



*Ascensions*  
Stone Stairs & Balustrade  
by Stone Legends 

Stone Legends is proud to introduce a collection of stairs designed to lift your design ideas to all new levels.

# Ascensions

These beautiful designs help you to create impressive entries and staircases that will become the focal points for any interior or exterior space.

With your design ideas and our factory's capabilities, we will work together to make Stone Legends the key to your ascensions.

## ***Points to Ponder***

*Throughout this brochure, we will try to answer your most common questions.*

*Look for this "Ponder Cloud" for helpful information.*





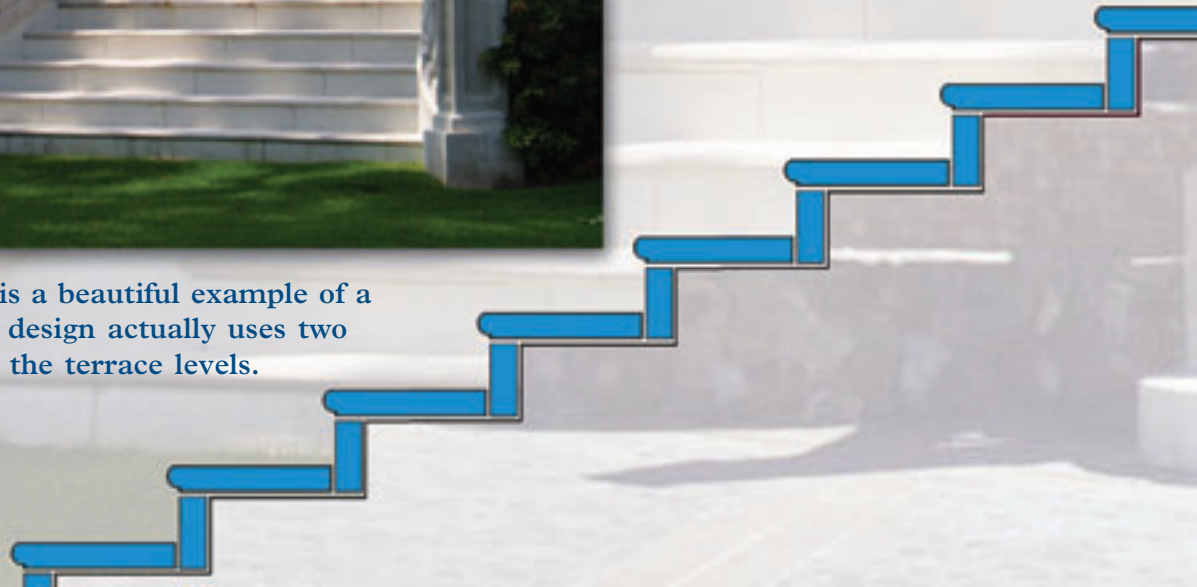
The Otterwood2A Binelli1 Spiral Stair (cover), gives a breathtaking first impression everytime you enter the room.



## *Helical Stair*

The Helical Staircase provides an elegance not found in other types of entryways due to its symmetry and complexity.

The Helical Stair (above) is a beautiful example of a *Chateausque Style*. This design actually uses two helical stair cases to span the terrace levels.



## *Grand Stair*

The Grand Staircase offers a more impressive presence within your entry. In most cases, the Grand Stair spans a full flight.

The Grand Stair (right), with its *Spanish Eclectic Styling*, was custom designed. Notice the embedded lighting within the risers.

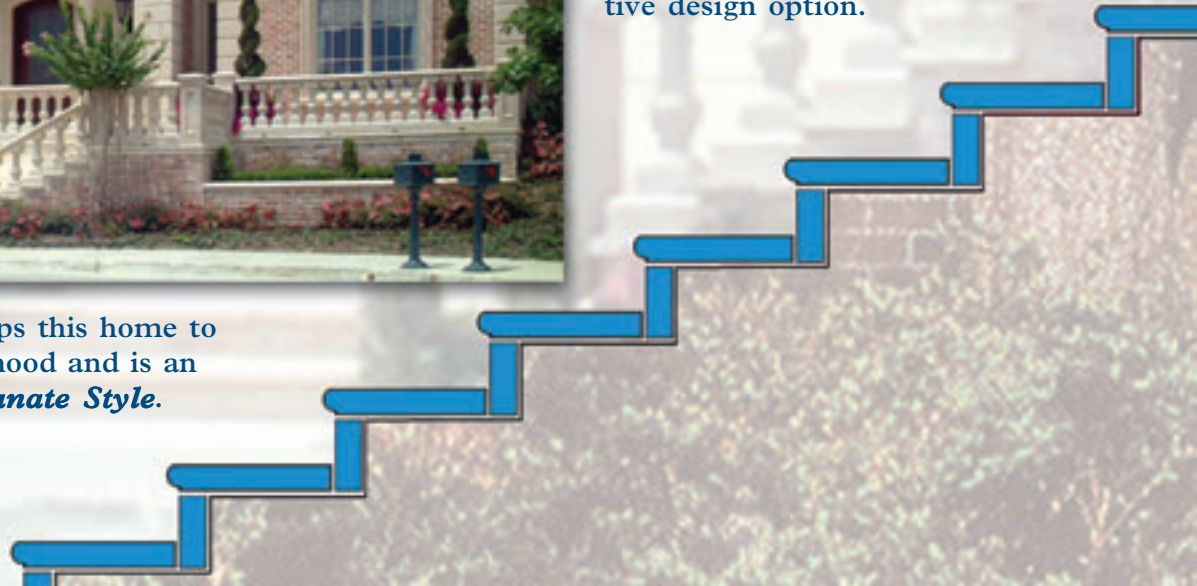


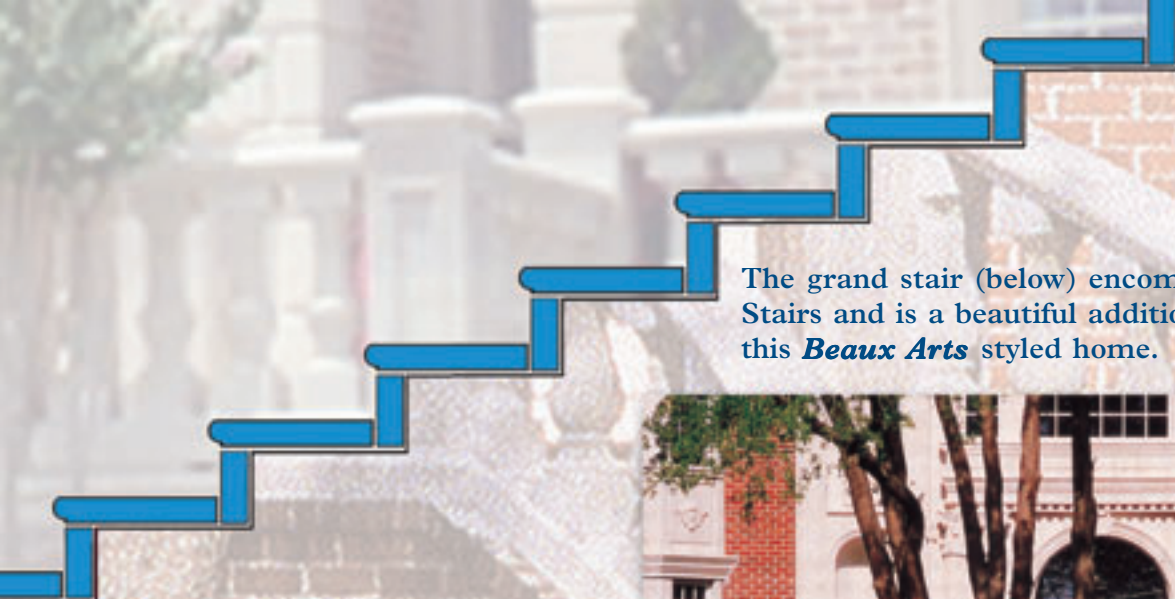


The Straight Stair (above) helps this home to stand out within the neighborhood and is an excellent example of the *Italianate Style*.

## *Straight Stair*

The Straight Staircase gives an elegantly grand effect while remaining the most cost effective design option.





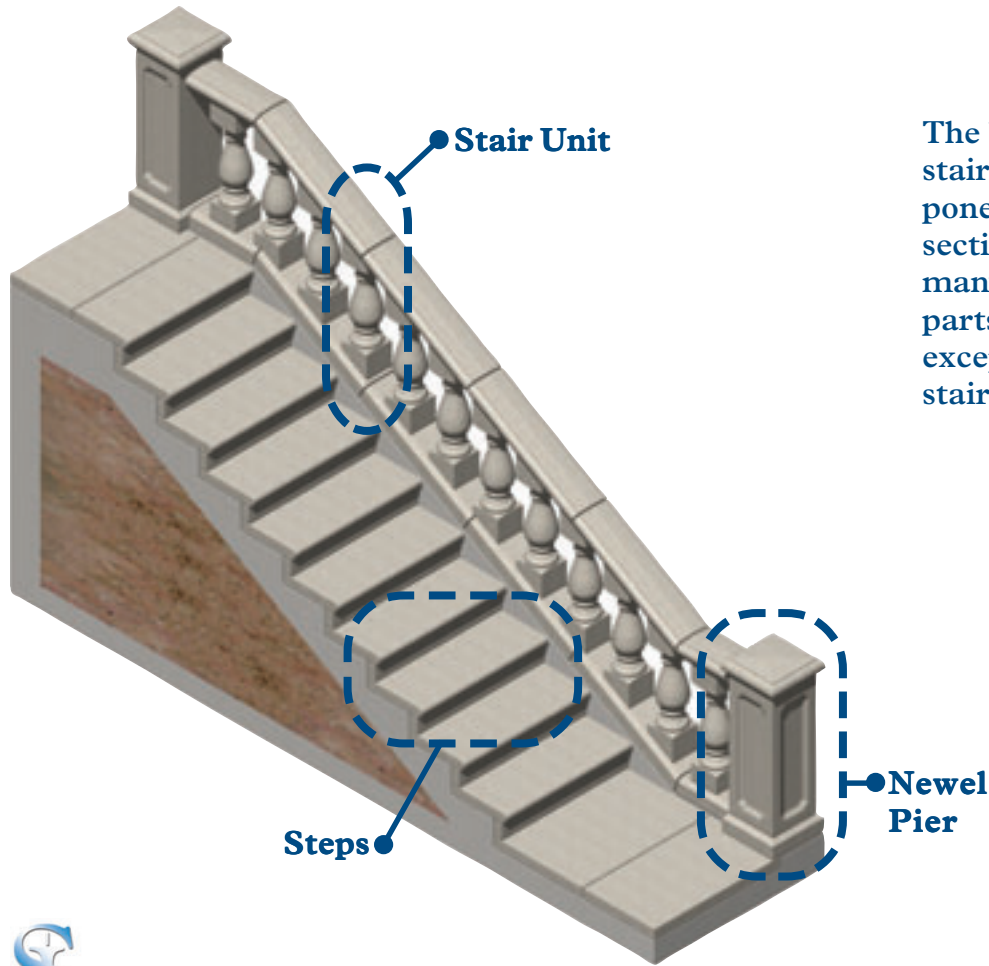
The grand stair (below) encompasses two mirrored Spiral Stairs and is a beautiful addition to the full facade entry in this *Beaux Arts* styled home.

## *Spiral Stair*

Originally, the Spiral Staircase was designed for defense, allowing a swordsman to fight numerous enemies indefinitely. As years passed, the spiral became a grand, elegant ascent into society.



# Stairs



The basic components for constructing stairs are very straight forward. These components come in a variety of profiles (cross section shapes) and can be manipulated in many ways to achieve different looks. All parts displayed are for use on Straight Stairs except those identified as Helical for helical stairs.

## *Baserail*

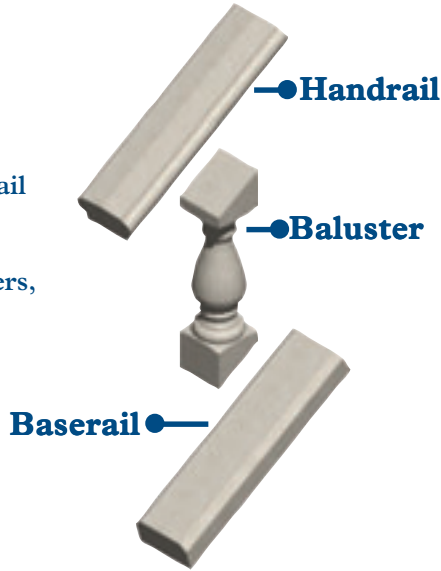
*The baserail can be omitted, but this makes placing of balusters more complex especially if you desire to keep a specific distance between balusters.*





## Stair Unit

The basic handrail consists of three components; Baserail, Balusters, and Handrail.



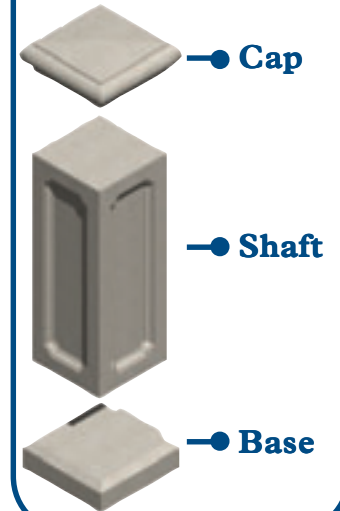
## Newel Piers

*The newel can be omitted and the handrail can be finished with a finished end or volute end. The newel offers a deadman pier for durability.*



## Newel Pier

Newels are used at the end of a stair as a finishing touch. The newel pier also consists of three basic components; Cap, Shaft, and Base.



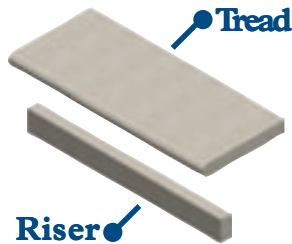
## Riser

*The riser can be omitted and replaced by brick masonry or other suitable veneer.*



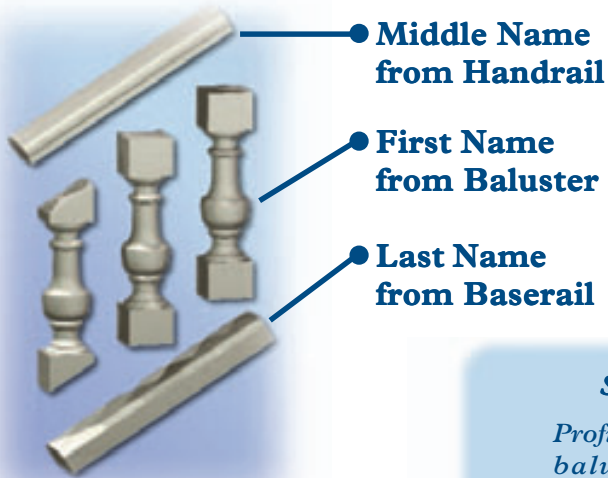
## Steps

Steps consist of two basic components; Tread and Riser.



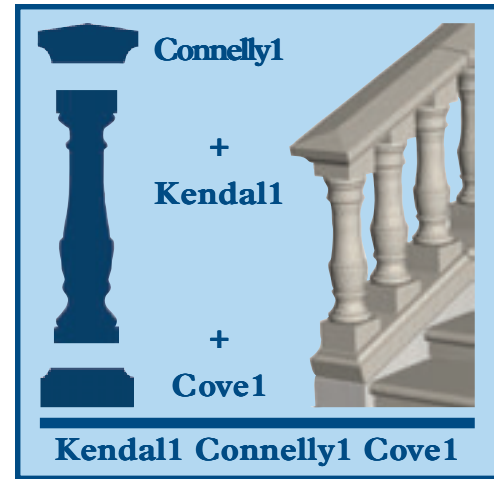
# Profile Families

A profile family is a group of profiles put together to achieve a certain look or style. These profiles can be identified by an unique profile name.



## Stair Profile Family

Profile families for stair and balustrade consist of 3 names based on the profile shapes of the baluster, handrail, and base rail.



**Extrados1**

+

**Otterwood1**

+

**Chamfer1**

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**Otterwood1 Extrados1 Chamfer1**

The Profile Family, right, is an excellent example of design customizing options. The handrail was replaced creating a new profile family.



**Binelli2**

+

**Noble1**

+

**Verona2**

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**Noble1 Binelli2 Verona2**



# Helical Stair

Listed are Standard Helical Units. Custom units can be designed from any of our standard balustrade units. You can mix and match the profiles to suit your design. Some of the helical stair units shown in this brochure come with finished ends at the base of the run (see the generic drawing for an example of a finished end). Others come with newel piers at the base of the stair. Newel piers can be added to a unit with finished end for just the cost of the newel pier chosen. In general, a helical stair will have two handrails that twist in opposite directions.



The *Chateausque* style home, left, uses the helical stair as part of the two-story entry.



The helical stair, right, is a perfect addition to this impressive *Greek Revival* styled home.

# Grand & Spiral Stair

Grand Staircases can make a beautiful addition to any home. They serve as major focal points for interior and exterior spaces. A grand staircase is usually a combination of helical or spiral staircases mirrored around a common centerline. In general, a spiral staircase would have both handrails twisting in the same direction, however, spiral staircases can only have one handrail.



With several sizes to choose from, the Otterwood2A Extradados1 Chamfer1 Grand stair is a great option for your plan.

*Shown with optional treads.*



Otterwood2A Extradados1 Chamfer1

Unit ID 245



Type Description	Primary View	View Modifiers	Surname	
Stair	Grand Stair	Newel Pier	Otterwood2A	
	R (Radius)	B (Rise)	Unit ID	Cost Factor/Ea
Otterwood2A Extradados1 Chamfer1	109"	36"	245	567500
Otterwood2A Extradados1 Chamfer1	70 <sup>1</sup> / <sub>2</sub> "	42"	9558	653000
Otterwood2A Extradados1 Chamfer1*	76"	102"	16576	679701
Otterwood2A Extradados1 Chamfer1	124"	108"	15410	693458
Otterwood2A Extradados1 Chamfer1	163"	128 <sup>1</sup> / <sub>4</sub> "	16575	726764

*\*These units include treads and risers.*

# *Straight Stair*

Straight stair units are calculated by the linear foot. Pricing for these units include: one foot of base rail, one baluster, and one foot of handrail. Handrails and baserails are available in straights, finished ends, corners, or stock radius parts at no additional cost to you. Straight stair units are produced with taller lugs at the top and bottom of the baluster, making it easy to cut in the field for most installations.



Balustrade Stair Units, above and right, have taller lugs on the balusters for cutting to fit any angle.



**Stair  
Balustrade**  
Can be cut to  
any angle.



# Balustrade

Balustrade units are calculated by the linear foot. Pricing for these units include: one foot of base rail, one baluster, and one foot of handrail. Handrails and baserails are available in straights, finished ends, corners, or stock radius parts at no additional cost to you.



Balustrade "Grade", right, has shorter lugs on the balusters.



Grade Balustrade



# Screening

Screening is an excellent alternative to balustrade systems. Traditionally, more decorative and they offer more privacy depending on the style you choose.

Tally Screening, right, has a very classical look and feel.



Waverly Screening, above, gives a very elegant feel to your landscape design.





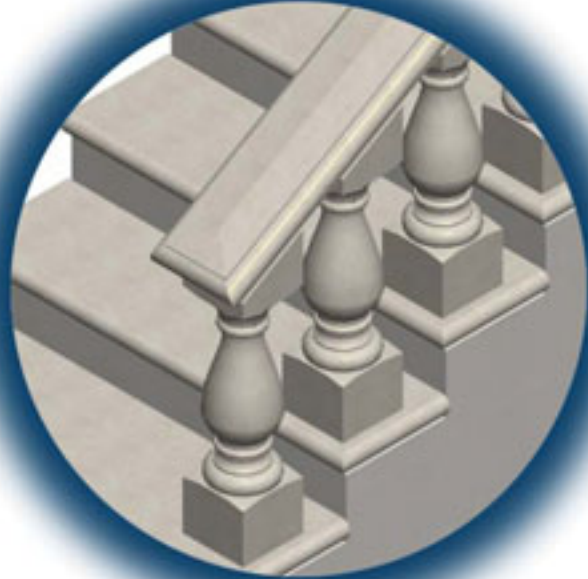
# Design Options

## No Baserail

These design options pertain to balusters installed directly on the treads of your stair.

In this example, right, the bottom baluster can be placed on the last step or on the floor level.

When dealing with a small "Ball Code" (see page 27), this installation may not be optimal as there is no room for deviation for baluster placement.





**Brackets**  
Scroll brackets, left, are beautiful additions to any open ended stair.



**Decorative Riser**  
This tread, left, sits on top of a decorative riser constructed of inventory parts.

**Banding**  
This banding, right, decorates the lower edge of the stair.



**Volute End**  
This Volute Ended hand-rail, right, has no baserail. Note that the bottom baluster was lengthened to accommodate the difference in height. The rounded bottom step is referred to as a starter step.



There are various ways to finish a stairway by using a small variety of standard parts. These parts provide the ability to design to unique individual styles and tastes. Some of the design options provide a lot of design flexibility while others are slightly tricky to align.

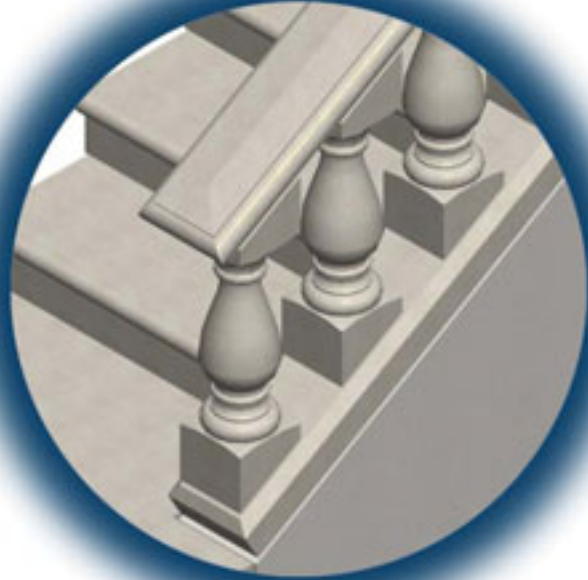


# Design Options



## *Baserail*

These balusters, right, were placed on a Baserail. The baserail provides more freedom to place balusters especially in cases where tight placement is required due to "Ball Codes" (see page 27).





### **Extensions**

A standard "Field Miter Cut" was used to extend this handrail, left. It is a beautiful addition where space permits.



### **Volute End**

This "Volute End" handrail, left, sits on top of a "Volute End" baserail. Using the baserail allows for a standard baluster to be used on the lowest placement.



### **Ease Up / Down**

And "Ease Up" was used to achieve a smoother appearing extension on this stair, right.

### **Screens**

Standard and custom designed screens, like the one shown right, are available to achieve any desired look.



There are various ways to finish a stairway by using a small variety of standard parts. These parts provide the ability to design to unique individual styles and tastes. Some of the design options provide a lot of design flexibility while others are slightly tricky to align.



# Design Options



## *Newel Pier*

The Handrail, right, terminates directly into the Newel shaft. It takes up less space but placement of the newel is a bit harder.





### **Newel Pier**

Placement of the top Newel, left, is critical. It has to be placed at the very edge of the step and care must be taken in joining the handrails and baserail to the newel to achieve a nice finish.



### **Ease-Up with Extension**

The handrail, left, was extended to meet the Newel that was moved away from the bottom step. A smooth transition was achieved by using a custom "Ease-Up" where the handrail changes from incline to grade.

### **Handrail Extension**

This handrail, right, was extended to meet the Newel that was moved away from the bottom step. It takes up more space, but allows freedom in placing the newel.



### **Pass-Thru Newel**

The handrail on this balustrade, right, transitions smoothly into the Pass-Thru Newel pier cap to create an elegantly finished stair.

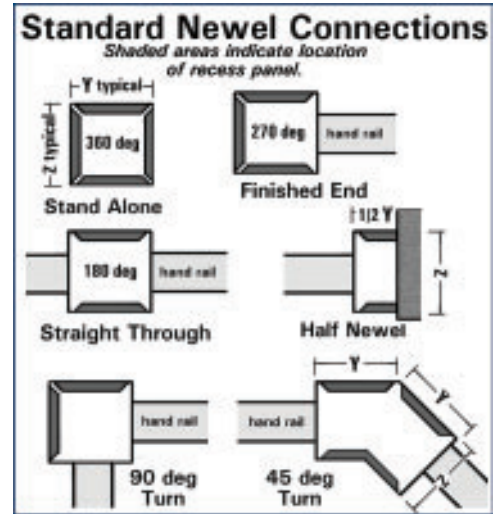


There are various ways to finish a stairway by using a small variety of standard parts. These parts provide the ability to design to unique individual styles and tastes. Some of the design options provide a lot of design flexibility while others are slightly tricky to align.



# Newel Piers

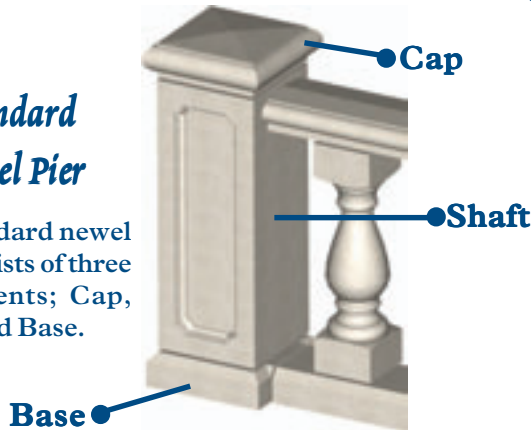
Standard Newel Piers project above the balustrade handrail and are typically 12" square. Optional Pass Through Newel Piers are shorter than the standard piers (the same height as the balustrade), but still 12" square. The hand rail aligns with the top of the newel cap. Custom In-Line Newel Piers are the same height as the balustrade and the same width as the handrail and baserails. The handrail and baserail continue above and below the In-Line Newel instead of using a separate cap.



Newels can be used to change direction, continue or terminate balustrade handrails.

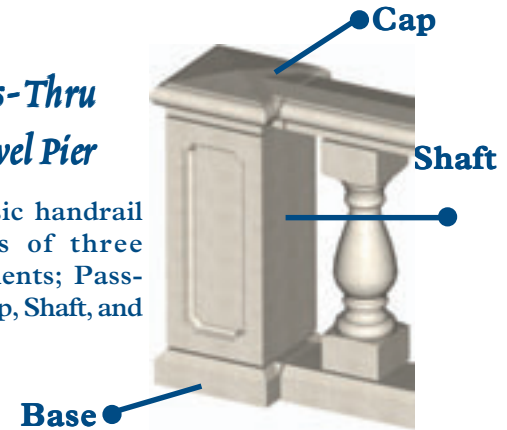
## Standard Newel Pier

The standard newel pier consists of three components; Cap, Shaft, and Base.



## Pass-Thru Newel Pier

The basic handrail consists of three components; Pass-Thru Cap, Shaft, and Base.



## Standard Base Connections



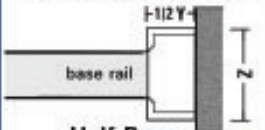
Stand Alone



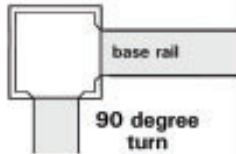
Finished End



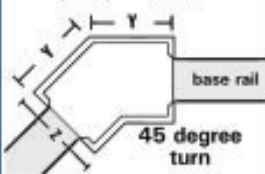
Straight Through



Half Base



90 degree turn



45 degree turn

## Base Connections - Standard & Pass Thru Newels

Please contact a Client Services representative or visit us online for Pass-Thru Newel pricing. Other styles also available online.

Newel cap projects above hand rail

### Standard Newel Caps

*Plan Views*

**360 deg**  
*Used for all newels except 45 and Half*

**45 deg Turn**

**Half Cap**

Type Description	Primary View	View Modifiers	Surname	
Newel Pier	Standard		Carriage	
		X&Z (Width&Depth) Y (Height)	Unit ID	Cost Factor/LF
Carriage1 Extrados1 Chamfer1		12" 37 <sup>1</sup> / <sub>8</sub> "	1380	12500
Carriage1A Extrados1 Chamfer1		12" 41 <sup>1</sup> / <sub>8</sub> "	1381	12500
Carriage1 Connelly1 Cove1		12" 37 <sup>1</sup> / <sub>8</sub> "	9251	12500

Type Description	Primary View	View Modifiers	Surname	
Newel Pier	Standard		Carol	
		X&Z (Width&Depth) Y (Height)	Unit ID	Cost Factor/LF
Carol1 Duran1 Cole1		11 <sup>1</sup> / <sub>2</sub> " 41 <sup>5</sup> / <sub>8</sub> "	16550	15000

Type Description	Primary View	View Modifiers	Surname	
Newel Pier	Standard		Caprice	
		X&Z (Width&Depth) Y (Height)	Unit ID	Cost Factor/LF
Caprice1 Binelli1 Verona2		12" 44 <sup>3</sup> / <sub>4</sub> "	704	15000



The Caprice1 Binelli1 Verona2 Newel, left, shows how newels are used to change the direction of balustrade.





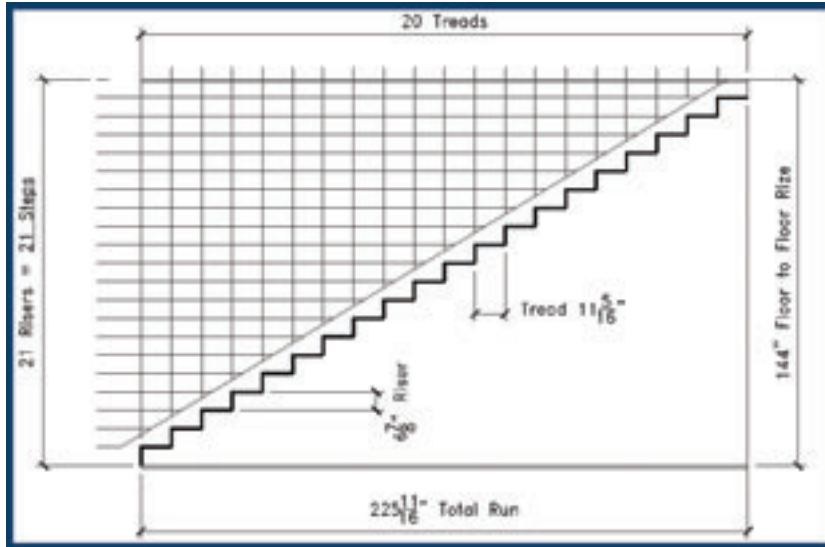
# Technical

## 4 Simple Formulas for determining Number of steps, Total run, Tread & Riser Sizes

Determining the number of steps, tread & riser sizes is very easy:

There are 4 basic formulas that need to be used.

These formulas will determine:



### Number of steps

(fl) (floor levels) in inches divided by 6.75" and rounded to a full number  
=  
"ns" (number of steps)

### Rise height

(fl) (floor levels) in inches divided by (ns) (number of steps)  
=  
"rh" (Rise height)

### Tread Length

25" - (rh x 2)  
=  
(tl) (Tread length)

### Total run of stairway

Ns (Number of steps) - 1  
x tl (Tread length)  
=  
tr (Total Run)

The most practical Riser heights range between 6 and 7-1/2".

You can change the **tr** (total run) of the stair by first determining a different theoretical **tl** (tread length) and calculating a new **rh** (rise height). Use the calculated **rh** (rise height) to calculate the new **ns** (Number of steps) and round the **ns** the closest full number of steps. Calculate a new absolute **rh** (rise height) and to determine the absolute **tl** (Thread Length). Calculate a new **tr** (Total Run) using the newly acquired **tl** (Tread Length).



## Building Codes

Every City Council abides by one of the many Building Codebooks. It is important to determine which Code your city prescribes to so that your stair-building project would be to specify. Some of the most commonly used codes are listed below.

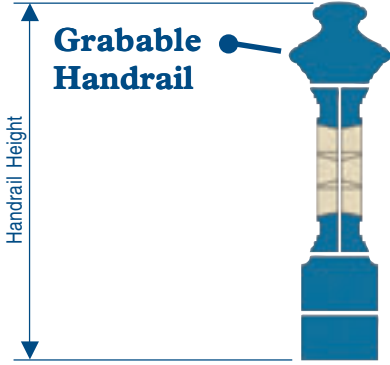
**1999 BOCA National Building Code**

**1999 SBCCI / Standard Building Code**

**2000 NFPA 101 Life Safety Code: Industrial**



# Technical



**Grabable Handrail**

Handrail Height

**Handrail Heights**  
Building Code also specify handrail heights for various applications.

**Grabable handrails**  
Some building codes require a Grabable handrail for certain applications. A standard handrail can be used with the cast stone handrail or the Binelli handrail can be used if you want to avoid the additional rail.

## Ball Codes

The purpose of ball codes is to prevent falling accidents.

The 4" or 6" delineator refers to the "maximum diameter" of a hypothetical ball that could be used to measure the maximum gap between balusters. A ball is used in order to mimic the size of a small child's head. Theoretically, If a child's head can pass through an opening, a chance exists that the child's body can pass through also. Shown here is a pictorial representation of the two primary ball codes: 4" and 6". Stone Legends standard spacing of 12" on center. Check local building codes for all Ball Code requirements pertaining to your specific installations.

