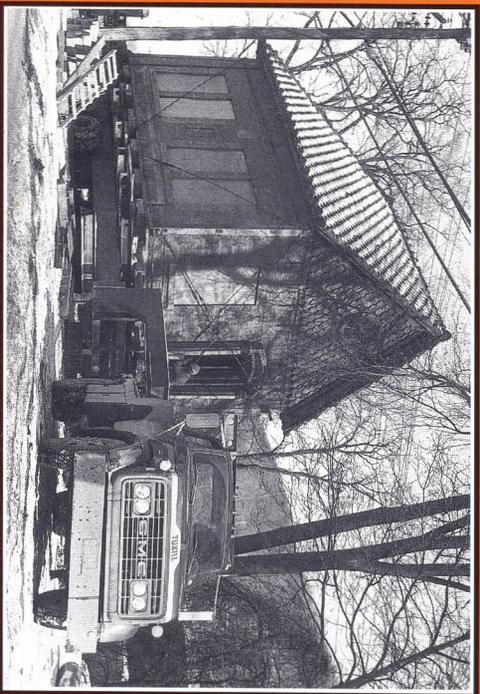


*The Roofs of Alfred*  
provides historical  
background on Alfred,  
New York's terra-cotta  
roof tile industry, an  
illustrated walking tour  
of downtown Alfred  
and information on  
roof tile manufacturing  
and installation.



# TILE ROOFS OF ALFRED

*A Clay  
Tradition in  
Alfred,  
New York*



The Friends of  
Terra Cotta Press

**Front cover:**  
Contemporary  
view of the  
Celadon Terra  
Cotta Company  
office building,  
which was built  
in 1892 and  
moved to its  
present location  
on Main Street in  
1974.

**Frontispiece:**  
Office in its  
original location  
on Main Street.  
A replica of the  
building was  
exhibited at the  
1893 Chicago  
World's Fair.

*Tile Roofs of Alfred*  
was created in a  
collaborative effort  
by Susan Tunick,  
Sandra Scofield  
and Terry Palmiter.

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# TILE ROOFS OF ALFRED

*A Clay Tradition in  
Alfred, New York*



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Terra Cotta Press

# Preserving a Tile Tradition

At first glance, the town of Alfred resembles other rural settlements located in the Southern Tier of New York State. It is tucked into a secluded section of the Allegheny foothills, offers beautiful hillside vistas and includes traditional village centers like many nearby towns. But a second look at Alfred reveals a community different from its neighbors—for it is filled with terra-cotta tile roofs.

In all, more than one hundred structures bear these distinctive orange-red roofs. One strikingly detailed structure located near the traffic light on Main Street, the Terra Cotta Building (front cover), is constructed entirely of ornamented clay blocks and tiles. The many tile roofs, as well as this

libraries, campus buildings and even the few nearly extinct barns (Figure 3) carried the rich patterns of the red tile.

Alfred was settled primarily by Seventh Day Baptists from Rhode Island who understood the value of education and founded Alfred University. They were early and strong believers in the equality of men and women of all races. Although there is little visual evidence of the importance of these pioneers, they left an indelible imprint of their integrity on the townspeople, many of whom were involved in the tile industry.

Alfred residents have long cherished their historic connections to the clay industry and have worked unceasingly to protect the physical

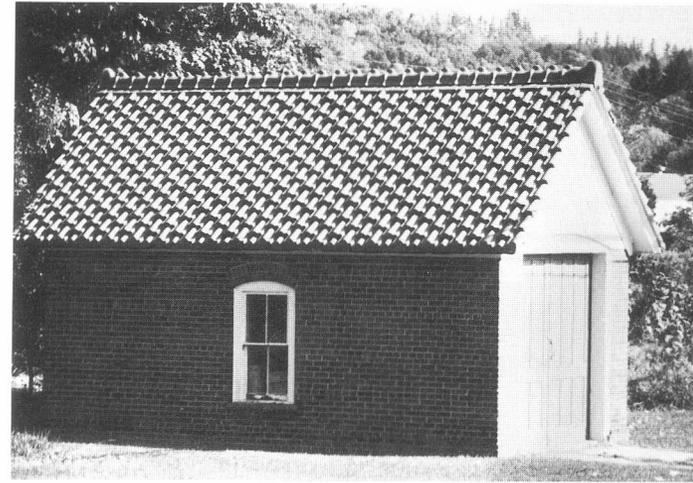


**Figure 1.** The unusual roof on this house at 160 North Main Street combines two types of shingle tile. One is shaped like a cross and the other like a diamond.

remarkable little building, are powerful reminders of the terra-cotta tile industry that thrived in Alfred from 1889 to 1909.

These durable and fire resistant tiles were especially popular for roofing in the Alfred region, where village residents and farmers from outlying areas transported “factory seconds” to cover their buildings. An amazing variety of residential and commercial structures were roofed or re-roofed with tile. Early nineteenth-century houses (Figures 1, 5, 8), churches, outbuildings (Figure 2),

evidence of this aspect of the past. In 1985, with the community's support, four individual landmarks and the sizable Alfred Village Historic District were listed on the National Register of Historic Places. More recently, residents of the town have been involved in an ongoing Roof Tile Project, which includes a series of activities organized by the Friends of Terra Cotta, the Alfred Historical Society and the Baker's Bridge Association, supported by a grant from The J. M. Kaplan Fund.



**Figure 2.** This small garage on the northern end of Main Street has a handsome Conosera tile roof.

Although tiles can last for centuries, the life span of a terra-cotta tile roof is estimated to be one hundred years. The loss of historic tile roofs occurs for a number of reasons, including poor maintenance, deterioration of the asphalt roofing felt laid underneath the tiles, structural weakness resulting from improper calculation of the weight of the tiles and the lack of a preservation ethic. Many existing roofs in Alfred are coming to the end of their projected life spans, and it is essential that their maintenance and preservation be carefully considered. Because of the expense involved in proper restoration, many townspeople have become concerned

about the future of this important legacy. As part of the Roof Tile Project, all existing roofs have been documented with photographs, conditions reports and written histories.

In today's world, where architectural conformity is the rule rather than the exception, it is hoped that Alfred will be able to retain its terra-cotta architectural heritage for future generations to enjoy.

**Figure 3.** This carriage barn, at 105 North Main Street, was built about 1919 and is covered with Conosera tile.



# History of a Tile Tradition

The discovery of rich Devonian shale along creek banks in Alfred during the late 1880s marked the beginning of ceramic manufacturing in the region. Two companies were soon transforming the high-quality raw materials into a variety of clay products.

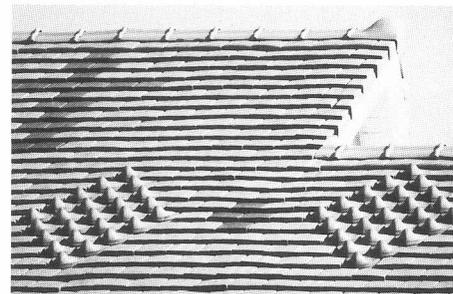
The **Alfred Clay Company** was located near the railroad tracks, east of what is now Alfred Station (Figure 4). It produced a famous “dry pressed” brick and a series of utilitarian roofing tile designs. The company’s most popular design was the Regal roofing tile, and its 1903 catalog states that “Regal tile has been laid on fine residences, school buildings, court-houses, railroad depots, power-houses, manufacturing plants etc....[It is] the most economical and desirable roofing material known.”<sup>1</sup>

The **Celadon Terra Cotta Company**, founded circa 1889, was located in the middle of the village of Alfred on flat land near Canacadea Creek. Among the first officers of the company

were pillars of the community and scions of old Alfred families: D. S. Burdick, William D. Clarke and J.J. Merrill. According to the 1898 *Alfred Sun*, Merrill was the first to realize that local clay could be used to produce decorative items. He and Frank Vogan set up a small plant that relied on a horse to provide the power to mix the clay. They manufactured vases, urns and chimney pots. Merrill was later instrumental in establishing the renowned New York State School of Clayworking at Alfred University.

The Celadon Terra Cotta Company’s name originated from the clay it first used, which turned a beautiful sea green during firing when coated with salt (as described in Charles Fergus Binns’ 1904 article in *The Clay Worker*). This pale green was reminiscent of the classic Chinese ceramic wares known as celadons.

During a visit to Alfred, George Babcock became interested in the

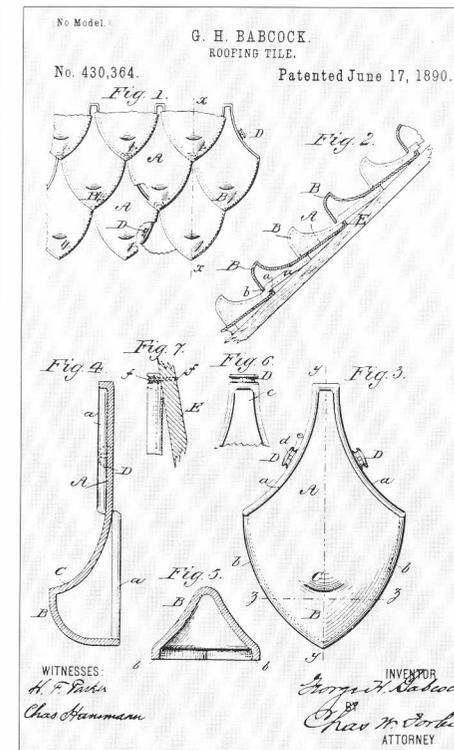


**Figure 5.** This house at 105 North Main Street was built about 1890. It is one of the most striking roofs in Alfred and combines two shapes of tile known as French and shingle.

Celadon Terra Cotta Company. He invested in it and was elected president in 1890. An industrialist and patentee of the Babcock and Wilcox boiler, Babcock began studying roofing tile in countries around the world and subsequently designed and patented more than thirty tile shapes for the company’s use (Figure 6). One of his most important design patents was for interlocking tiles, which made the roofs more weatherproof and reduced their weight.

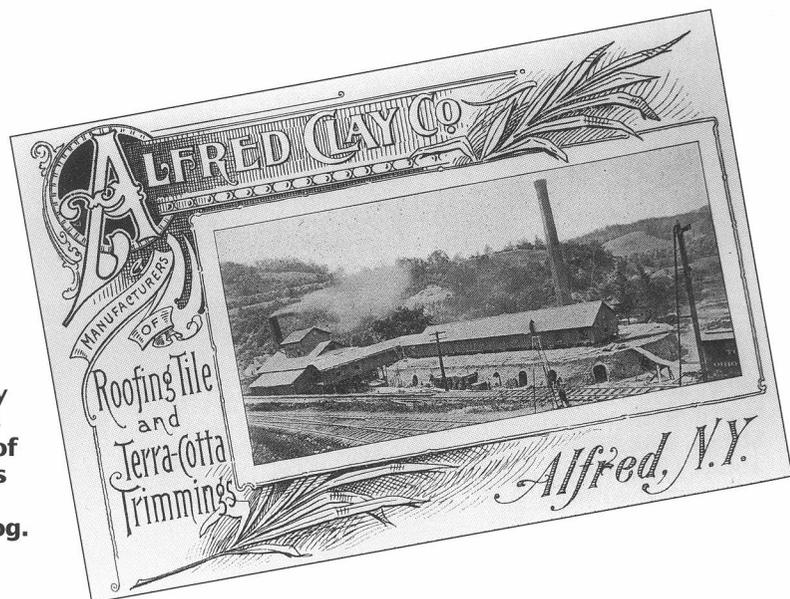
Babcock also invented hand and power presses with which, according to the *Sun*, “the company was able to produce the best roofing tile ever seen in the country and at great reduction in cost.”<sup>2</sup> Some of the specialized equipment used by the company and other plants across the United States was manufactured in the village of Alfred at the Rogers Machine Shop, which operated from 1892 until 1972.

Celadon tile was a luxury product made for use on institutional buildings and private estates. The *Sun* relates that “the class of buildings on which the tiles have been used are the best to be found in the country.”<sup>3</sup> In 1895 Celadon had offices in New York and Chicago and sales representatives in cities from



**Figure 6.** Patent drawing for the unusual roof tile used as an accent on 105 North Main Street.

Boston to Minneapolis. The demand for clay roofing tiles greatly increased with the development of Romanesque Revival architecture in the 1890s. Examples of the firm’s many important contracts include twenty-six buildings for the Army and Navy Hospital in Washington, D.C.; four buildings for the League Island Navy Yard in Philadelphia; the residence of James Bailey of the Barnum and Bailey Shows in Mount Vernon, New York; and the Finch Building in Scranton, Pennsylvania (Figures 11 and 12).



**Figure 4.** This image of the Alfred Clay Company plant appears on the cover of the company’s turn-of-the-century catalog.

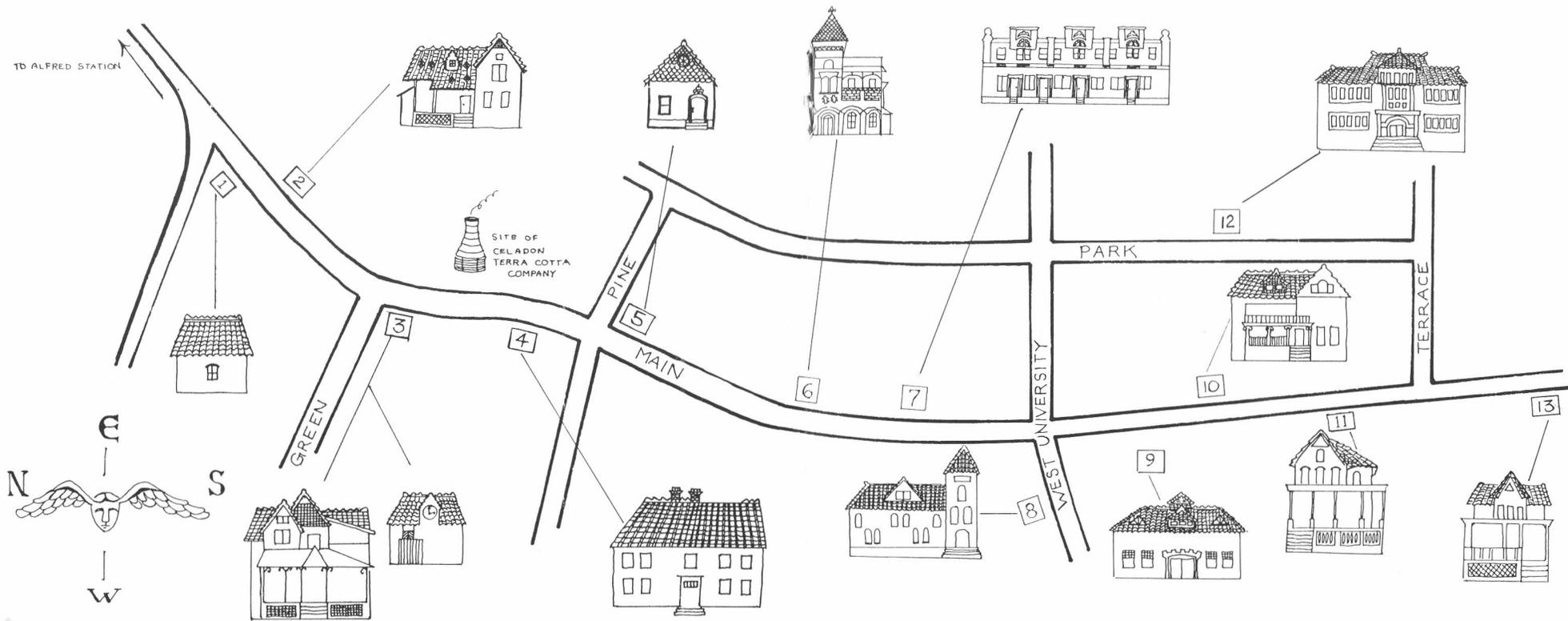
# Village of Alfred Terra Cotta Walking Tour

This walking tour begins at the northern end of Main Street in

Alfred. Participants should walk south, viewing the following buildings

on both sides of the street. There are short detours off Main Street at

West University and Terrace Streets.



**1 Small Garage.** Local legend relates that this garage was built by one of Alfred's first automobile owners, who constructed it specifically to protect his car while courting a woman who lived nearby. The roof is Conosera tile (Figure 2). Note the sculpture made from a tree trunk lurking nearby.

**2 160 North Main Street.** This roof combines two types of shingle tile. One, cross-shaped, covers most of the roof, and the other,

diamond-shaped, creates several large diamond patterns overall (Figure 1).

**3 105 North Main Street.** Two very interesting roofs are found here. The house's roof, built around 1890, combines shingle and French tile. Note both the raised curved tiles, reminiscent of rhinoceros horns, that create large diamond patterns, and the dark brown tiles that create geometric shapes. The carriage barn, built about 1919, has Conosera roof tile. On close inspection, three

letters and two numbers inset in dark brown roof tile are visible on both sides of the clock. They may refer to the tile setter's name and the date of construction (Figures 3, 5).

**4 81 North Main Street.** This structure was built around 1818 as a tavern and residence. The tile roofs were added by its owner in the early 1900s, who was one of the founders of the Celadon Terra Cotta Company. Regal tile was used on the house and Roman tile on the barn.

**5 Terra Cotta Building.** This richly ornamented structure was built in 1892 as the office building of the Celadon Terra Cotta Company. In 1974 it was moved to this site from Alfred University property. The building's facades, featuring the Celadon company's finely crafted products, served as showcases for the company. The roof tiles were changed many times over the years, to test newly developed tile designs. Currently the roof is covered with Conosera tile (Figure 7, covers, Frontispiece).

**6 44 North Main Street.** Built in 1830 as a commercial structure, this building was extensively remodeled in 1880. The tower roof has Conosera tile with an ornamental finial (Figure 8).

**7 Greene Block, 8 West University Street.** Dating from about 1889, this structure was originally a commercial building with a triple storefront and apartments upstairs. It currently houses administrative offices of Alfred University. The terra-cotta decorative plaques

have been partially restored.

**8 Parish House, 8 West University Street.** Built in 1906, this structure was originally used by the Women's Society of the Alfred Seventh Day Baptist Church. The roof is covered with Roman tile.

**9 Crandall Barn, 8 South Main Street (rear).** Constructed in 1905, this brick building served as a carriage barn for the 1885 Crandall house. The building housed the School for American

Craftsmen from 1946 to 1950. Now owned by Alfred University, the building has been vacant for some time. Roman tiles are used on the roof, one of the largest and most impressive in the area.

**10 17 South Main Street.** This house was built in 1850 and extensively remodeled in 1900. The roof is covered with Conosera tile.

**11 26 South Main Street.** Dr. Darwin E. Maxson built this house around 1880. In 1905 it became th

home of Dr. Boothe C. Davis, president of Alfred University. The roof is covered with Regal tile.

**12 South Hall, Park Street.** This building served as the Alfred Village grade and high school from 1908 to 1940. The very popular Conosera tile can be seen on this roof.

**13 58 South Main Street.** Built in 1884, this structure served as the parsonage for the village's Seventh Day Baptist Church. Conosera tile was also chosen for this roof.



**Figure 7, left.** A wagon load of roof tile packed in straw passing the Celadon Terra Cotta Company office building.

**Figure 8, right.** The Conosera tile roof and ornamental finial were added to this 1830s commercial structure at 44 North Main Street in the late 1880s.



## A Tile Tradition: Manufacture and Installation

Devonian shale, quarried along the banks of the local highway in Alfred Station, was the primary raw material used in the manufacture of the roof tiles. The shale was blasted, dug out by hand and transported to the tile plant in horse drawn wagons. Then it was pulverized in large crushing machines and placed in a pug mill, where it was mixed with water to form a homogeneous mass of clay. This clay was extruded into a wide strip and cut into a series of crude slabs called "blanks," which were then put into tile pressing machines and formed into varied sizes and shapes of roof tile. Once formed, the raw tiles were placed on carts, put through a drying tunnel and loaded into the kiln. The firings reached a temperature of about one thousand degrees Fahrenheit and produced tiles of excellent color and strength (Figure 10).

In 1904 the Celadon plant operated eight presses, five run by power and three operated by hand for small units. The principal power presses were of the pentagonal revolving type. They were so efficient that they increased the daily tile production tenfold. Ornamental tiles

were molded by hand, or the tile press was altered to produce an embossed design. Complex units like hip rolls, finials, crestings and other ornamental pieces were pressed by hand into plaster molds. The surface next to the plaster was then smoothed by hand so that it would match the machine-made surface of the plain tile. Occasionally, one-of-a-kind pieces were sculpted by hand without using a mold (Figure 11).

Very little is known about the actual conditions in the factories, but records indicate that at one time as many as one hundred men and boys worked at the Celadon plant. A local resident, George Place, writing of his experience as a tile plant worker, recalled that "Sometimes the kiln was still hot when the boys were sent into the kiln to begin wheeling out the burned tile. Sometimes the Canacadea Creek overflowed its banks and the water came up into the plant. In that case, if any of the number one tile became coated with mud, boys with wash tubs and brush brooms had to wash heaps of tile with water and the brooms."<sup>4</sup>

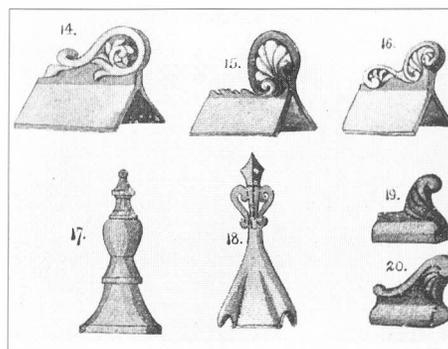
There are two classifications of clay roofing tiles—interlocking and overlapping. Interlocking tiles are designed in pairs so that the edge of one hooks over the other, thereby securing neighboring tiles together; they are usually nailed to the roof structure. Overlapping tiles do not have any sort of unusual edge, and each one must be nailed into place.

The Celadon Terra Cotta Company was known for the care it took in making sure the tiles fit together perfectly. Tile roofs were often custom-made for a specific building. Architects would submit roof plans that called for a particular style of tile. Once the architect's drawings were received, the manufacturing began. Charles Binns reported that the plan for "every hip and valley is laid out in full on the floor. Every cut tile is marked and a plaster form made to the exact angle required, and to this the tile themselves are shaped while green, and marked each for its own place."<sup>5</sup>

Specifications for some tile roofs have been located, but the actual installation instructions have not been

found, perhaps because plant employees often traveled to the building site with the roofing to be sure that it was installed properly. After firing, the roof tiles were packed in straw and loaded onto wagons, hauled to the Alfred Station depot and shipped by rail to sites all over the country (Figure 7).

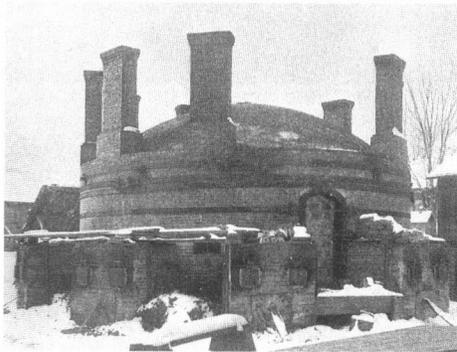
Tiles were best laid on steep roof slopes because they shed water more quickly; shallow roof slopes allow water to back up and ice to form. Roof sheathing was first covered with an asphalt-saturated felt paper of between 45 and 65 pounds depending upon the style of tile. Over this, the tiles were then attached with special 2½-inch metal alloy galvanized 8-penny nails. Each nail was hammered so the head remained ¼ inch above the tile, thereby allowing for expansion and contraction of each tile within the roof system. Copper sheets weighing 14 ounces per square foot were specified for chimney and valley flashing. Rain gutters and downspouts were often made of the same material. After all tiles were in position, mortar was used to seal



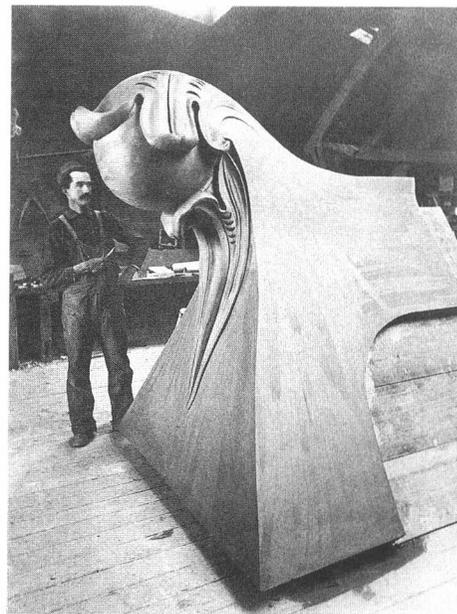
**Figure 9.** This page from a vintage Celadon Terra Cotta Company catalog shows several of the many finials that were stock items readily available from the company.

the ridge and hip tiles, protecting them from harsh weather conditions and from birds in search of nesting places (Figure 9).<sup>6</sup>

The Celadon Terra Cotta Company's factory stood on what is now the rear parking lot of McLane Physical Education Center of Alfred University. The terra-cotta office building, dating from 1892, was on Main Street in front of the plant (frontispiece). It measured 27 feet by 40 feet in plan; inside was one large room with a fireplace and a small vestibule. It



**Figure 10, left.** The kiln for burning roofing tile at the Celadon Terra Cotta Company, from Heinrich Ries's *The Clays of New York*, published in 1900.



**Figure 11, below.** Modeler William Kenyon, of the Celadon Terra Cotta Company, working on an enormous ornamental roof tile for the Finch Building in Scranton, Pennsylvania.

changed its name to Ludowici. In 1893 the Ludowicis arrived in America, bringing with them years of experience in tile manufacturing.

Just three years after the Ludowicis purchased the company, a disastrous fire brought an end to tile production in Alfred. On August 26, 1909 all of the wooden buildings at the plant burned to the ground. The terra-cotta office, made of fired clay, survived unharmed. It is a sad irony that fire should have caused the demise of the company, since the

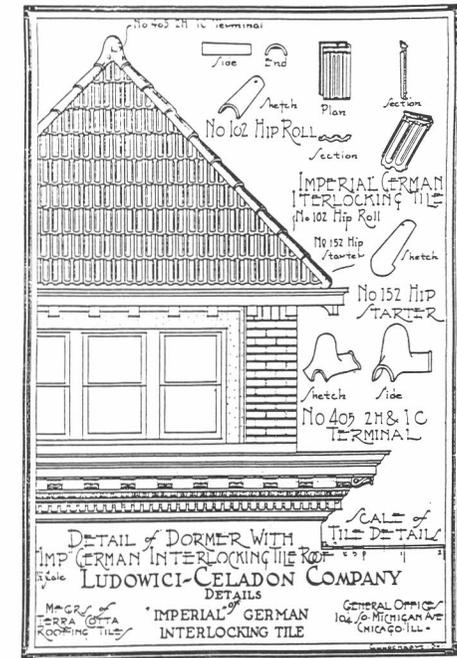
fireproof quality of tile roofs was one of the most important reasons for their popularity. Following this calamity, the Ludowici-Celadon Company moved to another area rich in clay deposits, New Lexington, Ohio, where it continues to produce outstanding tiles today.

The factory site was eventually sold to Alfred University, and in 1969 plans were developed for the construction of a new physical education building. In 1970 the Alfred Historical Society purchased the terra-cotta office building, which was

**Figure 12, below.** The Finch Building, 424 Wyoming Avenue, Scranton, built in 1898 by architect W. Scott Collins, still proudly displays Kenyon's ornamental roof.



**Figure 13, right.** This page from an early Ludowici-Celadon Company catalog shows details of Imperial German Interlocking Tile, one of the company's popular designs.



subsequently moved and stored until 1974, when a new site was found (back cover). After the building was relocated, it was donated to the New York State College of Ceramics. Over the years this beautiful little structure has been used for many purposes—a jewelry store, meeting house, traffic court, rod and gun club and telegraph office. Today it stands as a symbol of a once thriving clay industry and, fittingly, is used by historical societies for exhibitions that frequently include artifacts from the two companies.

In 1898 the *Alfred Sun* reported that because of the terra-cotta industry "Alfred has blossomed like the rose, and its people have lived in a degree of comfort which would have been impossible without the substantial benefits that the Terra Cotta interests have brought." Nearly one hundred years later Alfred still appreciates the benefits of this heritage. 🍷

#### Notes

1. "Regal Roofing Tile," *Alfred Clay Company Catalog*, c.1903.
2. "The Celadon Terra Cotta Company," *Alfred Sun*, April 6, 1898.
3. Ibid.
4. "Remembering Alfred's Roofing Industry," *Alfred Sun*, July 6, 1992.
5. Professor C. F. Binns, "How Roofing Tiles Are Made," *The Clay Worker* 41 (1904): 44-46.
6. *Preservation Brief 30* (1993) offers excellent detailed information on this subject and features eight photos of tile roofs in Alfred.

#### Illustrations

- Alfred Historical Society: Figures 4, 6, 7, 9, 13, back cover.  
Jay Barclay: Figure 8.  
William H. Bassett (collection of Mrs. Virginia Bassett): Figure 11.  
Brian Oglesbee: Front cover.  
Heinrich Ries, *Clays of New York* (Albany: University of the State of New York, 1900): Frontispiece, Figure 10.  
Susan Tunick: Figures 1, 2, 3, 5.  
Paul Tunick: Figure 12.

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**Back Cover:** This 1970 view shows the terracotta office building in-transit from its original site, currently Alfred University's McLane Physical Education Center, to a storage location. It was moved again in 1974 to its present location on Main Street.