



**BOSTON VALLEY**  
TERRA COTTA

**TerraClad™**

Innovative Manufacturing  
in Architectural Ceramics

# TerraClad™

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Innovative Manufacturing  
in Architectural Ceramics



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Sales representatives are available across many regions of the US, as well as Canada, Europe and Asia. Please visit our website or contact our main office for more details.

2nd Edition



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RACCLAD<sup>TM</sup> MADE IN USA  
BOSTON VALLEY TERRA

For centuries, terra cotta has given architects the versatility needed to realize their designs. In that tradition, TerraClad™ offers countless possibilities using the latest building technologies.

## COMPANY & PRODUCT OVERVIEW

### Our Company

*OUR TEAM*

*BENEFITS OF WORKING WITH  
BOSTON VALLEY TERRA COTTA*

*BOSTON VALLEY ARCH DESIGN LAB*

*BOSTON VALLEY GLAZE LAB*

### Our Products

*TERRA COTTA SYSTEMS OVERVIEW*

*RAIN SCREEN PRINCIPLES*



Over the last 30 years, we have invested over \$18 million in capital improvements. This has given us a competitive edge by assuring that we produce architectural terra cotta materials of the highest quality with on-time delivery.

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## OUR COMPANY

**BOSTON VALLEY TERRA COTTA WAS ESTABLISHED** by the Krouse family in 1981 following the purchase of Boston Valley Pottery, a company which had been in existence since 1889. Originally a brick manufacturing facility and later a clay pot manufacturer, Boston Valley Pottery was converted to an architectural terra cotta facility by the Krouses. Utilizing both superior ceramic engineering knowledge and sculpting talent, Boston Valley Terra Cotta has become one of the leading manufacturers of architectural terra cotta globally.

Boston Valley commenced operations with the restoration of the Guaranty Building, a Louis Sullivan landmark in Buffalo, New York. Since that time the company has

been awarded contracts for some of the most notable buildings around the country. We are awarded contracts based not only on the cost of our product but also because of our ability to meet and exceed expectations in regard to service and the quality of our terra cotta products. To date, over 1800 contracts have been carried out to completion. Our facility has grown into a state of the art operation with 180,000 square feet of work space and over 100 employees operating two shifts per day. Our management team has over 30 years of experience in design engineering, drafting, model and mold making, clay body and glaze development, and customer service.



## Our Team

Boston Valley Terra Cotta has extremely qualified people in every department. Production is closely monitored and directed by our management team. Our employees have strong roots in the community and have made Boston Valley Terra Cotta their career. By the fact that we are a corporation with closely held stock, primarily in the hands of the Krouse family, we have a vested interest in seeing that our product is of the very highest quality. Our family values also extend to our commitment to a safe and healthy work environment for our employees.

### Safety

Our corporate safety team designed and implemented a safety policy governing all employees and visitors. They consistently monitor working environments, solicit feedback from employees, revise policy and provide training. Because of our commitment to safety, Boston Valley was awarded membership to the Affinity Insurance captive.



## Benefits of Working with Boston Valley

### Manufactured in the USA

- LEED Credits Available
- Buy American Act Compliance
- Shorter Shipping Timeframe

### Ease of Service

- Location & sales rep network allows us to be on site to service your project.
- Ability to contact the people manufacturing your product, who are aware of daily operations.

### Turnkey Solutions

- Worked diligently over the last 30 years to build a network of people that can provide turnkey solutions to your design challenges.





## Boston Valley ARCH Design Lab

### Our Mission

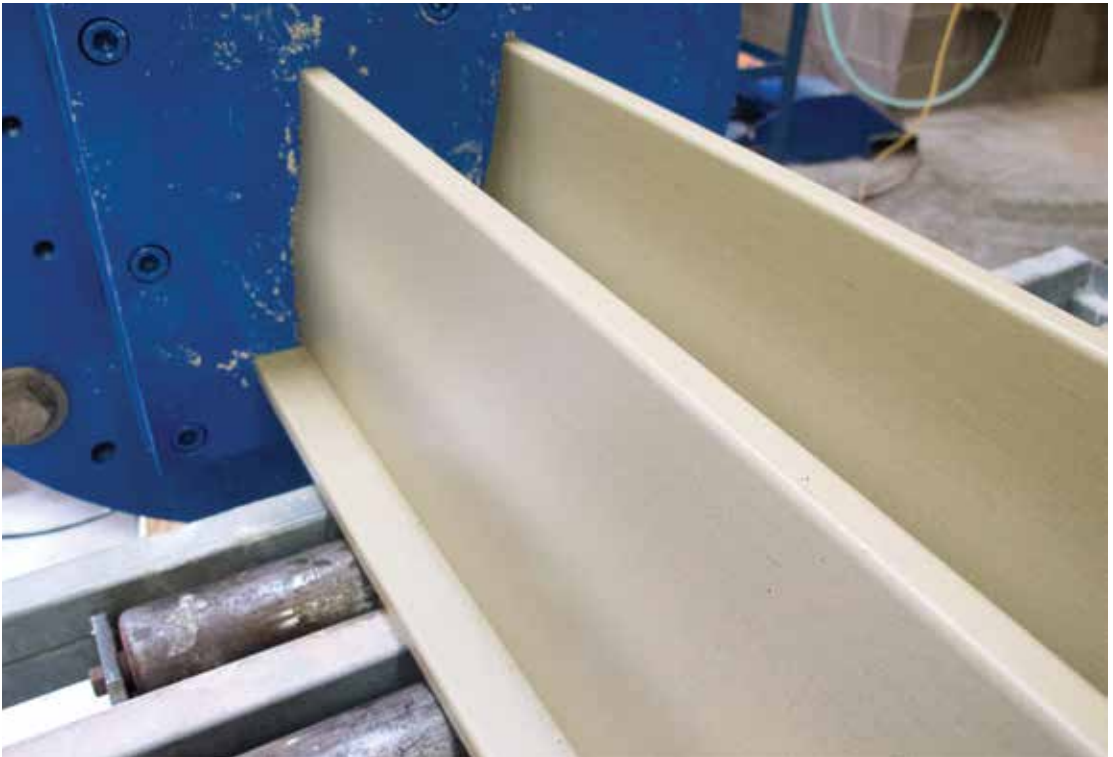
Boston Valley's Arch Design Lab uses 3D CAD/CAM technologies to rapidly fabricate and manufacture custom terra cotta products for interior surfaces, new building exteriors and existing building re-clad or restoration projects of all sizes and scopes. The collaborative design process begins by receiving 3D files in most any format from a client. Our team will then rationalize the design to make it possible to manufacture by our material and facility guidelines. We will work to determine the best manufacturing and installation methods based on a series of factors including profile, size, project scope, desired finish, and budget. This parametric design process allows us to collaborate sooner, with greater ease and efficiency, and to a manufacturable end goal.



## Rapid Prototyping & Custom Fabrication

Our lab utilizes an industrial laser cutter, a 5-axis CNC machine, and a complete suite of architectural and digital sculpting programs to rapidly produce prototypes, mockups and models, molds and dies used in the manufacturing of the final product. The prototypes give us and the architect the ability to understand the design as true three-dimensional parts that can be touched and observed in different heights, angles and potentially various patterns. In some cases these machines and technology cut out tedious or time consuming parts of the manufacturing process, allowing our employees to focus on the true craft of terra cotta manufacturing.

This technology, combined with our historic craftsmanship and material knowledge gives us an unparalleled edge in fabrication of custom designs.





## Boston Valley Glaze Lab

### Custom Development

Boston Valley has been making glazes and matching historic finishes for over 30 years. Owing to this experience and knowledge, our Glaze Lab is unmatched in the research and development of glaze finishes. Whether you are looking for a single chromatic color or a more complex finish using a custom glaze or several glazes, our glaze lab will work with you as part of our design assist services to develop the finish and fulfill your design goals. Ceramic glazes open up a world of possibilities often unavailable in a clay body and can add that final unmistakable and memorable touch to your project. While seemingly simple, color is often a deeply personal design choice that can invoke various reactions from building users and inhabitants. Boston Valley understands this and has established a workflow process which allows the designers to provide initial examples and input as well as feedback throughout the entire process.

### Ceramic Artist Collaborations

Having developed relationships with two renowned ceramic artists, Boston Valley can collaborate with them should a client desire. With Ann Carrier, owner of the design seen in the above photo, Boston Valley collaborated on a project at Alfred University in the choral room of the Miller Performing Arts Center. Carrier worked with our staff on the creation of the RAM-press profiles, glaze finish as well as method of mounting.



## Ceramic Artist Collaborations - continued

Dutch artist Christine Jetten of Studio Christine Jetten is another ceramist with whom Boston Valley has a working relationship. The recently completed 175 park project in Madison, NJ showcases our successful collaboration. Jetten worked with our Glaze Lab to translate glazes originally produced in an electric kiln to our industrial gas kiln environment. Challenges such as raw material sourcing and glaze-profile interaction also had to be overcome. Following the opening of the building, KPF principal and project architect Hugh Trumbull had this to say about the terra cotta:

“Working in terracotta is absolutely fascinating – the material is so rich and powerful. I fully believe that understanding the process of creating the material, the fabrication, the science, the art, and of course the craftsmanship, unlocks terracotta’s true potential for any project seeking design excellence.

At 175 Park Avenue, Boston Valley Terra Cotta and Christine Jetten allowed KPF to explore exciting glazed elements that defined the project’s iconic architectural features. This successful collaboration elevated the building quality as a whole.”

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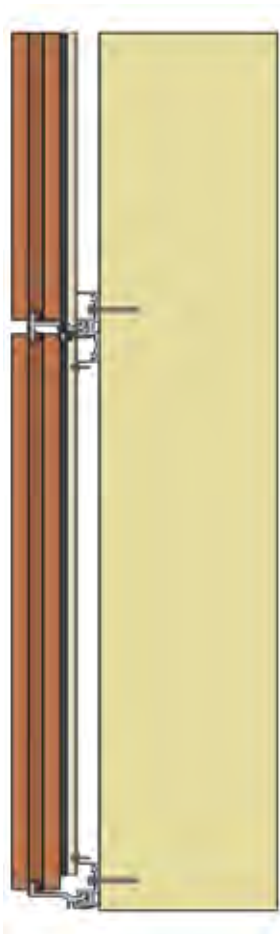




# Terra Cotta Systems Overview

## TerraClad™ System

Boston Valley Terra Cotta's ceramic rain screen cladding system provides benefits above and beyond conventional masonry cavity wall systems. In addition to the durability and ease of maintenance inherent to any ceramic cladding, the TerraClad™ system incorporates ship-lapped open joints that shield the structural wall from wind driven rain and snow while also ventilating the air space to mitigate mold and mildew growth. Our various track systems shown in section below give us flexibility to select that which provides greatest installation ease when considering your design. Beyond the functionality of the system, the plasticity of terra cotta offers profile opportunities to designers not available in alternate rain screen cladding materials.



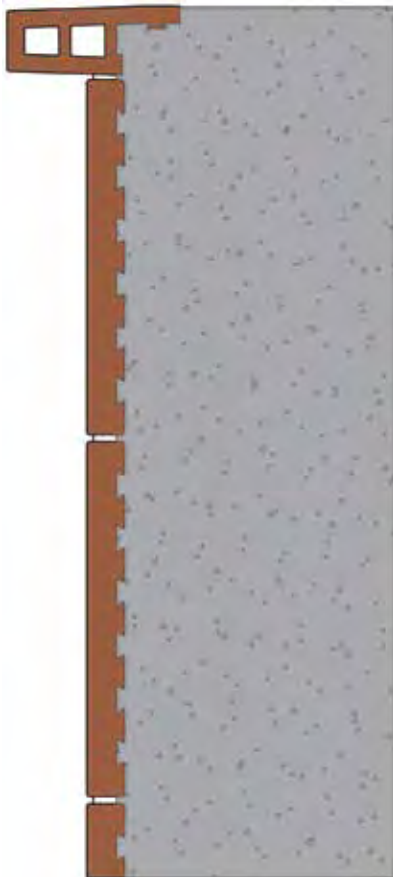
TERRACLAD™ SYSTEM SECTION DIAGRAM  
HORIZONTAL TRACK



TERRACLAD™ SYSTEM SECTION DIAGRAM  
TOP - FLANGED TRACK  
BOTTOM - STANDARD TRACK

## Terra Cotta PreCast Solutions

This system simply involves embedding a solid terra cotta unit in a precast concrete panel. The terra cotta panel is 30mm thick and features a dovetail profile on the backside. The terra cotta panels are laid face down in the forms and concrete is poured over the back of the panels to create one large precast unit. This system is ideal for those needing the strength and durability of precast concrete construction but desiring the myriad of options available in both profile and finish offered by terra cotta.



TERRA COTTA PRECAST SECTION DIAGRAM

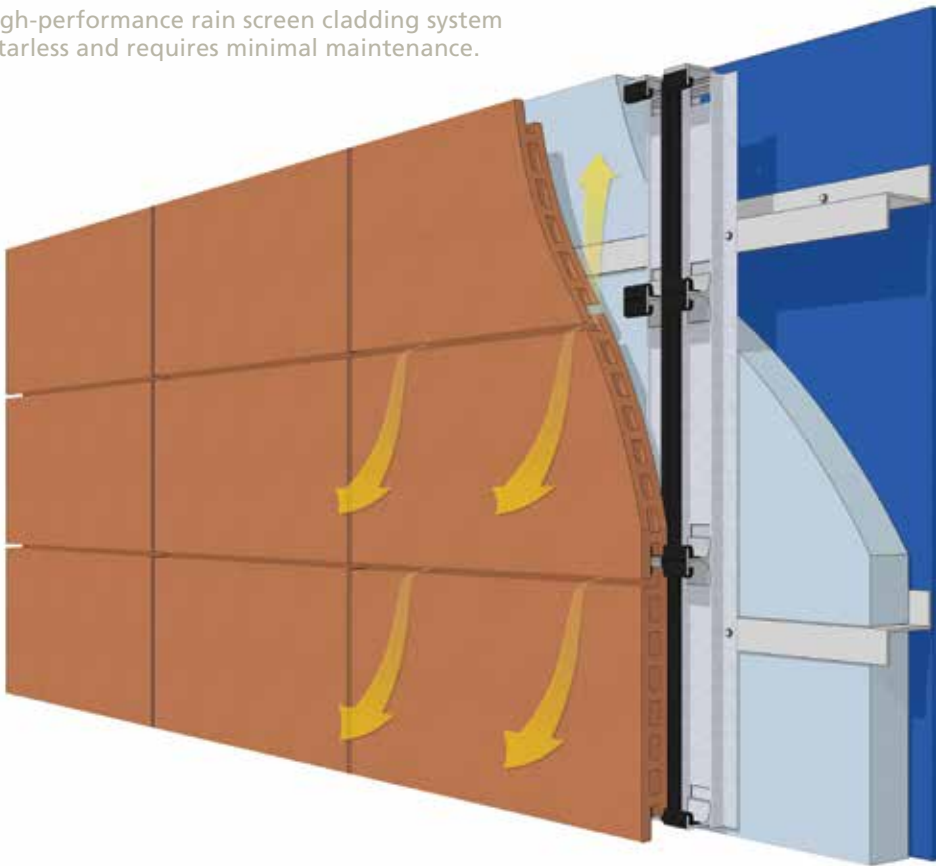
## TerraClad™ Sunshade

Boston Valley also offers sunshade devices as part of our TerraClad™ product line. They can be used in combination with the rain screen system or as a standalone feature. A true marriage of form and function, these sunshade devices aid in reduction of glare and help to shield occupants from the sun similar to traditional blinds, while also giving designers a component with which to create a unique, modern building design aesthetic.



TERRACLAD™ SUNSHADE SECTION DIAGRAM

Our high-performance rain screen cladding system is mortarless and requires minimal maintenance.



## Rain Screen Principles

The TerraClad™ system creates a ventilated cavity wall, mitigating mold and mildew growth. The ship-lap joint helps prevent wind-driven rain and snow from reaching the structural wall while also allowing the cavity to breathe and panels to dry faster. Gaskets and isolators provide a snug fit between panels and the framing system to prevent wind induced rattle and allow for movement of the aluminum framing system due to thermal expansion.

### Benefits of the TerraClad™ System Design

- Ceramic panels installed on an aluminum framing system offer the durability of a masonry installation without the weight
- Continuous insulation outboard of the primary wall system increases the thermal performance of the building envelope
- A mortarless system allows for installation in any weather condition and reduces maintenance costs associated with re-pointing
- LEED credit opportunities
- Abundant profile, color and finish opportunities available

## Benefits of the TerraClad™ System Installation

1. Pre-punched track with gravity friction-fit clip speeds system installation
2. Training provided by Boston Valley technical field support team either at our facility or on the job site
3. Out-of-box installation – all components provided
4. Panels cut to size including quirk-miter corners standard
5. Replacement of a panel does not require the entire stacked bond to be removed
6. Various system options exist to handle stud vs. cmu construction, panel orientation, and punched versus unpunched track

## Simple to Install



Prepare site and install track



Install TerraClad™ panels



Continue building TerraClad™ courses



Replacing a panel is easy







# TERRACLAD™ PORTFOLIO

## TerraClad™ Portfolio

*BECHTLER MUSEUM OF MODERN ART*

*CONNECTICUT COLLEGE, NEW LONDON HALL*

*SAN ANTONIO MILITARY MEDICAL CENTER*

*ROBERT LEE YMCA*

*VAUGHAN CITY HALL*

*GREENE-HILLS SCHOOL*

*ALFRED UNIVERSITY, SCHOOL OF ART & DESIGN*

*HAMILTON COLLEGE, WELLIN MUSEUM OF ART*





1

2



## TERRACLAD™ PORTFOLIO

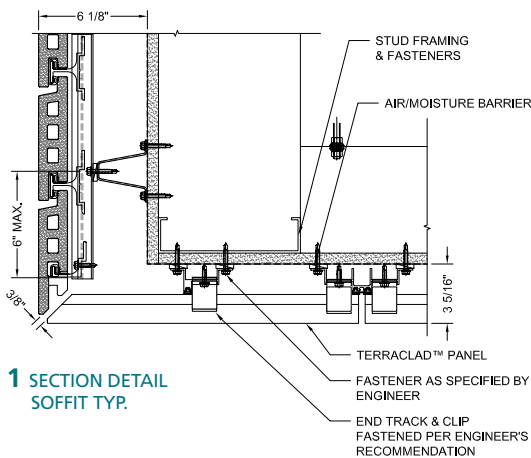
### Bechtler Museum of Modern Art

Charlotte, NC

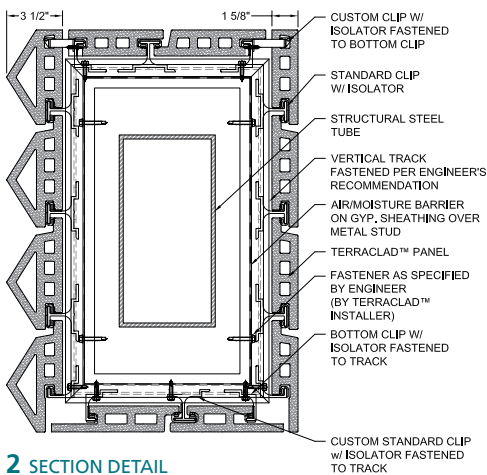
DESIGN ARCHITECT Mario Botta Architetto

ARCHITECT OF RECORD Wagner Murray Architects

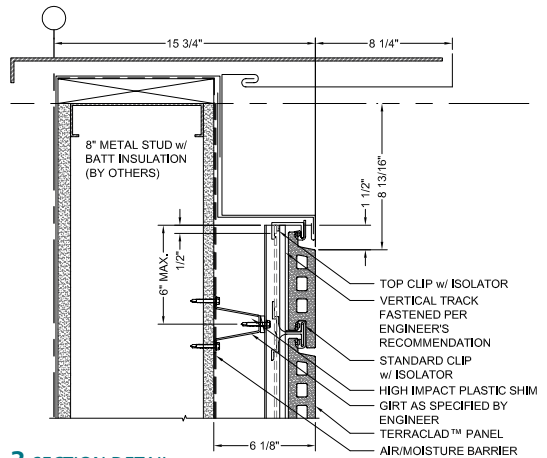
INSTALLATION CONTRACTOR Wasco, Inc.



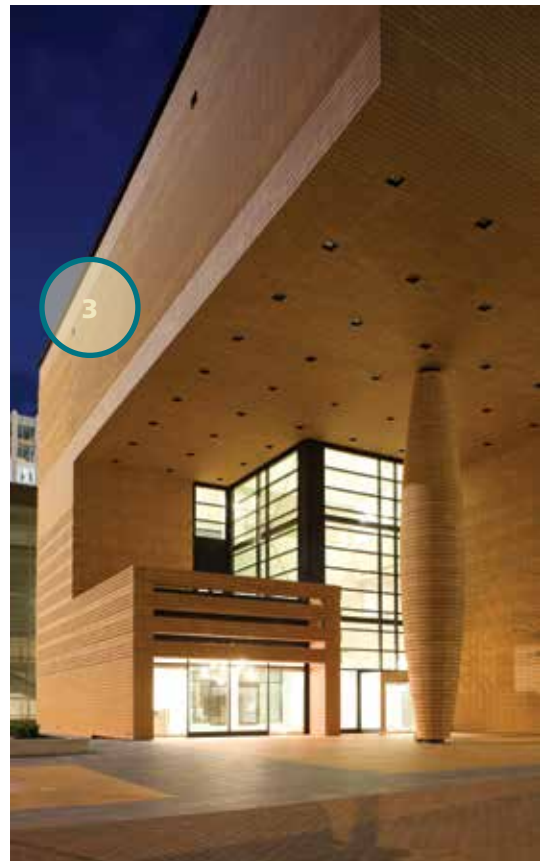
**1 SECTION DETAIL**  
SOFFIT TYP.



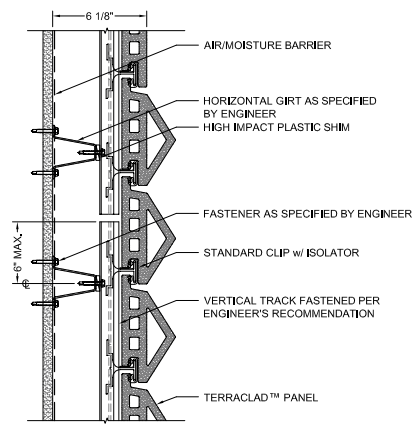
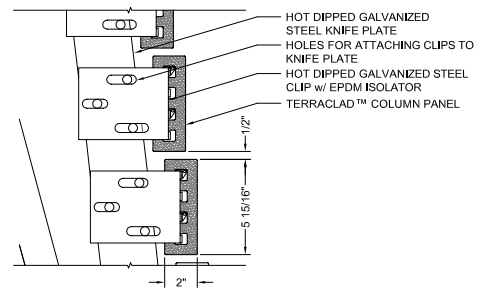
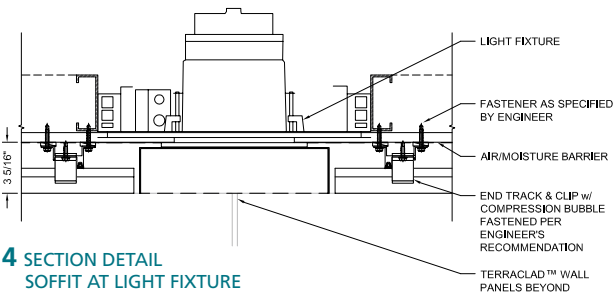
**2 SECTION DETAIL**  
HORIZONTAL BEAM

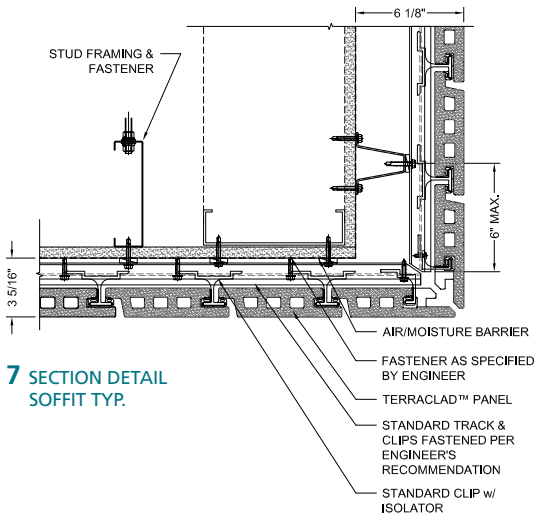


**3 SECTION DETAIL**  
DIMENSIONS AT TOP OF TRACK









For this Mario Botta designed building, Boston Valley developed both a custom through-body clay color and several custom profile panels. We provided approximately 30,000 square feet of panels, 6000 square feet of custom-sized pavers, 5,000 square feet of soffit units, as well as a 42' high graduating radius column clad in terra cotta for which we assisted in designing and engineering the structure and attachment system.







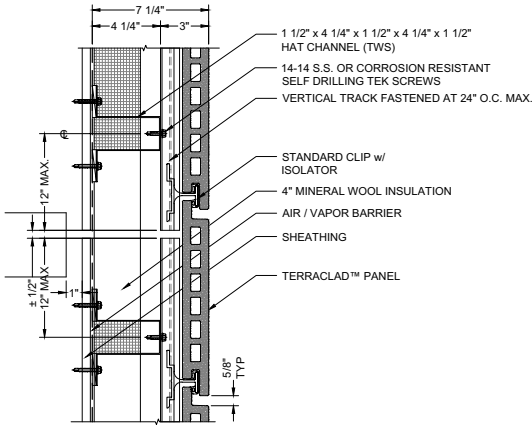
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Connecticut College,  
New London Hall

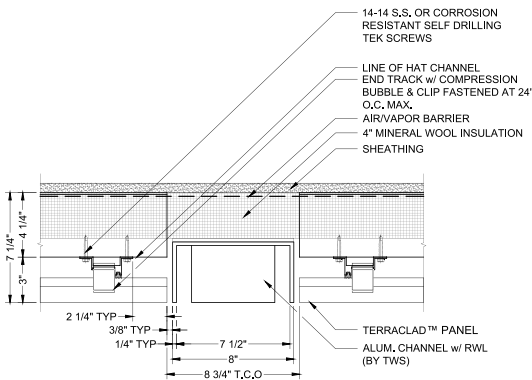
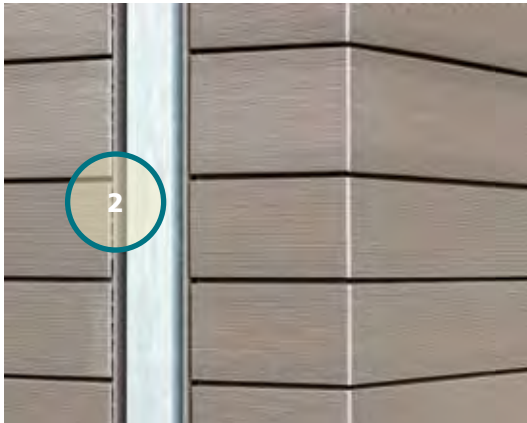
New London, CT

ARCHITECT Payette Associates, Inc.

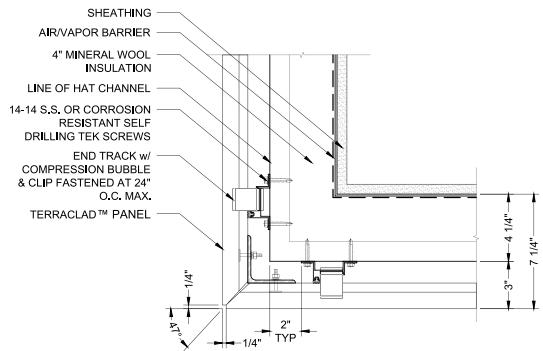
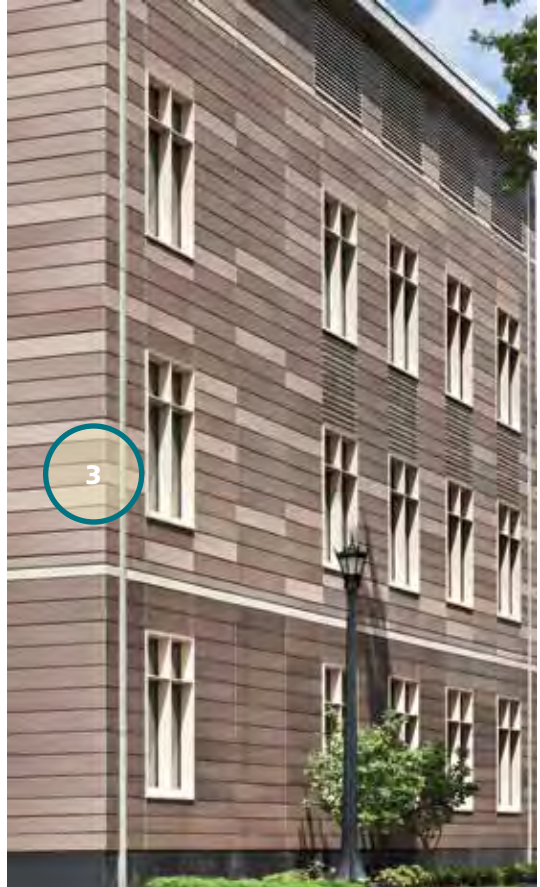
INSTALLATION CONTRACTOR Total Wall Systems



1 SECTION DETAIL  
TRACK BREAK AT CHANGE IN SUBSTRATE

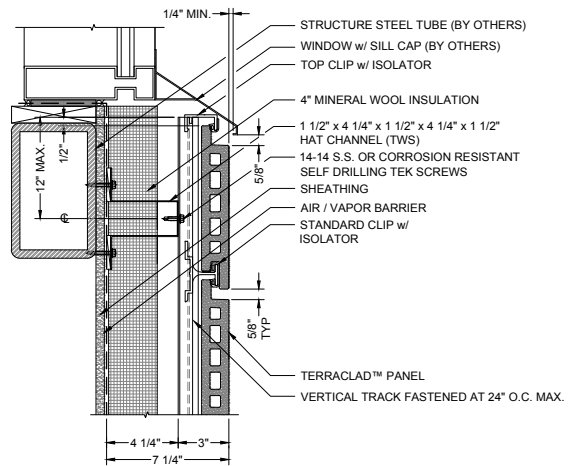


2 PLAN DETAIL  
PANEL AT RAIN WATER LEADER



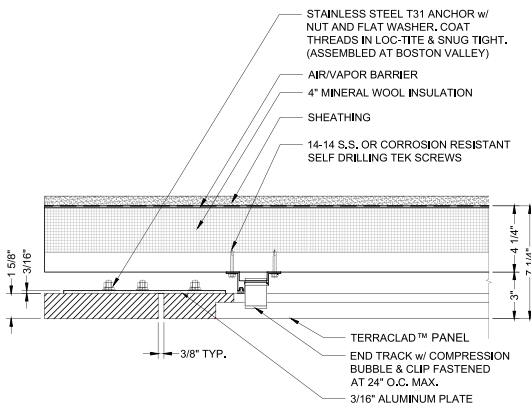
3 PLAN DETAIL  
MECHANICAL CORNER



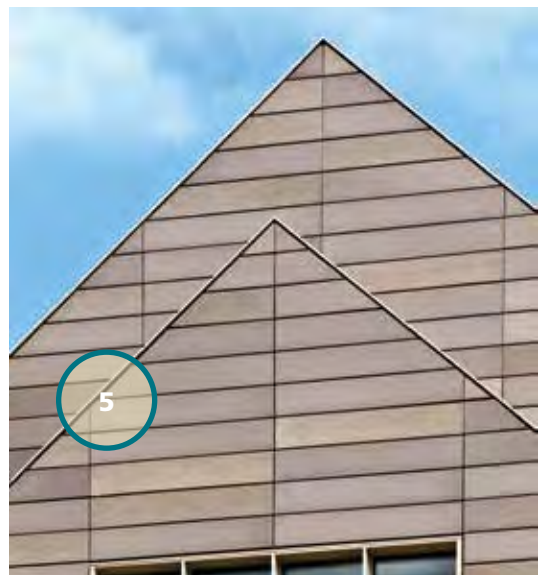


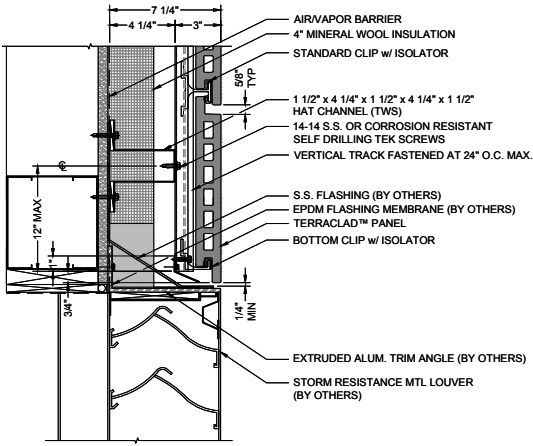
**4 SECTION DETAIL  
PANELS AT WINDOW**

The combination of sandblasted, machined score, honed and ribbed profile panels create an interesting texture on this facade and makes the building contextually appropriate for this historic stone campus.



**5 PLAN DETAIL  
MECHANICAL PLATE AT PEAK**





**6** SECTION DETAIL  
PANELS AT MECHANICAL LOUVER



©Chris Payne Photography





© Sisseton Photography, Inc.



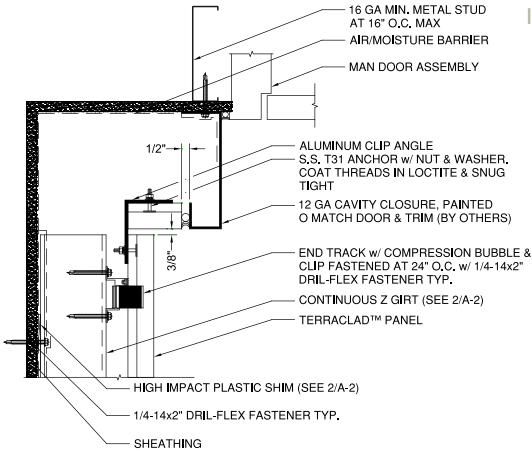
## San Antonio Military Medical Center

San Antonio, TX

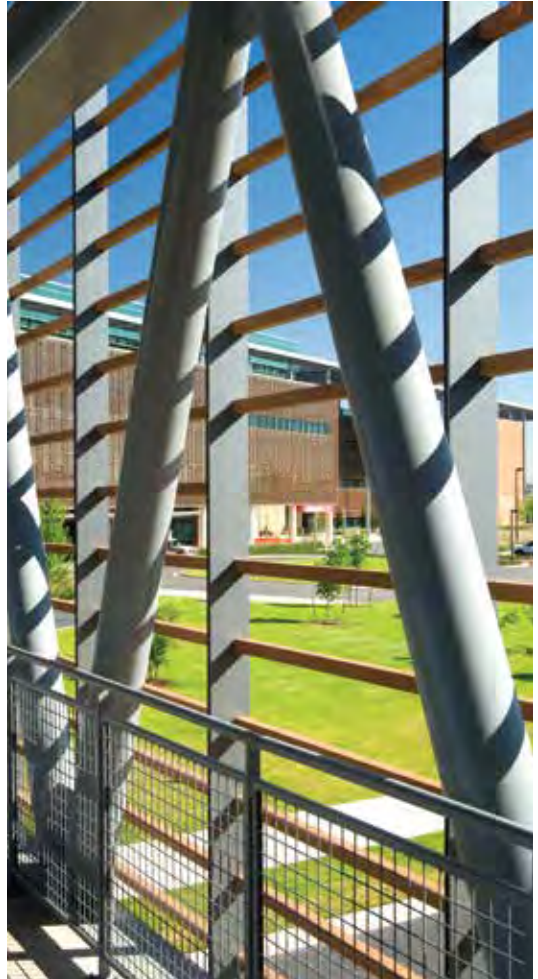
ARCHITECT RTKL Associates, Inc.

INSTALLATION CONTRACTOR OF SUNSHADES Harmon

INSTALLATION CONTRACTOR OF PANELS GA Masonry



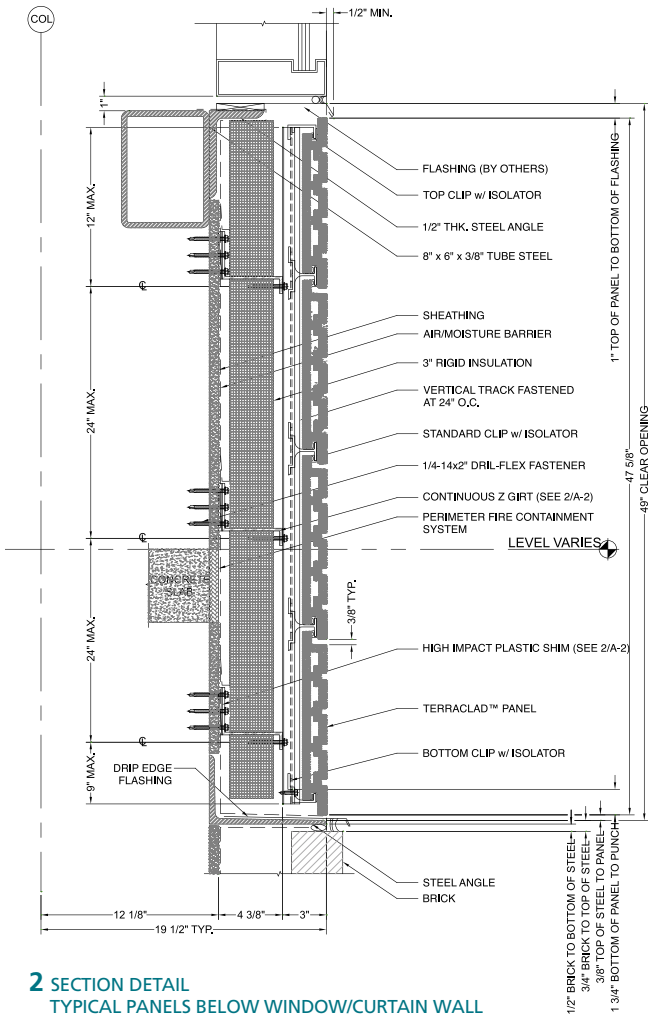
**1** PLAN DETAIL  
 JAMB INSIDE CORNER AT PENTHOUSE DOOR



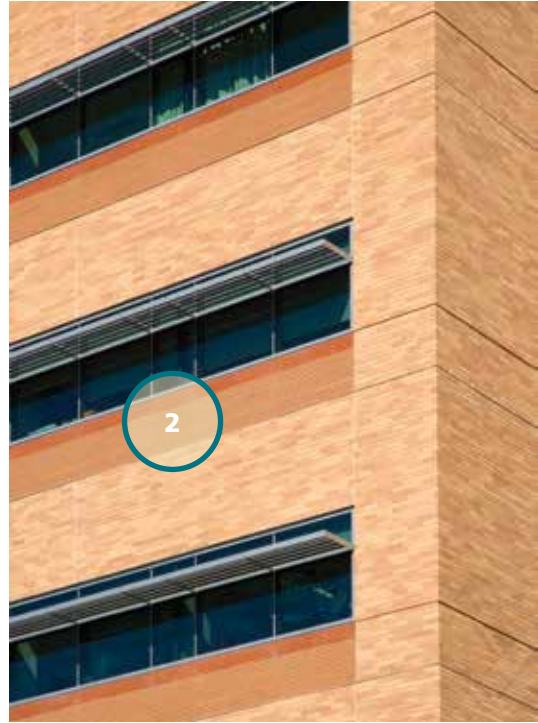
This large government medical facility is clad in a combination of terra cotta and brick. Boston Valley provided 130,000 linear feet of baguettes and louvers as well as 20,000 square feet of panels in two custom colors. As shown in the photos large expanses of unitized baguettes were installed on the hospital façade as well as the parking garage to provide shade from the intense Texas sun to the occupants.

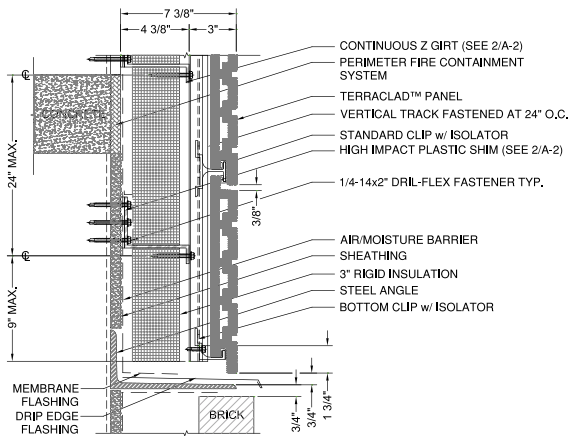


COL



**2 SECTION DETAIL**  
TYPICAL PANELS BELOW WINDOW/CURTAIN WALL





**3 SECTION DETAIL**  
PANEL AT BOTTOM OF TRACK, BRICK WALL

The San Antonio Military Medical Center received the 2013 AIA Healthcare Design Award. Jurors felt that the materials used on both the interior and exterior had been well selected for functionality as well as beauty, welcoming patients and their families. One juror even commented specifically about the façade saying,

“What a fantastic use of skin elements. This has seamlessly integrated the old and the new.”





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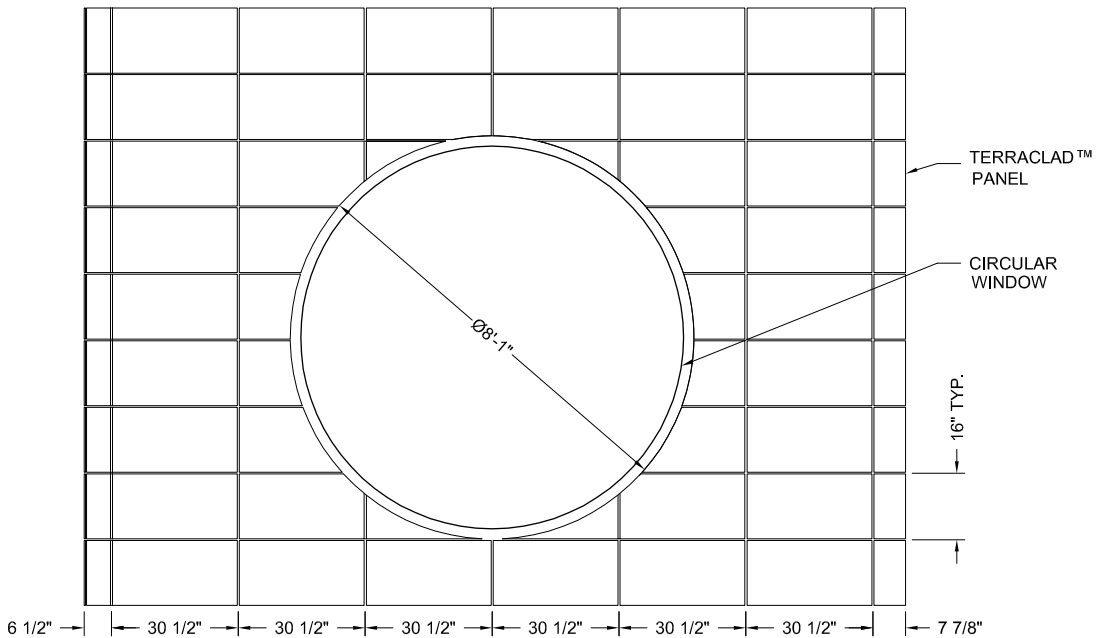
# TERRACLAD™ PORTFOLIO

## Robert Lee YMCA

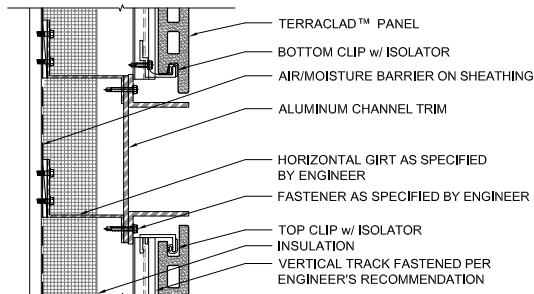
Vancouver, BC Canada

ARCHITECT Endall Elliot Associates

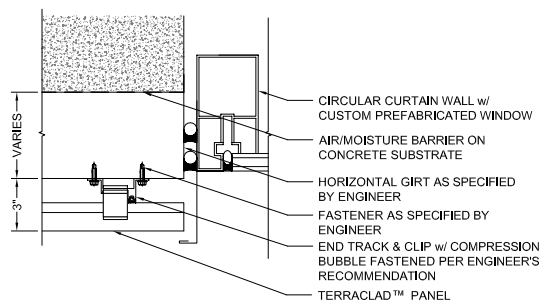
INSTALLATION CONTRATOR Keith Panel Systems



1 PARTIAL ELEVATION



2 SECTION DETAIL - TERRA COTTA AT ALUMINUM TRIM



3 PLAN DETAIL - END TRACK AT CIRCULAR WINDOW





1

2

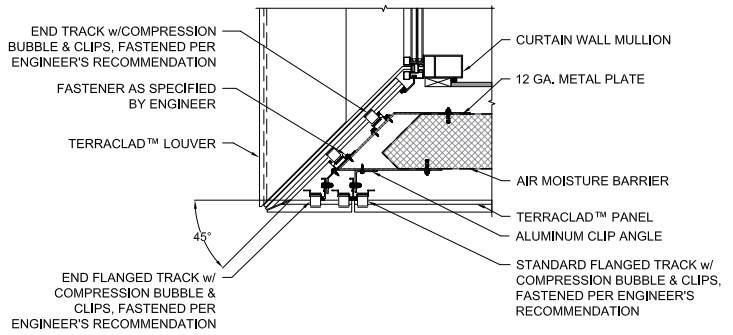
3

## Vaughan City Hall

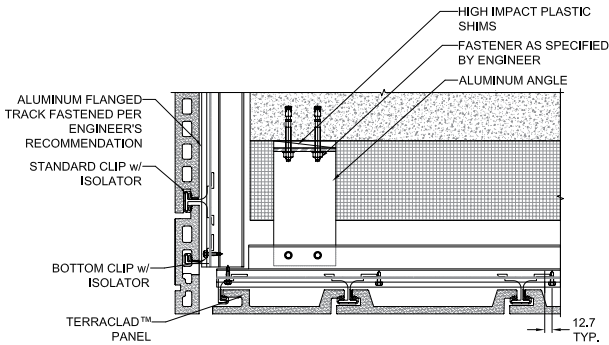
Vaughan, ON Canada

ARCHITECT KPMB Architects

INSTALLATION CONTRACTOR Ritz Metals

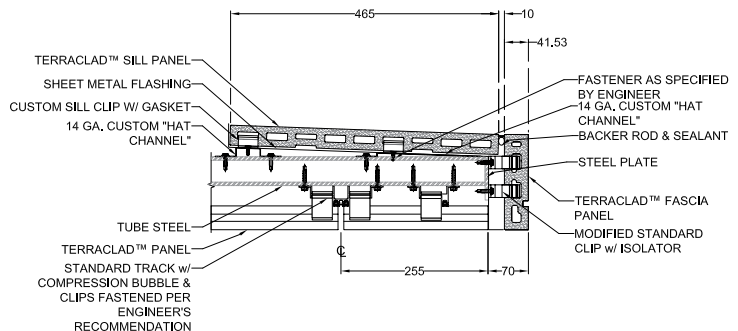


**1 PLAN DETAIL - 45° CORNER**  
MIRROR IMAGE OF PHOTO



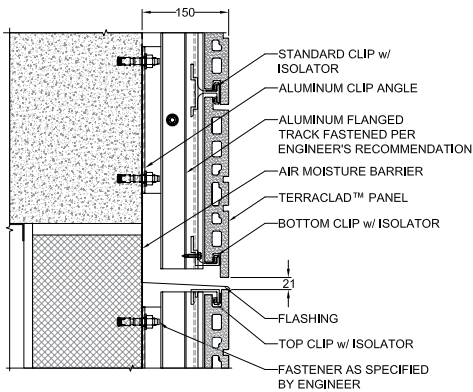
**2 SECTION DETAIL - REFLECTED SOFFIT**

In 2012, Vaughan City Hall was awarded the Ontario Association of Architects Award of Excellence. This is the province's highest architectural honor and candidates are judged on creativity, context and sustainability.



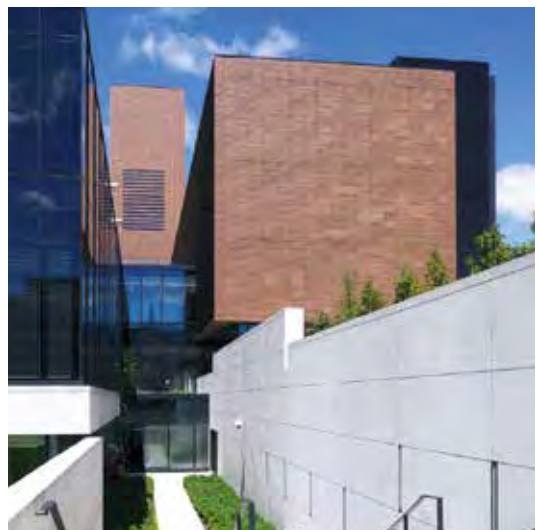
**3 SECTION DETAIL - TERRA COTTA SILL**





**4 SECTION DETAIL- EXPANSION JOINT**

KPMB utilized the TerraClad™ system on this expansive city hall located in Vaughan, Ontario, just north of Toronto. With our proximity to the project site, Boston Valley was easily able to take on this international project and provide the product and service necessary to see the design through to completion.

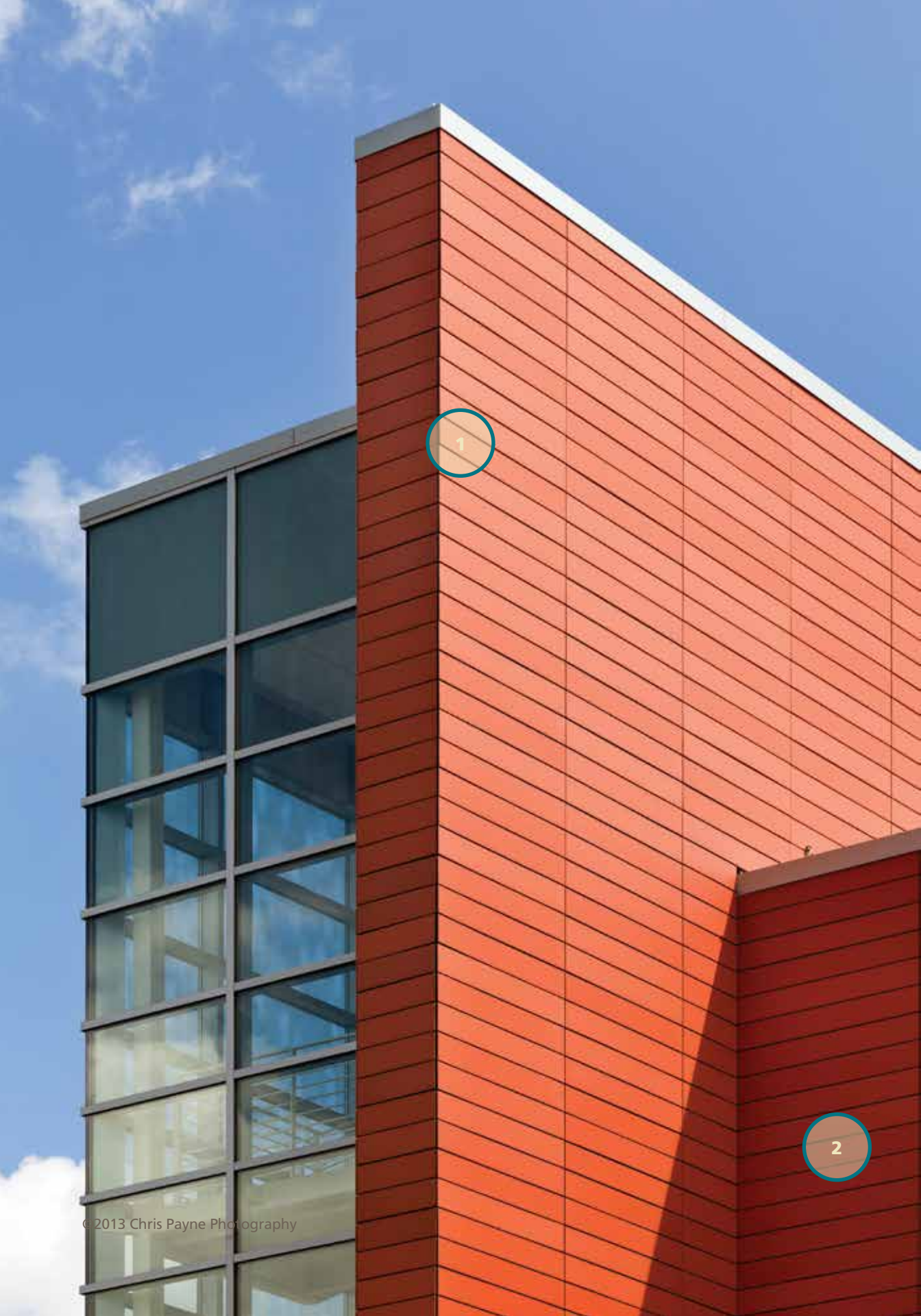




Various custom elements were required, including 5 new profiles, a new through body color and glaze finish, and specialty miter cuts for knife-point conditions at the corners where curtainwall and terra cotta louvers met panels. The custom profiles and natural range of the body bring life and momentum to the building. In all Boston Valley provided 26,000 linear feet of louvers and 41,000 square feet of interior and exterior panels, soffit, fascia and sills.







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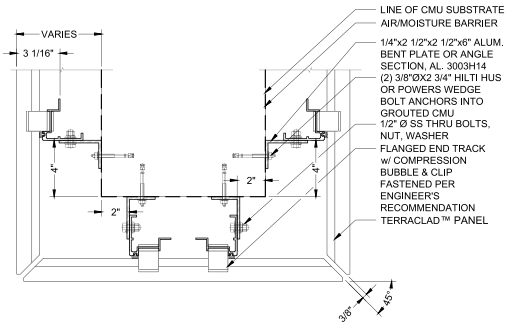
# TERRACLAD™ PORTFOLIO

## Greene-Hills School

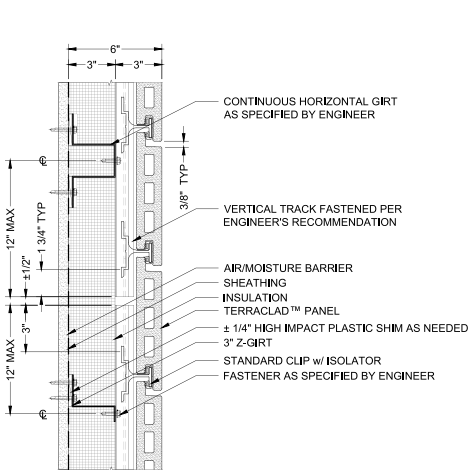
Bristol, CT

ARCHITECT Tai Soo Kim Partners Architects

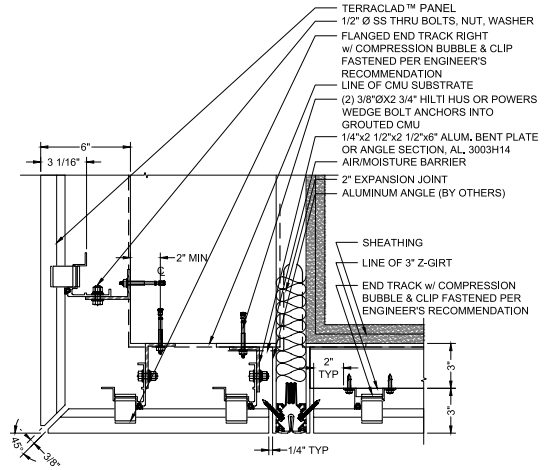
INSTALLATION CONTRACTOR Total Wall Systems



**1 PLAN DETAIL - PANEL AT TRACK BREAK (CMU)**



**2 SECTION DETAIL - PANEL AT TRACK BREAK**



**3 PLAN DETAIL - CHANGE OF SUBSTRATE  
QUIRK MITERED CORNER AT 2" EXPANSION JOINT**







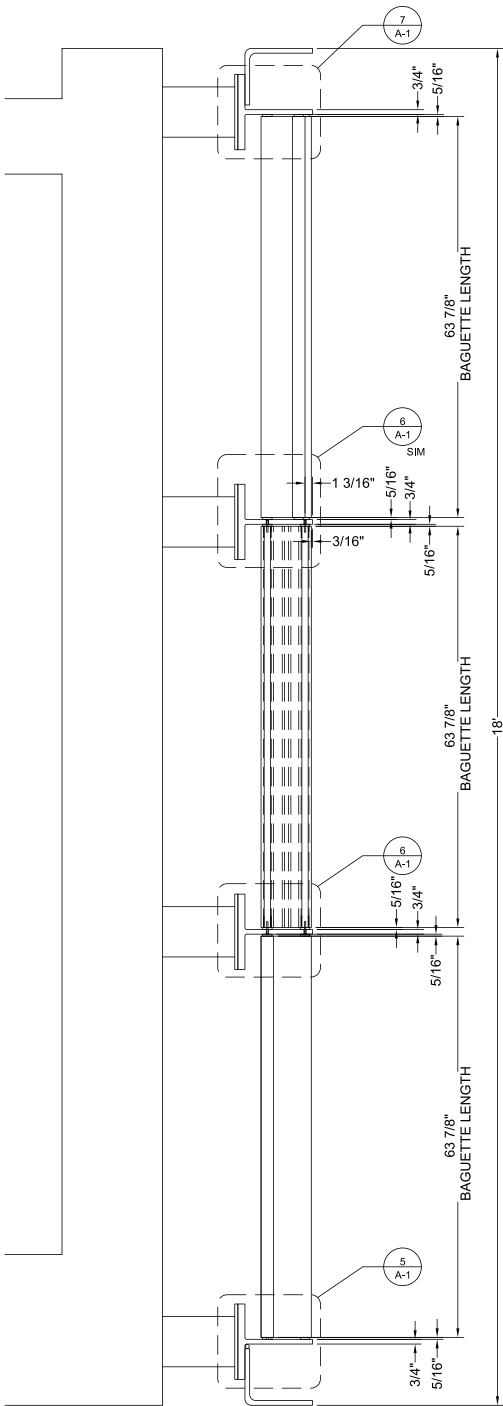


Alfred University,  
School of Art & Design

Alfred, NY

ARCHITECT ikon.5 architects

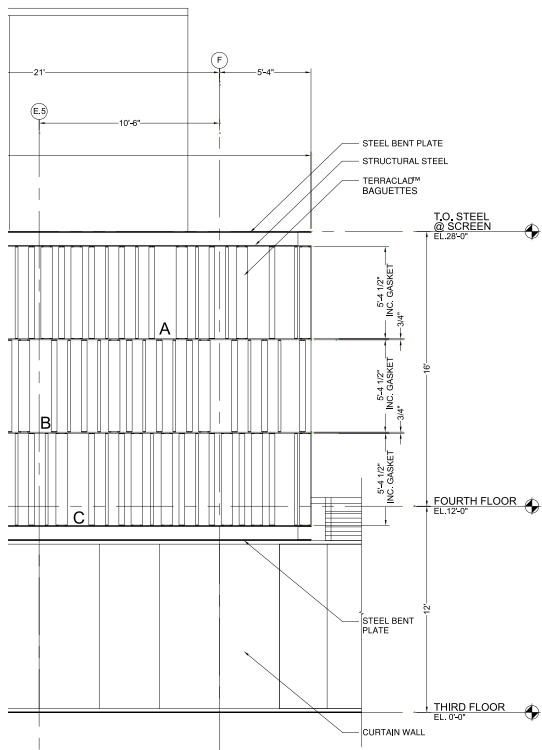
INSTALLATION CONTRACTOR The Pike Company, Inc.



BUILDING SECTION



EAST ELEVATION





1

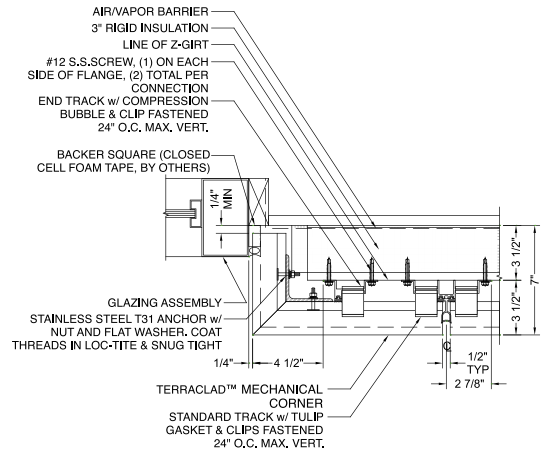
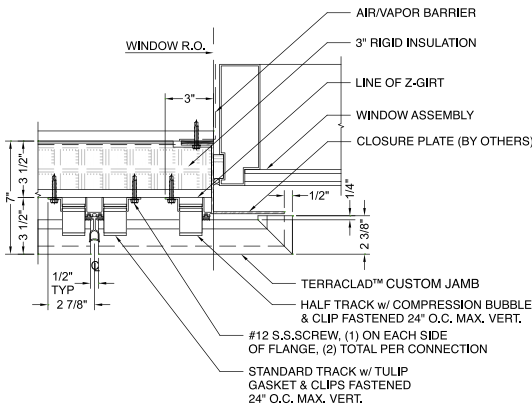
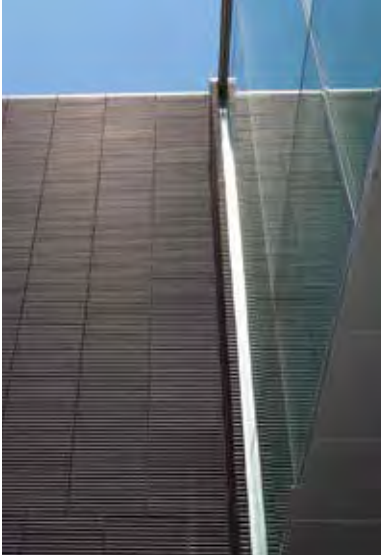
# TERRACLAD™ PORTFOLIO

## Hamilton College, Wellin Museum of Art

Clinton, NY

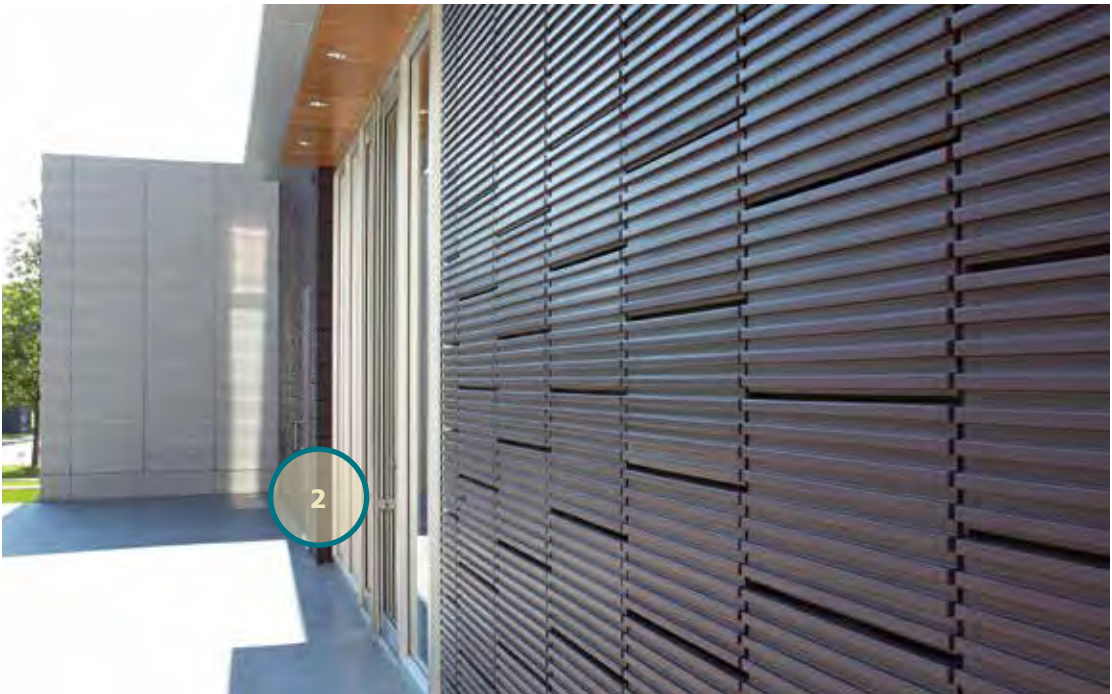
ARCHITECT Machado and Silvetti Associates

INSTALLATION CONTRACTOR Edward Schalk & Son, Inc.

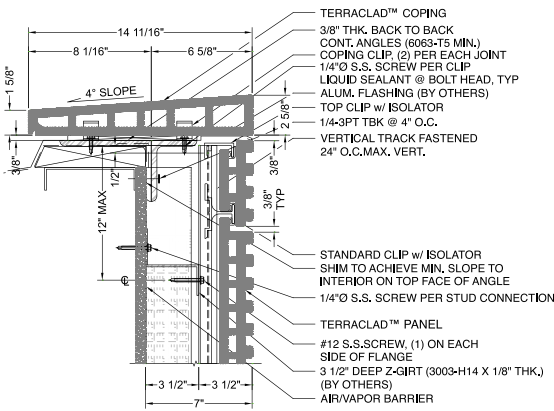


**1** PLAN DETAIL - CUSTOM JAMB

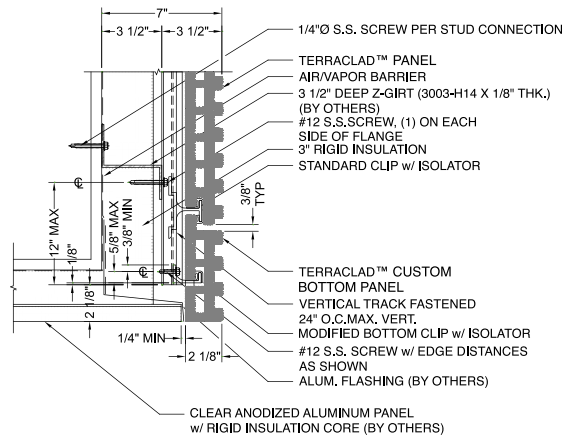
**2** PLAN DETAIL - MECHANICAL CORNER AT ENTRY GLAZING  
MIRROR IMAGE OF PHOTO







**3 SECTION DETAIL - PANEL AT TERRA COTTA COPING**



**4 SECTION DETAIL - CUSTOM BOTTOM PANEL**

With its deep purple hues, ribbed panels and vertically staggered bond, the Wellin Museum of Art demonstrates all the characteristics of the TerraClad™ system designers can use to create a truly stunning façade. Color was a very personal decision for the members of this project team, and after discussions and development in through-body and glaze applications, the client selected the matte purple glaze seen here. The ribbed texture, off-set bonding pattern and finished corners all come together with the color to make the building a stunning work of architecture.









Boston Valley's TerraClad™ team works with each client to understand the most acceptable and cost effective system installation.

## TERRA COTTA SYSTEMS

TerraClad™ Track Systems

TerraClad™ Panel Options

*PANEL SIZES AND PROFILES*

TerraClad™ Panel Details

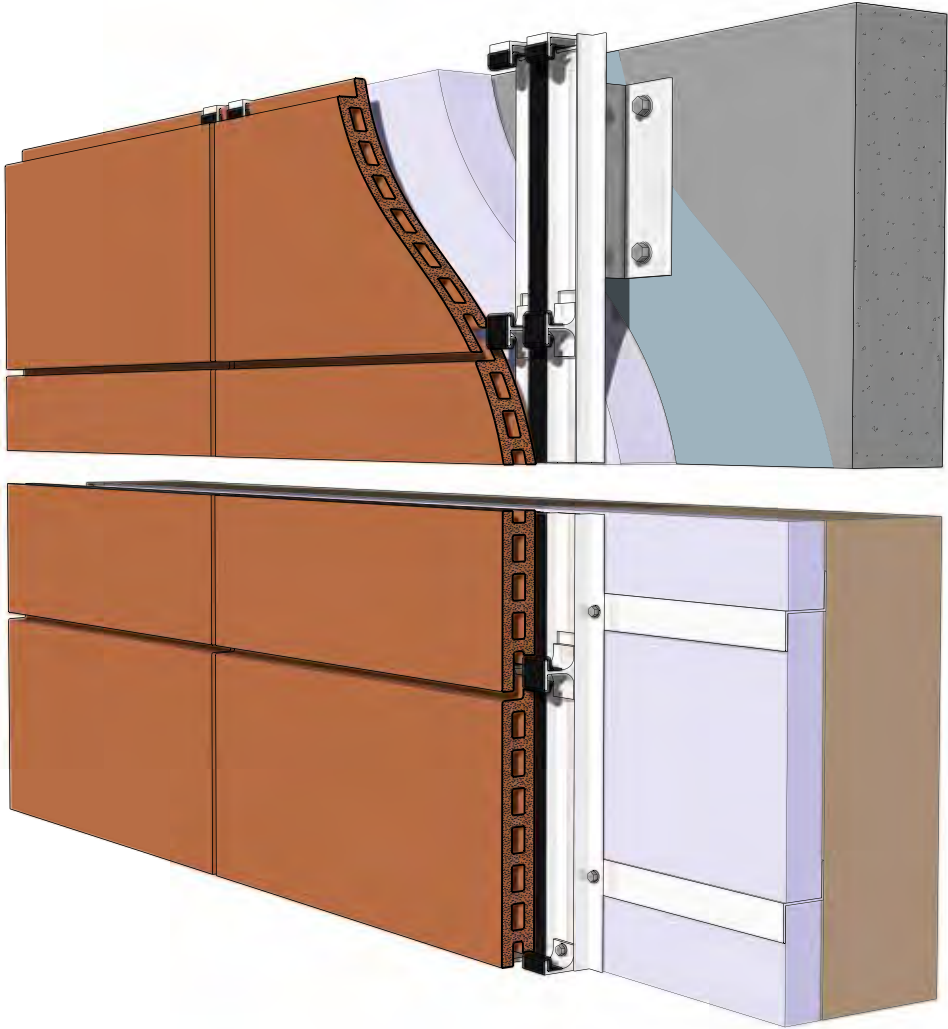
TerraClad™ Sunshade Applications

*BAGUETTE AND LOUVER DETAILS*

Terra Cotta PreCast Solutions

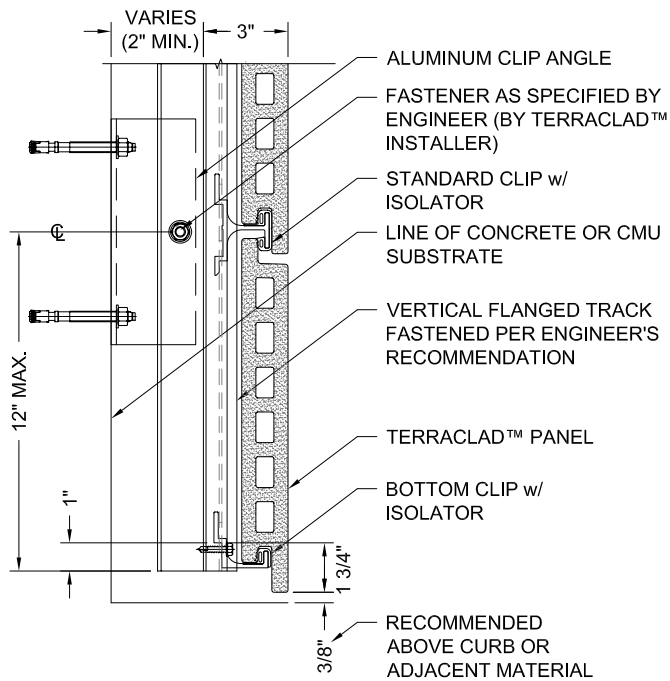
*PRECAST PRODUCT OVERVIEW*

## Vertical Track Option

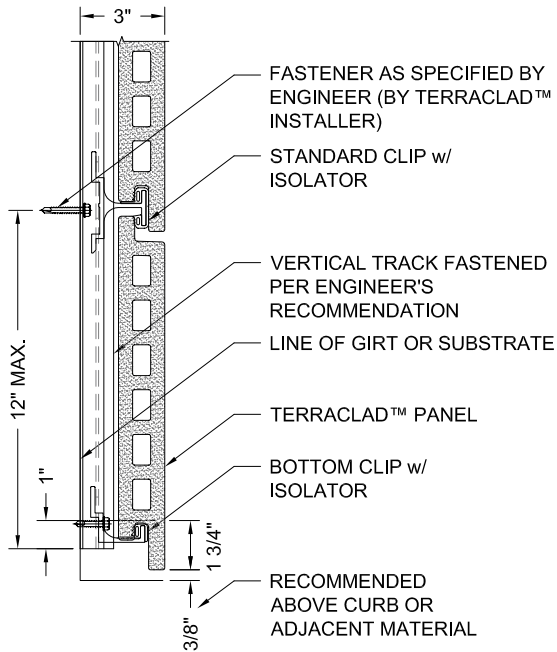


TERRACLAD™ SYSTEM DIAGRAM  
TOP - FLANGED TRACK  
BOTTOM - STANDARD TRACK

# Vertical Track Details



**Section Detail**  
PANEL AT BOTTOM OF FLANGED TRACK



**Section Detail**  
PANEL AT BOTTOM OF STANDARD TRACK

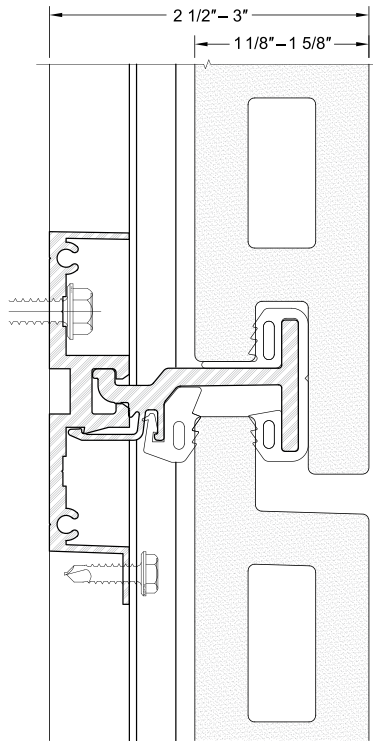


# Horizontal Track Option

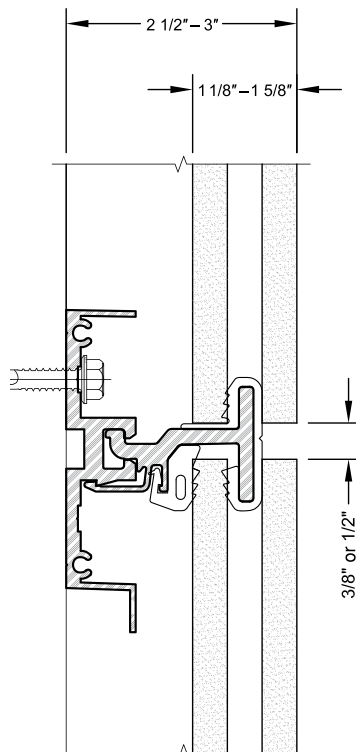


TERRACLAD™ SYSTEM DIAGRAM  
HORIZONTAL TRACK

# Horizontal Track Details



**Section Detail**  
HORIZONTAL TRACK SECTION WITH  
HORIZONTAL PANEL



**Section Detail**  
HORIZONTAL TRACK SECTION WITH  
VERTICAL PANEL



Let our TerraClad™ team show you how the plasticity of clay and extrusion technology can assist in the construction of your building's façade.

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## TERRACLAD™ PANEL OPTIONS

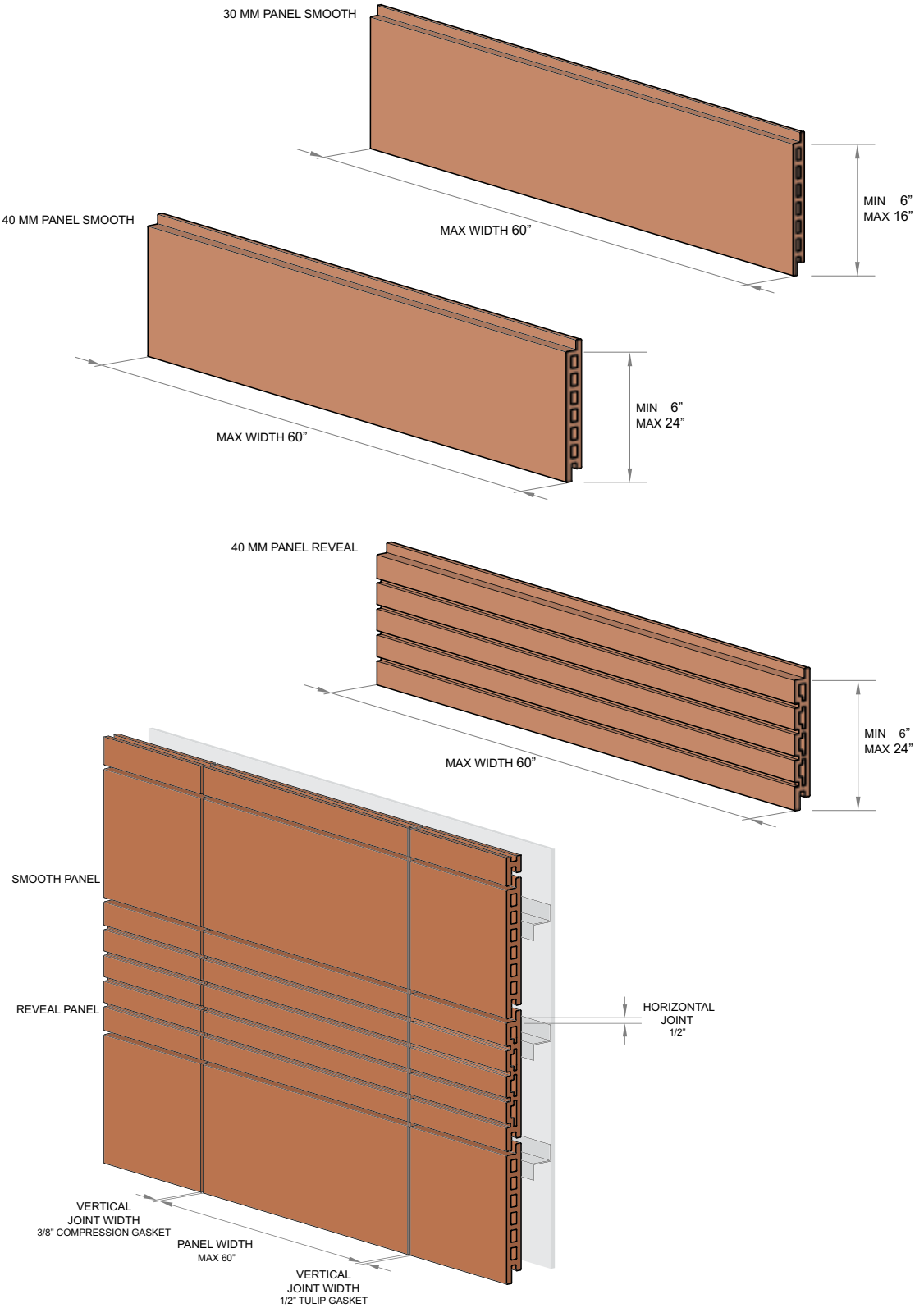
### Panel Sizes and Profiles

TerraClad™ ceramic rain screen panels are available in two thicknesses, 30mm and 40mm. The 40mm comes in a range of standard heights for both smooth and reveal panels, while the 30mm comes in a range of standard heights for the smooth profile (see next page for heights). Beyond these standard panels we have produced custom profiles and specialty elements for firms such as Machado & Silvetti, KPF, and Mario Botta Architetto. All of these profiles are shown on our website and are available for you to design with. Boston Valley's team will also work with you to develop a unique profile for your project.

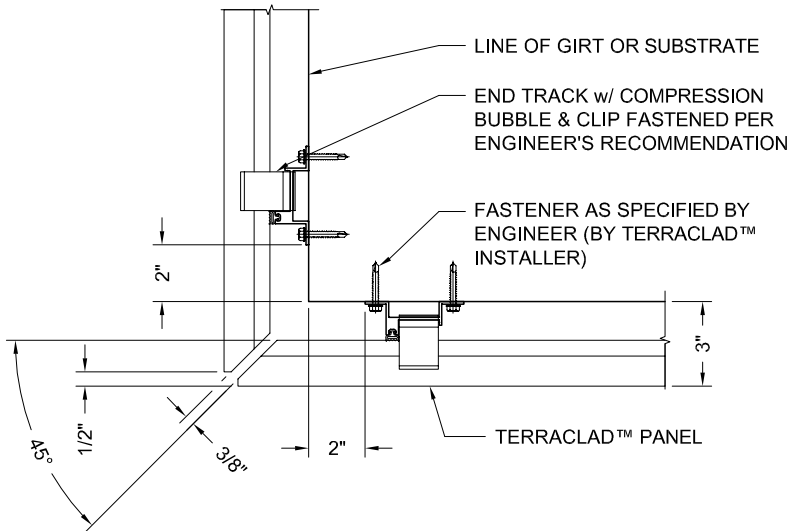
The standard sizes for smooth & reveal panels shown on the next page are available in 2" increments based on the height restrictions for 30mm & 40mm panels. Many custom profiles are available for use and can be found in the downloads section of our website, [bostonvalley.com](http://bostonvalley.com). TerraClad™ products are provided cut to size and outside corner conditions are quirk miter cut at our facility.



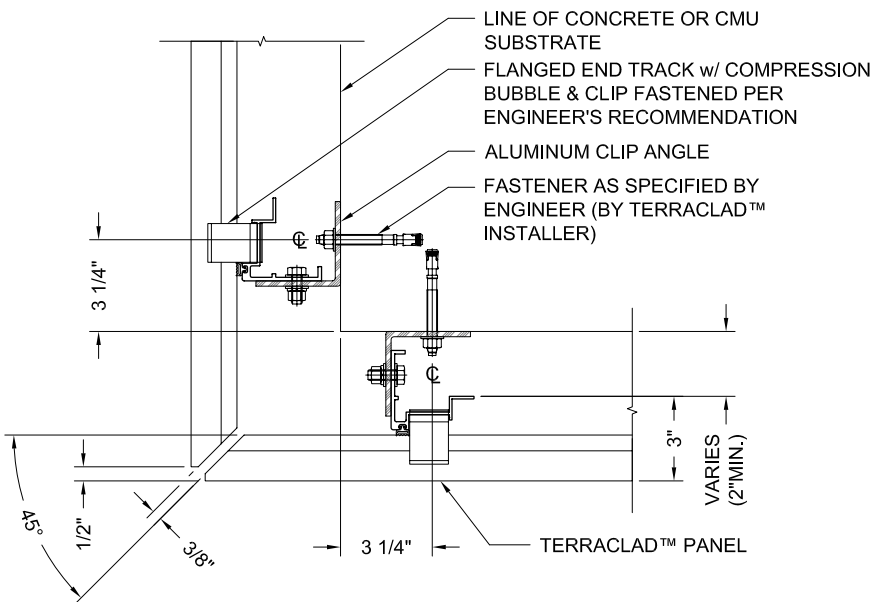
# Standard Sizes



Outside Corner Details - Vertical Track

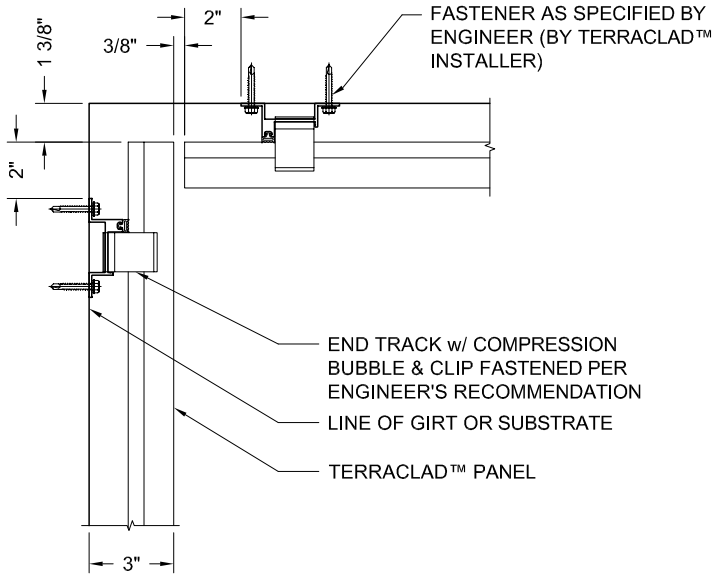


**Plan Detail**  
STANDARD END TRACK, 3/8" QUIRK MITERED CORNER

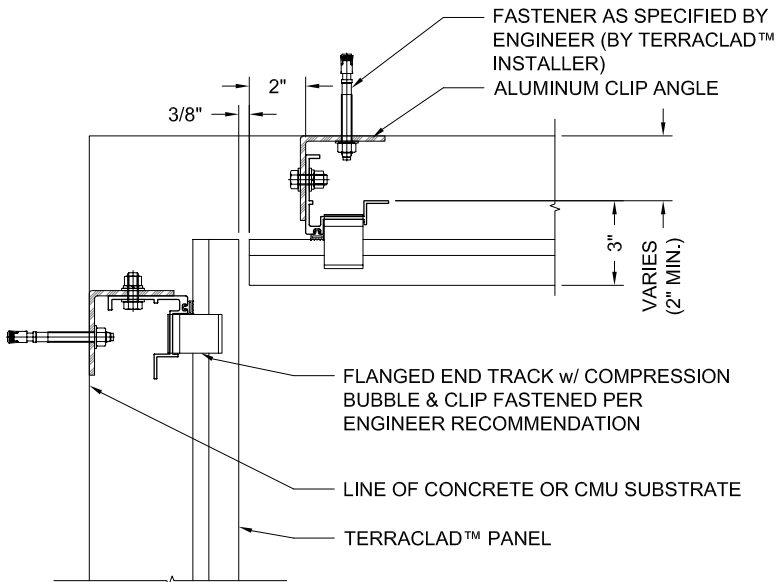


**Plan Detail**  
FLANGED END TRACK, 3/8" QUIRK MITERED CORNER

# Inside Corner Details - Vertical Track



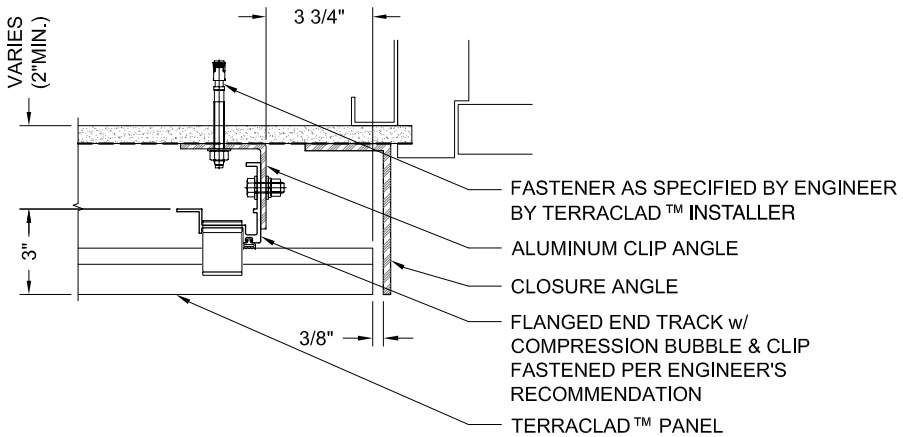
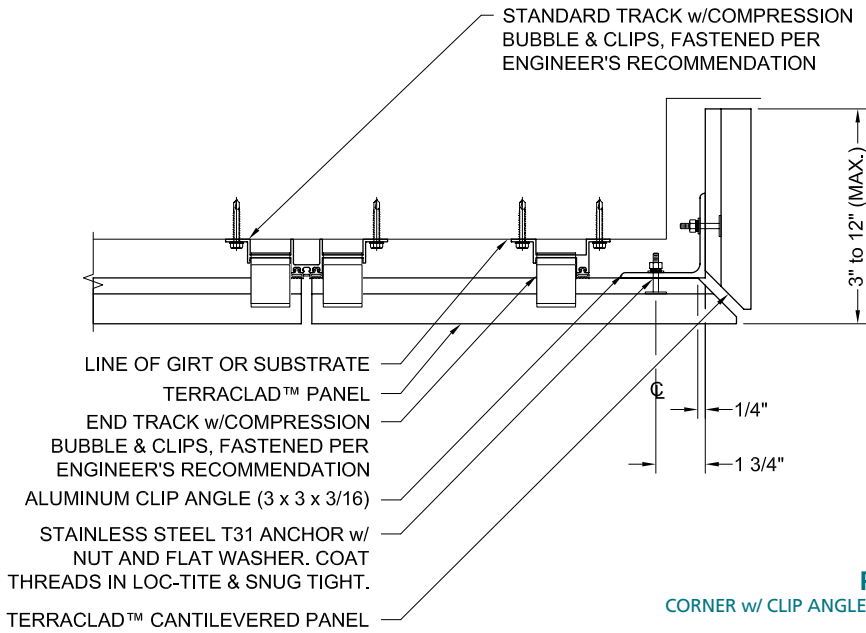
**Plan Detail**  
STANDARD END TRACK, 3/8" OPEN JOINT



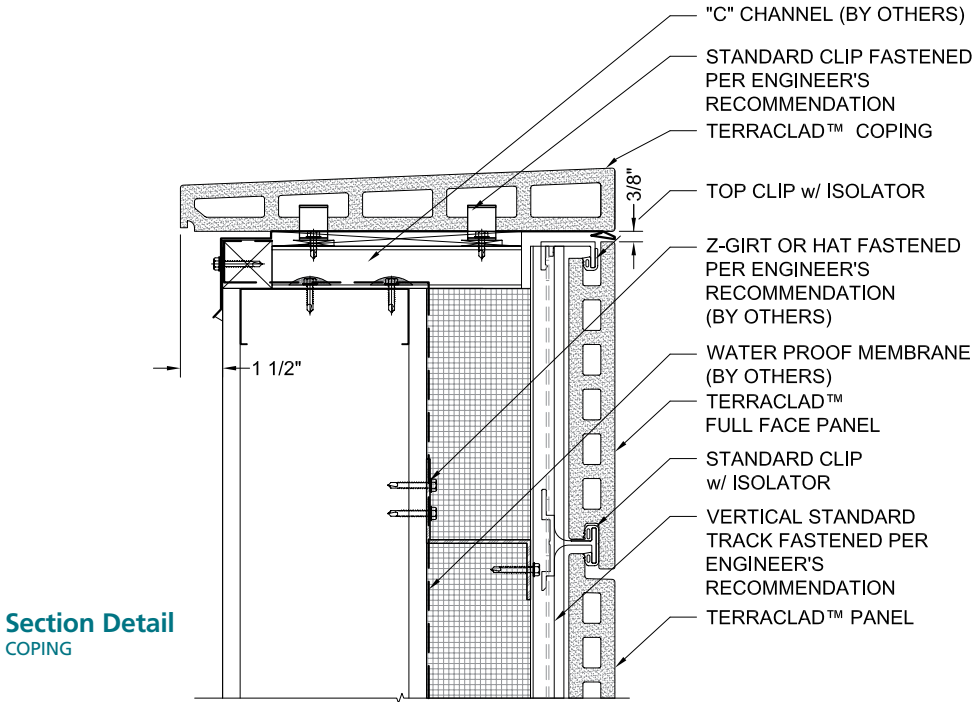
**Plan Detail**  
FLANGED END TRACK, 3/8" OPEN JOINT



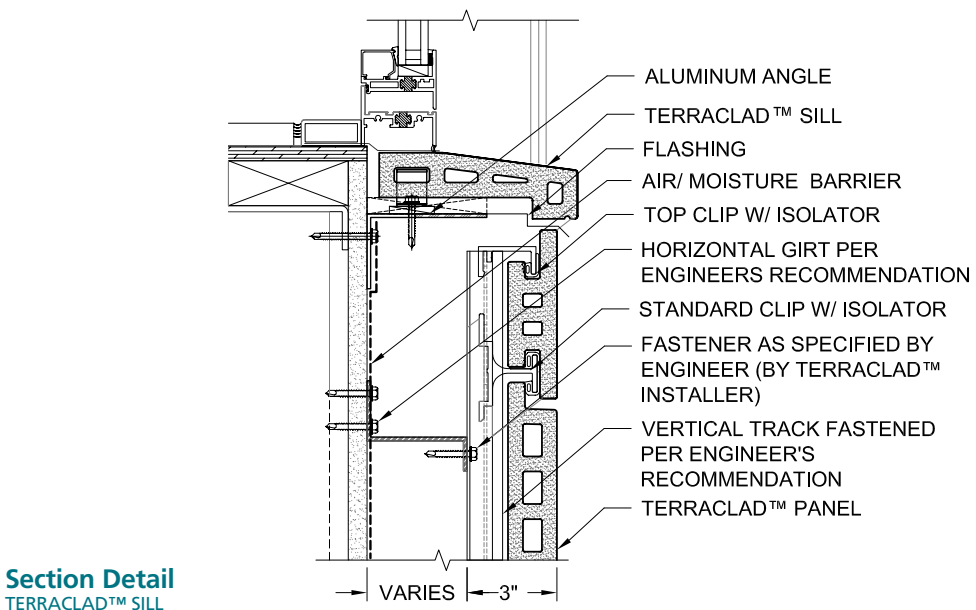
# Jamb Details - Vertical Track



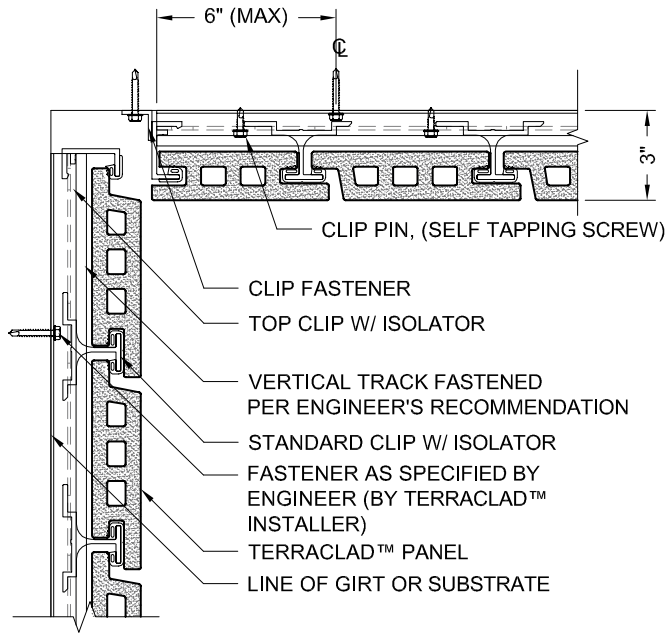
## Coping Detail - Vertical Track



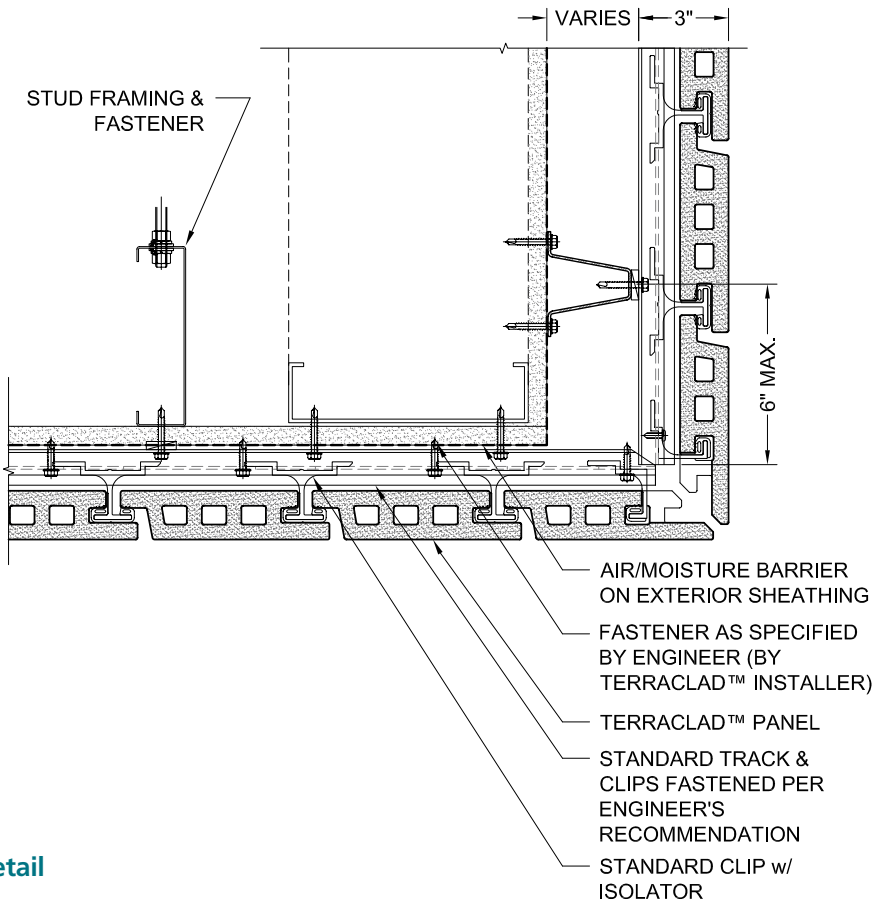
## Sill Detail - Vertical Track



# Soffit Details - Vertical Track



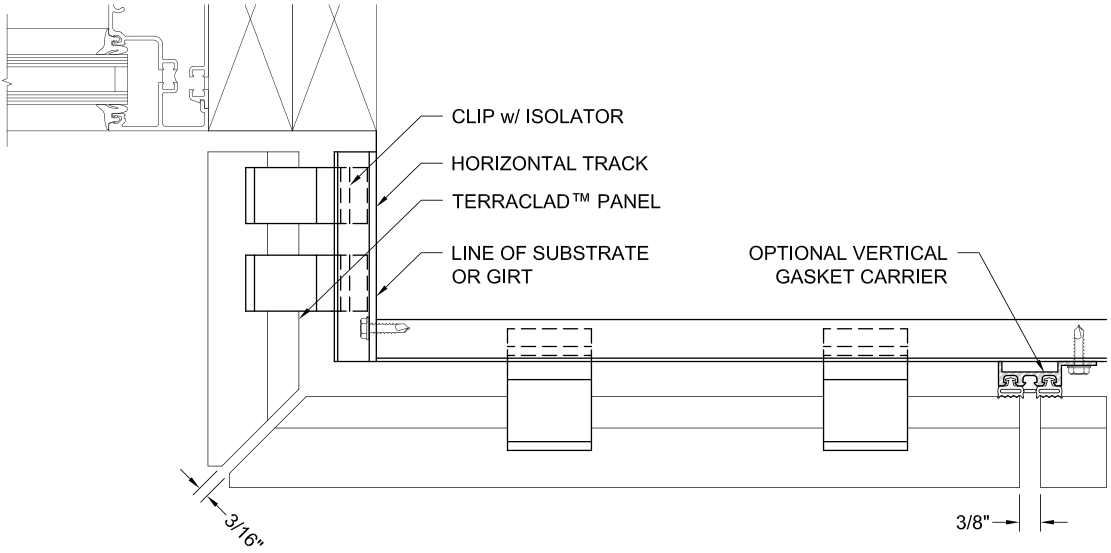
**Section Detail**  
SOFFIT TOP CLIP



**Section Detail**  
SOFFIT TYP.

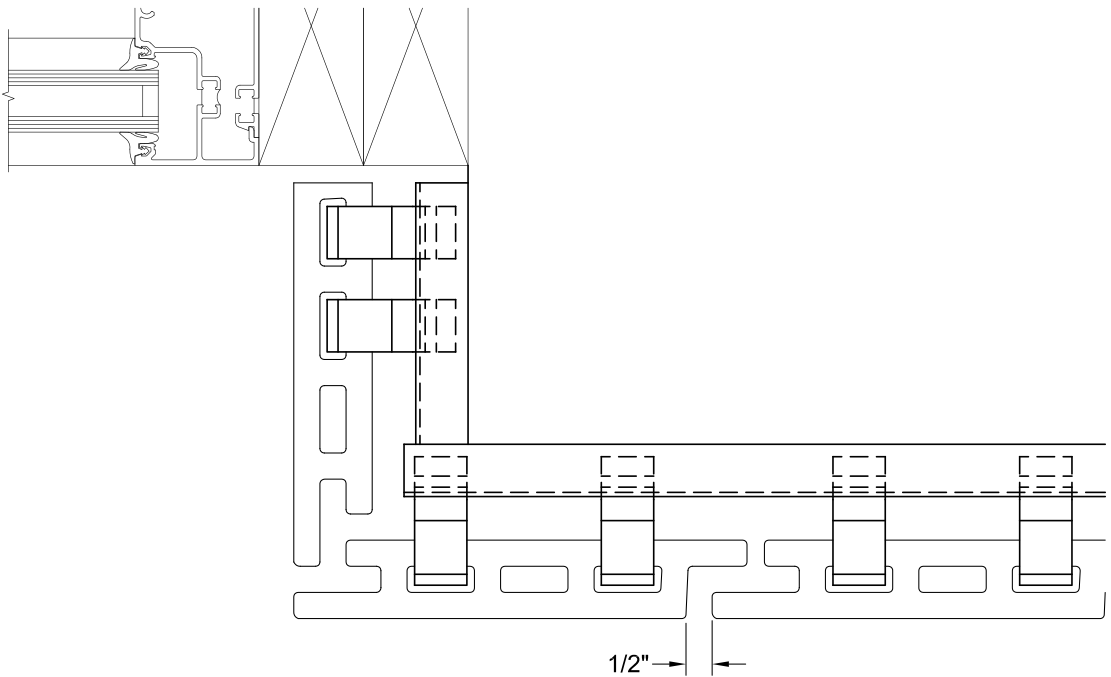


# Outside Corner Details - Horizontal Track



## Plan Detail

HORIZONTAL TRACK WITH HORIZONTAL PANELS



## Plan Detail

HORIZONTAL TRACK WITH VERTICAL PANELS



Custom louver profiles were designed by Perkins + Will for the University of Texas, Dallas (shown above) and KPMB at the Vaughan City Hall.

## TERRACLAD™ SUNSHADE APPLICATIONS

### Baguette and Louver Details

In addition to the ceramic rainscreen cladding system, Boston Valley offers sunshade devices as a part of the TerraClad™ product line. Our team provides engineered solutions for the utilization of baguettes and louvers as part of your façade design. Also formed using extrusion technology, baguettes and louvers are available in standard sizes but can be modified to fit your design goals. As the perfect combination of form and function, these sunshade devices not only add a distinctive element to a building, they also cut down on glare when used in front of a glazing system, providing shading to the building's occupants similar to any conventional shades or blinds.

The basic elements of these shading systems are the terra cotta baguette or louver, an internal aluminum spline and gasket. While

typical attachment details are available for basic understanding of the system, Boston Valley has the ability to modify the framing and attachment system to fit the specific needs of your project. No two projects have utilized the same framing system, yet Boston Valley continues to create success even when presented with a challenging design.

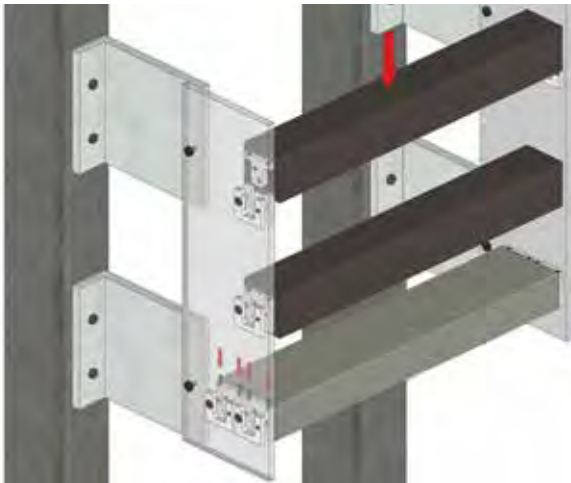
Boston Valley Terra Cotta uses the term "baguette" to refer to any sunshade device that has a square profile, while a "louver" refers to all other shading devices that have sides with unequal dimensions. Similar to TerraClad™ panels, sunshade devices are typically provided in maximum lengths of five feet. Please contact a member of our sales team if your design incorporates spans of a greater distance.

Our custom sunshade profiles and installation guide for baguette/louwer screen walls are shown in the downloads section of our website, [bostonvalley.com](http://bostonvalley.com).

### Standard Vertical Fin Attachment

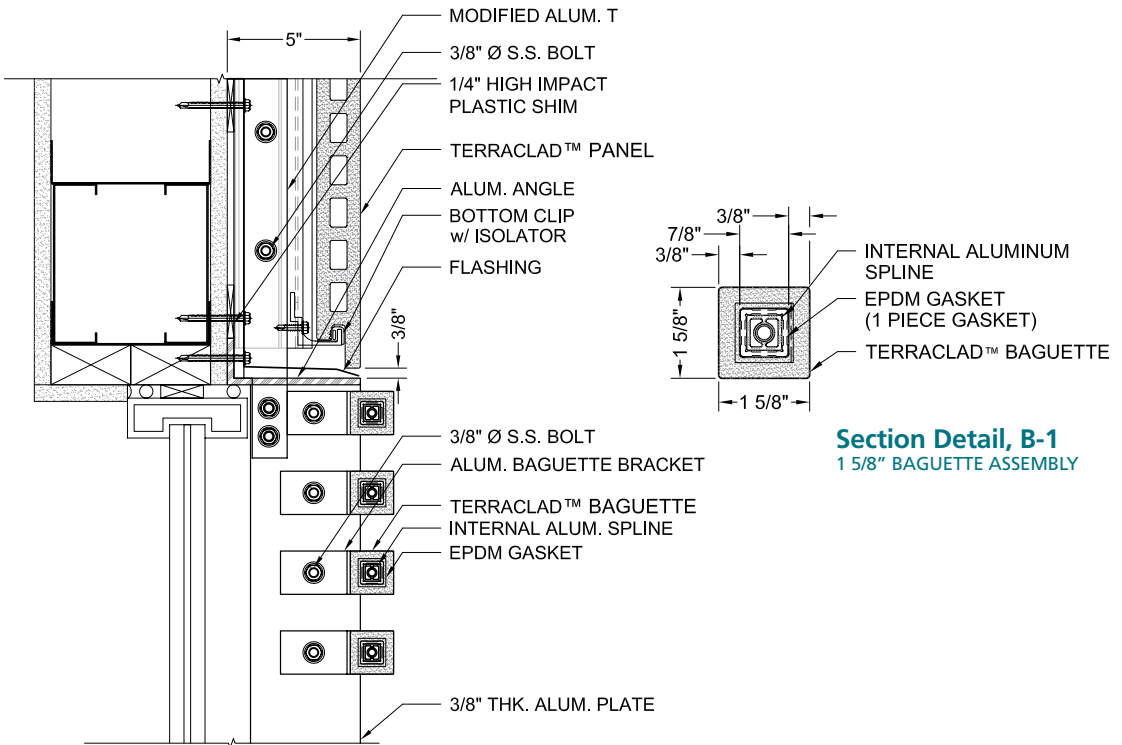


### Removable Bracket Attachment Option



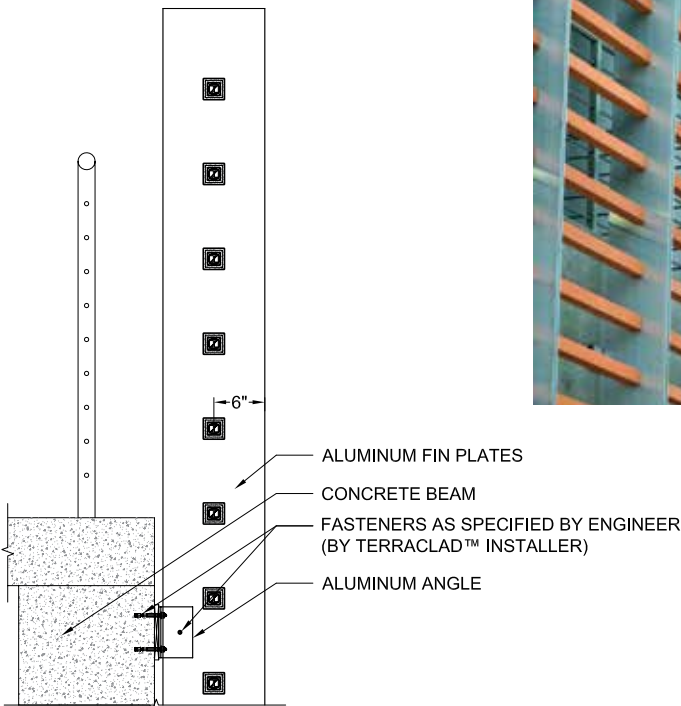


# Baguette Details



**Section Detail, B-1**  
1 5/8" BAGUETTE ASSEMBLY

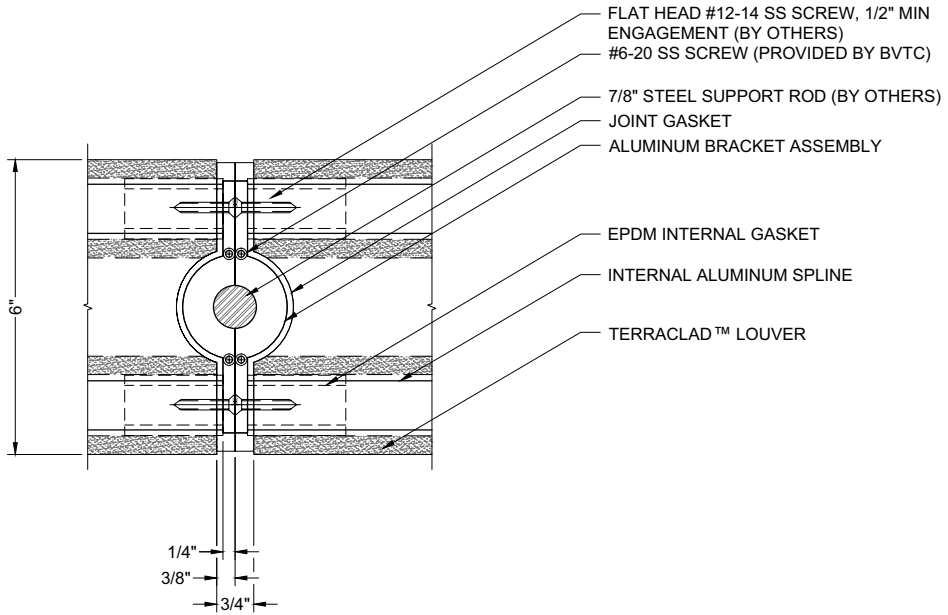
**Section Detail**  
1 5/8" BAGUETTE WITH FRAMING



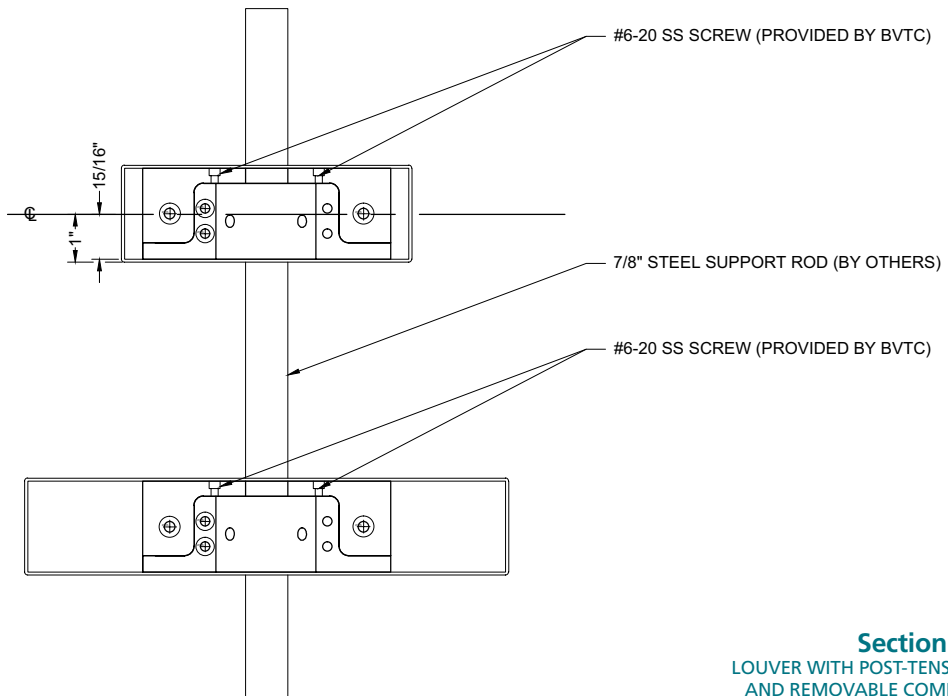
**Section Detail**  
2 1/2" BAGUETTE WITH FRAMING



# Louver Details



**Plan Detail**  
 LOUVER WITH POST-TENSION ROD  
 AND REMOVABLE COMPONENTS



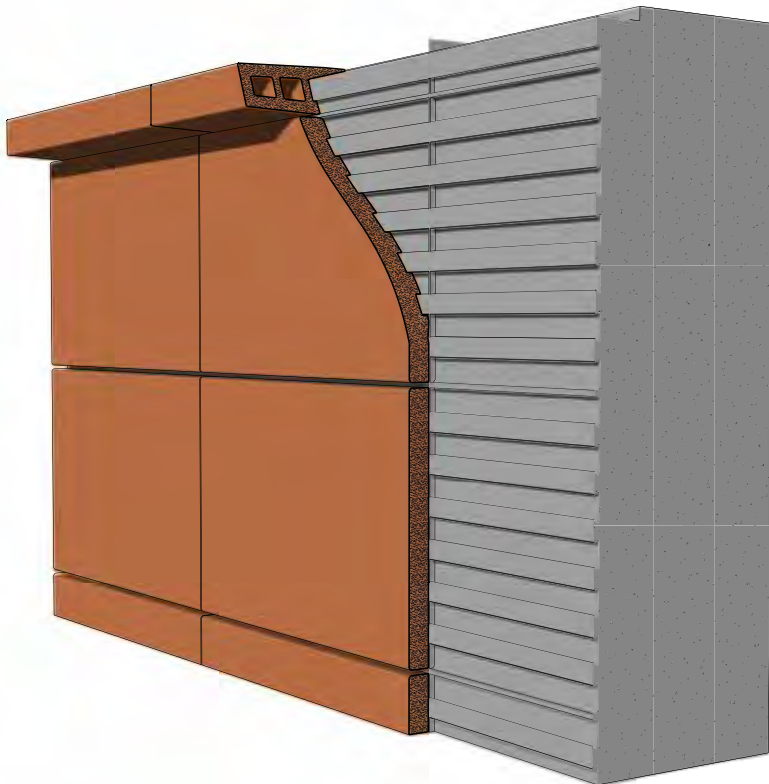
**Section Detail**  
 LOUVER WITH POST-TENSION ROD  
 AND REMOVABLE COMPONENTS

## PreCast Product Overview

For decades architectural designs have involved embedding a facing material in precast concrete panels. Terra cotta can be used as this type of finishing material to provide a wide variety of options in both profile and color. A 30mm solid terra cotta veneer as well as hollow-cored profile such as is shown in the rendering below can be embedded in large precast units. The dovetail profile on the backside of the panel provides additional surface area for the concrete to adhere to the terra cotta, ensuring a high-strength bond between the two products.

### Terra Cotta PreCast Benefits

- Speed of Installation
- Blast Resistance
- Design Flexibility





## Profiles and Shapes

Terra Cotta PreCast panels are available in 2" height increments from 6"– 24". The maximum length for the panel is 60". If you are considering larger dimensions or custom profiles, please contact our sales team.









# TERRA COTTA DESIGN OPTIONS

Design Options

Color Options

*TROUGH-BODY CLAY COLORS*

Finish Options

*TERRA COTTA TEXTURES*

Glaze Options

*TERRA COTTA GLAZE FINISHES*

*ARTIST COLLABORATION*



There are many reasons designers choose terra cotta, one of the primary reasons being the ability to customize the material in form and finish. As evidenced by its use throughout history, terra cotta can easily be formed into innumerable profiles and finished with textures and glazes giving it the appearance of alternate materials like metal or stone. Boston Valley maintains a strong competitive advantage in both these aspects with our use of 4 forming methods and more than 30 years of glaze matching and creation. The following pages will introduce you to the color, texture and glaze finishes possible when working with terra cotta.

### Terra Cotta Color Ranges

As a natural product made of material mined from the earth, terra cotta can exhibit a color range in both clay body and glaze finishes upon firing. This range makes terra cotta a truly beautiful building material. Boston Valley works with our clients to clarify the inherent color range of their selection and ensure that it fits within their design goals.



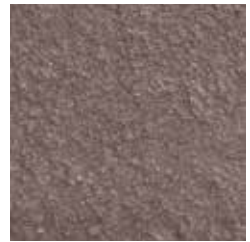
**ADOBE**  
R 137 G 81 B 66



**CHARCOAL**  
R 82 G 76 B 75



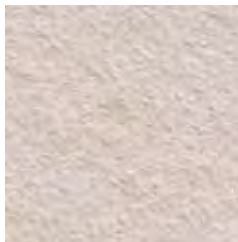
**MOCHA**  
R 98 G 83 B 74



**SLATE**  
R 120 G 109 B 101



**TERRA COTTA**  
R 144 G 90 B 71



**PEBBLE**  
R 139 G 120 B 103



**MESA**  
R 128 G 104 B 85



**GRAVEL**  
R 133 G 122 B 110

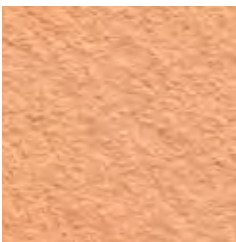
### Photospectrometer

Boston Valley Terra Cotta has invested in a Konica-Minolta Photospectrometer. This device allows us to scan panels for color compliance within a target range. As terra cotta is a natural material that displays a color range upon firing, this device gives us the ability to set a target range with the client and ensure that product leaving our facility falls within that selected range.

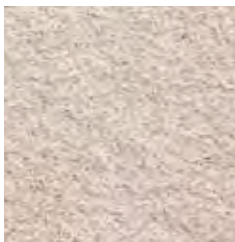
## Through-Body Clay Colors

Boston Valley Terra Cotta's TerraClad™ and terra cotta precast ceramic rain screen products are available in a variety of standard through-body colors (see page 66 and below). This means that the color of the final product is achieved through a combination of clays, minerals and/or stains which are mixed with water and fired to a high temperature, forming permanent bonds. Our through-body colors experience zero color fade due to UV exposure.

Beyond our standard through-body colors, we have the ability to create custom through-body colors. Our in-house Research & Development lab has created custom colors for many of the projects in our TerraClad™ portfolio. The lab is constantly working to enhance our offerings with different colors and blends. One interesting blend they have developed is an iron-spot finish. This iron-spot can be added to any of our through-body color recipes and gives the product a more rustic, traditional look. Please contact us to learn more about custom through-body color development.



**SALMON**  
R 184 G 125 B 89



**LIMESTONE**  
R 148 G 129 B 108



**CREAM**  
R 230 G 216 B 197



**GRAPHITE**  
R 96 G 88 B 83



**SAND**  
R 206 G 169 B 131



**CINNAMON**  
R 184 G 127 B 98



**IRON-SPOT**

The color palette shown on these two pages represents the standard through-body colors available for TerraClad™ products. Colors shown are subject to change without notice. Contact Boston Valley Terra Cotta prior to selection to confirm availability.

## Terra Cotta Textures

The malleability of terra cotta enables us to put a wide variety of textures in the surface of the terra cotta panels. Beyond the natural fired finish, Boston Valley offers 13 other textures. Used alone or in combination, these textures bounce and reflect light differently, creating an interesting pattern along the façade.



HONED



EXPOSED AGGREGATE



MEDIUM MACHINE SCORE



LARGE MACHINE SCORE



FINE MACHINE SCORE



PEELED SAWTOOTH



BRUSHED



WIRESTRUCK





RIDGED



SMALL ROUNDED LINE RAKE



SMOOTH SAWTOOTH



LARGE ROUNDED LINE RAKE



SMALL PEAKED LINE RAKE



## Terra Cotta Glaze Finishes

Boston Valley Terra Cotta has been developing glazes for more than 30 years. As such it is truly one of the strengths of our company. Glazing gives the designer a world of possibilities for finished color. Boston Valley can glaze both our panels and sunshade devices to achieve a different finish color or appearance than what is available in our through-body colors. Because of our specialized production processes, we can provide a glaze-wrapped end on our panels and a 4-sided glaze finish on the sunshade devices. Glaze color finishes are available in matte, satin and gloss surface types. We will work with you to understand what amount of reflectance will be appropriate for your project as well as what colors and tones are available for each surface type. Having matched historic glazes for years, our research and development lab can accept alternate material samples such as stone, metal or cloth, or paint color swatches as a basis of direction for the glaze color. Our sales team will work with you throughout the glaze development process sending you samples for your feedback until you are satisfied with the finish.







Glaze finishes open up a world of possibilities which may not be attainable for our TerraClad™ products in a through-body clay color.

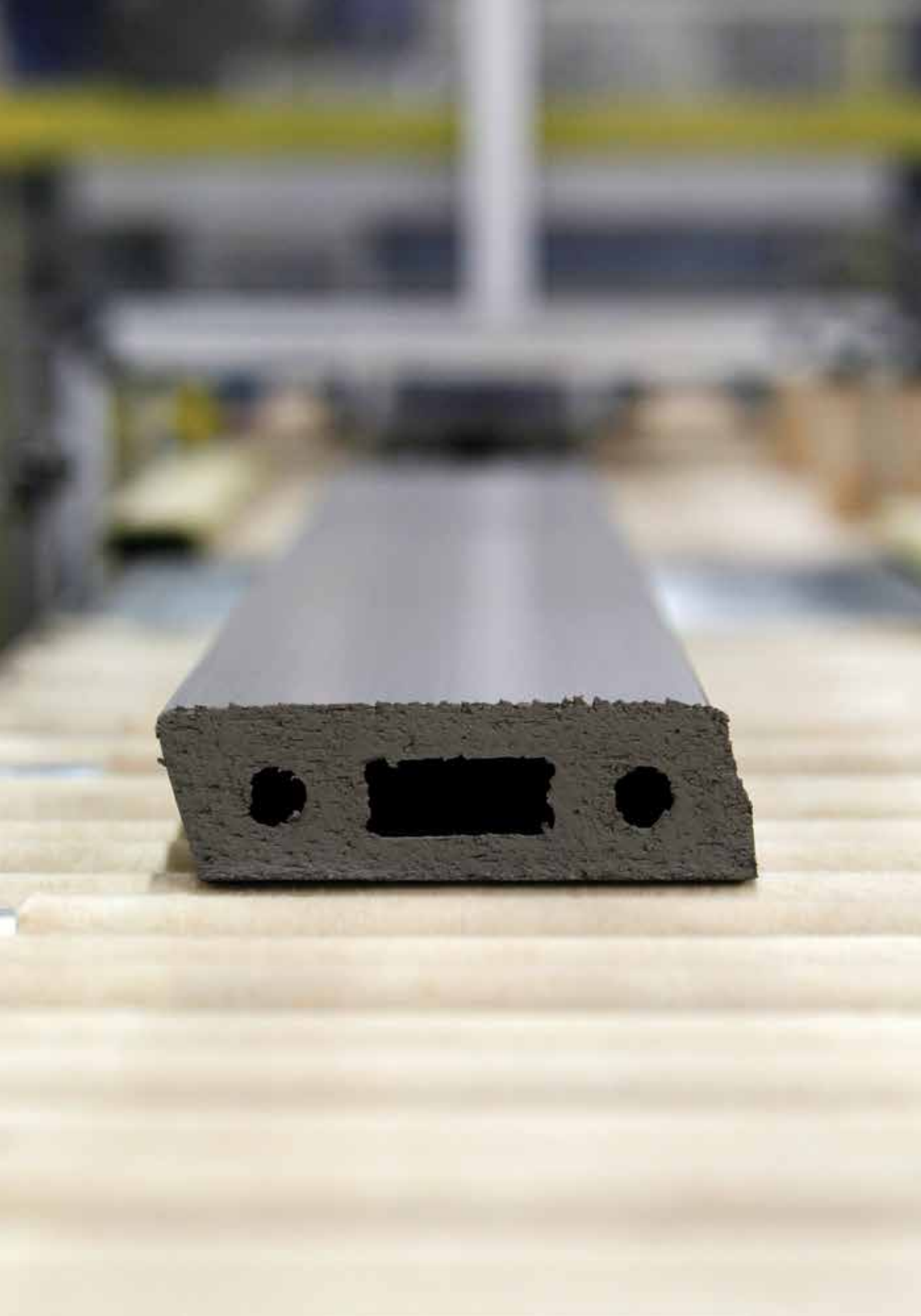
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## Artist Collaboration

As mentioned in the introduction of this book, Boston Valley also collaborates with ceramic artists including Anne Currier and Studio Christine Jetten. If desired, Boston Valley can request proposals for their glaze development collaboration on a project.







To maintain consistency in the high quality products manufactured, Boston Valley sources raw materials from US suppliers and tests product on a regular basis.

## TERRA COTTA QUALIFICATIONS

Product Testing - TerraClad™

Product Testing - Terra Cotta PreCast Panels

Quality Assurance Program

## Performance Test & Description

### ASTM C126

Standard Specification for Ceramic Glazed Structural Clay Facing Tile, Facing Brick and Solid Masonry Units

### ASTM E 283-04

Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen

### ASTM E 331-00

Standard Test Method for Water Penetration of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference

### ASTM E 330-02

Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference

### ASTM C67

Standard Test Method for Sampling and Testing Brick and Structural Clay Tiles

### ASTM C1354

Standard Test Method for Strength of Individual Stone Anchorages in Dimensional Stone

### AAMA 501.1-05

Standard Test Method for Exterior Windows, Curtain Walls, and Doors for Water Penetration Using Dynamic Pressure

### AAMA 501.4

Recommended Static Test Method for Evaluating Curtain Wall and Storefront Systems Subjected to Seismic and Wind Induced Inter-story Drifts

### AAMA 501.6-01

Recommended Dynamic Test Method for Determining the Seismic Drift Causing Glass Fallout from a Wall System.

### AAMA 509-09

Voluntary Test and Classification Method for Drained and Back Ventilated Rain Screen Wall Cladding Systems

## Florida Building Code High Velocity Hurricane Zone Testing, Miami-Dade County, Florida 08-1014.03 July 1, 2014

### TAS 201-94

Impact Test Procedures - Large Missile Impact

### TAS 202-94

Criteria for Testing Products Subject to Cyclic Wind Pressure Loading

### TAS 203-94

Criteria for Testing Impact & Non Impact Resistant Building Envelope Components Using Uniform Static Air Pressure

### ASTM E 1886

Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials

### ASTM E 1996-06

Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors and Impact Protective Systems by Windborne Debris in Hurricanes



## Technical Data for TerraClad™

Property/Characteristic	CRITERIA
Absorption	ASTM C67-02C   4.2–6.5%
Modulus of Rupture	ASTM C67   2231–3717 lbs/in <sup>2</sup>

### Dimensions and Tolerances

Width (center, parallel to core)	.039" for any cut length up to 60"	± 1.0 mm for any cut length up to 1524 mm
Height:	± .0625" up to 10"	± 1.58 mm up to 254 mm
	± .09375" up to 15"	± 2.38 mm up to 381 mm
	± .125" up to 20"	± 3.17 mm up to 508 mm
	± .15625" up to 24"	± 3.96 mm up to 609.6 mm
Thickness: (cross section of panel)	± .0625"	± 1.58 mm
Straightness: ("sweep")		± 0.25% of length
Diagonal Flatness:		± 0.25% of diagonal
Vertical Flatness:		± 0.5% of height
Torsion:		± 0.25% of diagonal

Weight per Unit Area	ASTM C67-02C   130-135 lbs/ft <sup>3</sup>
Linear Coefficient of Thermal Expansion	3.5 x 10 <sup>-4</sup> percent (0.00035%)
Freeze and Thaw	ASTM C67-02C   300 cycles passed
Efflorescence	ASTM C67-02C   No efflorescence
Chemical Resistance	ASTM C126-99 No Change in Color or Texture



## PRODUCT TESTING - TERRA COTTA PRECAST PANELS

### Performance Test & Description

#### **ASTM E488**

Standard Test Methods for Strength of Anchors in Concrete Elements

#### **ASTM C666**

Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing

#### **ASTM C126**

Standard Specification for Ceramic Glazed Structural Clay Facing Tile, Facing Brick and Solid Masonry Units

#### **ASTM C67**

Standard Test Method for Sampling and Testing Brick and Structural Clay Tiles

## Technical Data for Terra Cotta PreCast Panels

Property/Characteristic	CRITERIA
Absorption	ASTM C67   7.5%
Modulus of Rupture	ASTM C67   1400 lb/in <sup>2</sup> or greater

### Dimensions and Tolerances

Width (center, parallel to core)	.039" for any cut length up to 60"	± 1.0 mm for any cut length up to 1524 mm
Height:	± .0625" up to 10"	± 1.58 mm up to 254 mm
	± .09375" up to 15"	± 2.38 mm up to 381 mm
	± .125" up to 20"	± 3.17 mm up to 508 mm
	± .15625" up to 24"	± 3.96 mm up to 609.6 mm
Thickness: (cross section of panel)	± .0625"	± 1.58 mm
Straightness: ("sweep")		± 0.25% of length
Diagonal Flatness:		± 0.25% of diagonal
Vertical Flatness:		± 0.5% of height
Weight per Unit Area		ASTM C67   130-135 lbs/ft <sup>3</sup>
Linear Coefficient of Thermal Expansion		3.5 x 10 <sup>-4</sup> percent (0.00035%)
Freeze and Thaw (of precast unit assembled)		ASTM C666   300 cycles passed
Efflorescence		ASTM C67   No efflorescence
Chemical Resistance		ASTM C126 No Change in Color or Texture
Tensile Bond Strength (of precast unit assembled)		ASTM E488   150 lbs/in <sup>2</sup> or greater
Compressive Strength		ASTM C67   6000 lbs/in <sup>2</sup> or greater



### Quality Assurance / Quality Control

Boston Valley Terra cotta is committed to producing the highest quality terra cotta product in the country. We have put a quality assurance program in place that ensures every block leaving our facility will meet our assured standards. The program is in place all the way from clay batching, through extrusion into drying and firing and finally sizing and shipping. Product is checked for conformance to dimensional tolerances after it is dried and after it is fired. Straightness of the panels is checked on a laser controlled tolerance inspection machine which automatically rejects non-conforming panels for recycling. After firing panels are also checked for color range conformance using a photospectrometer. Boston Valley also performs consistent periodic material testing to ensure our clay bodies continue to perform in the industry property testing expected of ceramic materials. Our recipes consistently outperform the industry standards.

### Proudly Manufactured in the USA

Boston Valley's terra cotta products are manufactured at 6860 South Abbott Road in Orchard Park, NY 14127. Our 180,000 square foot facility employs over 100 New Yorkers.

Boston Valley Terra Cotta offers a product that meets all international standards. We have successfully completed more than 130 commercial projects. Our TerraClad™ product is made with American materials, a majority of which are sourced from within a 500 mile radius of the facility. We are committed to sustainability and responsible manufacturing and are constantly revisiting and revising our production processes to ensure we can provide the highest quality product with limited impact on the global environment.

#3

We accept TerraClad™ ceramic materials from project sites to reuse in the manufacturing process.



## Projects Featured in this Book

175 PARK AVENUE  
*PAGE 70*

516 WEST 19TH STREET  
*PAGE 64*

BECHTLER MUSEUM OF MODERN ART  
*PAGES 18-21*

BOSTON VALLEY TERRA COTTA HEADQUARTERS  
*PAGE 59*

CONNECTICUT COLLEGE NEW LONDON HALL  
*PAGES 22-25, 64, 69*

GERALD FORD INTERNATIONAL AIRPORT  
PARKING GARAGE  
*PAGE 60, INSIDE COVER*

GREENE-HILLS SCHOOL  
*PAGES 36-37*

HAMILTON COLLEGE, WELLIN MUSEUM OF ART  
*PAGES 16, 40-43*

HARRAH'S AK-CHIN HOTEL AND CASINO  
*PAGE 64*

ALFRED UNIVERSITY, SCHOOL OF ART & DESIGN  
*PAGES 38-39*

NORTH CAROLINA BIOTECHNOLOGY CENTER  
*PAGE 50*

ROBERT LEE YMCA  
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