The Seventh Book of Leon Battista Alberti on the Art of Building. Ornament to Sacred Buildings.

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–112 We have noted that the art of building consists of different parts, some of which—such as the *area*,[1] roof, and so on—are common to all structures, whatever their type, while some vary from building to building. Ornaments to the first category we have considered as extensively as was relevant to our purpose. Now let us deal with the second. Our inquiry will prove so valuable that not even painters, who are most exacting seekers of delight, would be without it; it will also prove so delightful that—to put it simply—you will not regret having read it.

But I hope that you will not disapprove if this new argument is introduced with a new preface. We shall develop our argument as clearly as possible,[2] beginning with the articulation, description, and annotation of the parts of which the whole subject consists. With a statue made from a mixture of bronze, gold, and silver, the respective weights are the concern of the man who casts it, while the sculptor looks to the lineaments, and there may be others concerned with different aspects; in the same way, we shall divide up the different parts of building art, to establish a clear and appropriate order in which to deal with the relevant considerations. We shall now describe compartition, which contributes more to the delight and splendor of a building than to its utility and strength;[3] although these qualities are so closely related that if one is found wanting in anything, the rest will not meet with approval.

Buildings are either public or private; both public and private may be further subdivided into sacred and profane. To deal with public buildings first.

The ancients would set out the walls of their cities with great religious ceremony[4] and would dedicate them to some deity for protection. They thought that no method of government could be devised to resist changes that result from violence and treachery between man and man; and they compared the city to a ship on the high seas constantly exposed to accidents and danger, through the negligence of its citizens and the envy of its neighbors. This was, I imagine, why legend had it that Saturn, out of a concern for human affairs, once upon a time appointed heroes and demigods to protect every city with their wisdom;[5] because we depend not only on walls for our safety, but also on the gods' help. It is said that Saturn did this because he realized that just as we put a shepherd and not one of the cattle in charge of a herd, similarly another race of beings, far superior in wisdom and virtue,[6] should be left in command of human communities. This is why the walls were dedicated to the gods. Others credit the providence of the great and good God with the allocation of guardian spirits not only to individual

souls but to nations.[7] The walls were therefore considered particularly sacred, because they served both to unite and to protect the citizens; when on the point of capturing a city under siege, the ancients would call upon the protecting deities of that city with a sacred incantation that they might not emigrate unwillingly, so as not to appear to have acted in disrespect of the religion of the place.[8]

Who could consider a temple as anything but sacred? And this for a number of reasons, not least because that is where mankind offers the gods thanksgiving and worship, which they have deserved. This piety is the single most important part of justice, and who would deny that justice is in itself a divine gift? There is a further part of justice, closely related to the above, and of particular importance; one that is also highly pleasing to the gods, and, consequently, most sacred: it is the means by which men achieve peace and tranquility, by dispensing to each his just deserts. For this reason the basilica, where justice is dispensed, we grant to religion also.[9]

As for the monuments of noble events, which are to commend their memory to posterity, unless I am mistaken, they depend entirely on justice and religion. We shall therefore discuss walls, temples, basilicas, and monuments together; but before touching on this, we cannot avoid making a few brief but important comments about the city itself.

The *area* of the city, and the surrounding region, will be greatly enhanced if the buildings are appropriately distributed and arranged. Plato preferred the urban center and the surrounding countryside to be divided into twelve districts,[10] each with its own temple or chapel.[11] For our part, we would also include crossroad altars, courts for lesser judgments, garrisons, racecourses and recreation grounds, and other similar facilities, provided sufficient homes flourish in the surrounding countryside to warrant them.

Some cities are large, and others, such as castles and little forts, are small. The authors of antiquity were of the opinion that since cities on a plain must have been founded after the flood, they were less ancient and consequently less important. At any rate, for grace and comfort, a flat and open site is more appropriate to a city, and a tortuous and inaccessible one to a castle. On the other hand, they need complimentary qualities: I would make any flat site slightly raised, for the sake of hygiene, and would take a level plateau in a mountainous site, for the sake of the roads and buildings. Cicero appears to have preferred the city of Capua to Rome, because it was not perched on hills, nor disrupted by valleys, but flat and level.[12] The reason why Alexander refrained from founding a city on the island of Faro[13]—an otherwise well-fortified and convenient site—was that he realized that there would not be enough space to expand.[14]

Another thing must not be forgotten here, that the wealth of its citizens is a great mark of distinction for a city. We read that when Tigranes[15]

founded the city of Tigranocerta,[16] he forced a large number of the nobl and wealthiest men to settle there with all their possessions, by publishi an edict that threatened the confiscation of anything discovered not to ha been taken with them.[17] But any neighbor, or even foreigner, would do t of his own free will, if he knew there was somewhere that he could lea healthy and happy life, among honest citizens of good character.

The principal ornament to any city lies in the siting, layout, compositic and arrangement of its roads, squares, and individual works: each must properly planned and distributed according to use, importance, and co venience. For without order there can be nothing commodious, graceful, noble.

In a state that is morally sound and well ordered, according to Plato, the la should forbid the importation of any foreign luxury and prevent anyo from going abroad before he is forty years of age;[18] any outsider to enter t city for instruction should be sent home again as soon as he has been i stilled with the noble disciplines. This was because contact of any kind wi foreigners would cause the inhabitants gradually to forget their ancestr frugality and to grow resentful of their traditional customs, which in itse would be a great detriment to the city. The elders of Epidamnium, accor ing to Plutarch, realized that trading contact with the Illyrians would co rupt their citizens; and mindful that moral decadence could bring abo revolution, they selected each year, as a precaution, one of their mo serious and circumspect citizens to go to Illyria and negotiate trade an contracts on behalf of the others, according to their individual requests.[19] In short, anyone of experience would agree that it is best to take every pr caution to prevent the state from being corrupted through contact wit foreigners. Yet I do not think that we ought to follow those who exclud strangers of every kind.

In Greece there was an ancient custom among nations that were not i league, but nonetheless not unfriendly to one another, that should one pas through another's territory bearing arms, he would not be received withi the city, nor, equally, would he be inhospitably driven away; instead, a mar ket for provisions would be set up not far from the city limits,[20] ensurin that the new arrivals found all the refreshments they required, while th citizens would not fear for their safety. Personally I prefer the Carthaginia system: while they were not unreceptive to foreigners, they would no allow them the same privileges as their own citizens; they permitted them access to certain roads leading to the forum, but denied them any view o the more private parts of the city, such as the dockyards and so on.

Mindful of this precedent, we should divide the city into zones, so that no only are foreigners segregated into some place suitable for them and no inconvenient for the citizens, but the citizens themselves are also separated

into zones suitable and convenient, according to the occupation and rank of each one.

The charm of a city will be very much enhanced if the various workshops are allocated distinct and well-chosen zones. The silversmiths, painters, and jewelers should be on the forum, then next to them, spice shops, clothes shops, and, in short, all those that might be thought more respectable. Anything foul or offensive (especially the stinking tanners) should be kept well away in the outskirts to the north, as the wind rarely blows from that direction, and when it does, it gusts so strongly as to clear smells away, rather than carry them along. Some might prefer the residential quarters of the gentry to be quite free of any contamination from the common people. Others would have every district in the city so well equipped that each would contain all its essential requirements; thus it would be quite acceptable to have common retailers and other shops mixed in with the houses of the most important citizens. So much for this subject. Clearly utility demands one thing, and dignity another. To return to the argument. ◆

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The ancients, especially the Etruscans, preferred to use vast, squared stone for their walls, just as the Athenians had for the Piraeus, on the advice of Themistocles.[21] In Tuscany and Vilumbria, and also in the territory of the Hernicians, ancient towns may be seen, constructed of huge, irregular blocks of stone;[22] I approve of this form of construction very much: it has a certain rugged air of antique severity, which is an ornament to a city. This is how I would build the city walls, that the enemy might be terrified by their appearance and retreat, his confidence destroyed.

If along the wall there is a wide, deep moat with sheer sides—such as that of Babylon, said to have been 50 royal cubits wide and more than 100 deep[23]—it will add considerable grandeur. The height and thickness of a wall may also add grandeur, as in the works attributed to Ninus, Semiramis, Tigranes, and many others who had a mind to magnificence.

Along the walls of Rome we have seen turrets and walkways, their pavements patterned with mosaic and their walls faced with the prettiest revetment. But not every treatment is suitable for every city. The refinement of a cornice and revetment are not appropriate to a town wall: instead of a cornice, there should be a projecting row of large stones, slightly smoother than the rest and set flat and level; instead of revetment, while still preserving a rough, austere, and almost menacing appearance, I would have the stones fit so tightly together along their edges and corners that there are no gaps to blemish the work. This is best achieved with a Doric rule, cited by Aristotle to describe his interpretation of how the law should be;[24] the Doric rule is one made of flexible lead. When employing extremely hard blocks of stones, which are awkward to shape, labor and expense may be

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No aspect of building requires more ingenuity, care, industry, and diligence than the establishment and ornament of the temple. I need not mention that a well-maintained and well-adorned temple is obviously the greatest and most important ornament of a city; for the gods surely take up their abode in the temple. And if we decorate and splendidly furnish the houses of kings and visiting notables, what should we not do for the immortal gods, if we wish them to attend our sacrifices, and hear our prayers and supplications? But although men value them so highly, the gods have little concern for such perishables—they are moved solely by purity of mind and divine worship. There is no doubt that a temple that delights the mind wonderfully, captivates it with grace and admiration, will greatly encourage piety. To the ancients a people seemed to be truly pious when the temples of the gods were crowded.

This is why I would wish the temple so beautiful that nothing more decorous could ever be devised; I would deck it out in every part so that anyone who entered it would start with awe for his admiration at all the noble things, and could scarcely restrain himself from exclaiming that what he saw was a place undoubtedly worthy of God.[38]

The Milesians, according to Strabo, once built a temple that was so large that it was never roofed—this I do not commend.[39] The Samians boasted that they had the largest temple of all.[40] I am not against a temple being such that it can scarcely be enlarged, but it must be possible to adorn. Ornament is never completed: even in a small temple there is always something left over, it seems, that could and should be added. For my part, I like the temple that is no bigger than the size of the city requires; a large expanse of roof I consider offensive.

But I find it most desirable in a temple that, on the evidence of what is seen there, it should be truly difficult to decide whether the brilliance and dexterity of the artist or the enthusiasm of the citizens deserves the greater praise in gathering such rare treasures; and whether it is to be valued more for its grace and seemliness or for its endurance. This last is a quality that in other buildings, both public and private, must be given repeated and thorough consideration; but especially in a temple, since the investment which it involves must be protected as well as possible against accidental destruction. And, in our opinion, age will give a temple as much authority, as ornament will give it dignity.

Following the Etruscan Discipline,[41] the ancients were advised that every place was not suitable for every god. Those who patronize peace, chastity, and the noble arts should have their temples located within the custody of the walls; but those who incite pleasure, strife, and fire—Venus, Mars, and Vulcan—should be excluded.[42] Vesta, Jupiter, and Minerva, whom Plato called the guardians of the city, they would place in the town center or on the citadel;[43] and Pallas, goddess of craftsmen, Mercury, to whom the mer-

4 All temples consist of a portico and, on the inside, a *cella*; but they differ in
114v—115v that some are round, some quadrangular, and some polygonal.[56] It is obvious from all that is fashioned, produced, or created under her influence, that Nature delights primarily in the circle. Need I mention the earth, the stars, the animals, their nests, and so on, all of which she has made circular? We notice that Nature also delights in the hexagon. For bees, hornets, and insects of every kind have learned to build the cells of their hives entirely out of hexagons.

The round plan is defined by the circle.[57] In almost all their quadrangular temples our ancestors would make the length [of the plan] one and a half times the width. Some had a length one and a third times their width, and others a length twice their width. It is a considerable defect in a four-sided plan if the angles are not exact right angles.

For many-sided plans, the ancients would use six, eight, or even ten angles. The corners of all such plans must be circumscribed by a circle.[58] Furthermore, they may be plotted exactly using the circle. For half the diameter of the circle will give the length of the sides of the hexagon [that it circumscribes]. And if you draw a straight line from the center to bisect each of the sides of the hexagon, it is obvious how to construct a dodecagon. From a dodecagon it is obvious how to derive an octagon, or even a quadrangle. But there is a better way to construct an octagon: mark out an equilateral, rectangular quadrangle,[59] and draw in the diagonals to each of the right angles; then from each point of intersection[60] draw an arc, its radius half the diagonal, to cut the sides of the quadrangle on either side; then the line joining these two cuts made by the arc will become the side of the octagon. We may also use a circle to define the decagon: we draw a circle with two diameters intersecting one another at right angles, and divide any one of the semidiameters into two equal parts. From this point of division we take a straight line slanting up to the top of the other diameter. If you then subtract from this line one quarter of the diameter, the distance remaining will equal the length of one side of the decagon.[61]

To the temple are added tribunals;[62] sometimes many, sometimes few. With quadrangular temples there is almost invariably one at the further end, opposite the door, where it is immediately obvious to anyone entering. With a quadrangular plan, tribunals along the side look best when they are twice as long as they are wide; on each side there should preferably be only one tribunal, but if more are required, they should be odd in number.[63] With round and, likewise, polygonal plans several tribunals may conveniently be added; depending on the number of sides, either each side should have a tribunal or they should alternate, one side having one, the next one being without. Round plans may conveniently accommodate six or even eight tribunals. With polygonal plans, make sure that the corners are equal in size and shape.