



Boston Valley Terra Cotta

TM
TerraClad
Architectural Cladding Systems





TerraClad Production Facility

Boston Valley Terra Cotta

Contents:

Introduction	4
Panelized Cladding System.....	5
Pressure Equalized Rainscreen.....	6
Color	7
Panel Sizes.....	8
Rainscreen Panel Attachment.....	9
Inside and Outside Corners	10
Parapet and Sill Sections.....	11
Window and Spandrel Details.....	12
Panel Spacing Details	13
Terra Cotta Installations	14
Terra Cotta Installations	15
Baguette and Louver Design Ideas	16
Baguette and Louver Design Ideas	17
Technical Data.....	18
Custom Shape	19
Shape Design Ideas.....	20
Shape and Color Design Ideas.....	21
Testing	22
LEED info	23
Technical Sales Support.....	25
Terra Cotta Applications.....	26
A History of Quality and Craftsmanship.....	27

TerraClad™



Introduction:

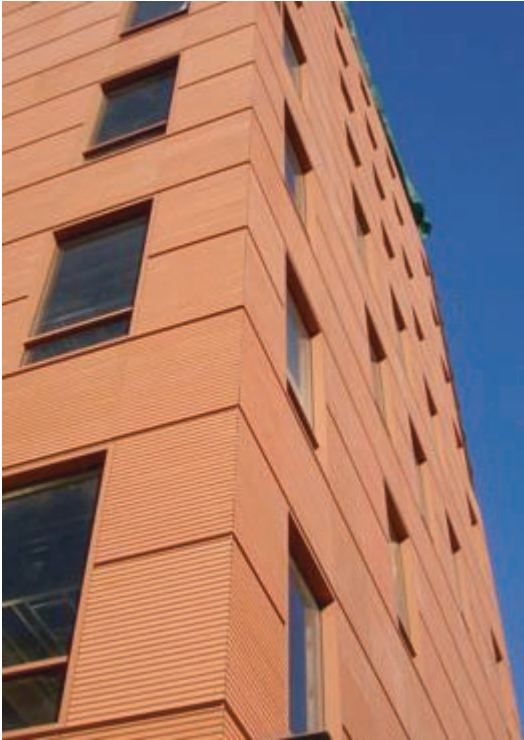
Boston Valley Terra Cotta has developed this catalog to introduce designers to the exciting possibilities of ceramic cladding systems.

With continuous advancements in our production of high quality ceramic building panels and the development of attachment systems, designers can now use this versatile material in high performance rainscreen designs.

To those new to the concepts of rainscreen wall construction theories, we have included a graphic overview.

For centuries Terra Cotta has given designers the versatility needed to realize their designs. In that tradition TerraClad™ opens additional possibilities for the building designer with the latest technologies.

Panelized Cladding System



Versatile Cladding

Our new rainscreen cladding system allows maximum design flexibility. This mortarless panel system creates a wide range of design possibilities.

A flexible manufacturing process allows for many panel sizes and surface profiles. Large color selection is available in both raw material selection and glazing applications.



A System Designed for Protection and Aesthetics

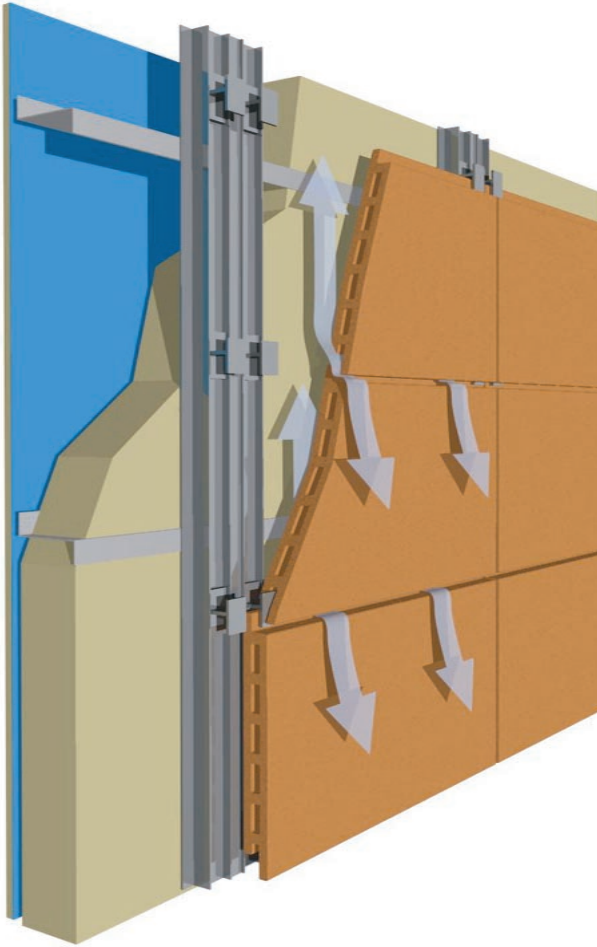
Rainscreen systems help to meet today's tough requirements for moisture control for both building longevity and air quality. Terra Cotta provides the high performance surface characteristics and natural warmth to maintain a building's aesthetics for many years.



TerraClad™

Boston Valley Terra Cotta

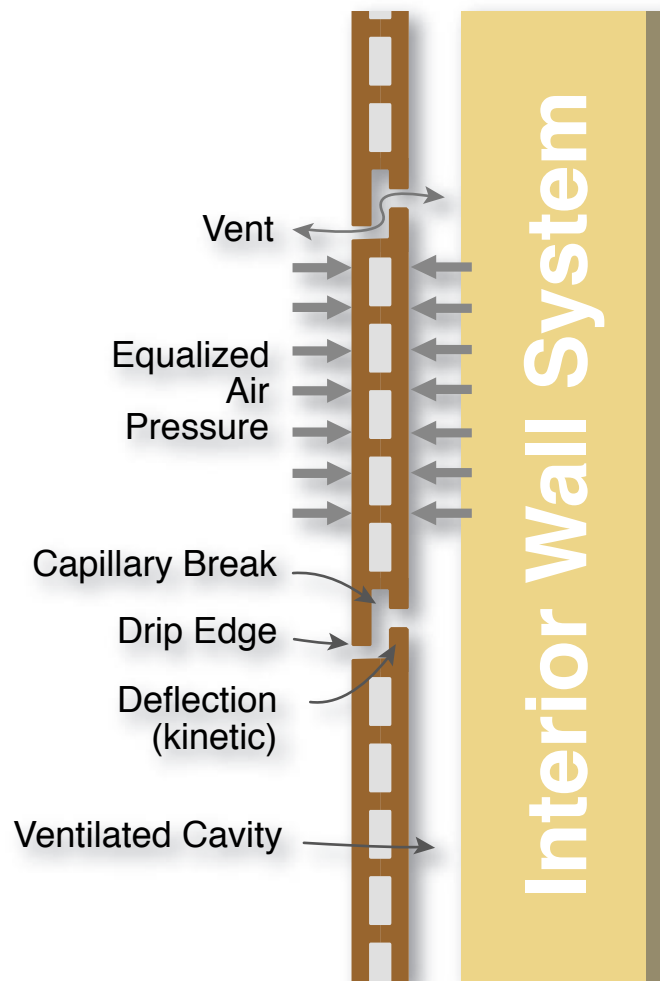
Pressure Equalized Rainscreen



Rainscreen principals use techniques to address failures in conventional sealed systems. The panels direct rain along the surface while venting prevents wind and pressure from driving moisture deeper into the wall system. Venting also keeps the wall cavity dry. The mounting rail and gaskets channel water out at the joints.

How TerraClad™ Helps Keep Water Out

The TerraClad™ Architectural Terra Cotta Rainscreen System is designed to deal with the physical methods of rain entry.



Boston Valley Terra Cotta

Standard Colors Are Just the Start

The TerraClad™ standard colors are intended as a starting point for the designer. Gaskets can be color-matched to the terra cotta panels.



Fired In Color for Permanence

TerraClad™ is a ceramic product produced by firing clays at high temperature in kilns, allowing almost unlimited variation between choices in through body colors and glazing.



Examples of the Wide Color Palette

Printed Colors May Vary.
Actual Samples Upon Request

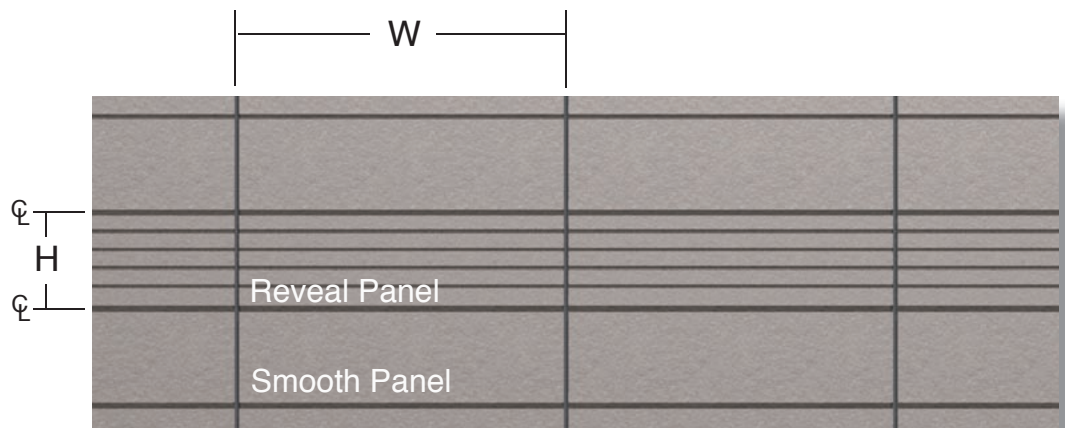
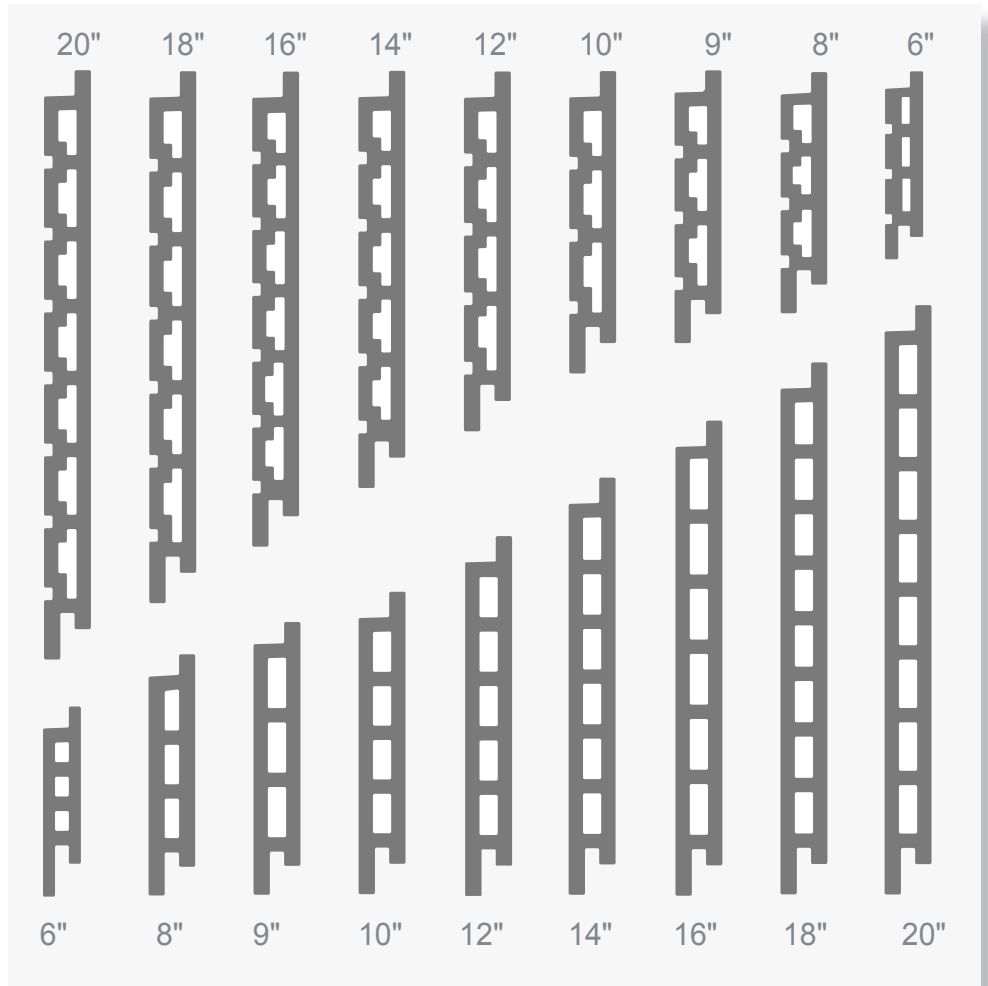
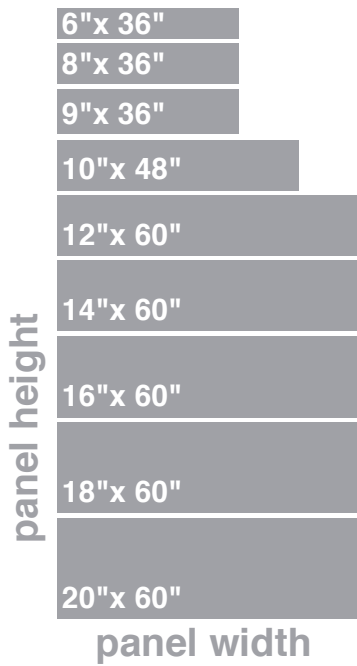


TerraClad™

Panel Sizes

Scaling the Panel to the Project

Standard profiles have been developed as a starting point for the designer. Larger panel width allows for longer lengths.



Boston Valley Terra Cotta

Rainscreen Panel Attachment

Fast All Weather Installation

Dry, mortarless installation can take place in all weather and seasons.

A continuous extruded aluminium track (below) speeds panel installation by providing a slotted channel for the attachment clips.

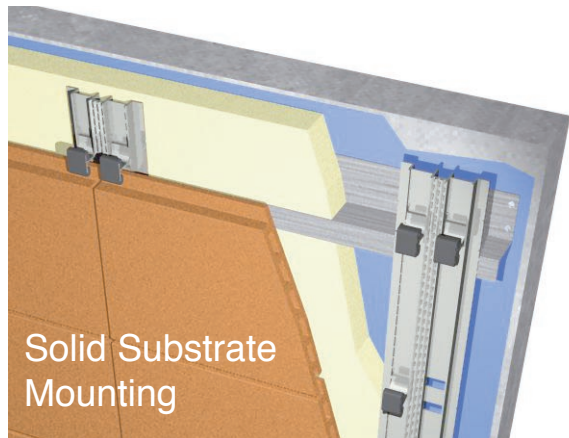
The clip, covered with a silicone isolator, secures the panel to the vertical track.



Panel Attachment



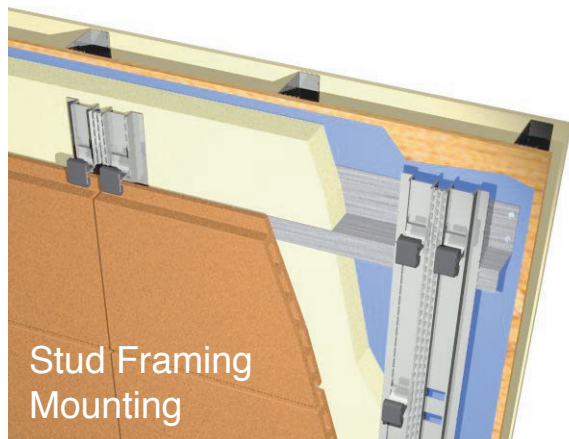
Typical Panel Section



Solid Substrate Mounting



Extruded Track, Clip and Gaskets



Stud Framing Mounting

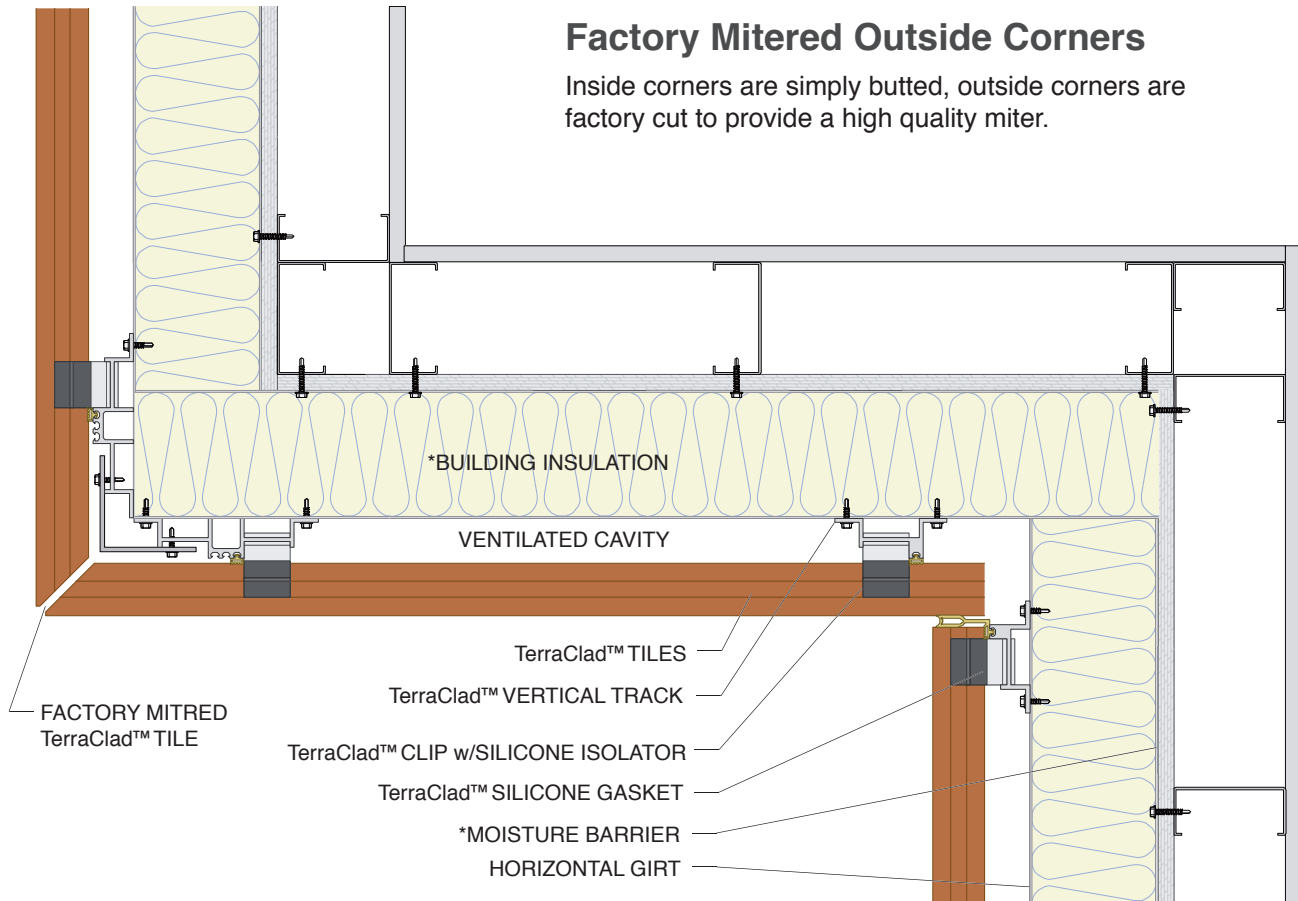
TerraClad™

Boston Valley Terra Cotta

Typical Inside and Outside Corners

Factory Mitered Outside Corners

Inside corners are simply butted, outside corners are factory cut to provide a high quality miter.



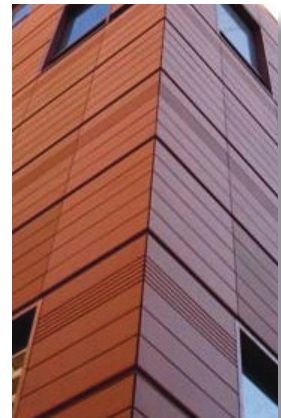
*BUILDING INSULATION, AIR, WATER, AND VAPOR BARRIERS FOR ILLUSTRATION PURPOSES ONLY. ACTUAL THERMAL AND MOISTURE PROTECTION DETAILS/LOCATIONS TO BE DETERMINED AS PART OF A BUILDING SPECIFIC ANALYSIS.



Mitered Corner



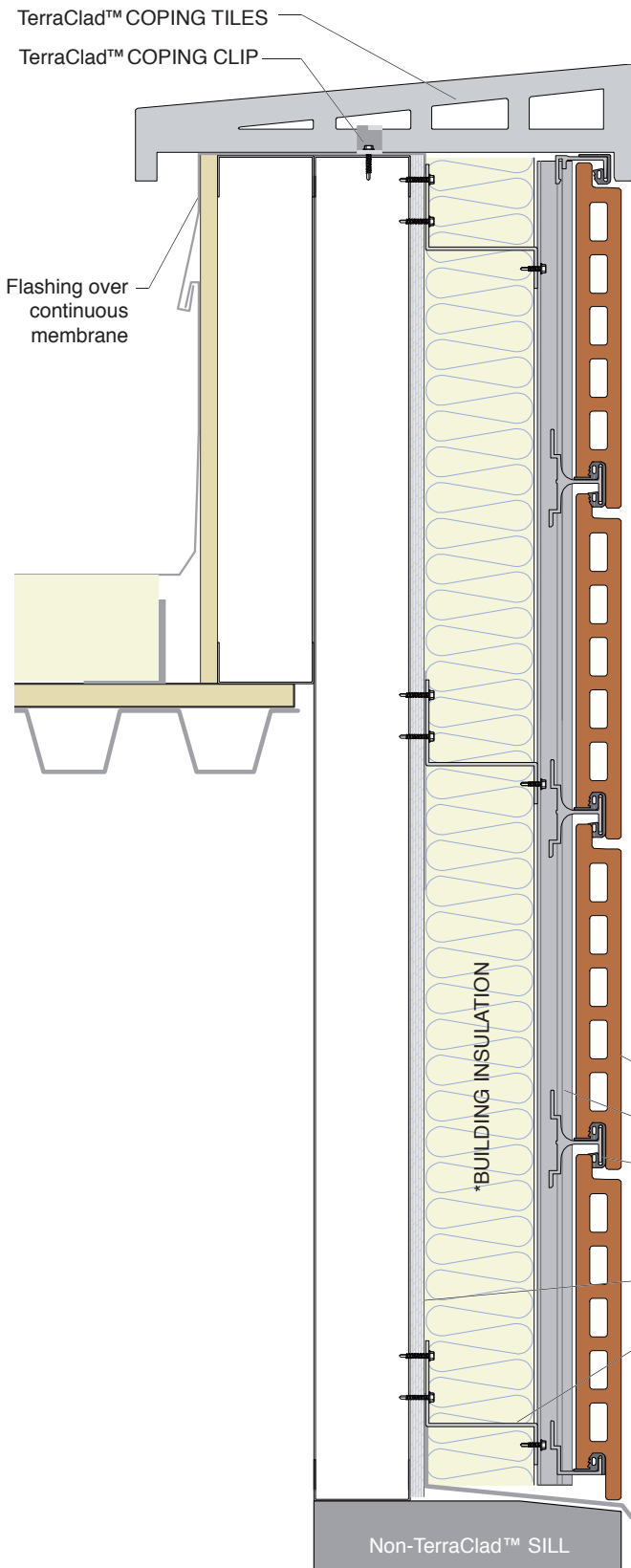
Multi-axis Saw Cutting Tiles



Building Corner

Boston Valley Terra Cotta

Typical Parapet and Sill Sections



Coping in a Contrasting Color

With the variety of colors available in terra cotta, the designer can extrude coping and sills for desired effects.



TerraClad™ TILES
TerraClad™ VERTICAL TRACK
TerraClad™ CLIP w/ SILICONE ISOLATOR

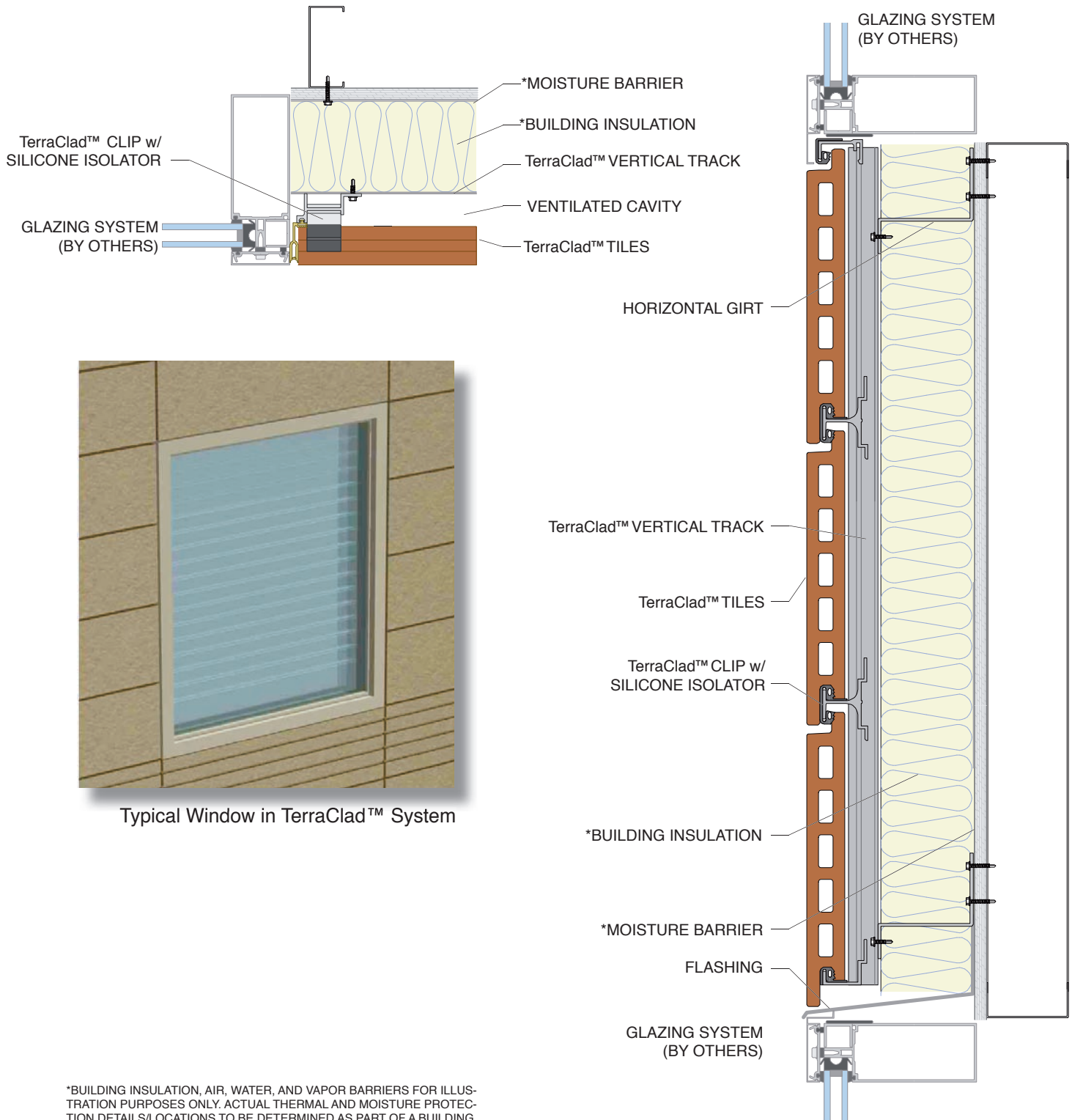
*MOISTURE BARRIER
HORIZONTAL GIRT
FLASHING

*BUILDING INSULATION, AIR, WATER, AND VAPOR BARRIERS FOR ILLUSTRATION PURPOSES ONLY. ACTUAL THERMAL AND MOISTURE PROTECTION DETAILS/LOCATIONS TO BE DETERMINED AS PART OF A BUILDING SPECIFIC ANALYSIS.

TerraClad™

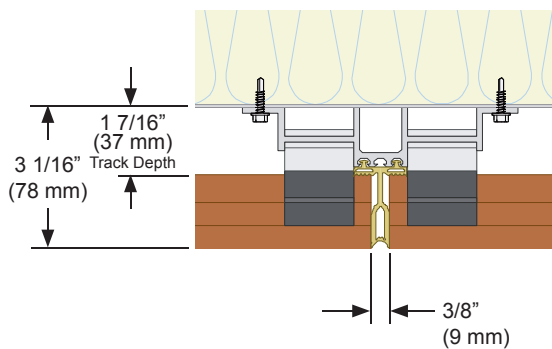
Boston Valley Terra Cotta

Typical Window/Spandrel Details

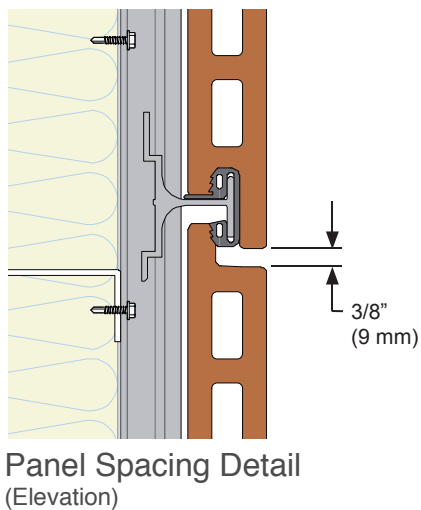


*BUILDING INSULATION, AIR, WATER, AND VAPOR BARRIERS FOR ILLUSTRATION PURPOSES ONLY. ACTUAL THERMAL AND MOISTURE PROTECTION DETAILS/LOCATIONS TO BE DETERMINED AS PART OF A BUILDING SPECIFIC ANALYSIS.

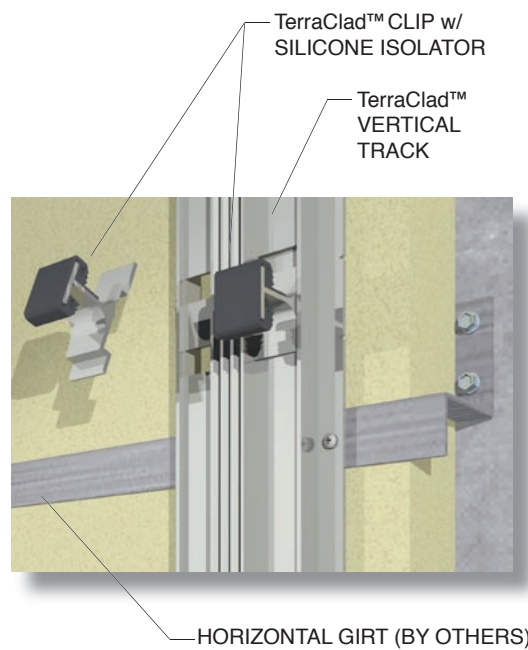
Panel Spacing Detail



Panel Spacing Detail
(Plan View)



Panel Spacing Detail
(Elevation)



TerraClad™

Boston Valley Terra Cotta

Terra Cotta Installations

Colburn School of Performing Arts,
Los Angeles, CA
Architect: Pfeiffer Partners Inc
Contractor: Matt Construction
Panelizer/installer: Benson Industries



Boston Valley Terra Cotta

Terra Cotta Installations



New Jersey City University Arts & Science Building,

New Jersey City University,
Jersey City, NJ

Architect: Michael Graves & Associates

Project Architect: STV Group Inc.

CM: Turner Construction

Installation Contractor: Artex Systems Inc.



Mashantucket Pequot Tribal Nation Museum & Research Center

Mashantucket, CT

Architect: Polshek Partnership
Architects, LLP

Contractor: BW Dexter II, Inc.,
Danielson, CT

TerraClad™

Boston Valley Terra Cotta

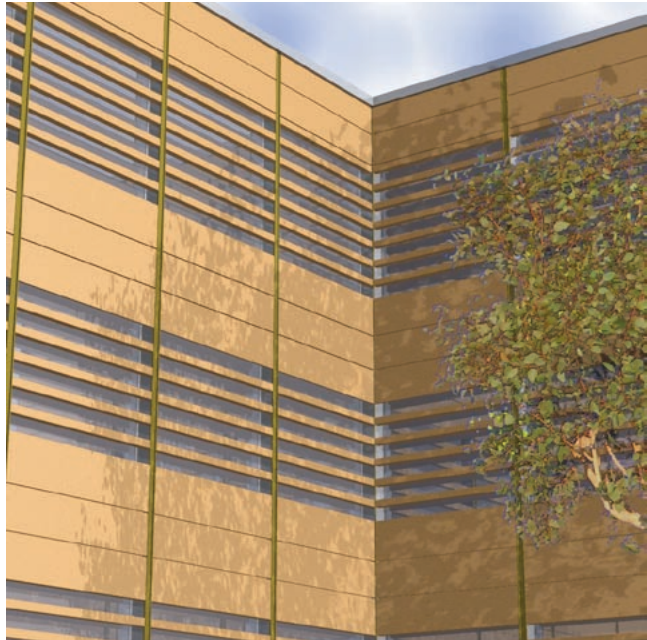
Baguette and Louver Design Ideas

Baguettes Extruded in Terra Cotta

Baguettes extruded in terra cotta can be integrated into glazing systems and interchanged with matching solid terra cotta panels.



Inside Model View



Exterior Model View



Mock-up provided to New York Times Building



Mock-up provided to New York Times Building

Boston Valley Terra Cotta

Baguette and Louver Design Ideas

Louvers Extruded in Terra Cotta

Designers can produce many different building components in the same material, giving a coordinated look to the exterior building fabric when desired.



Model of panelized system with all louvers



TerraClad™

Boston Valley Terra Cotta

Technical Data

Property/Characteristic	Value/Criteria
Absorption	4.2-6.5%/ASTM C67-02C
Modulus of Rupture (depending on color selected)	2231-3717 lbs/in ² /ASTM C99
Flexural Strength (depending on color selected)	2280-3457 lbs/in ² /ASTM C880
Dimensions and Tolerances	.06" for any cut length up to 60"
Height:	(± 1/16) ± .0625" up to 10" (± 3/32) ± .09375" up to 15" (± 1/8) ± .125 up to 20"
Thickness: (cross section of panel)	(± 1/16) ± .0625
Straightness: ("sweep")	± 0.2% of length
Diagonal Flatness:	± 0.2% of diagonal
Vertical Flatness:	± 1.0% of height
Torsion:	± 0.2% of diagonal
Weight	130-135 lbs/ft ³ /ASTM C67-02C
Weight per Unit Area	13-16 lbs/ft ²
Linear Coefficient of Thermal Expansion	3.5 x 10 ⁻⁴ percent (0.035%)
Freeze and Thaw Test	300 cycles passed/ASTM C67-02C
Hardness Resistance Mohs Scale	Various Standard Colors 7-9
Efflorescence	not effloresced/ASTM C67-02C
Chemical Resistance	no change in color or texture/ ASTM C126-99

Subject to change without notice, October, 2006

Modifying Extruded Terra Cotta

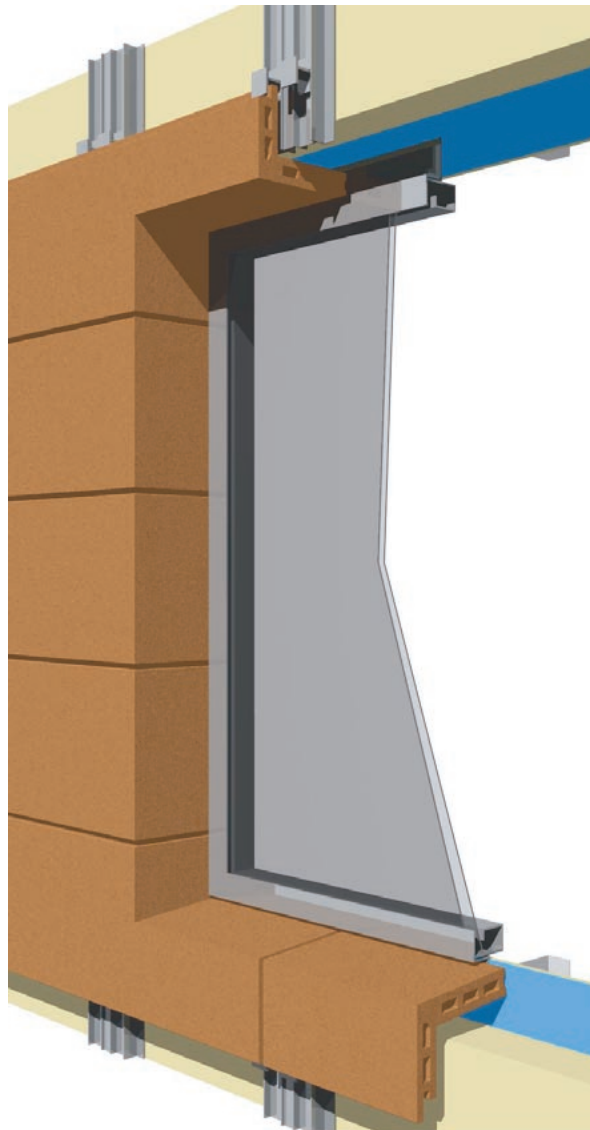
Extruded terra cotta can be cut to create window returns and inside and outside corners.



Window Return
Top Left



Window Return/
Sill Left



Model View

Note:
The maximum width of a unit's face is 12"
The maximum horizontal or vertical return of a unit is 3"

TerraClad™

Shape Design Ideas

Adjusting Profile Shape

Introducing variation in the profiles of our panels can add architectural interest to the building without changing the construction technique.



Sample Profile



Bullnose Profile Model Rendering



Sample Profile



Curve Profile Model Rendering

Shape and Color Design Ideas

Ridge Extrusions Can Create Strong Shadow Lines

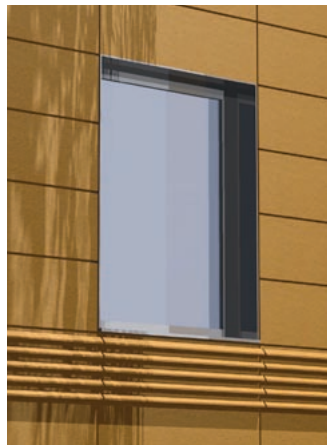
In this concept model, raised
ridges were formed into pan-
els to create a strong linear
texture.



Raised Ridge Profile Model Rendering



Sample Profile



Raised Ridge Detail

Using Color to Change Massing

The wide variety of color
available in terra cotta allows
the designer to introduce
color with lasting durability.



Color Variation Model Rendering

TerraClad™

Boston Valley Terra Cotta

Product Testing

Testing the Systems

In addition to meeting ASTM C880-98 and ASTM C99-87 performance tests, a mock-up curtain wall and exterior cladding system using TerraClad™ panels and an alternate attachment system designed and built by Benson Industries passed the following tests: ASTM E283-97, ASTM E331-96, AAMA 501.1-94, and ASTM E330-97.

The same mock-up successfully passed elastic and inelastic (lateral) seismic displacement tests.



Rainscreen Panels in Place for Wind Driven Rain Testing



Panels During Load Testing



Panels During Load Testing



Panels During Testing

Boston Valley Terra Cotta

LEED® = Leadership in Energy and Environmental Design

The LEED® Rating System is a product of the United States Green Building Council (USGBC www.usgbc.org) that promotes the use of energy efficient design practices to reduce life cycle costs of our built environment and reduce our impact on the earth and natural resources.

Points are awarded based on a project's ability to meet/exceed design criteria in the following areas:

- Sustainable Sites
- Water Efficiency
- Energy and Atmosphere
- Materials and Resources
- Indoor Environment Quality
- Innovation and Design Process

BVTC's TerraClad™ System LEED® Point possibilities:

Recycled Content credit 4.1 (5%) credit 4.2 (10%)

The manufacturer of each component shall provide a letter stating the percentage of post-consumer or post-industrial materials used in the production of said component.

Recycled Components of the TerraClad™ System:

- Unglazed Terra Cotta Tiles only (Boston Valley Terra Cotta)
 - **12% Post-industrial (recycled terra cotta)**
- Aluminum Track (Approved Extruder)
 - **20% post consumer recycled content**
 - **30% to 40% post industrial recycled content (depending on scrap availability)**

TerraClad™

Local/Regional Materials credit 5.1

The manufacturer of each component shall be located within a 500-mile radius of the job site.

Boston Valley Terra Cotta is located approximately 18 miles south of Buffalo, New York. It is within a 500 mile radius of the following major cities: to the north - Toronto, to the east – Boston, New York and Baltimore, to the south it is just short of Charlotte, to the west Indianapolis, Chicago and Milwaukee are within the 500 mile radius. A suggested way to check for distance: <http://earth.google.com/>, for a specific job site in question.

Local/Regional Materials credit 5.2

Of the 20% above, 50% extracted or harvested within a 500-mile radius of the job site.

Components of the TerraClad™ System:

- TerraClad™ Tiles (Boston Valley Terra Cotta)
 - 23% raw material extracted from southern Ohio.
 - 14% raw material extracted from central Virginia.
 - 42% of the raw materials by weight, used to manufacture TerraClad™ are harvested within 500 miles of Boston Valley Terra Cotta, 6860 South Abbott Road, Orchard Park, New York 14127



Technical Sales Support in Your Region

Baltimore, Brian Dyer, (Maryland, Washington DC, Virginia, West Virginia, North Carolina)

Boston, Tim Shannon, (Massachusetts, Vermont, Connecticut, Maine, New Hampshire)

Chicago, Barry Meyer, (Illinois, Indiana, Minnesota, Wisconsin, Iowa)

Dallas, Peter Heinz, (Texas, Oklahoma, Arkansas, Louisiana, Mississippi, Alabama)

Los Angeles, Mike Davis, (California, Nevada, Utah)

NYC, David Richter, (New York, New Jersey)

Seattle, Erl Thorgalsen, (Washington, Oregon)

Vancouver, Bill Newman, (British Columbia, Canada)



TerraClad™ Tradeshow Booth AIA 2006 Los Angeles

TerraClad™

Boston Valley Terra Cotta

Terra Cotta Applications

Scaled to the Building

Terra cotta can be scaled to create the elements needed for large building designs.



Seamless Integration of Elements

Terra cotta integrates seamlessly with other construction elements. Glazing allows color matching to window extrusions and other fixtures and elements.



Boston Valley Terra Cotta

A History of Quality and Craftsmanship



Experience

Twenty five years of historic restoration projects across the nation has allowed us first hand to see what works and what doesn't in exterior building systems ... working with architects and other experts has taught us how to deliver the detailed, high quality, long lasting products needed for high visibility projects.



Craftsmanship

Our team of artisans, production staff and engineers understand the timeless value of quality as much as you do.

TerraClad™

Boston Valley Terra Cotta



Boston Valley Terra Cotta, Production Facility in Orchard Park, New York, USA

Call 888.214.3655 for information
on our architectural cladding or visit:
www.terraclad.com

Boston Valley Terra Cotta
6860 South Abbott Road
Orchard Park, New York 14127
P. 716.649.7490 Fax. 716.649.7688

Printed 11/06

Boston Valley Terra Cotta