

foundation of the architecture of Western civilization and an important part of our country's architectural heritage and image. Jefferson demonstrated this Renaissance preference in his design for the university's pavilion four. Design connoisseurship is thus essential in determining what is worthy of emulation or what may not be. A masterpiece such as Palladio's Palazzo Chiericati has much to tell us. Aspiring practitioners of classical architecture, thus have to be familiar with the languages, vocabulary and grammar in order to apply it effectively in one's own works. For example, let's look at just a small portion of Vitruvius's explanation of how to execute the Corinthian capital, "different portions of this capital should be fixed as follows that the height of the capital, including its abacus be equivalent to the thickness of the base of the column. Let the breadth of the Abacus be proportion so that diagonals drawn from one corner of it to the other shall be twice the height of the capitals, which will give the proper breadth to each face of the Abacus" and so on for a page or two more. Many of America's great public buildings such as our nation's Capitol are expressed in this language, also so are many institutional buildings such as The Metropolitan Museum and many of our older residential neighborhoods such as Monument Avenue in my hometown of Richmond, Virginia. Vitruvius makes other observations about human proportions such as the length of a man's forearm is the same as the width of his chest and there's also equal to one fourth of his height and so on. These proportional relationships are analogous to the proportional systems of classical architecture, which Vitruvius discusses at length. The most important insight we have for Vitruvius is his definition of the three essentials of a work of architecture *firmitas*, *utilitas*, and *venustas*, firmness, commodity, delight. The outstanding example of ancient cast concrete construction is the dome of the Pantheon the dominant element of one of the most sublime spaces ever created, a triumph of engineering and design. But since the Etruscan buildings were wooden structures and it all disappeared by Vitruvius's time, he didn't include the Tuscan order in the architectural canon, nor did he consider the composite to be a separate order. The term *architrave* is composed of two words, *arc*, a Greek prefix, meaning chief as in Archangel or chief angel and *trave* from the Latin word *trabes*, meaning wooden beam. This is an illustration from a 17th century edition of Vitruvius's treatise by French architect Claude Perrault, who supplied illustrations for his edition. Vitruvius states that a well proportioned human standing straight with arms stretched perpendicular to his torso, describes a perfect square and with arms stretch diagonally upward and legs apart, he describes a perfect circle using the navel as center point. Like the Roman works, the temple's dominant feature is its columns, but we also see that the temple is structurally very elementary, simple post and beam construction, something vertical holding up something horizontal. So if the *architrave* is the chief beam or the chief structural element of the entablature, the *architrave* can be either plain or composed of two or three overlapping bands called *fascia*. Below the crown molding, we have a narrow *fascia* and the underside of the *fascia* is the *soffit* *soffit* derived from the Latin word [*suffigo*], which means to fasten beneath the underside of a window or door head is also called a *soffit*. These cornice moldings were ultimately based on wooden construction and they serve to encase the framing members between the roof framing and the top of the wall as in this demonstration of a colonial American vernacular structure. This early medieval arcade is made of salvaged ancient columns and capitals with no attempt to match them correctly with no understanding of classical design principles. In his treatise, Vitruvius

described the rules for governing the types of columns or orders, specifically the three orders that the Romans acquired from the Greeks. Starting at the top, we have crown molding, fascia, soffit, bed moldings, frieze, taenia, and a one fascia architrave. The Renaissance also kindled interest in ancient ruins, but Renaissance architects were at a loss on how to design new buildings using or reusing the classical language. The discovery was an ancient Roman treatise on architecture by an architect named Vitruvius Pollio who lived during the time of Caesar Augustus. Palladio applied eustyle spacing for the portico of the Villa Emo. Palladio also applied eustyle spacing in the porticoes of the Villa Rotonda. Well, from the Greeks, the temple of Hera, in Paestum in Southern Italy dates some 500 years earlier than the forum's buildings. We'll take up the special politics of Greek classicism in the next session, but in contrast to the Greeks, the Romans were great engineers. The rules for proportion in classical architecture were worked out by trial and error over many centuries; rules that made buildings visually satisfying. Nevertheless, the Renaissance architects considered both the Tuscan and the composite to be legitimate orders in their own right and added them to the Canon. Phrygia was noted for making richly decorated long bands of cloth, hence frieze. Cyma comes from the Greek word cuma, meaning curvy or billowy as in Cumulus clouds, which are billowy. Scores of additions of Vitruvius's treatise in many languages have since been published. However, Vitruvius maintains that the most visually satisfying spacing is what he called eustyle. For Vitruvius, eustyle meant that the center bay of a temple portico should be slightly wider than the base on either side, giving emphasis to the entrance. Andrea Palladio noted this in his measured plan of the Pantheon portico. This restored view of the interior of Rome's basilica of Constantine displays an extraordinarily rich interior. This type of architecture inspired numerous great spaces, particularly in the decades around 1900 in what we call the American Renaissance. Vitruvius was aware of Tuscan architecture that is the buildings erected by the ancient Etruscans. Here we see crown molding, fascia, soffit and bed moldings just as in the Tuscan order. Now separating the frieze from the architrave is a very narrow projecting band called the taenia, which is the Greek word for a ribbon. The torus is set on the column's bottom element, a square block called the plinth from the Greek plinthos, the word for a brick which it resembles. Buildings still got built and many of them were built with architectural fragments quarried from ancient structures. The Institute of Classical Architecture and Art advocates for and teaches the use of the classical language. Such lengthy detailed instructions at last gave the Renaissance architects the key to classical design. Vitruvius also discusses how you can give a specific character to a temple by the spacing of its columns. Columns closely spaced, make a temple appear uninviting. Eustyle is not often used on Corinthian porticoes, but we sometimes find it in very sophisticated classical works. We also see in this image huge round arches, vaulted ceilings and a semi dome. The columns on the arch of Septimius Severus on the right and the tabularium in the upper left are not structural. They draw the eye up. The moldings above each row of columns emphasize the building's horizontality they lead the eye around the building and visually tie it together. The Romans regarded the composite as an enriched version of the Corinthian order. The module is the diameter of the lower portion of the column shaft. The proportions vary for the other orders as well, depending on which architect's treatise you are using. The term entablature comes from the Latin word to [tabula], meaning a board or plank from which we get the Italian tavola or table. The entablature

is divided into three main parts, the cornice, frieze, and architrave. At the top we have an S shape molding, originally serving as a gutter and commonly called the crown molding. Beneath the abacus encircling the capital is a quarter round circular molding called the echinus. As you could see, the echinus in a Greek capital is more elliptical and does resemble the shape of a sea urchin's shell. The torus on a column base resembled a swelling bicep muscle. Having dealt with the elements of the column and entablature let's see if a typical classical building now looks more familiar to us. Can we now better read this Charleston church? In the capital we have the abacus, echinus, and astragal, and at the base, the torus and plinth. The Renaissance architects felt it one of the best ancient examples of the Roman Doric order was the lower level of the theater of Marcellus in Rome. The theater got pretty beat up over the centuries, but enough of it was intact for a 17th century French architect Freart de Chambray to record its orders in his book on Roman architecture. Thomas Jefferson admired the theater of Marcellus's Doric order and use the order on pavilion 10 at the University of Virginia. A defining feature of a Doric entablature is the frieze. This ancient monumental architecture has inspired works great and small from the Renaissance to the present. This church has classical columns and moldings, but its builders are playing the game without knowing the rules. Vitruvius's texts survived as a medieval copy with no illustrations. It was discovered in 1414 by Vatican archivist in a monastery in Switzerland. Nearly all subsequent architectural treatises used Vitruvius as their authority. Most of them have included illustrations based on Vitruvius's written descriptions. You may be more familiar with Leonardo da Vinci's depiction of the Vitruvian man. This illustration is from that same French edition of Vitruvius's treatise. Eustyle spacing can also correct an optical illusion. Also such great temples were primarily an architecture of the exterior. The panels, or coffers in the dome, were not only decorative, they serve to lighten the weight of the dome. The use of classical columns or orders to give character and expression to buildings is seen in thousands of examples. We may not know why a building is beautiful, but we know beauty when we see it. This simple courthouse, was designed by builders who had worked for Thomas Jefferson and from whom they learned the proper use of the classical vocabulary. Vitruvius stated that the module is the basis for the proportioning of an order. The entablatures of each order, or what the columns hold up are generally around two modules tall. We see here how different architects have determined what should be the ideal proportions of a Doric order. So let's now look closely at each of the orders and familiarize ourselves with their various components. The term cornice derives from the Greek word Coronas, meaning curved. This arcade is architecturally illiterate