siding was nailed directly above the rabbet, passing through only one piece of siding. This method of nailing prevented the siding from splitting in case of shrinkage. This illustration was taken from the 1898 book, *Building Construction and Superintendence, Part II: Carpenters' Work*, by F.E. Kidder, C.E., Ph.D.

house is old growth, having come from virgin forests that had never been cut. Old growth material can be identified by its very tight growth rings. The heartwood from old growth lumber is denser, tighter grained and stronger than second or third growth lumber. It is very likely that the siding was cut at a mill shop near Lakeport, possibly even milled onsite.

Siding is commonly applied to wall sheathing, which is a layer of boards nailed to the wall framing specifically to hold the siding. However, the Lakeport house was not built with wall sheathing. Built of a brace frame construction, the siding is nailed to the house frame or vertical framing members. The original siding was applied with traditional cut nails using a specific nailing pattern. The nails are applied directly above the rabbet and pass through only one piece of siding so that there is no danger of the boards splitting with shrinkage. This type of nailing pattern also makes siding removal easier.

Years of exposure to the elements, followed by a harsh power washing, had damaged the exterior wood of Lakeport Plantation house. In 1984, when work was done to stabilize the house, a power washer was used to clean the exterior of the house before being painted. The high pressure from the power washer blew away the soft grain of the wood siding and left the hard grain, resulting in a washboard effect. The deteriorated siding was removed from sections on the north side of the house near the ironwork porch and plantation office, the southwest corner of the house near the servery, and the gable end of the ell above the west porch. Masonite siding that had been used to replace original siding on the west side of the main



This photo shows a close-up of the siding on the west wall above the servery and ell porch. The damage done by power washing can be seen here where the wood was washed away, leaving some boards very thin. In extreme cases, it is possible for power washing to wash a hole through the wood.

The photo at right shows an area on the south side of the house where siding was replaced. The original cypress siding was replaced with sinker cypress, old growth cypress that has been recovered from the bottoms of lakes and rivers.



house was also removed. The deteriorated siding was replaced with sinker cypress.

Sinker cypress is material cut from cypress logs that have been reclaimed from the bottoms of rivers and lakes. Years ago, during the time when logs were hand-cut and rivers and lakes were used as a means for transportation, cypress trees, several hundreds or thousands of years old, were being cut down, tied together and floated to the nearest sawmills. Many of these logs sank before reaching their destination. Preserved underwater for a hundred years or more, they are now being recovered by the lumber industry and sold as specialty lumber. Known as “sinker” or “deadhead” cypress, this material is highly sought after today.

The lower three feet of siding around the house was removed during the replacement of damaged sill



The photos above and at right show the gable siding replacement above the kitchen and plantation office of Lakeport Plantation house. The siding was deteriorated beyond repair and required replacing.



The photo at left shows a corner board on one side only. As seen here, the corner board overlaps at the corner and the siding fits up against it.

beams. Restoration workers reused the siding that was salvageable and replaced what was not. Each piece of new siding that was replaced on the house was dated on the back with permanent marker to identify the date of restoration. Replicated cut nails were used to duplicate the historic nailing pattern.

Corner boards are used to finish the edges of houses with wood siding. Put on vertically, they are used for the siding to butt up against, protecting the edges of the siding material. Not all of the corners of Lakeport Plantation house have corner boards on both sides. Some have a corner board only on one side. In this instance, the board overlaps one corner and the siding runs into it from the other side. Some of the original corner boards were missing when restoration began and most of the remaining were replaced using new material.

Although no latticework remained at the time that restoration began, historic photographs show a latticework frame built between the foundation piers of the ell porch. The latticework was reconstructed using the photos to determine the building pattern and dimensions.

The primary purpose of exterior paint is to protect the wood from moisture, one of the main causes of wood deterioration. Paint is also used for decorative purposes, to highlight the architectural details of a



The historic photo at right shows the original latticework that was built between foundation piers at the back of Lakeport Plantation house. This photo was provided by descendants of the Johnson family.

This photo shows a hint of the original paint color found on siding in a corner of the ell porch where a hot water heater was installed. The heater had been boxed in, which had protected the paint from exposure to power washing in the 1980's. A paint sample taken from this area was used for historic paint analysis.



house. Painting the trim, corner boards and moldings a different color than the body of the house will emphasize these details and add to the appearance of the house.

The earliest paints were used by cave dwellers thousands of years ago. For centuries, paints were used by artists for decoration. Early painters mixed their own paints and recipes were a closely guarded secret. Paint mixtures varied as different recipes were tested and perfected. Paint was first used as a protective coating during the nineteenth century. Linseed oil paints, developed during that period, protected the wood, were extremely durable and were inexpensive. It was also during this period that painting as an early trade began to disappear. Paints were still being mixed by hand until the mid 1800's, when manufacturing companies began producing ready-mixed paints. Following World War II, synthetic paints were developed and are popular today. Natural oil-based paints have remained largely unchanged and are still being used today, but are slowly being phased out and replaced with more modern and environmental friendly paints.

Before painting began on the exterior of Lakeport Plantation house, paint samples were taken and sent to Welsh Color & Conservation in Bryn Mawr, Pennsylvania, for paint analysis, to determine the original colors of the house. Historic paint analysis is the scientific study of paint. With the use of a stereomicroscope, the colors of a house during a certain period in time can be determined. Paint analysis is most often used to determine the original colors of a house, but is also useful in dating certain elements of the



The photo at left shows the original paint color going back on the siding of Lakeport Plantation house.



The photo at left shows the contrast of new and old as a reproduction of the original paint colors goes back on Lakeport Plantation house.

house. Another purpose of paint analysis is to determine the ingredients of the paint.

Power washing the house, during the 1980's, had removed most of the original paint and it was difficult to find areas where it still remained. Some of the original siding paint was found in a corner of the ell porch behind a hot water heater that had been installed years ago. The heater had been boxed in and this had protected the paint underneath. Early in the restoration process, the

hot water heater was removed, exposing some of the original paint still intact. A paint sample for the trim was taken from the uppermost point of the north porch pediment. This is an area that would have been difficult to reach when the house was power washed. Paint analysis determined the original siding to be golden yellow color and the trim a creamy white. The original paint was determined to be an oil based lead paint.

The siding and trim were prepared for new paint before the original colors were restored to Lakeport Plantation house. The existing white paint was cracked and weathered. Paint had peeled, exposing raw wood in some areas and there were layers of paint build-up in other areas. Hand scraping and sanding is the safest method to use when preparing wood for paint. Machine sanders can also be used when necessary, but with caution. Machine sanders can easily damage the wood if used improperly. Power washing and sand blasting are not recommended for wood as they are too harsh and will damage the



The photo at right shows the front porch pediment receiving a coat of paint. The paint color, a reproduction of the original, emphasizes the intricate detailing of the newly restored rose window.

In this photo, the first phase of restoration is near completion. The siding and cornice moldings are restored and painting is complete. The creamy white trim frames the yellow gold siding and Lakeport Plantation begins to return to its former glory.



wood. After sanding, areas of raw wood should be primed before painted. The purpose of primer is to prepare raw wood to accept the paint. The primer grips the wood and adheres to the paint. The siding and moldings were both taken back to their original colors, using a semi-gloss acrylic latex enamel paint. Acrylic latex is extremely durable and easy to maintain. The new siding and moldings were primed before being installed. Painters also primed the nail heads to prevent them from rusting.

Routine maintenance is important for the upkeep of the siding and the trim. Regular inspections will help to spot any problems before they can cause serious damage. Problem signs to look for are cracked paint, open joints and damaged siding. When paint begins to crack, moisture penetrates the wood and causes the paint to peel. Peeling paint allows for more moisture to enter and the wood begins to swell. The joints open up allowing moisture to enter between the joints and the wood begins to deteriorate. Damaged siding is also a threat, allowing water to enter through the cracks in the siding. Damaged or deteriorated wood should be properly repaired or replaced as soon as possible. Paint is also an important factor in the longevity of the wood. When painting the wood, it is important to use a good quality of paint and proper painting techniques. A good paint job should last from eight to ten years and simple touch-ups can be made between paintings. With proper care and maintenance, the wood siding and trim should last forever.

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Lakeport Plantation is an Arkansas State University Heritage Site located in Chicot County, Arkansas. The *Lakeport Plantation Restoration Technical Reports* were compiled by Ronnie and Sonya Walker to document the restoration of Lakeport Plantation.