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A Note To Contributors: TRADITIONAL BUILDING solicits reviews of historical products from building and preservation professionals. A query letter to the editor describing the product and scope of the review is suggested. Photos of outstanding examples of Neo-Traditionalism and Architecture are also sought. While we will be careful of all materials submitted, we cannot be responsible for non-receipt or loss; please keep copies of all materials sent.

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**ON THE COVER:**

Working drawing for steeple restoration, drawn by
Robert Thayne. Courtesy, Architectural Timber & Millwork. For more information on this company, see the SourceList on page 40.

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MELVYN GREEN: SHORING UP THE WORLD

Only recently has Melvyn Green, historic-preservation structural engineer, realized that he cannot save every building in America. "I just don't have time," he admits sadly. He has found ways, however, to appease his crusading urges: Writing codes and lecturing. "If I can share my knowledge to help others avoid mistakes," he says, "that's the next best thing to being there."

BY EVE M. KAHN

In addition to composing dozens of building restoration and seismic-reinforcement guidelines for districts, towns, states, and regions, his Los Angeles-based eight-person firm has tackled a dazzling array of hands-on projects, from adobe missions to terra cotta-clad skyscrapers. A significant few are located east of the Mississippi, and the rest could exist only in the West. A c.-1900 beet sugar factory in Arizona, for example, or a 1908 citrus-fruit packing house in Riverside, Calif.; the c.-1800 San Gabriel Mission in San Gabriel, Calif., one of the state's oldest buildings; houses built by the man who brought citrus to the region or by the founders of the Kimberly-Clark paper empire; the c.-1900 headquarters of Death Valley Scotty, a colorful desert gold miner; and an 1877 Nevada school-turned-museum whose rehabilitation was partially funded by the proprietor of the notorious Mustang Ranch. ("We wondered if we should raise our fee, since the money comes from prostitution," Green jokes.)

The more bizarre the project, the better he likes it. He's made structural recommendations for a roller coaster in La Jolla; completed a preservation study of an outdoor folk-art environment in Cambria Pines, Calif., which is made of everything from masonry to old tires; and given the National Trust for Historic Preservation advice on restoring Los Angeles' cement-and-scrap Watts Towers. He is currently helping the city adapt an 1896 railroad bridge for trolley use. "They want to know how to widen it to two tracks and upgrade it for quake safety while preserving its character. That's a whole series of challenges no one's ever dealt with before."

"Mel likes odd projects, quirky projects, or else he gets bored," says his partner, preservation designer Anne Watson, who also describes him as "the ideal partner for a preservationist like me. He's very good at what he does, he's committed to architecture which is unusual in an engineer, and he lets me make the aesthetic judgments — he's a real team player."

"He sometimes comes to me and says, 'I don't know what to do about such-and-such a feature of a building; I don't know how to make it work structurally without spoiling it aesthetically,'" she continues. "And I respond, 'I'm sure you'll think of something,' and he always does, after he stewed for a while."

An Angelino since the age of three, Green became fascinated with old buildings, bridges, and dams in his teens. "And I've never looked back," he says. While studying for his B.A. at the University of Arizona in the late '50s, he became "the first and maybe only engineer in history to take an architectural history course." A few years working on bridge design for the state of California led to a year designing missile silos, a stint which led him back to the security of public service. "I was a Depression-era kid," he recalls. "I was always told you should get a steady job so you don't end up in a bread line. Defense work was not reliable; it depended upon some politician's whim."

He next served as assistant director of building and safety for the city of El Segundo, a Los Angeles satellite "with a nighttime population of 15,000, a daytime population of 100,000, and a lot of aerospace industry, so there were very few old buildings or residential buildings." His boss, Bob O'Bannon, author of Building Department Administration (the definitive textbook in the field), became his mentor. "Bob understood the human aspects of building, departments, that it's not all steel and concrete. It's also people who need help."

Green is designing invisible seismic bracing for the San Gabriel Mission, one of California's oldest buildings.

The concrete arches of the Colorado Street Bridge, in Pasadena, have spilled and cracked. Green is overseeing their rehabilitation.

says Green. O'Bannon left the department in 1966; Green took over his job, left it in 1969, briefly ran a construction-materials-quality-testing lab, and then set up his own structural-engineering consulting shop. He also found time to work with the National Bureau of Standards on prefabricated housing and with the Department of Energy on the Model Energy Code that 46 states have adopted, projects he describes as "more evidence of my mission to save America."

Along the way, he kept in close touch with his mentor. In 1972, he helped O'Bannon write a speech for a National Trust conference on building. Continued on page 48.
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special report

Poring Over Interior Molded Ornament

Which material gets poured into a mold to cast an architectural element is a decision that the designer must make. How to choose that material requires a lot of research. Here’s a start.

BY JUDITH SIEGEL LIEF

B y now, there are many materials and mixtures to choose from when specifying interior molded ornament. Which one and how to choose depends on the size of the piece, where the piece(s) will be installed, how many pieces need to be fabricated, and whether or not historical accuracy is a priority.

Architectural ornament can be among the most aesthetically pleasing features of a project, yet because it is one of the last aspects of a job, it is likely to get shortchanged when costs run over budget. If there’s pressure to cut costs, make sure the client understands the trade-offs. Choices that are made now are ones that a building owner (and future owners) will have to live with for years. Writing careful and complete specifications is still the best way to ensure that a job will get done with the least amount of last-minute panic.

Material Matters

The roster of suitable materials includes: Plaster; composition (compo) — a centuries-old traditional material typically consisting of animal-hide glue, burnt sienna, oil, whiting, and water; rigid and flexible polyurethane foam; and polyester. Reinforcing materials can include: Sisal, burlap, and fiberglass. Only an exact historical installation will demand plaster or composition — the only historically authentic materials. Otherwise, all materials are fair game.

There are several factors to consider when specifying a material to be used for interior molded ornament. Sometimes a job will speak for itself: A high-end restoration that needs to be historically accurate will demand the use of plaster ornament. After all, plaster is a historical material and it meets all building codes. The families of polymers — especially polyurethane and polyester — have made a significant contribution to the historical ornament market; they’re light in weight, can be made flexible, are more easily mass produced, and still present crisp detail while retaining the finished quality of plaster or wood. However, they will not necessarily meet code for fire ratings; unless carefully formulated, they will burn (and some emit toxic fumes.)

Decorators Supply is a 100-year-old manufacturer with a huge inventory of plaster and composition ornament. Jack Meingast, its sales manager, thinks “people have a fear of plaster; they’re afraid it’ll crack. In fact, reinforced plaster is quite strong.”

David Flaharty, a sculptor who has created interior ornament on such blue-chip jobs as the Metropolitan Museum in New York City, works almost exclusively in plaster. He appreciates the purity of the material and tries to avoid the toxicity of casting polymers (but can be talked into using them if absolutely necessary).

Giannetti Studios’ president, Bob Giannetti, lauds the advantages of GRG (glass-fiber reinforced gypsum). “It’s thin, light, strong, can be lifted easily, and has a Class A fire rating.” It’s useful for large projects like a coffered ceiling. Because it’s much harder than molding plaster, it’s well suited for pilasters, columns, and bases. Michael Surface, president of Kansas-based The Crowning Touch, works primarily in polyurethane foam. He thinks the flexibility that it offers is unsurpassed for use on domes, bay windows, and radius moldings. “It bends so easily on curvatures while retaining its detail.”

On the other hand, James Ty Clark of Classic Carvings, Chicago, believes polyester offers great durability, crisp detail, and fast mold cycling. Additionally, the recipes or “mix designs” can be re proportioned to adjust density for greater flexibility or strength. Because polymers are very durable and will not chip (the way plaster can), they’re useful for high-traffic situations. Because polyester — like some other materials — has a fast molding cycle, it’s beneficial when many castings are fair game.

continued on page 8

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WRITE IN NO. 245
### Materials for Interior Molded Ornament: Pros and Cons

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<th>Material Type</th>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SISAL-, GLASS-, OR BURLAP-REINFORCED PLASTER</strong></td>
<td>• Historical material • Class A fire rating — will not burn • More economical/ft</td>
<td>• Can be damaged by water • Chips; not good for high traffic areas • Long mold cycling</td>
</tr>
<tr>
<td><strong>GLASS FIBER REINFORCED GYPSUM (FRG)</strong></td>
<td>• Greater strength than plaster (so pieces can be made thinner; therefore lighter) • Rapid mold cycling • Harder than plaster</td>
<td>• Relatively inexpensive • Can be installed by non-plasterer • Non-flammable</td>
</tr>
<tr>
<td><strong>COMPOSITION (Compo)</strong></td>
<td>• Self-adhering • Lightweight</td>
<td>• As with plaster, but not strictly historical</td>
</tr>
<tr>
<td><strong>RIGID POLYURETHANE FOAM</strong></td>
<td>• Can be made flexible • Lightweight</td>
<td>• Moisture has no effect • Non-flammable • Class A fire rating — will not burn</td>
</tr>
<tr>
<td><strong>FIBERGLASS-REINFORCED POLYESTER (FRP)</strong></td>
<td>• Extremely durable</td>
<td>• Not historical material • Will burn &amp; emit toxic fumes if not properly formulated</td>
</tr>
</tbody>
</table>

### Stock Vs. Custom

Another factor to consider when specifying materials are: Is the design available from a catalog or does an original need to be created? As you can see from the SourceList (pp. 10, 12, 14), there are hundreds of stock designs available, for example. Decorators Supply offers over 1,700 designs. Obviously, custom pieces tend to be more expensive than stock. Other price considerations (besides material specified) are: The number of pieces to be created and the speed of mold cycling — that is, how long it takes a material to set and how quickly a mold can be reused.

### Fire Rating

Code on most public jobs requires a Class A fire rating, which means that a flame will spread very slowly or not at all. Plaster and gypsum, for example, have Class A (or Class I) fire ratings; they will not burn. The addition of a polymer increases the flame spread number.

Hiram Ball, president of Ball Consulting, is a raw material supplier of, among other things, Jesmonite — a (mostly exterior) formula of gypsum and polymer with a Class A fire rating of 25. Ball explains the ASTM E-84 Tunnel Test: A manufacturer must create the exact recipe that will be used on a project in a 2 x 4 ft. log. The testing lab mounts the sample in a calibrated tunnel. They introduce a flame source at one end and monitor what happens over a period of time and then, depending on how quickly the flame spreads, assign a number, which can range from 1 to 200. Classifications run accordingly: Class A (or I) 0-25, Class B (or II) 26-75, Class C (or III) 76-200.

Beware: Fire ratings are very tricky. A material's suitability for a particular application may depend on the way the building code is written. For instance, a Class C material, which would not be acceptable in a vertical exit way — a location with the strictest code — might be quite suitable in a hotel room, where the codes are more liberal.

### Aesthetics

All of the materials listed in the chart hold crisp detail. Still, it's difficult to quantify what constitutes good detail. Dave Talbot, president of Architectural Reproductions, maintains there's no substitute for clear specifications in the traditional steps of shop drawings, submittals, and approvals. Additionally, clients are demanding more from manufacturers in the area of detailed design and engineering.

### Strength/Durability

Most materials can be reinforced to increase strength. But it's important to know where a piece will be mounted when choosing a material. Because plaster and gypsum may chip, they're less suitable for high-traffic areas. Composition and the polymers are quite durable, and they can endure surface impact unscathed.
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Free
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Free
Free
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Free
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Custom duplication
Brackets & cornets, wall ornament
Molded plaster ornament; custom work a specialty
Molded plaster ornament; custom work a specialty
Molded plaster ornament; custom work a specialty
Molded plaster ornament; custom work a specialty
Free;

Gypsum, chipped glass, other noncombustible aggregates
Plaster, FRP, cast concrete, metal
Plaster, cement, metals & polymer composites
Plaster
GRG, high-density polyurethane
GRG
Mantels, domes, crown moldings
Enrichments, brackets, fireplaces, fire screen, pedestals, pendants
Molding plaster, hydraulic gypsum cement, FGR 90 (glass-reinforced gypsum)
Cast stone, lightweight concrete
Partition wall panels and polyester pieces

MATERIALS

NO. 726

% CUSTOM
100%
95%
90%
90%
80%
80%
80%
20%
30%
30%
20%
0%

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WRITE IN NO. 743
### TRADITIONAL BUILDING'S SOURCELIST OF INTERIOR MOLDED ORNAMENT

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<th>Niches</th>
<th>Running</th>
<th>Columns</th>
<th>Other</th>
<th>Materials</th>
<th>% Custom</th>
</tr>
</thead>
<tbody>
<tr>
<td>Edon Corporation</td>
<td>Supplier of fiberglass-reinforced ornamental specialties in historical replication. In-house capabilities include: Design, sculpting, and pattern-making for large assemblies. Free Write in No. 189</td>
<td>x x x x</td>
<td></td>
<td></td>
<td></td>
<td>Domes, cornices, and more</td>
<td>FRP GRG</td>
<td>50%</td>
</tr>
<tr>
<td>Felber Studios, Inc. PO Box 151</td>
<td>Architectural plaster shop specializing in historic restoration and fabrication. GRG has a Class A fire rating. Free Write in No. 288</td>
<td>x x x</td>
<td></td>
<td></td>
<td></td>
<td>Domes, ceiling tiles</td>
<td>GRG, plaster, Jesmonite</td>
<td>90%</td>
</tr>
<tr>
<td>The Fischer &amp; Jirouch Co. 4871 Superior Ave., Dept. TB Cleveland, OH 44103 (216) 361-3840</td>
<td>Ninety-year-old manufacturer of architectural plaster ornament; over 1,700 designs in a variety of styles; Class B fire rated. Custom reproduction. Free Write in No. 196</td>
<td>x x x</td>
<td>x</td>
<td></td>
<td></td>
<td>Figures, grilles, gables, mantels, corbels, festoons, beams, frizes, and lots more</td>
<td>Plaster with fiberglass chips, hemp fiber, &amp; steel rods (where applicable)</td>
<td>100%</td>
</tr>
<tr>
<td>David Flaherty, Sculptor 402 Magazine Rd, RD 2 Dept. TB</td>
<td>Blue-chip period installations in plaster; no plastics. Multi-part installations allow custom compositions.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>All ornamental plaster work</td>
<td>Gypsum plaster</td>
<td>100%</td>
</tr>
<tr>
<td>L.H. Freedman Studios 388 Congress St., Dept. TB Boston, MA 02210 (617) 426-8887</td>
<td>Sculptor specializing in moldmaking and casting from drawings, photos, or existing elements especially preservation, conservation, custom art, and architectural design and restoration. Free Write in No. 639</td>
<td>x x x</td>
<td></td>
<td></td>
<td></td>
<td>Friezes from the Parthenon &amp; other select elements</td>
<td>Plaster, polymer &amp; plaster fiberglass (epoxy), and composition</td>
<td>95%</td>
</tr>
<tr>
<td>Giannetti Studios Inc. 3806 31st St., Dept. TB Brentwood, MD 20722 (301) 927-0032</td>
<td>Stock or custom ornament; also repairs existing moldings; maintains a specialty. &quot;If you can draw it, we can make it.&quot; Free Write in No. 733</td>
<td>x x x</td>
<td>x</td>
<td></td>
<td></td>
<td>Mantels and domes</td>
<td>Plaster &amp; GRG</td>
<td>60%</td>
</tr>
<tr>
<td>Huboken Brownstone Co., Inc. 16 Yale Ave., Dept. TB Jersey City, NJ 07304 (201) 435-2455</td>
<td>Fabrication and restoration of architectural sculpture and detail for interior and exterior applications. Will work from drawings or make molds in situ. Free Write in No. 739</td>
<td>x x x</td>
<td></td>
<td></td>
<td></td>
<td>Fabrication of any detail and element</td>
<td>Plaster, GRG, GFRC, cast stone, terra cotta</td>
<td>95%</td>
</tr>
<tr>
<td>J.S. Keller &amp; Associates P.O. Box 13151, Dept. TB Webster Grove, MO 63119 (314) 962-6626</td>
<td>Complete line of reproduction English oak interior decoration. Molds crafted from antique originals; hand-finished (museum quality) to simulate wood. All products standard but made-to-order. Send $10 for catalog</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Brackets, corbels, friezes, arches, carved panels</td>
<td>Polyurethane-expanded foam with proprietary hard resin outer surface</td>
<td>0%</td>
</tr>
<tr>
<td>M.C.M.C. 1512 14th St. N.W., Dept. TB Washington, D.C. 20005 (202) 328-6262</td>
<td>Specializes in ornamental plaster moldings; many stock patterns available; moldmaking capabilities for custom work; will create new design; will work from existing drawings. Free Write in No. 741</td>
<td>x x x</td>
<td></td>
<td></td>
<td></td>
<td>Domes, ceiling tiles, door headers, brackets, panels, sconces, finals, wall &amp; ceiling trim</td>
<td>Plaster, GFRC, cast stone, GFRC</td>
<td>40%</td>
</tr>
<tr>
<td>Frank Mangione 21 John St., Dept. TB Saugerties, NY 12477 (914) 246-9963</td>
<td>Specializes in ornamental plaster, both new work and repairs. Will work from drawings; can reproduce most plaster ornamentation. Free Write in No. 741</td>
<td>x x x</td>
<td></td>
<td></td>
<td></td>
<td>Gypsum plaster flat work restoration &amp; molds run in place to match existing ornament.</td>
<td>Plaster</td>
<td>100%</td>
</tr>
<tr>
<td>Moonlight Molds, Inc. P.O. Box 2198, Dept. TB Cardena, CA 90247 (213) 536-9142</td>
<td>Custom-built architectural ornament for interior/exterior use for both new construction and historic buildings. Class A fire rating. Free Write in No. 741</td>
<td>x x x</td>
<td></td>
<td></td>
<td></td>
<td>Coffered ceilings, friezes, more</td>
<td>GRG, pre-cast plaster, pre-cast ornament, and GRG</td>
<td>87%</td>
</tr>
<tr>
<td>Molloy and Associates, Inc. PO Box 515, Dept. TB Hutchins, TX 75114 (214) 225-6106</td>
<td>Sells alkali-resistant glass and equipment used to make GFRC. Free Write in No. 646</td>
<td>x x x</td>
<td>x</td>
<td></td>
<td></td>
<td>Exterior panels, garden benches</td>
<td>GFRC</td>
<td>10%</td>
</tr>
<tr>
<td>Nostalgia, Inc. 307 Stiles Ave., Dept. TB Savannah, GA 31401 (912) 232-2324 (800) 824-0015</td>
<td>Represents Sorale of Nantes—a French manufacturer of large plaster installations such as luxury liner ballrooms, theaters, malls, etc. Zero flame spread and zero smoke contribution. Free Write in No. 743</td>
<td>x x x</td>
<td></td>
<td></td>
<td></td>
<td>Special plaster facades, complete interiors of malls, theaters, more</td>
<td>Gypsum, hydocal, and like materials</td>
<td>30%</td>
</tr>
<tr>
<td>Orlandini Studios, Ltd. 633 W. Virginia St., Dept. TB Milwaukee, WI 53204 (414) 272-3657</td>
<td>Ornamental plaster craftsman who prefers residential and small commercial jobs; will travel. None</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Any historical replication or restoration</td>
<td>Plaster</td>
<td>100%</td>
</tr>
<tr>
<td>Manuel Palos Sculpture 1330 Donner Ave., Dept. TB San Francisco, CA 94124 (415) 822-8034</td>
<td>Sculptor who specializes in high-end restorations and special architectural projects with a variety of new techniques and updated materials. Class A fire rating. Free Write in No. 640</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Engineering &amp; installation; any custom project</td>
<td>Decocast, GFRC, GRG, FRP, bronze, marble, stone</td>
<td>40%</td>
</tr>
<tr>
<td>Permalife Inc. 1701 Clyde Pk. Ave. SW Suite #5, Dept. TB Birmingham, MI 48090 (616) 245-0180</td>
<td>Specializes mostly in exterior ornament but have recently expanded to interior markets. They have pattern-making and mold-building capabilities for custom jobs. Free Write in No. 744</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Victorian brackets, louver fans, Rigid polyurethane foam</td>
<td>15%</td>
<td></td>
</tr>
</tbody>
</table>

continued on page 14
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### Traditional Building's Source List of Interior Molded Ornament

**CSI# 06200**

**By Judith Siegel Lief**

<table>
<thead>
<tr>
<th>COMPANY</th>
<th>SPECIALTY</th>
<th>Literature</th>
<th>Ceiling Medallions</th>
<th>Niches</th>
<th>Running Moldings</th>
<th>Columns/ Capitals</th>
<th>Other</th>
<th>Materials</th>
<th>% Custom</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polytek Development Corp.</td>
<td>Suppliers of mold-making materials in a variety of polyurethane and silicone rubbers especially suitable for taking molds off vertical surfaces.</td>
<td>Free</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Any other ornament</td>
<td>Molding resins &amp; mold-making materials</td>
<td></td>
</tr>
<tr>
<td>Restoration Works</td>
<td>Specializes in architectural trim and medallions; also decorative hardware and plumbing fixtures.</td>
<td>Free</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Vaulted ceiling, domes</td>
<td>Condensed polyurethane foam</td>
<td>10%</td>
</tr>
<tr>
<td>Rocca Noto Sculpture Studio</td>
<td>Specializes in custom architectural ornaments; especially difficult projects.</td>
<td>Free</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Window treatments, door surrounds, overdoors, corbels</td>
<td>Polyurethane</td>
<td>5%</td>
</tr>
<tr>
<td>Royal American Wallcraft</td>
<td>Manufacturers of rigid polyurethane foam moldings. Also distributes Anaglypta and Lincrusta borders and wallcoverings.</td>
<td>Free</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Window trims, brackets &amp; corbels</td>
<td>Pre-formed polyurethane</td>
<td>6%</td>
</tr>
<tr>
<td>Russell Enterprises</td>
<td>Custom plaster work, restorations a specialty.</td>
<td>Free</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Any cast plaster ornament</td>
<td>Plaster, epoxy, Portland cement</td>
<td>100%</td>
</tr>
<tr>
<td>Russell Restoration</td>
<td>Specializes in custom duplication of ornamental molding. Also models and casts new moldings from drawings. Construction crews for installation.</td>
<td>Free</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Any architectural ornament or art duplication</td>
<td>Plaster, FRP, GFRC</td>
<td>100%</td>
</tr>
<tr>
<td>Towne House Restorations</td>
<td>Specializes in custom duplication of ornamental molding. Also models and casts new moldings from drawings. Construction crews for installation.</td>
<td>Free</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Any architectural ornament or art duplication</td>
<td>Plaster, FRP, GFRC</td>
<td>100%</td>
</tr>
<tr>
<td>J.P. Weaver</td>
<td>8,000 mix-and-match ornaments that can be configured to make any architectural element.</td>
<td>Free</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Ornaments; can make up any architectural detail</td>
<td>Composition</td>
<td>80%</td>
</tr>
<tr>
<td>Worthington Group</td>
<td>Cast moldings, niches etc.; fiberglass balustrades (new). Also wood columns, stained glass domes, and aluminum gates.</td>
<td>Free</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Mantels, fiberglass domes, balustrades, corbels</td>
<td>Cast plaster</td>
<td>5%</td>
</tr>
</tbody>
</table>

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WRITE IN NO. 671
MOLDED ORNAMENT PORTFOLIO
(Consult SourceList for contact information about companies illustrated.)

Louis XV Medallion #707; composition; 1-1/2" relief; 36" x 36". Decorators Supply Corporation

Art Nouveau I ceiling panel #TL-0006; gypsum. Above View

Sconces reproduced from original detail in the old UniRoyal Building, Los Angeles; FRG. Moonlight Molds

Crown with Scallops #6134; 16" x 4-5/8"; high-density polyurethane. Custom Decorative Mouldings

Plaster restoration in Connecticut residence. Art Home

Medallion # 353; gypsum. Nostalgia

Textured, reinforced fiberglass. Manuel Palos

Plaster repair; St. John's R.C. Church, Poughkeepsie, NY. Frank Mangione

Large Georgian molding; cast plaster. Worthington Group

New Orleans crown molding; 10" (wall) and 2-3/4" (ceiling); FRG. Giannetti Studios, Inc.

Georgian Classic molding #2396; 6-1/2" repeat; 6' 1/2" lengths; 9-3/8" (wall) and 7-1/8" (ceiling); plaster. M.C.M.C.

continued on page 18
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PICTURED: FROM OUR CUSTOM DESIGN DEPARTMENT: Above: a frieze design, approximately 4" x 40". Below: The side detail of a custom fireplace illustrating exceptionally high relief. Photography: FRITZ TAGGART

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WRITE IN NO. 646

DIVISION 6 - WOOD & PLASTICS

TRADITIONAL BUILDING

MAY/JUNE 1991
Molded Ornament Portfolio
(continued from page 16)

Plaster moldings; GRG columns; gypsum cement detail on tub. The Balmer Studios

Balcony facing molded in GRG. Architectural Reproductions

Fireplace top side detail; composition. J.P. Weaver

Newly cast capital; cement, polymer, fiberglass. L.H. Freedman Studios

No. 10128 corbel; ornamental plaster. Felber Studios, Inc.

Replication of original plaster capital; polyester. Classic Carvings

Plaster medallion. David Flaherty, Sculptor

Replication detail of a hand-carved wood column base for the Morgan Library, NYC; hydrocal. Cameron Noriega Atelier

Moldings and wall panels; polyurethane expanded foam with proprietary hard resin outer surface; hand finished to simulate wood. J.S. Keller & Associates

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Beating The Asphalt Shingle Blahs

While providing an economical roof, asphalt shingles just don't have sufficient texture and character to look pleasing on traditional structures. Here are some good-looking alternatives.

BY CLEM LABINE

Mention the need for roofing to most contractors and you'll get the reply: "What kind of asphalt shingles do you want?" This response is not surprising: Asphalt shingles represent an overwhelming 77% of today's roofing market on a square footage basis. By contrast, metal, clay, and concrete materials total a mere 8% of the roofing market, with wood shingles bringing up the rear at 1% market share.

But for traditional buildings, having that 9% of specialty materials available is critical. On most old and historically styled new buildings, the bland flatness of asphalt shingles just doesn't make it. (Recognizing that problem, CertainTeed has just come out with an extra-thick asphalt product called "Grand Manor Shingle"). Fortunately, the roofing market is big enough so that a 9% market share can support a lot of exciting product development in specialty materials — especially in concrete roof tiles.

Most of the traditional roofing materials are more durable than asphalt shingles — and more expensive. Thus, they find favor with building owners who have a long-range view and/or who put high value on aesthetics and durability. This breaks down into three basic market segments: (1) Restorations and additions to old buildings; (2) Institutional, government, and commercial structures; (3) High-end custom homes. When you're spending over $1 million on a house, a roof that costs $10 per sq. ft. doesn't add much proportionately to the cost. But premium-quality materials can add durability, provide a distinctive look, and offer low maintenance costs. The amount of roof that you see from the street is also a factor: High-visibility roofs benefit more from a distinctive material than do roofs that comprise a smaller part of a building's visible elevation.

In the roofing business, salvage materials are more important than in other areas of building products. Occasionally, you need only a few square feet of tile to repair an old roof ... and you can't find new tiles that will match. Or maybe you're planning an addition to a building that already has a slate or clay tile roof. Sometimes recycled materials give the best match. Some roofing producers, such as Vande Hey-Raleigh, have large supplies of salvaged tiles (concrete and clay) on hand, as well as natural slate. And many of the major roofing installers also have large inventories of recycled tiles and slates.

Who's Included In This Report

We haven't included suppliers of wood shingles in this report; that was covered in the March/April 1991 issue. And although we are including metal shingles and tiles, we haven't included suppliers of flat metal standing-seam roofs.

Most of the companies included on the following Source List are manufacturers, but we've also listed a few major roofing installers because they also maintain a large inventory of salvaged material, which can be very handy for repair and restoration jobs. The companies listed were selected from respondents to a detailed questionnaire — those most interested in serving the special needs of historical architects and contractors.

Thermo Copper Coating is a unique, inexpensive alternative to copper metal sheeting — providing an attractive, long-life finish without the limitations, expense or problems of more traditional methods.

Specially formulated from acrylic resins and pure ground copper, it cures to form a flexible membrane with the bright, shiny appearance of a new copper penny. It ages with time and exposure to the elements like traditional copper sheeting. And, if preferred, the aging process can be accelerated to provide an attractive patina effect.

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Thermo Copper Coating
Brookfield Zoo, Chicago, Illinois

WRITE IN NO. 464

Thermo Copper Coating
Brookfield Zoo, Chicago, Illinois
TRADITIONAL BUILDING'S
SLATES, TILES & SHINGLES
SourceList

<table>
<thead>
<tr>
<th>COMPANY</th>
<th>SPECIALTY</th>
<th>Literature</th>
<th>Flat Tiles &amp; Slates</th>
<th>Round Tiles</th>
<th>Fancy Ends</th>
<th>Materials</th>
<th>New/ Salvaged</th>
<th>% Custom</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bellvale Slate Roofing</td>
<td>Major consultant and installer of steep roof- ing systems — repair, restoration, and new projects. Slate, tile, copper and other tradi- tional materials.</td>
<td>Free</td>
<td>Write in No. 679</td>
<td>✓ ✓ ✓</td>
<td>All traditional materials</td>
<td>N/S</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Bender Roof Tile</td>
<td>Extruded concrete roof tiles produced in Florida with Swedish technology. Integral color in each tile; fungus-retarding top coat- ing provides deep colors, smooth surface and long life. 23 colors; 50-yr. warranty.</td>
<td>Free</td>
<td>✓ ✓</td>
<td>Concrete</td>
<td>N</td>
<td>0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Berger Building Products</td>
<td>Among many products, firm stocks the nation's broadest line of half-round metal gutters in copper, galvanized, and painted alumi- nium. Complete line of fittings, chan- nel-type hangers, etc. Fully locked-seam in- side &amp; outside mitres in 4&quot;, 5&quot;, and 6&quot; sizes. Snow guards in 7 styles.</td>
<td>Free</td>
<td>Write in No. 758</td>
<td>✓</td>
<td>Metal half- round gutters</td>
<td>N</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Cal-Shake, Inc.</td>
<td>Manufactures a lightweight fiber-cement Class A roofing shingle that resembles ceder shakes. Carries an F rating of 2.4 and a 30- yr. limited product warranty. Comes in 4 woodtone colors; product available in sun- belt states and Hawaii.</td>
<td>Free</td>
<td>✓ ✓ ✓</td>
<td>Fiber-cement</td>
<td>N</td>
<td>0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CertainTeed Corp.</td>
<td>Has introduced a high-end fiberglass/as-phalt shingle, called Grand Manor Shingle, that has extra depth and shadow line thick- ness. Provides a slate-like appearance when installed. Carries Class A fire rating.</td>
<td>Free</td>
<td>✓ ✓</td>
<td>Fiberglass/ asphalt</td>
<td>N</td>
<td>0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conklin Metal Industries</td>
<td>Manufacturer of metal roofing shingles, in- cluding one pattern typical of late 19th-cen- tury homes. Also supplies galvanized roofing sheets, gutters, and leaders.</td>
<td>Free</td>
<td>Write in No. 714</td>
<td>✓ ✓</td>
<td>Galvanized, Copper, TCS, Tema, Faminrip</td>
<td>N</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>Craycroft Brick Co.</td>
<td>Natural clay tiles are produced in both flat and round shapes. Available in 8 styles and a variety of colors and tones.</td>
<td>Free</td>
<td>✓ ✓ ✓</td>
<td>Clay</td>
<td>N</td>
<td>5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eternit, Inc.</td>
<td>Integrally colored, fiber-cement shingles, 316&quot; thick, that resemble natural slate. Come in 3 colors and 2 sizes, with a 30-yr. warranty.</td>
<td>Free</td>
<td>✓ ✓</td>
<td>Fiber-cement</td>
<td>N</td>
<td>0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evergreen Slate Co.</td>
<td>Offers a full line of natural roofing slate in 11 colors. The company's extensive inventory allows it to match any color ever produced for roofing or repair projects. Offers full architectural service and a com- plete line of slate's tools.</td>
<td>Free</td>
<td>Write in No. 713</td>
<td>✓ ✓ ✓</td>
<td>Natural slate</td>
<td>N</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>FibreCem Corp.</td>
<td>Manufacturer of non-asbestos fiber-cement simulated roofing slate in 3 styles: Southern Slate, Beaver Shingle, and Euro Slate. Southern Slate comes in 4 standard colors: Charcoal, pewter, silver, and sea green. Also available as siding and architectural panels.</td>
<td>Free</td>
<td>Write in No. 377</td>
<td>✓ ✓</td>
<td>Fiber-cement</td>
<td>N</td>
<td>70%</td>
<td></td>
</tr>
<tr>
<td>Gerard Roofing Technologies</td>
<td>Manufactures pressed steel roofing tile panels in rounded Mission tile and rustic shake patterns. Stone-coated finish comes in 8 solid colors and 7 blends. Lightweight (140 lb. per square) and come with a 40-yr. warranty.</td>
<td>Free</td>
<td>✓ ✓</td>
<td>Galvanized with stone coating</td>
<td>N</td>
<td>0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gory Roof Tile</td>
<td>Extruded concrete tile with integral color and Class A fire rating. 90 standard colors and blends; shapes include Spanish-S and Barrel.</td>
<td>Free</td>
<td>✓ ✓ ✓</td>
<td>Concrete</td>
<td>N</td>
<td>20%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hilltop Slate Co.</td>
<td>New York - Vermont region slate in all colors and sizes from their 7 quarries. Spe- cializes in roofing slate for restoration and new construction. Ships anywhere in U.S. Also: Structural slate and flagging.</td>
<td>Free</td>
<td>✓ ✓ ✓</td>
<td>Natural slate</td>
<td>N</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ludowici-Celadon, Inc.</td>
<td>Produces roof tile in Spanish S, Barrel, Inter- locking Shingle styles; 10 shapes in all 24 standard colors available. Complete fittings and custom finals, terminals, and end caps.</td>
<td>Free</td>
<td>✓ ✓ ✓</td>
<td>Clay</td>
<td>N</td>
<td>35%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M.C.A., Inc.</td>
<td>Clay roofing tile manufactured in a variety of styles, including 1-piece &quot;T&quot;. Straight barrel Mission, American Flat, and Oriental. Colors include natural, flashed, and glazed finishes as well as custom colors.</td>
<td>Free</td>
<td>✓ ✓</td>
<td>Clay</td>
<td>N</td>
<td>35%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Midland Engineering Co.</td>
<td>Supplier and custom installer of a full range of steep roofing systems. Specializes in large structures like churches, schools, and courthouses throughout the Midwest.</td>
<td>Free</td>
<td>Write in No. 742</td>
<td>✓ ✓</td>
<td>All traditional roofing materials</td>
<td>N/S</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Monier Roof Tile</td>
<td>High-quality extruded concrete roof tiles manufactured at 16 plants located across the U.S. Produced in 6 basic styles and 24 standard colors and blends. Tiles pass the severe freeze/thaw test C67-72 Method B. Carry 50-yr. warranty.</td>
<td>Free</td>
<td>Write in No. 718</td>
<td>✓ ✓</td>
<td>Concrete</td>
<td>N</td>
<td>20%</td>
<td></td>
</tr>
</tbody>
</table>

continued on page 24
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- Snowguards
- Roofing tools

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<table>
<thead>
<tr>
<th>COMPANY</th>
<th>SPECIALTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>New England Slate Company</td>
<td>New and used roofing slate in all colors and sizes; custom sizes and shapes. Also furnishes slate's tools and supplies, and custom snow guards.</td>
</tr>
<tr>
<td>W. F. Norman Corp.</td>
<td>Original 1908 metal roofing shingles and tiles in 5 styles, including round Spanish tile and two unique Victorian flat shingles. Also related trimmings including cresting, finials, and end caps.</td>
</tr>
<tr>
<td>Penn Big Bed Slate Co.</td>
<td>Supplies Pennsylvania blue-gray slate for roofs, as well as for structural purposes, flagging, blackboards, fireplace facings, and floors.</td>
</tr>
<tr>
<td>RTS Company</td>
<td>Makes five types of metal tile and shingle roofs: Spanish S-Tile, California Mission Tile, Slate Shingle, Flat Tile, and Standing Seam Shingle.</td>
</tr>
<tr>
<td>Raleigh, Inc.</td>
<td>Specialists in installation of slate and tile roofs for restoration projects. Large stock of new and used and recycled slate, some dating to the late 1800s. Sells in large or small quantities and ships throughout the U.S.</td>
</tr>
<tr>
<td>Richmond Precast Concrete Products</td>
<td>manufactures Hendrick's Tile—a concrete tile that simulates the look of a slate or wood-shingle roof, while providing a Class A fire rating.</td>
</tr>
<tr>
<td>Rising &amp; Nelson Slate Co.</td>
<td>Quarrier and producer of Vermont colored slate: Semi-green, semi-gray, black, gray-black, unfading variegated purple, unfading mottled gray-green, unfading mottled green and purple, unfading green, and red.</td>
</tr>
<tr>
<td>Rogers Roofing</td>
<td>Major roofing contractor with long experience with traditional roofs: Slate and tile, custom copper work, wood roofs, gutters and leaders, sheet metal roofs, complete exterior restoration.</td>
</tr>
<tr>
<td>The Roof Center</td>
<td>Complete line of steep roofing supplies, specializing in tile and slate. Large inventory of new and salvaged roofing material in all shapes and sizes.</td>
</tr>
<tr>
<td>Slate &amp; Copper Services</td>
<td>Major specialist in copper and slate work for both restoration and new construction. Supplies roofing and flashing, gutters, finials, gutters, and snow guards—among other things.</td>
</tr>
<tr>
<td>Supradur Manufacturing</td>
<td>Manufactures fiber-cement slates and shingles. Supra-Slate II and Heritage Slate are slate look-alikes with Class A rating and freeze-thaw resistance anywhere in N. America. Also available: Dutch Lap, Twin Lap and Hexagonal shingles as well as Mediterranean style clay tile.</td>
</tr>
<tr>
<td>Thermo Materials, Inc.</td>
<td>Supplies Thermo Copper Coating—a finish of acrylic resins and ground copper that can be applied to other materials to create appearance of a patinated copper roof. Also: Material that will accelerate the patinaing of raw copper.</td>
</tr>
<tr>
<td>TileSearch</td>
<td>Computerized listing and sales service for all brands, sizes, and colors of previously used clay roof tiles. Quantities for small repairs or large projects.</td>
</tr>
<tr>
<td>Vande Hey-Raleigh Mfg.</td>
<td>Broad line of extruded concrete roofing tiles in 7 basic patterns, including 2 new designs: Cotswold stone tile (a variegated gray/green/brown tile with antiqued surface), and English shingle (a blend of terra cotta, brown, black, and French clay). Standard colors and textures, plus custom manufacturing. Large stock of recycled slate, concrete, and clay tiles.</td>
</tr>
<tr>
<td>Vermont Structural Slate Co.</td>
<td>Supplies unfading Vermont Grade A roofing slate in green, mottled green and purple, and violet. Standard thicknesses range from 3/16&quot; to 1/4&quot;. Can also supply graduated-textured roofs with individual shingles of varying length and thickness (largest slates are placed near the eaves; smallest toward the ridge line).</td>
</tr>
<tr>
<td>Zappone Manufacturing</td>
<td>Traditional-looking roofing systems in copper and aluminum. Decorative copper shingles for exterior and interior uses.</td>
</tr>
</tbody>
</table>
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- Ums
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- Scopla
- Lavoers
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- Complies
- Marques
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Write in No. 665

Raleigh, Inc.

Write in No. 580
TRADITIONAL ROOFING PORTFOLIO

(Consult SourceList for contact information about companies illustrated.)

Mission "S" concrete roof tiles from Monier have the bold traditional high-barrel Spanish profile and variegated color.

New Cotswold Stone concrete tiles from Vande Hey-Raleigh have the mottled dark gray-brown appearance of old weathered English tiles.

Handmade Hendrick concrete tile from Richmond Precast Concrete Products have been used at Colonial Williamsburg to simulate wood shingles while adhering to fire codes.

The magnificent red tile roof of the Fulton County Courthouse, Rochester, Ind., was totally re-roofed by Midland Engineering.

Besides a full line of roofing slate, Evergreen Slate supplies slater's tools and repair products, such as slate hooks.

The line of 1908 metal roofing shingles from W.F. Norman Corp. include the Normandie style that resembles flat tile.

Gerard Roofing Technologies makes steel roof tile panels in traditional patterns with a stone-coated finish for long life.

Fiber-cement slate substitutes from FibreCem Corp. come in many colors permitting creation of Victorian-style patterned roofs.

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Peter Gedrys

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John T. & Lily Hemmer, William Morris c.1875

WRITE IN NO. 449

Traditional Building

July/August 1991 • 29
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The Entire July/August Issue Devoted To The Victorian Revival
CARVED ARCHITECTURAL ORNAMENT

Whether carved by hand or carved by machine, ornament that's been shaped under a hardened steel edge has a character and clarity that you don't find in molded ornament. But carvers are more skilled at executing some styles than others.

BY CLEM LABINE

When one thinks of hand carvers, one's mind automatically conjures up visions of the legions of anonymous artisans who carved figures for the Gothic cathedrals. Looking upon those medieval carvings today, people are likely to exclaim: "They don't do work like that any more!" While it's true that there are no longer legions of hand carvers around, they certainly do exist — as this survey shows. And if the budget permits, you can get hand carving created today that will rival the work done in any previous era.

In addition, technology has had a major impact. Multiple-spindle carvers, such as those used by Raymond Enkeboll Designs, can turn out crisply carved wood embellishments — and at moderate prices. And in the high-tech arena, we've found one firm that's creating large-scale sculpture using CAD software to control cutters. Bill Kreysler, head of William Kreysler Associates, says: "We go directly from CAD output to the final carved object. No one else I know of has the ability to scale up CAD designs to carved wood — and at moderate prices."

Although we include some stone carvers on the SourceList (p. 32), we're going to confine our comments here to wood carving shops. Many of the principles that apply to selecting a wood carving studio apply to other carvers as well.

Types Of Wood Carvings

Wood carvings come in several levels of sophistication — and cost:

(1) EMBOSSED MOLDINGS — These can simulate simple carved moldings, although technically they aren't carved, since no material is removed during manufacture. Essentially, a heated roller presses a pattern into wood fibers that have been softened with moisture. Obviously, moldings produced in this fashion are the most economical.

(2) MACHINE CARVINGS — A variety of machines will carve wood mechanically, following a master guide or pattern. Some use mechanical chisels, others employ round cutter heads. Some beautiful moldings can be created in this way — carvings that to the untrained eye appear hand done. Stock machine carvings are relatively economical; however, the cost mounts if you need custom machine carvings because you have to pay for creation of the expensive master pattern.

(3) HAND CARVING — With hand carvings, the pattern emerges from the wood under blows from just a chisel and mallet. There are few limitations to line and undercut; just about anything a designer can conceive, a skilled carver can produce. Of course, hand carvings represent the most expensive type of architectural embellishment. On the other hand, for small quantities, hand carving can be less expensive than tooling up for machine carving.

Artist Vs. Production Shop

There are two basic types of carvers: Those who think of themselves as artists, and those who consider themselves production craftsmen.

The artist-oriented shop is primarily interested in producing one-of-a-kind works; the client is paying for the artist's creative expression. By contrast, the production-oriented shop is geared more towards the creation of traditional ornament — architectural embellishments that will enhance an overall design rather than become the focus of attention.

Both types of shop fill a need (and some of the larger shops can fulfill both roles). Just make sure you match the orientation of the shop to the needs of your job.

A good production carving shop will be able to supply detailed design and working drawings of carving that conforms to historic norms. Since many interior design and architectural firms don't have designers fluent in the finer points of traditional ornament, carving shops find it essential to be able to furnish detailed design service.

Of course, fair's fair: You should expect to compensate a carving shop for working drawings. Ian Agrell, a partner in Agrell & Thorpe, points out: "I'm happy to provide thumbnail sketches for free, but beyond that, I bill for design service at our regular hourly rate." This policy is only prudent, since every now and then a client will obtain working drawings from one shop, then peddle the drawings around to other shops looking for the lowest price.

What Are Those Chisel Marks?

If hand carving is involved, make sure the client understands that a hand-carved product looks different from a machine-produced item. In a world accustomed to plastic laminates, on more than one occasion a client has expressed dismay to see chisel marks on a hand-carved piece. The client was expecting to see the smoothness of a polymer surface, not evidence of the human hand. Although hand-carved pieces can be sanded to perfect smoothness, that's an option that must be specified.

Selecting A Carving Shop

When selecting a shop for hand carvings, Anthony Lombardo, president of Architectural Paneling, Inc., stresses the importance of determining the background of the carvers who will be doing the work. "Carvers who learned their craft in Europe are the best," Lombardo asserts. "There is no substitute for the skills you acquire when you learn your trade as a young person . . . and that's what the European apprentice system develops. For example, for carving cherubs, the Italian or French carvers are absolutely the best."

continued on page 38
## TRADITIONAL BUILDING'S
### ARCHITECTURAL CARVINGS SourceList

<table>
<thead>
<tr>
<th>COMPANY</th>
<th>SPECIALTY</th>
<th>Literature</th>
<th>Hand Carvings</th>
<th>Machine Carvings</th>
<th>Materials</th>
<th>Stock Elements</th>
<th>Custom Carving</th>
<th>% Custom</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agrell &amp; Thorpe</td>
<td>Classically trained British carvers create a full range of custom architectural embellishments, carved by hand in most types of wood. Among their work: Architectural capitals, carved paneling, brackets, Gothic tracery, lecterns, pulpits, and choir stalls. Restoration services.</td>
<td>Free</td>
<td>Write in No. 723</td>
<td>Free</td>
<td>All wood types</td>
<td>✓</td>
<td>✓</td>
<td>100%</td>
</tr>
<tr>
<td>Architectural Conservation</td>
<td>Custom studio deals in all phases of architectural sculpture and ornament; can carve originals from photos or drawings. Also pattern-making, mold-making, and casting. Duplicates or restores historic ornament.</td>
<td>Free</td>
<td>Write in No. 641</td>
<td>Free</td>
<td>Many materials</td>
<td>✓</td>
<td>✓</td>
<td>100%</td>
</tr>
<tr>
<td>Architectural Paneling</td>
<td>Complete design and manufacture of custom built-in furniture and complete paneled rooms. Also: Carvings, moldings, bookcases, fireplaces, and overmantels available in all woods.</td>
<td>Free</td>
<td>Write in No. 530</td>
<td>Video $20; refundable</td>
<td>All wood types</td>
<td>✓</td>
<td>✓</td>
<td>50%</td>
</tr>
<tr>
<td>Art Home Studios</td>
<td>Offers complete sculptural and architectural services, both carved and molded ornament. Staff sculptors and carvers are able to form a wide range of materials to match historic originals or architect's design. Small jobs or large.</td>
<td>Free</td>
<td>Write in No. 643</td>
<td>Free</td>
<td>Various</td>
<td>✓</td>
<td>✓</td>
<td>100%</td>
</tr>
<tr>
<td>Bendix Mouldings, Inc.</td>
<td>Extensive line of carved and embossed pine and hardwood moldings and ornaments. Sold in lengths varying from 3 to 15 ft. Custom moldings—carved, embossed, or planed—to suit to quantity users.</td>
<td>Free</td>
<td>Write in No. 578</td>
<td>Free</td>
<td>Various hardwoods, Chebeque, Pine</td>
<td>✓✓</td>
<td>✓</td>
<td>10%</td>
</tr>
<tr>
<td>Cathedral Stone Co.</td>
<td>Custom production of architectural carvings in limestone, sandstone, marble: Column capitals, pilasters, fireplaces, etc. All types of interior and exterior relief carving.</td>
<td>No literature</td>
<td>✓</td>
<td>✓✓</td>
<td>✓✓</td>
<td>✓✓</td>
<td>✓✓</td>
<td>✓✓</td>
</tr>
<tr>
<td>Creative Sculpture Design</td>
<td>Specialist in conservation and restoration of historic buildings, monuments, and sculpture. Can re-create damaged or missing areas of metal or stone. Cleaning, repair, and restoration services. Also: Site-specific sculptural commissions.</td>
<td>Free</td>
<td>Write in No. 638</td>
<td>Free</td>
<td>Various</td>
<td>✓</td>
<td>✓</td>
<td>100%</td>
</tr>
<tr>
<td>Cumberland Woodcraft</td>
<td>Complete line of architectural carvings, including capitals, rosettes, ornaments, and custom carvings. In addition to carvings, the firm offers a complete line of firewood, corbels, wainscoting and paneling, buttresses, and rilling systems. Also: Bats, bookcases, mantels, and more.</td>
<td>Free</td>
<td>Write in No. 131</td>
<td>✓</td>
<td>✓✓</td>
<td>✓✓</td>
<td>✓✓</td>
<td>✓✓</td>
</tr>
<tr>
<td>Draper &amp; Draper</td>
<td>Specializes in hand-carved mantels, both antique and reproduction. Custom hand-carved mantels in American, English, French, and contemporary styles. Professional discounts.</td>
<td>Free</td>
<td>Write in No. 533</td>
<td>✓</td>
<td>Various woods</td>
<td>✓</td>
<td>✓</td>
<td>20%</td>
</tr>
<tr>
<td>Elegant Entries</td>
<td>Hand-carved mahogany panels; also available in rosewood and teak. Hand-carved mahogany corbels and sculpture. Company can carve to client’s specifications.</td>
<td>Free</td>
<td>Write in No. 577</td>
<td>✓</td>
<td>Maple, Oak</td>
<td>✓</td>
<td>✓</td>
<td>5%</td>
</tr>
<tr>
<td>Raymond Enkeboll Designs</td>
<td>Elegant carved architectural accents, including balusters, newel posts, onlays, rosettes, panels, moldings, crowns, mantels, corbels, and more, in many designs and styles.</td>
<td>Free</td>
<td>Write in No. 732</td>
<td>✓</td>
<td>All wood types</td>
<td>✓</td>
<td>✓</td>
<td>100%</td>
</tr>
<tr>
<td>Douglas Gist Restorations</td>
<td>Fully staffed architectural woodworking shop that specializes in restoration and preservation services throughout New England. Can reproduce any architectural detail—including carvings.</td>
<td>Free</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>100%</td>
</tr>
<tr>
<td>Harding &amp; Cogswell Corp.</td>
<td>A major designer and fabricator of Indiana Limestone building cladding systems. Will also execute custom carvings in limestone.</td>
<td>Free</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>100%</td>
</tr>
<tr>
<td>Himalayan Wood Carving</td>
<td>Designs and produces detailed ornamental wood carvings, with a variety of relief and 3-dimensional geometric, floral, and figurative motifs. From Nepal: Screens, bay windows, paneled doors, columns, mantels, etc.</td>
<td>Free</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>100%</td>
</tr>
<tr>
<td>Wm. H. Jackson Co.</td>
<td>Specializes in custom hand-carved wood mantels in Early American, English, and French styles. Hundreds of designs; each unit can be modified to suit the individual project. Also: Antique carved wood and marble mantels.</td>
<td>Free</td>
<td>Write in No. 756</td>
<td>✓</td>
<td>Various woods, Marble</td>
<td>✓</td>
<td>✓</td>
<td>100%</td>
</tr>
<tr>
<td>Kenmore Industries</td>
<td>Among the classically designed stock carvings available: Carved capitals on pilasters, carved dolphin, swag, basket of fruit trunks &amp; plaques, carved louver fans. Complete hand-carved classical entablatures.</td>
<td>Free</td>
<td>Write in No. 389</td>
<td>✓</td>
<td>Mahogany</td>
<td>✓</td>
<td>✓</td>
<td>0%</td>
</tr>
</tbody>
</table>

continued on page 34
ARCHITECTURAL ACCOUTREMENTS
Carved and Sculptured in Solid Woods

Raymond Enkeboll Designs

Details are the essential ingredient to any great room. Our corbels come in a multitude of designs and sizes that have countless applications. Their use is limited only by your imagination.

Photography by Tony Nelson

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WRITE IN NO 577
### TRADITIONAL BUILDING'S ARCHITECTURAL CARVINGS SourceList

<table>
<thead>
<tr>
<th>COMPANY</th>
<th>SPECIALITY</th>
<th>Literature</th>
<th>Hand Carvings</th>
<th>Machine Carvings</th>
<th>Materials</th>
<th>Stock Elements</th>
<th>Custom Carving</th>
<th>% Custom</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimitrios Klitsas</td>
<td>Highly detailed custom wood hand carvings for architectural embellishments, furniture, picture and mirror frames, chests, panes, plaques, etc. Carvings done in any style, on any wood, in any size specified by client.</td>
<td>Free</td>
<td>Write in No. 738</td>
<td>All wood types</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>100%</td>
</tr>
<tr>
<td>Kreyzler &amp; Associates</td>
<td>Architectural sculpture and molding shop with broad capabilities. Has a technique for using CAD files to drive cutters, allowing designer to go straight from computer model to final carved object. For certain jobs, technique is cheaper than molding.</td>
<td>Free</td>
<td>Write in No. 739</td>
<td>Various</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>100%</td>
</tr>
<tr>
<td>Larkis Company</td>
<td>Architectural woodshop turns out a wide range of mantels, both standard and custom. Many of the mantels incorporate hand carving, which can be customized as client specifies. Standard woods include: Cherry, oak, walnut, and mahogany.</td>
<td>Free</td>
<td>Write in No. 537</td>
<td>All wood types</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>30%</td>
</tr>
<tr>
<td>Meeting House Restoration</td>
<td>Specialist in museum-quality restoration of antique furniture; reproduction of architectural woodwork and embellishments, including carvings.</td>
<td>Free</td>
<td>All wood types</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>100%</td>
</tr>
<tr>
<td>New York Marble Works</td>
<td>Carving and fabrication of all types of interior marble products, including fireplaces, tiles, and other marble specialties.</td>
<td>Free</td>
<td>Marble</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>10%</td>
</tr>
<tr>
<td>Oak Leaves Studio</td>
<td>Specializes in one-of-a-kind high-relief architectural wood sculpture for such things as doors, panels, overmantels, and free-standing sculpture.</td>
<td>Free</td>
<td>All wood types</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>100%</td>
</tr>
<tr>
<td>Manuel Palos Sculpture</td>
<td>A full-service architectural sculpture studio that, in addition to molded and cast ornament, can produce custom one-of-a-kind carved stone architectural embellishments and sculpture. Works in marble, limestone, and other materials specified by client.</td>
<td>Free</td>
<td>Stone as specified</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>80%</td>
</tr>
<tr>
<td>Pietra Dura, Inc.</td>
<td>Specializes in architectural stone restoration, including retouching or repairing of existing moldings and carvings, honing weathered surfaces, re-creating and installing lost moldings and decorative elements in original material. Also: Moldmaking and casting.</td>
<td>Free</td>
<td>Stone, Other materials as specified</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>100%</td>
</tr>
<tr>
<td>Puccio-European Marble Works</td>
<td>Sculptor, designer, and consultant to design professionals on the uses of marble in architectural and interior applications. Creates custom fireplaces, stairs, bath tubs, and sculpture.</td>
<td>Catalog $5</td>
<td>Marble</td>
<td>◆</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>100%</td>
</tr>
<tr>
<td>Readybuilt Products</td>
<td>Imports carved English mantels in oak and mahogany. Manufactures 50 styles of Early American, traditional, and Classical mantels in red oak and poplar.</td>
<td>Free</td>
<td>Write in No. 217</td>
<td>Various woods</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>25%</td>
</tr>
<tr>
<td>Renaissance Woodcarving</td>
<td>Specialty woodcarver who can custom-carve any decorative element for furniture, paneling, mirror and picture frames, and architectural embellishments. All work done to client's specifications.</td>
<td>None</td>
<td>Any wood types</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>100%</td>
</tr>
<tr>
<td>Ricketson Woodwork</td>
<td>Major full-service architectural woodwork shop that provides design and production of all traditional millwork. As part of their service, the firm provides all types of wood carvings, including relief, pierced tracery, incised capitals, rosettes, and running patterns.</td>
<td>Free</td>
<td>All wood types</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>100%</td>
</tr>
<tr>
<td>Seekonk Studios</td>
<td>Sculptural studio concentrates on carving architectural and sculptural forms from original samples or drawings. Works in any carveable material, such as wood, plaster, or stone.</td>
<td>None</td>
<td>Any material specified</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>100%</td>
</tr>
<tr>
<td>Smithler Studios</td>
<td>Offers complete restoration of limestone carvings. Also does custom carving, from Gothic and Art Deco architectural embellishments to one-of-a-kind sculpture.</td>
<td>None</td>
<td>Limestone</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>70%</td>
</tr>
<tr>
<td>Strasser &amp; Associates</td>
<td>Specializes in architectural restoration and furniture. Also historic interiors. Can reproduce any architectural wood carving for fireplaces, doors, stais, etc.</td>
<td>Free</td>
<td>Any wood specified</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>90%</td>
</tr>
<tr>
<td>Jack Wallis' Doors</td>
<td>A large stock of carved and handcrafted wood doors. Will also create custom doors to client specifications. Offers a selection of hand-carved architectural accents, and will also do custom wood carving.</td>
<td>Catalog $4.50</td>
<td>Wood</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>10%</td>
</tr>
<tr>
<td>Frederick Wilbur, Woodcarver</td>
<td>Woodcarver specializes in serving architects and interior designers. Historic restorations, as well as more contemporary designs: Hand-carved millwork, doors, mural panels, moldings, capitals, moldings, mantels, etc.</td>
<td>Free</td>
<td>Write in No. 752</td>
<td>All wood types</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>100%</td>
</tr>
<tr>
<td>Wilson &amp; McCracken</td>
<td>Major full-service architectural woodwork shop provides design and production of all traditional millwork. All types of wood carving, including relief, chip carving, pierced tracery, incised capitals, running patterns, and sculptural figures.</td>
<td>Free</td>
<td>All wood types</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>100%</td>
</tr>
</tbody>
</table>
British Classical Carvers

British Master Carver, Mr. Ian Agrell and Chief Carver, Adam Thorpe, together with their staff, create traditional hand-carved decoration for architecture and furniture to the highest European standards.

The workshop has undertaken commissions for such major British establishments as Kensington Palace, Ely Cathedral, the new Lloyd's Building in the City of London, and Trinity College of Music.

Their work also graces the residences and palaces of the Sultan of Brunei, the Sultan of Oman, the King of Jordan, and includes commissions for the Saudi Royal family.

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William H. Jackson Co.
3 East 47th Street New York, NY 10017 - 212-FL3-9400

WRITE IN NO. 756

WRITE IN NO. 723

WRITE IN NO. 533
ARCHITECTURAL CARVINGS PORTFOLIO
(Consult SourceList for contact information about companies illustrated.)

- Custom hand-carved wood mantel from William H. Jackson
- This Corinthian capital was carved in limestone by Manuel Palos
- Architectural wood moldings hand-carved by Frederick Wilbur
- Carved marble "Dutchmen" inserted into damaged Georgia marble columns by craftsmen from Pietra Dura during restoration of Brooklyn Borough Hall
- Elaborate 11 ft. x 9 ft. carved picture frame in Honduras mahogany created for the Frick Foundation by Wilson & McCracken
- Carved white oak doors with gold leaf and limed oak finish by Oak Leaves Studio
- Classical hardwood doorway carved by Kenmore Industries
- An elegant Rococo hardwood detail carved by Agrell & Thorpe
- Acanthus leaf wood carving by Dimitrios Klitsas
- Deteriorated cast concrete bas-relief sculpture was restored with epoxies by Creative Sculpture Design & Restoration

continued on page 37
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Building will end soon. To make
sure you don't miss a single issue,
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When evaluating samples of a shop's work, be sure the example is the same style as the work you're commissioning, stresses British-trained Ian Agrell. Carvers are more accomplished in some styles than others, he observes. "For example, in our shop I prefer to do the Gothic carving, while my partner, Adam Thorpe, enjoys the Rococo work."

In evaluating samples, there's also no substitute for experience in discerning the differences between excellent and mediocre work. In a panelled room, for example, it's not just individual carvings you're evaluating, but also the way the whole ensemble relates: Proportions, sizes of individual elements, the way the ceiling mirrors the wall, etc.

**How To Sculpt A 33-ft. Colossus**

How do you make a 33-ft. tall sculpture of a human figure — quickly and economically? Bill Kreysler, president of William Kreysler & Associates, says he's figured out a way. Kreysler has a system using CAD output to drive a cutter... the computer makes it possible to easily achieve scale-up factors of 15X and greater. The process can start with a laser-scanned image of a 3-D model... or read CAD drawings supplied by clients for architectural as well as sculptural shapes. (The process illustrated here could just as easily make a cornice.)

Here's how the system was used to make a huge figure for an amusement park in Japan:

1. A 30-in. model of the desired figure was scanned by a laser scanner to create a 5-D digital image. This image was then loaded into an AutoCad program. Slices through the body of the model as close as 1 mm apart let the sculpture be broken down into several hundred wafer-thin cross-sections.

2. A CNC (Computerized Numerically Controlled) router reads the AutoCad .DFX files and cuts out cross-sections of the scaled-up 3-D digital image. Each slice of polymer foam is left inside its rectangular board so outside edges can be used as reference guides during gluing.

3. Labeled cross-sections are assembled and glued. After adhesive cures, scrap is broken off to reveal the slightly saw-tooth sculpture.

4. Saw-tooth edges are sanded, and a layer of fiberglass-reinforced polyester (FRP) creates a durable structural skin over the foam core.

5. After final glazing, priming, and finish, the completed 33-ft.-tall gas station attendant is ready to go on duty. (For details about William Kreysler & Associates, see Carvings SourceList on p. 34.)

**MANUEL PALOS SCULPTURE, INC.**

1330 DONNER AVENUE, DEPT. TB
SAN FRANCISCO, CALIFORNIA 94124
415 822 8034 FAX: 415 822 9280

WRITE IN NO. 642
n a small town, a tall spire inspires awe; in an urban setting, elaborate towers compete for attention. Wherever you go, cupolas, steeples, and domes give buildings their highest chance to express themselves. But these superstructures also can give architects headaches. In addition to preventing water penetration, professionals must also choose a material, and manufacturers working in wood, metal, and FRP offer conflicting claims.

Cupolas & Steeples

ADVANTAGES & LIMITATIONS

General Notes
- Always consult a reputable manufacturer before developing specs
- Keep installation costs in mind; something that is cheap on the ground but costly to set in place is not a bargain
- Be wary of proportions, especially when dealing with cupolas. Common mistakes are cupolas that are too thin and tall, like telephone booths, or too small — basic rule is, no less than 1 in. of base width per 1 ft. of building length
- Allow for proper joint details. Major reason superstructures have been torn off historic buildings is that improper detailing led to water penetration. Also, where different materials touch, allow for different expansion rates
- Standing-seam cupola roofs are luxuries that look handsome but do not offer more protection than flat roofs; cupola louvers should be deep enough to keep out rain and wind, and roofs should be securely attached
- Remember that dark finishes, on any material, fade faster than light ones

WOOD

ADVANTAGES
- Historical material, suitable for traditional new construction as well as restoration
- Lasts centuries, if properly maintained
- Accepts intricate detail
- Easy to paint, infinite number of colors can be applied by amateurs
- Easy to repair, simple to combine new pieces with existing elements
- Small structures, i.e. cupolas, can be installed by amateurs

DISADVANTAGES
- Costly
- Restoration and fabrication work are time-consuming
- Will deteriorate if not painted regularly
- Heavy (1/3 the weight of aluminum or FRP)
- Combustible

SPEC NOTES:
- When restoring steeples, hire one knowledgeable firm to handle as many aspects of the project as possible, with as few subcontractors as possible: Every segment of a tower interlocks with the others, and coordination leads to a sounder structure
- Cupola louvers should be nailed and glued, not stapled

ALUMINUM

ADVANTAGES
- Usually less expensive than wood or FRP
- Light (1/3 the weight of wood)
- Relatively easy to repair, although usually must be fixed with replacement panels
- Noncombustible
- Wide range of finish colors available

DISADVANTAGES
- Not a historical material
- Details can be crude at close range
- Requires experts to install, and finishes (anodizing, various metal plating, baked-on coatings) require experts to apply and are difficult to touch up

SPEC NOTES:
- Talk to manufacturer before developing specs regarding joints, anchoring details, and interior structure. Common mistakes are (1) not being aware of how flexible the material can be and (2) over-engineering internal structure
- Various cladding materials are available: Copper and lead-coated copper are durable and can be soldered for intricate detail but must be isolated from aluminum; stainless steel is durable and friendly to other metals but difficult to work; Microzinc is compatible with aluminum, can be soldered, and is more flexible than steel, but it is not as flexible as copper and has to be worked in warm places; termo-coated steel can be soldered for good detail but steel core limits flexibility

FRP

ADVANTAGES
- Usually less expensive than wood
- Does not require experts to install
- 1/3 the weight of wood
- Impact resistant and easy to maintain; does not rot or rust
- Can be installed in large, unitized pieces, minimizing joints
- Class A fire-retardant laminates are available
- Color is integral, so no field paint required for at least 15 years

DISADVANTAGES
- Not a historical material
- Can be more expensive than aluminum
- Not all suppliers offer custom colors

SPEC NOTES:
- Discuss project with manufacturer in early stages, to make sure the design is easily moldable (and hence cost-effective) — i.e., avoid return angles and undercuts
- Specify molded matte finish, rather than matte finish created after fabrication with surface-harming abrasives
- Specify premium-grade, UV-resistant, pigmented gel coats, or use catalyzed urethane or 100%-acrylic-emulsion paints
- High gloss can be regained with rubbing compound and wax

Note: The Fiberglass Fabrication Association's spec guides for architectural FRP will be available at the AIA convention in May

HISTORICAL ARTS & CASTING, INC.
1939 South 4130 West, Unit F
Salt Lake City, Utah 84104
Tel: 801-974-0242 Fax: 801-974-5832

WRITE IN NO. 121
TREASURY BUILDING'S SOURCELIST OF CUPOLAS, STEEPLES & DOMES

BY EVE M. KAHN

COMPANY

SPECIALTY

Accent Millworks
Box 226, Dept. TB
Ashland, OH 44804
216-992-7819

Cupola builders, with stock models ranging from 21 to 40 in. H and custom work "as big as a truck can haul." Roofing materials include copper, aluminum, wood, and asphalt. Also supplies custom and stock vane.

Free

Redwood

15%

Architectural Conservation
6 Sarnowski Dr., Dept. TB
Scotia, NY 12302
518-370-0712

Restoration studio specializing in ornament, with extensive experience on towers; also provides specialty roofing, woodwork, and restoration of stained glass, paint, and sculpture.

Free

Write in No. 641

As specified

100%

Architectural Fiberglass Corp.
1351 10th St., Dept. TB
Copake, NY 12107
518-642-4772

FRP specialists who manufacture replicas of sheet metal, cast iron, stone, terra cotta, and wood steeples and cupolas and related ornament, mainly for commercial and ecclesiastical projects.

Free

FRP

100%

Architectural Timber & Millwork
35 Mt. Warner Rd., Dept. TB
Hadley, MA 01035
413-586-3045

Full-service restoration and fabrication of steeples, towers, domes; Survey, documentation, restoration and conservation specs, millwork, steel and timber framing, copperwork, stone, forged iron, belts, weathervanes, gold leaf. Specialists in on-site fabrication, restoration, rigging. Also: Extensive experience with weathervanes & finials.

Free

Write in No. 329

As specified

100%

Campbellsville Industries
Taylor Blvd., Dept. TB
Campbellsville, KY 42718
800-467-8135

Major supplier of aluminum steeples and cupolas; has worked around country and holds world record for largest prefabricated steepel! Also clocks, louvers, crosses, finials, cornices, balustrades, urns, domers, domes, towers; many stock designs. Extensive experience with weathervanes & finials.

Free

Write in No. 582

Aluminum, copper, lead-coated copper, tene-coated steel, or Microzinc cladding aluminum over steel frame

80%

Cape Cod Cupola
78 State Rd., Dept. TB
N. Dartmouth, MA 02747
508-994-2119

Stock cupolas with pagoda, hip, or bell roofs and 4 or 6 sides, with mounding around eaves and base; from 25 to 48 in. H, custom up to 76 in. H. $60 to $1048. Also over 100 styles aluminum and copper weathervanes.

Free

Pine with aluminum or copper roof

1%

Clarke County Metalsmiths
410 E. Main St., Box 641, Dept. TB
Berryville, VA 22611
703-935-3666

Subsidiary of Clarke County Roofing and Guttering which fabricates steeples and other superstructures in sheet metal. Also builds all kinds of sheet-metal ornament, including finials.

Free

Write in No. 728

Northern white pine or copper roof

5%

Colonial Collections
202 Idlewood Dr., Dept. TB
Stamford, CT 06905
203-322-0079

Mail-order source of 4-sided cupolas with hip, bell, or pagoda roofs, in kit or assembled form, from 19 to 68 in. H. stocking $75 to $1,100 stock. More variety of full-bodied copper vanes ($75 to $300) as well as silhouette and full-bodied cast-aluminum vanes ($32 to $300).

Free

Free

Northern white pine or copper or wood roof

5%

20%

5%

Country Cupolas
1160 Easton Rd., Dept. TB
E. Conway, NH 03867
603-939-2698

Cupolas with pagoda, bell, gable, gambrel, or hip roofs, with louvers or glazing, 4, 6, or 8 sides, from 19 to 68 in. H, stock, custom to 96 in. H. Options include keystones, corner posts, cladding such as clapboard.

Free

Write in No. 716

Northern white pine with aluminum, copper, or unfinished roof

25%

Denninger Cupolas & Weather Vanes
RD 1, Box 447, Dept. TB
Middletown, NY 10940
914-343-2229

Hand-crafted cupolas with hand-seamed copper roofs; specializing in historic reproductions and other custom work. Standard line has 4 or 6 sides, period molding, glazing ($995 to $3,295). Wide variety of weathervanes, from full-bodied copper to cast aluminum ($40 to $3,000). Custom silhouette vanes available in many materials.

Free

Free

Free

Free

Write in No. 730

Redwood or cedar with copper or wood roof

50%

Edon Corporation
1160 Easton Rd., Dept. TB
Horsham, PA 19044
800-523-2599 or 215-672-8050

Major manufacturer of FRP domes, steeples, and ornament; has worked on large projects around the country, and can reproduce from originals or originals. Also line of major manufacturer FRP cupolas with 4 or 6 sides, bell or hip roof.

Free

Write in No. 189

FRP

80%

Fiberglass Specialties
Box 1340, Dept. TB
Henderson, TX 75653
903-527-1459 or 214-657-6522

Major supplier of FRP steeples and cupulas; offers dozens of stock units (from $145 to $1,560) as well as components. Steeples can have 4, 6, or 8 sides; windows or louvers, decorative panels, pillars, columns, railings, urns, vanes.

Free

Free

Free

Write in No. 731

Write in No. 734

25%

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Write in No. 731
## TRADITIONAL BUILDING'S SOURCELIST

### CUPOLAS, STEEPLES & DOMES

**CSI# 10340**

**BY EVE M. KAHN**

<table>
<thead>
<tr>
<th>COMPANY</th>
<th>SPECIALTY</th>
<th>Literature</th>
<th>Materials</th>
<th>% Custom</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molded Fiber Glass</td>
<td>Large molded FRP manufacturer. With 300,000-sq.ft. plant, can create “products of unlimited size” and recently finished acres of minarets and spires for the Taj Mahal casino in Atlantic City, NJ.</td>
<td>Free</td>
<td>FRP</td>
<td>100%</td>
</tr>
<tr>
<td>Overly Manufacturing</td>
<td>100+ year-old architectural-metal products manufacturer of domes, steeples, and spires. Finials, plasters, cornices, and other ornament available, as are specialty finishes and metal roofing.</td>
<td>Free</td>
<td>Aluminum, copper, Monel, and stainless steel</td>
<td>100%</td>
</tr>
<tr>
<td>Rocca Noto Studios</td>
<td>Group of artisans who reproduce ornament as well as steeples, cupolas, and domes in FRP, mainly for residential buildings.</td>
<td>Free Write in No. 422</td>
<td>FRP</td>
<td>100%</td>
</tr>
<tr>
<td>Skyline Engineers of MD</td>
<td>Steeple restoration specialists who have restored churches in 26 states, state capitol in 4 states, and Boston’s Faneuil Hall. Services include carpentry, masonry, roofing, painting, cleaning, gilding, and vane and steeple design, replication, and repair.</td>
<td>Free Write in No. 762</td>
<td>As specified</td>
<td>100%</td>
</tr>
<tr>
<td>Slate and Copper Services</td>
<td>14-person firm that restores slate and copper roofs, manufactures roofing accessories, and fabricates copper finials and steeples. Major recent projects include restoration of Bergen County Court-house in New Jersey.</td>
<td>Free Write in No. 721</td>
<td>Copper, slate</td>
<td>100%</td>
</tr>
<tr>
<td>Smith of Derby</td>
<td>Manufactures FRP cupoils with bell roofs colored to resemble lead, from 4 ft. 2 in. to 6-1/2 ft. H. Options include mock or closed louvers and wide variety of the company’s clocks and vanes. Also: Handsome brass silhouette vanes with brass cardinals. Full or swell-bodied copper vanes also available.</td>
<td>Free</td>
<td>FRP</td>
<td>10%</td>
</tr>
<tr>
<td>Superior Fiberglass</td>
<td>Fabricates FRP steeples: from 10 to 47-1/2 ft. H stock, $560 to $10,800; larger sizes and custom work also available. Standard colors: cream, sand, and antique bronze; more for bronze, copper, silver, and gold. Options include arched or flat windows or louvers and pilasters.</td>
<td>Free</td>
<td>FRP</td>
<td>20%</td>
</tr>
<tr>
<td>Webb Manufacturing</td>
<td>8 styles of wood 4-sided cupolas: bell, hip, and pagoda roofs, arched or rectangular louvers, and copper or aluminum roof coverings. $200 to $1100.</td>
<td>Free</td>
<td>Redwood with copper or aluminum</td>
<td>5%</td>
</tr>
<tr>
<td>Wiedemann Industries</td>
<td>Manufactures 14 stock steeple styles with 4, 6, or 8 sides, some with arched openings. Options include glazing, louvers, crosses, finials, and vanes. White finish standard; other colors available.</td>
<td>Free Write in No. 751</td>
<td>FRP</td>
<td>10%</td>
</tr>
<tr>
<td>Yankee Steeplejack</td>
<td>Steeplejacks with 11 years’ experience: services include slate roofing work, millwork repair, gliding, carving, structural repair, and sheet-metal work.</td>
<td>Free</td>
<td>As specified</td>
<td>100%</td>
</tr>
</tbody>
</table>

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Hexagonal wood cupola with bell-shaped roof from Country Cupolas

continued on page 44
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CUPOLAS & STEEPLES PORTFOLIO
continued from page 42

Venetian glass mosaic over FRP dome by William Kreysler & Assocs.

Frosted-glass windows and standing-seam copper roof grace a wood cupola by Denninger Cupolas & Weather Vanes.

Moroccan steeple in FRP by Edon Corp.

Fiberglass Specialties manufacturing an FRP steeple

Landmark Rigging at work on the Norfield Congregational Church

WEATHERVANES & FINIALS PORTFOLIO
(Consult SourceList for contact information about companies illustrated.)

Rooster silhouette vane from Smith of Derby

Walking moose vane from Good Directions

Bow-carrying Indian vane from The Copper House

Oak leaf vane with leafy mount from Contemporary Copper

Vain vane: Mermaid with mirror from Salt & Chestnut

Gilded cow vane from Ives Weathervanes

Copper pelican vane from Wind & Weather

Lion and thistle finials from an 1860 casting catalog, which Historical Arts & Castings can reproduce

Horse-and-rider vane from MacQuarrie & Niccum
WEATHERVANES & FINIALS

BY EVE M. KAHN

A handsome, well-proportioned weather-vane or finial is like a perfect punctuation for a smooth sentence. Not all weathervanes and finials are created equal, however. The best vanes are one-of-a-kind sculptures, whose value will increase: Metals are non-ferrous, features are high relief, bodies are full, surface textures are rich from hammering, and soldering or brazing are nearly invisible. The non-ferrous, features are high relief, whose value will increase: Metals are avoided have gaps in the solder that allow water penetration; they also lack bearings, come without mounting hardware, and do not swing well, tearing up their mechanics — this kind is likely to blow away and, in the process, smash up nearby cupolas or roofs.

Choosing a finish for weather-vanes is simple: Few of them require copper vanees acquire a graceful patina without any help (and an applied skin of 23K gold leaf will last about 50 years), and aluminum vanees usually come with a baked-on finish. Aluminum finials should have a fluoropolymer coating, Teemoc's polyurethane, or PPG's Deltron epoxy. 

Thanks for information to Bruce Coste at Copper House, Robert Baird at Historical Arts & Casting, Marilyn Strauss at Salt & Chestnut Weathervanes, Jonathan Niccum of MacQuarrie & Niccum, and Travis Tuck — Metal Sculptor.

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Hand Wrought Copper Horse Vane
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WEATHERVANES & FINIALS

CSI# 10340

BY EVE M. KAHN

COMPANY | SPECIALTY | Literature | Materials | % Custom
---|---|---|---|---
aden shutter for Architecture | Workshop and foundry supplying finials, cupolas, and other architectural *adornments* in wood, metal, or composite. Services include design and pattern- and mold-making. Stock copper finials can be up to 12 ft. H and corporate glass sections. | Free flyer; send $5 for color brochure | As specified | 50%
Contemporary Copper | Custom vanes in copper; can replicate anything from specific breeds of cattle to c.1930 tractors to the outline of Hawaii. | Free | Copper | 100%
The Copper House | Full-bodied and silhouette vanes, from fully-rigged clipper ships to sheep. In copper, from $150 to $2500, with natural, light, dark, or verdigris finish, aluminum vanes, $25 to $150. | Free | Copper, aluminum | 3%
Historical Arts & Casting | Major source of metal ornament, with finials a specialty; has created them for major buildings around the country. Will engineer and install, has an extensive library of vintage patterns, and can fabricate to any height. | Free brochure | Metal as specified | 100%
Ives Weathervanes | High-quality, hand-formed full- or swill-bodied copper vanes. Over 20 years’ metalsmithing experience. Gliding is available: $400 to $2000 for stock, more for custom. | Free | Copper, brass, bronze | 90%
Kenneth Lynch & Sons | 60-year-old fabricator of metal finials as well as vanes in unusual traditional, non-kitchy designs; e.g., peg-legged sailors, horses leaping fences, carpenters at work. Custom vanes also available. | Free | Copper, brass, aluminum, lead | 30%
MacQuarrie & Niccum | Hand-pounded full-bodied copper vanes; recent assignments have included helicopters, hefty pigs, and wind-blowing Indians shooting arrows. | Free | Copper | 90%
New England Tool | Forge fabricates custom finials and vanes for commissions ranging from large commercial buildings to residences; provides design and engineering assistance. | Free | Metal as specified | 100%
W. F. Norman | 99-year-old sheet-metal ornament manufacturer with a broad selection of finials; from simple spheres to ornament-encrusted poles topped by banners. Can also fabricate new designs based on images or originals. | Free | Copper, zinc | 85%
Salt & Chestnut | 17-year-old vane source: hand-hammered silhouette and full- or swill-bodied, some with glass eyes. Stock from $90 to $1600, with natural or verdigris finish. Adaptations of stock, other custom work available. | Free | Copper | 25%
Travis Tuck, Metal Sculptor | One-man top-of-the-line vane workshop, producing hand-sculpted pieces: $1900 to $3200 for stock, more for custom. Recent commissions: Yachts, planes, championship horses, municipal projects. Stainless-steel shaft, bronze bearing and mounting hardware standard; 2SK gilding available. | Free | Copper, brass, bronze | 90%
Victorian Reproduction Enterprises | Victorian lightning rods and rods/vanes. 5-ft.-H rods/vanes have horse, pig, rooster, or cow vanes, sparkling glass balls, and star ornaments; rods with or without glass balls and scroll braces are 30 in. H. Complete kits, $55 to $244; parts sold separately. | Free | Various metals | 0%
Whitehall Products Ltd. | Victorian red and red/vanes. 5-ft. H rods/vanes have horse, pig, rooster, or cow vanes, sparkling glass balls, and star ornaments; rods with or without glass balls and scroll braces are 30 in. H. Complete kits, $55 to $244; parts sold separately. | Free | Aluminum | 10%
Wind & Weather | Mail-order source of over 150 stock vanes in copper, brass, or aluminum: $36 to $1300, more for custom. Also steel and copper finials and wood cupolas with hip, pagoda, or bell copper-covered roofs. | Free | Copper, aluminum, brass, steel | 5%
ZED International/Le Fanion | French-based vane workshop which produces zinc or copper silhouettes or full-bodied designs. Stock patterns include wheat bundles, angels, and long-tailed winged dragons: from $800 to $10,000. | Free | Copper, zinc | 10%

THE CUPOLA/WEATHERVANE CONNECTION

Many of the companies that supply cupolas also supply and/or restore weathervanes and finials. To avoid double entries, the cupola companies that are also involved with weathervanes were not included on this SourceList. For a more complete view of the weathervane market, you should also consult the entries on the Cupolas SourceList (pages 40, 42) for the following companies:

- ACCENT MILLWORKS
- ARCHITECTURAL TIMBER & MILLWORK
- CAMPBELLSVILLE INDUSTRIES
- CAPE COD CUPOLA
- CLARKE COUNTY METALSMITHS
- COLONIAL COLLECTIONS
- DENNINGER CUPOLAS & WEATHER VANES
- EDON CORP.
- GOOD DIRECTIONS
- LANDMARK RIGGING
- SKYLINE ENGINEERS OF MD.
- SLATE & COPPER SERVICES
- SMITH OF DERBY

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to realize that building codes often led to unnecessary demolition of his­toric buildings." His beneficence paid of: In 1974, Oxnard, Calif., asked him to convert their 1906 Carnegie Library into a community center.

Seismic reinforcement proved to be the project's greatest challenge. Stabilizing techniques of the time called for an ornament-obscuring coat of gunite, a type of concrete, to be sprayed over an unreinforced-

masonry structure's interior or ex­terior. "Even to say, 'No, there's got to be a better way' was radical at the time," says Green. His better way: Steel beams stationed at intervals wide enough to be barely noticeable and closely spaced enough to stabi­lize the structure.

Assisting him on the project was Anne Watson. "I told her, 'Come work for me, I can guarantee you six months' work,' and six months turned into 16 years," he says. The two partners divide tasks neatly: Watson handles architectural issues and minds the store. "I hate to travel," she says. "I'd rather have my nose in the computer." Green not only deals with engineering considerations, but he also lectures, attends conferences, and copes with clients. (He chose his office's locale, Manhattan Beach, partly for its proximity to the airport and partly for its ocean breezes — "the only breathable air in town," he says.)

Seismic-related work takes up mu­ch of his time. After he completed the Carnegie Library, he began work­ing with research engineers to de­velop more sophisticated reinforce­ment methods. "They did the re­search, I wrote the codes so that the research could be used in the field," he says. "What we came up with, our ideas for tying masonry together, made what I did at the Carnegie Library look ordinary, if not primitive." His other written contributions in the field include the Uniform Code for Building Conservation (used by every state west of the Mississippi).

He has also written guidelines for Massachusetts, San Diego, San Ber­nardino County, Los Angeles' Central Business District, Yuma, Arizona, and California's Seismic Safety Commission.

Green gave seismic, structural, and con­servation advice for the restoration of the Fourth Ward School in Nevada.

The firm has encountered a few pockets of bad luck along the way. They completed an adaptive­use study for a Victorian hotel in On­tario, Calif., just before the building burned; they designed seismic strengthening for two firehouses in Alhambra, Calif., just before the Whittier Narrows Earthquake of 1987 reduced them to ruins. And there have also been moments of sheer in­spiration. Asked to move a 22-by-38­foot, WPA-sponsored, mosaic mural in the Fourth Ward School in Nevada, Green hooked it up over a dozen toaster-size Teflon pads. "The mural is rigid, while the beams and concrete are flexible," says Green. "In case of quake, the mural can just slide back and forth."

At the moment he is expand­ing his horizons still further, in par­ticular his firm's geographic boundaries. "We're helping South Carolina with multi-hazard mitiga­tion, so that when they rebuild from Hugo they'll be strong enough to withstand the next hurricane or earthquake," he says. "I've also done consulting in Peru and Yugoslavia — and there I heard the Slavs say, 'If only we had no building codes, or more sympathetic building codes, we could preserve so much more.' They're saying the same things we said 20 years ago. Everywhere you go, the needs, the problems, the ques­tions are the same."
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