



PICCO

Universities & Institutions

NATURAL STONE / STRUCTURAL
ENGINEERING SERVICES

piccogroup.com







PICCO GROUP IS AN ESTABLISHED, AWARD-WINNING STRUCTURAL ENGINEERING FIRM RECOGNIZED AROUND THE WORLD FOR OUR UNMATCHED EXPERTISE IN STONE CLADDING, MASONRY, AND ENGINEERED FACADE SYSTEMS.

PICCO Group is uniquely suited to assist **higher education** when determining the types of updates and maintenance needed for natural stone interior and exterior cladding. We work on diverse projects with Facilities teams at institutions across North America—our legacy is 100+ year buildings! Our position as a key (and early) stakeholder ensures we can provide you with timely and professional services before making critical cost and schedule decisions.

We know what you are facing. The next years ahead will require managing your campus resources—and we can help. We can help determine phasing plans for **stone rehabilitation** and **maintenance**. We can assist with understanding how to make natural stone-clad buildings more energy efficient. We can be your partners as we all re-engage in this new world.

And we're here to help you create a lasting legacy!

MICHAEL PICCO, President
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KARL DOUCAS, Principal, VP Operations
karl.doucas@piccogroup.com



PICCO GROUP AT A GLANCE



“Our deepest motivation comes from knowing we’ve played a part in creating a lasting legacy.”

—MIKE PICCO, FOUNDER AND PRESIDENT

At PICCO we’re **stone experts**— with the knowledge and expertise to provide you with options for material, fabrication and installation.

Mike Picco—Founder and President of PICCO Group, is a **structural engineer and natural stone specialist.** Obtaining and selecting stone can be more intriguing than using a man-made material. Stone depends on the judgment of individuals who, through years of experience, have learned to predict how the veining is likely to unfold within a yet-uncut block of stone, to reveal its unique natural beauty for the architect to utilize in their next project.

When Mike started PICCO Engineering in 1992, he believed he could succeed by being honest and excellent. Mike focused on work that he loved—and we are still doing that.

With over 35 years experience, he remains active in, and is a much sought-after speaker on the subject of stone cladding and anchoring systems. He has shared his expertise with industry leaders from around the world, offering seminars at StoneExpo for The Marble Institute of America and at Marmomacc—International Exposition of Stone Design & Technology in Verona, Italy. He served as the President of the Natural Stone Institute (NSI), and was awarded Person of the Year for 2021.

INDUSTRY
STONE ENGINEERING

ESTABLISHED
SINCE 1992



Stone Engineering Services

- + 3D BIM Modeling
- + ASTM Material Testing
- + Connection Detailing
- + Coordination
- + Contract Administration
- + Design Assist
- + FM Engineering Support
- + Forensic Investigations
- + Heritage Restoration
- + Prefabricated Systems
- + Retrofit Engineering
- + Shop Drawings + Shop Tickets
- + Site Inspections
- + Stone Cladding Engineering
- + Stone Sourcing Support
- + Structural Engineering

Stone Partners

ASL Stone
Atlantic Tile
Cleveland Marble
Coldspring
Dan Lepore & Sons
Dee Brown
ECLAD USA Inc.
Gemstar
Granicor Inc.
IMS Masonry Ltd.
KEPCO+
Lorton Stone
Precision Stone
Rugo Stone, LLC
QuarryHouse
York Marble

Architects we work with

1100 Architect
Allied Works Architecture
Antoine Predock
Diamond Schmitt
Foster + Partners
Gerry Partners, LLP
Hariri Pontarini Architects
IBI Group
Kasian Architecture
Kohn Pedersen Fox
Moriyama & Teshima
Robert A.M. Stern
Rodney Leon Architects
Snøhetta
Stantec
Tod Williams Billie Tsien



1 / Project Coordination

Masonry + Stone facades require thorough coordination with integrated systems, details, design, across numerous stakeholders. Our shop drawings are professionally managed and meticulously coordinated with:

- Architectural design + detail
- Building envelope requirements
- Expansion + control joints
- Foundations and grades
- Gate hardware + design
- Installation efficiency + constructability
- Integrated masonry jointing + alignment
- Shelf angle support and bearing
- Special Assemblies
- Steel, concrete, wood or light gauge base structure
- Stone geometry + fabrication limitations
- Window + Door openings + details

It's not always easy to communicate to an architect or to a contractor that details don't work or changes are necessary to achieve design intent. Nor to identify a critical error that may pose significant project risks; however, this is what the coordination process allows us to do on all of our projects. We drive a process of quality review, RFI communication, and sound consulting that helps avoid unplanned costs.

2 / Creative Solutions—Real Value

We work collaboratively with construction teams to improve cost allocations and schedules. At *Vanderbilt University Residential College Hall (A)*—we reviewed, and improved an original plan for erecting masonry chimneys in the traditional way. Our suggestion to prefabricate the full steel-framed masonry chimney as one piece proved more efficient, better controlled, and cost-effective.

Validation by the team has extended this approach to the new current phase at Vanderbilt University Residential College Hall (B).

3 / Value Engineering

We like to engineer value into the project early and once. However, when consulted later in the process, we help define alternate solutions that exceed the expectations of our clients. For example: consider a solid cantilevered stone staircase for a historic private residence. The prospect for invasive structural demolition and reconstruction of the adjacent wall was real but a more sensitive approach was desired.

We delivered a turnkey solution that completely avoided any disruption of the existing structure, yet elevated the design approach. The result: our innovation of a solid stone, 19 tread, floating and post tensioned stair was born.

PROVEN EXPERIENCE

Elegant complexity, striking aesthetics, and bold technical challenge—heightens our curiosity.

4 / Material Sourcing + Optimization

We work with Architects and General Contractors to thoroughly evaluate material selection. We will test material, inspect at the source, and engineer the ideal material specifications to optimize, performance, cost, and constructability. We ensure institutions select the right material for the project environment and desired aesthetic.

Mitigating your short—and long-term risks that are associated with incompatible material or may be inadequate dimensional criteria is a key objective for us.

5 / BIM

Building Information Modeling is a methodology best implemented by the savvy owner. Understanding how rich data is leveraged by your faculties team will drive your decision to travel this road. In addition, engaging the right companies will determine if the project benefits from the use of BIM, or if the higher cost of BIM delivery is wasted.

PICCO can help you make those decisions, as we did at Yale University. Design to Fab, to BIM or not to BIM, Automation, digital delivery and workflows—these are all important questions we address with you.

6 / Design Assist

Our influence on sound cladding design and stone execution is best illustrated through our Design Assist services.

Belmont University allowed PICCO to support the Architects, Structural Engineers, General Contractor and Fabricators with timely and specific solutions. We refined the structure to align with critical areas of bearing; made suggestions for dimensional refinements that maintained stone continuity and integration; and augmented the back-up structure to ensure installation of stone would be possible and clean.

Our Design Assist process succeeded in preparation of bid documents as well as construction documents, while setting the stage for final engineering design calculations.

7 / Facilities Maintenance

With quality buildings designed to last a lifetime, building maintenance ensures that structures will endure the test of time.

Our intricate knowledge of the specific details, specifications, and systems of buildings we engineer, give us a unique perspective. *From site inspections, condition assessments, repair solutions, retrofit engineering, restorations, and maintenance support, we remain your reliable and trusted partner. Our services extend beyond cladding alone, to include all of your building structural engineering needs.*

STONE ENGINEERING

INSTITUTIONAL PORTFOLIO



**Aga Khan Park–
Museum + Ismaili Centre**
Toronto, ON

** 2016 MIA+BSI Pinnacle
Award of Merit*

**American Museum of Natural
History–Gems & Minerals**
New York, NY

Barnes Foundation
Philadelphia, PA

** 2013 Building Stone Institute
Tucker Award*

**Canadian Museum
of Human Rights**
Winnipeg, MB

** 2015 MIA Pinnacle Awards–
Award of Merit*

**Commodore Uriah P. Levy
Center, U.S. Naval Academy**
Annapolis, MD

** 2006 MIA Pinnacle Awards–
Award of Merit*

Montreal Museum of Fine Arts
Montreal, QC

** 2012 Hardsurface Awards
Natural Stone and Project of
Year Award Winner*

The Baker Museum Expansion
Naples, FL

**The Smithsonian–National
Air & Space Museum**
Washington, DC



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PICCO's prompt and professional services have enabled us to meet the needs of today's extraordinary and most complex projects.

The MIND Institute in Sacramento California, Engineering Research Building at Yale University, Grand Rapids Convention Center and Department of Human Services for the state of Minnesota represent a remarkable body of work where PICCO Engineering created positive synergy between all construction trades...

—CHRIS WEDHOLM, DIRECTOR OF SALES
VETTER STONE COMPANY



UNIVERSITY PORTFOLIO NORTH AMERICA



Yale



THE UNIVERSITY OF
ALABAMA



WAYNE STATE
UNIVERSITY



Kenyon College

Seneca



GEORGETOWN
UNIVERSITY



SOUTH DAKOTA
STATE UNIVERSITY



What Makes us Different?

Our clients tell us over and over again that it's the way we take care of them—the way we respond to their needs, and consistently deliver the unexpected—that sets us apart. We're proud of the relationships we've built with leaders in the industry—understanding the complexities of varied and complex structural engineering projects. We pride ourselves on our ability to provide world-class capability, together with innovation, value, and integrity for projects of all scopes and sizes.

**Appleby College—
Barr Commons Renovation**
Oakville, ON

**Belmont University—
College of Music and
Performing Arts**
Nashville, TN

**Carthage College—
Residential Tower**
Kenosha, WI

**Cornell University—
Martha Van Rensselaer Hall**
Ithaca, NY

**Georgetown University—
Southwest Quadrangle**
Washington, DC

**Johns Hopkins University—
(Hardscape Improvements)**
Baltimore, MD

Kenyon College—Library
Gambier, OH

**Lehigh University—
Health, Science &
Technology Building**
Bethlehem, PA

**Northwestern University—
Tech AB Infill**
Evanston, IL

**Princeton University—
Lewis Centre for the Arts**
Princeton, NJ

**Rice University—
Performing Arts Center**
Houston, TX

**Sacred Heart University—
Bobby Valentine Health
& Recreation Center**
Fairfield, CT

**Seneca College—
Markham Campus**
Toronto, ON

**South Dakota State
University—
Performing Arts Center**
Brooking, SD

**Stanford University—
Institute for Economic
Policy Research**
Stanford, CA

**Stockton University—
Academic Quad Expansion**
Atlantic City, NJ

**Temple University—
Charles Library**
Philadelphia, PA

**University of Alabama—
Shelby Biomedical
Research Building**
Tuscaloosa, AL

**University of Pennsylvania—
Perry World House**
Philadelphia, PA

**University of Minnesota—
McNamara Alumni Centre**
Minneapolis, MN
**2001 Award of Merit—
Marble Institute of America*

**University of Regina—
College Avenue
Campus Renewal**
Regina, SK

**University of Saskatchewan—
Collaborative Science
Research Building**
Saskatoon, SK

**University of Toronto—
St. George Campus,
Muzzo Family Alumni Hall**
Toronto, ON

University of Virginia
Charlottesville, VA

**University of Waterloo—
School of Pharmacy**
Waterloo, ON

**University of Windsor—
Windsor Star Building**
Windsor, ON

**Ursinus College—
Parlee Center for Science
and the Common Good**
Collegeville, PA

**Vanderbilt University—
Residential Colleges A/B**
Nashville, TN

**Wayne State University—
Mike Ilitch School of
Business**
Detroit, MI

**Wilfrid Laurier University—
The Lazaridis Hall Building**
Waterloo, ON

**Yale University—
Pauli Murray College
Benjamin Franklin College**
New Haven, CT

**York University—
Schulich School of Business**
North York, ON

Yale University

Pauli Murray and Benjamin Franklin
Residential Colleges

LOCATION: New Haven, CT / USA 

ARCHITECT / CLIENT: Robert A.M. Stern Architects / Turner Construction

COMPLETION: 2018 / 220,000 sf each college / \$500M





45
PHASES

100
UNIQUE CONNECTIONS

10,517
STONE PIECES

Classical stone, integrated masonry with ornate carvings and traditional detail—reflect the existing architectural character on campus.

SCOPE OF SERVICES

Due to the scale and complexity of the project, PICCO became a key contributor to the design team assisting the architect with stone detailing.

+ Design Assist

+ Stone Shop Drawings

+ Shop Tickets

+ Installation

TYPES OF STONE

Indiana Limestone: rustic/standard buff
Weymouth Granite: seam/split face

The masonry structures are identified by the North and South colleges. Exquisite attention to detail was paid to the beautiful passageway groin vaults, signature towers, and stone tracery.

CHALLENGE: Extensive coordination was required to integrate all trades with minimal site modifications. Phases were drafted and submitted in parallel sequences allowing multiple installation crews to work in tandem and ensure a continual supply of material.

INNOVATION: PICCO established all brick course working points for all trades to work from, coordinated all carved ornamentation to ensure proper integration with the stone detailing, and resolved all interactions between windows, doors, brick, storey-coursing, and design benchmarks. Innovations included designing arches as solid stone instead of cladding. A unique numbering system was devised to allow any stone to be easily identified by profile, type and length. If damage occurred, the same stone for a phase not being actively installed could be pulled and re-cut for that phase without interruption.

Temple University

Charles Library

LOCATION: Philadelphia, PA / USA 

ARCHITECTS / CLIENT: Snøhetta; Stantec / Dan Lepore & Sons

COMPLETION: 2019 / 225,000 sf / \$175M



"Acting as a new social, cultural and intellectual hub for the university and surrounding community, the design serves the contemporary needs of a world-class research facility and its students." – SNØHETTA



32,405
SF OF STONE CLADDING

40
UNIQUE CONNECTIONS

9,557
FT OF ALUMINUM RAIL

The building's base is vertically clad in split faced granite, a choice that references the campus' surrounding context.

SCOPE OF SERVICES

+ Shop Drawings

+ System Engineering

+ Fabrication Tickets

TYPES OF STONE

Mesabi Black Granite: split face/grooved

This new library is at the intersection of two major pedestrian pathways anchoring a new academic and social core planned for the campus. A cedar-clad arched entrance is cut into the stone volume and continue into the building, forming a three-storey domed atrium with white terrazzo flooring.

CHALLENGE: The vertical slender geometric stone used required the right system and critical detailing to achieve precisely. Further challenges on site to accommodate tight tolerances made this a unique project to execute.

INNOVATION: An aluminum rail system allowed us to exceed expectations while economizing installation for installation crews. Back anchors in the granite also concealed attachments ensuring the "louvered" look of the facade was true to the aesthetic intent.

Vanderbilt University

Residential College A: "Nicholas S. Zeppos College"
and Residential College B

LOCATION: Nashville, TN / USA 

ARCHITECT / CLIENT: David M. Schwarz Architects; Hastings Architecture / IMS Masonry

COMPLETION: 2020/2022 / 400,000 sf / \$230M





26

PHASES

400

UNIQUE CONNECTIONS

14,650

STONE PIECES

Masonry and stone-clad residential building featuring Victorian / Gothic architecture styles, and detailed aesthetic elements.

SCOPE OF SERVICES

We accepted the full scope of masonry facade coordination and engineering services.

+ 3D Modeling

+ Shop Drawings / Shop Tickets

+ Connection Engineering

+ Mock-ups

+ Prefabrication Design

TYPES OF STONE

Crab Orchard Sandstone: split face

India Pink Sandstone

Indiana Limestone

Vanderbilt re-imagined their west end neighborhood through the design of four new residential colleges. Vertical brick expansion joints were hidden behind downspouts; molded brick was used instead of extruded to make wall surfaces slightly irregular. The Chimneys create a convincing profile along the skyline, but also conceal plumbing and ventilation systems.

CHALLENGE: Our resources were scaled and PICCO changed its process to achieve a 6-month schedule crash.

INNOVATION: Masonry detailing documentation for all facades and courtyards were developed to a level of detail rarely seen, helping translate to an authentic craftsmanship. Meticulous coordination aligned the architect's design, cladding, structure, envelope, windows, fabrication, installation, schedule, and cost. PICCO helped improve outcomes from a previous campus-build experience (with another service provider). Our suggestion to prefabricate the full steel-framed masonry chimney as one piece proved more efficient, better controlled, and cost-effective.

STONE CONSULTING

The impact and value of engaging a **stone consultant** at each project phase—

1

Sustainable Material Sourcing

- + We elevate your knowledge and capability
- + We support sourcing of stone from around the globe
- + We value engineer and optimize performance

2

Design Collaboration

- + Idea to model more thorough, more useful benefits downstream
- + Impact to entire building on aesthetics, budget and constructability
- + Project delivery methodology and processes—BIM or not to BIM

3

Leverage Technology

- + Extensive toolbox for navigating diverse challenges and solutions
- + Automation for efficiency and precision
- + Quality built-in with technology that enables craftsmanship

4

Impact to Entire Building

- + Proven results, knowledge and know-how with unmatched experience
- + Collaboration: Architect + Structural Engineer + GC + Fabricator + Installer
- + Opportunities for value engineering upfront

→

Engage us directly—how can we help?

Designing an optimal wall and selecting the right stone can significantly affect cost, installation and schedule. As an objective stone consultant, PICCO Engineering delivers the most value to a project by collaborating at the earliest stage of the project right through to its completion.

Not ready to engage yet? Talk to us.

We will listen to your challenges and can share our insights.

WHAT OUR CLIENTS SAY

“After various failed attempts of hiring an engineering firm for the stone cladding system here at the Princeton Lewis Center for the Arts Project, we were introduced to PICCO Engineering.

During our first meeting, it was clear that PICCO was the right firm with the right people, knowledge and experience—they were very responsive and quick with engineering solutions for the stone cladding system—with a very aggressive schedule which they met time and time again. We were able to complete the stone cladding engineering and move on to the installation in a very effective and efficient manner which helped the overall schedule.

Turner is very pleased with the work performed by PICCO and look forward to working with them again in the future.”

—Fernando Delgado, Turner Construction

PICCO GROUP

SHAPING PROGRESS
DESIGNING LEGACY
SINCE 1992.

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