

## Sources of Clay Roofing Tiles for Historic Buildings

Clay roofing tiles were used at least as early as the mid-17th century in America. Archeological research has revealed that pan tiles, or S-curved tiles, and flat tiles were used in Jamestown, Virginia. Clay tile roofs were common in large urban areas such as New York and Boston in the late-17th century, and throughout the 18th century because of their fireproof qualities. Initially imported by European settlers, often as ship ballast, the colonists soon established their own production of a variety of clay roofing tiles here in the New World. By the mid-17th century, Dutch settlers in the Hudson Valley were manufacturing clay roofing tiles for their own use, as well as transporting them down the river to New York. A century later Moravian settlers in Pennsylvania were also making their own clay roofing tiles that resembled the clay tiles of their German homeland. Spanish missionaries brought with them their tradition of clay tile roofs when they settled on the West Coast and established the string of missions that are the buildings in America still most commonly associated with clay tile roofs. Clay tiles of varying shapes and design continued to be a predominant roofing material in America until about 1820 when their popularity began to be eclipsed by the increasing use of metal roofing materials which were not only

fireproof, but available at a fraction of the cost and weight of clay tiles. Although the Italianate Villa styles of the 1850s were successful in reviving America's interest in clay roofing tiles for a brief period, it was the introduction in the late-19th century, and the early-20th century, of the many romantic revival styles of architecture, most notably the Romanesque, Mission, Spanish and Mediterranean revival styles, that was really responsible for repopularizing clay tile roofs in the United States. It is the historic clay tile roofs of buildings from this period that are most likely to be candidates for repair and replacement, and it is primarily for the owners and managers of these turn-of-the-century buildings that this list has been prepared.

The companies listed here manufacture or supply new clay roofing tiles that can be used in historic preservation and rehabilitation projects. In addition, some of the companies supply custom-made tiles, and others offer a large and varied stock of salvaged clay tiles. The entry for each company lists the different "field" tile shapes available from that company, or a selection of the most popular or historically appropriate of the company's "field" tiles. General specifications given include size and weight, number of colors available, and approximate cost per square, whenever possible. Since prices are subject to change, it is best to contact the manufacturer or supplier directly for a list of current prices, or to discuss custom orders. The companies listed here also supply all the specially-shaped tile pieces, such as gable, hip, and ridge fittings, end bands, eave closures, and hip and terminal starters, to name just a few, that are necessary to

accommodate the wide variety of roof shapes and sizes, as well as special hangers when required. It should be noted that not all of the tiles supplied by these companies may be suitable for repair or replacement of historic tile roofs. Some of the tile shapes, and many of the colors, particularly those that are very bright or shiny, are completely contemporary in design, and some, such as those manufactured in Japan, are Oriental in design, and are not appropriate for use on most historic tile roofs in the U.S. (A more complete listing of available sources for traditional roofing materials that includes not only clay tiles, but also slate, metal, concrete and composition tiles and slates, may be found in *Traditional Building*, Vol. 2, No. 6, November-December 1989.)

This list was compiled by Paul K. Williams, graduate student in the historic preservation program at Cornell University, during his internship with the Preservation Assistance Division (PAD) during the summer of 1990. It was compiled as part of a research effort directed toward development of a Preservation Brief on the subject of the Preservation and Repair of Historic Clay Tile Roofs that will be published by the Preservation Assistance Division. Anne Grimmer, architectural historian with PAD, will continue to work on preparation of the Brief. She welcomes any information on the subject concerning historical treatments, or repair and replacement techniques that have been used successfully on historic clay tile roofs. Please contact her at FTS 202-343-9567.

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## An Experiment in Archeological Site Stabilization

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The original intent was to transplant marsh grass in the area enclosed by the artificial rake. The rate of natural revegetation adjacent to the experiment suggested that it might be best to let nature take its own course. Furthermore, an appropriate growth medium (sand and silt) to support the revegetation had yet to form. If the projected accumulation of fill material occurs as predicted and vegetation does not result, a transplanting effort will then be undertaken.

## Final Protection Step and Monitoring

Cumberland Island has a sizable population of wild pigs and horses that forage and graze along newly established marsh grass communities. To protect the rake and revegetation experiment from predation, strips of GEOWEB were installed on paths leading down to the

rake. This material opens into squares and acts similar to a cattle guard; neither pigs nor horses will cross it.

The rake will be inspected on a regular basis to insure that mechanical failure does not occur. Stakes rising three feet above the original ground surface inside the enclosure will be used to chronicle the rate of sand/silt accumulation and the hoped for natural invasion of marsh vegetation.

For additional information, contact John Ehrenhard at the National Park Service Southeast Regional Office, 75 Spring Street, SW, Atlanta, GA 30303. Future articles about this project will report on results and costs associated with this experiment.

John Ehrenhard is chief, Interagency Archeological Services Division, Southeast Regional Office, National Park Service.

Dr. Robert Thorne is Director of the National Clearinghouse for Archeological Sites Stabilization and Director for the Center of Archeological Research. He is also professor of anthropology at the University of Mississippi.

NPS has a cooperative agreement with the University of Mississippi to be involved with site stabilization in the U.S.

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**Boston Valley Terra Cotta**  
6860 South Abbott Road  
Hamburg, NY 14075  
TEL: 716-649-7490

**Specialties:**

Boston Valley Terra Cotta specializes in custom-made architectural terra cotta and roof tile for restoration projects and contemporary installations. In addition to architectural ornament pieces, the company also reproduces or custom-makes clay roof tile. Highly skilled ceramic technicians, engineers, and artists oversee personalized production. Shop drawings and field surveys lead to matching mold configurations with custom or matching colorization. Hand finishing and application of glazes or paint complete the four-week cycle. 30,000 sq. ft. factory with 8 kilns.

Reproduction of clay roofing tile by submission of two samples of tile, showing color, surface finish, and gloss of the surface glaze. (12" x 12" each, with anchoring system) Contact company for current pricing and capabilities.

**DETAILS**

P.O. Box 309  
Mill Valley, CA 94942  
TEL: 415-568-5590

**Specialties:**

Details specializes in architectural salvage of unusual clay tile pieces. A number of warehouses across the Nation hold a wide variety of salvaged clay tiles. Write for information on prices, and availability of specific types, sizes, shapes, colors, and manufacturers.

**Gladding, McBean & Co.**

P.O. Box 97  
Lincoln, CA 95648  
TEL: 916-645-3341  
FAX: 916-645-1723

**Specialties:**

Gladding, McBean & Co. has been a manufacturer of clay roofing tile since 1875. The six most popular tiles are listed below, as the company produces a wide variety of tiles in different shapes, sizes, textures, and colors, as well as custom orders. A variety of colors are available, in addition to natural terra cotta, including glazes and custom matching, and a variegated blend. In-house staff design assistance.

**Specifics:**

Tile Shape	Name	Actual Size	Depth	Weight Per Piece	Weight Per Square	# Tiles Per Square	Colors	Price Per Square
	Cordova	18" Long 8" Wide	1"	5.25 lbs.	1,060 lbs.	190	2	\$155.00
	Lincoln S	20" Long 13 1/4" Wide	1"	6 lbs.	900 lbs.	75	2	\$153.00
	Lincoln Interlocking	14" Long 9" Wide	1 1/4"	7 lbs.	900 lbs.	145	2	\$161.00

**Gladding, McBean & Co.**

Tile Shape	Name	Actual Size	Depth	Weight Per Piece	Weight Per Square	# Tiles Per Square	Colors	Price Per Square
	Berkeley* (Berkeley)	18" Long 11" Wide	5/8"	7 lbs.	1,400 lbs.	187	2	\$231.00
	Italian* (Cordova)	18" Long 14 1/2" Wide	5/8"	5 lbs.	1,080 lbs.	142	2	\$198.00
	Lincoln Glazed Shingle	15" Long 10 3/4" Wide	1"	8 lbs.	850 lbs.	114	10	\$390.00

\*NOTE: Prices effective April, 1989 and do not include trim & ridge pieces. Custom colors available in all tile.

\*Roof composed of two different tile types; tile in parenthesis is the cover tile.

**International Roofing Products, Inc.**

4929 Wilshire Blvd, Suite 750  
Los Angeles, CA 90010  
TEL 213-937-1635  
FAX 213-931-2352

**Specialties:**

International Roofing Products specializes in producing new clay tile in a wide variety of glazed and unglazed colors. Complete evaluations from submitted plans are available, and guaranteed price estimates are possible with submitted blueprints. In-house personnel are available for any needed renderings. Decorative ridge tiles are offered in a wide variety of styles. Delivery in 8 to 10 weeks after order placement. 50-year guarantee. Actual or 1/4 size samples are available by request.

**Specifics:**

Tile Shape	Name	Actual Size	Depth	Weight Per Piece	Weight Per Square	# Tiles Per Square	Colors	Price Per Square
	F Flat	13 3/4" Long 13 1/2" Wide	1"	9 lbs.	850 lbs.	108	13	\$465.48
	FL Flat	18 1/8" Long 10 1/2" Wide	5/8"	7 lbs.	700 lbs.	100	7	\$400.35
	FN French	13 3/4" Long 13 1/2" Wide	1"	9 lbs.	850 lbs.	108	8	\$426.60
	S Spanish	12 1/4" Long 12 1/4" Wide	1"	7.38 lbs.	960 lbs.	130	26	\$440.70
	J Oriental	12" Long 12" Wide	1"	6.04 lbs.	870 lbs.	144	26	\$331.20
	CH Chinese "S"	12 1/4" Long 12 1/4" Wide	1"	7.43 lbs.	1,100 lbs.	148	6	\$605.32

\*NOTE: Price reflects stock tile with east coast delivery as of May 1, 1990. Trim & ridge tiles are additional. A "square" is a roofing section with dimensions of 10' x 10'.

Ludowici-Celadon, Inc.  
P.O. Box 69  
New Lexington, OH 43764  
TEL: 614-342-1995  
FAX: 614-342-5175

**Specialties:**

The Ludowici name has been associated with clay tile manufacturing for over 400 years. In addition to the six selected tile types listed below, the company offers nine stock tile styles and has capabilities to reproduce virtually any existing tile. Tiles can be produced in a wide variety of colors, textures, shapes, and sizes. Glazes and color and texture variation available. Technical consultation offered; 50-year guarantee.

**Specifics:**

Tile Shape	Name	Actual Size	Depth	Weight Per Piece	Weight Per Square	# Tiles Per Square	Colors	Price Per Square
	Classic	14" Long 9" Wide	1"	4.5 lbs.	800 lbs.	158	4	\$450.00
	Williamsburg	14" Long 9" Wide	1"	4.5 lbs.	800 lbs.	158	3	\$340.00
	Norman	15" Long 7" Wide	1"	5.3 lbs.	1,600 lbs.	317	3	\$1,120.00
	Spanish	13 1/4" Long 9 3/4" Wide	1"	5.2 lbs.	900 lbs.	171	4	\$270.00
	French	16 1/4" Long 9" Wide	1"	8 lbs.	935 lbs.	133	3	\$1,065.00
	Barrel Mission	14 1/4" Long 11 1/2" Wide 18" Long 11 1/2" Wide	1"	5 lbs.	1,250 lbs.	225	1	\$495.00 \$545.00

\*NOTE: Prices are effective as of April 1, 1990 and do not include trim & ridge tile. Custom color and textures additional.

**Maruhachi Ceramics of America, Inc. (M.C.A.)**

1985 Sampson Ave.  
Corona, CA 91719  
TEL: 714-736-9590  
FAX: 714-736-6052

**Specialties:**

M.C.A. has been involved in the production of clay tile for over 80 years. Complete computerization of production lines results in high quality tile in a wide variety of glazed and flashed colors, including blended variations. Written installation specs included. Samples available; 50-year guarantee.

**Specifics:**

Tile Shape	Name	Actual Size	Depth	Weight Per Piece	Weight Per Square	# Tiles Per Square	Colors	Price Per Square
	"S" Mission	19" Long 14" Wide	5/8"	10.5 lbs.	788 lbs.	75	42	N/A
	Barrel Mission	19" Long 10" Wide	5/8"	7.5 lbs.	1,005 lbs.	134	29	N/A

**Maruhachi Ceramics of America, Inc. (M.C.A.)**

Tile Shape	Name	Actual Size	Depth	Weight Per Piece	Weight Per Square	# Tiles Per Square	Colors	Price Per Square
	Oriental	11 7/8" Long 11 3/4" Wide	1/2"	6 lbs.	864 lbs.	144	10	N/A
	American Flat	15 3/4" Long 10 3/16" Wide	3/4"	6.98 lbs.	768 lbs.	110	10	N/A
	"S" Mission Glazed	19" Long 14" Wide	5/8"	10.5 lbs.	788 lbs.	75	14	N/A

\*NOTE: Contact company for current prices. All tile available in 14 different stock glazed colors. Raised ridge caps and decorative pieces needed for the completion of the Oriental style.

**Raleigh, Inc.**

6506 Business U.S. Route 20  
P.O. Box 448  
Belvidere, IL 61008-0448  
TEL: 815-544-4141  
FAX: 815-544-4866

**Specialties:**

Raleigh is a highly diverse company that has a large inventory of new and salvaged clay tiles available to ship in large quantities. Stock includes Ludowici tiles as well as discontinued styles from the late-19th century, and many unusual styles and patterns. In addition, Raleigh also specializes in the installation of roofing tile for historic preservation projects all over the country, ranging from total replacement to smaller repairs. Call or write for information on availability of specific tile types, and prices.

**Supradur Manufacturing Corp.**

P.O. Box 908  
Rye, NY 10580  
TEL: 800-223-1948  
NY: 914-967-8230

**Specialties:**

Supradur Manufacturing Corporation is a company primarily associated with the production of mineral fiber roofing shingles, replicating the look of wood and slate. This company imports from France the following clay tile in a small variety of "antiqued" colors. Technical materials available. Limited warranty. Contact company for current pricing and special color orders.

**Specifics:**

Tile Shape	Name	Actual Size	Depth	Weight Per Piece	Weight Per Square	# Tiles Per Square	Colors	Price Per Square
	Tegusol	18 1/8" Long 11 1/4" Wide	.44"	8.3 lbs.	766 lbs.	92	6	N/A

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### United States Tile Company

P.O. Box 1509  
909 West Railroad Street  
Corona, CA 91718  
TEL: 714-737-0200  
FAX: 714-272-3594

### Specialties:

The United States Tile Company produces the following three types of tile in a variety of colors and blends. United States Tile Company tiles are sold only to roofing contractors.

### Specifics:

Tile Shape	Name	Actual Size	Depth	Weight Per Piece	Weight Per Square	# Tiles Per Square	Colors	Price Per Square
	Mission	18" Long 7"-8 1/2" Wide	1/2"	N/A	1000 lbs.	168	5	N/A
	"S" Spanish	18" Long 13" Wide	1/2"	N/A	900 lbs.	88	5	N/A
	Flat	18" Long 13" Wide	1/2"	N/A	1030 lbs.	107	2	N/A

## Reviews

**Ethics And Public History: An Anthology.** Karamanski, Theodore J., editor. Robert E. Krieger Publishing Company, Malabar, Florida: 1990; 184 pp. Reviewed by Alan S. Newell, President, Historical Research Associates, Inc., Missoula, MT.

Public historians have been preoccupied with the ethical dimensions of their work for the past decade. The issue first surfaced in *The Public Historian* in 1979 and has reappeared periodically since that time. The Organization of American Historians sponsored a panel on ethics at its 1984 conference in Los Angeles. The National Council on Public History (NCPH), the professional organization for public historians, sponsored a debate on historical ethics at its Phoenix conference in 1985. These discussions coincided with the Council's adoption of "Ethical Guidelines for the Historian" at the Phoenix meeting. The resiliency of this topic, as evidenced by the latest collection of ethical discourse, *Ethics And Public History: An Anthology*, suggests that public historians must be threatened daily by the temptation to stray from the ethical center of professional historical conduct.<sup>1</sup>

Such is not the case. In the 17 years that I have been engaged in historical consulting in the private sector, I have rarely encountered a circumstance that portended a compromise of professional ethics. In making this statement, I think that I can speak for the more than 20 historians that I have supervised at my firm during that time. Obviously, questions of standards and conduct arise occasionally in a contractual arrangement with a private or public client. I suspect that they occur equally often in academia. However, where these problems impact upon the practice of the historical craft, I have never experienced a situation in which the solution was not a clear and resounding deference to the requirements of the profession.

I admit that I approached my reading of Ted Karamanski's book with the previously stated bias. You can imagine my surprise when I found that it is a rather interesting "read." Perhaps I found it so because a review of the work confirmed virtually all of my earlier perceptions about the preoccupation with ethical standards by some public historians. I am suspicious of the agenda of historians who advocate a "code of ethics." Often, such "codes" are poorly reasoned efforts to dictate the public historian's marketplace. A number of the articles in this anthology suggest more appropriate avenues of inquiry for those public historians who are concerned with the "real" problems of working in a non-academic environment.

*Ethics and Public History* is divided into three distinct sections. The first and principal section of the book offers seven essays on various aspects of potential ethical problems faced by public historians. The essays are uneven in quality. Four of the articles were previously published in *The Public Historian* in either 1984 or 1986. They reflect much of the debate that centered on this topic during the mid 1980s and that led to the NCPH's adoption of the "Ethical Standards" in 1985. These essays identify specific problems that face public historians, primarily in the arena of offering expert witness testimony. J. Morgan Kousser's article, "Are Expert Witnesses Whores? Reflections On Objectivity in Scholarship and Expert Witnessing" is the most thoughtful of these previously published works. It corrects the perception that historical research that is directed toward meeting the need of a "paying" client is inherently less objective than research selected for an essentially academic audience. Historians working in all sectors of the profession consider a variety of "self-interested reasons for choosing research topics."<sup>2</sup>

Two of the remaining essays in this section of the book, Ted Karamanski's "Introduction" and Joan C. Williams'

"Clio Meets Portia: Objectivity in the Courtroom and the Classroom" are also well done. Both authors synthesize many of the points debated in the last decade. They also offer insightful comments into the broader nature of this issue and its importance to all historians, not just to those who call themselves "public" historians. Joan C. Williams convincingly argues that the real debate on historical ethics is not related to the historian's audience (academic vs. private). Rather, ethical behavior, as defined by objectivity, can only be achieved by adhering to "methodological norms."<sup>3</sup> By reviewing the controversial testimony of historians in *EEOC v. Sears*, Williams demonstrates the difficulty of historians maintaining a proper balance of evidence and counter-evidence in working for a private client. In arguing for a broadening of the debate on ethics, Karamanski suggests that historians must become involved with the public. Both academic and non-academic historians face the challenge of perfecting "their craft to create a usable past."<sup>4</sup>

Little needs to be said about the remaining two sections of the book. Part II offers examples of standards available to historians who work in the Federal Government or who belong to the California Committee for the Promotion of History (CCPH). The "Ethical Guidelines" that were adopted by the NCPH in 1985 are also presented. Part III of this anthology presents standards of professional conduct that have been adopted by various professional groups such as the American Historical Association, The Society of American Archivists, and the American Association of University Professors. I believe that a careful perusal of both sections will show that the existing standards and principles adopted for historians by national organizations are adequate to address ethical questions.

There are unique problems that confront public historians that are dictated by the immediacy of client contact and the use of the product of historical re-