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# SAINT CLAIR COUNTRY ESTATE

A NEOCLASSICAL MANSION CLAD AND  
ORNAMENTED IN AMERICAN LIMESTONE

■ A CASE STUDY

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**POLYCOR**



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# CUSTOM STONE WORK

## A CRAFTSMAN'S DREAM

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In their work in the Pacific Northwest, the craftsmen at Red Leaf Group are privileged to work on many architecturally inspired buildings, but few as special (and challenging) as a modern neoclassical mansion completely clad and ornamented in American limestone.

A private home nestled in the mountains, that we're calling the Saint Clair Country Estate, this project took three years and 60 blocks of Saint Clair limestone to complete. It was a project that challenged the team's skills and tools, but ultimately left them grinning from the chance to showcase their talents.





# SAINT CLAIR - FLEURI

■ LIMESTONE



## DESCRIPTION

This gray-beige American limestone is treated as a marble, and can therefore be used in architectural and heritage projects as well as for countertops.

Because its wavy grain pattern evolves from one slab to another, every countertop is unique. In a fleuri-cut pattern, it creates beautiful white to gray-beige waves.

## QUARRY OPERATING SINCE | ANNUAL PRODUCTION

1900

On demand

## FINISHES AVAILABLE

Polished	Waterjet
Antique	Sandblasted
Honed	

## APPLICATIONS

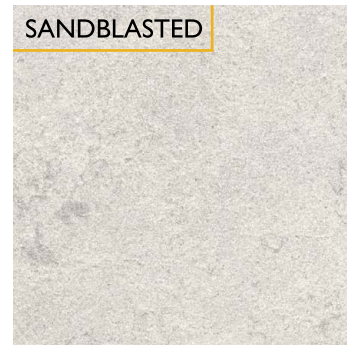
Exterior	Vertical
Interior	Commercial
Horizontal	Residential

## PHYSICAL TEST RESULTS

		Imperial	Metric
Absorption by weight	ASTM C97	0.5%	0.5%
Density	ASTM C97	168 lb/ft <sup>3</sup>	2 691.10 kg/m <sup>3</sup>
Compressive strength	ASTM C170	15 889 Psi	109.55 MPa
Modulus of rupture	ASTM C99	972 Psi	6.70 MPa



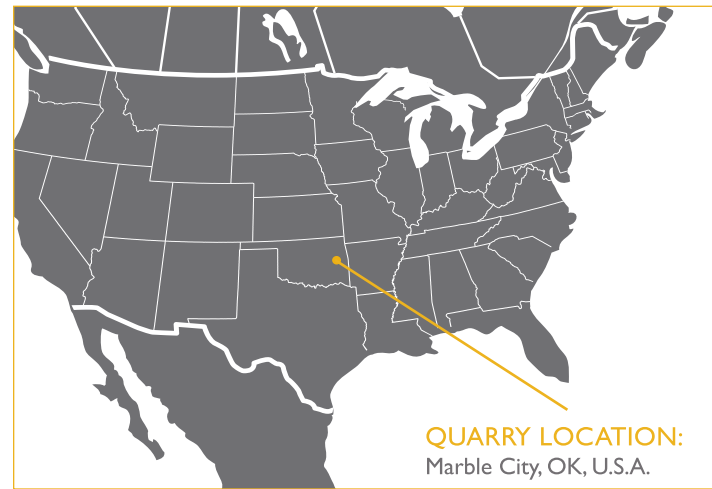
POLISHED



SANDBLASTED



ANTIQUE



QUARRY LOCATION:  
Marble City, OK, U.S.A.



SAINT CLAIR FLEURI  
HONED

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**PAVERS**

ELEVATED PIER SYSTEM

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In the rear grounds of the home the architect specified a paver pedestal system. This elevated pier system provides durability, protection, and performance in cold and wet conditions common in Vancouver. It also allows easy access and serviceability for repairs and building maintenance. This effective drainage system is a critical issue for every building in the Pacific Northwest's freeze / thaw environment.

Red Leaf cut and fabricated their own 24" x 24" x 2" pavers from solid blocks of Saint Clair limestone. The antiqued finished pavers were dry laid onto the pier system. Wet Dynamic Coefficient of Friction (DCOF) is important in horizontal applications where slip resistance is a concern. Saint Clair falls within the ANSI Standard A137.1 and is rated at 0.56, making it a suitable option for exterior and interior installations.





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# **STONE WALL** CONSTRUCTION

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The wall featured here is a retaining wall on the north property line. The stone is mechanically anchored onto a reinforced concrete wall, that sits on a strip footing. This allows the stone to offer a decorative component, whereby structural retaining resistance is provided through the concrete. An air-cavity is introduced by hanging the stone on stainless anchors. This avoids any contact of the limestone with the concrete, eliminating any risk of efflorescence. More on the anchors used here.

Piers and pier caps were milled via 5-Axis CNC, and the flat veneer panels with more conventional bridge saws.



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# SOFFIT AND TERRACE ROOF DETAIL

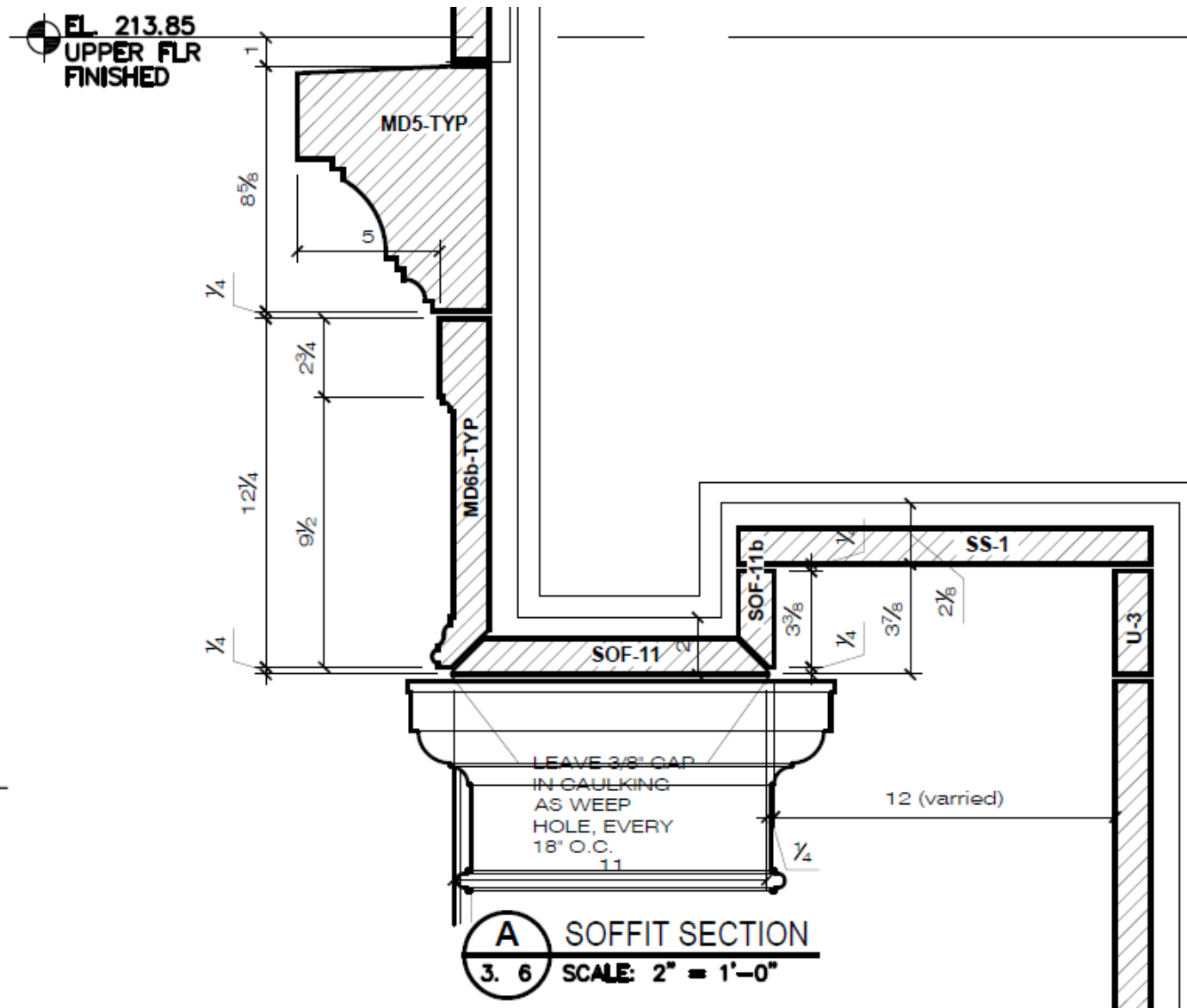
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A complicated cantilevered feature, the soffit is framed by an oblique angle. The Red Leaf drafting team collaborated with the architect and builder to create detailed shop drawings to work out the fabrication of the design detail, which also had to allow for a cavity to let the structure breathe.





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# **RAILINGS, COLUMNS AND CORBELS**

MILLING AND CARVING

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The project consisted of 450 balusters, each carved from a small individual block of stone, and built into extensive balustrade systems, which were not only straight runs, but also acted as guard rails to staircases.





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The columns were milled using a large CNC lathe. Columns require an entasis, which requires geometric figuring and CNC programming.

The completed columns were finished with a hand honing process. To install the solid columns, each weighing approximately 16,000 lbs, Red Leaf used a large mobile crane to position them into place.





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# **THE STONE ARTISANS**

WELL TRAINED TALENT

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Carving Foreman Andrew Swinley and the Natural Stone Institutes Craftsman of the Year for 2016, carved each of the project's five corbels.

Red Leaf Group President Steffen Waite believes that Andrew's decades of experience and talent as a classically trained sculptor are influencing architecture in the Vancouver area.

"Here in the Pacific Northwest the architectural influence is more modernist, but as we build awareness of Red Leaf Stone and Andrew's carving skills, we are seeing architects renewing a passion towards classicism."



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# **SAINT CLAIR LIMESTONE**

A NORTH AMERICAN STONE

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When the Red Leaf team first discovered Saint Clair they actually thought it originated from Portugal and didn't know how to source it. They were happy to discover the limestone originated for Polycor's own quarry in Oklahoma and was readily available.

"Saint Clair limestone is a natural fit of the Pacific Northwest," Waite said. "It's dense, freeze-thaw resistant and with its underlying grey tones fits in very well with the Vancouver skyline."





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**ONE STONE. TWO CUTS.**  
FLEURI AND LINEAR

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# SAINT CLAIR - LINEAR

■ LIMESTONE



## DESCRIPTION

This gray-beige American limestone is treated as a marble, making it suitable for architectural and heritage projects, as well as for countertops. Because its wavy grain pattern evolves from one slab to another, every countertop is unique. It shows a more consistent grain pattern in a linear cut.

## QUARRY OPERATING SINCE | ANNUAL PRODUCTION

1900

On demand

## FINISHES AVAILABLE

Polished	Waterjet
Antique	Sandblasted
Honed	

## APPLICATIONS

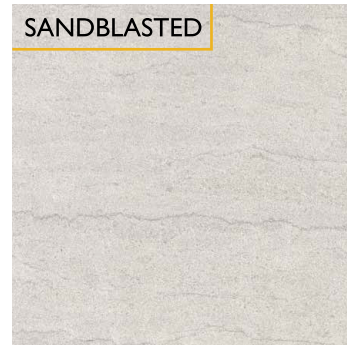
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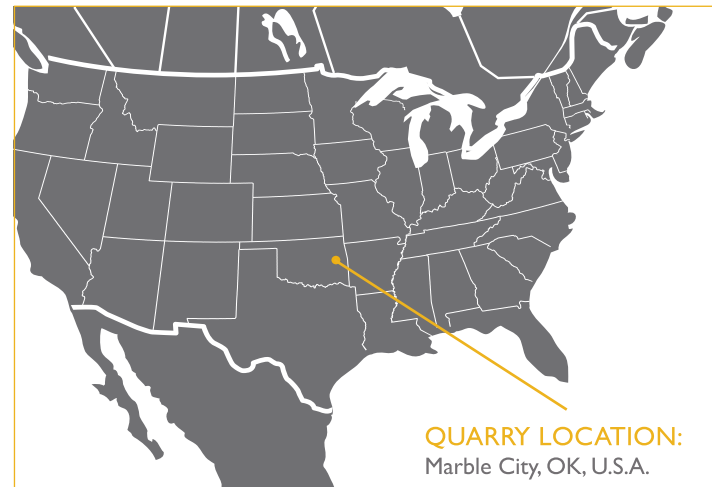
POLISHED



SANDBLASTED



ANTIQUE



QUARRY LOCATION:  
Marble City, OK, U.S.A.



SAINT CLAIR LINEAR  
HONED

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