

Here Begins the Sixth Book of Leon Battista Alberti.
On Ornament.

I The lineaments,¹ the materials for construction, and the employment of
92—93 craftsmen; also anything else that might seem relevant to the construction
of buildings, both public and private, sacred and profane; again, anything
that would protect them from the assaults of bad weather and make them
adaptable to the requirements of place, time, man, or thing—we have dealt
with all this in the five preceding books. How thoroughly we have done so
you may yourself discover as you examine them. I do not think you would
want greater application in dealing with such matters. As heaven is my wit-
ness, it was a more demanding task than I could have imagined when I em-
barked on it. Frequent problems in explaining matters, inventing terms, and
handling material discouraged me and often made me want to abandon the
whole enterprise. On the other hand, the very reasons that first induced me
to embark on it summoned me back to my undertaking and encouraged me
to continue. For I grieved that so many works of such brilliant writers had
been destroyed by the hostility of time and of man, and that almost the sole
survivor from this vast shipwreck is Vitruvius, an author of unquestioned
experience, though one whose writings have been so corrupted by time that
there are many omissions and many shortcomings. What he handed down
was in any case not refined, and his speech such that the Latins might think
that he wanted to appear a Greek, while the Greeks would think that he
babbled Latin. However, his very text is evidence that he wrote neither
Latin nor Greek, so that as far as we are concerned he might just as well not
have written at all, rather than write something that we cannot understand.

Examples of ancient temples and theaters have survived that may teach us as
much as any professor,² but I see—not without sorrow—these very build-
ings being despoiled more each day.³ And anyone who happens to build
nowadays draws his inspiration from inept modern nonsense rather than
proven and much commended methods. Nobody would deny that as a re-
sult of all this a whole section of our life and learning could disappear
altogether.

Since that is how things stood, I could not help but consider long and often
whether it was not my duty to write a commentary on this subject. As I was
exploring this matter, many noble, useful things, vital to the existence of man,
came to my notice, which I decided not to neglect in writing. Moreover, I
felt it the duty of any gentleman or any person of learning to save from total
extinction a discipline that our prudent ancestors had valued so highly.

As I vacillated, and hesitated whether to press ahead or give up, my love of
work and enthusiasm for learning prevailed; and where intelligence failed
me, enthusiastic study and hard application supplied. No building of the

ancients that had attracted praise, wherever it might be, but I immediately examined it carefully, to see what I could learn from it. Therefore I never stopped exploring, considering, and measuring everything, and comparing the information through line drawings, until I had grasped and understood fully what each had to contribute in terms of ingenuity or skill; this is how my passion and delight in learning relieved the labor of writing. Yet to collate material from sources so varied, heterogeneous, and dispersed, material from outside the normal range and skill of any writer, to review it in a dignified manner, to arrange in a proper order, to articulate precisely and explain rationally, surely all this required an ability and learning greater than I would profess to have. Even this will not cause me to repine, if I have succeeded in the general aim I set myself of convincing the reader that I would rather my speech seemed lucid than appeared eloquent. Those with any experience in this field of writing will appreciate how difficult this is, better than those who have never taken such a risk. What we have written is (unless I am mistaken) in proper Latin, and in comprehensible form. We shall do our utmost to continue like this in the remainder of the work.

Of the three conditions that apply to every form of construction—that what we construct should be appropriate to its use, lasting in structure, and graceful and pleasing in appearance—the first two have been dealt with, and there remains the third, the noblest and most necessary of all. ◆

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Now graceful and pleasant appearance, so it is thought, derives from beauty and ornament alone, since there can be no one, however surly or slow, rough or boorish, who would not be attracted to what is most beautiful, seek the finest ornament at the expense of all else, be offended by what is unsightly, shun all that is inelegant or shabby, and feel that any shortcomings an object may have in its ornament will detract equally from its grace and from its dignity.

Most noble is beauty, therefore, and it must be sought most eagerly by anyone who does not wish what he owns to seem distasteful. What remarkable importance our ancestors, men of great prudence, attached to it is shown by the care they took that their legal, military, and religious institutions—indeed, the whole commonwealth—should be much embellished; and by their letting it be known that if all these institutions, without which man could scarce exist, were to be stripped of their pomp and finery, their business would appear insipid and shabby. When we gaze at the wondrous works of the heavenly gods, we admire the beauty we see, rather than the utility that we recognize. Need I go further? Nature herself, as is everywhere plain to see, does not desist from basking in a daily orgy of beauty—let the hues of her flowers serve as my one example.

But if this quality is desirable anywhere, surely it cannot be absent from buildings, without offending experienced and inexperienced alike. What

would be our reaction to a deformed and ill-considered⁴ pile of stones, other than the more to criticize it the greater the expense, and to condemn the wanton greed for piling up stones? To have satisfied necessity is trite and insignificant, to have catered to convenience unrewarding when the inelegance in a work causes offense.

In addition, there is one particular quality that may greatly increase the convenience and even the life of a building. Who would not claim to dwell more comfortably between walls that are ornate, rather than neglected? What other human art might sufficiently protect a building to save it from human attack? Beauty may even influence an enemy, by restraining his anger and so preventing the work from being violated. Thus I might be so bold as to state: No other means is as effective in protecting a work from damage and human injury as is dignity and grace of form.⁵ All care, all diligence, all financial consideration must be directed to ensuring that what is built is useful, commodious, yes—but also embellished and wholly graceful, so that anyone seeing it would not feel that the expense might have been invested better elsewhere.

The precise nature of beauty and ornament, and the difference between them, the mind could perhaps visualize more clearly than my words could explain. For the sake of brevity, however, let us define them as follows: Beauty is that reasoned harmony of all the parts within a body, so that nothing may be added, taken away, or altered, but for the worse.⁶ It is a great and holy matter; all our resources of skill and ingenuity will be taxed in achieving it; and rarely is it granted, even to Nature herself, to produce anything that is entirely complete and perfect in every respect. “How rare,” remarks a character in Cicero, “is a beautiful youth in Athens!”⁷ That connoisseur found their forms wanting because they either had too much or too little of something by which they failed to conform to the laws of beauty. In this case, unless I am mistaken, had ornament been applied by painting and masking anything ugly, or by grooming and polishing the attractive, it would have had the effect of making the displeasing less offensive and the pleasing more delightful. If this is conceded, ornament may be defined as a form of auxiliary light and complement to beauty. From this it follows, I believe, that beauty is some inherent property, to be found suffused all through the body of that which may be called beautiful; whereas ornament, rather than being inherent, has the character of something attached or additional.⁸

This granted, I continue: Anyone who builds so as to be praised for it—as anyone with good sense would—must adhere to a consistent theory; for to follow a consistent theory is the mark of true art. Who would deny that only through art can correct and worthy building be achieved? And after all this particular part concerning beauty and ornament, being the most important of all, must depend on some sure and consistent method and art,

which it would be most foolish to ignore. Yet some would disagree who maintain that beauty, and indeed every aspect of building, is judged by relative and variable criteria, and that the forms of buildings should vary according to individual taste and must not be bound by any rules of art. A common fault, this, among the ignorant—to deny the existence of anything they do not understand. I have decided to correct this error; not that I shall attempt (since I would need detailed and extended argument for it) to explain the arts from their origins, by what reasoning they developed, and by what experience they were nourished; let me simply repeat what has been said, that the arts were born of Chance and Observation, fostered by Use and Experiment, and matured by Knowledge and Reason.

Thus medicine, they say, was developed by a million people over a thousand years; sailing too, as almost every other art, advanced by minute steps. ♦

Building, so far as we can tell from ancient monuments, enjoyed her first gush of youth, as it were, in Asia, flowered in Greece, and later reached her glorious maturity in Italy. It would seem to me quite likely that the kings of Asia, being men of considerable wealth and leisure, when reflecting on their own standing, their wealth, and the majesty and greatness of their thrones,⁹ saw the need for grander roofs and more dignified walls, and began to search out and collect anything that might be of use to this end; then, perhaps, to make their buildings as large and splendid as possible, they used the largest trees available for their roofs and built their walls of a finer stone. Their buildings became impressive as well as graceful.

Then, thinking that it was the huge scale of their works that was admired, and that one of the primary tasks of a king was to build what lay beyond the capacity of the private citizen, these kings became enamored of the immensity of their works, until their rivalry led to the folly of constructing pyramids.

I believe that experience in building gave them an opportunity to discern differences in number, order, arrangement, and exterior appearance in their buildings, and allowed them to compare one to another.¹⁰ In this way they learned to appreciate the graceful and to spurn the ill-considered.

Next came Greece, a country where upright and noble minds flourished, and the desire for embellishing what was theirs was evident, and, above all, great attention was given to the construction of temples. Therefore they began by examining the works of the Assyrians and the Egyptians, from which they realized that in such matters the artist's skill attracted more praise than the wealth of the king: for vast works need only great wealth; praise belongs to those with whom the experts find no fault. The Greeks therefore decided that it was their part to surpass through ingenuity those

whose wealth they could not rival, in whatever work they undertook. As
with other arts, so with building, they sought it in, and drew it out from,
the very bosom of Nature, and began to discuss and examine it thoroughly,
studying and weighing it up with great incisiveness and subtlety.

They inquired into the differences between buildings that were admired and those that were not, overlooking nothing. They performed all manner of experiment, surveying and retracing the steps of Nature. Mixing equal with equal, straight with curved, light with shade, they considered whether a third combination might arise, as from the union of male and female, which would help them to achieve their original aim. They continued to consider each individual part in the minutest detail, how right agreed with left, vertical with horizontal, near with far. They added, took away, and adjusted greater to smaller, like to unlike, first to last, until they had established the different qualities desirable in those buildings intended to endure for ages, and those erected for no reason as much as their good looks.¹¹ This was their achievement.

As for Italy, their inborn thrift prompted them to be the first who made their buildings very like animals.¹² Take the case of a horse: they realized that where the shape of each member looked suitable for a particular use, so the whole animal itself would work well in that use. Thus they found that grace of form could never be separated or divorced from suitability for use. But once they had gained dominion over the world, they were so obviously eager to embellish their city and property as the Greeks had been, that within thirty years a house that might have been considered the finest in the entire city would not rank in the first hundred. There was such an incredible surfeit of talent in this field that at one time, I read, seven hundred architects were being employed in Rome alone, whose work could scarcely be praised enough. The empire had sufficient resources to supply anything needed to provoke astonishment: they say that a certain Tacius gave the people of Ostia a bath building with a hundred columns of Numidian marble for which he paid with private funds.¹³ In spite of all this, they preferred to temper the splendor of their most powerful kings with a traditional frugality, so that parsimony did not detract from utility, nor was utility sacrificed to opulence, but could also incorporate anything that might be devised to enhance comfort or grace.

Their concern and enthusiasm for building continued unbroken, until eventually they probed so thoroughly into the art that there was nothing so recondite, concealed, or abstruse as not to have been explored, traced out, or brought to light; all this with the help of the gods, and little resistance from the art itself. Since the art of building had long been a guest among the Italians, more particularly among the Etruscans, who, besides the miraculous works of their kings, of which we read, such as labyrinths and sepulchers,¹⁴ have inherited from ancient Etruria very old and excellent pre-

cepts about the building of temples;¹⁵ because, I say, the art of building had long been a guest in Italy, and because the desire for her was so evident, she seems to have flourished there, so that Italy's dominion over the world, already famous for every other virtue, was by her ornament made still more impressive. She surrendered herself therefore to their understanding and possession, thinking it a disgrace that the leaders of the world, the glory of all nations, should be rivaled in the splendor of their works by peoples surpassed in every other virtue.¹⁶

Need I mention the porticoes, temples, ports, theaters, and vast baths, which caused such amazement that experienced architects from abroad denied that some of those works could ever be built, although they saw them before their very eyes. Should I go on? They did not fail even to have their drains beautifully built. And they had such taste for ornament that they delighted in lavishing imperial resources on grace alone, and their enterprise in building was perfectly matched by the ornament.¹⁷

Through the example of our ancestors, therefore, and through the advice of experts and constant practice on our part, thorough understanding may be gained on how to construct marvelous buildings, and from that understanding well-proven principles may be deduced; rules that should not be ignored by anyone eager—as we all should be—not to appear inept in what he builds. These we must set down, as was our undertaking, and explain to the best of our ability. These principles either direct every aspect of beauty and ornament throughout the building or relate individually to its various parts.¹⁸ The former are derived from philosophy, and are concerned with establishing the direction and limits to this art; the latter come from the experience of which we spoke, but are honed, so to speak, to the rule of philosophy and plot the course of this art. These latter ones have a more technical character, and I shall deal with them first, saving the former more general rules for an epilogue. ♦

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The pleasure to be found in objects of great beauty and ornament is produced either by invention and the working of the intellect, or by the hand of the craftsman, or it is imbued naturally in the objects themselves. The intellect is responsible for choice, distribution, arrangement, and so on, which give the work dignity; the hand is responsible for laying, joining, cutting, trimming, polishing, and such like, which give the work grace; the properties derived from Nature are weight, lightness, density, purity, durability, and the like, which bring the work admiration. These three must be applied to each part of the building, according to its respective use and role.

The parts of a building may be classified in several different ways, but here we would prefer to draw the distinction between characteristics common to all buildings, rather than according to individual differences. In the first book we established that every building must have a locality, *area*, compartment,

wall, roof, and opening.¹⁹ In this they all agree. Their individual differences lie in that some are planned as sacred, some profane, some public, others private, some for need, others for pleasure, and so on. We shall begin with their common characteristics.

It is difficult to establish how the hand and intellect of man may increase the grace or dignity of the locality, unless, perhaps, it is worth imitating those responsible for devising the fantastic schemes that have been documented—schemes that men of prudence would not criticize, provided they offered some advantage, but would not praise unless they were necessary. And rightly so. Who would praise²⁰ whoever it was—whether Stasicrates, as Plutarch claims,²¹ or Dinocrates, as Vitruvius maintains²²—who proposed to carve Mount Athos into an effigy of Alexander and in its hand to place a city capable of holding ten thousand people?

But equally, Queen Nitocris is not to be criticized for constructing vast ditches to divert a bend in the Euphrates into a huge loop, so that it passed three times in front of the same Assyrian village, if the depth of the ditch helped to fortify the locality, and the abundant irrigation to improve the fertility of the soil.²³ But let such projects be for the amusement of powerful kings. Let them join sea to sea by cutting through intervening land; let them level mountains and valleys; let them create new islands, and again join existing ones to the mainland; let them leave behind feats that could never be imitated, and in so doing preserve their name for posterity. In any case, the more useful their works will prove, the more they will be praised.

The ancients would use religion to add dignity to places and groves, and even entire regions. We read that the whole of Sicily was consecrated to Ceres.²⁴ But let us skirt this matter. What would be most agreeable would be some admirable and unusual property of the place, of great benefit and quite outstanding; as, for example, when the climate happens to be milder than anywhere else, and unbelievably consistent, as it is in Meroe, where men live as long as they wish;²⁵ or when the locality offers something to be found nowhere else, desirable and salutary to mankind, such as amber, cinnamon, or balsam; or when there is some supernatural influence, as on the island of Sonus Ebusius, which is said to be quite free of anything harmful.²⁶

The *area*, being a certain portion of the locality, will be enhanced by all that may adorn the locality.²⁷ But natural advantages will be more abundant and readily available in the *area* than they are in the locality. There may be many different attractions all around, such as promontories, rocks, heights, chasms, grottoes, springs, and other reasons making it attractive to build there rather than anywhere else. Also there may be landmarks of some bygone era, records of the times and events to fill the eyes and mind with admiration. These I shall pass over; nor shall I mention the site where Troy

once stood, the blood-soaked fields at Leuctra or Trasimene,²⁸ and the countless other examples.

It is not easy to describe what the hand or intellect of man may contribute to this end. I shall pass over the more obvious instances, such as the oriental plane trees transported by sea as far as the island of Diomede, to adorn an *area*,²⁹ or the erection of columns and obelisks by great men, or the planting of trees for posterity to venerate, such as the olive planted by Neptune and Mercury, which long stood on the acropolis of Athens.³⁰ Nor shall I mention objects preserved for long ages and handed down by our ancestors for posterity, such as the terebinth tree at Hebron, which is said to have lasted from the beginning of the world to the time of Josephus the historian.³¹

A most appropriate way to make a place more dignified is through good taste and ingenious measures, such as the laws that prohibit any male from entering the temple of Bona Dea,³² or that of Diana by the patrician portico;³³ likewise at Tanagra no female may enter the grove of Eunostus,³⁴ nor the inner parts of the temple in Jerusalem;³⁵ and there is a spring in Panthia where no one but priests may wash, and they only for the purpose of making a sacrifice; nor may anyone spit in Doliola by the Roman Cloaca Maxima, where the bones of King Pompilius lie.³⁶ Inscriptions may be found in a number of chapels forbidding the entry of prostitutes.³⁷ No one is allowed to enter the temple of Diana in Crete, except in bare feet,³⁸ and no slave girl is permitted entry to the temple of Matuta.³⁹ No herald may enter the temple of Oridio at Rhodes,⁴⁰ nor flute player the temple of Tennes at Tenedos.⁴¹ No one may leave the temple of Laphystian Jove without first offering a sacrifice.⁴² No ivy may be carried into the temple of Pallas at Athens, or of Venus at Thebes. In the temple of Faunus the word "wine" could not be mentioned.⁴³ There was also a rule that in Rome the Porta Janualis could not be closed during war, nor the gate of the temple of Janus opened during peace;⁴⁴ and they preferred the temple of Hora to remain continually open.⁴⁵

Should we decide to follow this example, then it might be appropriate to make it unlawful for any woman to enter temples of the martyrs, or men those temples of the virgin saints. There are other conditions that human ingenuity can fix, and that add great dignity; some of these, although we read of them, we would scarcely credit, if similar ones were not to be found in our own times. Some maintain that human art was responsible for the fact that in Byzantium snakes will not harm anyone, nor jackdaws fly indoors; and that around Naples crickets are never heard,⁴⁶ that there are no owls in Crete,⁴⁷ that no bird ever disturbs the temple of Achilles in the island of Boristene,⁴⁸ and that in the Forum Boarium at Rome no fly or dog has ever entered the temple of Hercules.⁴⁹ And in our own times it has been claimed that no kind of fly ever enters the public palace of the Censors in

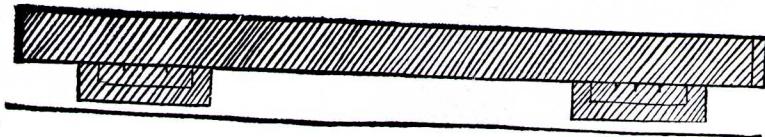
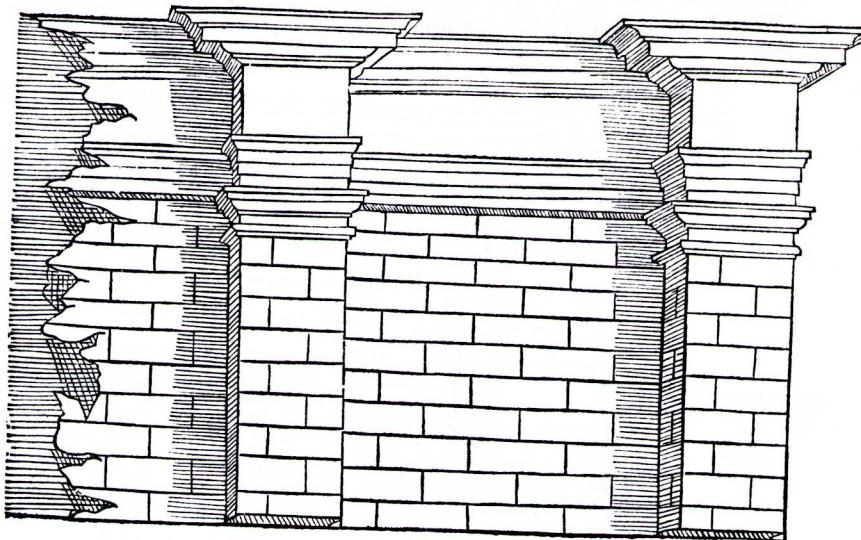
Venice; in Toledo only one type of fly will enter the public slaughterhouse, and it may be distinguished by its whiteness.

Many such examples are recorded, but to review them would take too long. Nor do I know enough to say whether they are the result of artifice or of Nature. Is art or Nature, for instance, responsible for the following? A laurel tree is said to grow from the tomb of Bibrias, king of Pontus; if a sprig from it is taken aboard ship, it will lead to continual disagreement on board, until it is removed.⁵⁰ It never rains on the altar of the sanctuary of Venus in Paphos; in Troy, if any sacrificial remains are left about the statue of Minerva, they will not rot; if a hole is dug in the tomb of Anteus, the heavens will not stop raining until it has been refilled. Some maintain that these effects may be achieved using a technique now long out of use, based on the operation of figurines that the astronomers claim to understand.

I recall reading in the life of Apollonius that magicians fixed on the roof of the royal basilica of Babylon four gold birds, which they called the tongues of the gods; these, they claimed, had the power to reconcile the mind of the crowd to the heart of the king.⁵¹ Even as serious an author as Josephus claims to have witnessed a certain Eleazar, who in the presence of Vespasian and his sons instantly cured a maniac, by putting a ring to his nose.⁵² He also claims that Solomon had composed an incantation to reduce illnesses.⁵³ And Serapis of Egypt, whom we call Pluto, according to Eusebius Pamphylius, gave out symbols for expelling demons and taught how they took on the form of animals to taunt humans.⁵⁴ Servius, too, claims that men used to recite certain magical incantations to protect themselves from misfortune, so that they could not die unless the incantation were to be canceled.⁵⁵ If such stories are true, I could easily be led to believe an incident I find in Plutarch: there was in Pellene a statue that, if taken out of the temple by a priest, would fill everything, wherever it faced, with terror and great anxiety, because no eye could look at it without fear.⁵⁶ But these anecdotes are included for entertainment.

To continue. As for the general methods of dignifying the *area*, such as setting out, dyking, leveling, consolidation, and so on, I have no more to say, beyond what is to be found above in the first and third books. To have the greatest dignity, the *area*, as we mentioned above, must be extremely dry, level, and solid, and very appropriate and convenient for the purpose that it is to serve; it may well help to surface it with some material: this we shall deal with later, when discussing walls. Plato also gives some useful advice: a grand name will lend a place great dignity and authority.⁵⁷ That the emperor Hadrian approved of this is demonstrated by the famous names, such as Licus, Canopeius, Achademia, and Tempe, that he gave the rooms of his Tiburtine villa.⁵⁸ ♦

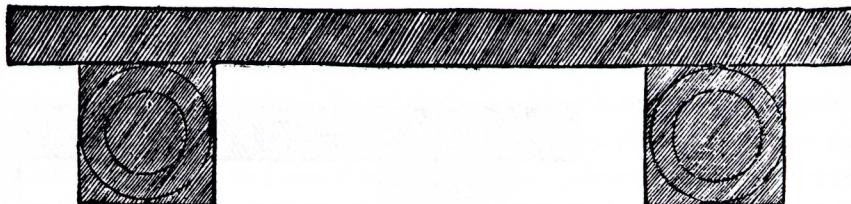
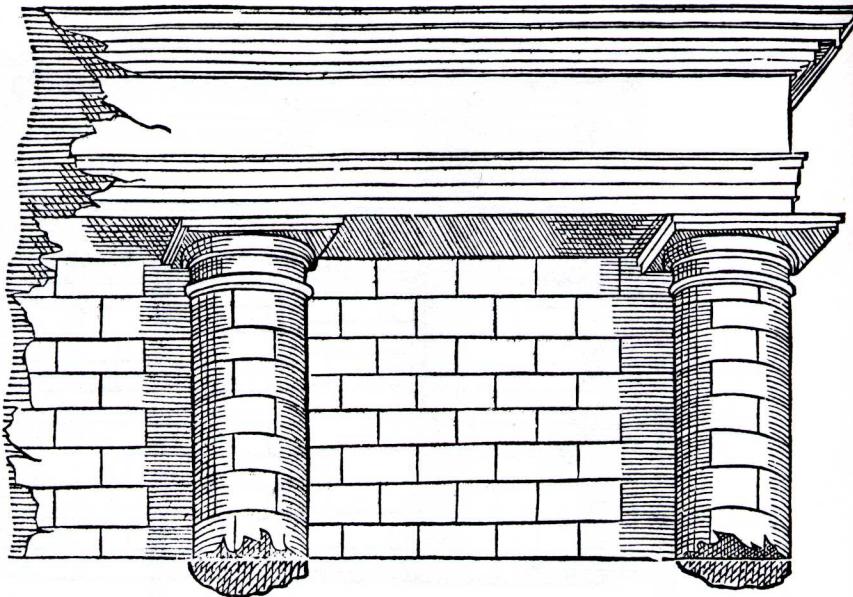
Pilasters with articulated entablature: protruding by not more than one quarter or less than one sixth their width.



We have [now] dealt with ornament pertinent to parts common to all buildings. The respects under which they differ must be dealt with in the next book, the present one being long enough already. But since in this book we have taken it upon ourselves to investigate diligently into anything relevant to the ornament mentioned earlier, nothing useful may be overlooked. ♦

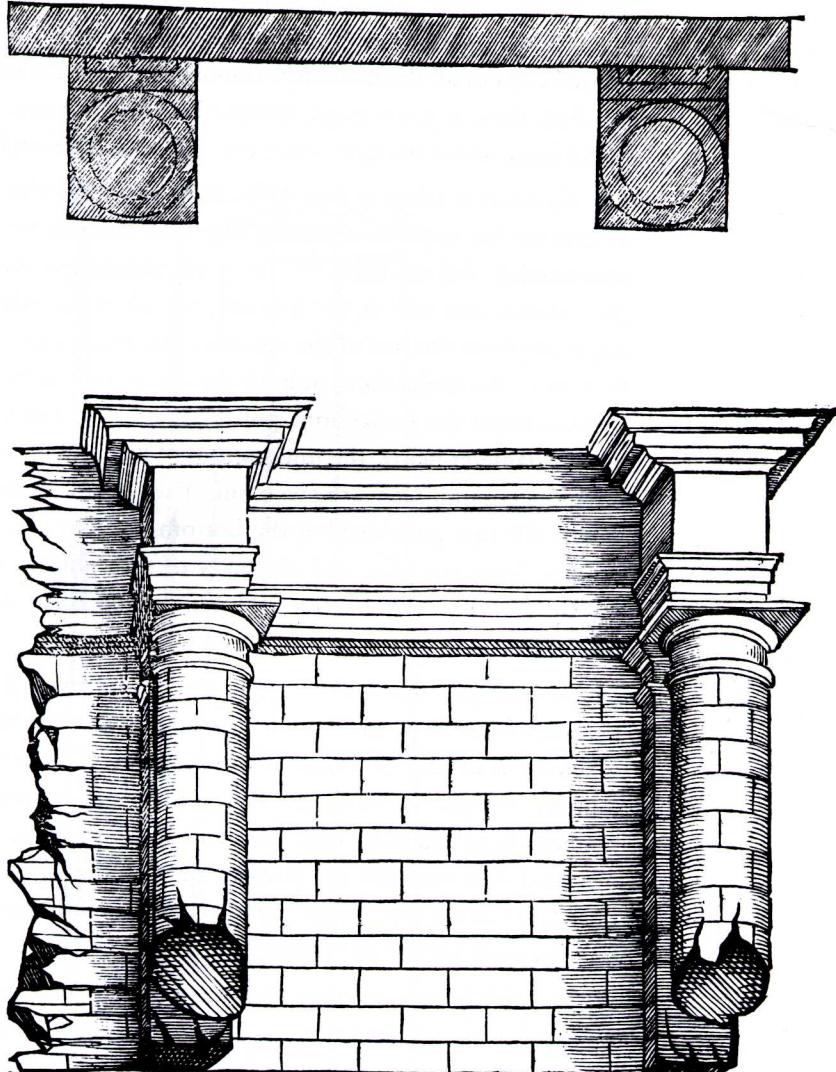
In the whole art of building the column is the principal ornament without any doubt; it may be set in combination, to adorn a portico, wall, or other form of opening, nor is it unbecoming when standing alone. It may embellish crossroads, theaters, squares; it may support a trophy; or it may act as a

Columns detached by the width of their base.



monument. It has grace, and it confers dignity. Just how much expense was invested by the ancients in making columns as elegant as possible is not easy to describe. Indeed some, not content with columns of Parian or Numidian marble, alabaster, and other forms of marble, would commission famous sculptors to carve figures and images on them; there are said to have been over 120 such columns in the temple of Diana at Ephesus. Others have added bases and capitals of gilded bronze, such as in the double portico at Rome constructed during the consulship of Octavius, the one who triumphed over Perseus.¹⁰⁵ Still others have made them completely of bronze, or plated in silver. But let us not dwell on such matters.

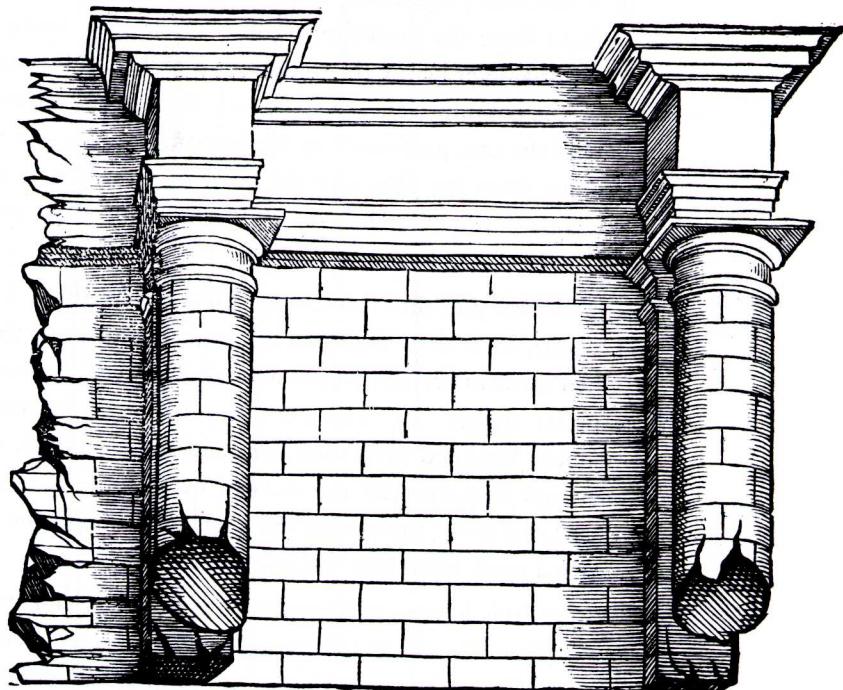
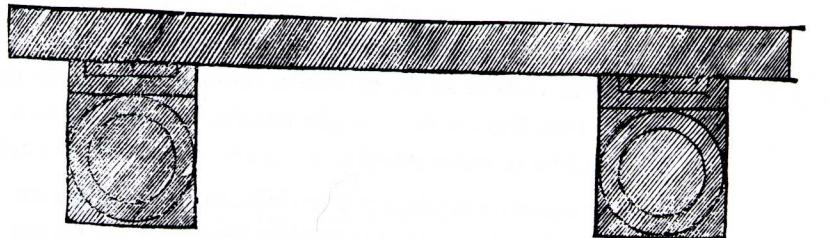
*Detached columns with corresponding pilasters
and articulated entablature.*



Columns must be rounded and turned. I read that two architects, a certain Theodorus and Tholus, built in their workshop at Lemnos a series of wheels whereby columns could hang and be so well balanced that they could be turned by a child.¹⁰⁶ But this is a Greek story.

A matter relevant to our discussion is to establish which are the longest lines in a column—to wit, the axis and the profile; the shortest are the diameters of the various circles that surround the column in various places. The most important of these circles are the plane surfaces, one at the top of the column and one at the bottom, to be known as the end plates.¹⁰⁷ The axis is the straight line extending through the core of the column from the center of

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the top circle to the center of the bottom one; this may also be called the perpendicular through the center of the column. The centers of all the circles lie along this axis. The profile is the line drawn from the outermost band of the top circle to the corresponding point on the bottom band, joining the ends of all the diameters running through the center of the column; this line, then, is not a single straight line, like the axis, but is composed of many lines, some straight, some curved, as will be explained later.

The diameter is taken at five different points along the column, in order to determine the respective circles. These are the points: the projections, the recession[s], and the belly.¹⁰⁸ There are two projections, one at the top of the column and one at the bottom, so called because they protrude and stand out from the rest of the column. The recessions, also two in number, lie next to the projections, at both the top and the bottom, and are so called because there the projections pull back into the body of shaft. The belly has its diameter below the midpoint of the column, and is so called because there the column seems to swell out. Then again the two projections differ in that the one positioned at the bottom consists of a fillet¹⁰⁹ and a curve running from the fillet into the body of the column; but the projection at the top of the shaft has, in addition to the fillet and oblique curve, a collar.¹¹⁰

I have told you that I desire to make my language Latin, and as clear as possible, so as to be easily understood. Words must therefore be invented, when those in current use are inadequate; it will be best to draw them from familiar things. We Tuscans call a fillet the narrow band with which maidens bind and dress their hair; and so, if we may, let us call "fillet" the platband that encircles the ends of the column like a hoop. But the ring positioned at the top next to the fillet, which binds the top of the shaft like a twisted cord, let us call "collar."

Finally, this is how to determine the profile. On a stretch of pavement or level piece of wall, to be known as the "tracing," a straight line is drawn, equal in length to the proposed column, which the workmen have yet to quarry from the rock: this line is called the axis. We then divide the axis into fixed portions, as determined by the design of the proposed work and the type of column (which will be discussed in the appropriate place). The diameter of the cross-section at the bottom must be proportional to these sections, and this we mark on the drawing with a short line running across at right angles at the bottom end of the axis. We divide this diameter into twenty-four parts; we make the fillet one part high, and mark this on the drawing with a thin line. Then take three twenty-fourths of the diameter, and make the center of the next recess along the axis at that height, and through its center draw a line parallel to the base. This then will be the diameter of the bottom recess, in length one seventh shorter than that at the base. Having marked these two lines, the diameters, that is, of the recess

and fillet, we make a curved line from the end of the recess to the end of the fillet, bending in toward the axis with as gentle and graceful a curve as possible. This curve should begin with a quarter circle, whose radius equals the height of the fillet. We then divide the whole length of the axis into seven equal parts, and mark the divisions with points. Then on the fourth point from the bottom I set the center of the belly, and through this the diameter is drawn, its length equal to that of the bottom recess.

The top recess and projection are then determined in the following way: according to the size of the column (a subject to be debated in the appropriate place), the length of the diameter of the top circle is derived from that of the bottom recess, and marked on the drawing at the top of the axis. Once drawn, we divide this diameter into twelfths, one of which is occupied by the collar and the fillet of the top projection together, with the collar taking up two thirds, and the fillet the rest. Below this projection lies the recess, its center one-and-a-half twelfths distant from the center of the projection to the top circle, and its diameter one ninth less than the maximum diameter of the projection. After this, draw a curved line, similar to the one below.

Finally, once the projections, recesses, oblique curves, and diameter of the belly have been added to the tracing, make two straight lines, one from the end of the top recess and, likewise, one from the end of the bottom one, both leading to the ends of the diameter that marks the belly. Using the above instructions, then, the line known as the profile may be constructed. Along this line a thin template may be fashioned, with which workmen may obtain and define the correct shape and definition for the column. The base of the shaft, if the column has been turned properly, should be at right angles to the line dropped vertically from the center of the circle that constitutes the top of the column.

The above is not a discovery by the ancients, handed down in some writing, but what we have noted ourselves, by careful and studious observation of the works of the best architects. What follows principally concerns the rules of lineaments; it is of the greatest importance, and may give great delight to painters. ◆