Summer 2007 Volume 30, Number 2

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Dry Stone Walls Hardscaping Natural Thin Stone Bluestone Slate Roofing BSI Man of the Year

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On the Cover:

Cold Spring Granite's Radiant Red, Amber Gold and Academy Black granites provided the perfect hardscaping materials for the Harbor Building Parkway project in San Pedro.

> Photo courtesy of Cold Spring Granite

Photo courtesy of Keith Davitt

Features

8 Outdoor Art: From the Ground Up

When it comes to landscaping, natural stone isn't limited to surface applications. Its ease of use for more artistic endeavors opens up the landscape architect's ability to provide their clients with beautiful, oneof-a-kind gazebos, wall screens, garden sculptures, benches, fountains and much more.

18 Natural Stone: The Heart of Hardscaping

From large-scale public paving to small residential patio and pool oases, natural flagstone and stone pavers provide the crucial element for any hardscaping project. In this article, we'll highlight a broad array of public and residential hardscaping projects where natural stone lends its durable, creative and attractive presence to the architects' designs.

34 What's Old is New Again

Used for centuries across the globe, dry stack stone walling is making a comeback in a big way. Whether it's the classic mortarless wall stone fencing, made famous in Scotland, Ireland and the U.S. New England areas, or contemporary versions with twists, turns and even a double helix or two, natural stone provides the right material for the job.

6 Introduction

Departments

Historical Feature

72 San Francisco's Soul

At 5:12 a.m., April 16, 1906, San Francisco awoke to its infamous earthquake. By fire's end, five square miles of ash marked the destruction of 28,000 buildings. In the midst of hell, the San Francisco Mint stood tall, strong and ready. Today, San Francisco is in the midst of restoring and re-purposing this elegant and well-loved stone landmark.

76 Industry News

80 Advertising Index

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BuildingStone MAGAZINE Features

48 Natural Stone Lite

Natural thin stone provides the beauty and strength of natural stone for environments

where full-dimensional stone might be weight prohibitive. We'll review some case studies where natural thin stone came to the rescue for a variety of interior and exterior building applications.

56 Colorful Contributions

Bluestone provides an unusual and creative contribution to almost any exterior or interior application. We highlight a few projects were bluestone provided its diverse and whimsical spectrum of colors.

60 Century Roofing

Slate roofing is a wonderful way to top off any residential, public or private construction project. Slate roofing is known for its tremendous durability - lasting 100, 200, even 400 years - as well as for its unique capabilities to handle removal and interchanging of system parts for ease of maintenance. We'll discuss what designers need to know about this robust natural stone system.

66 BSI's Man of the Year: John Grubb

At the 2007 BSI annual convention. John Grubb was honored with the Institute's "Man of the Year" award. In this issue, we highlight his amazing accomplishments and how he has assisted in raising the building stone industry to a new level.

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BSI Introduction

Relaxing in the Great Outdoors

Scott Buechel President, Building Stone Institute

ANY CITY DWELLERS will travel hundreds of miles each weekend for the opportunity to enjoy the great outdoors; however, for others it is as close as their own backyard. In recent years, the trend has been to create a resort-type atmosphere in our outdoor living areas, allowing us to enjoy the peace and serenity of a tropical vacation – right at home, every day.

People are doing more than ever with their backyards, incorporating the finest aspects of Mother Nature. Architects are using outcroppings and adding patio stone walkways that lead to outdoor gathering areas complete with fireplaces and even outdoor kitchens. From these gathering areas, the path may lead to a stream, which flows into a small pond filled with exotic fish.

Yes, we are now designing our outdoor living areas just as carefully as we design the interiors of our homes. No longer is this just a place to clip the grass. Our yards are becoming havens of peace and tranquility, as well as outdoor entertainment areas. As you read through the articles in this issue, you will see how hardscaping is used to achieve different and unique affects, to reflect the personality of the homeowner.

On a recent trip to Washington, D.C., I had the opportunity to visit the American Society for Landscape Architects (ASLA) headquarters. After our visit, we went to the rooftop where they have incorporated the use of landscaping. Today, this is being called "green." It was a very inviting area that allowed their employees a place to temporarily "get away" during the workday. The rooftop was lined with plants, with decorative chips, vision barriers around the heating and air conditioners (which also acted as a sound barrier), and even a few very small trees.

The ASLA uses this rooftop mecca as a demonstration of what can be achieved with a little ingenuity. When Executive Vice President and CEO Nancy Somerville showed us what the roof looked like before the landscaping, it was easy to see how this outdoor area, in the middle of the city, could improve people's attitudes. Nancy also said that, in terms of payback, they are projecting that the landscaping will double the life expectancy of the roof, making the project not only aesthetically appealing, but also cost-effective.

We all want to be surrounded by nature, to the fullest extent possible. Given the durability of natural stone, the cost of natural stone over a lifetime is very affordable. You will always need to look at projects and try to figure out where you can "value engineer," but if you truly look at the life cycle of stone, this is the one product that should not be pulled from your projects. The use of natural stone will always reflect positively on you and your company. \blacklozenge



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Photo courtesy of Keith Davitt

OUTDOOR ART:

From the Ground Up

By Mark Haverstock

HEN IT COMES TO HARDSCAPING, where designers and landscape architects add non-plant elements to landscaping, stone is a natural choice. It offers so many appealing options, from a rustic stacked wall to a flowing waterfall; or a simple granite bench to an intricately carved gazebo. Maybe you like the solid presence of stone – or you just need some strategically placed boulders.

"With stone, you have the real deal, not a replica," said Jason Hestekin, sales representative for Fond du Lac Stone. "It's difficult to get that natural, rustic feel from concrete. Most people who choose natural stone, whether its boulders, slabs or outcroppings, want that natural, rustic look." You can install your stone and arrange it the way you want. Within a year or so, once you get your grass and plants and vegetation going, it will give you the appearance that it's been there forever.

Back to Nature

"I think there's a trend of building on large wooded properties - people want a three-acre lots so it looks like they're living in the country," Hestekin said. "Natural products lend themselves more to a rustic, country feel." The other part is the maintenance - there isn't any. He noted that the natural changes that the climate presents are part of how the stone may or may not change over time. If moss grows on it, that's the way it's supposed to be. Stone's beauty increases the longer you have it installed on your property.

Stone Crossing, a residential development in Colorado Springs, Colo., features open spaces with a country feel, including more than a mile of neighborhood trails and almost 22 acres of dedicated open space. Among these spacious surroundings is a stone bridge constructed from Siloam Stone's layered sedimentary sandstone, designed by Wenk and Associates of Denver. "It's part of a pond arrangement that has several water features," said Matthew Mueller, general manager for Siloam Stone." It features patios and steps, in addition to the walkway."

Mueller noted that customers are after the rustic look, especially with stairs and entryways. "They're trying to create an environment that looks like the home belongs in the existing environment," he said. "With Siloam Stone, that's been our niche; the natural look is what people love about our products." Siloam supplies local stone exclusively from their 640-acre deposit in southern Colorado.

Surrounded by rolling pastureland and overlooking beautiful Lake Grapevine, the Gaylord Texan Resort pays tribute to the six regions of Texas: the Gulf Coast, Hill Country, the High Plains and Prairies, the Pineywoods and Swamps, Brush Country, and the Mountains & Deserts. Inside the atrium area of the resort is a hardscape representing the Hill Country area of Texas. "The natural stone you see is the wall rising out of the rock in the background," said Robert V. Barnes, III, executive vice president of Dee Brown Inc., an award-winning mason contractor in Garland, Texas, "We used several different types of Oklahoma sandstone from the Canadian River area for this project."

BELOW: Closeup of pond and waterfall at New Skete Monastery.



LEFT: Inviting outdoor area at New Skete Monastery invites visitors to stop, sit and enjoy.

BELOW: This observatory/gazebo in upstate New York was designed as a romantic spot where visitors can be one with nature and view the surrounding mountains. Another section of the resort that utilizes the same variety of Oklahoma sandstone is a grand stairway located in one of the courtyards, where it is used as veneer as well as the cap. "The architect didn't want joints – he basically wanted everything to fit together. Though it is laid in mortar, it doesn't appear to be," Barnes added. "You've got to have an artist working on that wall, someone who can see the material and make the puzzle pieces fit." More than 80,000 square feet of stone came together to complete this one feature.

Preserving Tradition

Ancient craft with modern design is what New York's Sana Stone provides for its clients. "The sort of handcrafting we do is difficult to accomplish in any reasonable way in the United States today; it's a very time-consuming process," said Nayanna Currimbhoy, one of the firm's partners.



THE ART OF HARDSCAPING

When landscape architect Keith Davitt moved to Cambridge, N.Y., he soon realized that most people think about gardens as simply a collection of plants. "They don't think about outdoor living structure; they don't think about hardscaping," he said. "They're missing the whole possibility of what outdoor structure offers in the form of outdoor living, as well as making their gardens look better."

Davitt said that if you look at any perennial bed and embed a piece of hardscape in it - a pot, a stone, a sculpture - the garden will instantly look better. "The reason for this is when you're looking at plants, what you're really seeing are 10,000 pinpoints of light," he explained. "If you've ever tried to draw a plant, you know how complex a structure it can be. In comparison, an urn, a vase or a birdbath are very simple forms. The eye is able to rest on them and relax, and then can go out and survey the garden again, refreshed."

Hardscaping provides balance and focal points, and offers a sense of motion or enclosure – all the many uses that structures provide but plants alone can't. "Also consider this: How many gardens that you go back to in ten years that are totally plants are still there?" Davitt asked. "With hardscaping you have more permanence, durability, and delineation of space. Hardscaping gives you more lasting environments."



LEFT: Fond du Lac outcropping.

Photo courtesy of Fond du Lac Stone

Even in her native India, it was a dving art until Sana Stone supported a revival of the stone carving community in Jaipur, approximately 160 miles from New Delhi. The Jaipur workshop now supplies customers with detailed, hand-carved screens, sculptures and structures.

One elegant example is The Raincatcher, a stone observatory/gazebo located on an estate in upstate New York. Constructed of yellow limestone, the structure stands on four pillars that support a dome. The dome features a central oculus, which lets in sunlight, moonlight, rain and snow, and creates a moving shadow in the space according to the passage of the sun through the sky.

Hand-carved moon screens that support the benches display the phases of the moon. An intricately carved stone lotus flower embedded in the center of the dome functions as a rain catcher, and compass, and when it fills with rain, becomes a bird bath. The interior of the dome, as well as the base of the columns, are handcrafted to add texture and



RIGHT: Narrow entryway to Tucson, Ariz. home incorporates indigenous sandstone, washed gravel imbedded in cement and poured cement with a stucco surface. Plants and forms are scaled to match available area.

Photo courtesy of Keith Davitt

create a play of light and shadow on the stone. To add to its mystique, the yellow limestone turns golden when wet.

The 20,000-pound observatory is constructed to use compression. Like stone construction in ancient times, the collar of the dome works as the keystone, locking the dome into place. All parts of the observatory are notched into place using mortise and tenon joints. There is no mortar, though copper pins are added for additional security. The lintels that hold up the dome distribute the weight to the columns and then to the foundation.

Landscaping Layout

Almost all of Keith Davitt's projects utilize natural stone. As a landscape architect, he appreciates the integrity and look of natural stone. "You can't really replace that," he said. "Concrete used as concrete is one thing, but concrete cast to imitate stone is a totally different animal. It doesn't take any skill to work with these fabricated materials, but it takes a real craftsman to work with natural stone – that becomes part of the beauty of the garden."

Davitt typically doesn't do a project for the sake of being unique. "However, it often comes



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out that way when you select materials with some degree of sensitivity for their impact," he said. "What I'm always trying to do is to create a beautiful environment and whatever is going to help me get that quality dictates what I choose." He added that every stone is different; unlike with prefabricated materials, with each stone, you have a new opportunity to create something that's completely natural and unpredictable. It will combine with the stones you've already laid up in some unique way.

Design is more a matter of discovery than creation according to Davitt. His bluestone walkway project in Brewster, N.Y., is one good example. "I'm always designing in response to the client and the property itself," he explained. "My client had both contemporary and classical tastes, and the house exterior was contemporary." The walkway was composed of broad, deep steps that lend a sense of spaciousness as opposed to narrower steps. The sweeping S-curve also lends grace to the project.

Sometimes, practical needs help determine design parameters. The Monastery at New Skete project in Cambridge, N.Y., began with an alternative to a large set of concrete steps that the residents disliked. Originally, they wanted to design a way up to the chapel that was wheelchair accessible and that could easily accommodate a snow blower. "But when I got there, I also saw there was no outdoor living area available, yet this was a destination area for people," Davitt explained. "It was also the desire of the monks and nuns to open up more to the community." Thus began the Meditation Gardens Project, an area terraced with boulders that weigh 1.5 to five tons, featuring a waterfall and two ponds.

BELOW: Portable crane aids in exact placement of stone and boulders.





RIGHT: Beaver Dam Bush Hammered Steps and Beaver Dam Drywall.

BELOW: Sandstone bridge bisects pond and creates a small waterfall.



Attention to Details

One of the biggest challenges in creating outdoor spaces with stone is just getting the stone on the property. "If you're talking about an urban space like my Brooklyn projects, every piece of material had to go through a building," Davitt said. "So when you're talking about moving a two-ton boulder through the building, you need a little time and some ingenuity." He often employs an age-old method used by the pyramid builders of Egypt with some modern updates – heavy PVC pipe under the stone and boards under the pipe to protect the floors. You roll the stone pieces forward and move the back pipes to the front until the stone is safely on the opposite end of the building.

Then there is the challenge of placing them properly, which can be extremely difficult. Davitt had a ship builder make a portable crane to help him move large pieces of rock with reasonable ease and accuracy. "It had to come apart so two people could carry it through a brownstone, [assemble



it] on site in a backyard, and be able to lift these very heavy stone pieces and boulders," he said. Other stones and bags of sand are used as counterweights once the crane is assembled.

Designs for small, restricted space also require special attention. When designers are working with compact parameters, they often use materials scaled properly for that spatial area. "You don't use large pieces of stone in a very small space," Davitt said. "The elements need to fit the available space, and when you're working in small spaces, you make the benches a little bit lower than they would normally be. These adjustments give the sense of expanding the space."



LEFT: Bluestone walkway incorporates Belgian block.

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Photo courtesy of Keith Davitt

ABOVE: This handcarved screen and urn of white marble are located at a private residence in Ghent, N.Y. The screen, called the namaste screen, is in a pyramid shape that comes down to a knife point at the top-the base sits in a marble trough. The low urn works in this case as an outdoor shower.

One of a Kind

From its formation in the ground through the quarrying, cutting and installation process, each piece of natural stone has its own personality and contributes its unique character to hardscaping projects. "The stone we supply is always one-of-akind, although it may have 99 percent of the characteristics of the next batch," Hestekin said. "The similarities are there, but it does have a uniqueness to it that you can tailor to your application. You can really make a project your own."

Though Fond du Lac Stone has a core set of products, just about every project is different in some way. For example, a customer may choose product A and product B, but may only use 30 percent of A and 70 percent of B. Another may go with a 50/50 mix. "Though the projects may have some similarities, there's a completely different feel to them," he said. "Everything becomes a custom project."

RESOURCES:

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Fond du Lac Stone Fond du Lac, Wis. (920) 921-8280 www.fdlstone.com

Keith Davitt, Landscape Architect Cambridge, N.Y. (518) 677-8357 www.gardenviews.com

Sana Stone New York, N.Y. (212) 228-8396 www.sanastone.com

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NATURAL STONE:

The Heart of Hardscaping

By Jodi Paper

HE KEY TO SUCCESS IS PAVED WITH NATURAL STONE. From largescale commercial projects to small residential applications, natural stone comes through as the product of choice when hardscaping is the name of the game. Whether you are looking at giant pavers for a public space susceptible to high

foot traffic, or small-scale flagstone to enhance a backyard oasis, natural stone is essential to designing a visually glorious and truly sustainable hardscape.

Natural stone boasts innumerable qualities in a variety of applications. According to Fred Van Ness, owner and operator of Van Ness Stone Inc. of Newbury, Ohio, "Real stone is in a class of its own."

First, there is the variety of natural stone available: limestone, sandstone, bluestone and granite, to name a few. Then there is the range of available cuts and shapes: pavers, veneers, cobbles, boulders, stacking, flagging – the list goes on. And the colors? Every color of the rainbow, and then some. It's safe to say there is a stone for every purpose and a purpose to every stone.

Public Spaces and Large Commercial Projects

For hundreds of years, people have depended on stone for its sustainability, beauty and strength; large-scale commercial and public hardscaping projects prove no different. While one might think of manmade materials for such sizeable outdoor applications, stone is actually an incredibly viable and economical choice.

Jim Schmidlein is a project manager at Architectural Paving & Stone Inc. located in Weymouth, Mass. Throughout the years, he has seen a lot of natural stone being used in commercial building projects in the Boston





OPPOSITE PAGE AND LEFT: Cold Spring Granite offered its Radiant Red, Amber Gold and Academy Black granites for the Harbor Building Parkway project in San Pedro, Calif.



ABOVE: Many home owners are adding natural stone features to their landscaping designs.

RIGHT: Natural stone lends itself to almost any design idea.

area and noted how conducive the material is to the climate.

"Granite is best suited to our climate because it can withstand the wear and tear of snow removal, and freeze and thaw cycles," he said. "Limestone, bluestone and fieldstone also are used frequently. We have projects that mix fieldstone walls and large, stone benches in unique ways."

Indeed, natural stone's durability lends great versatility for public spaces and large commercial projects. Many of these stones are able to withstand the impact of heavy pedestrian traffic and all kinds of weather conditions. Additionally, a number of them boast ease of care and maintenance – important qualities in any application, especially major thoroughfares.

University of Cincinnati

Initiated in 1989 by the University of Cincinnati, "The Master Plan" is an effort to transform the urban campus landscape – harsh concrete and sprawling parking lots – into a



RIGHT: Radiant Red granite provides the perfect material for benches along the Harbor Building Parkway project.

livable, casual space. In association with this redesign are the university's "Open Spaces" projects, including the renovation of Main Street into a pedestrianfriendly, aesthetically pleasing greenscape.

Landscape architect and project manager, Len Thomas, turned to Cold Spring Granite, a quarrier and fabricator of building stone located in Cold Spring, Minn., for the perfect hardscaping material that would help shape the project. Often referred







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ABOVE: Whether you choose small gravel, flat flagstone or large fulldimension blocks, natural stone can provide the perfect accent for your landscaping ideas.

RIGHT: Natural stone can withstand a tremendous amount of foot and vehicle traffic.

to as "the flavor of the University of Cincinnati," Cold Spring's Carnelian granite met the color characteristics of many of the older buildings on campus.

"One thing we talk to architects about granite is about choosing a stone," said Ken Hogan, a field sales representative at Cold Spring Granite who worked with Jodi Moore, the regional sales representative, on this project. "We talk about sustainability. Granite will keep its appearance. It has a high integrity when it comes to color maintenance." It's also one of the hardest – if not *the* hardest – stones, and so, is applicable in many capacities. "We used the Carnelian for step treads, walking areas, borders to the walkways, seat walls and fountains," Hogan said. "The seat walls and tread worked well to transition the topography."

From a longevity standpoint, and given the amount of wear and tear in such a heavy-traffic area, Carnelian granite made a lot of sense. It's a product that is easier to keep clean and harder to destroy.







"In all, 110 truckloads of Carnelian granite were used in the two phases of the Main Street project," said Brent Peterson, a project manager at Cold Spring Granite. At 24 tons per truck, that totals 2,640 tons of granite used on this project. Considering granite's sustainability, toughness and beauty, it is no wonder the project relied so heavily on this magnificent stone.

Port of Los Angeles

The restoration of the Port of Los Angeles is another example of natural stone stepping up to the hardscape plate. For this large-scale project, architects and designers also worked with Cold Spring Granite. In this case, the materials of choice were Radiant Red, Amber Gold and Academy Black, which came from quarries



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BELOW: Cold Spring's Carnelian granite was used at the University of Cincinnati's "Open Spaces" project to provide a casual, more livable space for visitors, students and faculty.

BOTTOM: Natural stone plays a significant role in creating successful hardscaping projects for residential sites.

Photo courtesy of Cold Spring Granite



in Texas, Minnesota and California, respectively.

The Radiant Red – implemented all along the parkway and used for the benches that dot the waterfront – was selected because it is reminiscent of the Red Car Line that is a major part of the history of the area, and which, in fact, has recently been restored. The Amber Gold Granite houses the stories of San Pedro that have been sandblasted into the stone. The Academy Black pavers are local to the project; its darkness a striking contrast to the other stones.

Again, sustainability and longevity are major factors when choosing hardscaping materials, which makes granite a natural choice. Thus, the restoration of the port was designed around expectations of intense foot traffic, as well as lending to the beautification of the area. Granite paving, with its strength and non-slip surface, fills the bill. And stories, like those of San Pedro, have literally been etched into stone, allowing them to become permanent and historical fixtures.

"One big reason we see granite being used in such applications, is that it lasts hundreds of years," said Kathy Spanier, the director of marketing at Cold Spring Granite. "It makes a lasting impression."



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RIGHT: This residential project utilizes natural stone in several forms, each complementing the other.

BELOW: Unlike other materials, natural stone can create patios, walkways and other hardscaping projects that need limited maintenance and upkeep.



^{photo} courtesy of Sonny & Sons Stone



Residential Projects

Harry S. Triebe Sr. is the owner of Sonny & Sons Stone Company in Downsville, N.Y., and he is a firm believer in natural stone. "As a hardscaping material, natural stone cannot be beat for its overall versatility, strength and durability, and its cost-effectiveness due to the previous factors," he said. For residential projects, both large and small, the world of natural stone is a vast smorgasbord of building materials.

For Triebe, whose company specializes in bluestone, "the possibilities [of natural stone] are limited only by one's mind." Residential applications for natural stone include walkways, patios, steps and entranceways, coping and poolscapes, stone walls, accenting and much more.

"What drew me to the stone business, was the variety of color and texture, and the knowledge that granite can help create a beautiful outdoor living space," said Andre Hagadorn, president and owner of Adirondack Natural Stone LLC of White Hall, N.Y. Adirondack Natural Stone specializes in four, different granites, all quarried locally: Blue Mountain, Adirondack Natural, Dolph Pond RIGHT: Natural stone easily flows from interior to exterior applications, providing flawless transitions.

and Lake George. "Because this is a natural material, granite has very unique properties," Hagadorn said. "As it's harvested from the quarries, different veins are unearthed, offering different hues with the stone. This creates a beautiful range of colors, and as the stone on finished projects weathers, the colors deepen, giving way to an Old World elegance."

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foot applications, natural stone is great as an accent. Glen Chesshir, who is the owner and operator of Chesshir Stone & Rock Inc. in Dallas, said that boulders can be put to good use. "Boulders are always a good item, because they can be used to highlight flower beds, waterscapes, creek beds and koi ponds," he said.

Architectural Paving & Stone's Schmidlein has noticed that rounded, smooth riverbed stone has become a popular accent material.

In his corner of Northeastern Ohio, Van Ness said, "People are using reclaimed cobblestones in driveways and casual sitting areas." He went on to point out, "The major advantage of natural stone is that it is not commercial looking. It fits easily into a natural setting because it *is* natural."

A recent hardscaping trend is the integration of outdoor rooms in residential projects.

"We see a lot of people investing in outdoor rooms, an additional room to the house where the families can spend more time outside enjoying the environment while also having some of the indoor amenities available, such as an outdoor bar or cooking facilities," said George Cannell, director for Delaware Quarries Inc. of New Hope, Pa. Whether creating a comfort zone or curb appeal, he said, natural stone plays a significant role in creating successful hardscaping projects for residential sites.

"When people look to sell their homes, or just to make the home personable to them, nat-





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ural stone makes their home more appealing than homes using other types of patio or cladding materials."

Of course, natural stone used in residential settings is more than just a pretty material; it is highly sustainable. "When used in landscaping, natural stone can be permanent. It's good for so many years to come when it is installed properly," Chesshir said.

Proper installation includes paying attention to the climate in which the stone will exist. "The right product has to be used in the right application in the right climate," Van Ness said. "We try to only carry products that will sustain in our Ohio weather. Sandstone works well here because it breathes; it takes water in and it lets water out."







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Schmidlein agreed. "Natural stone in the proper application will last forever. When lifecycle costs are taken into account the initial cost of stonework is made competitive by lower maintenance," he said.

Thus, natural stone is an economically viable option, not just for spectacular, million-dollar homes, but also for smaller homes. Natural stone can fit any budget. Costs often are based on square foot or per ton pricing. And because a large portion of the overall cost of natural stone can come from freight charges, selecting stone from local quarries can significantly lower the price. But the main thing to remember is that natural stone can last forever.

Perhaps Van Ness put it best: "Fine homes - whatever their size - use real stone. Period."

Green Building

Natural stone is not only a solid investment in commercial, public and residential properties; it's an investment in the future. "The recent emphasis on 'Green Building' and LEED [Leadership in Energy Environmental Design] has provided a new motivation to utilize locally quarried stone,"





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Adirondack, Blue Mountain, Dolph Pond, Hawthorne, and Lake George Granites <u>Available in:</u> Mosaic Veneer, Roughly Squared & Rectangular, Ashlar, Flagging, Uniwall, Wall Stone and Thin Veneer Schmidlein said. "Materials that are extracted and manufactured within 500 miles [of a project] add to the score the building receives. Depending upon the competing materials, natural stone can add to this score and thus show a commitment to our environment."

In whatever application, natural stone gets to the heart of the matter: sustainability, versatility, strength, durability and costeffectiveness. "With natural stone you have the longevity," Van Ness said. "Something built today will be enjoyed by your grandchildren's grandchildren. And natural stone doesn't have any dyes or chemicals that may be harmful to the environment. Natural stone is a reclaimable source, being reused again and again; it's not destined for a landfill."

In the wise words of Hagadorn, "With natural stone there are no rules. People can use any cut and color and make their dream a reality."

RESOURCES:

Adirondack Natural Stone LLC White Hall, N.Y. (518) 499-0602 www.adirondacknaturalstone.com

Architectural Paving & Stone Weymouth, Mass. (781) 337-2780 www.apsboston.com

Chesshir Stone & Rock Inc. Dallas, Texas (214) 350-6781 www.chesshirstone.com

Cold Spring Granite Cold Spring, Minn. (320) 685-3621 www.coldspringgranite.com

Delaware Quarries Inc. New Hope, Pa. (800) 533-4954 www.delwarequarries.com

Sonny & Sons Stone Company Downsville, N.Y. (607) 363-7543

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Dry Stone Walling

By James Asbury, Mountaineer Stone

CREATIVE ART FORM PROVIDES NEW IDEAS WHILE STILL STICKING TO ITS ROOTS



FOR THOSE WHO THINK THAT THE ONLY WAY to use stone in construction is to adhere it to a block or slather it with mortar would benefit from looking back in time. Familiarize yourself with masonry design before the modern world "caught up" with the Romans' invention of a standardized block for construction.

There is a growing revival of "wallers," as they are formally called, who shun the use of mortar altogether. With the demands of historic preservation and restoration in the United States, and private interest in new and unique uses of this ancient wallbuilding technique, the outlook for these wallers is positive.

Within this growing group of dry stone masons, there exists a branch that utilizes these building concepts primarily in mainstream landscaping or historic restoration. Still others attempt to push the basics of the craft further – creating new shapes and structures – making the natural stone the defining characteristic of the landscape.

In my eight years of walling, I've seen my fair share of scrunched-up noses and more than once responded deftly to the accusatory question: "Aren't you going to put any mortar in that?" I politely say "no" and, if the inquiring individual has the time and desire, I recount the summarized history of dry stone construction and finish it off by telling them why I find dry stone work to be a most rewarding and challenging trade.

I tell these people that in our quickly changing and moving world, it is often hard to find things that keep us anchored to the past. With dry stone construction, the craftspersons and structures can honor the past, present and future equally, with new twists on old ideas and the conABOVE: Dry stone masonry can be utilized in its traditional sense, such as this freestanding random rubble dry stack wall, or in a more contemporary form.

RIGHT: Built from hand-selected local natural stone, this freestanding dry stone wall includes an Old World hearth design.




Photo courtesy of Dick Gillespie ABOVE: This 80-yard dry stone fence includes an arched "sheep creep," historically used to allow sheep to freely move between pastures.

tinuation of telling stories through symbolic meaning in architecture.

Historical Perspective

Dry stone walling has a firm history that runs parallel with that of man. Walling, in some form or another, may have been practiced by man even before he came to use tools, with the first documented dry stone construction dating back to the early Neolithic period (beginning around 10,000 B.C.), aptly falling during the latter part of the Stone Age. Every part of the Earth where man has found stone, he has put them to use without mortar. Some of the living testaments to the longevity of dry stone wall structures include the ancient Egyptian pyramids (2575-2150 B.C.), the cyclopean walls of Mycenae (1350 B.C.), the Mayan ruins (8th and 9th century A.D.) and the Inca's use of stone wall terracing construction (15th century A.D.).

Dry stone walling's roots in the United States began before the first immigrant farmers planted their fields, when plots of land were divvied up by European settlers. Used mainly to mark and secure these boundaries, at the peak of their popularity, remarkably there were enough stones in New England's walls to build a fence around the Earth's equator. Likewise, at the end of the 19th century, there were enough dry stone in walls in Connecticut alone to build a six-foot tall wall



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RIGHT AND BELOW: The Tribute to Knowledge, a freestanding arch statue, was built by students of the Pennsylvania College of Technology in Williamsport, Pa.

along the entire East Coast and through the Gulf of Mexico.

In these early years, the building of dry stone walls served two purposes. Many of the stones were taken from the fields they bordered; as land was cleared and readied for planting, families, farmers and farmhands put the stone to use in walls and other structures. Though these walls' lives were highly static, there was slow change. Cleared stones in long windrows gradually were constructed into formal walls.

While structurally sound for centuries, only 5 percent of these historic walls are still standing, mostly because of deconstruction. These old walls can be found near older and restored homes and, in a trendy rebirth of old traditions, surrounding newer construction projects as well. These walls – and how they have been integrated into the current landscape of this country – reflect the changing lives of Americans and our cyclical relationships with past lifestyles and customs.

Rebirth of a Tradition

I have personally had the satisfaction of building dry structures that most people take for granted as requiring mortar. For instance, a couple of years ago I was commissioned to build a dry stone bridge. I used the knowledge I had acquired from workshops,







books and master craftsmen to build a more modern structure with an older technique.

Recently, I had the satisfaction of creating a dry stone wall project I dubbed "Mercy Gate." Like many jobs, I had the pleasure of selecting the stones from literally hundreds of pallets, and supervising the three-week project and every inch of production. Built from Pennsylvania bluestone blocks weighing up to 150 pounds each, the wall stands more than nine feet tall. The most significant part of this work was a large arch doorway.

During dry stone wall construction, a little voice in the back of your head wonders what might go wrong. This adds to the excitement when you compete the job, the false work is removed, and you stand in awe

LEFT: A winding pathway design by John Shaw-Rimmington.

Photo courtesv of John Shaw-Rimmington



RIGHT: Dry stone walling complements Mother Nature.

of the arch of dry stone left behind. It takes your breath away every time.

In another project – this time an 80-yard dry stone fence to enclose a large residential lawn – I constructed a "sheep creep," or a smaller arch in the wall historically used to permit grazing sheep to pass. Although it's a new construction, this element bears the historical presence of times past – as well as provides a remarkable design element for all who pass by.

Wallers across the trade are melding the traditional aspects with contemporary design, and vice versa. John Shaw-Rimming-

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LEFT: This "folly" design gives an Old World feel for this residential landscape.

ton has realized a number of his mind-boggling designs in recent years, starting with a twist on the standard arch. Rimmington's arch breaks the rules, creating a twisted arch. By offsetting each stone a couple of degrees further than the previous one, a twist appears in the arch and an old concept is reborn into a modern twist, so to speak.

Such novel adaptations of basic or classical building concepts are sought constantly by the creative dry stone mason. Rimmington has built a number of lessthan-traditional structures. I was quite impressed with a giant



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wedge of cheese, complete with holes. It's not as practical as a house, but it is far more interesting than the standard wall.

During another student project at the Haliburton School of Arts in Canada, Rimmington created a winding pathway, taking a traditional dry laid sheepfold and throwing a contemporary gentle curve into the design.

"In effect you create a winding pathway through two lovely C-shaped walls," said Rimmington. "The height of the two walls, including the rugged vertical coping is over four-and-ahalf feet, so that standing between them there is a dynamic interior space that is both intimate and inviting."

Likewise, in his workshop in Ontario, Rimmington and his students created what can best be described as a Hot Wheels track in stone. That structure was built inside of a greenhouse and was never meant to be permanent. When I saw pictures and read LEFT: John Shaw-Rimmington and his students at the Haliburton School of Arts in Haliburton, Ontario, Canada, provided a modern-day twist on the traditional "sheep creep."

about it, I decided that I'd like to see if it could be done for a permanent structure. Since students built the original, I thought it fitting to have students assist me in this second stone loop. Students from the Pennsylvania College of Technology were put to the task and saw it through to completion. The finished product, "A Tribute to Knowledge," is a stone loop in the same style as the aforementioned Hot Wheels track, and it has shown steady durability, making it safely through its first winter.

Unlimited Potential

Today, some wallers aim only to build strong walls, but others birth and nurture ideas, varying the work of the past with the input of the current patron. Neil Rippingale, a member of Great Britain's Dry Stone Walling Association and master craftsman from Scotland, has applied his trade all over the world. Deviating from traditional design, he has even constructed a dry stone house – with a few modern amenities included, of course.

"The Black House was built from new, yes, but the idea dates back hundreds and hundreds of years in Scottish heritage," Rippingale explained.

The Black House took 32 days to build and was a challenge worthy of a master. The house has one door and seven windows, and construction required that the inside be built vertically, with the outside battered. Tyvec and Visqueen lining intertwined on each course of the build were used as insulation.

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atural stone is always in fashion, whether it's limestone, granite or marble. Decorative and impressive stone facades create a refined image for the structure, and stand for value retention and quality. HALFEN natural stone anchors offer the same level of quality to the fastening and support of natural stone facades.

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ABOVE AND ABOVE RIGHT: Built by owner and dry stone mason, Steve Dziuba, this dry stone retaining wall shows that strength and sustainability can go hand-in-hand.

BELOW RIGHT: When the tree's roots pushed this retaining wall outwards, the author was able to dismantle the wall, correct the landscaping problem, and then rebuild the wall with the original stonework. For his accomplishment in this construction, Rippingale received much praise and publicity and was presented with the Pinnacle Award by Her Royal Highness, Princess Anne. He has since received a second Pinnacle Award for his inspiring work.

Green Building

While the revival of stone walling provides designers the ability to tie in a more traditional theme to a residential or commercial project, this type of structure also offers answers for modern-day problems.

Since the main material in dry stone wall construction is natural and no mortar is used, dry-stacked stone walls can be considered a "green" structure. A single skid steer or other small landscaping equipment is only required for a small amount of the work, leaving the main construction to be done with manpower. Relying on hammers and other small hand tools keeps construction simple. Also, dry stone walls do not sit on a poured footer; constructed in the traditional dry stone style, they create a natural location for water to return to the soil. Also, construction of a wall without mortar means that the structure can be adapted to a changing landscape without clearing mortar from the stones.

Timeless Art

One thing that many wallers seem to share is their joy in contemplating how their creations will long outlive them. Rippingale and Rimmington have expressed this sentiment and I, myself, think of it daily.

When asked what else he loves about this work, Rippingale replied, "I like the variety of it, and the people you meet all over the world with the same passion for it. ... I love working with the skills that ancient people used thousands of years ago. One stone added to another is not a new concept. One stone added to another – in just the right way – might be."

Given its longevity, working with stone is more creative, passionate and emotional than any other trade I personally have known. Dry stone creations have outlasted their mason creators for thousands of years and, so long as I build them right, I hope my work will long outlive me as well.





Conclusion Stone is a timeless and worth-

while medium when applied to architecture. Its rebirth is expanding, both in a traditional form, and in a new, creative way. Walling is basic, but unbound by restriction; dry stone walling cannot change, but is constantly evolving within its own identity. Just like any other trade or form of construction, it is always evolving yet it keeps its basic roots close to heart. ♦

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TUCKER DESIGNAWARDS

ponsored by Building Stone Institute, the Tucker Design Awards program is the stone industry's most prestigious award program. Highly respected by the architecture and design community, the Tucker Design Awards provide an opportunity to honor those projects that have demonstrated design excellence in the use of natural stone.

Who May Enter

Architects, landscape architects, interior designers, and others who feel their work has achieved design excellence in the use and incorporation of natural stone are encouraged to enter the 2008 Tucker Design Awards competition.

Eligibility

Completed projects located anywhere in the world are eligible. Projects in the design stage, under construction, or with unfinished landscaping will not be accepted. A project that has previously received a Tucker Design Award cannot be resubmitted.

Project Types

The Tucker Design Awards are awarded to honor excellence in the concept, design, and construction of projects that utilize natural stone including residential, commercial, and institutional structures; landscapes; interiors; and restoration. Memorials, landscape elements, and fountains are also encouraged.

Submission Procedures

Detailed entry guidelines and a submission binder will be mailed to each entrant upon receipt of the Call to Entry form.

The submission requirements include:

Up to twelve professional quality 8"x10" or 8.5"x11" color photographs of differing views. Images should be carefully selected and identified to include:

- An overall view of the structure
- Views of the exterior
- Views of the interior (if stone is used)
- Close-up views of the special details

If the project is a renovation or restoration, at least four of the photographs should be of the project prior to restoration or renovation.

A written description of the project which should not exceed 500 words and which should include the requirements of the client; a description of how those requirements were met; a description of the project's function; and an explanation of why natural stone was selected.

For buildings, include a floor plan and section and elevation drawings to illustrate the design and use of stone.

A site plan. For buildings, the plan should indicate location and use of stone; and for landscape designs, it should indicate areas where stone is used.

Line drawing showing a typical stone installation detail.

A separate sheet with the name and address of the design firm and consultants, the project owner, the general contractor or construction manager, the stone installer and the stone supplier, and the types of natural stone used.

Please Note: Winners will be required to supply digital high resolution images for publicity purposes. Images of the award-winning projects must be accompanied by a signed release which gives BSI permission to use all copyrighted photos to publicize the awards competition. BSI reserves the right to disqualify any entry with incomplete information or visual elements.

Presentation of the Awards

The award winners will be notified shortly after the jury's decision. Presentation of the awards will take place at the BSI Tucker Design Awards luncheon in Dallas, Texas during May 2008. Representatives for the award-winning project must be present to receive the award. For a look at the 2006 Tucker Awards, visit BuildingStoneInstitute.org



Registration Process

1. Complete this Entry Form and submit with the appropriate fee. Registration fees are \$100.00 for the first entry and \$75.00 for each additional entry.

2. Upon receipt of your entry fee, BSI will mail submission binders to you for completion. *Please note that NO entry fee will be returned in the event your entry is not submitted.* Submission binders will be returned upon your request.

Competition Schedule

Entry Form and Fees Deadline: September 28, 2007

Submission Binders Deadline: November 16, 2007

The judging is scheduled for January 2008 followed by the Tucker Awards Presentation May 2008 in Dallas, Texas.



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Please complete and return this form(s) before September 28, 2007 to: **Building Stone Institute** 551 Tollgate Road, Suite C Elgin, IL 60123 For questions about this competition, please call (866) 786-6313. Past jurors for the Tucker Design Awards have included:

Richard Foster, FAIA Hugh Hardy, FAIA John Johansen, FAIA Samuel Brody, FAIA M. Paul Friedberg, FASLA, AIP Hamilton Smith, FAIA John Morris Dixon, FAIA Gerald Allen, AIA Harry C. Wolf, FAIA Charles G. Hilgenhurst, FAIA William H. Livingston, Jr., AIA F. Thomas Schmitt, AIA John H. Burgee, FAIA William E. Pedersen, FAIA Robert A.M. Stern, FAIA A. Eugene Kohn, FAIA Malcolm Holzman, FAIA Walter F. Wagner, Jr., FAIA Danforth Toan, FAIA William Conklin, FAIA Douglas Brenner, AIA Herbert L. Smith, Jr., FAIA Alan Ritchie, AIA Frank C. Marcellino, AIA Herbert Beckhard, FAIA Robert M. Kliment, FAIA Mildred F. Schmertz, FAIA Der Scutt, FAIA Paul Rudolph, FAIA Elliot Willensky, FAIA Roger Yee, AIA Howard N. Horri, FAIA Stephen P. King, AIA Richard Bergmann, FAIA Philip W. Dinsmore, FAIA James Kingsland, AIA Bruce S. Fowle, FAIA Peter S. Forbes, FAIA Steven L. Einhorn, FAIA Melvin Brecher, FAIA Eric A. Chung, FAIA Frank D. Nemeth, AIA John Peter Barie, AIA Leonard Jacobson, FAIA Earl Flansburgh, FAIA Alan Goldberg, FAIA Frank Richlan, AIA Frederick A. Bland, FAIA Stanley Tigerman, FAIA Charles A. Linn, FAIA Frances Halsband, FAIA Harold Roth, FAIA Bradford White Fiske, AIA Robert A. Ivy, FAIA James R. Morter, FAIA Barry W. Starke, FASLA Peter H. Dominick, FAIA George Hoover, FAIA Robert Murase, FASLA Marvin Malecha, FAIA Leslie N. Boney, Jr., FAIA Thomas Blasley, FASLA James L. Nagle, FAIA Peter Lindsay Schaudt, FAAR, ASLA Randolph E. Guillot, AIA





Natural Stone Lite

By Cory Sekine-Pettite



ATURAL THIN STONE PROVIDES THE BEAUTY and strength of natural stone for environments where full-dimensional stone might be weight and/or cost prohibitive. The material is the fastest growing product among stone suppliers in the United States. And among many architects and builders. natural thin

stone is moving quickly from a niche product used strictly for cost savings or structural considerations to being the preferred facing product for many residential, commercial, industrial and institutional projects. In this article, *Building Stone Magazine* reviews some case studies where natural thin stone came to the rescue for a

variety of interior and exterior building applications.

A Happy Accident

In residential construction, particularly single-family housing, natural thin stone veneer is a popular choice for builders because, once installed, the stone looks just like full-dimensional stone, yet it requires less labor Photo courtesy of Stillman Development Co.

ABOVE: New York-based homebuilder Robert Stillman used natural thin stone for the first time on this multi-milliondollar Connecticut home.



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ABOVE: The lobby of the Hampton Inn & Suites in Lake George, N.Y., features natural thin stone from Champlain Stone Ltd.

and effort to install. In turn, this saves the builder – and the eventual homeowner – a good deal of money without sacrificing the quality of the building materials or their life expectancy.

For Robert Stillman, a New York-based builder of multi-million-dollar homes, discovering the qualities and ease of use of a particular supplier's natural thin stone was a happy accident. Stillman, owner of Stillman Development Co., was looking for a natural stone supplier last year for a small but exclusive residential development in Fairfield County, Conn. For this particular project, he required a natural thin stone that was a minimum of 14 inches long and six inches in height so that when the pieces went up on the exterior walls of his new homes, they looked like substantial stones – the kind he usually uses when working with thicker natural stone veneers. Through his online searches, Stillman found Connecticut Cut Stone Supplies Inc., of Milford, Conn., which was able to manufacture the stones to his specifications.

According to the manufacturer, natural thin stone is an intelligent way to engineer a residential project because one can save a significant amount of money in construction costs on digging the foundation.

The material also is often easier to work with than full-dimensional stone and can be installed

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LEFT: Natural thin stone also is a prominent feature of the bar area inside the Hampton Inn & Suites.

in less time, which is a factor in construction cost savings.

"You still see the same size and scale as regular, traditional four- to six-inch veneer, but you get five times the coverage," said Tyra Dellacroce, general manager of Connecticut Cut Stone. "Where normal veneer might cover about 30 square feet in a ton, a ton of ThinStone™ [the company's brand of natural thin stone] will cover about 140 square feet."



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LEFT: The entire front façade of this Connecticut home is constructed with natural thin stone from Connecticut Cut Stone.

"It was a really great experience," said Stillman, who was using natural thin stone for the first time. "From the outward appearance, you cannot tell that it is not a four-inch- or fiveinch-thick veneer, because it is real stone.

The home, pictured here and on page 48, is a 9,200-squarefoot, Georgian Colonial style house on 2.6 acres. It was completed just a few months ago, and is one of only three, multimillion-dollar residences being built by Stillman for this development. Construction on the house was completed in only nine months; the stonework was completed in just two months.

Connecticut Cut Stone supplied all of the stone used on the exterior and interior of the home, including three full chimneys, an entire front façade, extensive garden walls in the back of the house, a large deck and more. The thickness of the stone on the exterior ranges from 3/4 of an inch to 1-1/4 inches. It is a square-cut pattern of natural, split-face granite that includes specially manufactured corner pieces as well.

Stillman wanted to use natural thin stone because, in the price range of homes he builds, there would be a great resistance to using synthetic materials on the outside of the homes. "I needed to use a real stone, both for marketing purposes and for looks.... In this case, I had great variety and color, and texture. It doesn't look like every piece was cast in a mold," he said, adding that "It's RIGHT: The interior of this Stillman-built home features natural thin stone, which surrounds three full chimneys.

pretty hard to argue against it; you have real stone at half the cost, with half the time. It was not a hard decision to make."

As far as the installation goes, he said, "The labor was roughly one-half the time that we have typically experienced for a fourinch or five-inch veneer wall. And the cost of the material is a little more expensive than the full veneer stone, but the labor savings more than offsets it; and the speed is remarkable. I'd definitely use the product again."

Stillman added that it was a pleasure just to watch his crews work with the material. "They just take a 4-1/2-inch diamond blade grinder and they cut through it like they're working with tile," he said.

Colors and Textures

Multi-million-dollar homes are not the only projects where natural thin stone is being implemented today. Technology has made the production and affordability of natural stone veneers an option for homes and other projects on many budget levels. According to Natural Stone Veneers International Inc. (NSVI), a family-run stone supplier in Fond du Lac, Wis., diamond saws, robots and computer technology now contribute to the quarrying and fabrication of thin, lightweight slices of natural stone. What's more, the company said, scraps and rubble - once considered unusable waste - can be cut down and used as well, thanks to the technologies at hand.

Further, typically no additional structure supports are needed when a thin stone veneer is applied, since the size and weight is usually specified within building code limits. Thin veneers, unlike conventional full veneer stone products, do not require ledgers, footings or ties as part of installation, NSVI said. And in an industry where time *is* money, this fact makes natural thin veneers an increasingly popular choice.

It could be argued that nowhere is this truer than with commercial/retail construction projects. Joe Buechel, one of the five family members who run NSVI, said that for large commercial projects, natural thin stone is becoming the standard wall material. "With the technique and installation methods in which thin veneer is [placed], you'll see more of it because it is a better fit for commercial projects. ... It's more affordable."

In fact, many builders that incorporate natural thin stone into their commercial developments are able to *mix it up* with several different varieties of stone to produce unique and aesthetically appealing structures. Thus, NSVI offers 55 different varieties of thin stone veneer. "What sells in New York City is different from Florida or the Midwest or L.A., so you've got to have colors and textures," Buechel said.

One large project in particular, he recalled, used six or seven different types of NSVI's thin stone, including its Concord, Vir-





RIGHT: In keeping with the exterior design theme of the Stillman house, the garden walls behind the home also are constructed with natural thin stone.

BELOW: The large patio of Stillman house, which leads to the garden, is paved with natural thin stone tiles.



ginia Ledgestone, Sydney, Lakewood, Kingston and Olympia stones. The mixture of thin stone materials for the Grand Plaza shopping mall in Southern California visually divides the various storefronts for this outdoor mall, while at the same time producing a cohesive facility that looks as though it could have been carved right out of a mountain. The developers certainly couldn't have afforded such a design using full-dimensional products, yet the end result provides the

same visual appeal. "Again, it is all about color and texture. ... What better wall covering could you have than natural stone," Buechel said.



The Stone Sells Itself

For a recent hotel construction project in Lake George, N.Y., the architect, Rovetto Design Group, was opting to use a cultured stone product instead of the more costly fulldimensional natural stone - on the façade of the building, as well as for the interior fireplace, reception desk and bar area. However, before the project got underway, the firm discovered a natural thin stone alternative from Champlain Stone Ltd. of Warrensburg, N.Y. According to Champlain, once the masonry contractor quoted an installation price for the natural stone at the same rate as it had for the cultured stone product, the Hampton Inn & Suites hotel project was given the green light.

"The owner paid a little more for the natural stone thin veneer to get the desired color and cut, but the budget held," said Jane Bennett, a Champlain representative. "Because of the multi-storied design and the relative newness of natural thin veneer stone installations locally, the thin veneer was installed with a masonry shelf to doubly insure the bearing load of the stone would be secure."

Of course, Jim White, project manager for Champlain knows the stone will hold. "If it's installed properly on your building, it will be there [indefinitely]. It won't change in look or style or shape; it won't fade, it won't chip, it will just be there forever," he said.

For the Hampton Inn's owner, Adirondack Hospitality Corp., and its architect, White aided in the selection of Champlain's American Granite[™] thin sawn ashlar. He said the stone was chosen because it reflects the surrounding Adirondack Mountains and "it has a lot of natural earth tones. It also has some color; it's got some blue and some garnet inclusions. It's a very pretty stone."

Completed in the summer of 2006, the final design features 1,200 square feet of American Granite thin sawn ashlar and 100 lineal feet of American Granite thin sawn ashlar corners.

Admittedly, White said, the owner and architect didn't need much convincing to change their plans to natural thin stone. The product sells itself, he said. "It's almost a no-brainer for the end user who is paying the bill," he added.

And according to White, word of Champlain's natural thin veneers is spreading, particularly in his region where other recent projects include a hotel across the street from the Hampton Inn & Suites; the Natural History Museum of the Adirondacks in Tupper Lake, N.Y.; and the New York State Department of Environmental Conservation office in Warrensburg, N.Y. 🔶



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Colorful Contributions

By Todd Messelt



N THE NORTHEASTERN UNITED STATES where the stone has been quarried since the early 1800s, bluestone has been embraced by architects and designers as a versatile, colorful, flagging and coping material. While it remains a traditional favorite in the Northeast, purveyors of bluestone have enjoyed an ever-growing market that has reached every corner of the United States.

The durable bluestone's color palette extends beyond its namesake "blue" to shades of grey, brown, green and lilac. As a paving stone, its colors enable a diversity of possibilities, ranging from whimsical mosaics of irregular shapes to cleaner designs that incorporate a rectilinear, monochromatic approach. More recently, architects and designers have pushed the creative envelope by specifying newer bluestone treatments for countertops, flooring and interior facing.

Widely known as "Pennsylvania bluestone," the material's popular moniker is a doublemisnomer, not only because of the material's breadth of color. but also because it exists outside of Pennsylvania, with deposits reaching into southern New York. A few pockets of similar material can be found elsewhere in the world, but anyone hoping to find it in states other than New York and Pennsylvania can save the time and expense and learn from Dan Thomas, vice president of Star Stone Sales in Salt Lake City.



"When we originally started here in Utah, we heard an urban legend that there were bluestone deposits here in the mountains of Utah and Idaho," Thomas explained. "So my father and I started going out and prospecting on weekends. We'd go up into the mountains and search and prospect. We searched and searched and searched and searched, and could never find any. We did a lot of prospecting until we found it in New York State."

The Thomas family's subsequent decision to begin quarrying flagstone and heavy, block bluestone in New York was well advised. "The growth in the bluestone industry has been tremendous," Thomas said. "From 1970 to 2004, it grew 1,400 percent – and most of that has been in the last 10 years."

A Texture for Every Use

In Meshoppen, Pa., Bill Ruark is the owner of Meshoppen Stone Inc., a company that has been quarrying bluestone exclusively for 40 years. The family-owned business owns or leases about a dozen bluestone quarries in Pennsylvania and also operates three fabrication facilities.

Ruark said bluestone is widely marketed in three textures: natural cleft, flame-finished and polished. He said the natural cleft variety is popular for exterior uses, and the company is also seeing it used for interior flooring of foyers and hallways. Flame-finished and polished surfaces are used mostly for architectural-grade applications.

In New England, where bluestone has long been common fare, the material continues to enjoy popular status, said Jennifer Wies, a partner at Quarry ConABOVE: Bluestone can be used in a variety of forms, from flagging, wallstone and coping, to stair treads and veneer.

OPPOSITE LEFT: The durable bluepstone's color palette extends beyond its namesake "blue" to shades of grey, brown, green and lilac, much like this bluestone mosaic from Connecticut Stone Supply. BELOW: Whether its cut in regular or irregular shapes, bluestone provides designers and owners a clean, crisp look. nections in Middletown, Md. The company specializes in furnishing trailer loads of stone for large projects and supplies high-volume masons and landscapers.

"I've been helping people with selection for many years, and they'll come to me and say'I want something different." I'll show them 10 things that are different, and a lot of times they'll end up going with something that they're comfortable with, which is what they've seen for many years," she said. "They've worked with bluestone, they know the product, and there's really no reliable alternative."

Beyond Blue

Bluestone is available in two, basic color groups: variegated (full-color) or select. Full-color bluestone includes the blue, grey, green, brown and lilac tones; select bluestone has a more consistent coloration, with primarily steel blue to blue-grey with some greenish hues.

"We tend to be able to get select blue in nice slabs," Wies said. "It's really the most accessible when you want to do specialty cuts because the slabs tend to be from the most solid blocks. Sometimes, people will want to match treads with the full-color range, but it's a little harder to get slabs that don't have reeding [parallel grooves] within the block."

Interior designer Nancy Barden, who is also the sales manager for Barden Stone in Memphis, Tenn., said most of her clients prefer full-color bluestone for its variety of color, in addition to its relative affordability.

"Full-color ranges between \$5 to \$6 per square foot," she said. "If you color-select, you might be



looking at a \$1 or \$2 per square foot up-charge. It all depends on what the quarry is demanding.

"It's affordable for any kind of flooring application, and can also be used inside," Barden added. "If it's durable enough to be used outside, it's definitely durable enough to be inside. We have it in the whole downstairs of our family house."

Design Trends

Tyra Dellacroce is the general manager of Connecticut Stone Supplies in Milford, Conn., which imports, manufactures and distributes stone for largescale residential and commercial projects. "There's been a trend in the industry toward the desire and need to seek different sorts of textures, so architects have been specifying bluestone in different formats and finishes," Dellacroce said. "The cost does go up a little bit because there's another step in the labor process to deliver the textures and the finishes that they want."

With the growing trend toward modern designs, many architects are specifying sawn and flamed bluestone since its thickness and texture is consistent. "So rather than having large angulations in the natural cleft, it's going to have a consistent texture and a modern look," Dellacroce said. "You can get monochromatic color and monolithic texture by having a flamed surface.

"A lot of architects like the clean, crisp look that the stone provides. So we are manufacturing slabs for countertops and fireplace facings, and we are manufacturing it in a thinstone as well.

"It's a neat product right now because architects and designers are taking a traditional, New England colonial stone and finding a way to give it new life." •

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History

The formation of slate within the Earth's crust started more than 500 million years ago. A finegrained, metamorphic rock, slate is formed through a sedimentary process, stacking clay, volcanic ash and other elements to create a shale-type, foliated stone. Slate typically offers two lines of breakability - a cleavage and a grain line - making it easily possible to split the stone into thin, durable sheets for use as roofing material, building veneer, interior and exterior tile, and - for slate not containing feldspar – aquatic décor.

In the United States, slate roofing first came into limited use during the late-17th century, with the material only being used on the stateliest of town buildings. Prior to the age of major transportation, slate roofing was restricted to coastal cities, utilizing materials imported from Wales. However, from 1785 to 1870, the Welsh discovered and opened slate quarries from Maryland to Maine, providing a new local supply. Later, the growing use of locomotive transportation services created an opportunity to supply slate for roofing and other building needs across the United States, beyond the coastal areas and regions local to the quarries.

From the 1850s to the 1920s, slate roofing was at its height of use in the United States. This period of time introduced the transition of roofing from a typically conservative and low-key structure to a more decorative and high-profile appearance. For many design styles of the time – from Victorian, Victorian High Gothic and Richardson Romanesque, to Georgian, Tudor and Jacobethan Revival – slate became the perfect roofing material to compliment the architects' creations.

After decades of remaining in the shadows with the design community, slate roofing once again made a resurgence, beginning in the 1990s. With the tremendous expansion in the residential construction market in recent years, economic growth in the United States, an increase in historical renovations, and the opening of more slate quarries, slate roofing is making a comeback.

Domestically, slate is now quarried in a number of states, including Vermont, New York, Pennsylvania and Virginia; slate also has been quarried in Arkansas, California, Georgia, Maine, Maryland, New Jersey, Utah and Wisconsin as well, having since ceased production. Internationally, slate is found on practically every continent, with virtually every country that offers natural stone quarrying operations represented. The Glendyne Quarry of St. Mark du Lac Long, Quebec, Canada, is the largest roofing-slate producing facility in North America and one of the largest in the world.

Colorful Options & Designs

Of all the roofing materials possible, slate is perhaps the most aesthetically pleasing. No other material combines the quality and durability of slate, with the multitude of bursting colors, patterns and designs.

The colors traditionally utilized for roofing include every shade of dark black to milky grey, sea green, robust purples OPPOSITE LEFT: Slate roofing is known for its durability and classic look.

BELOW: Slate roofing is available in a number of styles, with the traditional look being the standard pattern shown here.





LEFT AND BELOW: Although the eyebrow dormers and arches provided a challenge for the slate roofers, the Tinley Park station project went off without a hitch.

and even a bright red slate. The roofing tiles are available in solid colors or a transitional blend of two or three swirling colors on each tile. As the color of slate is determined by its chemical and mineralogical composition, factors that differ upon the location, each quarry will provide a very specialized variety of colors, tones and shades. The color quality and characteristics are also dependent on other elements present; for instance, the black slate quarried in Buckingham County, Va., offers a distinct, glistening sheen because of its high mica content.

Natural slate roofing tiles typically are characterized as having faded or unfaded coloring. While slate's color does not technically "fade," faded slate roofing will present a chalk-ashen residue over time that may lessen its appearance, while unfaded slate tiles will not. It is also typical that many slate tiles will display varying degrees of color change or weathering because of oxidation of the minerals present in the stone as they become exposed to the elements.

Not only can designers have great artistic license through the use of various colors and color combinations, but slate roofing also offers a broad range of creative inscriptions or designs, as

well as traditional patterns, including standard pattern, random width, staggered butt, ragged butt, textural, graduated and mixed shapes styles.

Life Cvcle & Durability

What makes a slate roof expensive is its initial cost; however, over years it provides a pleasant appearance while needing little maintenance. The life cycle for a properly installed slate roof is usually more than 100 years, with the longevity typically dependent on the type and origin of the slate, the roof style and climate in which the building is located.

To support long life, slate roofs should be inspected annually and after severe storms. Even if a tile is damaged, maintenance and repairs of slate roofing systems are accommodated easily.

Case Study

Recently chosen at the American Institute of Architects' list of 150 Great Places in Illinois, the Tinley Park Oak Park Avenue Metra station designed by Legat Architects of Waukegan, Ill., provides Old World charm and sensibility that offered the perfect opportunity to utilize slate roofing.

Completed in 2002, the train station was the first step in this thriving southwest Chicago

community's master plan aimed at renovating the town's image. The station is the pivotal element in creating a warm and socially active central area for the town, sporting Fond du Lac Rustic stone walls from Buechel Stone, exposed wood rafters, and cedar shingle siding that recalls the "Arts & Crafts" style popularized at the turn of the century.

Taking this stylish design further, if one were to look down upon the building from above, the station's three-story clock tower and observation deck serves as the center point of a "clock face," with the "hour hand" housing the waiting area and the "minute hand" housing the Internet café and covered passenger drop-off area. Stone monuments





2276 South Daniels Road / Heber City, Utah 84032 Telephone 435.654.3336 or 1.800.654.0094 www.utahstone.com Beautiful quarried sandstone with colors varying from golds to tans to rusts.



Photo courtesy of Legat Architects ABOVE: Designers from Legat Architects of Waukegan, Ill., decided on a grey, green and purple combination of slate tiles for the Tinley Park station project.

around the plaza mark each hour on the clock's face.

With so much forethought and creativity in the design, it was hard not to choose the perfect roofing material for the job.

"Slate was easily sold on this project," said Marc Rohde, architectural project manager for Legat



Architects. "They wanted this project to be top-notch quality, so we were doing real slate, real heavy timber, real stone.

"Architecturally, we were probably first thinking about the look, but at the same time we had to look at the fact that we wanted this building to last at least 50 years," Rohde added. "We really wanted that stone and Old World look, so we went with what we wanted.

"Yes, slate roofing costs more, but it's pretty permanent and it should be a half century, at least, sitting up there," he said. "You're not going to be carrying it off after 20 years."

While slate roofing was relatively a "no brainer" on this project, Rohde and his team spent time looking over color samples, mixing combinations together and deciding on the final look that epitomized the Tinley Park project. In the end, a grey, green and purple slate combination provided exactly what they were looking for.

At the installation stage, although the eyebrow dormers, arches and the circular roof of the clock tower provided a challenge for the slate roofers, the project went off without a hitch.

"We're very pleased with how the project turned out," Rohde said. ◆

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BSI Honors John Grubb as Man of the Year

By Kate Parrott



OHN GRUBB DESCRIBES HIS YEARS in the stone industry as a "colored history." With nearly 21 years in the business – which Grubb considers an accomplishment in itself – and five years as a BSI member, Grubb has made promoting the stone industry a way of life.

His passion for stone developed more than two decades ago, when he first started working with Luck Stone in Richmond, Va., his current employer. He was first employed in a crushed stone scale office, dispatching trucks. At the time, Luck Stone sold small amounts of building stone and flagstone, along with various types of other products. Within a couple of years, Grubb was working full time with the architectural stone division of the company, which was developed in 1977 to offer consumers a complete line of stone products for the home, landscape and business.

Back then, Grubb was doing it all – selling the product, picking the orders, packaging them, delivering them and collecting for them. "At that point, it was a very young part of our business and we used to do it all," he said. "It was fun because you didn't know what you were going to be doing the next minute."

Since his early days in the business, Grubb has transitioned to different positions in the company, from estimating to project management. He's been involved with sales, and also conducted some operations management for a brief period. "But," he said, "I found my current calling as a product specialist to be where my strengths are. I tend to be notoriously curious about stuff, and I think the stone industry is an industry that calls for a certain amount of curiosity. It's an industry where you kind of have to selftrain. The nice thing about what I've gone through in the stone industry is that I don't just sell one product." Grubb said that learning about the many products out there that will work for his clients is the most exciting part of his job.

However, his enthusiasm for stone doesn't end there. Grubb's work in the industry transcends his



nine to five job. For the past six years, he has been a member of the Construction Specification Institute (CSI), an organization dedicated to creating standards and formats to improve construction documents and project delivery. Grubb said his involvement in the institute surprised even himself: "Usually, I don't like to take the lead," he said. "I kind of like to follow." That may be true, but not with CSI. Grubb has served as chair for a variety of committees, doing product expos and helping to promote new building products. He currently serves as president of his chapter in central Virginia.

Last year, Grubbs also was asked to serve as the Building Stone Institute (BSI) Technical Committee chair. "I really should have built the committee last year, but didn't do that," he said. "What I did was act more as a resource to questions that would come in from all over the country. Grubb said people would call BSI or send e-mails with technical questions about installations or product issues. He then would research and reply to customers' issues. "I kind of acted as a technical resource for the Building Stone Institute, but really didn't have a committee of other individuals ABOVE: John Grubb with the 2006 BSI Person of the Year Brenda Edwards.

OPPOSITE: John Grubb accepting the 2007 BSI Man of the Year Award.



ABOVE: John with fellow BSI member Diane Sante during the teambuilding event "Build Your Own Boat" contest at the BSI convention

BELOW: John participating in the BSI strategic Planning session.



that we tasked to write articles and things like that," he said. Forming a full committee, Grubb said, is this year's task.

He said the committee has currently been working on ASTM issues related to the stone industry for product specifications and installation specifications. "We're moving along," he said. "At this point, we've got a ways to go to really make an impact with our technical committee. ... In going forward, our goal is to figure out how to educate members and the design community on the selection and proper use of stone products.

One of his greatest accomplishments, Grubbs said, is being honored as the Building Stone Institute's Man of the Year.

"I feel very honored and very humbled by it," he said. "I'm more honored that the people I learned from would nominate me for what I've done, which is basically passing on the knowledge that they've created in the industry. I'm honored to represent the people who created and figured out all the stuff about stone."

BSI Past President, Rick Jones, said Grubbs is an ideal role model. "John has been faithful to make all our meetings," he said. "He was given the chore to work on promoting thin stone application fabrication and did an exemplary job. He's been a BSI and natural stone promoter for years. I think John was the right man at the right time at the right place."

Not only has Grubbs been a promoter of BSI, he's also been a supporter. "I feel like BSI's involvement in the industry is currently fantastic," he said. "Especially from the legislative involvement that BSI has participated in when it comes to trying to address issues for our members related to laws and issues that affect the industry."

Grubb also commended the Designer Education Series, which he says is behind the true meaning of BSI. "It's about educating people about the stone products and what the benefits are," he said. "I think that's a tremendous function of the institute." The series was established to offer base level stone fabrication and installation information to architects and designers. The courses are held annually nationwide.

Following his achievement of Man of the Year, Grubbs said he plans to continue what he's been doing. "My goals for the future are to continue to be a resource for all aspects of the construction industry when it comes to stone products – selection, application of, and troubleshooting. That's what I do now, and that's what I hope to be doing until I retire." •

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A New World in Veneer Stone

Natural Stone - Precut, Numbered and Ready to Install

Anyone who has been involved in a high-end construction project quickly realizes nothing is more critical than control. Control of design, control of timelines, control of costs and control of quality are the hallmarks of successful projects. When working with natural stone, controlling these factors is key to achieving an exceptional job. With natural veneer stone in increased demand on these types of jobs, New World Stoneworks LLC from Uxbridge, Massachusetts has developed a revolutionary process that makes it possible for architects and builders to control every aspect of a full thickness veneer stone project. The concept is really quite simple. Every stone arrives to the jobsite pre-cut, numbered and ready to install according to an approved design plan.

Getting started - The experience working with New World Stoneworks begins right where the architectural drawing leaves off. With stonework comprising a sizable value of many projects, it's interesting to note that on architectural drawings, it has historically been the only part of the job left with the notation "to be determined in the field." New World Stoneworks now makes it possible for architects to precisely spec out stonework in the same way as cabinetry, framing and all other construction elements.

For stonework that abuts or fits within other construc-



tion, such as fireplace fronts and chimneys, the company directly imports the architect's own CAD drawing file and creates the stone pattern within the specified outer dimensions. For standalone projects such as property walls and outdoor kitchens, it's as simple as creating a CAD drawing from the desired dimensions, sketch or even a picture. From there, control over the design leaves nothing to chance, with the power to specify the pattern, range of stone sizes, edge finishes and the exact joint, from dry fit to a uniformly dimensioned mortar joint around each stone.



TOP: Outdoor living space of dry-fit mosaic fieldstone.

ABOVE:

Installation diagram for fireplace front.
RIGHT:

Mosaic pattern installed dry (left) and with mortar joint (center) - to note the natural edges on corner returns. All edges are hand finished (right).

LOWER RIGHT:

The New World Stoneworks process ensures high accountability and satisfaction through every step.

Whether it's refined work with tight-fitting joints or a more rustic look that is desired, New World Stoneworks is able to ensure a predictable outcome to meet any request. Even the task of matching existing stonework is facilitated by the company's proprietary imaging system, which extracts geometries from a photograph of the sample area to create an entirely unique pattern in the new construction that is consistent with the prior work.

One of the most significant advancements is that before a single stone is cut, the entire job can be viewed in a digital proof, ensuring the overall look of the job, distribution of sizes and joint lines are exactly what the architect and customers have in mind. In this way, any last minute changes can be made before everything is "set in stone", and the approved plan then becomes the exact blueprint for the job.

New World Stoneworks utilizes an assortment of computerdriven equipment through a patent pending process to precisely cut each stone and number it according to the approved plan. From there, the visible face of every stone is manually finished by chisel, ensuring the combination of a flawless structural fit and unmistakable aesthetic of hand-tooled edges. Each stone is palletized in numerical order, washed and neatly wrapped for delivery with





laminated installation plans,

Installation – Once on the jobsite, the order of the stones on each pallet minimizes handling, such that every stone is lifted only once and set directly into place. By eliminating the time-intensive cutting and fitting, this revolutionary system yields up to a 90% reduction in installation time and makes it possible to accurately predict job scheduling requirements.

Also, since the stone crew is on site far less time and there's no dusty cutting, the potential for damage to lawns and landscaping is greatly reduced. Because the stone is pre-cut, the level of skill now required to install natural stone with tight, uniform joints is greatly reduced, and more workers are capable of achieving artisan-quality results. On large jobs, multiple workers can be installing simultaneously with no visible breaks in the pattern or fit.

Compared with a skilled mason installing 10-12 square feet of dry fit stone in a day, the New World Stoneworks system makes it possible to set 100 square feet or more in the same amount of time. In the context of a large construction, this can cut weeks or even months off the schedule, making it possible to incorporate natural stone where it might not have previously been feasible due to time constraints. Also, because the stock delivered to the site is



100% utilized, the traditional expense of bringing extra cutting stock on site is eliminated, and at the end of the job, there is no excess material or waste to haul away.

Through the innovative use of modern technology, New World Stoneworks exclusively offers the timeless beauty of full thickness natural veneer stone in a way that consistently surpasses even the highest expectations of design and quality craftsmanship.

New World Stoneworks LLC Uxbridge, MA 01569 (508) 278-7060 www.newworldstoneworks.com

Historical Feature

San Francisco's Soul

By Christina B. Farnsworth

HAT STONE BUILDING BAKED, shook, snapped, crackled and popped just over a hundred years ago?

At 5:12 a.m., April 16, 1906, San Francisco awoke to its infamous earthquake. After the big shake, damaged natural gas and water lines sparked 20-story high infernos that melted steel and glass. Broken water mains left little chance of quelling the fires. Observers reported fire raging on water. In the end, five square miles of ash marked the destruction of 28,000 buildings.

The answer is the "Granite Lady," second of the San Francisco mints. In the midst of hell, the San Francisco Mint stood tall, strong and ready. Today, San Francisco is in the midst of restoring and re-purposing this elegant and well-loved stone landmark.

Several dozen men had held fast through a fire so fierce that the mint's glass windows melted. Fusillades of pops and sharp snaps resounded through the structure as the flames attacked its sturdy stone facings. The mint employed some 150 people, but only a few dozen worked the night shift. At stake were not just the people and the building, but also \$6 billion in gold and silver at today's prices. Experts speculated that had the mint burned the United States economy might have collapsed.

The 1848 California Gold Rush accelerated interest in a West Coast mint. Monetary transactions in the booming coastal metropolis were rather fluid. Some people bartered; others completed transactions in gold dust or currencies of the United States, Mexico, France, Holland, England, and even Indian rupees. Numerous private mints stepped into the breach, making private coinage. Figuring out how to do business with a plethora of currencies was one problem; sending heavy gold to Philadelphia to be minted



into coins created other issues, including the hazards and expense of transport.

In 1850, President Millard Fillmore recommended a branch of the United States Mint be established in California. Congress approved in 1852 and the tiny first mint opened in 1854; the brick building was a mere 60 square feet, about the size of a walk-in closet by today's standards. Never-

Photo courtesy of Gil Castle



Photo courtesy of Bruce Chernin

ABOVE: The old coining room still features its original marble flooring. At its peak, the mint produced 60 percent of this country's gold and silver coins.

LEFT: Known as the "Granite Lady," the old San Francisco Mint was the city's first stone building. Its sturdy construction withstood the infamous 1906 earthquake. theless, it produced more than \$4 million in gold coins in its first year. Discovery in 1859 of what came to be called the "Comstock Load" in Nevada produced even more gold and required a larger mint.

Architect Alfred N. Mullet – also architect of Washington D.C.'s Old Executive Office Building – designed the new, \$2.1-million mint on a city block site acquired through eminent domain for approximately \$300,000. Wood boarding houses, hotels and apartment buildings came down and the Granite Lady rose. On May 26, 1870, masons laid the mint's cornerstone; the three-story mint opened on a rainy Saturday, Nov. 5, 1874.

The Granite Lady, San Francisco's first stone building, surrounded a courtyard. It was that courtyard and the artesian wells within that helped her survive the earthquake and fire. Mullett's engineering knowledge helped, too. He knew the Pacific Coast to be subject to earthquakes and designed the mint to "float" on its foundations in an earthquake, rather than shatter. Mullet also designed the concrete and granite foundation to deter tunneling by thieves in pursuit of the trove of bullion. It is, in effect, something of an ark for money. The quake tossed the mint's furniture about but the building itself performed well.

Though little besides the foundation and stairs are granite, some enterprising scribe early on dubbed her the Granite Lady. Three schooners brought sandstone from Newcastle Island in British Columbia for the facing of the upper floors and the six colossal fluted columns on the portico, so the building is literally stone from Newcastle. Local granite for basement walls came from the Griffith Quarry in Penryn, Placer County, Calif. Other stonework highlights include handlaid floors and marble fireplaces.

By 1880, just six years after opening, the San Francisco mint produced 60 percent of the United States' gold and silver coins and a third of the United State's national gold reserves. Historian Charles Fracchia, founder and former president of the San Francisco Historical Society (now The San Francisco Museum and Historical Society) called the mint "feminine." The smelting ovens worked 24 hours a day to mint coins, and Fracchia noted, "The smoke contained gold dust and workers would go out and scrape it off buildings and other things coated with it."

OPPOSITE RIGHT: The old mint coining room, circa 1890. The smelting ovens, as can be seen above, were in operation 24 hours a day

BELOW: Following the earthquake and resulting fires, the mint had the city's only source of potable water, and it also served as the community's bank.

Photo courtesy of San Francisco Museum and Historical Society

Just after the earthquake, night supervisor T. W. Hawes saw the fires start and instructed the night crew to close and lock the building's ground-floor iron security shutters. The crew removed as much as they could of what could burn from the building exterior.

The artesian well was the real blessing. By chance, the mint sported newly installed fire hoses, a building innovation put in place just 10 days before the fateful fire. The quake knocked out the well pump, so the night crew turned to chemicals to staunch encroaching fires: the sulfuric and hydrochloric acids used to manufacture the coins.

Brig. Gen. Frederick Funston, fearful of raids on the mint by Barbary Coast pirates and other thieves, dispatched 10 soldiers. Volunteers from the day shift brought the headcount to 60 people intent on protecting the mint. It was still only 9 o'clock in the morning. Mint superintendent Frank Leach was stalled a mere two blocks away trying to cross police lines reinforced by armed soldiers. Finally, a policeman recognized him, and he was able to join the 60 employees and soldiers working to save the mint.

The pump was quickly repaired, so Leach instructed the crew to wet the mahogany window frames and the building's interior. Where the hoses wouldn't reach, bucket brigades wet down anything that might burn. It was still only lunchtime, and the danger was nowhere near over. The fire continued, engulfing the building and throwing cinders into the court-

night supervisoryard as buildings across the alley burned.t and instructedWindow glass, Leach reported, "melted downck the building'slike butter."utters. The crewAnd the sandstone and granite began to

make popping sounds Leach described "at times the concussions from the explosions were heavy enough to make the floor quiver."

The precious metals treasure was in the basement but no one thought it safe. And then the copper roof, or rather the wooden roof beneath the hot copper, began to burn. The crew tore off copper to get water to the flames. The new hoses and the artesian well water were still winning the battle.

About 5 p.m., some 12 hours after the quake, Leach went outside the mint. Everything within sight was burned, leaving only fields of smoking embers.

The mint was a font of recovery and solace following the fire. An estimated 3,000 people had perished and more than half of San Francisco's 400,000 residents were homeless. The mint had the city's only source of potable water, and it also served as the community's bank.

But neither fame nor purpose last forever. The Granite Lady produced her last coin in 1937. The San Francisco Mint moved to its third location, and the historic landmark became a somewhat neglected relic.

The Old Mint, as the Granite Lady came to be known, became a National Historic Landmark in 1961. In 1994, the building closed, and this writer remembers rats trolling its grounds in daylight in the late 90s. In 2003, the federal government sold the building to San Francisco for one dollar — a silver dollar struck at the mint in 1879. In 2004, The National Trust for Historic Preservation listed the mint as one of America's 11 most endangered landmarks.

The \$83-million restoration plan, scheduled for completion in 2008, includes seismic strengthening and recreating the courtyard, while making the old mint a "green" sustainable building. At the restoration groundbreaking, Mayor Gavin Newsom called the Granite Lady "the soul of San Francisco."

Christopher Chadbourne of Boston is in charge of the restoration. Chadbourne's past projects include The Museum of Science and Industry in Chicago, Mount Vernon and Monticello. "People seek a sense of rootedness," he said. Plans are to restore the



Photo courtesy of San Francisco Museum and Historical Society



mint and respect its historic fabric inside and out. "We are working, sensitive to the 18 rooms that will be the galleries, convention visitors' bureau and restaurant," he said. In the bowels of the mint, where billions in gold and silver once waited, will be a money museum. The museum will explore the past through "stories rather than artifacts," Chadbourne said. Yet, "artifacts are sacred windows to these stories."

It seems fitting for proceeds from sales of commemorative coins to help pay for the restoration. On Friday, Oct. 27, 2006, then House Democratic Leader Nancy Pelosi unveiled the coin celebrating the Grey Lady: "Along with history comes a sacred responsibility to preserve and protect it for future generations. Just as the Old Mint's vaults protected millions of dollars in government gold, the museum will help preserve San Francisco's rich history for future generations of San Franciscans and visitors from throughout the world to our beloved City.

"San Francisco deserves a museum that pays fitting tribute to its rich past, and the Old Mint deserves a purpose that restores it to its original beauty, and honors its role in our city. Today begins a bright new future for our Granite Lady." •



Industry News

New VIC International High-Speed, Powerful Bowl Hole - Edge System

VIC International has introduced a bowl hole system designed to cut bowl holes in three-centimeter granite in less than 15 minutes – even on the job site.

Named the VIC Scorpion[™] Bowl Hole/Edge System, it is powered by a threehorsepower, single-phase, 220-volt variablespeed drive motor suitable for in-shop as well as field use. With a seven-foot arm and an extension table for large pieces, the VIC Scorpion[™] can handle a variety of bowl jobs, as well as drilling water supply holes and some edge profiling.

The versatile cutting system is simple to set up and operate either in the shop or out on the job site. It is extremely rugged and offers speeds from 2,700-10,000 rpms. It comes complete with a router-turbo tip finger bit, a thin wall core drill (38mm x 100 mm) and a tool holder.

The VIC Scorpion has been tested to drop bowl holes in three-centimeter granite within a 10 to 15 minute range. It also offers a number of optional tools, safety equipment, polishing accessories, as well as 25 bowl hole templates. Availability is immediate.

Successful Hardscape North America Launch

More than 1,700 industry professionals attended the inaugural Hardscape North America, March 7-10, at the Gaylord Opryland Resort in Nashville. Hardscape North America, the national hardscape tradeshow is produced by the Interlocking Concrete Pavement Institute (ICPI) and endorsed by the National Concrete Masonry Association (NCMA), Brick Industry Association and North Carolina Nursery and Landscape Association. The tradeshow provided an excellent opportunity for contractors to network with key manufacturers and suppliers of hardscaping products, construction equipment, vehicles and service while gaining valuable knowledge through educational seminars, exhibits and certification courses.

As more contractors aim to broaden their education, they're finding what they need at Hardscape North America. To improve their ability to install top-notch residential and commercial applications, contractors made the hands-on training classes sold-out events for 2007. The Hands-on Best Practices for Paver Installation sold out, as did the NCMA SRW Installer Education



and Certification Program. Two additional ICPI Level I Concrete Paver Installer Certification Programs were added to accommodate demand.

More than 95 exhibitors displayed stateof-the-art products and equipment. In addition to the indoor exhibition, an outdoor exhibit area enabled contractors to "touch and feel" tools and allowed exhibitors to showcase their equipment in typical site conditions.

Next year's Hardscape North America will be held Feb. 27-March 1, 2008, at the Nashville Convention Center.

Powers Fasteners Unveils Fifth Edition Specification and Design Manual

Architects, engineers and construction specifiers can find just about everything they would want to know about the hundreds of anchoring and fastening products and systems manufactured and marketed by Powers Fasteners Inc. in the company's new fifth edition Specification and Design Manual.

The comprehensive 390-page manual is a complete update to previous technical manuals and provides the latest in anchor technology, testing standards, construction codes and approval listings for every Powers product. In addition to general product information, it also contains up-to-date product approvals and listings, MSDS sheets, submittal packages, software tools and contact information.

Tennessee Marble Co. Acquires Tennessee Valley Marble

Tennessee Marble Company, a vertically integrated quarrier and fabricator of natural stone headquartered in Friendsville, Tenn., has acquired the assets of Tennessee Valley Marble, also located in Friendsville.

Monica Gawet, president of Tennessee Marble Co., said that the acquisition makes the company the largest marble cutting and fabricating operation in the United States.

"This enables us to offer a greater variety of Tennessee marble with a better ability to match existing products," Gawet said, noting that the acquisition involves the purchase of quarry rights and minerals, as well as several leases.

Gawet said that her company's strategic move was taken primarily to bring stability to the supply for Tennessee Pink marble, which is found only in East Tennessee. She said the material also has historical significance for the East Tennessee region, quarried since the 1890s with a comeback in popularity over the past decade.

The former owners of Tennessee Valley Marble are Tom and Mary White, who have owned the company since August 2003 and have recently retired.

Global Granite & Marble Opens in Peoria, III.

A variety of natural stone from around the world is now available at the new Global Granite & Marble stone selection center in Peoria, Ill.

The stone selection center represents the fourth location for Global Granite & Marble, which imports granite, marble, slate, travertine and a variety of other stone slabs from more than 30 countries, including Brazil, Italy, India and Spain. The firm's other locations are in St. Louis, Springfield, Mo., and Louisville, Ky.

More than 600 slabs in more than 140 colors eventually will be showcased at the 10,000-square-foot center. The choice jumps to 6,000 slabs in more than 300 different colors because of the extensive selection found only a few hours away at the St. Louis warehouse. The Peoria center also features natural stone tile, trims and accessories.

Tavella Elected Vice President of ASLA

Landscape architect Thomas R. Tavella, LLA, LEED AP, of Boston-headquartered firm BSC Group, was elected vice president, communication, of the American Society of Landscape Architects (ASLA), a national professional association. ASLA includes more than 16,200 members and 48 chapters, and promotes the landscape architecture profession and practice. Tavella is vice president and landscape architect in the Glastonbury, Conn., office of BSC Group, a multidisciplinary planning and engineering firm. With more than 20 years of experience, he has worked on numerous planning and design projects in New England. Recently, he led the development of an award-winning master plan for Oyster Shell Park in Norwalk, Conn. He has also provided low impact landscape design for University of Connecticut's Burton Family Football Complex, the first National Collegiate Athletic Association facility to be LEED-certified.

Tavella has held several positions within ASLA, including chair of the ASLA's Council of Professional Practice Networks and Public Relations Advisory Committee; Connecticut chapter trustee to the ASLA Board of Trustees; and president of the ASLA Connecticut chapter.

Pearlman Industries Acquires Dimensional Tools

Pearlman Industries Inc. of Commerce, Calif., a leading distributor of stone cutting and fabrication tools, has acquired Dallasbased Dimensional Tools Inc. The financial details of the deal have not been disclosed.

Dimensional Tools, which distributes products for the stone fabrication market, will become part of Pearlman's Keystone Tools division, according to the announcement made by Jeff Fox, CEO of Harbour Group, the St. Louis-based private company that owns Pearlman.

"[Dimensional Tools] location are a natural extension of our geographies and expand our footprint into attractive growing markets," Fox said. "This acquisition further demonstrates Keystone's dedication to growth through both internal initiatives and an aggressive acquisition strategy."

Robert Pico, president of Dimensional Tools, said: "Our team worked hard to build the company into a recognized leader in its markets. We believe we have the keys to successful growth and are pleased that Harbour Group and Keystone are willing to dedicate significant resources to help us achieve our goals."

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Stunning Washstand Emulates Contemporary Loft-Style Design

No matter how it is presented, the Studio washstand, from the Walker Zanger Bathroom Vanity Collection, is an artistic achievement of modernist style which is the perfect addition to a contemporary bathroom suite – as well as a more eclectic, or transitional bathroom design. It combines austere form with day-to-day function, making it as beautiful to behold as it is to live with.

The Studio washstand follows a clean, rectilinear plan-form, with brushed stainless steel base and legs, sporting an open-lattice shelf at the bottom, ideal for keeping towels both ready and fresh.

The top is hand-crafted from a single piece of honed Italian Calacata Vaglia marble, notable for its delicate and subtle veining. The top comes pre-drilled, ready to accept standard three-hole widespread faucets. In the center of the Studio washstand top resides a rectangular white ceramic undermount sink.

The Studio washstand features two, frontfacing drawers, each adorned with a simple steel pull, and lined with genuine leather, softening – and harmonizing with – the cooler surfaces of its exterior. While the lines are simple, the finishes are far more sophisticated. The Studio washstand's matte lacquer finish over the stainless-steel base protects the impeccable design from nicks and fingerprints.

Environmental Stoneworks Acquires St. Croix Stone Inc.

Environmental Stoneworks, a leading turnkey manufacturer, installer and distributor of stone veneer and related products located in Denver, has agreed to acquire St. Croix Stone Inc., located in North Branch, Minn. This acquisition will strengthen Environmental Stoneworks' presence in the Midwest market and allow the company to better serve its customers nationally.

By teaming up with Environmental Stoneworks, St. Croix Stone will broaden the market for its innovative products and grow its stone installation business. Other expansion sites the company is targeting include the Carolinas, New England and Texas.

Natural Stone Council Launches New Website

The Natural Stone Council (NSC), a collaborative organization representing business and trade associations that promote stone under the Genuine Stone[™] brand, announced the launch of its new website – www.GenuineStone.org.

Designed specifically for the stone industry and trades, the site is a central clearinghouse providing overviews of natural stone products and links to more detailed information depending on the type of stone and/or project.

The Genuine Stone site, developed in partnership with McKee Wallwork Cleveland, reflects the NSC's new branding message, "As Genuine as You," and offers architects, designers and builders solid examples of ways to bring that message to life using genuine stone.

"Our primary goal is to create a one-stop shop for people to find the answers and resources they need with regard to stone," said Sarah Biondi, account manager at McKee Wallwork Cleveland. "Further, the website tackles some of the misconceptions and myths currently in the marketplace about natural stone products."

The site offers a photo library of stone applications and installations as well as the variety of products available. There is also a section devoted to green building. The section explains what the NSC is doing to establish stone as an eco-friendly building material.

3M Expands its Capabilities in the Stone Industry

3M, St. Paul, Minn., has acquired Diamond Productions Inc., of Wayne, N.J., a manufacturer of superabrasive diamond and cubic boron nitride (CBN) wheels and tools for stone fabrication and other markets.

According to 3M, the deal enhances the company's cutting and grinding capabilities

for such things as kitchen countertops, monuments and structural granite.

"This acquisition expands 3M's superabrasives business into new areas for 3M like the industrial stone industry," said Chris Holmes, division vice president, 3M Abrasive Systems Division. "Adding DPI's bonded superabrasives enhances our existing product line and enables 3M to provide even more products for manufacturing process improvements by our customers."

New Park JAGUAR Profile Machine

For shops that require the ultimate in control and flexibility, the JAGUAR from Park Industries fits the bill with precision cutting and advanced touch-screen automation. Add that to Park's legendary durability and you have a machine that redefines performance and productivity. The JAGUAR is the ultimate machine for cutting dimensional stone and creating linear profiled stone.

The new JAGUAR's standard 30 horsepower, or optional 40 horsepower TEFC, motor powers up to a 40-inch blade which cuts full slabs of granite, marble, limestone, sandstone or bluestone up to 15 inches thick. More options and enhanced touch-screen computer controls allow operators to easily make adjustments for cutting a wide variety of profiled shapes.

In addition, there are multiple turntable options available, including the new programmable turntable with 10 tons of capacity.

Braxton-Bragg Opens New Headquarters, Customer Training Facility

Braxton-Bragg Corp., the Knoxville, Tenn.-based supplier of professional products and tooling for the stone and tile fabrication industry, has moved its headquarters to a larger facility in Knoxville. President and CEO Michael Pelehach said the move gives the company a lot more working space and will improve efficiency.

"The market has been evolving and Braxton-Bragg is evolving with it," he said. "We want to be on the leading edge of the industry, and this new facility gives us the platform to provide more services for our customers."

The new warehouse, sales and training facility just off I-640 is 46,000 square feet and includes a demonstration area where customers can attend seminars to see products at work. There also is a classroom onsite where customers can learn about the latest stone and tile equipment and technology.

"We're not just providing product; we are providing solutions to help our customers improve productivity," Pelehach said.

"Our new facility will provide our customers with better service with state-of-theart shipping capabilities," added Stephen Spencer, vice president of sales. "We'll be able to handle our increasing walk-in traffic much more efficiently."

Superior Stone Équipment Introduces New Machinery

Superior Stone Equipment announced the introduction of four of their new machines for their equipment line. Included in the new line are the Force 4000 bridge saw, Edge Xpress 1000 vertical polishing machine, Edge Xpress 2000 single head polishing machine and Streamliner water recycling unit.

The Force 4000 bridge saw is the latest from Superior's bridge saw line boasting a cast iron, single-beam bridge, oil bath greasing system, 17.5-horsepower direct drive motor, 7x12 oversized tilting table with hydraulic brakes, Allen Bradley touch screen controls, remote pendant with speed control, and heavy-duty steel stands. The saw like their already popular Force 5000, is sold as a complete turnkey package, which includes installation, training, all technician expenses, rigging, and pouring and planing a three-inch concrete pad on the table bed before installation.

The Edge Xpress 1000 vertical edge machine is Superior's new edge polishing machine made for fabricators wishing to quickly polish flat polishes on pieces ranging from one to six centimeters in thickness. The machine features nine heads, with six of the heads being polishing heads, two of the heads being 45 degree chamfering heads, and a multispindle head that can be swapped out to route out many different edge shapes. The machine is sold as a complete turnkey pack-



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Industry News

age including installation, training, rigging and all technician expenses.

The Edge Xpress 2000 single-head polishing machine is Superior's new edge polishing machine made for fabricators wishing to quickly polish flat polishes, beveled polishes, half bull nose and full bull nose polishes on pieces ranging from two to eight centimeters in thickness. The machine is capable of running at speeds ranging from one to 150 feet per minute. It is sold as a complete turnkey package and includes installation, training, rigging and all technician expenses.

Finally, Superior has introduced a new line of water filtration and recycling systems. The systems can be customized and sized to fit shops with flow needs ranging from 40 gallons per minute, all the way to 500 gallons per minute. All systems come as complete turnkey packages including installation, training, all technician expenses, rigging, clean water tanks, piping between units and forklift-ready base units.

LGM Offers Modeling Services Available in Just Days

Model shop LGM, one of the most advanced architectural modeling shops in the United States, has developed a new online service that streamlines both ordering and production of architectural models.

The service combines online shopping with the speed of 3-D modeling. Using the latest 3-D printing technologies, LGM builds models for a wide range of residential and light commercial projects. Users can request riskfree quotes, upload files, monitor a model's status, view digital proofs and make payments.

"We have modernized the way architects get physical models of their designs," said Charles Overy, president of LGM. "The RapidArch website makes it easy for customers to manage projects, place orders and make payments. We accept any type of input, from finished 3-D CAD files to hand sketches."

RapidArch Premium models display a building's every feature, from structure mass and roof overhangs, to windows, doors and railings. Premium models cost \$2,495, Deluxe models cost \$2,195 and Basic models cost \$1,695. The RapidArch online service produces detailed, custom models in just a few days. ◆

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