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OZARK ROCK MASONRY IN SPRINGFIELD, CA 1910-1955

by Debbie Sheals

Ozark rock masonry is arguable the most distinctive genre of 20th century vernacular architecture found in Missouri. In its use of local materials and simple forms, Ozark rock architecture compares to log construction of frontier times; the simple rock houses that dot the neighborhoods and countryside of the Ozarks can be seen as the "log cabins" of the 20th century.

The use of the term *rock*, as opposed to *stone*, in reference to this property type, is deliberate—Ozark rock masonry is characterized by the use of fieldstone, or rocks, rather than quarried and refined blocks of stone. The term *stone* is more often used in connection with rock that has been processed in some way, and often refers to rock that is the product of a quarry. *Dimension stone*, for example, is quarried stone that has been cut to specific dimensions.[1] In many cases, the rocks used for these buildings and structures came right out of the ground of the building site, or from streambed or hillside nearby. And, just as the rocks generally received no formal treatment or finish, neither did the design of the buildings and structures. Ozark rock architecture is almost exclusively the work of untrained masons. This combination of local materials and local handcraft has created a rich stockpile of buildings and structures that are unique to Springfield and the Ozarks.

As the largest metropolitan area and long-reigning "Queen City of the Ozarks," Springfield hosts a significant concentration of Ozark rock masonry.[2] The recent survey of Ozark rock masonry in Springfield documented hundreds of examples of this distinctive historic resource, and comparison of the Springfield survey data with that collected in other studies indicates that the Ozark rock masonry of Springfield is in many ways representative of Ozark rock masonry in general.[3]

The name *Ozarks* is based upon an abbreviation of the French works *aux-Arcs*, meaning "to Arkansas."[4] Although geographers differ on exact boundaries, most agree that the Ozarks region of the United States covers parts of four states: Missouri, Arkansas, Oklahoma and Kansas.[5] (Figure One.) Unifying physiographic features include hilly topography, older surface rocks than surrounding areas, and the presence of chert, an abundance of karst features (springs, caves, sinkholes) produced by groundwater action on bedrock, numerous streams, and relatively poor, rocky soils. Those rocky soils have been the bane of Ozarks farmers for generations. A 1914 soil survey of the Ozarks cited "the presence of steep slopes the susceptibility to erosion, and the frequent outcropping of surface rocks as detriments to large-scale agriculture."[6]

Figure One—Map of the Ozarks. From Ozark Vernacular Houses. (Fayetteville: The University of Arkansas Press , 1994) p. 8.

It is, in fact, difficult to find a description of the Ozarks that does not include the word *rock*; rocks are a character-defining feature of the Ozarks. Rocks in the Ozars are plentiful, and usually found close to the surface. As one Ozark resident wrote "The Ozarks, as everyone probably knows, are really full of rocks. They are not only the bones underneath, but an excess of them often lies on top."[7] A look at the underlying geology of the region helps explain how that "excess" came to populate the Ozark soil.

The bedrock beneath much of the Ozarks, and almost all of Green County (the county in which Springfield lies), consists of sedimentary rocks—sandstone, limestone and dolomite.[8] In Greene County, limestone and dolomite are the

most common, and in many places they occur in relatively pure deposits that have yielded large amounts of high quality dimension stone over the years. Burlington limestone, which is the most common, has been quarried in many parts of Missouri, including Greene County. One of the more prominent early limestone quarries in Green County is the Phenix [sic] Quarry, which opened in the late 19th century and supplied sawn and sometimes polished limestone for large construction projects in many parts of the United States.[9]

Although the swan blocks and slabs of stone produced by quarries were common components of formal, high style architecture, they are not usually found in Ozark rock masonry. Ozark rock masonry tends to utilize rocks that were found much closer to the surface, either loose in the soil, or as part of an exposed outcropping. These rocks are often weathered and typically have irregular shapes and rough surfaces.

Even the dirt in most parts of the Ozarks comes from the rocks. Soil surveys of Greene County and other parts of the Ozarks note that most of the soils in the region developed from the decomposed sedimentary rocks such as limestone and dolomites. A map of surface materials in Missouri shows that almost all of the Missouri Ozarks are covered with residuum from cherty limestone, dolomite and sandstone.[10] Chert is a very hard rock which is commonly found in nodules and thin layers between the beds of limestone and dolomite.[11] Chert is much more weather resistant to weathering than the other stones and tends to remain intact after the softer rocks break down. As one description of Ozark geology explained, "in areas where the limestone and dolomite have been dissolved and removed by weathering, the residual chert remains scattered over the surface."[12] That residual chert is the loose rock that has irritated Ozarks farmers for so long. One source observed that "it may well be true that the Missouri portion of the Ozarks contains more chert than any other comparable area in the United States."[13]

In a typical "if you can't beat 'em, join 'em" attitude, Ozark residents have for years put the same rocks that made life difficult for would-be Ozark farmers to use as a building material. In the 19th century, it was common for farmers to create fences from the hard chert and other surface rocks that clogged the fields. One description of the Ozark rocks noted "In the early days when building materials and money were in short supply, the resourceful Ozarkians turned to the readily available native rocks. Utilizing the rocks in the construction of fences served two functions. First, it rid the soil of the cumbersome rocks that made plowing a most difficult chore. Second, it set boundaries, and fenced in the livestock."[14]

Local rock was also used for Ozark buildings during the 19th century, although it was generally restricted to such things as foundations and chimneys, which were usually built of quarried stone that was at least roughly shaped into blocks. Fieldstone was rarely used for buildings, as the physical nature of those rocks made them hard to use. The most plentiful fieldstones in the region, chert, were also the hardest to utilize for traditional coursed masonry construction, which depends upon the load-bearing qualities of the stone used. The rough cherty rocks found loose in the Ozark soil were too tough to dress into even the roughest of blocks and generally too round to use for coursed rubble construction

It was not until the early years of the 20th century that fieldstone came into its own as a vernacular building material in the Ozarks. That change can be attributed at least in part to the increased availability of portland cement, a hard, fast-curing cement that became a common ingredient in structural concrete and masonry mortar around the turn of the 20th century. Portland cement, which was patented in Great Britain in 1824, was first manufactured in the United States in 1872, and it quickly became a major ingredient in masonry mortar.[15] Prior to the development of portland cement, masons used lime-based mortars, which cure more slowly and yield a softer end product. Portland mortars are up to twice as hard as lime-based mortars, and portland cement soon became a common ingredient in masonry mortars and structural concrete mixes. Sales of portland cement in the United States skyrocketed between 1890 and 1920, and by the early 1930s, pre-mixed, bagged masonry mortar was widely available.[16] The pre-mixed mortar, which featured a combination of portland and ground limestone, was inexpensive and easy to use, features which made it an invaluable component of vernacular masonry construction.

The use of concrete in a structural capacity increased greatly once portland cement came into widespread use. It became common practice to use poured concrete foundations for all types of architecture, and it was even possible to simply pour concrete walls, which would cure to become load-bearing components. That change in building technology can be seen as a major turning point in the development of Ozark rock masonry, because it made it easy for local builders to use native rock in an ornamental manner, without worrying about the structural qualities of a wall of round rocks or thin slabs of sandstone. Once builders were free of structural worries, rock became a relatively user-friendly surface treatment, much more accessible to the layman builder.

Field study of Ozark rock masonry in Springfield shows that poured concrete was an essential component in the construction of Ozark rock resources there, especially in those built before 1940. At least 100 of the 119 properties

which form the study group for the recent survey utilize poured concrete in one form or another. The use of poured concrete in the group ranges from the simple application of pre-formed elements such as window sills and wall caps, to more extensive structural use, in which poured concrete walls are faced with native rock.

The Springfield survey also showed that the Ozark rock resources in the city utilize two main types of native rock; fieldstone and split slab. As the names imply, fieldstone construction uses rocks more or less as they came out of the ground, while split slab construction features relatively large slabs of sandstone that were split along bedding planes to form smooth, even sheets of stone. In general, fieldstone buildings are older than split slab buildings; fieldstone became popular as a wall facing in the first decade of the 20th century, while split slabs were not widely used until the 1930s.[17]

One of the earliest and most distinctive variations of Ozark fieldstone masonry, which was most often referred to as cobblestone construction at the time, utilizes cherty, spherical, fist- to head-sized rocks as facing on the outer surface of walls.[18] The oldest examples of Ozark rock masonry in Springfield feature this type of fieldstone construction, which was most often referred to as "rubble" during the recent survey. (Figure Two) Dates for those properties range from ca. 1914 to around 1940. Rubble walls are characterized by highly textured surfaces and relatively small rocks. Joints are usually recessed. And, while it is not always possible to determine the structural system of a building via casual observation, the walls of most rubble buildings appear to have a poured concrete structural system.

Figure Two—A Craftsman Bungalow built ca. 1930 at 2551 West High Street, with rubble walls, and dark gray mortar. The rock here is laid to create a highly textured surface. Rubble Construction

Although Ozark rock masonry construction is firmly rooted in vernacular building traditions, it was also influenced by formal movements in architecture. Fieldstone construction in particular was often associated with the Craftsman movement in architecture, and some of the oldest houses in the study group reflect this architectural influence. The rustic quality and obvious connection to nature offered by native stone made it a natural choice for Craftsman builders. As one of the leaders of that movement, Gustav Stickley, explained, the ideals of the Craftsman movement were: "simplicity, durability, fitness for the life that was to be lived in the house, and harmony with its natural surroundings."[19] Stickley's book, *Craftsman Homes*, featured numerous plans and descriptions of modest houses. Stickley and other proponents of the Craftsman movement provided a good bridge between high style and vernacular architecture. His goal of supplying builders of even modest houses with well thought-out plans helped bring good design to everyday architecture, and the influence of the Craftsman movement in Springfield is quite evident in the properties of the survey group. Many of the oldest Ozark rock houses in Springfield are modest bungalows that appear to have been built from ready-made plans such as those published by Stickley; almost half of the study group, forty-six properties, were categorized as bungalows, the most common form of modest Craftsman house.

There are also Missouri precedents for the use of field stone for professionally designed buildings. At least one Missouri architect, Louis Miller, is known to have used fieldstone construction very early in the century.[20] Louis Miller, an Ozark native from the Arcadia valley, was a prolific architect and builder who worked throughout southern Missouri from the 1870s into the 1920s.[21] Accounts of Miller's work show that he was experimenting with fieldstone construction as early as 1903. A rhyme that was published with a photo of a Miller-designed bungalow built in St. Louis in 1903 indicates that the rocks on his buildings were surface-applied, like plums on a pudding:

> From the stone of Sheperd Mountain
> Cobblestones that down it thunder
> Louis Miller hopes to build him
> Something that shall make men wonder
> Like a pudding with the plumbs stuck
> Everyone upon the skin side
> So the cobblestones will cover
> All of Miller's dwellings outside.[22]

Miller designed several buildings and structures of native stone throughout the first decades of the new century, and his work surely had a hand in popularizing the use of fieldstone for modest residential construction. One description of Miller's work noted that a bungalow resort he designed in 1913 featured "little three-room bungalows" built of "porphyry cobblestone of an iron color, with brick corners

and a concrete belt course at the floor line," and also noted that he liked to use rock urns to ornament the porches of his dwellings.[23] The Springfield study group includes one rock urn, and several of the houses there have concrete string courses and/or brick edging. Miller's choice of fieldstone construction for even modest construction projects helped set the stage for the popularization of native rock construction in the Missouri Ozarks. It was, after all, a natural fit; the rustic charm of native rock combined nicely with the fact that rock was readily available and in most cases free for the picking and easy to work with.

By the time of the Great Depression, fieldstone construction had become firmly rooted in the Ozark vernacular building tradition, and one could find native rock on everything from urban park buildings to rural milk-houses. Ozark rock construction was well-established in Springfield by then as well: just over a third of the buildings in the core Springfield survey group appear to have been built before 1930. Ozark rock resources in Springfield can be divided into five basic categories: Residential, Civic/Public, Structures, Commercial, and Religious

Residential resources are by far the most common, and most of those are relatively small houses. Of the 119 properties in the survey group, 100 are residential, and all except three of those are single family houses.[24] The older houses in the group often exhibit some Craftsman styling, and many appear to have been built from the type of general plan published by Gustav Stickley and others. Many house lots also have secondary rock buildings such as garages and other structures (as distinct from buildings) such as retaining walls. The Mercer House, which was built at 1449 E. Blaine Street in 1919, for example, is an early fieldstone bungalow with a matching boundary wall along the front of the lot. (Figure Three)

Figure Three—Merl and Inez Mercer House

Ozark rock was also popular for civic and public building projects, most notably in Springfield city parks. Seven different park properties, each containing multiple resources, are included in the survey group; construction dates range from the 1910s into the late 1930s. The rustic nature and inherent durability of native rock construction made it a popular choice for parks. The largest building in the study group is the large fieldstone bathhouse that was built in 1927 in Fassnight Park, on South Campbell Avenue, and it remains in use today. Other rock structures in parks include retaining walls, bridges and barbeque grills. Outside parks, rock structures identified during the survey include a number of rock boundary walls and gateposts in residential neighborhoods. The largest set of gateposts in the survey area is located at Grand and Kickapoo Streets; they are topped with dressed stone accents and contain smooth stone name plates for "Sanford Place." Other structures of note include boundary fences and gateposts that run along several adjacent properties.

Rock commercial properties in Springfield are relatively modest one- and two-story tall retail buildings. The two-story commercial buildings have residential or office space on the second floors. Ozark rock was popular for roadside architecture, especially tourist courts, and several properties along the historic paths of Route 66 in the city contain Ozark rock buildings. The Rock Fountain Court Historic District, on College Avenue, listed in the National Register in 2003, contains nine separate rock tourist cabins, each of which features a slightly different type of rock masonry. (Figure Four)

Figure Four— Rock Fountain Court

A few highly intact rock churches also survive in the city. The survey group includes four relatively large churches, with construction dates ranging from 1932 into the 1950s. A study in another part of the Ozarks noted that rock was favored for church construction because it was generally inexpensive and could in many cases be built by members of the congregation. A rock church built in Mountain Grove in the 1950s, for example, was faced with rocks that church members took turns prying out of the ground with crowbars.[25] Local farmers were happy to get the stones off their land, and the church was provided with a durable, low-cost construction material.

The ready availability of rock as a building material played a major role in its continued popularity. An article published in *Missouri Magazine* in 1934 noted that "no other building material can be secured simply for the taking, picking it up and hauling it in from the field or the woods."[26] The builders of many of the Ozark rock buildings in Springfield apparently did just that. Many of the fieldstone houses in the survey group appear to be constructed of rocks taken directly from their site, and at least one is known to have been built from rocks cleared out of a nearby field. The Wills Grocery Store, at what is now 840 S. Kentwood, is said to have been constructed of rock taken from the nearby Calhoun farm.[27]

Another feature of Ozark rock construction that ensured it became part of the local building tradition was that its method was easy to learn. As one article noted in 1932, "laying of the rock is not a highly skilled operation and can be done by anyone with very little experience."[28] Several houses in the survey group were built by novices for their own use, and at least two are still occupied by the original families. Clyde Skidmore built a sandstone slab house for himself and his bride on High Street in 1941, and Mrs. Skidmore still lives there today. Skidmore, an upholsterer by trade, had never built a house or done any masonry before starting the project, and he never built another after that. It may be that his experience with upholstery helped as he pieced together random slabs of sandstone for the walls of his home; the rock work on the house is of a high quality, with tidy beaded joints and smooth, cleanly split slabs. Skidmore got the slabs from a creek bed near Fair Grove and split them as he went along.[29] (Figure Five)

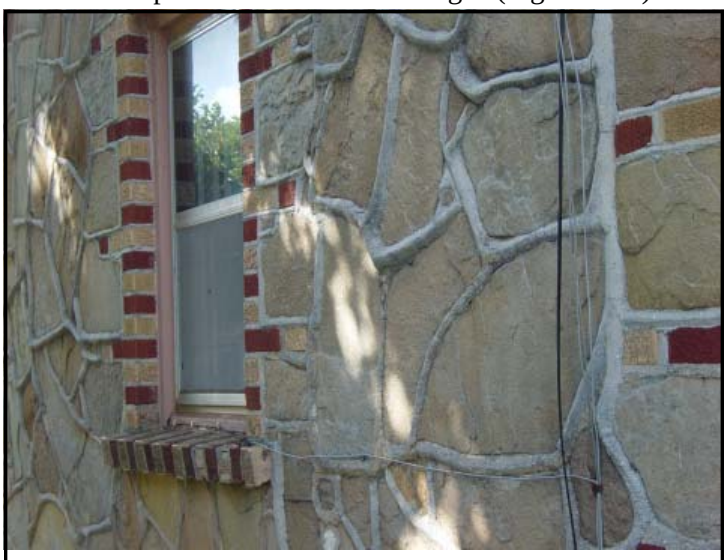

Figure Five—Skidmore house—split slab construction

George Quinn, who built his house on Willards Road in 1949, learned how to do the masonry from a local minister, James Melton. The thick pieces of sandstone he used came from a creek bed close to his property, and Quinn did nearly all of the work on the house himself.[30] The Quinn house features 8-inch thick masonry walls, backed by oak sheathing and studs. Quinn laid up the walls by setting the rock out from the frame inner walls, and filling the cavity with concrete as he worked. He used the handle of a trowel as a measuring stick to keep the masonry walls an even thickness and installed metal ties to reinforce the structure He added several new rooms to the house in 1965 and also constructed a matching rock garage behind the house, using the same type of rock throughout. (Figure Six)

Figure Six—Quinn House—Fieldstone Construction

It was also possible to learn the basics of working with rock from written sources or even workshops. The University of Missouri Extension Service held workshops during the 1920s and 1930s to promote what they called cobblestone construction and to show interested parties how to construct fieldstone buildings. From a 1932 article in *Missouri Magazine*: "Next to the low cost of such homes, perhaps the most attractive feature is the ease of construction, says R. W. Oberlin of the Missouri Agricultural Extension service, who has been instrumental in introducing the cobblestone type of construction on Missouri farms."[31] That same article mentioned several workshops, and described the construction methods taught at those events.

Instructions for building in the medium were published in several sources. A long article in *Missouri Magazine* in 1934 laid out detailed instructions on how to create a rock building, including everything from the size of the footings to the proportions of sand and cement that should go into the mortar mix.[32] The same article noted that the magazine would supply an illustrated booklet on the construction process to interested parties upon request. A book on varied building methods for farm buildings that was published in 1936 included similar instructions, including drawings of wall construction and formulas for estimating the materials that would be needed for a project.[33]

Construction professionals took advantage of the growing

popularity of rock construction. As noted in *Missouri Magazine* in the 1930s, "in practically every community experts in rock work have been developed who are capable of doing excellent work."[34] In several communities, including Springfield, there were local builders and masons who specialized in rock construction. Although it is often difficult to definitively link masons with specific projects, especially those of the modest scale that typifies Ozark rock, a few masons were singled out.

The career of one prolific Springfield "rock man," John Solomon Owen, was documented in *Springfield* magazine in the late 1990s. A three-part series written by his granddaughter, Marilyn K. Smith, identifies several buildings on which Owen and his sons did the masonry work.[35] Smith started researching John Owen's work after learning from her mother (Owen's daughter) that he had done the distinctive rock work for the Ben Diemer house on the north edge of Springfield, at 3528 N. National Ave. That house features a combination of darker reddish fieldstone and pale limestone, with the limestone used to accent the edges of windows and other openings. The limestone is also used for ornamental arches and sunbursts within the body of the walls. Smith also identified Owen as the probable mason of several other houses in Springfield, as well as the large L. J. Kent Boiler and Sheet Metal Co. Building (now Tindle Feed and Supply) at 700 East Central Street. (Figure Seven)

Figure Seven—Detail of Rockwork from the L. J. Kent Boiler and Sheet Iron Works, 700 E. Central Street, Springfield

Smith was not able to establish definitively that Owen was the mason on most of the buildings she mentioned, and based these attributions on similarity in technique. The masonry on several of the buildings Smith attributed to Owen features starburst shapes and the same distinctive combination of rough dark fieldstone with pale limestone accents found on the Diemer House. That same combination is also found on a number of other houses recorded during the survey project, with some variation in application details. A church just a few blocks from the Kent building, at 934 E. Webster, has rock work that is very similar to that found on the Kent building. The ornamental details found in the rock of the church and the boiler works are nearly identical and surely the work of the same mason. What is not clear is if that mason was Owen. The style of rockwork on those two buildings differs somewhat from that of the Deimer house, leaving some question as to their connection with Owen.

The differences could represent different stages in the development of Owen's personal style or simply be the work of a different mason or masons. A number of houses in the Springfield study group that were constructed in the 1920s and 30s feature a combination of dark fieldstone and pale limestone similar to that attributed to Owen, with the major difference being that the limestone is sawn and has a very smooth face, which provides for even more contrast with the rough dark fieldstone walls. The limestone pieces used on those houses often have one or more straight edges, and they appear to be quarry scraps, broken from larger slabs of stone. It is likely they originated at the Phoenix (sic) Quarry, a quarry northwest of Springfield that supplied polished slabs of sawn limestone for high-style building projects all over the country.[36]

The largest and most elaborate example of that particular masonry style can be found on a house at 2715 W. High Street. (Figure Eight) That large rock bungalow has the date "1921" carved into a limestone keystone located in the wall above the front steps. Rough-edged slabs of sawn limestone accent porch posts, and door and window edges, and rectangular slabs of sawn limestone form lintels over many of the windows and doors. At least five other houses in the survey group, all of which appear to have been built in the 1920s or 30s, utilize that same ma-

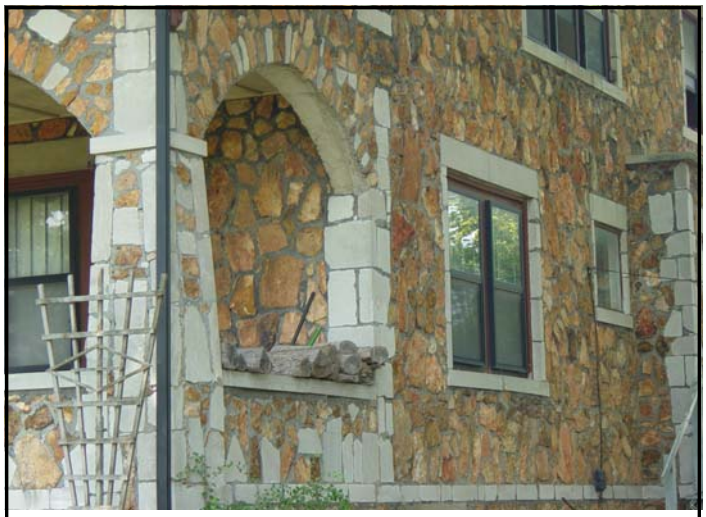

Figure Eight—2715 W. High Street

sonry technique in one form or another.

One of the houses featuring the sawn limestone and fieldstone combination is located at 1355 S. Clay, on a lot facing Phelps Grove Park, which also contains many good examples of Ozark rock construction. (Figure Nine) Rock structures in the park include bridges, walls along a stream bed and around a memorial garden, and several barbecue grills. The park also contains a large, nicely crafted rock shelter house. Phelps Grove Park is one of several publicly owned properties that benefited from federal New Deal programs during the Great Depression.

Figure Nine—Hawkins House, 1355 S. Clay—sawn stone edging

WPA (Works Progress Administration) and NYA (National Youth Association) workers did rock work in several Springfield city parks during the 1930s. One of the rock walls lining a stream at Phelps Gove Park bears the letters "WPA", stamped into the concrete edging, and another section of the same wall has "Apr 25, 1936" scratched by hand into the mortar. In other parks, stone tablets on buildings and even barbecue grills bear the letters "NYA".

Other Springfield parks containing rock structures of note include Silver Springs Park, which has an amphitheater and numerous retaining walls of rock, and the aforementioned Fassnight Park, which has one of the largest collections of rock bridges and other structures in the survey group. Although most of the Springfield park structures are of simple fieldstone construction, at least one of the bridges in Fassnight Park utilizes the more formal sawn limestone and fieldstone combination found elsewhere in the survey group

Some of the workers on the New Deal projects learned how to work with native rock as part of their Depression-era employment. An article published in the *Springfield Leader and Press* noted that "Most of Ed Elkins' 43 WPA workmen were made into stone workers and builders right on the job, although some of them were good to begin with—just had hard luck and were out of a job."[37] John Solomon Owen and his sons worked for the WPA at Phelps Grove Park, and workers from that program have been credited with building some of the rock houses near Phelps Grove Park after the depression.[38] It is likely that several of the rock houses in the survey group, including the house on Clay Street by Phelps Grove Park, were built by one or more former WPA employees.

WPA foreman Ed Elkins no doubt played an important role in the masonry work done by his crew of WPA workers; he was an experienced mason himself. Elkins built one of the oldest rock houses in the survey group; a large bungalow at 1335 E. Meadowmere Street. That house, which differs from most of the survey projects in that it uses only light gray limestone, became a local historic landmark in 1991. A plaque inside the house reads "This Craftsman style bungalow was built by H. Edwin Elkins in 1914 for his bride Velma. . . Mr. Elkins was an architect and bridge designer for the Frisco railroad. He also helped build other historic sites, including the Public Library, Lincoln High School, Shrine Mosque and the gymnasium at Central High School."[39] The current owners have heard that Velma did not like living so far from what was then the center of town, and that Mr. and Mrs. Elkins lived in the house only a short time. Springfield city directories show that they lived in various houses through the 1920s and 30s, and that Ed Elkins worked as a brick mason and a foreman for the WPA during the 1930s.

As the 20th century progressed, local builders began using native rock in a new way. By the late 1930s, builders started using large thin slabs of sandstone instead of the smaller, thicker fieldstone that had been popular. The slabs had much larger surfaces than fieldstone, often measuring more than 18 inches across. Slab construction often featured mortar joints that were accented with beaded profiles and/or painted to provide a stronger contrast to the tawny faces of the newly split-sandstone slabs. The use of random shapes was retained and even became more prominent. This particular type of rock work is sometimes called "giraffe rock," after its similarity to the markings on a giraffe's skin. That similarity is most striking when dark brown or black joints are combined with golden or tan slabs or rock. (Figure Ten)

Split slab construction may have become popular because it was easier to use, or simply as a new twist on an established favorite. It may also have been that, prior to the development of a good highway system, it was harder to acquire the right type of sandstone in Springfield. The type of sandstone used for split slabs occurs less often in

the Springfield area than do the weathered chert and other fieldstones that were in use before, and builders probably had to get that rock from elsewhere. At least one quarry in nearby Wright County is known to have shipped native sandstone to Springfield in the 1940s and 1950s.[40] Not all of the split slab rock was brought in from out of the county though; as mentioned above, Mr. Skidmore harvested the rock for his split slab house from the Fair Grove area, which is just a few miles northeast of Springfield.

Figure Ten—Split Slab Construction

The slabs, which were formed by splitting large pieces of natural sandstone to form thin plates of rock, were much lighter and thinner than the rough fieldstone that had been in use. That change made it possible to use a lighter structural system, and in many cases, the split slabs were applied as a surface treatment over frame walls. One description of the Wells Motel in Cabool, for example, noted, "Its construction is typical of vernacular Ozarks roadside buildings: inexpensive local limestone and sandstone "glued" with mortar to a backing, usually a light wooden frame."[41] A review of Sanborn Fire Insurance Company maps of Springfield shows that most of the rock buildings studied in Springfield that were built after the mid-1930s have rock veneer over frame structural systems.[42] Load-bearing concrete construction did not disappear, however. Some slab rock buildings have the same type of poured concrete wall used in fieldstone construction, and fieldstone and concrete construction continued to be used on buildings and structures in Springfield well into the 1950s.[43]

The ease with which slab rock could be added to a frame structure also made it popular for remodeling projects. Several of the properties in the survey group are frame buildings which received new coatings of slab rock many years after they were first constructed. The Church of Christ, at 801 S. Broadway Avenue is a good example of that trend. The 1933 Sanborn map shows it as an all-frame building, while the 1956 Sanborn shows that by then it had received its current rock sheathing, along with a large rear addition. A large house at 825 N. Grant Ave. has a similar history. It was built in the early 1900s, and received new rock veneer between 1950 and 1956. City directories show that it was home to the Estes family from 1922 into the 1950s, and that by the time the rock facing was added, Mrs. Estes was living there alone. It is likely that she chose the new rock facing for her house to cut down on maintenance costs.

The Estes house is one of many survey properties with a combination of materials; in addition to slab rock on the body of the walls, the house has red and tan brick accents, along with glass blocks and even rock-faced concrete blocks. Slab construction seemed to invite such combinations; it is much more common to see slab rock combined with other masonry materials than fieldstone, which was generally teamed only with light limestone, or used alone. That could be a function of the veneer construction methods, which would make it easier to add elements such as brick edging, the most popular addition. Many of the slab rock buildings in the Springfield study group have brick added to building corners and/or door and window openings. Red and tan bricks are often used together to further enliven compositions

The masonry work of the Estes house is very similar to that found on the cabins of the Rock Fountain Motor Court (ca. 1947) and the El Rancho Motel (ca. 1948), both of which have been attributed to rock mason Ed Waddell.[44] Waddell is named as the "rock man" for those projects by Quinta Scott, in *Along Route 66*, a history of roadside architecture associated with that famous highway. She claimed that in "Springfield the use of Ozark sandstone reached a crescendo" and that the development of a distinctive type of rock motel architecture "was due to the talents of rock man Ed Waddell," who worked with developer "Mac" MacCandless during the 1940s.[45] The Estes house and the motels all feature a combination of slab rock and two-tone brickwork, and the cabins of the El Rancho have the same type of glass block used on the Estes house. The similarities in the rock work of the three properties invites speculation that Waddell worked on the Estes house as well.

Another feature of both slab and fieldstone construction that bears mention is the use of special shapes, often with whimsical effect. One of the most notable examples of the trend in Springfield can be found on the house at 2331 N. Kellet Ave, which features a large camel, a near perfect circle, and a large arrowhead, among other shapes. The most common type of figure

or shape found in Springfield is a starburst or flower shape, with the rays or petals formed by thin chips of rock laid sideways around a rounded rock or even brick-bat center. A couple of the survey properties also have plant-like figures that are formed from thin strips of smooth limestone. The use of special shapes was common in many parts of the Ozarks; the 1947 Weymouth house, in Cole Camp, Missouri, for example features stars and a near-lifesize man on its front wall, and flower shapes can be found on rock walls in many Ozark towns.[46] One family of masons, the Greens, in Thayer, Missouri, even used a flower pattern in a gable end as their "trademark."[47] (Figure Eleven)

Figure Eleven — Ozark Rock Camel

Ozark rock continued to be a favored construction method into the 1940s and 1950s. Its popularity during the war years was bolstered by the fact that the rock was readily available, at a time when the war had created a nationwide shortage of building materials. And, although all-rock houses became much less common as the century progressed and labor costs made them more expensive, Ozark rock never completely disappeared from the building scene. Houses and businesses are still being built today with at least accents of native rock, and the towns and countryside of the Ozarks region are still host to hundreds of sturdy rock buildings constructed in the first half of the 20th century. Those resources are an enduring and significant link to one of the most distinctive genres of vernacular architecture found in Missouri.

[1]E. M Winkler, Stone in Architecture: Properties, Durability, (Berlin, etc.: Springer-Verlag, 1994), p. 301.

[2]The moniker "Queen City of the Ozarks" crops up in reference to Springfield in numerous historical sources, including *Crossroads at the Spring*, (Shanna Boyle and Julie March, eds., Virginia Beach, VA: Donning Co. Publishers, 1997), p. 25. The authors noted that Springfield had the title by the 1880s.

[3]See, for example, Linda Becker and Cydney Millstein, "Ozark Native Rock Masonry Survey," 1992, and Bonnie Stepenoff, "Ozark Rock Masonry Architecture Survey: Phase Two," 1993. (Both typescripts are on file with the State Historic Preservation Office, Jefferson City, MO.)

[4]Milton Rafferty, *Historical Atlas of Missouri* (Norman: University of Oklahoma Press, 1981), p. 10.

[5]Jean Sizemore, *Ozark Vernacular Houses* (Fayetteville: The University of Arkansas Press, 1994), p. 8

[6]Cited in Sizemore, p. 8.

[7]David M. May, "Blessings in Disguise: Ozarks Rocks." *The Ozarks Mountaineer*, 33 (June, 1985), p. 61.

[8]A notable exception within the Missouri Ozarks is the St. Francois Mountains area, which features much older metamorphic bedrock.

[9]Jonathan Fairbanks and Clyde Edwin Tuck, *Past and Present of Greene County, Missouri* (Indianapolis: A. W. Bowen and Company, 1915), p. 91, and Laura Wilson, "Phenix: A Town That is No More," (Typescript on file with the Springfield Public Library, July 30, 1979.)

[10]A. G. Unklesbay and Jerry D. Vineyard, *Missouri Geology* (Columbia, MO: University of Missouri Press, 1992), p. 22.

[11]William D. Thornbury, *Regional Geomorphology of the United States* (New York, London, Sydney: John Wiley and Sons, Inc., 1965), pp. 268-269.

[12]Unklesbay and Vineyard, p. 29.

[13]Thornbury, p. 263.

[14]May, p. 61.

[15]John P. Speweik, *The History of Masonry Mortar in America: 1720-1995* (Arlington, VA: National Lime Association, 1995).

[16]Speweik, p. 6, and Robert C., Mack, and John P. Speweick, "Preservation Brief #2: Repointing Mortar Joints in Historic Masonry Buildings" (National Park Service, Washington , D. C., 1998), p. 2.

[17]Section F of the National Register nomination, "Historic and Architectural Resources of Springfield, Missouri," as amendment in 2005 by the author, contains a more complete discussion of the different types of Ozark rock masonry in Springfield.

[18]Although many local sources of the day used the term "cobblestone" to describe this type of construction, the modern, and more widely accepted, definition of "cobblestone" refers to much smoother, water-rounded stones.

[19]Gustav Stickley, *Craftsman Homes* (New York: Craftsman Publishing Company, 1909, Reprint Dover Publications, 1979.), p. 9.

[20]Stickley, pp. 102-108, and Lynn Morrow, "Louis Miller: Master Craftsman and Folk Artisan of Southeast Missouri," *Gateway Heritage*, summer 1983, pp. 26-37.

[21]Lawrence O. Christensen., et al., *Dictionary of Missouri Biography* (Columbia and London: University of Missouri Press, 1999), pp. 547-548.

[22]*St. Louis Post-Dispatch*, May 28, 1903, cited by Morrow, p. 37.

[23]Morrow, p. 35.

[24]All 244 of the properties in the survey area that were identified but not recorded in detail were also residential.

[25]Stepenoff, p. 19.

[26]C. R. Meeker, "Cobblestone Cottages in Missouri," *Missouri Magazine*, December 1934, p. 13.

[27]That highly intact building has been the home of Missouri Rug Cleaning since 1941. A long-time employee of the store passed along the story of the builders harvesting rocks from the nearby farm.

[28]L. R. Grinstead, "Glorifying the Lowly Cobblestone," *Missouri Magazine*, January, 1932, p. 22.

[29]Mrs. Skidmore, interview with Debbie Sheals, September, 2004.

[30]Mr. Quinn, interview with Debbie Sheals, September, 2004.

[31]Grinstead, p. 32.

[32]Meeker, P. 13.

[33]J. C. Wooley, *Farm Buildings* (Columbia, Missouri: Co-Operative Store, 1936), pp. 103-106.

[34]Meeker, p. 13.

[35]Marilyn K. Smith, "Legacy of a Rock Man: John Solomon Owen, Parts I-III," *Springfield!*, October-November, 1999.

[36]Laura Wilson, "Phenix: A Town That is No More" (Typescript on file with the Springfield Public Libarary, dated July 30, 1979), no page numbers.

[37]The newspaper article was quoted without a date in Smith, "Legacy, Part II," p. 26. It was probably published in the mid-1930s. Springfield City Directories show that Elkins was working as a foreman for the WPA in 1937.

[38]Smith, "Legacy, Part II," p. 26.

[39]Text from the plaque was provided by the current property owner, Dixie Simpson.

[40]Stepenoff, p. 52.

[41]Robert Flanders, "Stone Craft Architecture of the Southern Missouri Ozarks," *Ozarks Watch*, Fall 1991, p. 39.

[42]Sanborn Fire Insurance Maps of Springfield, 1933, 1948, and 1956.

[43]David Quick, and Lynn Morrow documented the use of poured concrete for slab buildings in "The Slab Rock Dwellings of Thayer, Missouri," *P.A.S.T.*, (Volume 13, 1990, 35-43), and the Springfield survey group included buildings with poured concrete construction that dated as late as the 1950s.

[44]Quinta Scott, *Along Route 66* (Norman: University of Oklahoma Press, 2000), pp. 90-91.

[45]Scott, p. 90.

[46]The Weymouth house was recorded by Debbie Sheals during an architectural and historical survey of Cole Camp, Missouri, in 1998.

[47]Becker and Millstein, p. 32.

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