

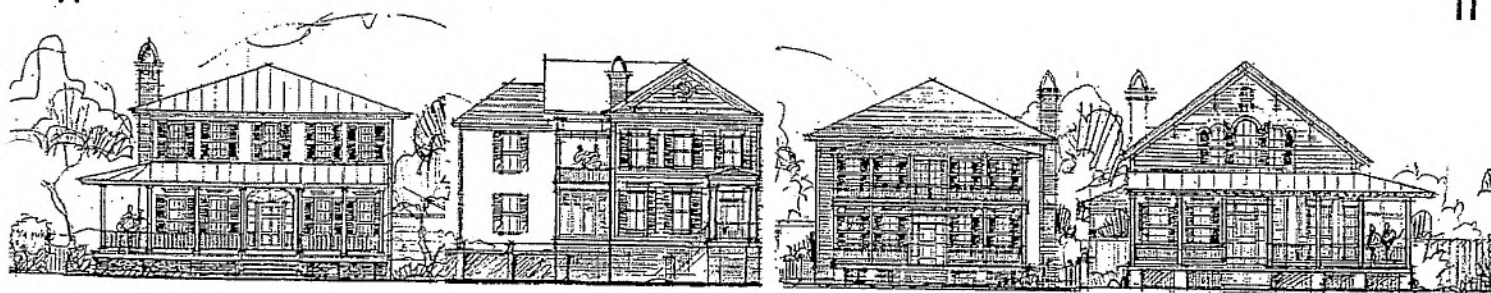


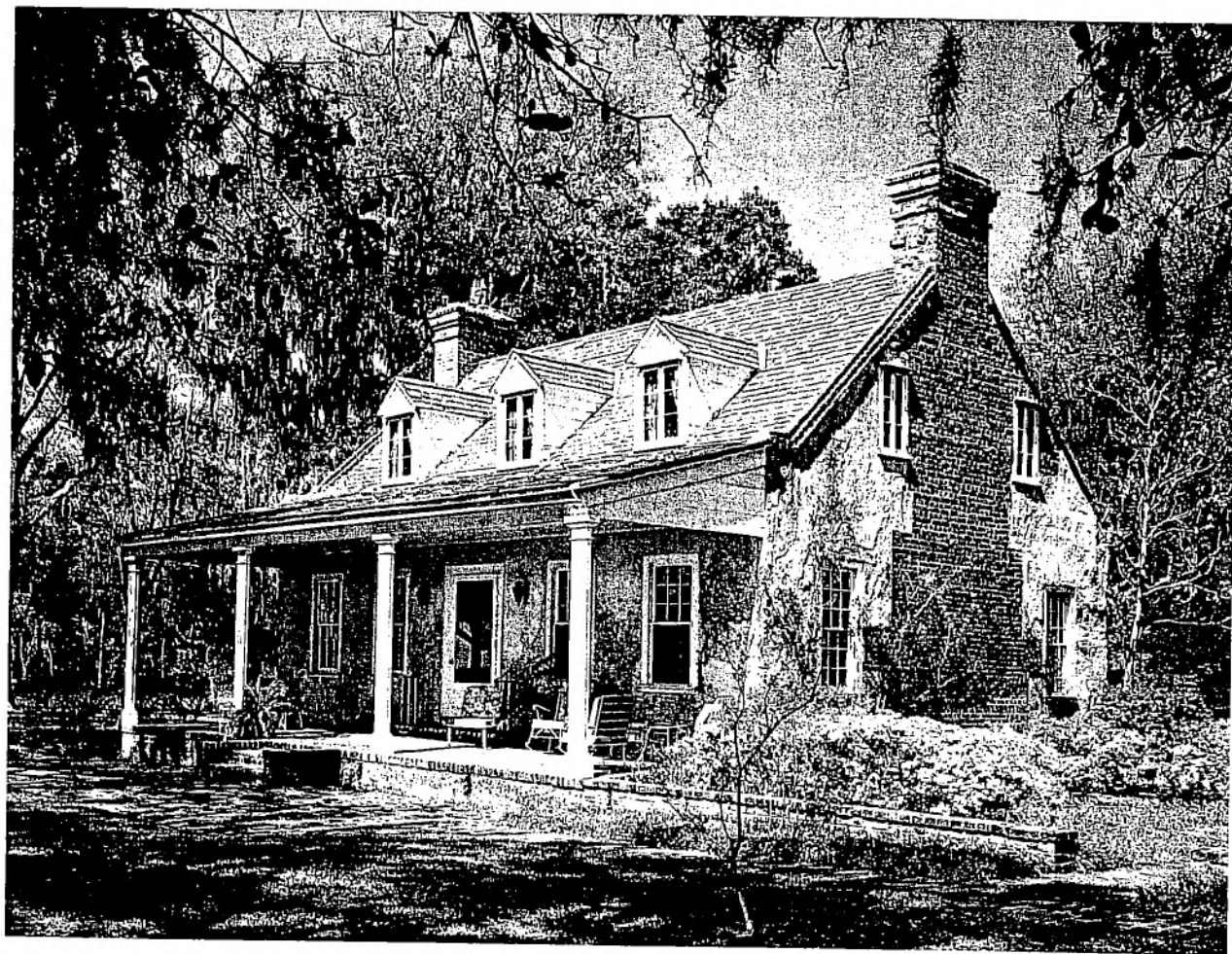
Pinckney Retreat

circa 1786

Appendix A:

Design Principles of Colonial Coastal Vernacular Architecture





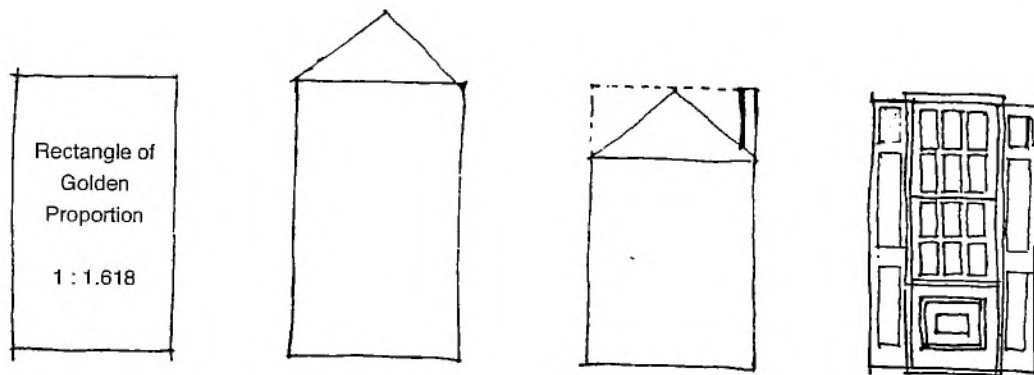
Proportion and Order

Proportion is one of the most critical aspects of timeless architecture. We have all seen contemporary houses that mimic details of classical architecture, but somehow our subconscious tell us it's just not right. More often than not, the only thing lacking in such a house is proper proportion.

Proportion of Lowcountry buildings is based on human scale. Vertical proportion, not horizontal, is ideal, with architectural features taller than they are wide. In particular, those portions of the house closest to the street or primary facade should be vertical in proportion. Humans stand up tall, and so should buildings.

Order traditionally describes the strict hierarchy of the classical styles, the Doric, Ionic, and Corinthian. However, in the Lowcountry, this hierarchy was loosely observed, mainly in the arrangement of the principle features of the house from most to least important. The primary story receives the tallest ceilings, windows, and columns, as well as the most ornate features. The attic and basement stories, which are commensurately shorter and less important, receive simpler treatment. The purpose is to draw attention to the more important areas of the house, and away from the less important ones.

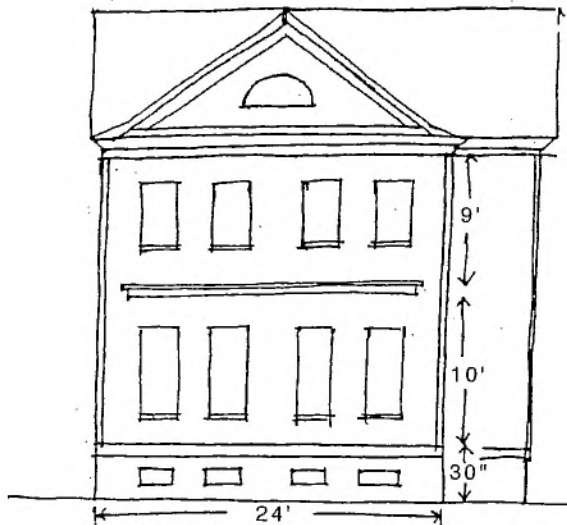
Emphasis is placed on making small houses appear larger than they really are, while making large houses appear less massive. Monticello, in Charlottesville, Virginia, is a perfect example. The house is actually a large three story building, but with careful attention to detail, Mr. Jefferson designed his home's exterior to have the appearance of understated elegance.



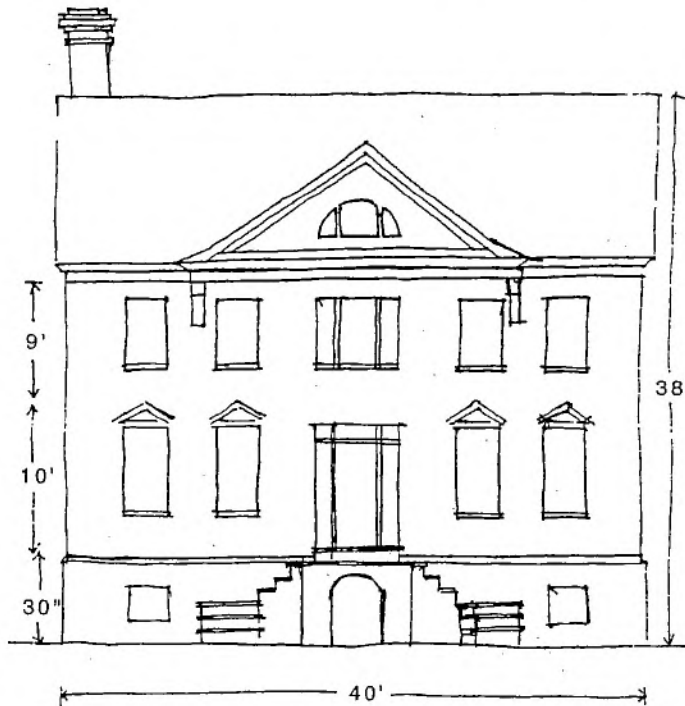
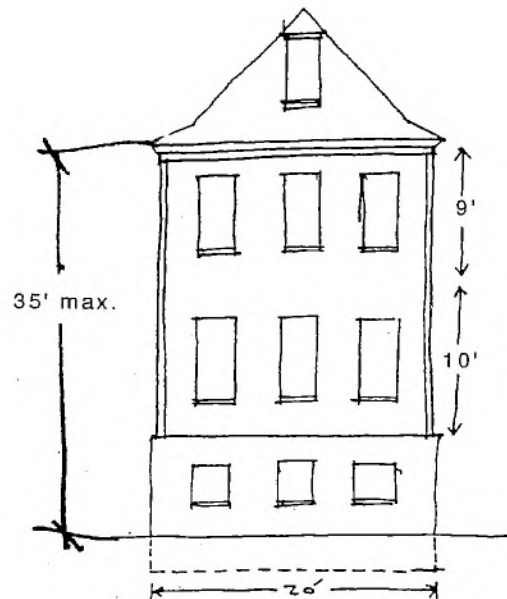
The Golden Proportion is the ratio which reflects the proportions of the human body and its various components to one another. Each bone in your finger is, from the tip, 1.6182 times longer than the bone before it. Your forearm is 1.6182 times longer than your hand, etc.. etc....

Examples of Massing

Below are buildings reflecting typical story heights, widths, and street frontage massing.

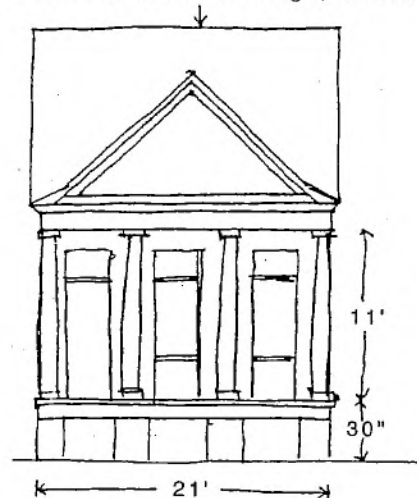


Windows are tall and lined up above one another to emphasize the vertical.



Verticality can be difficult to achieve in buildings wider than 40'. Given a 38' height to peak, horizontal elements, particularly the roof, need to be broken up to emphasize verticality.

Piers, Columns, and Tall Windows: Vertical elements are especially important in one story structures. Note panels below windows, steep roof slopes, taller ceilings, etc....



Ceilings and windows are tallest on the principal story, shorter in proportion above, and shorter still in any attic or basement stories.

Proportions of Columns:

Columns are perhaps the single most noticeable feature of classical architecture, and are governed by strict rules, or orders.



Height = Diameter x 7

A typical human is 7 heads tall.

Note the taper of the columns. This is called the entasis, and is correct for the optical illusion of parallel lines being concave.

The Doric Order is the simplest and strongest.



Height = Diameter x 9

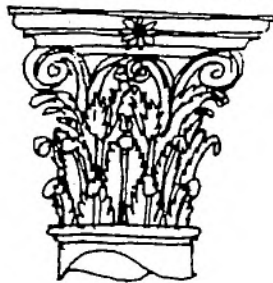


Spiral is based on the Golden Mean

The Ionic Order is the next above Doric, but below the Corinthian Order.



Height = Diameter x 10



The Corinthian Order is the highest and most delicate.

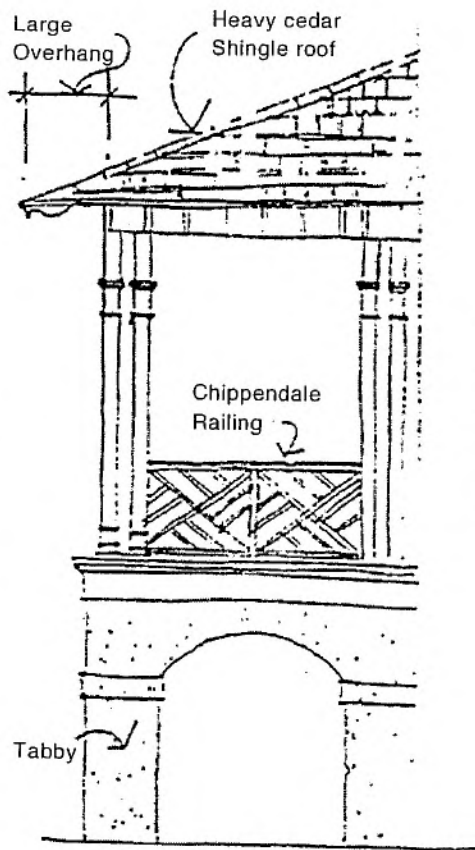
Porches

Perhaps no other architectural feature summons up feelings of sociability and hospitality as the front porch. Porches are the single most identifiable component of the Lowcountry style, and porches within conversational distance of sidewalks give rise to informal exchanges between strangers, thereby helping to create neighbors and strengthen the bonds of community. In the Lowcountry, gardens are for privacy. Porches are for making and keeping friends.

Good guidelines for creating a useful and beautiful porch include:

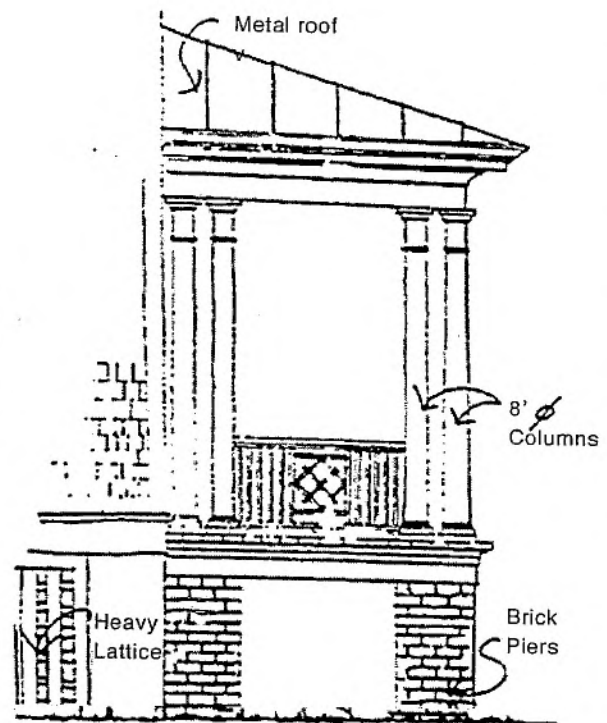
- A minimum depth of 8' allows for comfortable passage around furniture. Deeper is better as it provides better shade in summer and protection from the rain.
- The columns should be the same height or taller than the ceiling of that story. This will enable the windows to catch the warm rays of the sun during the winter months.
- The void space above the handrail, below the frieze, and between the columns should ideally be no more tall than square. This will emphasize the vertical look of the porch and house.
- The porch should ideally face South/Southwest to catch the prevailing breezes, which in the Lowcountry came from the Southwest, as well as the lower rays of the winter sun, which come from the South.
- The spaces between columns (column bays) do not necessarily center on the windows, because the columns are arranged according to the length of the porch. The windows are placed according to the needs of the rooms within and the pattern they create over the whole house, which has nothing to do with the porch or its columns. The bays between columns should not exceed column height, again to emphasize the vertical.
- Columns, posts, and piers should be of a thickness sufficient to look both substantial, and appropriate to the style of the house.

Porches cont.



The porches extend the volume of the house allowing views to permeate so that interior and exterior are actually interwoven in an extension of the living space into the natural environment. The porches themselves may have a wide range of column and balustrade styles. This is the essence of the individuality that will be expressed in each home.

Foundations are the link between the earth and the architectural form. The need for heavy texture and proportions offer a wide variety of material options. Tradition encourages a rhythm and balance with the columnation above. Use of masonry clad piers, stone, brick, or tabby (using local oyster shell) are all appropriate.

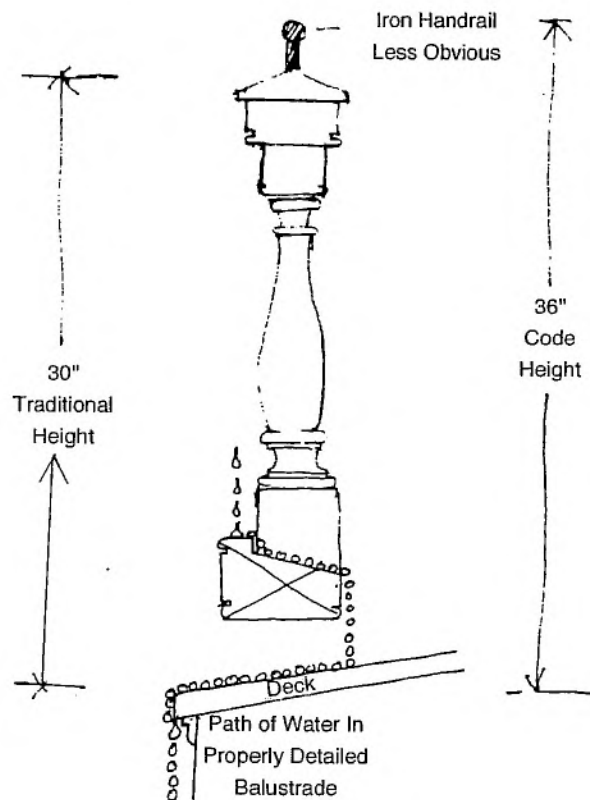


Porches cont.

Contemporary building regulations now require balustrades to be 36" height if the porch is more than 30" above ground level. This greater height throws off proportion. It also makes it difficult for a person sitting on a rocking chair on a porch to look into the eyes of a person they are conversing with on the sidewalk because the porch rail blocks their line of sight. This can be disruptive to the harmony of a good porch and neighborhood. A smaller, less visually obtrusive rail or cable can be placed above the balustrade of traditional height to maintain a well-proportioned appearance.

If the finished floor of a porch is 30" above the ground level, a balustrade can be built at a lower height or eliminated altogether, both of which open a porch up and make it more friendly. A lower balustrade also makes a convenient place to sit or lean.

Traditional balustrades were 28-30" tall.

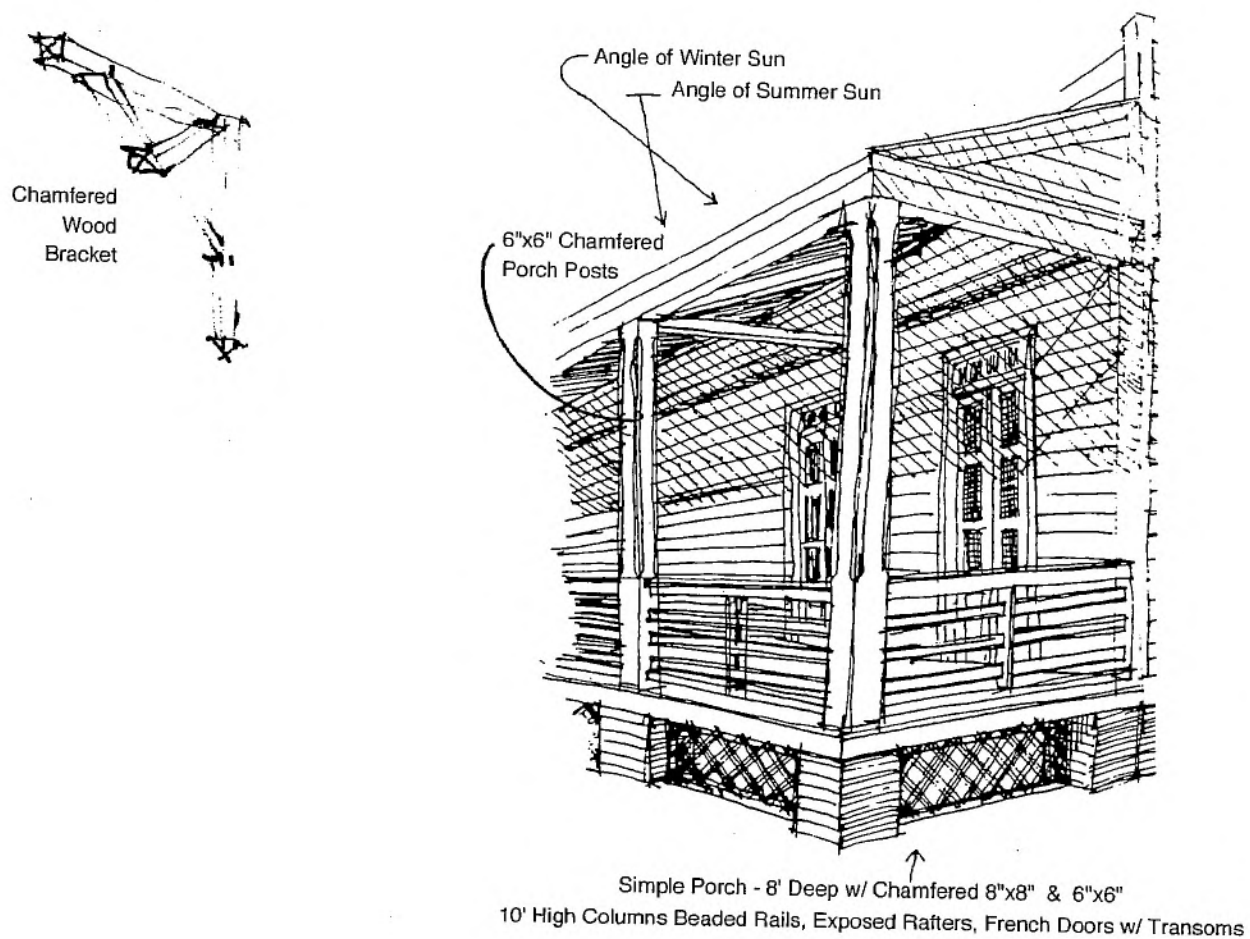


Porches cont.

The height of the porch deck has an important effect on the look and feel of the house. A porch floor 30" above ground level without a handrail has an openness that ties it closely to the landscape. A porch less than 60" above ground level is easily accessible to passersby, who can see right into it and is very friendly. A porch higher than 60" is more private, especially when it is pulled right up on the sidewalk, since it is above eye level of the average pedestrian. Thoughtful design on porch height will allow your home to reflect your personality and outlook.

The style of the porch should complement that of the structure. The porch is traditionally the most ornate feature of a home- the owner's gift to the street and neighborhood.

- * - Generous overhangs will help protect vulnerable porch parts from blowing rain.



Balconies

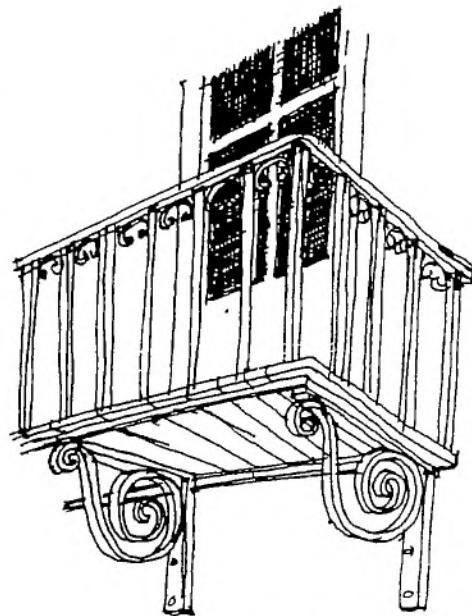
Balconies are similar to porches, but open a room to the outdoors in a more private way. They are meant to be stood upon or walked across, and are usually 3 or 4 feet in depth. Like porches, they range from informal to formal, and usually provide the focal point of a house.

Orient South / Southwest
to Prevailing Breezes

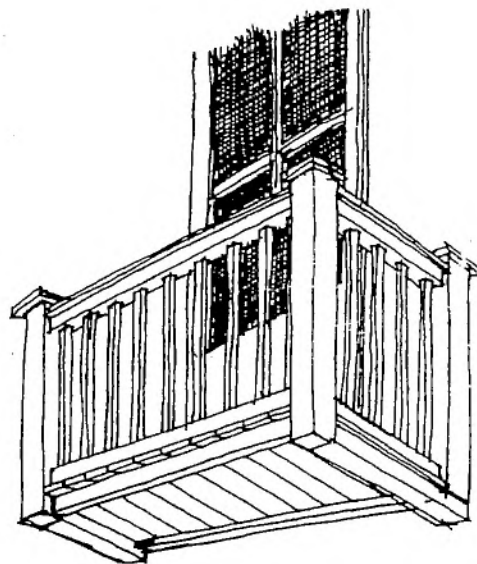
Parapet Roof or Deck
of Upper Porch



Classical Porch 10' Deep, 11' High w/
Turned Balustrade, Panelled Ceiling,
Triple Hung Windows, and Fluted Doric Columns



Substantial wrought iron support
brackets w/ wood deck.
Simple Design!

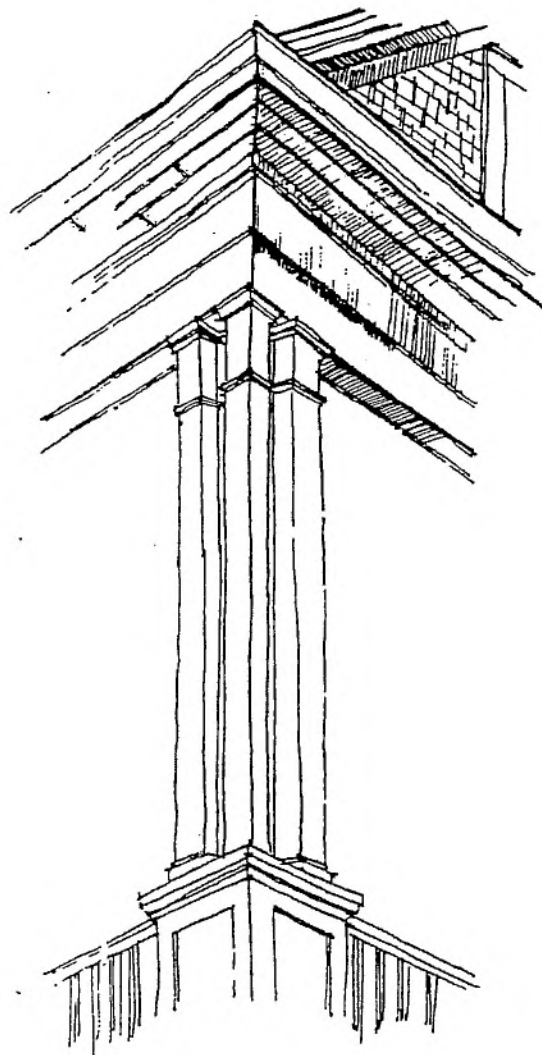
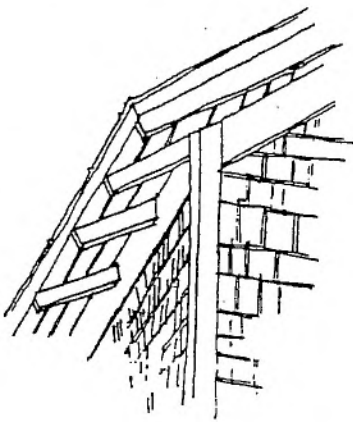


Wooden brackets are not supported
by brackets, but mortised right into
the wall and cantilevered out.
Posts are similar to hanging newels.

Cornice

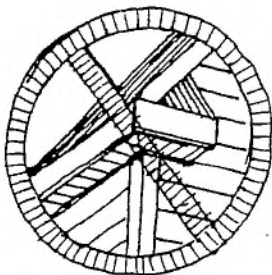
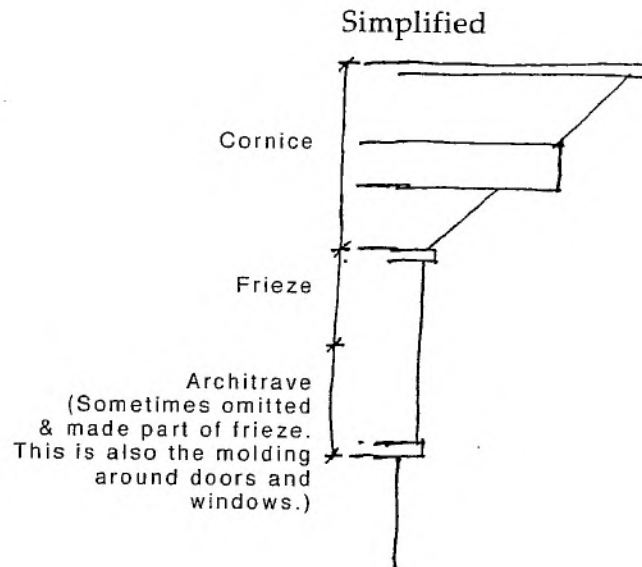
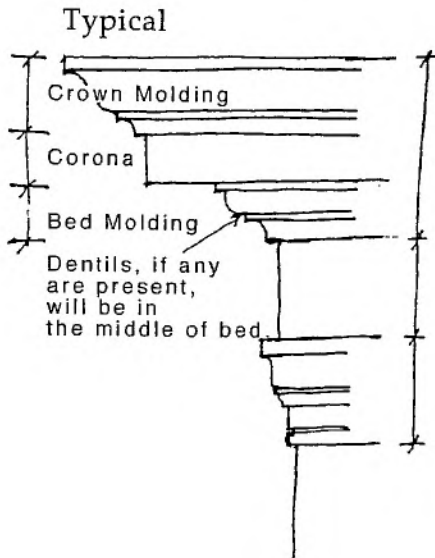
Another way to define the personality of the home and its inhabitants is through stylized cornices. The importance of various cornice styles is through its function to throw rain off the roof and to define the separation between roof and wall. Protection of the walls and porches from blowing rain and sun is particularly important in "Southern Coastal Architecture."

The "Lowcountry" cornices may have a variety of looks. A cornice may be open with the rafter tails exposed and shaped for a more rustic influence. A cornice with a classical influence can be used with a molded frieze, enclosed soffit, and a multi-part fascia. The cornice is important to help organize the mass of the structure through its horizontal nature. Here, scale and proportion help define the separation between the vertical wall plane and the roof.

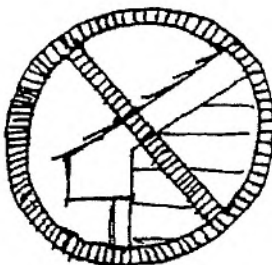


Vernacular Entablature:

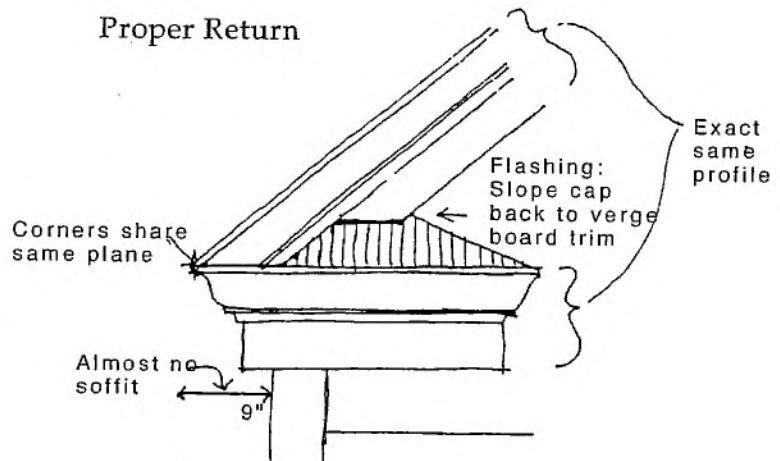
Used on eaves, porches, dormers, interior doorways, mantelpieces, etc....
Scale and proportion is critical to appropriateness and compatibility.



NO Plain
Boxed Soffits



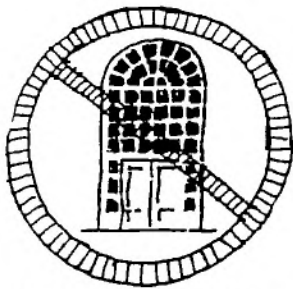
NO "Pork Chop"
Zone



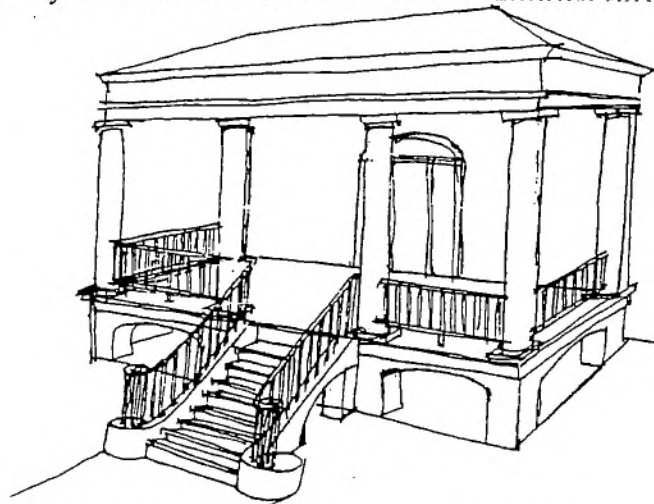
Entry and Door Design:

The entry is a home's gateway to the world. Whether formal or informal, the entry is usually the focal point of the house, and is the location appropriate for elaborate exterior architectural trim.

The style and setting of the house will have a great influence on the design of the entry. Double doors, while thought of as grand by many, are rare. Vernacular examples rarely exceed 4 feet in width.



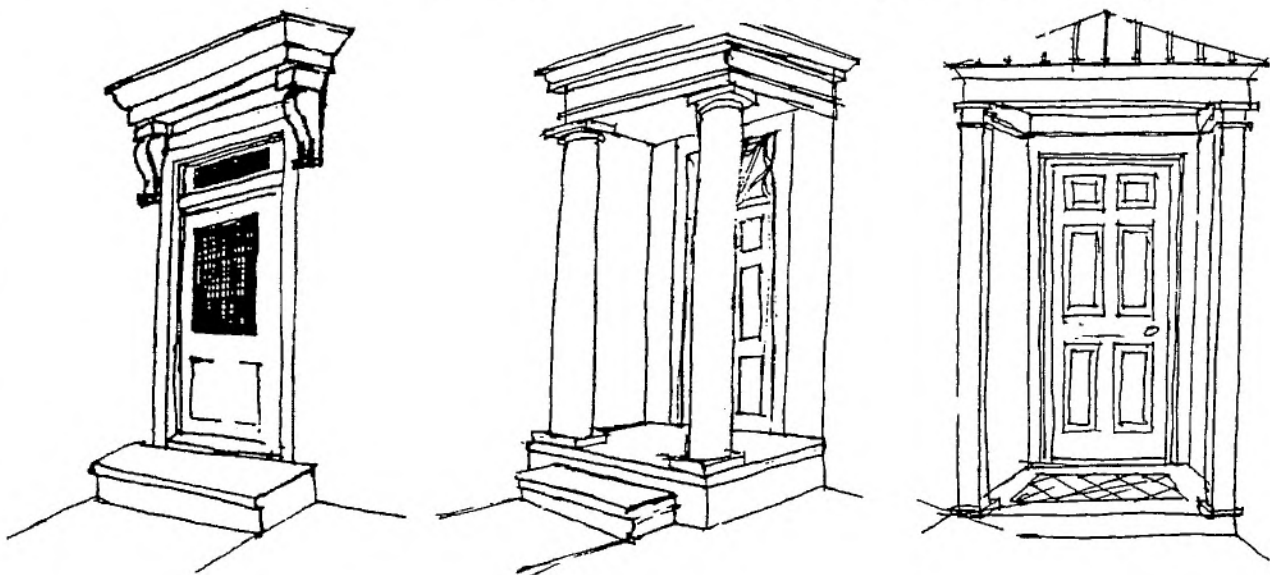
NO Big Theatrical Entries



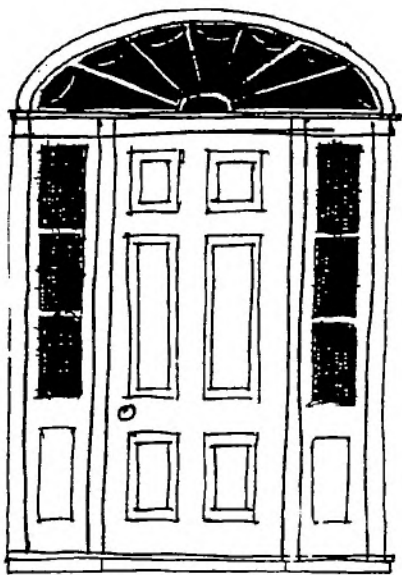
Whether simple or ornate, the entry is a primary component which sets the tone for the detail of the house.

The entry should convey to the world your outlook and philosophy, and is your gift to the neighborhood.

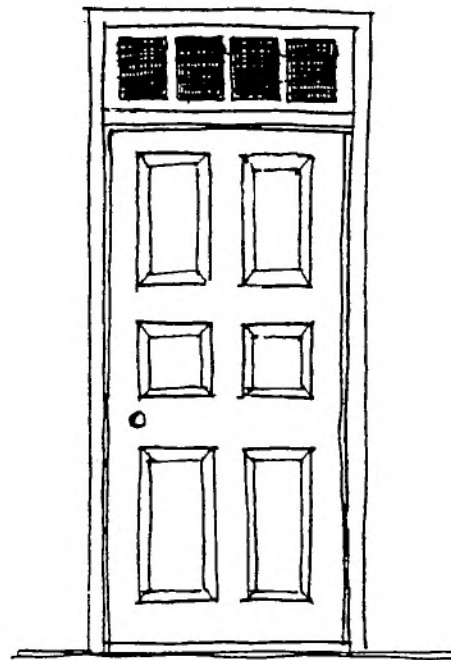
* - Stairs, walkways, and fences are all part of the entry.



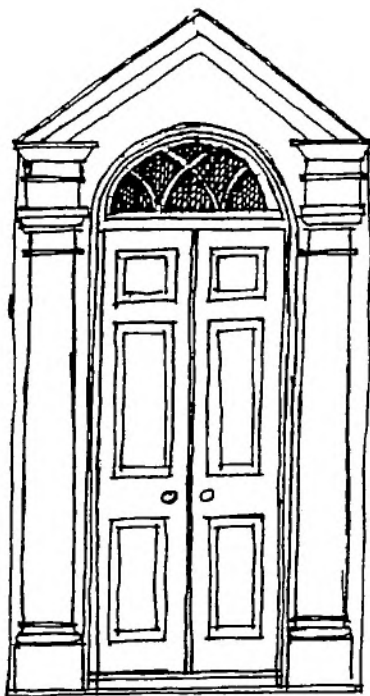
Entry and Door Design:



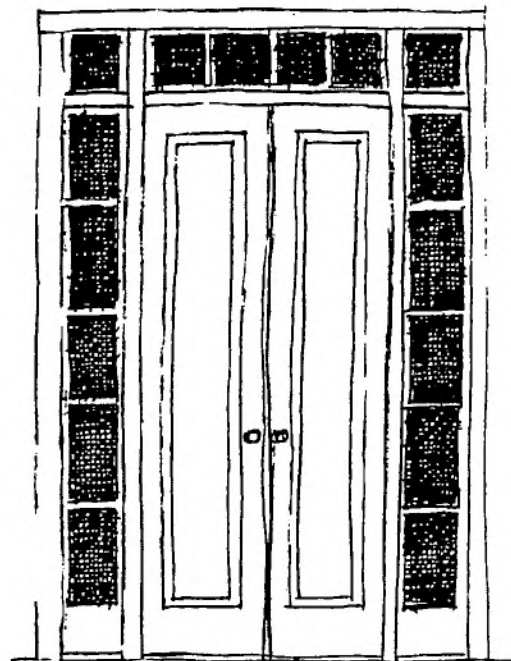
Late Georgian 6-panel (Federal).
Elliptical fan light w/
3-lite panelled sidelights.



Jacobean 6-panel.
Simple 4-lite transom



Georgian 3-panel double doors
6-lite lunette transom w/ Gothic tracery.
Pedimented door surround
w/ engaged columns.



Neoclassical 2-panel (Greek Revival) door.
Simple 5-lite transom.
5-lite glazed sidelights.
(Glazing means glassed-in or
comprised largely of glass.)

Exterior Walls

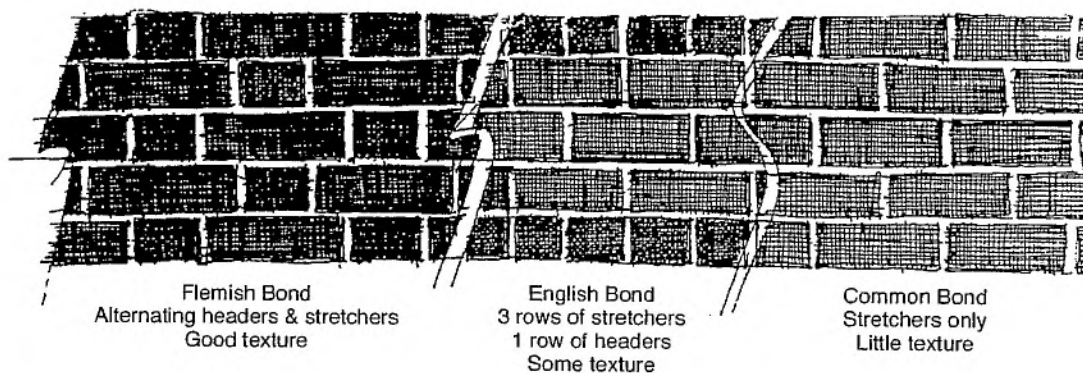
Lowcountry buildings generally have exterior walls of clapboard, brick, or stucco over masonry. However, materials such as wood shingles, board and batten, cut limestone, coralstone, or coquina were also used.

Brick- The traditional brick used throughout the Lowcountry is called "Charleston Grey" or "Savannah Grey" brick, and ranges in color from orange brown to dark brown. Early brick was much larger than those used today, but then so were the houses. "King" size brick are fine, but "Queen" and standard brick may better suit today's scaled-down buildings.

More important than size is brick color, mortar color, and bond pattern, which provide distinctive shadowing effects. Traditional mortar joints were made of bright white or buff yellow mortar, finely tooled to shed water and throw strong shadow. As the name implies, a Common Bond is the most frequently used brick-laying pattern. Flemish and English bonds give a home a more formal, distinguished look.

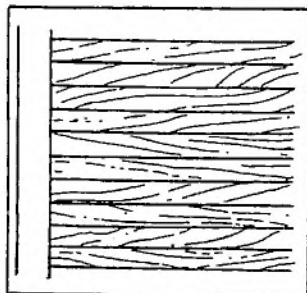
Stone- was rarely used for walls in the Lowcountry, and was generally reserved for trim, entries, and gardens. Ballast Stone from Europe is as close to an indigenous stone as there is.

Tabby- a lime concrete using burnt oyster shell as both aggregate and matrix, was an early wall material of great character. It induces a labor-intensive process due to the need to pour it in thin, densely packed layers, which give it the striated or layered look. As a result, it is usually regarded as cost prohibitive for structural uses, but as an accent-- such as a garden wall or columns, paving, as well as foundations-- it can be quite beautiful when done well.



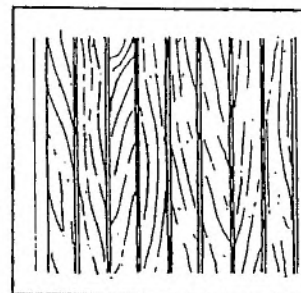
Exterior Walls cont.

Color- All exterior colors are to be ones which have historic precedent in Lowcountry areas. They should be sensitive to the environment, as well as blending with neighboring homes. Color samples should be submitted for approval to the Architectural Review Board.



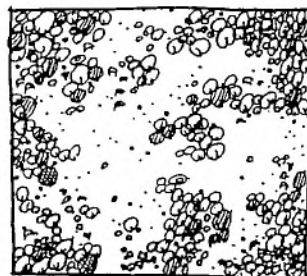
Clapboard

6", 8" or 10" siding may be used as horizontal clapboard and maybe beaded or not. Other appropriate treatments include "reversed battens" and "shiplap siding"



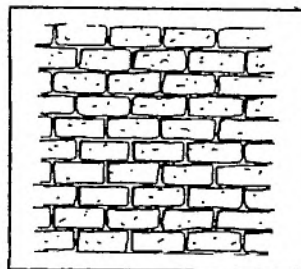
Board and Batten

8" vertical siding with 3" vertical batten strips is appropriate when the design warrants.



Tabby

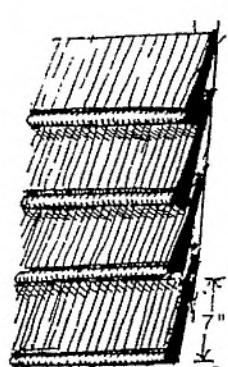
"Tabby" is another wall finish in keeping with Lowcountry "natural materials" and color.



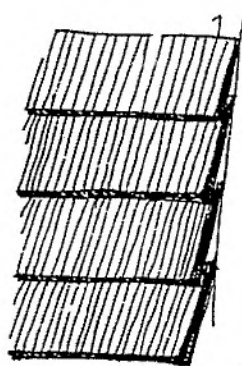
Brick

Brick should be laid in the traditional patterns. The colors should be indigenous to Lowcountry hand made brick. Joints should be tooled w/ beaded or grapevine pattern. Mortar color should match historical patterns.

Wood - In Beaufort, the outskirts of Charleston and the colonial section of Savannah, wood clapboard siding was the material historically chosen for its "cooler" nature (it doesn't retain heat like brick). Beaded edges give a more polished appearance, and better shadow lines, and hence, interest. Shingle siding should be reserved for simpler homes near the water, on outbuildings, or for siding dormers. Smooth cypress, cedar, or treated pine are all appropriate. Wood siding shall always be coursed with window and door openings.



Beaded Clapboard
7" exposure
Good shadowline



Clapboard, 1/2" Butt
7" exposure
Some shadowline



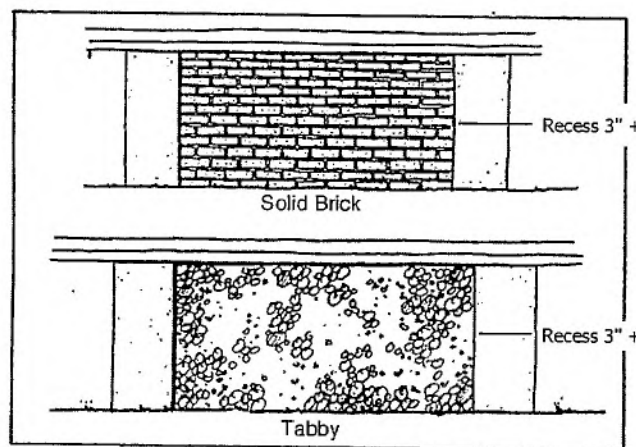
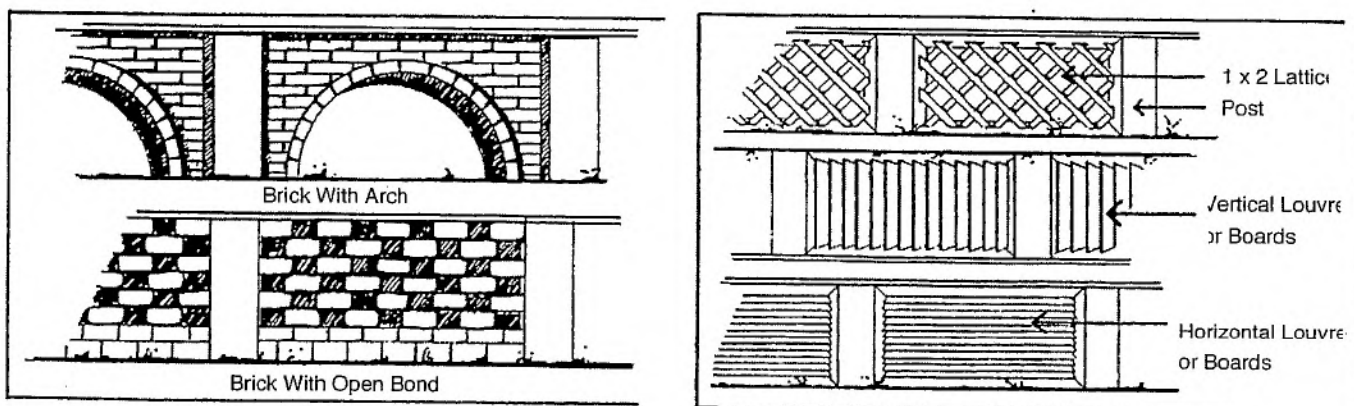
Shiplap
7" exposure
Almost no shadowline
For contrast of entries or doors

Foundations

There are two types of foundations in most "Lowcountry" inspired architecture. The first, the raised basement wall design, ranged from simple square columns to arcades of full archways or elliptical openings supporting upper story load-bearing walls. The wall materials were brick, brick veneered with stucco, or what is called "tabby."

The second foundation type we refer to today as the "crawl space" area, meaning a low area between the ground level and the bottom of the first floor joists. The outside wall treatment of this foundation was the same as with the raised basement. It is of course shorter than the raised basement and normally embellished with a type of wood "lattice" or wood louvre to allow for air circulation or solid masonry as above.

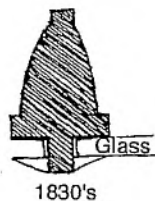
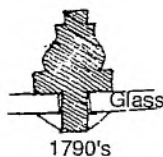
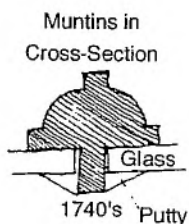
Tabby is actually a form of construction from North Africa and Southern Spain which dates from the 10th century and was introduced to the colonies by the Spanish via Florida. In South Carolina tabby construction consists primarily of oyster shell, lime, and sand as building materials.



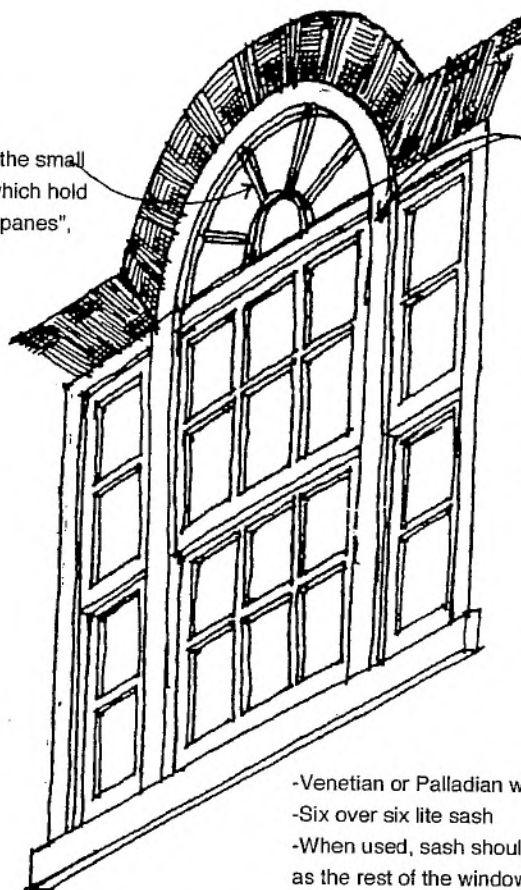
It is appropriate to mix brick and tabby

Window and Shutter Design

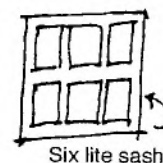
Windows were seen by the ancients as the eyes of the house, and "fenestration," or the study of the arrangement of the windows on the facade, is perhaps the most important discipline in classical architecture. The windows determine how the building presents itself to the outside world, and frame our view as we gaze through them from the inside. Another architectural discipline has to do with the makeup of the muntins, the little wooden bars, which hold the lites, or "panes" of glass. If you've ever wondered why there are tiny moldings planed into the muntins of old windows, rest assured they have a purpose. Part of the reason why "snap-in" muntins just don't look the same is that they lack such ornamentation. For this reason, the Code requires true divided lite windows in a style appropriate to the house. This could range from "one over one" to "nine over nine." Your house will look better, your views will be better framed, and your soul will be more satisfied.



Muntins are the small wood bars which hold the lites, "or panes", of glass.



Mullions are the frames which separate the sashes.



- Venetian or Palladian window
- Six over six lite sash
- When used, sash should be the same as the rest of the windows on that story, with the sidelites and lunette added to the sides and the top to increase height and width.

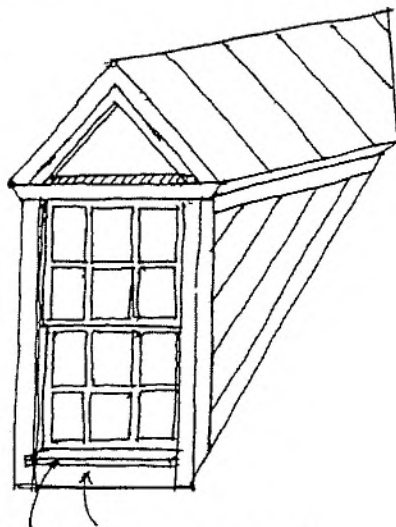
Windows and Dormers

Windows should generally have:

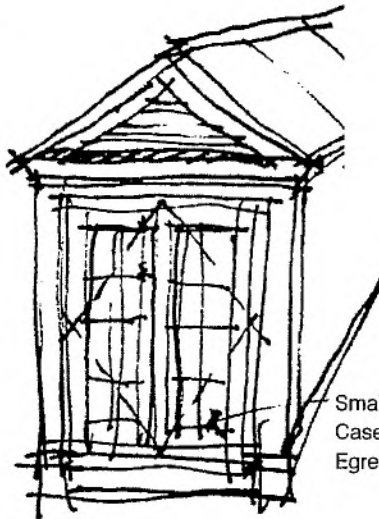
- their heads 9" - 30" higher than any doors on the same story
- mullions between them at least 4" in width
- mutins to be scaled appropriately to sash
- sills which project enough to allow for a drip kerf
- a sash style appropriate to that of the house



No overscaled dormers



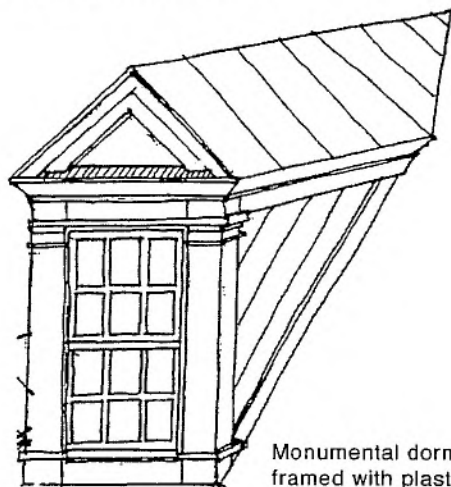
Sill is critical to keeping water out and needs a drip kerf



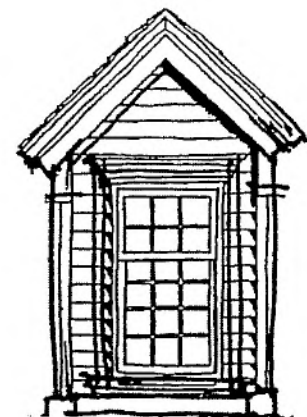
Smaller Dormers w/
Casements to Meet
Egress Code



Shed to 1765
(Huguenot)
Window 9 over 9



Monumental dormer
framed with plasters

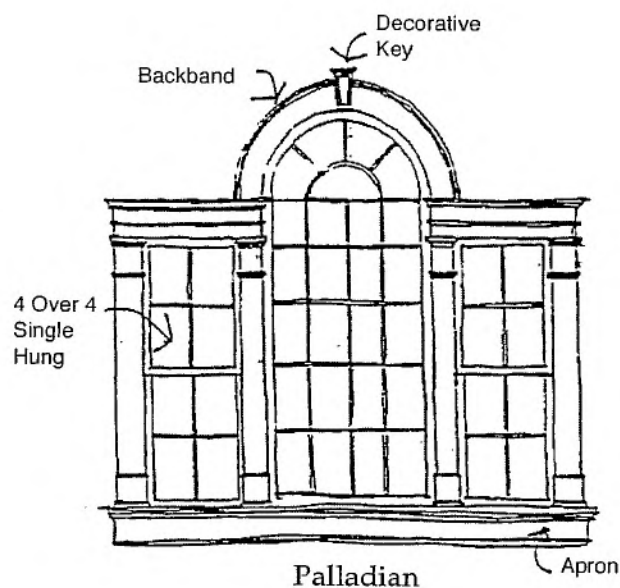
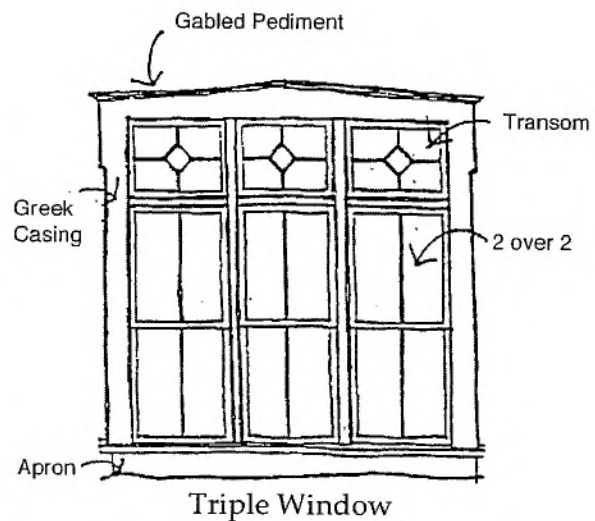
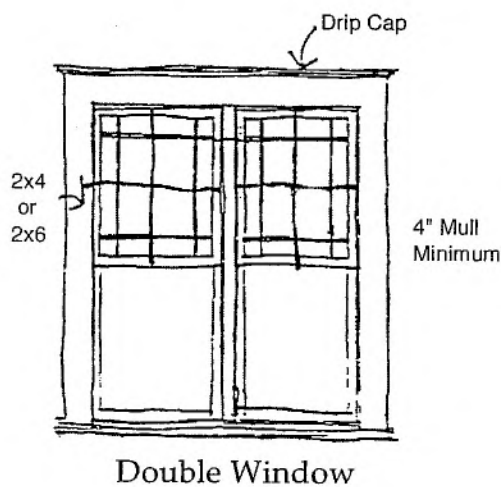


Gable- After 1765
(English)
Window 6 over 12
Window cornice
optional

Typical dormer should be no wider than the window plus its trim
Typical dormer should be framed with studs turned sideways to reduce wall thickness
Typical dormer should be placed on roof wherever sill can be 6"-8" above a roof line
Typical dormer should be with minimal or no soffit

Design of Multiple Windows

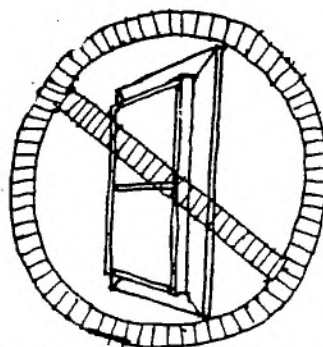
Large openings to capitalize on views are implicit in the "New Low Country", courting a new sense of space, light, and view. Together with the porches, windows manipulate the light as desired flooding a room with light or in other cases diffused and mingled, as appropriate to the interior atmosphere. One might see triple windows for wide views. Palladian style for a sense of classicism, or a multiple series of simple double-hungs to maximize light and ventilation.



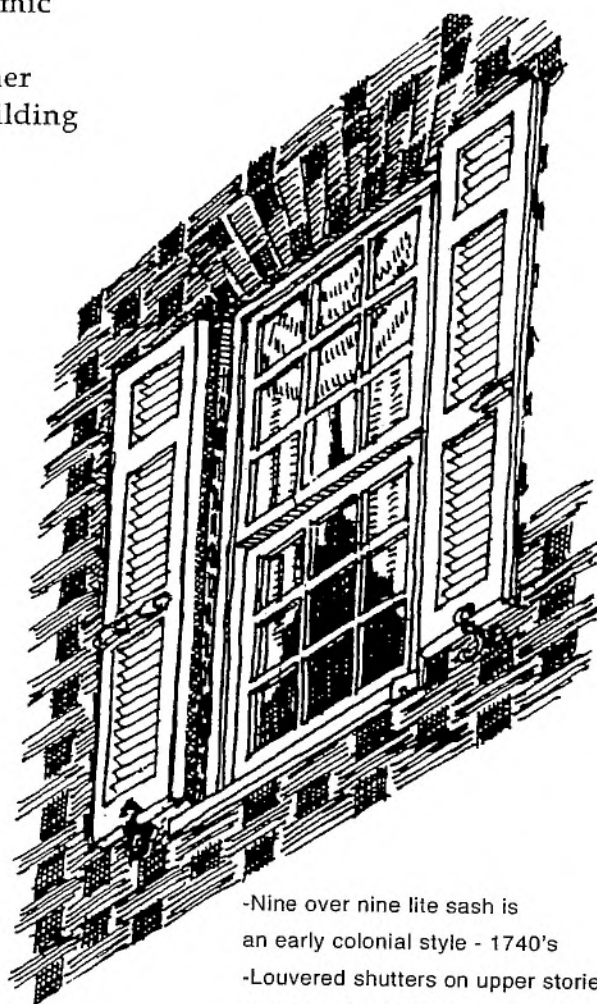
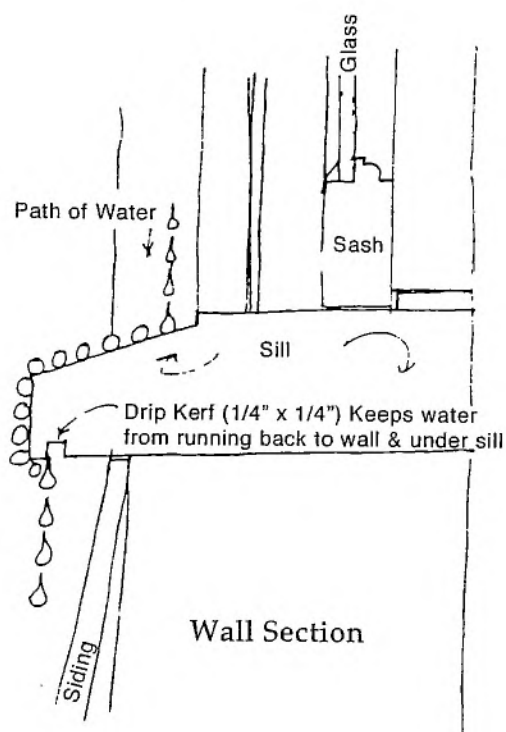
Windows and Shutters

Tributual windows generally are:

- tallest on the primary story, and progressively shorter on higher and lower stories
- the same height at the same level throughout the same story, unless used as doors
- of the same width in vertical succession, and lined up directly above one another, dormers excepted
- not all equidistant from one another, but arranged in twos or threes to create a rhythmic pattern
- no closer than one window width, not farther than two widths, from the corners of the building



No flush mounted windows

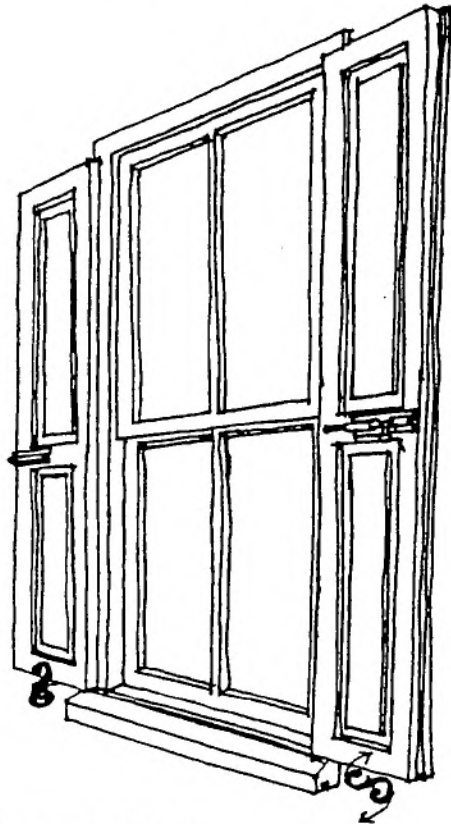


- Nine over nine lite sash is an early colonial style - 1740's
- Louvered shutters on upper stories, usually painted dark colors.
- Louvers point up when open, and point down to shed water when closed.

Windows and Shutters cont.

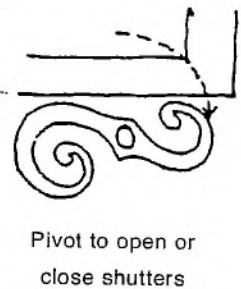
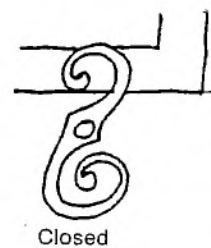
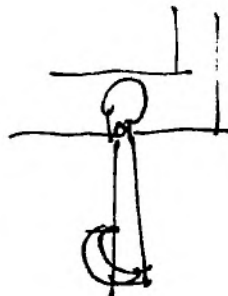
Shutters should generally be:

- paneled on the ground floor, for security
- louvered on the upper stories to allow for breezes, with the louvers angled down to shed water when the shutters are closed
- very tight within the window jambs when closed- the best "snap" closed, and have to be pushed from inside to "pop" open



← Note latches happen below window sash meeting rail

- Two over two light sash
Classical revival (1820's) until 20th c.
- Paneled shutters used on lower story for security and privacy



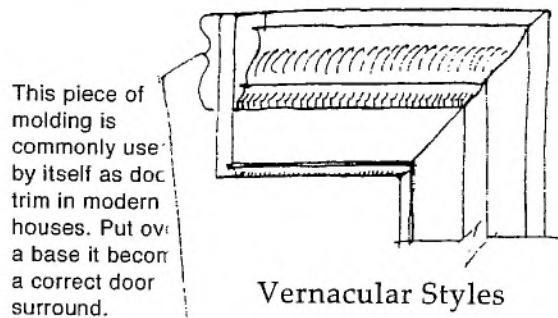
- Shutterdogs go below shutter, not off to the side, and centered on the shutter
- The weight of the larger scroll keeps them upright, so that the smaller scroll can secure the shutter

* - Shutters are to be sized to fit window opening, and must be operable.

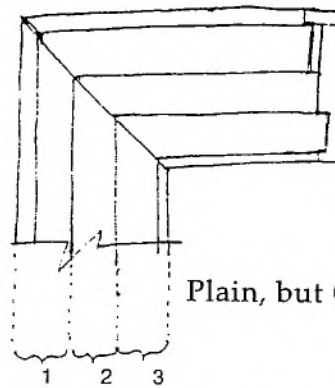
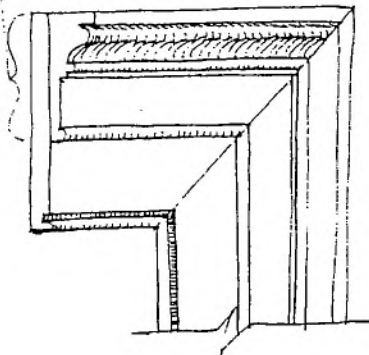
Exterior Trim Details

Trim Examples

Windows and doors: "3-part" trim is the same as the architrave

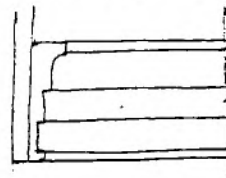


Vernacular Styles



Plain, but Classical

It is called "3-part" not matter how many pieces it is composed of. The 3 refers to planes or surfaces- there are 3 major planes

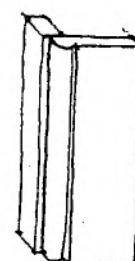
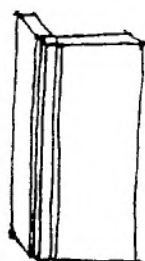
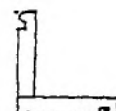
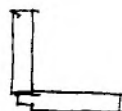
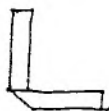


Remember the architecture portion of the entablature? Look familiar?

Corner Boards

Simple

Formal



Simple

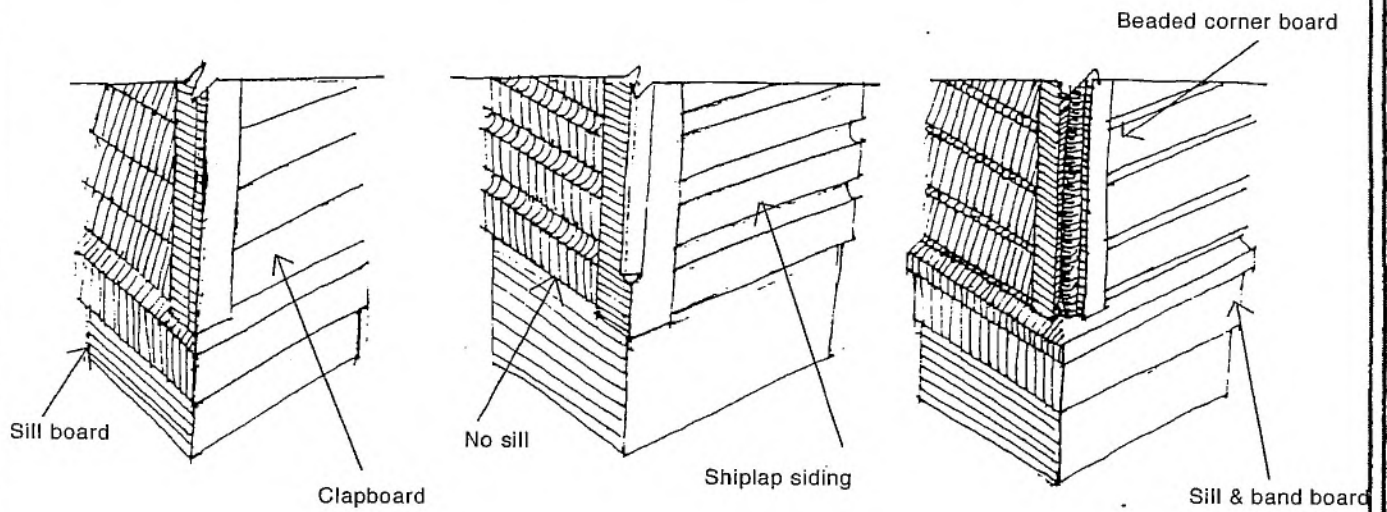
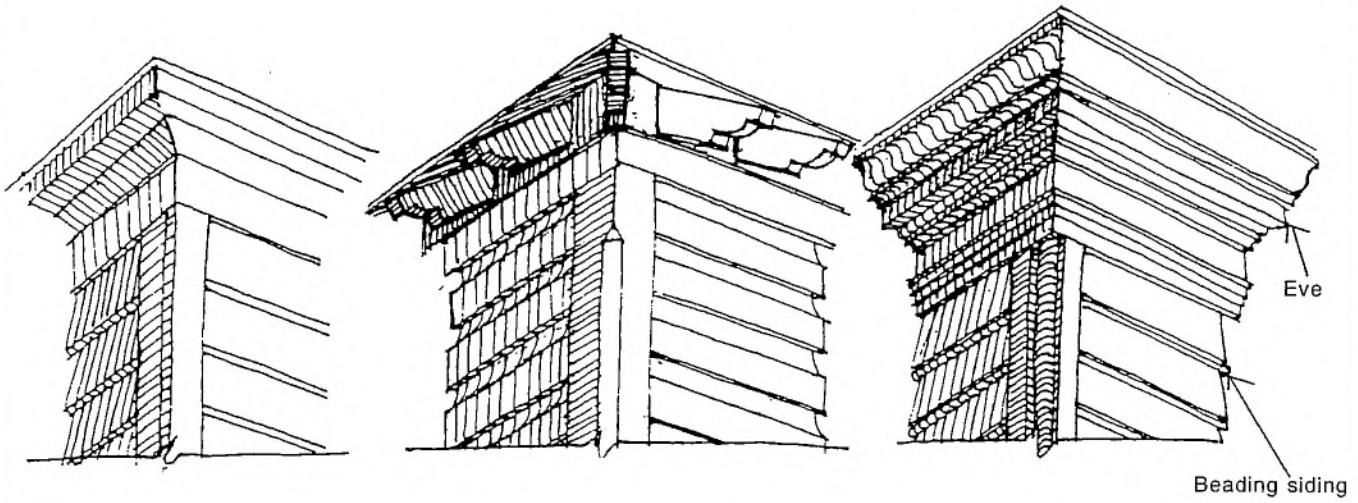
Chamfered

Rabbited

Beaded

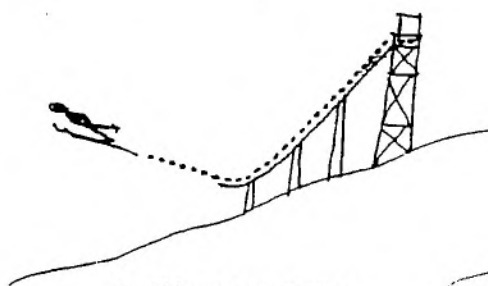
Corner Beaded

Sill & Eave Trim

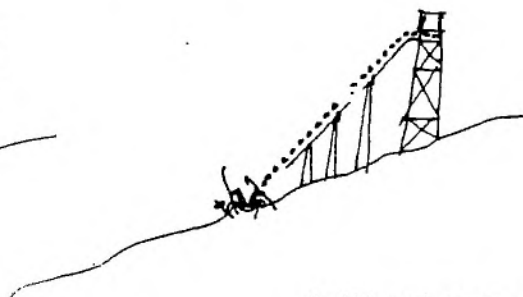


Roofs - Slope

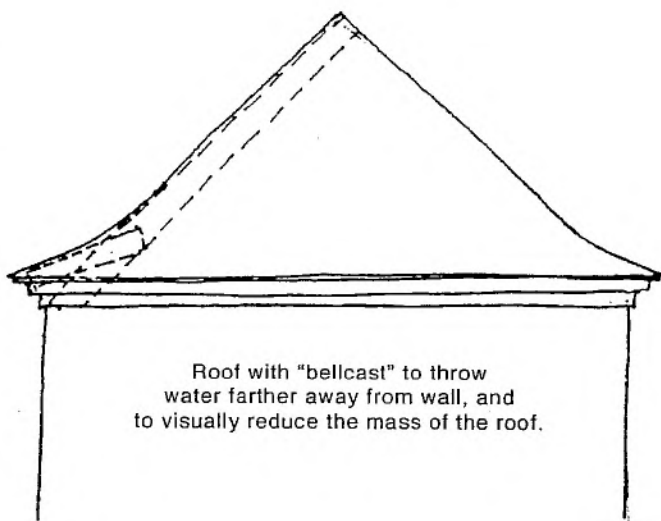
Traditionally, the Lowcountry has seen just about every form of roof known, but as a general rule, the most appropriate will either have a steep slope or almost no slope at all.



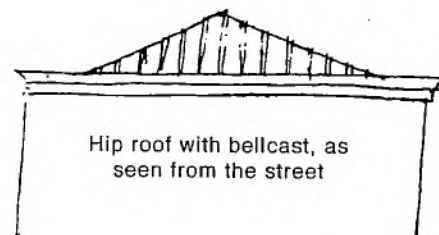
A ski jump based upon classical roof design



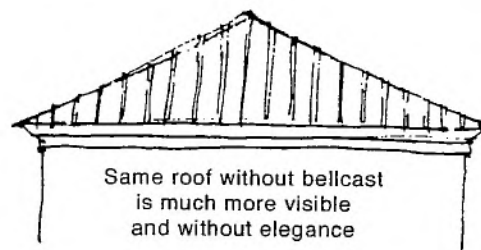
A ski jump based upon contemporary roof design.



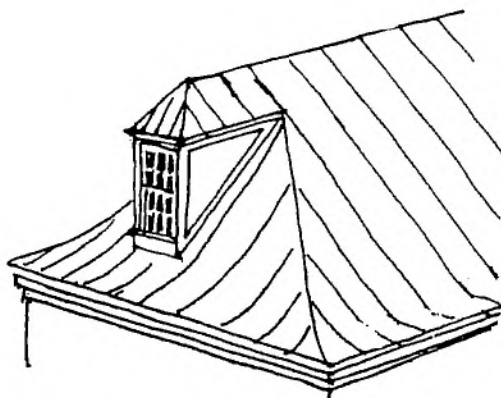
Roof with "bellicast" to throw water farther away from wall, and to visually reduce the mass of the roof.



Hip roof with bellcast, as seen from the street



Same roof without bellcast is much more visible and without elegance



Roof Design

Principal roofs should have slopes of:

Simple Gable

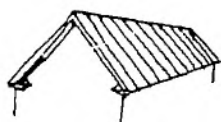
-7 in 12 to 12 in 12

Close/Parapet Gable

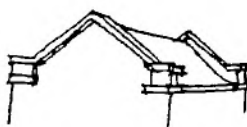
-1 in 12 to 12 in 12

Pedimented Gable

-5 in 12 to 8 in 12



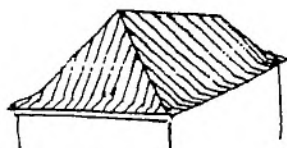
Simple
Gable



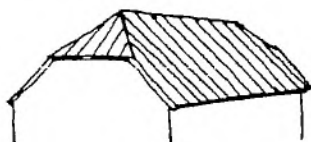
Parapet
or "Close"



Pedimented
Gable



Hip



Jerkin-Head

Hip
Jerkin-Head

-8 in 12 to 12 in 12
-10 in 12 to 12 in 12

Gambrel

-12 in 12 min. upper roof,
gable eaves to peak at
least square.

Mansard

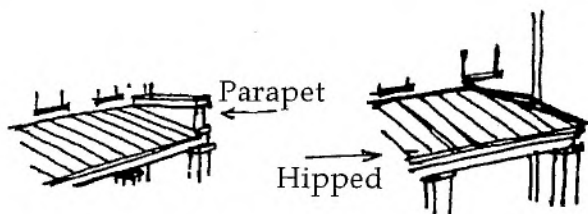
-5 in 12 to 8 in 12 upper
roof, eaves to peak at
least square.



Gambrel



Mansard



Porch -2 in 12 to 5 in 12 if parapeted,
5 in 12 if hipped

Roofing Materials

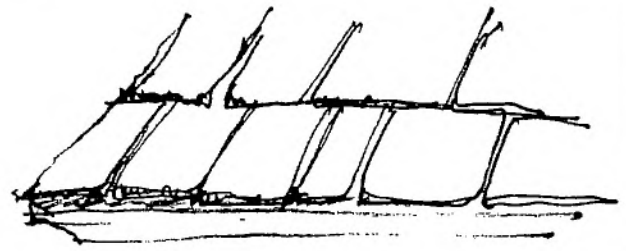
There are a variety of materials to choose from including cedar shakes, composition asphalt shingles, slate, tile, and metal roofing such as tin, painted tin and copper.

Traditional colors should be used so as not to distract from nature's surrounding colors or draw one's eye away from the home design. Colors also should be in keeping with the feeling of the overall facade design.

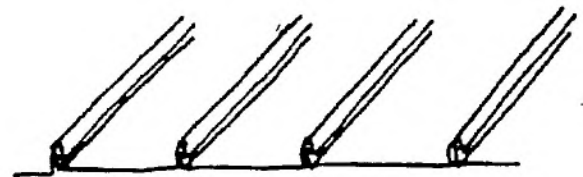
Historically colors for painted metal roofs were oxide red and forest green.

A 4/12 roof pitch will be the general minimum on any portion of the roof. The Architectural Review Board reserves the right to set off pitches and overhangs as they determine appropriate. Slope of the pitch should facilitate a balanced visual impression in relationship to the body of the dwelling. All vent stacks, exhaust vents and the like are to be positioned and located in the most unobtrusive way possible and painted to match the roof.

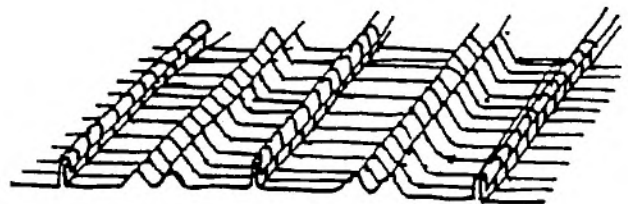
Flashing should be copper, unless the roof is metal where upon flashing would be of the roof material.



Slate Tiles



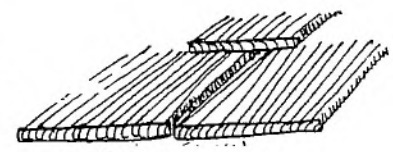
Standing Seam



V-crimp

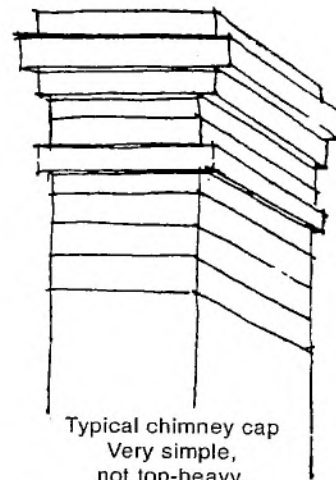


Shake - Split



Shingle - Sawn

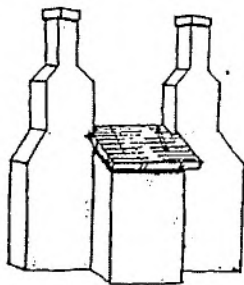
Wood shake or shingle



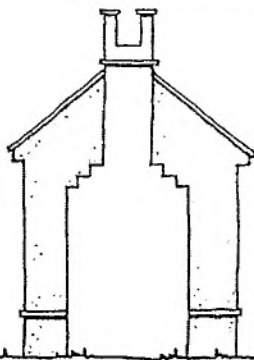
Typical chimney cap
Very simple,
not top-heavy.

Chimneys

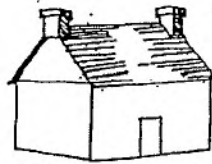
All chimneys must have masonry veneers. Exposed pre-fab chimney caps are not allowed. All chimney caps or covers must be approved by the Architectural Review Board. Decorative brick work is encouraged.



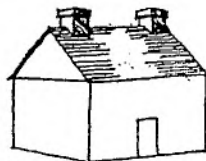
Chimney Pent,
Small room w/ roof



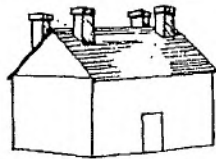
Massive Twin
Chimneys



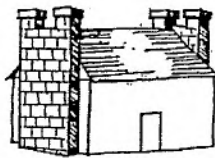
Paired End
Chimneys



Paired Interior
Chimney



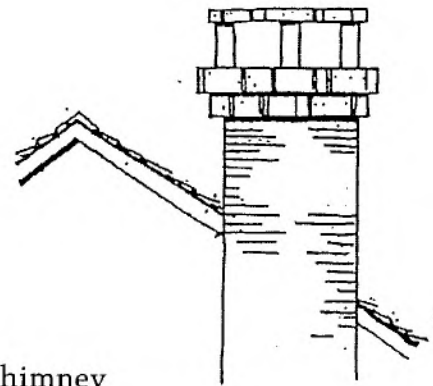
Paired Double
Interior Chimney



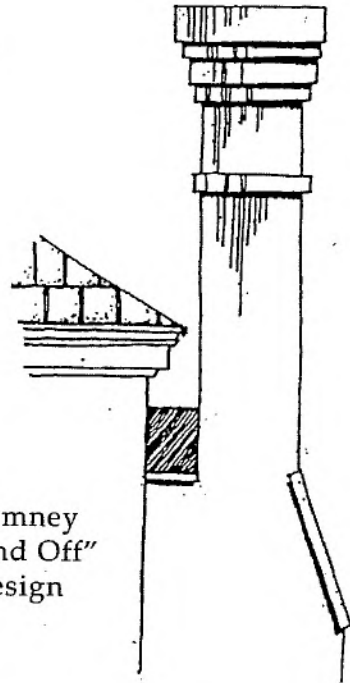
Paired Double
End Chimney



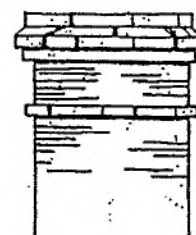
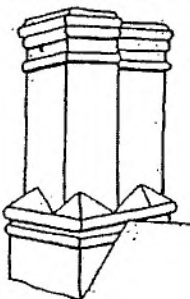
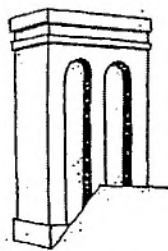
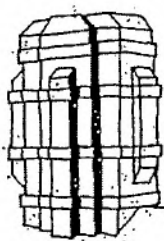
Exterior End
Chimney (Decorative)



Chimney
Cover



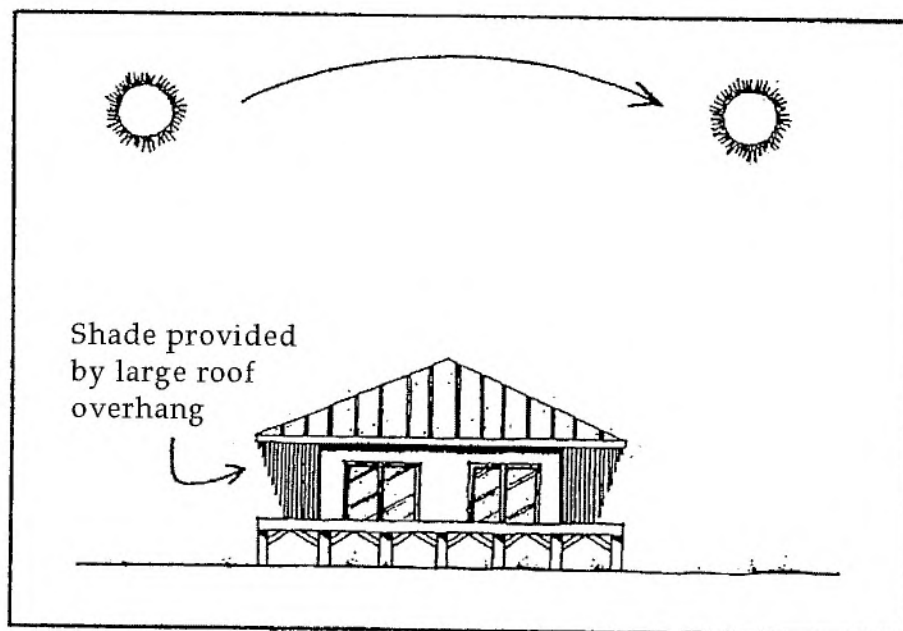
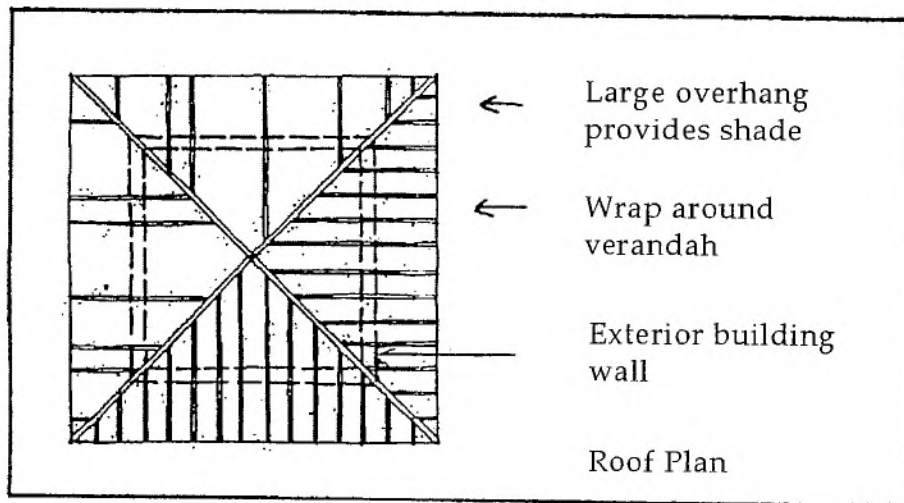
Chimney
"Stand Off"
Design



Decorative Chimney Tops

Interior/ Exterior Relationships

Climate tempering has historically best been achieved with large porches to shade the summer sun. In addition, operable shutters and blinds have been used to provide shade and privacy while admitting breezes. Also, lattice work and screens provide sun and pest control on porch areas.



Outbuildings

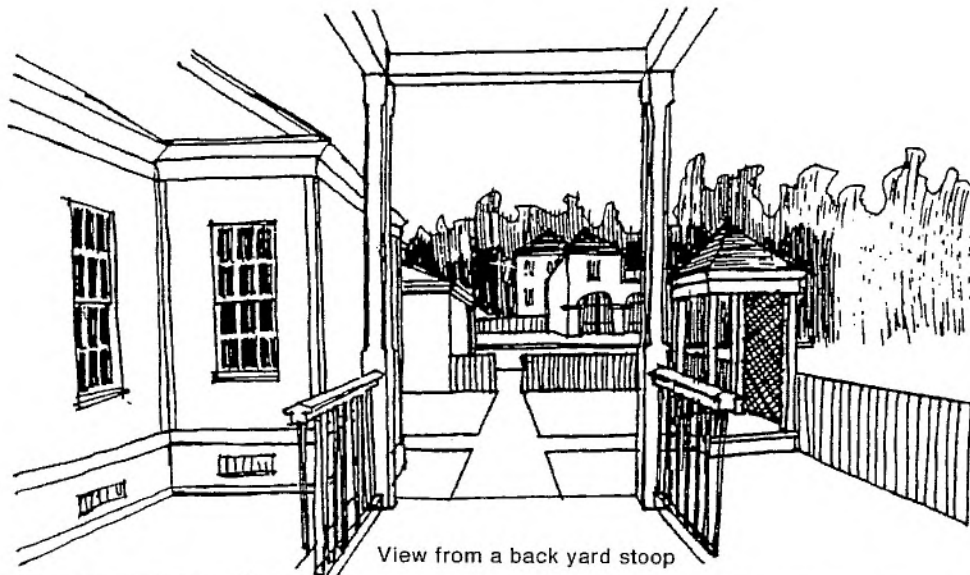
An important characteristic of Lowcountry architecture is the outbuilding. Examples include garages (carriage house), potting sheds, carports, workshops, or attached mother-in-law suite. Such little buildings create an architectural framework for the private garden, as well as streetscapes for the lanes or thoroughfares not occupied by the primary facade of the house.

Such gems make all the difference between a garden and a yard. Their design and materials should complement that of the main house, but be secondary in nature. Those portions of the house, which look like detached outbuildings, but are in fact connected by heated space to the main dwelling, may be of any size and roof slope, but are subject to the typical side setback requirement. Those, which are completely detached, may be placed within ? of the side property line provided their roof overhang doesn't encroach into the neighbor's yard.

Such little buildings are subject to the same basic guidelines as the house, and can be beautiful in and of themselves. They add to the texture of the neighborhood, and their rooftops create a picturesque depth to the views available from upper story windows.



View from a lane



View from a back yard stoop

Fences, Walls, and Gates

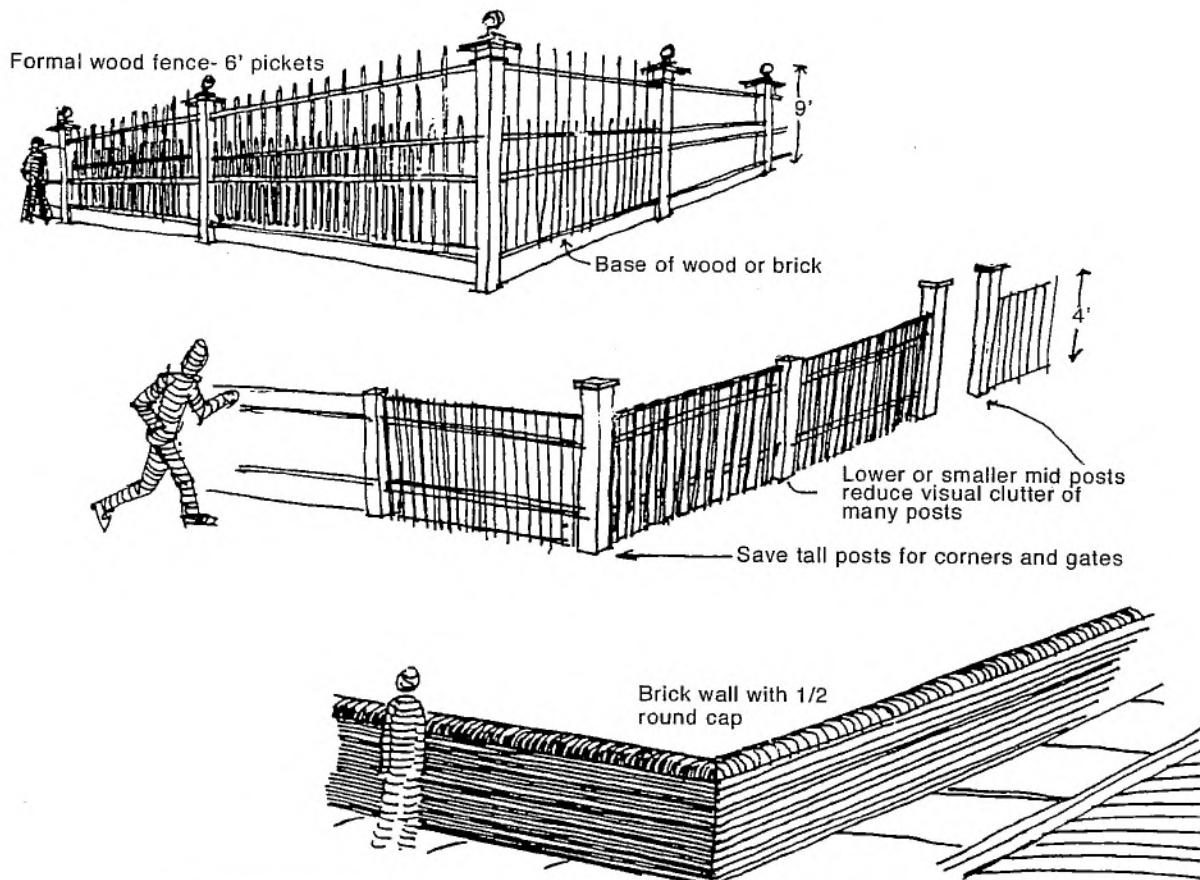
A fence or wall delineates the private realm from the public realm, and helps complete the streetscape. Fences can be formal and defensive, or simple and inviting. They serve as a complement or as a counterpoint to the house, which they surround and protect.

Formal: Tall and elegant fences set off elegant houses, but let passers-by easily see into the front garden.

Informal: Less polished materials make up these lower fences or walls, which are meant to contain plants, pets, or children. Wood pickets can be simple or fancy and come in an infinite variety of size and patterns. If used, make sure yours are of a different style from others on your street.

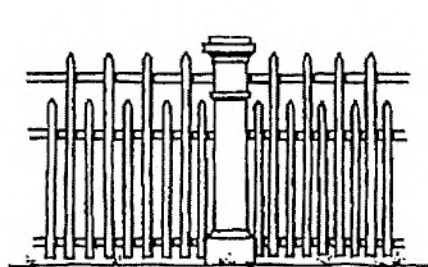
Friendly: Meant to be leaned on or sat upon, these can be jumped over, not to mention seen over. Gates, if any, are usually open.

Intriguing: Some of the most imposingly formal walls and fences are perforated with "windows," or openings to share a specific view with pedestrians. In a way, these are the friendliest since the owner has gone to great lengths to create a beautiful garden, and has spent even more effort to make sure anyone passing by can peek in to share the view.

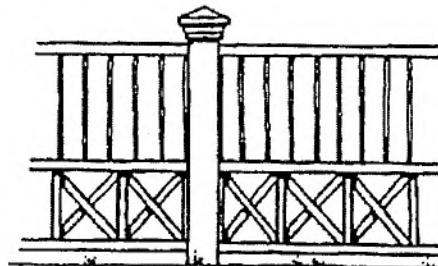


Fences

The service and general garden fence has evolved into a beautiful statement through the years.



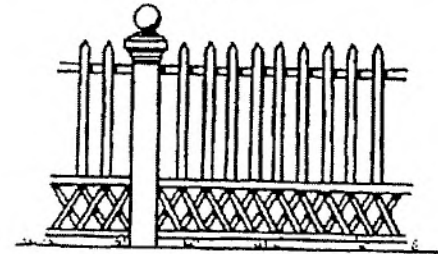
1800



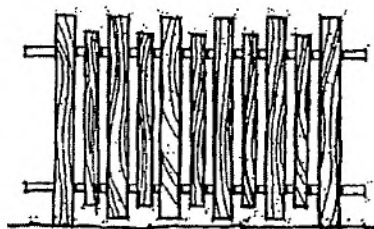
1825



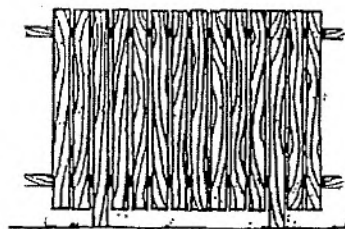
1800 with Flemish Bond



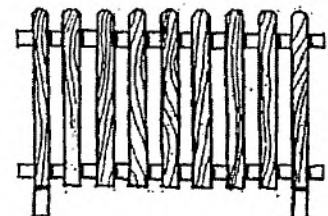
1870



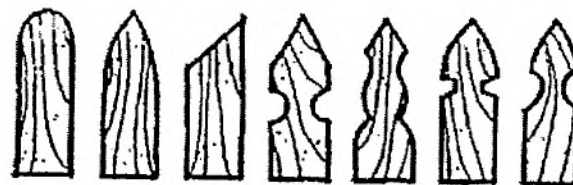
Picket



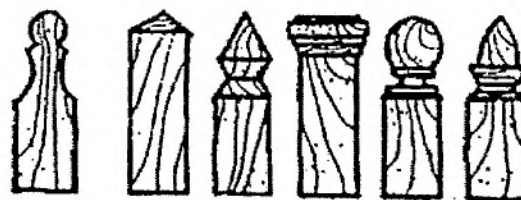
Picket



Picket



Pickets



Posts