

THE THRILL OF A NEW HOME WITHOUT THE COST; THE EVOLUTION OF RESIDENTIAL SIDING MATERIALS IN ARKANSAS

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INTRODUCTION

Transformations in Arkansas housing, whether folk or styled, have been numerous over the course of the state's history. Architectural changes are evident in scale, style, ornamentation and siding materials and each have been influenced by evolving social, cultural and economic factors in the nation, which were mirrored in the state. The environment met by the first settlers, the industrial age, mass-prefabrication, World War I, urbanization and the Depression were early underlying agents in new housing styles as were materials and the amount - or lack thereof - of new construction across the state, which was dictated by regional variations in employment opportunities, population and availability of construction materials. World War II had another pervasive effect on architectural character, as did post-war prosperity and suburbanization.

Modern materials for the exterior of homes and commercial buildings were a way for people to improve, safeguard and beautify what was considered old-fashioned and out of style. Each social and cultural influence in Arkansas's history added a layer to its architectural face either through the recycling of old buildings with new siding materials and additions, or through the introduction of a modern identity using current styles in newly developed areas. This layering process began as soon as the influx of non-Native Americans to the state started. Thus, one should remember that there might be more than meets the eye when examining the architectural character of a building or a historic district.

LOG STRUCTURES

Some of the earliest temporary dwellings in the state were constructed to provide the basic need of shelter. Many improvements over drafty one-room log buildings or in upgrading from rock overhang shelters and lean-tos of brush and hides were executed for practical reasons of comfort, not to impress one's neighbors. However, many families who intended to make Arkansas their permanent home would build quite substantial log houses. The wood used in such a building would need to cure for at least a year in order to avoid warping of green logs, so in the meantime families would camp out or live in temporary shelters like barns and bluffs.¹

Log buildings were the primary forms of shelter for immigrants to the Territory. Those regions of the state such as the Ozarks that remained comparatively rural into the mid-twentieth century featured homesteads of log construction from the beginning of Anglo-Saxon settlement in the area. Oral history regarding Washington County states that in 1857 no frame houses existed between West Fork and Fayetteville - though there were sawmills present in the northwest section of the state by the early 1850s.² A list of tools required for construction of early simple log buildings was offered in *The Goodspeed Biographical and Historical Memoirs of Central Arkansas*, which includes an ax, broad-ax for hewing, a frow and an auger.³ This method probably refers to those dwellings that were considered temporary shelters. On the other end of the spectrum, more sophisticated and permanent log houses could require as many as seventy-six tools to complete.⁴

Factors such as isolation and strained economic conditions resulted in a self-sufficiency that contributed to the lingering presence of log construction in the Arkansas Ozarks into the 1890s. These same factors influenced the statewide tenacity of log building past the close of the Civil War as the seclusion of frontier Arkansas required shelter that could be erected quickly, inexpensively and without a great deal of sophistication in woodworking.⁵ Subsequent incidences of log construction in the state surfaced from 1900 to 1912 when a large number of immigrants moved to Newton County in northwest Arkansas. These former city dwellers were recorded as hiring locals to construct log homes for them during that time. A second wave of log building emerged in the 1920s and 1930s due to the "back-to-the-land" movement of the Depression, necessitating inexpensive do-it-yourself housing, and due to the stylistic influences of

Rustic architecture popularized by the National Park Service and “alphabet agencies” such as the Civilian Conservation Corps (CCC), National Youth Administration (NYA) and the Works Progress Administration (WPA).⁶

The need for simplicity in woodworking led to the erection in 1820s Little Rock of many temporary buildings that were considered little more than huts of round, unhewn pine logs.⁷ However, many new residents of the state learned quickly that building a house of round logs with bark intact was a mistake. A covering of bark would provide shelter for insects as well as holding moisture and encouraging rot. The use of round logs also left large cracks that were difficult to chink.⁸ The favored technique of log construction in the Arkansas Ozarks during the nineteenth century involved a form of log preparation called planking whereby the log was hewn on two sides, leaving an area of bark on the top and bottom. Two theories for this method were to save labor or to create a more hospitable surface for chinking. The Depression-era manifestation of the log house in the Ozarks, termed the “Rustic” or “Adirondack” style, featured round, saddle-notched logs stripped of bark with protruding ends.⁹ Four types of corner notches have been represented in the Ozarks in order of frequency including, half dovetail, square notching, V-notching and saddle notching, which was found mainly on outbuildings.¹⁰ Notching in itself could sometimes be considered sufficient, however, pegs were also used to secure logs by making auger holes and driving them into the timbers.¹¹ Pegs were placed in strategic locations because they expanded and contracted with the wood. Because of this characteristic buildings employing pegs were often considered superior to those built with nails.¹²

Chinking was applied to the interstices of nineteenth century log buildings to provide insulation. Gaps were plastered over on the interior and exterior with mud and clay or more infrequently, a lime mortar combined with mud, clay, or sand. Sometimes small stones would serve as chinking but this was more common in other surrounding states.¹³ Another more prevalent method was to administer one of the mortar mixtures and riven hardwood chinking wedged diagonally into the cracks.¹⁴ Hardwood chinking was especially formed to fit in the chinks of the logs and was favored for such use because it wouldn’t shrink with exposure to the weather.¹⁵ Log houses devoid of chinking were not unknown according to nineteenth century German writer Frederick Gerstacker,

who reported that an Arkansas home of the late 1830s featured chinks left open, “probably to admit fresh air.”¹⁶ Portland cement was often employed for chinking in late nineteenth and early twentieth century log buildings but clay or mud was also used during the Depression in lieu of the funds to purchase concrete.

EVIDENCE OF FRAME AND BRICK HOUSING

Among the primarily log housing stock in Little Rock during the territorial years were at least two frame buildings, as noted in the 1820 deposition of Dr. Matthew Cunningham, an early permanent settler of the town. Any frame buildings at that time in central Arkansas were hand-hewn or hand-sawn from logs as no sawmills had yet been introduced in the area.¹⁷ Four brickmakers were established in the territorial capital by 1823 and an 1825 advertisement in the *Arkansas Gazette* mentions the presence of machinery for a sawmill. The ranks of local craftsmen had started to grow, increasing the construction of frame or brick buildings, though at that point they did not surpass the numbers of log buildings. By 1832 the sum of brick buildings in Little Rock had grown to sixteen, up from the reported total of six in 1827.

FRAME HOUSING

Migrants from more established areas introduced change to the complexion of the state's built environment as they constructed homes offering a higher degree of comfort such as they had previously enjoyed in their home towns. As far as stylistic influences these improved buildings were considered vernacular and did not exhibit any particular architectural style, but they made use of siding materials other than hewn or unhewn logs.¹⁸ The numbers of log buildings began to decline in prosperous areas as there was ready cash available to pay for sawn lumber.¹⁹ Residents also recycled their log buildings by applying clapboards produced by pit-sawing or by sawmills over the log core.

Some early frame houses in the state were produced by a whipsaw with handles set at right angles to the blade and teeth that cut in one direction. The procedure for cutting boards with the whipsaw often began with the excavation of a saw-pit into a hillside. A scaffold was then constructed over the pit. A hewn log was placed on the scaffold and two sawyers would position themselves, one on top of the log and one below it in the pit to guide the saw on the upward and downward strokes.²⁰ Many times a gully or simply a scaffold served in lieu of digging an actual pit.²¹

Subsequent technical improvements brought about the water-powered sawmill, which utilized a straight saw in a wooden frame or sash. This reciprocating saw worked

up and down on slides affixed to upright timbers. A timber fastened to a hinged joint on the sash was connected to a crank on the axle of a water wheel, which provided a cutting stroke of three feet. The log to be cut was mounted on a carriage and on the upward stroke of the saw a ratchet would push the carriage forward to receive a downward stroke. This type of sawmill was dependent upon the level of water available and could be closed for weeks at a time during periods of drought or flood; however it was still an improvement over the whipsaw in terms of cutting down on labor and producing more lumber in less time.²²

Steam sawmills appeared as the population, and consequently the demand for lumber grew. A letter in the *Gazette* on 8 August 1826 discusses the presence of an early steam sawmill in Helena. This type of mill became more numerous after the Civil War and with the introduction of the railroad, which made transport of lumber more feasible, but water mills continued to be used simultaneously for a period after the war.²³

BRICK STRUCTURES

With the incorporation of Little Rock as a city in 1835 came the need of the residents to grow beyond the frontier character exhibited thus far. Architecture became more than just a shelter and presented itself as iconographic symbols of intellectual and moral fortitude for elevated sensitivities. New church buildings introduced a sedate atmosphere to the community through more stylish architecture of brick or locally quarried granite. The erection of the 1836 Greek Revival stucco-over-brick State House was an effort by John Pope, third governor of the Territory, to improve Little Rock residents morally, politically and aesthetically, in hopes that it would provide the impetus for construction of “better houses.”²⁴

A few post-statehood families in Little Rock that possessed substantial wealth fulfilled Governor Pope’s dream of an improved landscape by constructing large, fashionable homes of brick in the Greek Revival and Federal styles. Public buildings that displayed international influences emerged as well. This was by no means the typical lifestyle of residents throughout the state even after Arkansas became a state in 1836 as log dogtrots and small, frame and brick central-hall, homes still abounded.²⁵ Much of the population’s income was from agriculture, which for the most part provided a

hardscrabble existence. A nationwide depression in 1842 and lagging cultural development attributed to geographic barriers such as swamps in the east and mountains in the northwest, also contributed to the lingering frontier appearance of the state. Thus the pre-Civil War siding materials used on the majority of dwellings would have been that which was traditionally and circumstantially economical and handy.

In 1861 the Civil War began to impact Arkansas as it did the rest of the Union. Technological breakthroughs that were taking root came to a standstill during the war years as the conflict placed a burden on the state's underdeveloped economic situation. Arkansas's architectural character continued to remain largely vernacular, composed of the traditional siding materials seen in the state since the 1840s.²⁶ Brick became more prevalent in new construction after the war owing to the burning of entire towns by Union and Confederate troops. Fire was a common threat even without the efforts of arsonists. The 1868 Little Rock City Council outlined a "fire district" within which all buildings were required to be constructed of brick or stone.²⁷ Wooden courthouses and county records contained within were often destroyed by fire resulting in the more hardy reconstruction of courthouses in brick or stone.

Pre-Civil War bricks were usually formed by hand and sun-dried at the construction site.²⁸ Brick making advancements soon allowed the use of ovens on the site. The firing temperature and the type of clay used dictated strength, durability and uniformity of bricks. Raw bricks (clay mixed with water) were shaped in a wooden mold and stacks of wood were encased in a mound of sod with openings at the top and bottom. When the wood was ignited the bricks were fired by the heat. Bricks produced by this method were soft and unstable so early masonry buildings were often covered by stucco or paint. The introduction of the beehive kiln improved the permanence of the bricks but there were still variations in color and strength.²⁹ The process became mechanized in the United States by the end of the nineteenth century and mass-produced bricks could be had in Fayetteville, Arkansas by 1870 but many small brickyards such as those found in Arkansas continued using manual labor.³⁰ The result being that many rural houses up to the turn of the century were still constructed of hand-molded bricks.³¹

THE RAILROAD AND ARKANSAS ARCHITECTURE

The importation of current architectural styles previously popular in the East was slow to reach Arkansas, but with the growth of cotton production in the Reconstruction era population numbers rose to 12,380 by 1870. The state's rail system had revived from its wartime stagnation and expanded from thirty-eight miles to over seven hundred by the end of Reconstruction, spawning various small towns with promises of commercial growth and sale of railroad land.³²

The pace of development and prosperity in the state began to experience a jumpstart as improved rail transportation opened up possibilities in the exploitation of natural resources, manufacturing and tourism, which spurred a post-Civil War construction boom. Foreign immigration was encouraged by the Cairo and Fulton Railroad, which offered payment plans for the expensive land on its route. Rail companies also hired land agents to manage sales resulting from people traveling through Arkansas on trains, which brought great gains in population between 1860 and 1880.³³ The increased citizenry attracted numbers of architects who had formal training and who were knowledgeable in the latest architectural fashions. Building guides and pattern books provided information on prevailing styles to professionals and the general public, resulting in the display of up-to-date architectural elements in cast stone, clay, metal and wood on housing at all economic levels. The industrial age of the late nineteenth century introduced manufactured building components produced by the jigsaw, bandsaw and lathe and provided for larger, more elaborate structures in styles such as Second Empire, Queen Anne and Richardsonian Romanesque.³⁴

Factory-produced elements could be shipped faster and to a wider customer base via the rehabilitated railroad system, which lowered the costs of building a fashionable home, thus beginning the trend of low-priced tract housing in Arkansas. Or one could update old homes by applying decorative elements like brackets, spindles and dentil work. The convenience offered by the railroad also gave rise to the long-lived do-it-yourself phenomena in architecture. By the mid-to-late 1890s expanded rail service and Rural Free Delivery enabled mail-order suppliers to advertise manufactured architectural elements and salvaged materials that could be applied by the inexperienced handyman. This was the logical first step toward the turn-of-the-century marketing of complete

houses by Aladdin Homes, Montgomery Ward and Sears, Roebuck that could be assembled on site. Building plans had been available through the mail since the invention of the adhesive postage stamp in the 1840s, but this method still required the services of an architect, carpenter or builder. Purchasing an entire Colonial Revival, Bungalow or Foursquare home of clapboard, wooden shingle or stonekote (stucco) from a mail-order company cut out the local lumberyard and carpenters, saving the customer time and money.³⁵ These mail-order companies aimed their marketing strategy primarily at the farm family, of which there were many in Arkansas. However, the move toward urbanization created by burgeoning commercial growth in many small towns served by the railroads generated a need for new housing such as that offered through the mail.

At the beginning of the twentieth century Arkansas's rural character was undergoing a transformation. Commercial and industrial growth created a boomtown situation for large and small towns alike. By 1900, Little Rock's population had tripled and increases in the wages of middle and upper classes began to impact how people spent their time.³⁶ Hours that had been spent on subsistence and house maintenance dwindled as increasing numbers of automobiles and improving roads provided the average Arkansan with the means to leave the farm and enjoy all that the increasingly fast paced, consumer oriented world had to offer. Material goods, baseball, theaters and auto tours for the family began to occupy newfound leisure time and disposable income, leaving little inclination for continual home upkeep.³⁷ These factors also meant the shifting population base would require new housing or the updating of old homes to reflect their elevated station in life.

INFLUENCE OF POST WORLD WAR I PROGRESSIVE IDEALS

In the early 1900s fresh ideas for the layout of residential neighborhoods surfaced to liven up the monotonous repetition of the traditional grid. This movement spawned new residential areas like Midland Hills in Little Rock -- platted in 1908 -- that provided a park-like atmosphere and curving streets following the natural lay of the land. The idea was that living within nature and away from the confines of the city was beneficial to one's health.³⁸ These progressive ideas helped popularize the Craftsman style, as it advocated the use of natural materials such as large timbers, stucco and stone. After

World War I the Craftsman style waned in popularity, but post-war homes designed by Arkansas architects would continue to graft the low profiles and charming design elements of the Craftsman style onto the diverse period revival houses requested by men who had been to Europe during the war. Returning soldiers brought their provincial experiences to bear upon new homes by the early twentieth century and the popularity of Mission, Mediterranean and Tudor styles began, elevating the humble reputations of stone and stucco.

STUCCO

A new trend toward remodeling and rehabilitating aged structures into less labor-intensive dwellings was reported by *American Builder* magazine in 1917. The development of alternative siding materials for the remodeling of homes was not only an effort to save money and time but in some cases an attempt to lend an air of perceived substantiality through imitation of traditional cladding like wood, brick and stone. Stucco was one of the building materials at the forefront of this movement, saving the homeowner money and labor by eliminating the need for a total paint job and presenting an up-to-date look for an old home. Materials such as these became the popular economical alternative to high lumber prices, which had doubled after World War I when the U.S. became a major timber exporter to meet the reconstruction needs of Europe. The fireproof characteristics of stucco were also touted as an important safety factor that had an impact on lowering insurance rates.

Stuccowork created a new market for contractors as magazines like *American Builder* and *House and Garden* ran articles on interior and exterior design encouraging the remodeling of “decrepit” homes with a new overcoating. Sears, Roebuck catalogues of the 1930s offered one low down payment, with a year and a half to pay it off, for a modernization plan. The company would offer guidance in the purchase of materials needed for the customer’s desired changes, eliminating waste and thus saving money. Sears was among the companies with a construction product to sell that used “before and after” testimonies to advance sales, running photos of shabby homes in vernacular or passe styles next to photos of gleaming Colonial Revival houses.³⁹ A new look could completely change the character of an out-of-style frame Queen Anne or brick bungalow. A 1918 advertisement for Atlas Portland Cement used housing shortages created by men flocking to work in war-time factory jobs to extol the virtues of stucco and concrete for industrial housing. The company stressed that conditions called for speedy construction that was fireproof and economical, a need that could be met by poured concrete foundations and walls of monolith, cast block or stucco.⁴⁰ While there was not a need for war-industry housing in Arkansas during World War I, the advantages of materials that

saved time and dollars made as much sense to Arkansas construction workers as they did elsewhere.

The use of stucco in Arkansas had begun with its utilitarian function as a stabilizing agent applied directly over the soft handmade bricks produced in the nineteenth century, but it was increasingly seen as the primary siding material in early twentieth century neighborhoods being constructed to the west in Little Rock, and on stylish homes throughout the state. Stucco is an ancient building material long used in place of traditional materials in Europe because of its easy application and the look of stone or marble. The common mixture is cement and water with sand and lime. A second mixture includes gypsum, and is divided into two sub-groups, “stone stucco” using crushed stone and pigments and “scagliola”, which creates a marbled effect by mixing plaster and crushed marble.⁴¹ The winter months often created idle times for contractors, causing the loss of millions of dollars through a decrease in jobs and the deterioration of lumber sitting unused and exposed to freezing temperatures. By 1917 stucco coating that was resistant to frost was created using magnesite plaster. Rather than water a nonflammable magnesium chloride solution was mixed with the plaster, providing a covering that could be used in freezing temperatures and could also furnish a fireproof coating.⁴²

THE APPLICATION OF STUCCO

The base for the stucco needed to contribute strength and permanence as well as insulate the home. One such sheathing dating from the 1920s employed dove-tailed wood strips embedded in a layer of asphalt mastic on fiber board with galvanized wire mesh for strength at the corners. Galvanized or painted metal lath was often used as a base because it had about the same expansion and contraction properties as stucco. Pre-existing siding of wood sheathing or weatherboard could also be covered with tarpaper and chicken wire, which was then coated in the stucco. In applying stucco to the dove-tailed wood strips the applicator needed to keep the wood wet in order to prevent suction from occurring. The first coat of stucco applied to the lath would be 5/8” thick and was required to remain wet for seven days before the second coat was applied. After the first coat dried out the second coat of no less than 1/4” thickness could then be administered. It was

recommended that the finishing coat be carried in one direction and care should be taken that the mortar not dry out at the edges.⁴³

Many historic and modern homes in Arkansas are sheathed in stucco or the modern approximation of the material. A search of properties surveyed or listed on the National Register by the Arkansas Historic Preservation Program yielded construction dates for stucco homes ranging from the beginning of the twentieth century to the early 1950s. There is considerable room for error regarding these dates as many Arkansas Architectural Resource Forms completed before the early 1990s have questionable information, and as many homes may have received a coat of stucco after the construction date unbeknownst to the surveyor and current owner. Some homes still had original garages on the property that were constructed of weatherboard, which could be an indication of the later application of stucco on the home. It would be difficult to ascertain whether the wall covering is original or not, absent the exposure of original siding materials, an exhaustive search of building permits or dated historic photographs, which is beyond the scope of this paper. Several historic commercial buildings in towns across the state also received a stucco facelift. Their original styles can usually be ascertained by the telltale signs of corbelling, hood molds and window sash configurations, but as with the residential properties a true date for the remodeling of the buildings would need to be subjected to a lengthy search best left to the research of individual structures.

Stucco buildings reveal a variety of textures. Art Deco buildings popular from the 1920s to the 1940s often were covered in smooth, flat stucco. A “pebbly” surface was also a frequent technique during that time and could be seen on many earlier Period Revival and Craftsman homes. A third stucco surface had a thick texture with obvious trowel marks, a method often employed on Mediterranean homes and in the half timbering of some Tudor homes.⁴⁴ Technical innovations after the 1950s transformed stucco and lends some clues to possible remodeling dates. Later faux stucco covering is composed of foam insulation board or panels of cement. In comparison to post-1950s stucco, historic stucco is generally heavier. True stucco will have a solid sound when tapped and is less susceptible to damage. Even though real stucco absorbs moisture it dries quickly and is hardier than modern manifestations.⁴⁵

CONCRETE BLOCK

Another turn-of-the century labor and money saver in Arkansas home construction was concrete block molded in the appearance of cut stone. Concrete, like stucco had an ancient precedent as a building material, but its appeal as a fashionable exterior and porch treatment did not reach its zenith in the United States until just after the turn of the century. Concrete originally consisted of natural materials like clay and lime such as that found in volcanic ash that had been exposed to intense heat. An artificial form called Portland cement was invented during the Industrial Revolution in England, but the natural formula continued to be marketable until the 1890s.

An improved version of Portland cement was produced in Great Britain through the nineteenth century and held a large share of the imports to the United States until the 1871 construction of the first American cement company in Pennsylvania. The American cement industry had organized into professional groups by 1900, one of which was the Portland Cement Association. The obvious function of this group was to advance the use of Portland cement, which was accomplished through workshops, advertising, catalogues and pattern books. Concrete block was highly recommended by the association in 1905.⁴⁶

Early production of concrete block in the nineteenth century was achieved by filling cast-iron or wooden box molds called “side-face machines” with a “dry mix” of concrete mixed with the minimum amount of water for hardening. The concrete was added in layers and hand-tamped. The block was removed via the hinged sides of the mold box and laid out to dry for seven to ten days in an upright position.⁴⁷

Mass production of concrete block buildings did not develop until Harmon Palmer patented a cast-iron hollow block machine in 1900. With this invention, it was claimed that two men could produce between eighty to one hundred blocks in a day. Blocks were cast with the design plate on the bottom in “down-face” machines that rotated up 90 degrees for release of the block. Hollow blocks were considered superior as they were lighter, insulated better and were more moisture-resistant.⁴⁸ Once the popularity of the concrete block as a building material was established competing companies began marketing their own machines. All followed Palmer’s pattern of metal frame and mold box with hand release lever for opening the sides and removing the

finished product.⁴⁹ In the years prior to standardization of the concrete industry the size of some early blocks was 24” or 32” long. Blocks were also thicker, sometimes weighing as much as 180 pounds.⁵⁰ With the organization of manufacturing associations the standard block size for most machines by 1924 was reduced to 8” X 8” X 16”; however, 1/2 or 1/4 size block attachments were accessible, as well as gable, bay window, circular and corner block attachments.⁵¹

The formula for the blocks was composed of Portland cement, water, sand and stone or gravel aggregate. It was advocated that the stones for the aggregate be no larger than 1/2” inch and that the concrete should be wet but not over-moist, which would cause the block to adhere to the metal or sag upon removal from the mold. The most common specifications called for one part cement to two or three parts sand to four or six parts aggregate.⁵² When embossing a design on the face of the block a fine-mix using highly ground sand or aggregate would be placed on the design plate and then topped with a coarse-mix for strength. The face design came in a variety of patterns, some providing a delicate refined look such as egg and dart, rope face, wreath face and scroll face. These designs were more commonly used as trim in water tables, belt courses, copings, cornices and sills. Other designs were imitative of cut stone like rock face and panel face, which were most often utilized for construction of entire houses.

Concrete blocks were also popular for house foundations, being cheaper than stone and stronger than brick. Face designs seen most often on foundations were rock face, cobblestone, panel face and ashlar. Despite initial protest by architects as to its failed attempt to imitate the beauty and strength of stone, the masses across the U.S. and Arkansas embraced concrete block because it was comparatively inexpensive, it needed no paint and most important it was fire resistant. Many garages during the 1920s were composed of concrete because building codes in some states called for limited frame construction within a certain distance of the property line, and also because cars and the fuels used to maintain and propel them were highly combustible.⁵³ Banks and commercial buildings were often constructed of block because of its fire resistant characteristics while farm buildings of concrete provided protection against tornadoes. Porch kits could be purchased from Sears in 1908. The customer could choose between

Ionic or Gothic capital molds for columns and could produce concrete bases, balusters, rails and under-porch “lattices”.⁵⁴

A second search of the Arkansas Historic Preservation Program archives for the earliest incidence of concrete blocks either used as foundation material or siding material for a building produced a construction date of circa 1904. The next concentration of concrete block buildings occurred between 1913 and 1915 followed by 1920 to the latest date of surveyed concrete properties, 1930. Commercial buildings with party walls and banks were a large part of the surveyed properties constructed of concrete blocks, most of them being built during the 1920s as replacement buildings after catastrophic fires destroyed frame commercial districts. Concrete block was normally utilized for new construction rather than as a remodeling material. As with the search for evidence of stucco use in Arkansas, the AHPP archives are a limited resource in comparison with the true numbers of structures utilizing concrete blocks in the state. However, they do offer a reasonable representative sample.

The face designs seen most often in the State Historic Preservation Office’s archives were rock face and panel face. The basic machine offered by Sears, Roebuck and Company home catalogues came with the rock face pattern, which could be a factor in the frequent appearance of that design in Arkansas. Sears, Roebuck catalogues also offered plans for concrete houses but did not provide the concrete block because most people would make their own. To cover all the bases the company offered its version of the block machine in 1905, asserting that ease of production was such that anyone could start their own cottage industry or make blocks for their personal use.⁵⁵ This could account for its occurrence in many rural areas of the state and in railroad towns that would receive regular mail shipments, making the acquisition of block machines easier. It is interesting to note the rapidity with which concrete blocks made their appearance in Arkansas after the turn-of-the-century invention of the machines, an indication that the state had become less impenetrable.

After 1930 concrete block began to lose popularity. Two factors have been cited in its demise; the rise of modernism and changes in technology. Concrete as a building material did not decline but sleek, smooth surfaces had become more stylish by 1920. Also at this time, automated machines that had the capability of producing more than one

block at a time were available, upstaging antiquated hand-tamped units. Improved block machines and the growth of the concrete industry into new areas of construction brought an end to the use of ornamental face concrete blocks in Arkansas and nationwide.⁵⁶

EFFECTS OF THE DEPRESSION

The year 1930 had a catastrophic impact on Arkansas's economy as the Depression bore down on the state. Bank closings and a yearlong drought literally took the food from many people's mouths. By 1932 average incomes for farm families plummeted and thirty-seven percent of Arkansas's workers were unemployed. Regional differences had an impact on the reaction to these acute circumstances. Those in the rural areas of the Ozarks and the Ouachitas were not experiencing situations much different from everyday life. Self-sufficiency was the norm for them, but the Delta region was one area where upper and lower classes had to alter their survival skills.⁵⁷ Arkansans' abilities to "make do" were sharpened by these dire straits as what little money people had was squirreled away and things were pared down, patched and repaired. The spare atmosphere in the state significantly slowed new construction and ensured that the current trend in remodeling continued out of necessity. In 1934 the National Housing Act created the Federal Housing Administration (FHA) and a system of federally guaranteed bank mortgages. This act brought homeownership within the reach of millions and also aided in the continuation of the growing modernization movement. Federally guaranteed loans for "repairs, alterations, or improvements" to existing homes were provided by the act. Publicity campaigns by the FHA for the Better Housing Program, which promoted the loan guarantees inspired those in the building industry to offer their own home loans leading to an expansion in the variety of available construction products by encouraging their use.⁵⁸

ASPHALT SIDINGS

Manufacturers of the early twentieth century continued to improve upon building materials that offered fireproof, vermin-proof and maintenance-free exteriors expanding the diversity of siding materials available to contractors and amateur builders alike throughout the years prior to the Depression. Asphalt and asbestos as roofing materials entered the market in the early 1900s. A 1918 article in *American Builder* mentions that some cities were passing legislation against wood roofing shingles, which posed a constant danger from fire. Subsequently asphalt and asbestos shingles were becoming

common replacements. However the cost for the asbestos shingle was twice as much as that of wood, so it was not used as often as asphalt. Still, its hardy character kept it on the market until it reached its apex as a versatile product for roofing and siding in more flush times.⁵⁹

ASPHALT ROOFING MATERIALS

Composition roofing materials using fabrics covered with pine tar or sand were in use on the East Coast by the 1840s. This form was later improved through coatings of asphalt and talc, sand, powdered limestone or gravel to add color and endurance. Modern roofing shingles were formed from units of felt saturated with asphalt, a bitumen produced from refined petroleum, and colored mineral or ceramic granules. Shingles cut from rolls in 8" X 12-1/2" shapes made their appearance in 1903 in rectangular and hexagonal forms. The Prepared Roofing Manufacturers Association was formed in 1911 to advance the sales of asphalt products and to improve upon them while widening the market.⁶⁰

While asphalt was not yet sweeping the nation as a wall covering in the early twentieth century, there were murmurings among the construction industry about applying it as siding in remodeling jobs. Architect Charles G. Peker wrote in a 1918 issue of *American Builder* that chipped slate asphalt roll roofing could be used as a substitute for stucco in the gable end of a house, creating a half-timbered effect. It also served as an insulating covering when nailed over drafty wooden drop siding.⁶¹ Hexagonal and rectangular asphalt shingles marketed nationwide as wall covering did not appear until 1929. Those shingles can still be spied on sidewalls of dormers or on outbuildings in rural areas of Arkansas, however such coverings could have been roofing shingles applied pre-1929. Perhaps as a sign of the times asphalt was primarily offered as a renovation material that eliminated the need to paint wooden siding. Roofing companies were left with a glut of material when the Depression forestalled new construction, so they augmented their manufacturer's lines with offerings that catered to the current building market and offered the look of traditional materials at a lower price. Johns-Manville and Certain-teed Products Company offered a strip shingle with a 2-1/2" exposure and 9-1/2" length in imitation of brick in 1931. Each strip shingle was divided into individual

“bricks” available in red, buff or gray featuring “mortar” lines in white, brown or black. Faux brick was the prevailing asphalt siding style during the 1930s. Mastic Corporation reported that 100% of its sales in 1935 were in the brick design marketed as panels called Inselbric, but wall shingles were still marketed in a variety of patterns and colors such as rectangular, hexagonal and pyramidal in green, tan and blended.⁶²

In 1940 Sears, Roebuck & Company catalogues offered brick-type insulating panels in 14” X 43” units, five bricks high and four-point (hexagonal) asphalt siding in brown tone, red tone, jade green and tile red. Advances in the production of roll roofing introduced heated rollers that pressed detailed patterns into granulated surfaces, making it possible to offer rolled asphalt brick siding in the early 1940s.⁶³ By 1941 Sears invited customers to “make old houses look new” by applying Honor Bilt Brick Roll-Type siding in 32” X 43’ sections, which was offered in addition to the four brick double lap siding - marketed by the company beginning circa 1937. To lend a finished look to the job accessory strips for inside and outside corners, edge trim and soldier courses were available. By 1943 they included 32” X 43’ asphalt rolls of irregularly coursed “ashlar stone” (also known as Inselstone) in gray.⁶⁴ The 1954 Sears catalogue introduced a new insulating stone design called “Ranch Stone”, featuring elongated multi-colored asphalt units resembling cut-sandstone in irregular courses on 15” X 48” panels. Color selections were gray/green and crab orchard.⁶⁵ In 1966 the Sears, Roebuck catalogue featured “Random Stone” as a new siding product. This was very similar to Ranch Stone but it included randomly placed raked shapes in imitation of wire-cut bricks among the multi-colored units. Random Stone consisted of wood fiber insulation board impregnated with bitumen and thickly overlaid with mineral-stabilized asphalt on the weather side and surfaced with mineral granules for color. Color ranges became rather elaborate in comparison to earlier asphalt siding choices. The color selections were referred to as “Holiday,” which was brown and light gray with coral highlights and beige mortar, “Riviera,” consisting of shades of gray with occasional coral and gray mortar and “Lakeside,” displaying green overtones with harmonizing gray and beige mortar.⁶⁶

APPLICATION OF BRICK-TYPE SIDINGS

Strip sidings were usually applied over clapboard structures so a smooth sheathing surface was required. Pressed cellulose known as fiberboard or Celotex was offered on the market in conjunction with the multi-tab asphalt shingles. The sheathing provided a layer of thermal insulation, which added to its appeal. By 1935 Bird & Sons was offering insulated brick siding in sheets consisting of 12" X 8-1/2' long panels of asphalt "bricks" attached to 1/2" thick cellulose backing.⁶⁷

Roll siding could be applied by squaring off a strip through a vertical mortar joint. One end would be set even with a corner and the top of the strip would be even with a previously applied horizontal chalk line. Roofing nails would be placed along the salvage edge, 1/2" above the lower edge of the overlying course and would be spaced approximately 4" apart. Nails spaced 2" apart would be located in vertical joints; inside corners and at windows, doors, and other openings 1/2" from the cut edge of the strip. A nail would also be placed in each vertical mortar joint across the siding. Corner pieces that matched the siding would be applied to outside corners. The piece would be embedded in cement and nails placed in the mortar line 1" from the edge of the strip on both sides of the corner.⁶⁸

The four-point and rectangular-style asphalt siding can still be seen on Arkansas homes, mainly as gable treatment. Ashlar stone, or Inselstone, and Ranch Stone still exist on many homes as well, but the faux brick siding was a more frequent treatment with Ranch Stone a close second and both are still extant in most regions of the state. The roll brick-type siding continued to be popular into the 1950s. The 1934 issue of Polk's Little Rock and North Little Rock City Directories contains the first mention among the classified listings of Johns-Manville brick-type siding sold by J.R. Grobmyer Lumber Company in Little Rock.⁶⁹ The Greater Little Rock Telephone Directory of 1937 contains the first mention of asphalt siding under the "roofing" category of the classified section. It was listed as a Mule-Hide Roofing product available at Arkmo Lumber Company in Little Rock but did not specify as to whether it was brick-type siding or another form.⁷⁰ The incidence of asphalt siding in Arkansas seemed to closely follow the national availability of that product, which would have been an ideal material for frugal homeowners in the early 1930s. Arkansans who had headed west in easier times began

losing their jobs, so by 1931 thousands returned to join relatives or take up squatter's rights. Many of these people hoped to support themselves through subsistence farming on the outskirts of towns so suburban shifts with its accompanying new construction was continuing even in the throes of the Depression. Asphalt siding would have been one of the economical alternatives for thrifty farm families.⁷¹

The popularity of asphalt siding did not wane in the 1950s as various roofing companies and mail order catalogues offered the asphalt 15-1/2" X 48" shingle style in wood grain and striated design. By 1950 shake textured shingles were available from Sears, Roebuck in white, dark gray, dark green and dark brown.⁷² The color selection was expanded during the mid-1950s with the availability of mint green and pink blend. After aluminum siding use began to rise and the textured shingles were replaced by the more popular Ranch Stone and Random Stone covering, the color selection reverted to fewer and more bland choices. This type of siding was applied on new construction as well as continuing as a popular remodeling resource during the post World War II housing boom. Mastic Company of South Bend, Indiana, reported that Inselbric sales had dropped to 5% in 1956 while Instelstone panels and Inselwood shingles represented respectively 30% and 65% of its sales totals.⁷³ The 1960s began a period of decline for asphalt siding when aluminum and steel clapboard style siding came into vogue as more desirable remodeling materials and by the 1970s production of asphalt roll siding had ceased.

Listings in the Little Rock, North Little Rock and Suburban Areas Telephone Directory for asphalt sidings appear for the last time in 1970 under the heading for "roofing materials" in the yellow pages.⁷⁴ By the late 1950s to 1970 the Inselbric style was usurped by the more popular Ranch Stone and shingle styles (Durawood or Inselwood) in the state. Specific mention of insulated brick siding and Inselbric occurred for the last time in the 1957 telephone directory.⁷⁵ In a demonstration of the longevity of Ranch Stone siding, Garland Cravens, a resident of New Blaine, Arkansas reported that he applied it to the local post office as late as 1967.⁷⁶

ASBESTOS SIDING

Asbestos siding was utilized by homeowners for the same reasons as asphalt siding, but its popularity did not peak as early as asphalt. The material enabled homeowners to avoid costly painting jobs but its main attraction was its fireproof character. In its time asbestos was pervasive in home construction, being found in siding, roofing, floor tiles, insulation for heating systems and boilers, acoustical plaster, wallboard and joint compound and asbestos reinforced concrete water pipes. There was evidence by 1918 among the American medical community that asbestos was impairing the health of people who worked in the industry, but it remained on the market in Arkansas up to the early 1980s.⁷⁷

Asbestos is a rock with a molecular structure of fibers that can be pounded down into even thinner fibers.⁷⁸ The fibers by themselves are too unrefined and abrasive for independent application so asbestos was combined in a variety of ways beginning in the 1880s. The most effective combination hit upon was asbestos and Portland cement, which was first produced as a coating in the United States in 1905. Johns-Manville Company marketed it as a sealer for leaking roofs and joints around chimneys, dormer windows, skylights, scuppers, shingles and rooftop nail holes. It was also used as a fire retardant on walls, ceilings and beams in hotels and commercial kitchens. Engineer Ludwig Hatschek invented a machine for the production of preformed asbestos-cement products in 1907, which opened the market to new products such as synthetic roof and wall shingles, corrugated wall and roof panels, flat millboard and decorative wall and ceiling moldings.⁷⁹

The production of early-twentieth century asbestos cement materials was accomplished through a “wet” process whereby asbestos and cement were blended in water, covering the fibers thoroughly in the cement. The resulting slurry was fed through a laminating machine, which formed interlaced layers. In this malleable state the sheets were corrugated or left flat. A later “dry” method involved spreading a mixture of asbestos and cement on a conveyor belt. Water was added to the mixture then subjected to rolling. Next a weighted cylinder applied hydraulic pressure. Textured surfaces were applied by an embossed cylinder. After a curing period of 24 hours the sheets would be

cut, punched and steam cured. Pigmented asbestos was achieved in the wet process by the addition of color pigments to the slurry and by pressing ceramic granules into it during the drying process.⁸⁰

A 1937 issue of *American Builder* reported that Johns-Manville was offering Shake Textured asbestos siding shingles with raked surface and staggered butt as a popular new product in that year. This was an improvement, the magazine stated, over the hexagonal roofing shingles used on walls in 1929. The article established the fact that, “at that time asbestos shingles had not been developed for use on the side walls of a house.” Therefore customers had to use roofing shingles as a fireproof wall covering.⁸¹ Further evidence of early twentieth century use of asbestos as siding was chronicled in a 1928 edition of *American Builder*. A fire had broken out in New Jersey causing \$3,000,000 worth of damage to commercial and residential structures on an Ocean City boardwalk. The article told of a house and Dodge showroom located in the midst of the conflagration sided in hexagonal asbestos roofing shingles. The two buildings survived the flames and actually impeded their progress, saving the adjacent frame buildings. The house purportedly was covered in the shingles fifteen years prior to the fire, so asbestos roofing material could have been utilized as siding by at least 1914 even though it was not marketed as a wall covering.⁸² However, the hexagonal design was not considered aesthetically pleasing because of a lack of surface texture and shadow lines. In contrast the 1937 J-M “shake” shingle was considered comparable to wood shingles in texture and charm and had the added advantage of being fireproof, rot proof and termite proof, as well as costing 10% less than the hexagonal shingle.

American Builder of October 1937 also recorded that the popular Keasbey & Mattison asbestos shingle #4 hexagonal enjoyed a “wide and extensive use” on low-income houses, factories and outbuildings during the mid-to-late-1920s. K&M introduced their no. 57 “Century” asbestos broadsiding in 1937 and Bird Weather-Tex offered a “3-in-1” asbestos siding shingle in that year. In contrast to the more costly shingle of the 1920s the new product marketed by most companies was less expensive, weighed less per square and could be applied by an amateur, all attractive traits to families strapped by the blows of the Depression.⁸³ Another new siding making its appearance in 1937 was Johns-Manville’s asbestos clapboard in white with wood texture. With an exposure of 9-1/2”

the clapboards were 8' long.⁸⁴ By 1939 gray clapboards were available through Sears, Roebuck catalogues. This product was not advertised as heavily as the shingles, nor did it enjoy as great a following, but it is mentioned in *American Builder* magazine as late as 1950. Johns-Manville asbestos clapboards first appear in the Greater Little Rock Telephone Directory of 1942 and every year after that until 1961.⁸⁵

One anomaly that appeared in a 1937 edition of *American Builder* was Eternit asbestos and Portland cement brick-type siding shingles offered by Ruberoid. This is the only mention of brick-type siding in asbestos that has surfaced. It is presented in a "new product" section of the magazine so perhaps some technical problem evolved and it was taken off the market.⁸⁶ Notwithstanding the apparently isolated reference to brick-type siding, the primary surface design of asbestos shingles from every manufacturer was an approximation of wood. Johns-Manville and Ruberoid marketed a cedar texture, which had a raked appearance. Sears, Roebuck and Keasbey and Mattison were among the companies that presented a waveline wood grain pattern in 1938. In 1940 Ruberoid broke away and advertised a smooth "colonial" siding, which had the advantage of no foothold for dirt.⁸⁷ The illusion of wood siding was maintained by butt patterns of wavy, straight edge and thatch - also known as shake - design. Wood grain shingles were initially offered only in white and gray, but the 1940 Ruberoid smooth siding was available in browntone, greentone and varitone. In 1942 Flintkote provided a "mottled" tone in brown, red and green, produced by impregnating color throughout the sheet. During the mid-1950s building boom manufacturers rose to the occasion and began offering a greater variety of colors, among them gray-green and gray-pink. In 1955 J.R. Grobmyer Lumber Company in Little Rock sold Certain-teed insulating siding in forest green, coral, chocolate brown, pastel green and silver-gray.⁸⁸

The 1965 Fall and Winter Sears, Roebuck catalogue featured a new asbestos siding called Mineral Fiber. It came in 9" X 32" clapboard form or 12" X 24" traditional shingle form. This type of siding was similar in appearance to the raked asphalt shingles but it was 5/8" thick in contrast to the 3/16" thickness of asphalt. Mineral Fiber siding was described as a "Scientific blend of two virtually indestructible materials, asbestos and Portland cement." Ceramic type pigments were blended into the material and each panel was then coated with a layer of acrylic plastic and oven baked to lock the color in.⁸⁹

The Portland cement used in asbestos shingles differentiated them from asphalt materials due to the fact that it allowed for weathering, resulting in siding that became “richer and softer with age.”⁹⁰ When an asbestos shingle is damaged the break will take the form of a clean crack due to the concrete while asphalt siding appears to tear leaving ragged edges much like cardboard. The typical dimensions of shingles was 12” X 24” but a 9-1/2” X 24” size was also available.⁹¹

Building magazines in the mid-1940s to early-1950s advocated asbestos cement flat boards that could be used for insulation in utility areas, interior walls or as exterior siding. 4’ X 8’ boards could be scored with a tool such as a knife, ice pick or awl then the board could simply be snapped for improvised clapboards. The boards were offered in an “attractive” stone gray but they could be painted.⁹² Corrugated sheets of asbestos had a more utilitarian character and were used mainly for secure siding of warehouses, factories and railroad buildings. During the 1950s however, it enjoyed some usage as a unique architectural element for angular post-war buildings alternately referred to as “Doo wop” or “Googie” architecture.⁹³

APPLICATION OF ASBESTOS SIDING SHINGLES

Prep work for application of asbestos shingles included priming all woodwork, gutters, flashings and exposed elements that moisture could drip from to prevent staining of the shingles. As with asphalt siding, a smooth surface was required for application of asbestos shingles. On new construction smooth sheathing would suffice but on existing buildings clad in clapboard or shingles bevelled strips, straightening sheets or nailing strips would be recommended for smoothing. The wall would then be covered in building paper or slater’s felt. *American Builder* magazine reported in 1942 that original wall materials could be removed for economy’s sake, deepening the mystery surrounding the origins of some buildings and presenting a factor architectural historians should explore in determining construction dates or original architectural styles of asbestos-sided buildings.

Siding jobs began with the application of a cant strip, usually a common wood lath, at the bottom of the wall. The strip would be nailed over the end of a horizontal layer of waterproof building paper or slater’s felt. A chalk line would then be snapped

about 11-1/2" from the bottom of the cant strip. A 3" X 12" backer strip of waterproof felt or asphalt roofing paper provided by the manufacturers was applied at corners and at all vertical joints between shingles. A backer strip is also folded vertically at the bottom of the beginning corner of the structure allowing for 1-1/2" of coverage on each wall. The first siding shingle would be placed at the corner flush and level with the chalk line at the upper edge and the side edge would be aligned with the corner. It was recommended that shingles be applied from both outer corners toward the center.⁹⁴

Siding units came from the manufacturer pre-punched with nail holes. Two holes in the upper edge of the shingle would be located 1-1/2" from the sides with a third hole in the upper center. Two butt edge holes would be closer to the sides with a third center hole. A 2" galvanized needle-point nail would be driven into an upper corner hole and before the second upper corner nail was driven snug the backer strip would be placed behind the edge of the shingle, allowing 1/2" of the strip at the top of the shingle and 1" at the bottom to remain exposed for application of the next shingle. The 12" X 24" shingles usually retained a 1-1/2" lap, which allowed for coverage of the 1" of backer strip at the bottom of the shingle. The upper center nail would be hammered in next and the two side butt nails driven through the backer strip in order to secure it.⁹⁵ Special 1-3/4" alloy nails were used for the bottom holes. These nails were utilized as they would not stain or corrode, however a 1941 *American Builder* article cautioned against placing them in one's mouth as they were possibly poisonous.⁹⁶

Corner treatments with asbestos siding were handled by overlapping the first flush corner shingle with the coterminous shingle on the adjacent wall. On the course above the first whole shingle a corner half-shingle is laid, which extends beyond the corner and butts against the edge of the whole shingle on the adjoining wall. This results in succeeding courses overlapping first on the left side then on the right. Two alternative methods of finishing corners would be butting the shingles against the edges of a corner board or against a metal corner, with or without a projecting bead. A cutter with hole punching and notching features was an important accessory for fitting shingles. The job could be done without one, but a cutter reduced waste through breakage and allowed a better fit around chimneys, dormer windows, frames and corners. A finished look to the

job would result from the use of a caulking gun for applying compound in a matching shade around windows and doors.⁹⁷

ASBESTOS SIDING USAGE IN ARKANSAS

Asbestos shingles continue to clad buildings in Arkansas due in part to the danger and expense involved in removal. The attributes of economy, durability and low maintenance that allowed asbestos to enjoy such a lengthy and auspicious distribution also account for its dogged presence on the state's rural and urban homes. Asbestos-sided homes are numerous in the state's urban centers and the majority are the result of remodeling efforts. North Little Rock's Argenta neighborhood contains a number of obviously Folk Victorian houses sided in asbestos. The MacArthur Park and Governor's Mansion Historic Districts in Little Rock still hold many mid-to-late nineteenth century and early-twentieth century homes covered in asbestos. However, with the renewed interest in revitalizing those neighborhoods and the reconstruction from a January 1999 tornado, much of the siding in those districts has been removed within the last twenty years.

Contractor Laurence Schulte, who has worked in the state since 1945, revealed that asbestos siding reached a peak in popularity in the mid-1940s after the end of World War II. The war slowed new construction for non-defense needs considerably and eventually brought it to a halt by 1942 when the War Production Board (WPB) put a freeze on all housing not utilized by war workers.⁹⁸ In 1943 privately financed remodeling of homes was stalled unless the community was granted a housing quota by the National Housing Administration (NHA). It could also be allowed if the work did not require priority assistance from the NHA and the total cost fell under the \$200 permitted under the construction clause of regulation L-41.⁹⁹ While new construction did proceed during the war, the restrictions imposed by the government would have kept the numbers of buildings clad in asbestos low until the materials bottleneck could be lifted, accounting for its delay in widespread usage. Schulte stated that the material was distributed to builders and individual homeowners through the efforts of salesmen called "blue suede shoe boys" who were both local and out-of-state agents. These salesmen enjoyed the same reputation as those of the "tin men" who sold aluminum siding through less than

above-board means using exaggeration and deceptive practices, Schulte said. Many local lumber companies and hardware stores would receive the asbestos from Arkansas Foundry Company (AFCO) in Fort Smith and Little Rock. Schulte is of the opinion that the main reason for the popularity of asbestos in Arkansas was the elimination of the need for painting.¹⁰⁰

There is a heading for asbestos products in the Greater Little Rock Telephone Directories beginning in 1933 but there is no specification for siding so it is likely that the materials offered were primarily roofing shingles.¹⁰¹ The first mention of asbestos siding in the Greater Little Rock Telephone Directory appeared in 1937 when Arkmo Lumber Company in North Little Rock advertised Mule-Hide asphalt and asbestos roofs and siding for every type of building. J.R. Grobmyer Lumber Company ran the first ad urging customers to re-side with Johns-Manville asbestos sidings in the 1942 Polk's Little Rock and North Little Rock City Directory.¹⁰² Even after aluminum siding entries begin to increase in the late-1950s classifieds, asbestos siding continued to be offered by a few lumber and roofing companies in the telephone directories. By 1973 GAF Roofing Materials was the sole company in the telephone directory listing asbestos siding called STRATALITE thatch siding.¹⁰³ This type of siding persevered and was listed in the telephone book every year until 1981.¹⁰⁴

North Little Rock building permit books available through the North Little Rock History Commission are sporadic but offer some additional insight into the trend toward asbestos siding in Arkansas. Permits issued in 1935 mostly mentioned repairs or re-roofing and any new construction materials mentioned were frame or brick veneer. This is true of permits issued in 1941 as well. The available permit books skip some years but 1943 began an increasing trend in entries listed as "resided." Specific mention of asbestos siding in the permits appeared in 1948 when four houses were listed as having received that treatment. Permits listed for re-siding with asbestos appeared again in 1952 and 1954. The last permit book filed with the North Little Rock History Commission dated from 1955. By the mid-1950s the popularity of aluminum would have been on the cusp of a general trend toward increased use so it is not clear what type of siding requiring a permit was used unless the buildings are still extant.¹⁰⁵

HOUSING IN WORLD WAR II ARKANSAS

By 1941 Arkansans had joined in the European conflict, thus beginning the state's recovery from the Depression. The draft took many young men off to join the military, but it also brought war industries to the state, which created new boomtowns. Arkansas was slow to lure those industries to its borders at first as the majority of the state's congressmen in the House had not been in office long enough to garner favors from the federal government. Substandard roads, low education levels and absence of skilled labor also stalled the establishment of Arkansas's war-related industries in comparison to other states. However, after 1942 the nation's mobilization of the war effort accelerated at such a rapid pace that Arkansas received a fair number of those industries. Jacksonville was home to a fuse and detonator factory, Pine Bluff received a military arsenal in addition to plants in El Dorado, Hope, Hot Springs, Malvern and Little Rock. Five Army Air Force training centers were installed in the state and two army training camps opened in North Little Rock and Fort Smith.

Hope's population rose from 7,475 in 1940 to 15,475 by 1942, one year after the beginning of construction there on the Southwest Proving Grounds. Camden projected in 1944 that 6,000 workers would arrive to toil at a new naval plant, doubling its population, while Fort Smith received 6,000 new residents as well. As thousands of Arkansans moved out of state to work in shipyards and plants, they were replaced by large numbers of immigrants. The logical outcome of this influx of workers was a housing shortage.¹⁰⁶ A September 1944 issue of the *Camden News* urged residents and landlords to list any vacancies, be it rooms, houses or apartments, with the Chamber of Commerce so engineers and architects arriving for work on the naval ordnance plant could obtain lodging. Naval personnel were to receive first choice.¹⁰⁷ The suspension of building activity during the Depression had reduced the available housing stock in the state, adding to the shortages created by incoming personnel. The problem was exacerbated by the dispossession of entire families through orders of condemnation on their land for the construction of defense facilities.¹⁰⁸ Creative residents made themselves at home in Cotton Belt and Missouri Pacific railroad stations, automobiles or rehabbed chicken houses. One enterprising Camden landlord rented out beds in shifts.¹⁰⁹

The Better Housing Program's 1930s campaign of restoration and renovation had come into its own at the beginning of the war. First and foremost in Arkansans' minds during that time was safeguarding the country, their families and their recent financial freedom from the Depression. Savvy developers and construction promoters played upon the fears that all that could be taken away in the blink of an eye and used the word "security" liberally in advertising and editorializing. A 1940 issue of *American Builder and Building Age* refers to new homes variously as "indestructible security, security on an acre of good earth" and "security expressed in brick."¹¹⁰ Noting a 1940 increase in new homes *American Builder* magazine asked, "Could anything more strongly represent the faith of the average American family in the permanent values of the ownership of house and land, of a true home, and a related faith in the power of this country to defend its people and their homes?"¹¹¹

Prior to the 1941 materials freeze by the WPB, some cities that were feeling the crunch from war industry population explosions managed to erect a small amount of new housing through private individuals with the help of the Federal Housing Administration (FHA). The resulting architectural style of the homes that were completed has been termed "minimal-traditional" because they displayed sparse decorative detail, small porches or stoops, low-pitched roofs and boxed eaves with little-to-no overhang. Priorities and shortages in equipment and labor imposed by the war effort directly dictated the sparing use of materials on residences and the later stall in private residential construction. In 1942 major forest industries were classified as essential to the defense effort and everything local mills produced was appropriated by the military. A Forester, Arkansas, sawmill operated twenty hours a day and cut three million feet a month for army camps in Arkansas and Oklahoma.¹¹² Wallace E. Johnson, a builder from Tennessee who erected WPB approved houses in Pine Bluff and Blytheville, bought his own sawmill in order to meet the lumber needs of his housing developments.¹¹³

The war brought changes to America and Arkansas in other areas, which enabled residents to make post-war improvements in their means of shelter. Wages began to rise because of a nationwide labor shortage; however, rationing meant there was little in the way of material goods to be had. This enabled Arkansans to build up savings accounts and escape debt.¹¹⁴ After the war the state began to trend toward suburbanization and

industry began to compete with agriculture as the main employer. War plants adapted to peacetime uses and the Resources and Development Commission created by the legislature in 1945 worked to pull in new industries. Arkansans were enjoying an increase in income that rose faster than the national average, permitting them to reap the benefits of prosperity.¹¹⁵

During the war years the media launched campaigns designed to advance America's optimism in an improved post-war way of life. This seemed only just after years of sacrifice and it was an idea that was heartily embraced by returning servicemen. Between 1946 and 1949 more than five million houses were built in America, a number that was boosted by the GI Bill of Rights, allowing the acquisition of home loans with little or no down payment.¹¹⁶ Suburban developments of small assembly line produced starter homes sprawled across the landscape. Growing families were looking for ways to expand and refine their homes and spend their disposable income, an atmosphere that was ripe for the introduction of aluminum siding.

ALUMINUM SIDING

Siding materials and architectural styles popular during the 1940s and early 1950s have been relatively unrecognized by the preservation community until recently with the eligibility for listing buildings constructed or remodeled during those years on the National Register of Historic Places. The pervasive presence of aluminum and vinyl siding has been a controversial issue as far as its aesthetic and practical uses when it is proffered as a replacement for historic building materials and as it alters, often irrevocably, the profile and architectural character of a building. Some independent contractors do not take the care needed to accurately and sensitively apply replacement siding on historic buildings, resulting in the destruction of decorative features and projecting details, not to mention the occasional irreversible damage caused by its application. Nail holes in masonry buildings can introduce cracking and spalling and concealed water entry points can continue to wreak damage beneath the new siding, allowing deterioration to continue and to cause rising moisture levels on the interior of the home.¹¹⁷ There are pre-and post-World War II residences in the state that were originally sided in asbestos and asphalt but most clapboard-style aluminum siding applications in Arkansas from the early-1950s to roughly the 1970s were likely the result of remodeling efforts.

THE ORIGINS OF ALUMINUM SIDING

Aluminum was identified as an element in 1825. With a heated mixture of potassium and aluminum chloride Hans Christian Oersted was able to produce an impure lump of metal that distantly replicated tin in 1825. In 1845 a German chemist expanded on Oersted's efforts and created miniscule pellets of aluminum. The pellets would not form larger masses when melted so he used a hammer to pound them together until he came up with a segment of pure aluminum. The difficulty in achieving any amount of aluminum made the material extremely expensive. By the middle of the nineteenth century it cost twice as much as platinum or gold. A French metallurgist invented a new reduction process in the 1850s combining sodium with the aluminum ore. This brought the cost of aluminum down to a price equivalent to that of silver. By the 1880s it was

down to about eight dollars a pound, still prohibitive, but it was being produced in more workable amounts.¹¹⁸

In 1886 Charles Martin Hall applied electricity to a graphite crucible filled with alumina dissolved in molten cryolite. This “electrolytic reduction process” produced pure aluminum and is considered to be the impetus for the economical production of the material. Hall and a partner, Arthur Vining Davis, formed the Pittsburgh Reduction Company in a rented building. The pair broke into the metals production business by using their process to create aluminum cookware. After Hall was awarded a U.S. patent for his process in 1889 the company expanded its output and by 1900 was up to seven million pounds in production. Around that time they also brought about the lowering of the price of metal in the United States to 33 cents per pound from \$11.33 per pound. The Pittsburgh Reduction Company became the Aluminum Company of America (ALCOA) in 1907 and by the end of World War I it was the single American producer of primary aluminum.¹¹⁹

ARCHITECTURAL ALUMINUM

The first architectural application of aluminum was the mounting of a small grounding cap on the Washington Monument in 1884. Sheet-iron or steel clapboard siding units had been patented in 1903 and Sears, Roebuck & Company had been offering embossed steel siding in stone and brick patterns in their catalogues for several years by the 1930s.¹²⁰ ALCOA began promoting the use of aluminum in architecture by the 1920s when it produced ornamental spandrel panels for the Cathedral of Learning and the Chrysler and Empire State Buildings in New York. The exterior of the A.O. Smith Corporation Building in Milwaukee was clad entirely in aluminum by 1930 and 3’-square siding panels of Duralumin sheet from ALCOA sheathed an experimental exhibit house for the Architectural League of New York in 1931. Most architectural applications of aluminum in the 1930s were on a monumental scale and it would be another six years before it was put to use on residential construction.¹²¹

In the first few years after World War II manufacturers began developing and widely distributing aluminum siding. Among them Indiana machinist Frank Hoess has been credited with the invention of the configuration seen on modern aluminum siding.

His experiments began in 1937 with steel siding in imitation of wooden clapboards. Other types of sheet metal and steel siding on the market at the time presented problems with warping, creating openings through which water could enter, introducing rust. Hoess remedied this problem through the use of a locking joint, which was formed by small flap at the top of each panel that joined with a U-shaped flange on the lower edge of the previous panel thus forming a watertight horizontal seam. After he had received a patent for his siding in 1939 Hoess produced a small housing development of about forty-four houses covered in his clapboard-style steel siding for blue-collar workers in Chicago.¹²² His operations were curtailed when war plants commandeered the industry. In 1946 Hoess allied with Metal Building Products of Detroit, a corporation that promoted and sold Hoess siding of ALCOA aluminum. Their product was used on large housing projects in the northeast and was purportedly the siding of choice for a 1947 Pennsylvania development, the first subdivision to solely use aluminum siding. Products such as 4", 6", 8" and 10" X 12' unpainted aluminum panels, starter strips, corner pieces and specialized application clips were assembled in the Indiana shop of the Hoess brothers.¹²³ Siding could be applied over conventional wooden clapboards or it could be nailed to studs via special clips affixed to the top of each panel. Insulation was placed between each stud.¹²⁴

While the Hoess company continued to function for about twelve more years after the dissolution of the Metal Building Products Corporation in 1948 they were not as successful as rising siding companies like Reynolds Metals. After the war Reynolds utilized an aluminum sheet rolling mill in Illinois with the intent of applying its total output toward the national housing shortage. Siding was only one of many aluminum building products marketed by Reynolds, but it was the star of the line and was featured extensively in the company's advertising. Aluminum, like asbestos and asphalt, was touted in the 1940s as a replacement for traditional materials that offered similar aesthetic qualities yet had the usual maintenance-saving attributes of being rodent resistant, fire resistant, insulating (by 1948) and requiring no painting. Reynolds promised the customer that their aluminum siding would provide "traditional colonial beauty" for a lifetime.¹²⁵ Two types of siding besides the utilitarian 5-V crimp and corrugated forms available from Reynolds were lifetime aluminum clapboard and lifetime aluminum weatherboard.

The .032-gauge clapboard siding came in 8' and 12' lengths with 8" of exposure. The weatherboard siding came in a .027-gauge solid aluminum sheet that was crimped in imitation of clapboards. This product came in 6', 8' and 12' lengths with 4" exposure.¹²⁶ The effectiveness of Reynolds' ad campaign was proven by the company's estimate that within eighteen months of production they had shipped enough aluminum products to side and roof over 141,000 five-room houses.¹²⁷

Sears, Roebuck & Company catalogues offered aluminum siding panels akin to Reynold's aluminum weatherboard siding in 1949. The panels were provided in 8', 10' and 12' lengths with 4" exposure. It was recommended for use on homes but the catalogue also mentioned that it could be applied to factories, storefronts and farm buildings. Of course its main attraction was that it didn't need painting but the ad stated that... "it takes paint beautifully."¹²⁸ By 1954 the company was offering pre-painted green, white, gray and buff aluminum clapboards with an 8-1/4" exposure and a variety of accessories as "the newest thing in siding for homes." Accessories included mitered aluminum outside corners, inside corners, starter strips, window and door trim, back-up tabs and aluminum foil sheathing.¹²⁹

Other companies were encouraged to develop their versions of aluminum siding when the Federal Housing Expediter offered subsidies to firms that produced prefabricated housing and alternative construction materials, in order to bring some relief to the post-war housing shortage. Kaiser Aluminum and Chemical Company purchased exclusive rights to a pending patent for a "clapboard unit" from Canadian inventor Charles Kinghorn in 1947. His invention featured a spring-tensioned locking joint and concave profile, which provided increased structural rigidity against denting and reduced the noise factor from rainfall. The enhanced strength of this new siding meant that sheathing was not necessary as it could be applied directly to studding. The 3S aluminum alloy units were available in 7" widths and 10', 12', 14' and 16' lengths. The clapboards and accompanying accessory pieces were coated with a zinc-chromate primer for the application of house paint.¹³⁰

Jerome Kaufman, founder of Alside Incorporated, perfected the process of baking a coat of paint directly onto the aluminum siding in the factory. Pre-punched and pre-cut aluminum siding panels from roll formers were carried on a conveyor through an

electrostatic spray paint booth then baked in a gold-lined oven by one thousand five hundred-watt infra-red light bulbs. By 1948 the new product was on the market in white, cream or gray.¹³¹ Previously companies like Reynolds offered unpainted siding, which would “weather” to a gray-white over time or they suggested painting with the promise that it would take less paint and last longer than lumber.¹³² After Alside’s success was proven through gross sales of more than one million dollars Reynolds and Kaiser developed their own factory-painted siding and by the early 1950s most available siding was prepainted.¹³³

Encouraging sales figures for residential aluminum siding spurred the establishment of myriad independent producers in the late 1940s. However the promising postwar sales of aluminum siding were curtailed by the Korean War in 1950 through the imposition of National Production Authority (NPA) constraints on the use of aluminum for civilian construction projects. For the larger aluminum producers this was not much of a setback since they could easily meet the needs of the defense industry, but smaller operations with less diverse product lines that were dependent on the civilian market faced the specter of closure. The NPA revoked their controls in 1953, but Kaiser and Reynolds felt that government intervention in the supply of aluminum lent an air of instability to the market, which led them to cease production of aluminum siding and take up supplying sheet stock to independent fabricators.¹³⁴

With the absence of the principal producers from the residential siding market small installers became more numerous. By the mid-1950s competition increased, bringing about shady sales practices and tarnishing the reputation of the industry. The Aluminum Siding Association (ASA) was formed in 1957 to bring a stop to the scams, to promote aluminum siding usage and to improve product quality through codes of ethics, established standards and public relations campaigns.¹³⁵

Aluminum siding had been marketed originally as a new construction material but from the late-1940s to the late-1950s it was promoted and used primarily for home improvement. A 1956 editorial in *American Builder* proposed that the construction industry needed to aggressively pursue the used-house market through a program of “obsolescence-selling.” The housing crisis was over so contractors should target owners of old houses, growing families and the elderly. Once their homes had been acquired it

would be necessary to remodel for better resale prospects, a prime opportunity for siding installers.¹³⁶

Aluminum became a favored material for new construction in 1959 when National Homes, aided by ALCOA developed factory-built houses sided in clapboard-style aluminum. Millions were spent on their advertising campaign promising that the proliferation of their prefab homes would enable salesmen to boost their earning potential by reaching millions of new homeowners and builders. ALCOA was not blind to the forecasts of increased sales and in 1960 the company entered the residential market with pre-painted white, green, gray, yellow or beige 8" siding insulated with foil backing of polystyrene foam. ALCOA contracted with five of the oldest and largest building products companies in the nation to serve as their distribution force. Coupled with an ambitious ad campaign ALCOA's system helped them gain the advantage over independent fabricators who used local dealer-applicators for sales of their products. ALCOA's partner companies and their products were well known in contrast to the obscure brands produced by the independents. Many of the small fabricators had fallen by the wayside by the mid-1960s, unable to compete with the volume and name recognition of larger producers.¹³⁷

ALUMINUM SIDING COMPOSITION

Aluminum siding was made up of a combination of metals, creating alloys that provided the tensile strength needed for efficient coverage that pure aluminum could not provide. The minimum standards set by the ASA in 1962 called for a combination of magnesium, manganese, chromium, silicon, iron, copper, zinc and 0.5 percent other elements. Sheet material was formed by aluminum alloy fabricating ingots at reduction plants, which went through rolling mills for conversion to sheet. The ingots were heated and then sent through breakdown rollers producing long, thin slices of metal. Cold rolling brought them to the proper thickness for sheet stock cut to width and then wound on coils for the fabricators.

The factory fabrication of aluminum siding used two methods: roll forming and brake forming. In roll forming the sheet stock was flattened and nail slots and weep holes (for the release of moisture) were punched into it. The aluminum was then fed through

polished steel roller dies that formed interlocking edge profiles. Embossed surfaces were achieved through this method by the installation of a set of pattern rollers at the end of the production line. Reynolds Metals introduced a texturized finish for their siding in 1946 and by 1949 other fabricators were offering stippled, pebbled, basketweave, and the most popular texture, simulated wood grain. Brake forming employed hydraulic press brakes. Sheet stock was flattened, punched and then cut into 10-foot-long blanks at the factory. It was then fed into two brake presses for the forming of the edge profiles. This method was much slower than roll forming because it required that the blanks be fed into the brakes by hand one side at a time, which accounts for roll-forming being the more popular method.¹³⁸

ALUMINUM SIDING COMPONENTS

The siding required for cladding a home consisted of a multitude of formed pieces that were specially designed to be applied on unbroken surfaces, window and door openings, corners and attachment to roofs and foundations.¹³⁹

“Field panels” was the technical term for sheets of aluminum clapboard with wide butts on the lower edge and tapered tops. These were used for the weatherproof covering of uninterrupted surfaces of exterior walls. The bends at the top and bottom edges of the panel formed interlocking joints that adhered to abutting panels. The joints were available in two basic styles; lock-up joints and stack-on joints. Lock-ups used pre-formed flanges on the edges of the panels, which were attached to a horizontal lip on the next panel, while stack-on joints were employed on panels with matching edge profiles enabling them to rest on top of each other. Some siding used special clips but most could be applied to the buildings with nails through slots in flanges on the top and bottom edges.

Prior to the mid-1950s underlayment consisted of a layer of asphalt building paper. Materials of aluminum foil backed by building paper were utilized for remodeling projects in the mid-1950s and were placed on existing walls prior to the attachment of the aluminum siding. The material provided a barrier for air and vapor, acted as a reflector for radiant energy and prevented corrosion by providing a buffer between differing materials.

Starter and closer pieces consisting of narrow strips of aluminum secured the edges of first and last siding courses with flanges or folds. Panels beneath window openings were secured by closer strips. Seams on overlapping panels of siding were bolstered with backer plates that were also used to keep panels adjacent to openings from cupping.

Vertical corner posts for outside and inside angles consisted of U-shaped channels for the ends of field panels and wide flanges for flashing. Another choice for outside corners was corner caps with a sawtooth silhouette in imitation of mitered wood.

Window and door openings were topped with head flashings and channel flashings were applied to the sides of openings for securing field panels and prevention of water damage. Waterproof joints between aluminum and contrasting building materials could be formed by the flashing as well.

A variety of accessory items effectively eliminated or concealed historic elements, flattening the remodeled building and altering the original architectural intent. Window and door trim could be covered with sheet metal pieces as could fascia boards, verge rafters and wooden louvers. If a problematic element such as a cornice or bracket needed to be sheathed coil stock could be custom formed at the job site.¹⁴⁰

ALUMINUM SIDING APPLICATION

Applicator tools required for the installation of aluminum siding were few. Aviation shears, tin snips or hand or power saws could be used to cut field panels down to size. A roofer's knife could also be used to score the material for snapping. The toolbox could include a caulking gun, hammer, chalk lines, squares, tape measure, cutting table and ladder. Portable sheet metal brakes were sometimes used to custom form coverings for architectural details.

Preparation for remodeling installation involved removal of original siding down to the sheathing, or the use of furring strips or underlayment materials. Hollow-backed siding for new construction was placed over sheathing and insulated siding was nailed to the studs. A horizontal datum for the first course was marked by a chalk line on the surface of the underlayment. A starter strip even with the datum was then attached to the

wall. Next, corner posts for the inside and outside, trim wrap and window channels were applied and the field panel courses were ready for installation.

The general direction of panel installation was usually from the bottom up though some siding was made to be installed from the top down. Nail slots were pre-cut into most siding but there were brands that needed to be affixed with aluminum clips for engagement of the locking joints. Thermal expansion and contraction needed to be considered so for that reason nails would not be hammered completely into the stud or sheathing. Once the courses of panels were placed on the wall any overlapping seams, corners and panels adjacent to openings would need to be bolstered by backer strips. Wooden molding or aluminum closer strips would secure the last panel in place and corner caps would be applied. Caulking of seams and gaps would follow and scratches could be concealed with touch-up paint.

ALUMINUM IN ARKANSAS

Though aluminum siding was invented for use as a new construction material, its greatest application was in the area of home improvement. World War II restrictions on building materials barely caused a ripple in some of Arkansas's more rural communities such as those in southwest Arkansas. The state was still heavily wooded during the 1940s and many small privately-owned sawmills could continue operations without the intervention of the government. These remote mills did not send their timber through established lumberyards so life as they had always known it continued and new houses were still constructed of lumber though large subdivisions composed of aluminum-clad homes were constructed in various states.¹⁴¹ Arkansas contributed to the American suburban expansion during the period from the late 1940s to the early 1950s; however, the majority of new homes built in the extending boundaries of Little Rock and North Little Rock continued to be constructed of frame or brick.

Braley Homes in Little Rock, North Little Rock and Park Hill still advertised new homes of Wolmanized and kiln-dried lumber in 1946.¹⁴² The 1951 Coolwood division in Little Rock was a small pocket of red-and buff-brick homes with some weatherboard siding in gable ends or on walls under the shelter of carports. A 1953 ad for Broadmoor in the southwest area of Little Rock offered new homes in brick veneer in a choice of 11

colors. As with Coolwood, some homes had small areas of wood siding on gable ends or porch and carport walls, but by the 1960s and 1970s most lumber in these developments had been concealed by the application of aluminum siding. The 1960s saw the movement toward new construction in Arkansas utilizing original siding of aluminum, but remodeling applications still comprised the bulk of aluminum siding jobs.

The 1950 Little Rock, North Little Rock and Suburban Areas Telephone Directory contains the earliest listing for aluminum siding sales at Hall & Company.¹⁴³ Little Rock contractor Laurence Schulte recalled that in the early 1950s he was approached by ALCOA to distribute their product in Arkansas. He stated that salesmen from the primary producers would travel to different states and sign contractors to be independent applicators. Schulte and North Little Rock businessman Earnest Floyd of Koolvent Aluminum Awning Company, who began selling aluminum about the same time, both recalled traveling across the state in the early 1950s installing aluminum as replacement siding. Schulte owned his own contracting business and Floyd owned a home products business that marketed aluminum awnings and gutterings since 1948. Both men said that most new business originally came from referrals or ads in city directories and telephone directories. During the 1960s and 1970s local advertising for aluminum siding was printed in television guides and during movie showings on television.¹⁴⁴

The real estate section of a 1951 issue of the *Arkansas Gazette* listed a three-year-old frame house for sale with “aluminum siding outside.”¹⁴⁵ That listing was only one out of hundreds that described homes of frame or brick in the early 1950s. The construction business was abridged significantly in 1950 as the Korean War began to have an effect on the distribution of aluminum siding. The 1951 *Arkansas Gazette* proclaimed that the civilian consumption of aluminum would be severely restricted and Koolvent placed an ad in the paper stating that ... “aluminum products will be curtailed until defense needs have been fulfilled.”¹⁴⁶ This probably contributed to the lengthy history of asbestos and asphalt siding in the state, as their popularity began to decline when aluminum again became available after the war in the mid-1950s. Entries in the Little Rock telephone directory for contractors who installed aluminum siding began to increase from one in 1950 to four in 1958.¹⁴⁷ The Aluminum of Arkansas Company seemed to sum up the

giddy status that remodeling materials soon reached in state culture when it proclaimed in the 1965 telephone directory that aluminum siding offered, “The thrill of a new home without the cost!”¹⁴⁸

ASA estimates placed the numbers for aluminum siding installation in the United States at three million homes by 1961, signaling the advent of the boom years for aluminum siding. According to local industry applicators the state consumption of aluminum closely followed the national predilection but it continued to be used mainly as remodeling material roughly into the 1980s. In the ten years between 1950 and 1960 annual U.S. sales leaped to around 130 million pounds from nineteen million pounds and in 1973 the industry enjoyed sales of 9,370,000 squares. Even with the introduction of vinyl siding in the early-1960s aluminum maintained its hold on the apex of the siding market until 1982 when vinyl asserted itself, taking the lead in sales. Laurence Schulte and Earnest Floyd recalled that vinyl siding was not popular at first due to its flimsiness but ALCOA took over production and it became more acceptable by the 1980s. Schulte stated that steel siding had its drawbacks in the 1970s as it had a baked-on vinyl finish that tended to come off easily.¹⁴⁹ Beginning in 1987 aluminum siding sales dropped precipitously and sales fell to 975,000 squares in 1996. The properties of colorfastness and dent and corrosion resistance gave vinyl the advantage over aluminum, replacing it as the top siding product in America and Arkansas.¹⁵⁰

PERMA-STONE

A lesser-known alternative siding material that enjoyed a modest wave of popularity in post-war Arkansas was a cementitious simulated stone product called Perma-Stone. Customers that applied this siding to their homes or businesses were looking for ease in updating their building or constructing a new home. They were also after the freedom from maintenance that such a material could offer. As with aluminum siding and its faux clapboard appearance Perma-Stone harked back to the days of early twentieth century concrete blocks and was applied as an alternative to cast stone. The material offered the permanence and stability conveyed by natural stone buildings and an attractive feature of Perma-Stone was that it could be produced on site, which made it a flexible material. This could account for the high degree of individuality in block shapes, sizes and coursing that can be seen on Perma-Stone buildings around the state.

HISTORY OF PERMA-STONE

The Perma-Stone Company in Columbus, Ohio, sold and marketed its simulated masonry product through licensed and trained dealers by 1929. The molds and ingredients for the siding (Portland cement, aggregate, crushed quartz, mineral colors and metallic hardeners) were provided by the company to dealers who produced the materials and installed them. The success of the company inspired the formation of several competitors using various manufacturing and installation techniques and materials. Most of the fledgling companies tried to target the new construction market with their advertising but simulated masonry was swept up in the remodeling movement and modernization was a large share of its area of application.¹⁵¹

MANUFACTURE AND INSTALLATION OF PERMA-STONE

Perma-Stone is a concrete material that forms a veneer on walls when attached to a wood or steel lath or directly to masonry surfaces. As with asbestos and aluminum siding a base for application of Perma-Stone is required on remodeling jobs. A metal or wood lath affixed to the wall would receive an initial coating of cement mortar called a “brown coat” in a layer 3/8” to 3/4” thick. This coat would be scored to serve as a surface

area for the next layer. Before the first layer dried the second coat or “scratch coat” of 1/4” to 3/8” thickness would be applied. While still wet the finish coat, also 1/4” to 3/8” thick was laid over the scratch coat using an aluminum pressure mold consisting of a shallow pan with handles on opposite sides. While the top two layers were still plastic waxed paper or other nonadhering material would be placed on the surface. The applicator would then pass an embossed cast aluminum roller over the waxed paper, leaving a crinkled imprint in the still-wet finish coat. Rollers in varying sizes and textures could be used.

After removal of the waxed paper the crinkled surface would be scored with guide lines for simulated mortar joints. A chasing tool with parallel cutting edges would be used to cut grooves for the mortar joints in the top layer, which could then be pointed with mortar or left unfinished.¹⁵² Perma-Stone could adapt to curved surfaces just as well as flat surfaces by direct application. The faux stones could be laid in random, broken, and coursed ashlar while the joints could be raked, beaded or pointed.¹⁵³ Tinting of the mixture with mortar dyes added a variety of colors to the surface veneer, as did a coating of colored powdered materials like mica, oxide pigments, stone dust, slate dust, mineral chips or artificial stone. The powder would lend a speckled surface that closely emulated natural stone and could be applied prior to the placement of the waxed paper on the surface or afterwards.

PERMA-STONE IN ARKANSAS

Though the process for Perma-Stone was patented in 1929 no evidence has surfaced for its use in Arkansas until the late 1940s. Bill Brown of Brown’s Garden Tractors in El Dorado, Arkansas, stated that his uncle Bob Brown owned a franchise for Perma-Stone and that Bill and his brother, Tom Brown, and father, L.R. Brown, helped Bob Brown with his business in 1949. Their previous experience had been in plastering and Mr. Brown said that the majority of their family’s business was in the new construction of commercial buildings.¹⁵⁴

The 1951 North Little Rock building permit records note one house as having been resided in Perma-Stone. The next mention of the materials was an ad in the *Arkansas Gazette* for the opening of a Little Rock Perma-Stone franchise in that same

year. Previously Ark-La-Tex Perma-Stone had been located on Central Avenue in Hot Springs.¹⁵⁵ Perma-Stone of Arkansas first appears in the classified listings of the Little Rock, North Little Rock and Suburban Areas Telephone Directory of 1953 and it is mentioned each year until 1974.¹⁵⁶

Perma-Stone buildings, residential and commercial, still stand in the state. Most examples are small, minimal-traditional style houses covered completely in Perma-Stone, some are Ranch homes with the veneer applied halfway up the exterior wall with stucco, frame or aluminum above. Commercial examples noted are small, one-story, rectangular buildings with plain storefronts of metal plate glass windows and plate glass doors. Though the application of this material appears to have occurred primarily on residences in Arkansas during the 1950s modernization wave and it seems to have been a more substantial material, it did not enjoy as great a popularity as aluminum siding. Little Rock contractor Laurence Schulte remembered that it was not popular for “esthetic” reasons. Another theory could be that it was advertised as a symbol of wealth and upper-class stability but stone was in such abundance in Arkansas that the average farmer could have a stone house just by clearing a field, though many chose not to because of the labor and time involved in constructing such a house. Sandstone was used copiously as foundation or chimney material on frame and log houses for decades in the state and those who lived through the hard times that required such construction probably did not agree that having such a home indicated upper-class surroundings.

The quest for alternative siding materials continues as technology allows, often to the detriment of historic buildings. Americans’ desire to fill their days with multiple activities and the quest to spend their disposable income on more than just maintenance fuels the modern market for economical labor-free construction materials. Arkansans have been typical of most of the country in their desire to obtain more free time and more material goods through the elimination of painting and home-repair. Outside and domestic impacts on the state’s economy have been the most obvious factors in the availability and the perceived need for such resources. Often delays were incurred by geographical and transportation barriers but Arkansas homes reflected the popular trends as soon as new siding options became available. In some cases concern for the rehabilitation of concealed or damaged historic elements has spurred the removal of

alternative siding materials, but the presence of such cladding has prevailed on a large scale throughout the state and the application of alternative siding materials continues in great numbers on existing and new homes.

ENDNOTES

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- ⁷⁸ *American Builder*, October 1937, 124-125.
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¹⁰⁴ *Ibid*, March 1972, 451.

¹⁰⁵ North Little Rock, Arkansas Building Permit Records, 1935, 1941, 1943-1944, 1947-1948, 1950-1952, 1954-1955.

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¹⁰⁷ *Camden News*, 29 September 1944, (Materials submitted to Arkansas Historic Preservation Program for National Register nomination of Lato Duplexes by John Wheeler, Camden, AR).

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¹⁰⁹ Mary Carolyn Rowe, “*N.A.D. Changes the Face of Camden; An Early History*,” *Ouachita Historical Quarterly*, 16, No. 2, December 1984, 23-40.

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¹¹⁵ *Ibid*, 245-246, 249-250

¹¹⁶ Goldstein, 32, 34-35.

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- ¹³¹ *Ibid*, 63, 64.
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- ¹³⁷ *Ibid*, 74-78, 82-83.
- ¹³⁸ The majority of information in this section may be found in Lauber’s thesis, “*And It Never Needs Painting.*”
- ¹³⁹ Majority of information found in Lauber’s thesis.
- ¹⁴⁰ Majority of information found in Lauber’s thesis.
- ¹⁴¹ Brantley, 13.
- ¹⁴² F. Hampton Roy, et al., 206.
- ¹⁴³ Little Rock, North Little Rock Directory, June 1950, 173.
- ¹⁴⁴ Interview with Laurence Schulte, Schulte Construction, Little Rock, 05 May 2001 and interview with Earnest Floyd, Koolvent Aluminum Awning Company, North Little Rock, 07 February 2001 by Holly Hope.
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