

Ancient alabaster veneer from the Nile Valley (1 BCE), called *cotognino*, Tomb of Paul V, 1605–1611. Pauline Chapel, Santa Maria Maggiore, Rome.



# Alberti, Ornament, Nature, and Law: A Reading of *De re aedificatoria*

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Few themes in the history of art are as often gone over yet as unclear as the question of ornament as it is put forward in the first treatise on architecture in modern Europe, the *De re aedificatoria*, written by Leon Battista Alberti starting around 1450 and first appearing in print in Florence in 1485.<sup>1</sup> The notion of ornament is central to it. The ten books of *De re aedificatoria* are effectively divided into three parts. *Firmitas*, *utilitas*, and *commoditas* (firmness, utility, and aptness) are the objects of the first five books. The tenth book is devoted to *instauratio*; that is, maintenance, repairs, and restorations. The core of the treatise, books 6 to 9, is devoted to ornament. Four books, close to half the work, are devoted to what French translators have tended to designate as *embellissement* (embellishment). Alberti himself identifies ornament as the “part of art which is the most dignified, and because of this, the most necessary,” sometimes called *gratia et amoenitas*, sometimes *ornatus* or *venustas*.<sup>2</sup> But these four books manifest a further organizing principle. Alberti presses the general category of ornamentation into two complementary yet distinct designations: *pulchritudo* and *ornamentum*.

Most recently, commentators have taken to crediting rhetoric for what they identify in *De re aedificatoria* as a general theory of ornamentation. This seductive approach arises from a general tendency in art history of referring to rhetoric as the ultimate source of intelligibility and explanation for painting or architecture.<sup>3</sup> In fact, good arguments can be made for this. When he defines *pulchritudo*, the term Cicero chose when translating the Greek *to kalon*,<sup>4</sup> Alberti explicitly introduces a cardinal notion borrowed from the Ciceronian dialogues *De oratore* and *Brutus*; specifically, *concinnitas*: “Beauty [*pulchritudo*] is that reasoned harmony [*concinnitas*] of all the parts within a body, so that nothing can be added, taken away, or altered, but for the worse.”<sup>5</sup> By virtue of *concinnitas* alone, the theory of architecture seems to have been solidly anchored in the empire of rhetoric. Translated as *harmony*, it has become, for better or for worse, a transcendental category of Renaissance architectural theory, at least in modern historians’ projects to

restore it.<sup>6</sup> Within this conceptual framework, which identifies beauty (*pulchritudo*) with harmony (*concinnitas*), is it possible not to consider ornament as a supplement, an adornment—a seductive cosmetic lie attached to an entire gamut of associated philosophical, moral, and aesthetic values?<sup>7</sup> This is what the opening of book 6 of Alberti’s treatise seems to confirm. The evidence stems from reference to another of Cicero’s works, *De natura deorum*:

If this is conceded [to Cicero], 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 quality, 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 [*afficti et compacti*].<sup>8</sup>

Modern French translations consistently relate *affictum* to the order of fiction. One of the most authoritative commentators—and the most prudent—explains, “the nature of the *ornamentum*, however, is said to be that of *fiction* (*affictum/affingere*) and something *put together* (*compactum/compingere*). [. . .] Ornamentum has the nature of something fictitious (*affictum*) and put together (*compactum*).”<sup>9</sup>

A familiar series of conceptual pairs is at work here—truth versus fiction, universal versus singular, idea versus phenomenon, necessary versus arbitrary, intellectual versus manual—all of which can be grouped around two regulating oppositions: idea versus accident, form versus matter. Such has been the underlying reason behind this understanding of ornament; it has been accredited with a prestigious philosophical lineage of Platonic origin. Since ornament is “fictitious and put together,” not unreasonably have historians of architecture pointed ornament back to *ennunciatio*, the rhetorical category corresponding to the modality of subjective judgment—where modern commentators find themselves on the solid ground of the Kantian regulation of beauty and pleasure.<sup>10</sup>

This conceptual framework, however, hampers consideration of *ornamentum* as well as the place Alberti assigns it in *De re aedificatoria*. To gauge the significance of this notion, we have to abandon the empire of rhetoric for an entirely different realm of quattrocento culture: Roman law and the natural philosophy on which it is solidly grounded.

### Harmony or Perfection?

The dominant reading of *ornamentum* today hangs on the meaning given to the formulation “*afficti et compacti naturam sapere magis quam innati*” at the core of the sixth book of the treatise.<sup>11</sup> At this point in the text Alberti is distinguishing between *ornatus* and *concinnitas*. *Concinnitas* is an economic

principle or, better yet, a perfect combination, a rigorous way of making a totality according to the rule of the commensurability of all parts of that whole: “Beauty is that reasoned harmony [*ratione concinnitas*] of all the parts within a body, so that nothing may be added, taken away, or altered, but for the worse.”<sup>12</sup> As we have just seen, *concinnitas* is the touchstone of art; it elicits a lyrical flight in the author: “It is a great and holy matter; all our resources of skill and ingenuity will be taxed in achieving it.”<sup>13</sup> Less frequently noted is how Alberti adjusts his judgment of *concinnitas* after these praises: “and rarely is it granted, even to Nature herself, to produce anything that is entirely complete and perfect [*perfectum*] in every respect.”<sup>14</sup> We cannot understand this back-and-forth balancing movement in the Albertian formulation if we forget the physics behind it. The fulcrum of the analysis is *perficere* (from *perficio*, *-is*, *-ere*, *-feci*, *-fectum*): perfection is the end of natural movements. In book 9 Alberti states, “Everything that Nature produces is regulated by the law of *concinnitas*, and her chief concern is that whatever she produces should be absolutely perfect.”<sup>15</sup> But perfection is the province of the ideal supercelestial world. In the sublunary world, perfection is rarely accessible: it is the horizon of human doing or making. This is why we have to take into account the essential division of the Aristotelian cosmos, which remained unquestioned until Galileo.

### The Sublunar, Region of the Arts

Beneath the moon, nature does not bring all movements to fulfillment: operations and forms are accomplished only “most of the time” (*hōs epi to polu*). But congenital anomalies, nonblooming buds, earthquakes, and so on, attest to potential for unfulfillment in the movements of the sublunary world. This is where human art comes in, imitating and bringing to term—to perfection—these incomplete movements: this is the precise formula of *imitatio naturae* or *mimesis*, understood most rigorously. We are indeed in Aristotelian territory. And this is explicitly confirmed in the long passage of book 9 of *De re aedificatoria* and its exaltation of *concinnitas*: “It has a vast range in which to exercise itself and bloom—it runs through a man’s entire life and government, it molds the whole of Nature. . . . This is the main object of the art of building, and the source of her dignity, charm, authority, and worth.” Alberti continues,

All that has been said our ancestors learned through observation of Nature herself; so they had no doubt that if they neglected these things, they would be unable to attain all that contributes to the praise and honor of the work; not without reason they declared that Nature, as the perfect generator of forms, should be their model. And so, with the utmost industry, they searched out the rules that she employed in producing things, and translated them into methods of building.<sup>16</sup>

*Concinnitas*, the ideal domain of nature's productions, is the horizon of human production, but in the productions of nature, the sublunar nature that affects generation and corruption, the perfection of *concinnitas* is rare. That is why the next book, book 10, with which *De re aedificatoria* closes, is dedicated to *instauratio*, which can be translated as *handling, repair, or restoration*; it is the book on accidents and defects of construction, of mismanagement and vandalism, erosion and aging, cracks, breaks, and leaks, and is therefore also the book that brings together a whole knowledge base deriving from Aristotle's *de naturalibus*, particularly *Meteorology*, Seneca's *Natural Questions*, and the Hippocratic treatise, *Airs, Waters and Places* on climate, wind and rain, hydrography, tides, floods, earthquakes, lightning, and fires—such is the ground of the *aedificatio*, the sublunar world terrain of architecture.<sup>17</sup> “A perfected and proportioned adjustment in all parts”: that is how I propose translating *concinnitas*. It is the horizon and regulating ideal, what nature and art aspire to, but it is achieved “rarely, even by nature” (*raro . . . vel ipsi naturae*).<sup>18</sup>

### ***Lex subsidiaria: A Moral Excursus***

This leads to why, in book 6, Alberti explicitly borrows the following anecdote from *De natura deorum* to recall Aristotelian *mimesis*, but with a grain of salt. For Cicero, the anecdote concerns the rarity of perfect beauty, even among the youths of Athens, and their necessary recourse to makeup and color to cover their bodies' defects or to enhance their handsomest parts, rendering the first less noticeable and the second more pleasant.<sup>19</sup> Ornament is assimilated to makeup, “a form of auxiliary light and complement to beauty” (*quasi subsidiaria quaedam lux pulchritudinis atque veluti complementum*), as Alberti writes.<sup>20</sup> In *De natura deorum* “auxiliary light,” supplementary shine or “adornment” is concrete: the admirer's desire is crystallized at the sight of a mole (*macula noevius*) on his favorite's wrist. Having touched on the question of the corporeal form of gods, Cicero's representative in the dialogue, Cotta, deploys an erotics of imperfection. A defect, a spot, or a mole can attain the status of decoration or jewelry by offering a supplementary sheen (*lumen*):

How small a percentage of handsome people there are! When I was at Athens, there was scarcely one to be found in each platoon of the training-corps—I see why you smile, but the fact is so all the same. Another point: we, who with the sanction of the philosophers of old are fond of the society of young men, often find even their defects agreeable. Alcaeus “admires a mole upon his favorite's wrist”; of course a mole is a blemish, but Alcaeus thought it a beauty [*lumen videbatur*].<sup>21</sup>

In desire, the blemish and the mole do not lie; they “supplement.” In the sixteenth century, Jean Martin aptly translated this revealing passage from Alberti: the blemish or the mole provide “*secours et accomplissement de beauté*” (aid to and accomplishment of beauty).<sup>22</sup> Within the space between nature and perfection the auxiliary or vicarious vocation of art spreads forth, together with desire. This light, this shine, is its index.

As he takes it up, Alberti sacrifices the salt of the ancient anecdote to Christian propriety by folding ornament over the Platonic *topos*: ornament is makeup, it adorns and dissimulates, but the shine is a different matter. We find that sparkle, that light, again in *De re aedificatoria*, book 9, part 5, which provides us with the closest thing to a general theory of ornamentation. The prologue makes clear what is at stake in this effort at generalization: it provides an epistemological basis for reflection on ornament, where it concerns the different ways of making a whole:

Whatever that totality [*unum*] is, which is either extracted or drawn from the number and nature of all its parts, or imparted to it by sure and constant method, or handled in such a manner as it ties and bonds several elements into a single bundle or body, according to a true and consistent agreement and sympathy—and something of this kind is exactly what we seek—then surely that totality must share the force and juice, as it were [*vim et quasi succum*], of all the elements of which it is composed or blended; for otherwise their discord and differences would cause conflict and disunity [*discordia discidiisque pugnarent atque dissiparentur*].<sup>23</sup>

Thus, while reflecting on the methodological division of art into parts—a formal exigency of the *ars disserendi*, and in general any conception that conforms to the rules of art whose paradigm of organizing a subject derives from Plato’s *Sophist*—Alberti points to the principles of good composition and combination, without which there is no body worthy of that name. In this way, he explicitly indicates the angle for putting the question of embellishment: it is the structural or morphological angle that has been required by natural philosophy since Aristotle for the analysis of a living organism: “The great experts of antiquity, as we mentioned above, have instructed us that a building is very like a living thing and that Nature must be imitated when we delineate it.”<sup>24</sup> In contrast, the topic of taste and subjective preference are left aside by Alberti. With a watered-down version of the Ciceronian anecdote (he substitutes *puellae*, “young women,” for *epebes*), he does away with subjective appetite:

Yet whichever you prefer, you will not then consider the rest unattractive and worthless. But what it is that causes us to prefer one above all

others, I shall not inquire.

When you make judgements on beauty [*pulchritudine*], you do not follow mere fancy, but the workings of a reasoning faculty that is inborn in the mind.<sup>25</sup>

And so the epistemological groundwork for inquiry into *pulchritudo* and *ornamentum* is set through an approach based on totality: consideration of the whole and all the parts that constitute it, an approach in which Aristotle's *Parts of Animals*, and the physical and natural philosophy of the ancients more generally, provided models. Let us return to the opposition Alberti provides: opposed to the totality that is "imparted to it by sure and constant method" (*singulis impartiundum ratione certa et coaequabili*) is the totality that "ties and bonds several elements into a single bundle or body" (*unam in congeriem et corpus plura iungat contineatque recta et stabili cohesione atque consensu*). To these two models correspond two verbs, *cohaeresco*, *-ere*, the inchoative form of *cohaereo*, *-ere* ("assemble," "bind") and *immisceo*, *-ere* ("mix," "combine").<sup>26</sup> One might here consider the Aristotelian opposition between uniform body parts (skin, bones, tendons) and nonuniform ones,<sup>27</sup> but more clearly, as we are proposing, it is the opposition between the whole by cohesion and the whole by combination, or of the composed and the blended: this is one of the major dividing lines in ancient science. In fact, the failure of constituting a whole suffers a state of discord that is normally translated through a rich semantic constellation of terms evoking war and combat (*discordia*, "discord"; *discidium*, "division," "divorce"; *pugno*, *-are*, "combat," "conflict"; *dissipo*, *-are*, "disperse," "scatter," "completely destroy")—a discord that, from Empedocles to Lucretius, serves in expressions about primordial formlessness.

We find ourselves here at a great distance from rhetoric. Alberti, in his different ways of designating the totality (mixture versus cohesiveness; cohesiveness of identity versus cohesiveness of heterogeneity), sends us back to the different ways that, starting from a reformulated Aristotelian physics in Rome, natural philosophy and law consider what constitutes a body.<sup>28</sup> Reference to Stoic conceptions of *corpus* is explicitly signaled by recourse to *De natura deorum*, a reminder of how central the Stoic treatment, as much in combining substances as in the distinction of things according to their mode of cohesion, was in the juridical determination of modes of property.<sup>29</sup> The *vis* and *succum*, "force" and "juice," in the passage above manifest the singular unity of the good fit or the good mixture, prolonging this semantic constellation. In natural philosophy, this "juice" has a very old pedigree—the curdling of milk by the juice of figs constitutes an important model in ancient physics, for instance, in the generation of the world or the formation of the fetus.<sup>30</sup> Now, "that totality must share the force and juice, as it were,

of all the elements of which it is composed or blended [*eorum omnium vim et quasi succum sapiat . . . quibus aut coherescat aut immisceatur*]” and this sharing, this manifestation, is *concinnitas* which has the brilliance, the “shine,” “the light” that Alberti denies to the solicitations of desire or subjective preference.

From this we may conclude, without my pursuing such questions any longer, that the three principal components of that whole theory into which we enquire are number, what we might call outline, and position. But arising from the composition and connection of these three is a further quality in which beauty shines full face: our term for this is *concinnitas*, which we say is nourished with every grace and splendor.<sup>31</sup>

### **Affictum and Compactum**

Let us go back to the definition of *ornament* put forward in book 6, and its translation. Upon completing the distinction between *pulchritudo* and *ornamentum* via the evocation of the licentious passage from *De natura deorum*, ornament is found to be qualified as beauty’s “auxiliary light” (*subsidiaria quaedam lux pulchritudinis*), although Alberti immediately specifies, “From this it follows, I believe, that beauty is some inherent quality, to be found suffused [*perfusum*] 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 [*afficti et compacti*].”<sup>32</sup> So, how to translate *affictum* and *compactum*? Surprisingly, *fiction* is imposed, without discussion, in many of the translations now in use; for example, see the “*caractère feint et ajouté*” (fictitious and put-together character) of French translators Pierre Caye and Françoise Choay, or even the “embellishment of the frame” that the English translators put forward in their notes on the passage.<sup>33</sup> Lexicological inquiry reveals the limitation of such a translation. To connect *affictus*, *-a*, *-um* to *affingere*, as does Hans-Karl Lücke, is not uncommon, but the primary meaning of *adfingo*, *-ere*, *-fixi*, *-fictum* is “to apply,” “to attach in shaping” (as Nature provides the body with organs of her formation), from which comes *adficticius* (“attached to”). *Adfigo*, *-ere*, *-fexi*, *-fixum* (“to fasten to,” “to confine”) stems from the same semantic constellation. The terms that translators have had recourse to—that is, the derived senses of *invented* or *imagined*—are only distantly related to the primary range of synonyms, and nothing in *De re aedificatoria* actually supports that valence. On the contrary, a second term in Alberti’s text, *compactum*, from *compingo*, *-ere*, *-pegi*, *-pactum* (“to join or unite into one whole”) renders *affictum* all the more clearly. *Compactus*, *-a*, *-um* is “that which is well assembled, blocked, secured, of which all parts hold together.” Therefore I propose translating

*affictum* and *compactum* as “that which is fitted and well secured.”

As opposed to *pulchritudo*, which is intrinsic and is diffused (*perfusa*) through the totality of the edifice on the model of the Stoic *pneuma* or *tonos*, ornaments are localized. They are fitted, affixed, assembled—that is their essential quality and qualification, a completely material, very literal, qualification, borne out by historical analysis, that enables us to catch the logic of ornamentation in *De re aedificatoria*: Alberti is the inheritor of a juridical determination of ornament that he reinscribes in the theory and practice of architecture, according to a new economy.

### **Alberti and Law**

Throughout his work, Alberti remains silent about his early legal studies at Bologna University (1424–1429), whose traces he has obscured, and his only treatise on law, *De iure*, a Ciceronic dissertation on how to be a good jurisconsult, constitutes, despite its title and object, “a veritable repudiation of the science of law.”<sup>34</sup> This triumph of rhetoric over gloss, where Alberti joins Petrarch, has appeared to modern historians to conform to the spirit of the Renaissance, understood as the “victory” of humanism over scholasticism. Albertian historiography has thus endorsed the idea of Alberti as a promoter of an art of writing and thinking that owed nothing to legal tradition. However, as such a sharp observer as Giovanni Rossi advises—attentive as he is to the lemmas and locutions borrowed from legal language that pop up here and there in the Albertian corpus from *Momus* to *De re aedificatoria*<sup>35</sup>—the technical baggage Alberti acquired during his law studies reappear unexpectedly and almost unwittingly, attesting to the indelible mark of a juridical education of that time.<sup>36</sup> A treatment of *ornamenta* provides a spectacular illustration of this diagnosis: while its provenance is never stated outright, throughout *De re aedificatoria* it is indeed conceptions Roman law assigns to ornament that Alberti reactivates and puts to the test of construction in his great treatise.

### **Questions of Method**

Roman law was rich in the refined discipline of classifying a *fundus*, which could be understood both as “foundation” or “substrate,” on the one hand, and as “estate,” “ownership,” or “property,” on the other: natural philosophy and ontology are always effectively implicated in jurisprudence; the ontology of the sensible world, of which the *de naturalibus* treatises of Aristotle and his commentators offer the most complete array, provide sustenance for interrogations of the law. The jurisconsult works to qualify and authorize relations of property from the point of view of its foundation/substrate and its operations—natural processes, human procedures: this is what makes it seem so exotic to us, as moderns.

This world, comprised of perpetually effervescent substances, subject to generation and corruption, to augmentation and diminution, to all forms of alteration, transport, and transposition, all of which is amply seen in the arts, is interrogated by the juriconsult from the point of view of causes; that is, modalities of acquisition of *dominium* (“the ownership of things”).<sup>37</sup> All litigation, in order to determine the rights of ownership of each protagonist, must identify with precision the manner in which the foundation is called upon by opposing parties. Is a contested item integral to another item? Is it added to another? Is it rooted to another? How is it connected to the other item? Is it combined with it? At the center of juridical competence is aptitude at identifying modes of *specificatio* (i.e., ways of being an entity).<sup>38</sup> The challenge is to determine whether, in the production of a new individual or a new *species*, the substances from which the new being has issued have disappeared and, with them, their *dominium*, their “right of property”—which supposes that the possessor of the anterior elements was not the producer of the worked object. Determining with precision the operations of *specificatio*, and thus the production of the new individual, is crucial. Some operations are irreversible: olive oil will not revert back to olives, nor wine to grapes. The author of the *specificatio*, therefore, has every chance of taking precedence. Others are reversible. Since a silver vase once melted down returns to a mass of silver, to *dominium materiae*, the owner of the initial material will prevail. One sifts through the operations of *subtractio*, *compositio*, *transformatio*, and so on, to judge whether a new *species* has been produced. The distinction between form and matter is inoperative: what matters are the different ways of being an entity.

*Accessio* (“the fact of adding, augmenting”) is particularly interesting. It qualifies an increase in land ownership through aggradation, the augmentations of one proprietor’s herd pursuant to a filly’s or a ewe’s fecundation by a neighboring landowner’s male animal, as well as problems of soldering precious metalwork, and sculpture: the sheep of the one brings forth an increase in the herd of the other with no diminishment in the *dominium* of the first. However, if a handle from my property is soldered to my neighbor’s cup of the same metal, I lose my *dominium*. The concrete actions of soldering under the two modalities of *ferruminatio* and *adplumbatio* are veritable ontological operators: *ferruminatio* unites two substances through a substance that is identical to them (e.g., two pieces of gold with gold); *adplumbatio* unites two substances with a third that is different (e.g., two pieces of gold with lead). In the second case, the owners can be distinguished without losing their initial delimitation: the thing and its *dominium* subsist. The modes of *adplumbatio* are declined juridically, case by case. Two examples, among others, are *inserta* and *iniuncta* (i.e., things that are joined or mounted on), which pre-

serve their individuality (e.g., beams in a building under construction). In such an instance the right to property is not extinguished: the owner of the wood can make a claim under the law called *Tignum junctum*, even if he cannot interrupt the work in progress.<sup>39</sup> If we continue our inquiry in this series, which may seem strange to us today, from transitory islands surging up in rivers, escaped slaves, wandering herds of sheep, traffic in gold, and paintings painted over other paintings, we arrive at a fundamental classification cobbled together by jurists from a patchwork of Aristotelian and Stoic concepts.<sup>40</sup> This classification first distinguishes homogeneous uncombined bodies “of a sole breath,” “a single spirit,” *uno spiritu*, such as man, wood, or a mass of stone, and so on. Then there is the body comprising several elements or parts of a single *genus* or kind (*quod ex contingentibus hoc est pluribus inter se coharentibus constat*) that comprises elements that touch or are tied together or, conversely, are distinct from one another, like a building, a boat, cabinetry, and so on. Finally there are objects comprising discontinuous elements of a *genus* or kind (*quod ex distantibus constat*) that a single name brings together (*corpora . . . uni nomini subiecta*)—a people, an army, a herd, or a choir being such *universitas rerum* or *corporea* constructed by subrogation.

This classification allows for an interrogation and apportionment of technical operations. Thus, while *ferruminatio* produces a new substance that is homogeneous and “a single spirit,” *adplumbatio* preserves the plurality of substances; for example, the *inserta* and *iniuncta* (“things joined and mounted to”), whose particular *dominium* is not extinguished by the construction of a new edifice or a new furnishing. As for metals, they can either fuse and become a new species, like gold melted with silver, which is precisely *specificatio*; or the process of combining while remaining distinct, as silver soldered to lead, which is *commixtio*; or else come together by *confusio* (i.e., to the point of prohibiting any later separation), like gold mixed with bronze.

These operative categories of the fifteenth and sixteenth centuries extended well beyond the world of law, as confirmed, for example, by Blaise de Vigenère, who, in commenting on “Praxiteles’ Bronze Cupid” (a text attributed to Callistratus), relies on the opinions of Cassius, Paul, and Pomponius, or the “doubts and controversies among jurisconsults” concerning ferrumination, when he elaborates a brief treatise on bronze casting.<sup>41</sup>

### **Jurists and the House**

The juridical mode of qualifying things and their *dominium* is what gives *ornamenta* their status. Here the approach that is developed by the civil lawyer for conflicts of property, sales, estate succession, inheritance, and trusts provides a guide. What support are *ornamenta* attached to? Of what

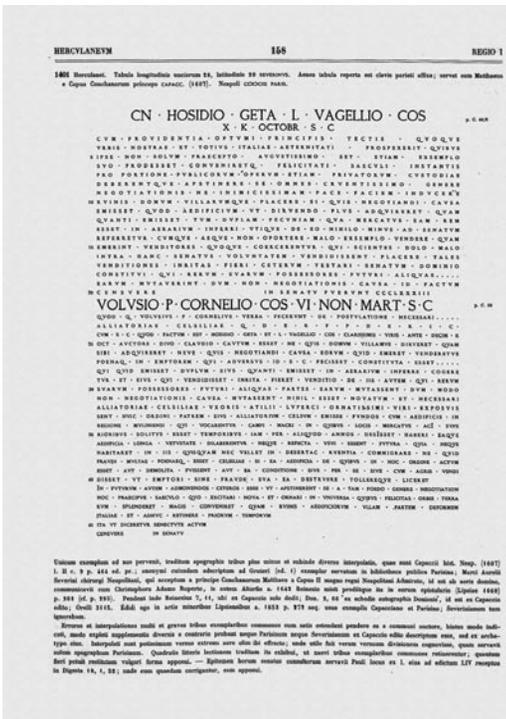
*substrate* are they the illustration, to take up that sixteenth-century philosopher's term? To what do they "give aspect and shine"? How are they attached to their support? Such are the questions whose constellation delimits the field of pertinence of the notion of *ornamenta*.

For the jurist, ornaments are *adiuncta*: they are "almost a portion of the house"; that is, they are affixed or united to the house (*aedibus iuncta*, or *aedibus adfixa*). In the *Digest*, they are "almost a portion of the house" (*quasi portio aedium*),<sup>42</sup> or "they are the house" (*ea quae sunt aedium*).<sup>43</sup> This is what distinguishes them from *supellex*, "the furniture," which needs to be understood not only in the modern sense of the term but also as trimmings, equipment, horses, jewels, and all that contributes to the splendor of the proprietor without being attached to funds or the edifice itself,<sup>44</sup> as well as from *instrumentum* ("agricultural and hydraulic equipment") which is indispensable to the management of the domain.<sup>45</sup> These distinctions were so sharp in the quattrocento that a humanist such as Giovanni Pontano could transform them into moral categories. In such treatises on the "social virtues," the splendid man—with his equipages, horses, and luxury—is opposed to the magnificent man, who deploys his grandeur on the ornaments of the city and his house.<sup>46</sup> The patrimonial status of *ornamenta* is signified by their particular attachment to property: they are detachable, but they are not furniture; they are *adiuncta* or parts of the house. They can be placed here or there but only under the express condition that their patrimonial status not be affected. They can be migrated from one residence to another within the same estate, and, while their value can be assessed or their price established, they cannot be separated from this entity by a bequest, a *fidei commissum*, or even for payment of taxes.<sup>47</sup> That is, they were attached not to this or that material building but to the incorporeal unity of the patrimony.

In book 30 of the *Digest*, within a series of cases demonstrating the virtuosic mastery of the law, Ulpian includes "*marmora et columnae*"—that is, marbles and columns, sculpture, *tabulae affixae et parietibus adjunctae* ("tableaux affixed and incorporated into walls"), precious tiles, decorated support beams, bronze doors, porticos, bookshelves if they are affixed to walls, and so on.<sup>48</sup> The only definition of them he offers is the impossibility of freely and without conditions separating these things from the edifice that is their support. The verb *detraho*, *-ere* ("to force down," "to strip off") is used to delimit the class of *ornamenta*.<sup>49</sup> Can one bequeath the ornaments of a residence? If one has two houses, can one bequeath one house and bequeath the ornaments of the other to "ornament" the first? Can one exempt the inheritance of ornaments from a residence, house, shop, or tavern? Can one bequeath one's house excluding its ornaments? Can one bequeath one's house minus its marble if the marbles are moved to a public building? Is

this bequest acceptable if the dispossession is to go to a public building in another city? Is it possible to discharge one's taxes using marbles and columns? Does a statue that is not sealed to a wall avoid the interdiction against being separated from an edifice? Regarding an outbuilding (*diaeta*) with which he has embellished a garden acquired as part of a dowry, can the husband remove its ornaments to make another use of them? This inexhaustible casuistry seems to express contradictory juridical prescriptions. While the principle appears to be untouchable—"one cannot bequeath something that is attached to a building" or "if what one bequeaths is attached to a house the bequest is null"—the senatus consulta and princely decrees nevertheless authorize and encourage, with precise conditions, the mobilization and transfer of "ornaments" if they serve to ornament either another edifice of the same proprietor,<sup>50</sup> or a public edifice.<sup>51</sup> Either way, such depredations cannot involve a commercial transaction. One need only refer to one of the sources of the normative Antonine and Severan tradition, as argued in the *Digest*.<sup>52</sup> The senatus consultum Hosidianum, whose dates, however imprecise (44–45 or 47 or perhaps even 54 CE), point toward the reign of Claudius and the consulship of Gnaeus Hosidius Geta and Lucius Vagellius.<sup>53</sup> This formulation is referred to during Nero's reign, in March 56 CE, in the senatus consultum Volusianum and reiterated in an edict by Vespasian now known via Severus Alexander.<sup>54</sup> Through these instances and reformulations, the Hosidianum in effect until Severus and beyond. Its objective was precisely to regulate the spoliation of dwellings and *domus* by a "very cruel type of commercial transaction" (*cruentissimum genus negotiationis*) that undermines "the roofs of our city."<sup>55</sup> The Hosidianum prohibited the sale of "parts detached from a house" through a destruction by *negotiandi causa*, whose aim is to resell valuable material. Such a sale was voided, and the buyer condemned to pay a fine of double the amount of the purchase.<sup>56</sup> Intended explicitly to protect "the eternity of all Italy" (*totius Italiae aeternitas*), historiographically the Hosidianum can be considered the founding act of the policy of legacy protection—and the "battle against real estate speculation."<sup>57</sup>

It was not until 1998 that the lawyer and legal historian Yan Thomas provided a radically new reading of the Hosidianum, showing that historians had missed the very dynamics of the senatus consultum, as well as the light that *ius civile* supplies to its understanding.<sup>58</sup> The Hosidianum does prohibit the resale of parts dismantled from a house to this end, but it allows the actions of



Left: Senatus consultum Hosidianum, ca. 44–45, 47, or 54 CE. From *Corpus inscriptionum Latinarum* (1883).

Opposite: Senatus consultum Hosidianum, ca. 44–45, 47, or 54 CE. From *Corpus inscriptionum Latinarum* (1883).

“those who, while maintaining proprietorship of their goods, transport elements (from one building to another) if they do not do so for commercial reasons”; that is, if the *spolia* are *not* disposed of with a third party and if they *are* redeployed in another edifice within the same estate. Legislation thus predisposes and authorizes the circulation of “parts of a house” within the same estate or patrimonial entity. Thomas thus points up a radical change of analytical perspective in the approach toward *ornamenta* according to the rules of their circulation issuing from norms of ownership.<sup>59</sup>

### Universitas aedium

The integration of legal logic into classical norms of architecture becomes more difficult after the second half of the sixteenth century, as it goes against some of its (and *our*) fundamental principles. *Ornamenta* belong to a quantitative approach: as a mass term, *ornatus* is fungible; it is a quantity that must always increase. *To ornament* means to “incorporate certain materials and certain forms into the sum of material and forms that constitute an already constituted patrimonial entity.”<sup>60</sup> What counts for a personal, familial estate or patrimony counts as well for the property and patrimony of the city and the empire: the embellishment of Rome means the increase of the sum total of what illustrates and adorns it.<sup>61</sup> This is as much as to say that the logic of ornamentation rejects the organic model that architectural theory will soon come to spread. For the ancient jurist, an edifice is not an organism; it is a sum of assets.

This interpretation of *edifice* possesses a coherence we should be attentive to, however paradoxical or exotic it may seem to us today. Here, ornament is not the form of a material, the qualification of a substrate; rather, it is a part of the house. This formulation, which goes against modern common sense, makes sense only when one relocates its juridical horizon. As Thomas reminds us, for Roman jurists form was a limited attribute of individual entities, heads of cattle in a herd, individuals in the city, parts of a house, and so on. But groupings, whether cities, herds, or legions, can be understood only through the concrete individuals constituting them, by way of forever renovating collections, and designated with the term *universitas*.<sup>62</sup> To consider a city or a legion beyond the life of the individuals constituting it, to consider its continuity in time, that it persists and endures, led Roman jurists to the artifice of describing its uninterrupted succession of concrete units and their relations:



And no organic metaphoric image of natural life could overwhelm this abstract apparatus of collective perpetuity. The jurists held that each position was occupied in turn inside a coordinated ensemble of positions . . . , each one found to be “placed,” “superseded,” “acceded” as by a constant turnover or complementarity which imparted to each subject a position already formerly held by another: a continual permutation that maintained as such an extended arrangement according to the fully fictional mode of subrogation. . . . According to this logic, what comprised unity among the beings of the city was not properly speaking their community of existence. It was rather, to take up a formulation from Seneca, close to the artificializing manner of Roman law, the fiction according to which these beings, even while being separate and distinct according to nature, *natura diducti et singuli*, were juridically and *ex officio* maintained in place, *iure aut officio*, inside of a collectivity: within one of those discontinuous collectivities (herds, armies, senates, tribunals, cities), which some jurists, following Stoic philosophy, called “bodies composed of distant elements.” But less common is the idea, proper to Roman law, that an institution exists and persists independent of its natural substrate.<sup>63</sup>

This mechanism can be recognized in the juridical approach to the parts of a house. As a matter of property and inheritance, a house is not a form in the Aristotelian sense of the term, but an institutional unit, the *iure aut officio* gathering of separate and distinct things, a universality of objects or *universitas aedium*. We need to think about an edifice in a way that hearkens back to the conception of the Stoic body composed of distinct elements—as a collection of things having become an incorporeal entity:

It is essential to note that as soon as materials added to the universality of objects representing the edifice were separated from it, they were covered by the juridical status they had had prior to having been incorporated, just as a head of cattle integrated into a herd maintains its anterior status and could be claimed separately.<sup>64</sup>

Similarly, a beam incorporated into the framework of a building does not lose its juridical status.<sup>65</sup> And so we see the economy of *ornatus*: the full legitimacy of the (real *or* virtual) continuity of a house’s parts (with *parts* in the plural). If ornaments are parts of the house, they still belong to a particular category, formulated in the Hosidianum, the Volusianum, and the legislation that extended from them.<sup>66</sup> What brings them together is patrimony, not the singularity of a material building. They cannot be dissociated from the patrimony by commercial transaction or by bequest. This is what the opinions of the jurists in book 30 of the *Digest* spell out for “bequests and fidei

commissa.” One could therefore sell a parcel, stable, or shop adjacent to a *domus*; the furniture, gold or silver dishware, equipment, and all the sumptuary elements in the house; or the entire house. But a house could not be stripped of its marble surfaces, its columns, its porticos, its bronze or gold tiling to be transferred to another: this would be, in the precise sense of the term, spoliation. On the other hand, removal of *ornamenta* from a house for transfer to another edifice within the same patrimonial estate was perfectly legitimate because the unity of the patrimony is respected. The singular edifice is only an agglomeration of assets that can be freely moved and delivered provided that, on the level of its patrimony, the *ornatus*, considered as a whole, is not diminished.<sup>67</sup>

This is what has been missing for decades from the literature on *spolia* that has associated reuse with decline and crisis. However, the status of *ornamenta*, their fundamental substitutability within the confining frame of a patrimonial entity to which they are attached in fact authorizes and accompanies continual recycling of marble, columns, capitals, and bronze or gold tiling, comprising a basso continuo to Rome’s constructive dynamics during the height of the empire.<sup>68</sup> What could be more exotic for us today, considering the modern identification of the logic of heritage with the exigencies of preservation and maintenance of particular edifices?

### Attachments

Clearly, the mode of attaching ornaments to an edifice is a crucial aspect: it is the expression and the instrument of their status. Their legal attachment to the patrimonial entity is immaterial, but their mode of attachment to the edifice enables their being distinguished from *supellex* (“furnishings and their adornments”), which fall into an entirely different legal classification, granting *ornamenta* lasting association with the building while at the same time enabling their movement and transport. Even if book 4 of *De re aedificatoria* offers no other definition of *ornamenta* beyond their enumeration, Alberti reveals, as a technician, archaeologist, and jurist, scrupulous attention to different kinds of nails (metal, flint chips, etc.), glue (wax, pitch, resin, mastic, gum), plaster, cement, mortar, soldering, and every mode of attaching ornaments to an edifice, from their installation and removal to their movement and transport:

Nails may often be seen in the wall, to hold the revetment [*crustationum*]. Time has shown that brass ones are best. But it is preferable, instead of using nails, to make tiny holes in the wall, between the joints of the courses, and use a wooden mallet to insert chips of flint, so that they protrude slightly.<sup>69</sup>

Or again:

For holding thick sections of paneling, nails or projecting marble catches should be fixed into the wall, then the paneling applied directly; but with thinner sections, instead of lime after the second plastering, apply any molten mixture of wax, pitch, resin, mastic, or any form of gum, and then warm the paneling gradually, to prevent it from cracking under the sudden heat of the flame. If the joints and rows form a harmonious whole, when joining paneling, this will be commendable. Veining must join with veining, color with color, and so on, so that they each enhance one another.<sup>70</sup>

### ***Machinatio***

The strange position of *machinatio* in the general order of the treatise has not been much investigated. This lack of curiosity should probably be seen in relation to the lasting notion that Alberti, compared to his contemporaries (e.g., to Francesco di Giorgio Martini), paid little attention to engineering practices. This idea persists, despite the work of Gustina Scaglia, Anthony Grafton, and others.<sup>71</sup> Meanwhile, historians who have endeavored to study engineering treatises from the quattrocento never associate lifting or transporting devices with *ornamenta*, since the science of engineering is considered restricted to problems of structure. But this is modern reasoning, considering only the illustrations in treatises to learn about the implementation of technologies and the complexities of mechanisms invented by engineers, while what they transport or erect interest us merely as accessories to the representation.<sup>72</sup> But let us turn to the evidence: *ornamenta* figure among the preferred objects in the technical procedures of lifting and transport imagined by the engineer-architects of the quattrocento.

These cranes, tie-rods, hoists, jacks, balance-wheels, and myriad bolts and screws attached to gearwheels and racks, these pulleys and ratchets designed for the most adventurous assemblages, all these devices for pulling and lifting, transporting and erecting, which architectural-engineering works from Francesco di Giorgio Martini to Giuliano da Sangallo describe in endless variation, these devices that reinvent the solutions to mechanical problems familiar to the ancients but forgotten in the Middle Ages are principally designed for the lifting and transport of columns, obelisks, pyramidions, statues, façade components, even for entire façades and towers; that is, for *ornamenta*.<sup>73</sup> The removal, transport, and installation of *ornamenta* inspired as much ingenuity on the part of quattrocento architect-engineers as machines of war, hydraulics, or mills. It was for *tirare* and *alzare*, for transporting, maneuvering, and lifting monolithic columns, sculptures, and obelisks that these gears, these complicated pinions and sprockets, trundles and ratchets,

Opposite, clockwise from top left:  
Francesco di Giorgio Martini.  
*Alzacolonne* (column lifter), in  
*Opusculum de architectura*, folio  
27v, 1474–1482. Ms. Harley 3281,  
British Library.

Francesco di Giorgio Martini.  
*Alzacolonne* (column lifter), in  
*Opusculum de architectura*, folio  
8r, 1474–1482. Ms. Harley 3281,  
British Library.

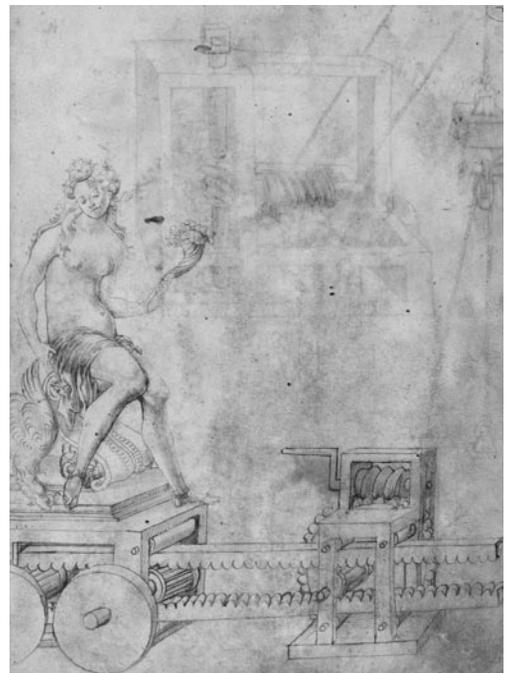
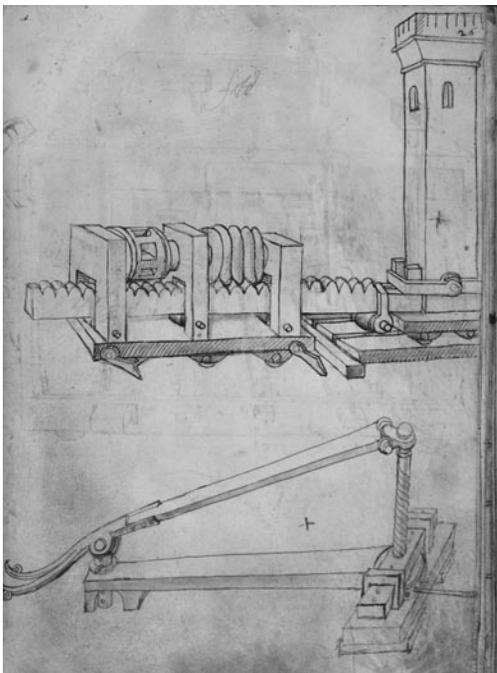
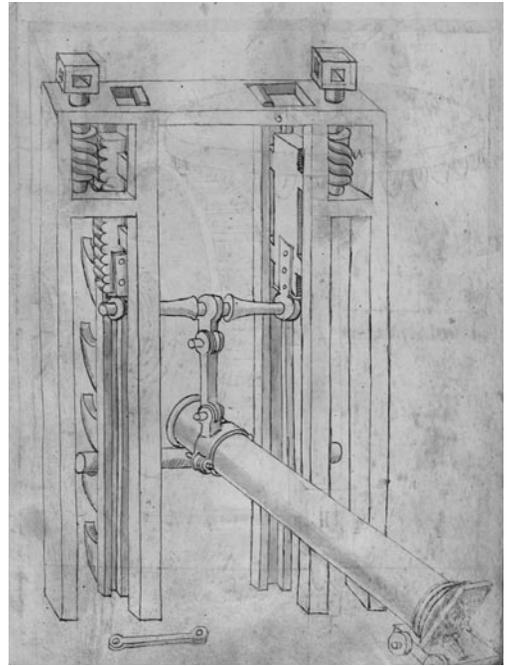
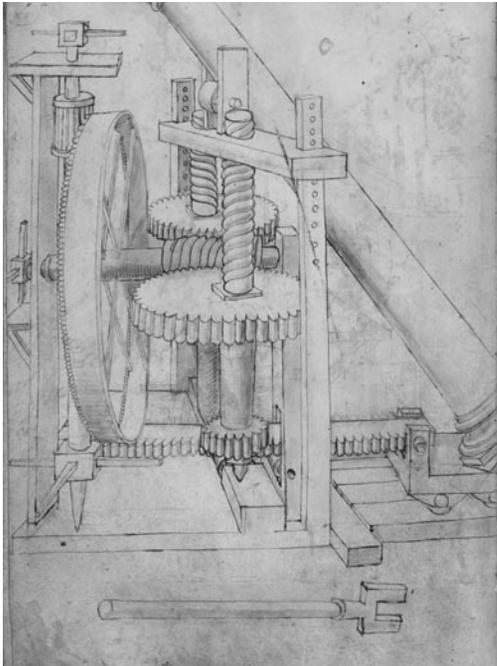
Girolamo da Treviso il Giovane(?).  
Two track mechanisms for the  
transport of a tower and a statue,  
first half of the sixteenth century.  
Gabinetto Disegni e stampe,  
Galleria degli Uffizi, Florence.

Francesco di Giorgio Martini.  
*Libro d'edeficij et machine*, folio  
33r, Mechanisms for dislodging  
(lever with metal threading) and  
transport (worm drive and track  
*crémailière*) of a tower, ca. 1475–  
1480. Getty Research Institute.

replaced (at least ideally) the weakness of ropes and inspired engineers to arrive at completely new theories for the lifting of objects.<sup>74</sup> Consequently, the moving of ornaments is one of the main sources of engineering inventiveness in the Renaissance.

### Ornaments, Machines, and Marvels

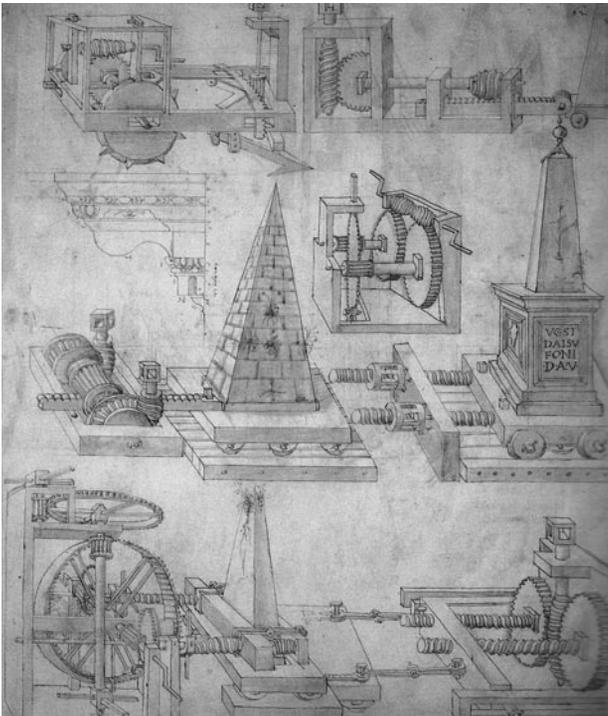
We are now able to understand the strange progression in book 6 of *De re aedificatoria*, the complex sequence that modern commentators put down to a sort of antiquarian bravado or a demonstration of erudition, because it



interweaves reflections on revetments (*crustati*), *mirabilia*, transport devices, simple machines, and Aristotelian mechanics. Let us trace out this circuitous but absolutely coherent route. Once the status of *ornamenta* has been established, attached to the edifice but removable, Alberti puts forward, starting at book 6, part 4, a veritable treatise *de mirabilibus*, sustained with Pliny the Elder, Solon, and the entire arsenal of ancient historians and paradoxographers: *ornamenta* are the bearers of this mythic memory. To start: “In adorning [*exornandum*] the wall and roof, you will have ample room to display uncommon gifts of Nature, techniques of art, diligence of the workman, and power of the intellect.”<sup>75</sup> There then follows an enumeration of tremendous monoliths and technical exploits of mythic proportions, calling upon the names of Osiris and Semiramis, shrines at Latona and Chemmis, and so on. For Alberti, the point is to introduce the question of revetment (*crustatio*) as the modern substitute for these wonders. Alberti also takes the opportunity to provide the reader with a long discussion of *machinatio* and the Aristotelian physics on which it is based, which takes up a third of book 6: “We will now discuss these forms of revetment and describe how they are applied. But first, since we have mentioned the movement of huge blocks of stone, it would seem advisable to describe here how masses of such bulk may be transported.”<sup>76</sup> A series of examples follow from Plutarch, Pliny the Elder, and Ammianus Marcellinus on how to draw ships away from rivers and the conveyance of obelisks on land and by sea. These also introduce via legend a favorite topic of quattrocento engineers; that is, the lever in ancient mechanics, the device par excellence in sixteenth-century thematizations of various lifting apparatuses: capstans, hoists, derricks, and so on.<sup>77</sup> The case of the obelisk that Emperor Constantine II (357) had erected in Rome’s Circus Maximus after long maritime and terrestrial conveyance from Egypt marks the triumphal coincidence of *ornatus urbis* and *ingenium*.

This leads to a long development on Aristotelian physics. As he calls up

problems faced by architects—how to haul, roll, and hoist columns and stone blocks—Alberti stitches together, if not a theory of the machine, at least a conceptual framework: to think about the machine is to think about movement “according to place” (*kata topos*), repositioning, and, more precisely, transferal from down to up. Alberti returns to the definition of the machine put forth by Vitruvius in book 10 of *De architectura*: “A machine is a solid conjunction and



Giuliano da Sangallo. *Tirari & alzari*, 1483–1516. Ms. Barb. Lat. 4424, folio 54r, Biblioteca Apostolica Vaticana, Rome.

well-built wooden structure, with a singular and marvelous force pertaining to the movement of heavy things.”<sup>78</sup> In Aristotelian physics, the up and the down, and directions in general (right/left, forward/back), are absolute determinants: in nature, both sublunary and supercelestial, there is an up and a down, a left and a right, a forward and a backward. Throughout the qualitatively differentiated universe, these determinations participate in the definition of every element. The nature of a thing is its “propensity to”; that is, its type of ordinary movement: the nature of a heavy object is to remain “in place,” just as the nature of fire is to rise. After repeated reminders of nature’s aversion to lifting, in book 6, parts 7–8, Alberti provides a discussion, largely based on the *Mechanical Questions* attributed to Aristotle, of simple machines—wheels, pulley blocks, screws, and levers—brought back to the fundamental principal of the balance and the properties of the circle, where he recognizes that he speaks, “non ut mathematicus sed veluti faber . . . non plus quam quod praetereundum non sit [not as a mathematician but as a practitioner . . . deal[ing] with no more than absolutely necessary].”<sup>79</sup>

*Machinatio* provides a verification of Aristotelian physics. In book 6, part 9, Alberti returns to a more ordinary, “modern” perspective of *ornatus* with a detailed treatment of *crustatio*, under two types: coating (*crustatione inductae*) and veneers (*crustationes adactae*), the first including plaster, white-wash, stucco, and paint and the second, marble panels, tile, and mosaic. The art of laying polychrome marble slabs to suggest the continuity of a curvy line and their cutting and polishing are taken up in book 6, part 10. The different ways of enriching a surface are then discussed: fresco and oil paint, shells, mother of pearl, and so on.<sup>80</sup> After this comes upper ornaments such as tiles, beams, and architraves, and finally the ornament par excellence: the column (book 6, part 13). When Alberti opens this with, “In tota re aedificatoria primarium certe ornamentum in columnis est [In the whole art of building the column is the principal ornament without any doubt],”<sup>81</sup> is he not echoing the preeminence the *Corpus iuris civilis* accords to “ornatus, hoc est marmora vel columnae [ornaments . . . that is to say, any marbles or columns]”? In fact, the column is monolithic here, the shaft of a single piece.

### The Invention of Ornaments

Book 7, devoted to sacred edifices, clarifies and deepens book 6’s focus and insists on the complementarity of *crustatio* and *mirabilia*, providing a continuity that transcends the functional division of the parts of the treatise.



Parietal *crustatio*, Silin (archaeological site of Leptis Magna, Tripolitania), 1 CE. Photo: Jacques Vérité. From *I marmi colorati della Roma imperiale*, ed. Marilda De Nuccio and Lucrezia Ungaro (2002).

Alberti's task is to provide a mythic genealogy for the realm of ornament: *ornamenta*, *spolia*, and *mirabilia* are so closely associated as his text moves along that it is hard to distinguish among them, and in fact they share a common origin. This is probably where Alberti is most faithful to the Roman tradition. His rigorous and precise approach, from the ancients to the *ornatus* of temples, with attention to the smallest variations in the texture of surfaces, reveals just what is archaic in the system of *ornamenta* he has inherited: the Romans considered ornaments within the general category of trophies and marvels. Their dedication in temples and sacred edifices is at the origin of architectural ornamentation.

The ancients would use precious objects to adorn [*res rarissimas ornamenti gratia imponere*] their temples and porticoes; such as the ant's horns brought from India to the temple of Hercules, or the chaplets of cinnamon deposited in the Capitol by Vespasian, or the great root of cinnamon that Augusta placed in a gold dish in the main temple on the Platine. In Aetolia, the country laid waste by Philip, the portico of the temple at Thermus was said to have been decorated with more than fifteen thousand suits of armor and over two thousand statues; according to Polybus, all were destroyed by Philip, except those bearing the name or image of a god. . . . In Sicily, some make their statues of salt: Soliuns is our authority [*auctor*] on this. Pliny mentions that glass was also used. Certainly, whether for their natural materials or for their ingenuity, objects of such rarity deserve great admiration.<sup>82</sup>

Every art has to have its qualifications, origin, an inventor with a name.<sup>83</sup> Alberti pays tribute to this tradition by providing his readers with an origin myth for *ornamenta*, as he found it in ancient literature. For the Latin authors, architectural ornaments drew their origin from remains and from trophies attesting to Roman triumph: Pliny the Elder's *Natural History*, for example, identifies the *spolia* of Syracuse and Corinth,<sup>84</sup> as well as the *mirabilia naturae* offered to the gods or displayed in each aristocratic *domus* at the origin of *ornatus*.<sup>85</sup> Then mobility—carefully framed by a strict system of dedication and inalienability—is what brings together so many heterogeneous objects: reuse is their common horizon.

### *Propagare fines*

Book 6 closes with “the principal ornament in the whole art of building”: the column. The introduction of the column is pivotal, because, in a single paragraph, it shifts the reader to a completely different scale, that of the city, of the empire:

In the whole art of building the column is

Left: *Lumachelone antico* reused veneer (including shells and fossils), Crypt Chapel, first half of nineteenth century. Santa Maria Maggiore, Rome. From *Marmi Antichi*, ed. Gabriele Borghini and Raniero Gnoli (1989).

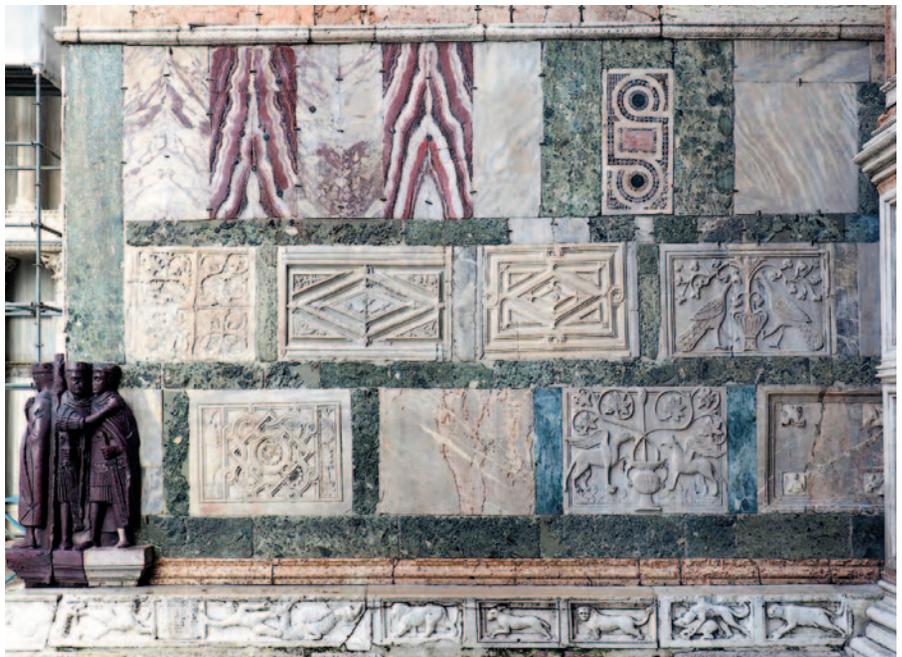
Opposite: Composition of *crustationes* imitating *spolia*, fourteenth century(?). South façade, Saint Mark's Basilica, Venice. Photograph: Armin F. Bergmeier.



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 monument. It has grace and it confers dignity.<sup>86</sup>

The extension of the concept of ornament appears to be limitless. In book 8, it is always within the category of *ornatus* that Alberti treats bordered approaches to tombs, mausoleums, pyramids, chapels, and roads “built of vast blocks of stone” (*stratae viae silice praeduro et maximorum lapidum strue coaggetatae*), like the Appian Way; or cut into rock where “mountains were cropped, hills excavated, and valleys leveled” (*delumbati montes, perfossi colles, aequatae valles*);<sup>87</sup> or wind towers and lighthouses, triumphal arches, ports and porticos, and all the amenities of the city and the port: theaters, baths, gardens, covered and pergola walkways, pools, drainage and sewers, and so on. What we consider pertaining to the urban, what we commonly call “technical achievements,” Alberti shares with us under the category of ornament.

Thus there is not, from the perspective of *ornatus*, a rupture between domestic and public space: in both cases, space is conceived as an accumulation of remarkable objects—something that Mantegna’s tableaux and frescos show with precision. Tombs and porticos, baths and statues are added to the *ornatus* of the city and the empire, just as capitols and marble revetments augment the patrimony of a family. In the mausoleums and tombs positioned along roads, with their ornamented figures and marbles, and their protection by law against depredation, the Roman people’s ornaments and the *ornatus* of Rome coincide to the point of indistinction. Alberti does not miss the chance of devoting a long passage to these in book 8, which is exceptionally rich in legal implications.<sup>88</sup> So, how can *ornatus* be circumscribed? It cannot be assigned the limitations of a class of objects, because even sewers are within its scope, as this complex passage from book 6 indicates: “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 efforts on grace alone, and undertook building enterprises only in order to increase the quantity of ornament.”<sup>89</sup> To deploy the forces of the empire and to augment ornament come down to the same thing. We can see in this a renewed version of the ancient formula, *propagare fines*—that is, enlarge the bounds (of Rome). This is what Yan Thomas calls *l’office des marbres*, the office, or institutional task, of marbles. Archaeology confirms it: the white or polychrome marble that ornaments the city and the empire, collected from the four corners of the Roman world, indicate by their colors and their grain, and their always further and more prestigious quarry, the range of origin of Roman confines. A complex juridical, administrative, and technical apparatus organizes their extraction and convoy to the great cities and to Rome itself.<sup>90</sup> A part-for-whole *ornatus*, marbles manifest the always moving limits of Roman domination, incarnating the coincidence of city and world, *urbs* and *orbis*: the physical manifestation of Roman *maiestas*.

The quantitative determination of *ornatus*, whose increase is the augmentation of a stock of fungible elements within patrimonial unity, therefore takes on new meaning. What is valuable for family patrimony is also valuable for the *decus urbis*. To ornament Rome therefore means augmenting the sum of that which celebrates or adorns it, the mass of marble that is the materiality of Rome. The majesty of Rome allows nothing to interrupt the augmentation of the *decus urbis*. The unlimited expansion of Roman dominion that enhances and amplifies the city with trophies and marbles *is* majesty itself, greatness becoming ever greater, always increasing, greatness that must always grow and gain ground without ascribable boundaries: supremacy fated to expand indefinitely.<sup>91</sup>

### ***Spolia or Ornamenta?***

In Rome, reuse is the continual (and unrecognized) basis of the dynamics of construction.<sup>92</sup> Paradoxically, it attests to the institutional continuity of the status of *ornatus*, as the patrimonial approach allowed for redeployments and reworkings within the same patrimonial entity. In sum, as opposed to the anachronic fixity of modern historiography, which identifies the logic of heritage with the exigencies of integral maintenance and preservation, the structural flexibility of the Roman patrimonial economy ensured the *augmentatio* of *ornatus* in Rome and the empire and, in the centuries “of decline,” protected the splendor of Rome through the infinite recycling it authorized. The juridical approach impels us to dissociate the question of *ornatus* from the monumental landscape as consecutive configurations: inseparable from reuse, *ornatus* coincides with constant renewal. The result

is that the juridical mechanism that allowed for the extraction and agglomeration of marbles from the world to the body of the city, the *universitas urbis*, also organized, in a sort of centrifugal movement, its dispersion: the regulated dispersion of Roman material to the four corners of the Christian world, from Constantinople to Aix-la-Chapelle. As paradoxical as this may seem, the association of ornaments with the majesty of Rome was in no way weakened by this, and no one contested the sovereign privilege authorizing their handling and removal. While, in the first and second centuries CE, “in Rome itself, mutilations and thefts of ornaments justified the *praefectus urbis*’s official inquiry and capital punishment, as if it were a sacrilege or a crime of *lèse-majesté*,”<sup>93</sup> in the “dark” fifth and sixth centuries the reuse of ornaments giving new life to marbles remained an attribute of the majesty of princes.<sup>94</sup> In Ostrogothic Italy, Theodoric continued to act in this way as a Roman emperor, his chancellery sending out authorizations throughout Italy for the reuse of marble blocks, columns, bronze, and other precious materials.<sup>95</sup>

When, around 1446, the Roman historian Flavio Biondo, in *Roma instaurata*, described Theodoric’s repair of the walls, theaters, palaces, baths, sewers, and aqueducts in Rome, which he had disengaged from “the brambles and thorns which neglect had left them to be covered by,” Biondo naturally made use of the lexicon and marks of ancient juridical language, writing that “Theodoric augmented the city.”<sup>96</sup> In fact, the explicit concern for the augmentation and growth of public splendor had, since the legislation of the Later Roman Empire that the Theodosian and Justinian Codes effectively brought together, governed special grants of marbles and columns, organizing their movement and reserving their transfer to public buildings when old structures were irreparable.<sup>97</sup> Again in the seventh century, Pope Boniface IV sought authorization from Emperor Phocas to transform the Pantheon into a Christian church, and Pope Honorius I sought bronze from Emperor Heraclius for the roof of Saint Peter’s Basilica.<sup>98</sup> Constantius II removed the last ornaments from the roof of the Pantheon to ornament Constantinople; if this contravened Roman civic pride, it remained strictly faithful to the patrimonial system of *ornamenta*. Late in the eighth century, Charlemagne requested of Pope Adrian I that marbles and mosaics of the imperial palaces in Rome and Ravenna be allocated to him to ornament the new palace at Aix-la-Chapelle.<sup>99</sup>



Andrea Mantegna. *Meeting*, before 1474. Detail. Wall of bridal chamber, San Giorgio Castle, Mantua.

### Rome, ca. 1450

*Spolia* provide the background for the theory of ornament in *De re aedificatoria*. Modern depredations of *decus urbis* elicited protest from humanists of the curia, who like Cassiodorus before them, denounced the “public injury” (*dolor publicus*) caused by the “mutilation” (*detruncatio*) of Rome.<sup>100</sup> This can be understood as the obverse of the spirit haunting Alberti’s reflections on *ornatus*. Still, that book 10, “Restorations of Buildings,” follows the four books on ornamentation is only logical.

We should therefore also more closely associate the writing of *De re aedificatoria* with Alberti’s time in Rome, in particular his second visit, which began in 1443 and coincided with the *renovatio urbis* embarked on by Pope Nicholas V (Tommaso Parentucelli, 1447–1455).<sup>101</sup> Alberti’s involvement in this, whether inspirational or instrumental, is the subject of debate; some have recognized his thinking in the design of the Borgo Novo or in the new plans for Saint Peter’s Basilica.<sup>102</sup> Manfredo Tafuri expresses skepticism on these two points in a rich and convincing demonstration.<sup>103</sup> I prefer associating the *De re aedificatoria* with an underlying trend launched some twenty years earlier: a collective endeavor, fueled by curial humanists, but not at all limited to them, to revive and reformulate not only the city landscape but also the Roman logic of *ornamenta*.

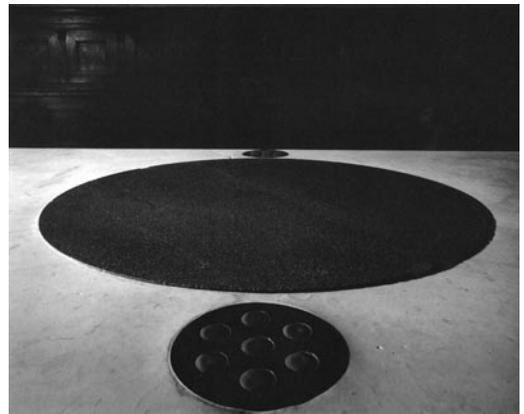
We have ample evidence *in rebus* of this program. We conceive it as starting



Mascoli Chapel, ca. 1430.  
Saint Mark's Basilica, Venice.

ca. 1425 with the resurrection of Lateran pavements of the *opus sectile* under the pontificate of Martin V.<sup>104</sup> Or with the reappearance, beginning in 1430, of colored marble revetments. In Venice, for example, the walls of the Mascoli Chapel in Saint Mark's Basilica, covered with finely incorporated large marble panels, may be the first such wall revetment in marble since antiquity. In Florence in 1430 a large porphyry disc was inserted in the central table of the Sagrestia Vecchia, above the tomb of relatives of Cosimo de' Medici.<sup>105</sup> Circa 1430, Bernardo Rossellino placed three large red marble panels in the recumbent tomb of Leonardo Bruni in the Basilica of Santa Croce. A few decades later, a porphyry *rota* was placed in the center of the lavish decor of the chapel of the Medici palace (1450–1455).<sup>106</sup> What was then called *opus affictum* (“attached work”)—that is, the colored marble incrustations whose use was challenged by Filippo Brunelleschi and Michelozzo—came into full force in architecture ca. 1450. In Rome that year, Giovanni Rucellai mentioned in his *Zibaldone* the panels of serpentine marble and porphyry used in the churches of Sant'Agnese, San Pietro, San Pancrazio, San Giovanni in Lateran, and Santo Stefano Rotondo—all restored under the orders of Nicholas V.<sup>107</sup> The pope himself had several porphyry discs installed in the interior of Saint Peter's Basilica, which he envisioned endowing with a vestibule, “splendidly covered with stones of diverse colors, porphyry and green emerald.”<sup>108</sup> The jubilee of 1450 marked the rise in a collective passion for porphyry, and Rucellai was one of the most ardent promoters.<sup>109</sup> Witness the small red marble plaque bearing his name (“Bernardo Oricellario”), which, in the guise of a discrete dedication, also marks the threshold of Santa Maria Novella.<sup>110</sup> The marble, onyx, and porphyry in the Chapel of the Cardinal of Portugal in the Basilica of San Miniato al Monte (1463–1467), for which Portuguese princes had to obtain material from Pisa and Rome,<sup>111</sup> and the panels of serpentine and porphyry framing Mantegna's paintings in the chapel of the Villa Belvedere built (1488–1490) for Pope Innocent VIII, show the extent of this determination to reinvest the plastic and symbolic economy of *ornamenta*.<sup>112</sup>

Painters did not fail to call upon this source of chromatic power to enrich their art. In Florence, in the Church of San Pancrazio, the sepulcher of Paolo Rucellai (1458–1469), modeled by Alberti after the Holy Sepulcher and covered with white marble inlay panels framed with panels of dark green marble, was surrounded by chapel walls decorated with painted panels imitating green



Top: Central table, porphyry disc, and Medici arms in bronze, ca. 1430. Sagrestia Vecchia, San Lorenzo, Florence.

Bottom: Porphyry circle in front of the central portal and *tabula ansata* with “BERNARDO ORICELLARIO” on the riser, 1468–1470. Santa Maria Novella, Florence.



and red marble. At the Villa Carducci di Legnaia comparable panels serve as the background behind the cycle of *Illustrious Men and Women* (1488–1489) painted by Andrea del Castagno on the walls of the loggia.<sup>113</sup> In Venice, the marble tones of *verde antico*, Verona rose, and *cipollino rosso africano* enrich the motifs and the chromatic variation of Cima da Conegliano’s and Giovanni Bellini’s paintings. In the Vatican, Fra Angelico introduced porphyry and serpentine marble in Nicholas V’s private chapel, the Niccoline Chapel, in the frescoes that he painted in 1448.<sup>114</sup>

As consciousness of the specifically Roman character of this *opus afflictum* was becoming generally recognized, Flavio Biondo explicitly explained in *Roma triumphans* that a “market” for Roman ornaments was developing. Most of Alberti’s patrons figure among the *ornatus* spoliators of Rome and imperial cities, from the Pazzi condemned by Roman conservators in 1447 for having divested several “sacred sites” in the city of marble, to Ludovico Gonzaga who, circa 1462, sent his agents to Constantinople to procure marble and porphyry needed for the chapel in Castello di San Giorgio.<sup>115</sup> Mantegna, who was commissioned to decorate the chapel, took up the poetic potential of this *ornamenta*. His *Circumcision* presents an architectural scenario containing a masterful array of marble, while also achieving such poetic *aemulatio* that the painting assumes a status of *ornatus* which, through the recovered symbolic power of the marble, may come to exceed that of the marble surfaces themselves.<sup>116</sup>

The spoliating enterprise that probably most directly implicates Alberti concerns the affair of Sigismondo Pandolfo Malatesta. In 1450, Malatesta was accused of removing *marmora et tabulae porphyreae ac serpentinae* (marbles and panels of porphyry and serpentine) from Sant’Apollinare in Classe, in the imperial city of Ravenna—accusations that were reiterated in 1454.<sup>117</sup> Were these the *spolia* destined for the façade of Tempio Malatestiano, a façade *all’antica* in Istrian stone marked with reused porphyry and green marble?<sup>118</sup>

These legal disputes involved the authority of the pope, guarantor of *decus urbis*, as exercised on



Leon Battista Alberti. *Rucellai Sepulchre*, 1467. Rucellai Chapel, San Pancrazio, Florence. Three-quarter views of the façade (top) and the apse (bottom).

ancient marble.<sup>119</sup> But this regal attribute, affirmed by Pius II in the bull of April 28, 1462, *Cum aliam nostram urbem in sua dignitate, & splendore conservari cupiamus*,<sup>120</sup> also authorized the pope to “remove marble” on his own behalf.<sup>121</sup> In fact, Nicholas V and his successors never ceased removing marbles and columns for their projects and restorations. Neither the spirit nor the letter of legislation from late antiquity was contravened when the popes fueled the *renovatio urbis* with relics of Roman patrimony; for example, when, ca. 1451–1452, Nicholas V had the Bolognese engineer Aristotile Fioravanti bring large monolithic columns taken near the Piazza della Minerva to the Vatican;<sup>122</sup> or when, ten years later, Pius II requisitioned seven of the columns from the Portico of Octavia to build the spectacular Benediction Loggia in the Vatican.<sup>123</sup> As an apostolic scribe (*scriptor apostolicus et familiaris*) to Pope Nicholas V, Alberti would have been in a good position to take measure of the *renovatio urbis*, as well as the particular status of ornaments in the program of the restoration of *maiestas* to the benefit of the papal authority—a program that was also contested by princes of Italy and aristocrats of Rome. We can thus recognize the unity of the *De re aedificatoria*’s four books on ornamentation. They seek to put *ornatus* to the test of construction.

#### From *renovatio* to *ars aedificatoria*

In *De re aedificatoria*, *concinnitas* is a perfect arrangement that suffers neither addition nor diminution, a regulating principle to which all composition should submit. In stark contrast, ornaments involve a quantitative approach: they are added or taken away. What characterizes them is mobility, which makes them into accessories. Books 6, 7, and 8, having evaluated the architectural potential of ornaments, examine the *machinatio*, the science of machines or mechanics, on which they depend, and deploy history and legend in their invention. Book 9 accomplishes and perfects their integration into the *ars aedificandi*, the art of building. From there, it is only a matter of subjecting *ornamenta* to the rule of *concinnitas*.

The ancient days of reuse have come and



Top: Andrea Mantegna.  
*Circumcision*, ca. 1460–1464.  
Originally in the chapel, Castello di San Giorgio. Le Gallerie degli Uffizi, Florence.

Bottom: Leon Battista Alberti.  
*Tempio Malatestiano*, after 1450.  
Façade. Rimini.



gone—so book 4 reminds us in an allusion to a *topos* of ancient literature concerning the wall the Athenians, on the eve of the Peloponnesian War, quickly built with whatever they could lay hands on. Thucydides writes, “the foundations are made of different sorts of stone, sometimes not shaped so as to fit, but laid down just as each was brought up at the time; there are many pillars taken from tombs and fragments of sculpture mixed in with the rest.”<sup>124</sup> Alberti comments:

It may be noted that a common material skillfully treated will be more graceful than a noble one piled up in a disorderly manner [*confuse acervata*]. There is a wall in Athens, described by Thucydides, hastily built, even using statues seized from tombs, but who would think it beautiful, simply because it was built of broken statues?<sup>125</sup>

Mantegna manages to give shape to this confusion, this disorderly piling up (*confuse acervata*). In his *Saint Sebastian* of Vienna (1470–1475 or, more probably, 1460–1470), behind the pillar of suffering, fragments of statues are piled with exposed and hastily positioned blocks,<sup>126</sup> and in the background of *Saint Sebastian* of the Louvre (1478–1480) people engaged in everyday activities can be seen on the ruins of a patched up esplanade laden with salvaged material. *Ornatus* will henceforth have to be dissociated from the economy of the trophy and of recovered remains, and become instead an integral part of the new art of architecture.

From book 6 on, Alberti’s prescriptions concerning the means and ways of working *ornamenta* (their *ordo et modus*) appear here and there, as in this discussion of revetments:

In all the revetments described above, avoid using the same color or shape too frequently, or too close together, or in a disorderly composition [*perturbate compincta copia*]; gaps between pieces should also be avoided; everything should be composed and fitted exactly, so that all parts of the work appear equally perfect.<sup>127</sup>

This becomes systematic in book 9, where Alberti affirms that, even if he commits no error in the principles of construction, an architect is in the wrong if he shuts out the possibility of recourse to ornament. Such is the case of “those who think the sole business of the wall is to support the roof, and there is no need to embellish it, in an appropriate and distinctive manner, with noble columns, magnificent statues, graceful paintings, and splendid revetment.”<sup>128</sup> The entire edifice, to its smallest parts, is to be submitted to the new discipline of “lines, angles, surfaces” (*lineae anguli extensio*), which are, in the work of forms, architecture’s true units of measure.<sup>129</sup> Ornaments, inscribed within the general order of the composition, are subject to it.<sup>130</sup>

Prescriptions therefore abound in book 9, where they amount to a manual on mounting and positioning:

The decoration of the work requires precision and method, it should be fluent, the decoration should not be packed together too closely, piled up in a single heap; it should be arranged and positioned in so fitting, correct, and apposite a manner [*apte appositeque distributis et collocatis*], that any alteration would be felt to disturb the delight of the *concinnitas*.<sup>131</sup>

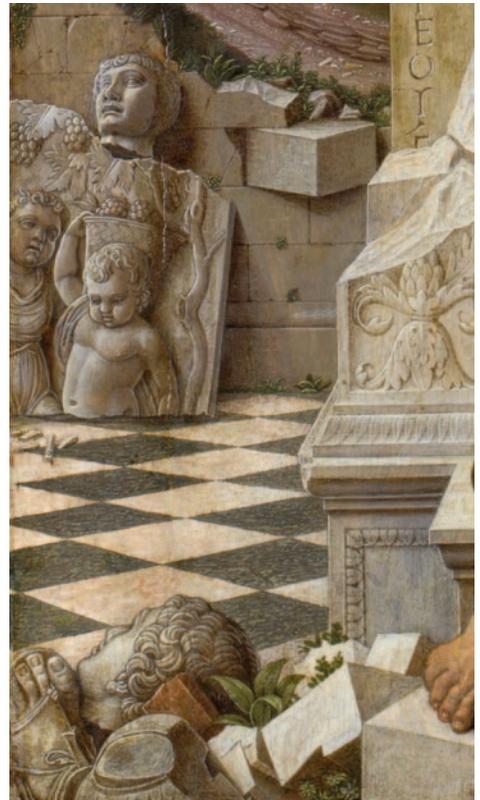
*Copia* and *varietas* organize the good distribution of ornaments, and one must be attentive not to extinguish, by the employment of second-order elements, that which should “shine”:

It would be helpful to include some sections treated with a little less care, so as to make the more refined ones shine by comparison [*quo excultoribus lumen comparatione sui reddatur illustrius*]. In particular, make sure the proportions of the lines are not corrupted. . . . Each part should be placed appropriately [*aptis collocetur*], so that none are isolated nor confused with another.<sup>132</sup>

But the challenge of the *opus affictum* of marbles, columns, and wall surfaces is not only good *collocatio* (good “arrangement”) or *convenientia* (the “hierarchical measure of dignities”) governing the rights and pretensions of each individual substance, man, or thing.<sup>133</sup> It is also a right and harmonious distribution of scansion and measures, a reasoned symmetry of elements combined among and with the entirety of the edifice that gives them the appearance of being indissociable, inherent, and produced by the structure into which they have been inserted:

We must therefore take great care to ensure that even the minutest elements are so arranged in their level, alignment, number, shape, and appearance, that right matches left, top matches bottom, adjacent matches adjacent, and equal matches equal, and that they are an ornament to that body [*ut . . . convenient ad istius corporis ornamentum*] of which they are to be a part. Even reliefs and panels, and any other decoration, must be so arranged that they appear to be in their natural and fitting place, as though twinned.<sup>134</sup>

At this point, is it possible not to think about the Tempio Malatestiano? The eight porphyry rounds in



Andrea Mantegna. *Saint Sebastian*, 1470–1475 or, more probably, 1460–1470. Detail of bottom left. Kunsthistorisches Museum, Vienna.

the white façade, the four disks, the oval, the five rectangular porphyry panels, the green serpentine marble panels and oval inserted into the lunette above the portal, the disk occupying the center of its triangular pediment, and the green marble lintel that greet the visitor—do they not signal the triumph of *ordo et modus* over the confusion of the *marmora et tabulae porphireae ac serpentinae* torn from the basilica of Sant’Apollinare in Classe?<sup>135</sup>

The *De re aedificatoria* takes note of the end of the ancient and medieval regime of reuse of which the walls of the Pisa Cathedral or those of the Doge’s Palace in Venice provide distinguished examples. But it equally disqualifies the reuse of the *spolia*/trophies of which Alberti’s contemporaries pride themselves, when not regulated by the new exigencies of the *ars aedificandi*. While the reactivation of the pageantry and pomp of ornaments (*ornamentum apparatus et pompa*) is the order of the day, while the popes brilliantly reaffirm their monopoly on the marbles and columns of Rome and endeavor to resuscitate to their advantage the economy of *maiestas*, the *De re aedificatoria* provides a new sense of *renovatio*. Architecture takes over from these periodic “renovations” that bore the burdens of reuse, as it takes up the baton from the patrimonial approach to ornaments of which jurisprudence was the conservator. From there, *ornatus* is placed under architecture’s authority. In the course of this long and complicated journey, which took no fewer than four books to traverse, the *De re aedificatoria* breaks the immaterial and statutory attachment of ornaments to patrimony, whether the patrimony of a house, a city, or the name of Rome. It breaks the singular, distinguishing temporality, made of redeployment and *renovatio*, of ornaments. Henceforth ornaments are assigned to the materiality and the visibility of each particular edifice. From this point, ornament becomes what we see: that dimension of an edifice that crystallizes the delectation that the art of constructing stimulates. Such is the conclusion of a paragraph in chapter 9 of book 9, whose unparalleled appeal constitutes a sort of manifesto of the new age of ornament:

Everything should be measured, bounded, and composed by lines and angles, connected, linked, and combined—and that not casually but according to exact and explicit method, so that one’s gaze might flow freely and gently along the cornices, through the recessions, and over the entire interior and exterior face of the work, its every delight heightened [*voluptatem augendo*] by both similarity and contrast; and so that anyone who saw it would imagine that he could never be satisfied by the view, but looking at it again and again in admiration, would glance back once more as he departed . . . its every number and dimension contributing to the splendor of the place.<sup>136</sup>



Andrea Mantegna. *Saint Sebastian*, 1478–1480. Detail. Musée du Louvre, Paris.

## Notes

The material in this article was developed over the course of my seminar at the École des Hautes Études en Sciences Sociales in 2010–2011 and 2013–2014 and was the subject of a talk given at the Wiederholung/Répétition conference at the German Center for Art History in Paris in June 2014, and of a presentation in April 2015 at the Architecture and Knowledge Seminar at the Harvard University Department of History of Art and Architecture. For their welcome and warm reception, I thank Andreas Beyer, Godehard Janzing, and Thomas Kirchner from the first and Erika Naginski, Alina A. Payne, and Antoine Picon from the second, as well as Vincent Jolivet and Pierre Thévenin for their attentive and stimulating readings, Maurice Brock and Francesco Furlan for their informed suggestions, and the generous reception by *Albertiana*, where it was first published as “Alberti, l’ornement, la nature et le droit: Une lecture du *De re aedificatoria*,” *Albertiana* 20 (n.s. 2), no. 1 (2017): 97–144. I would like to extend my gratitude to Lucia Allais, to the *Grey Room* team, and to Chet Wiener for undertaking, so valiantly and with such care, the translation of this text.

1. See *Leonis Baptistae Alberti viri clarissimi de re aedificatoria opus elegantissimum et quam maxime utile libri decem* (1485; Munich: Prestel, 1975). On the question of the date, see in particular Anna Modigliani, “Per la datazione del *De re aedificatoria*: Il codice e gli archetipi dell’Alberti,” *Albertiana* 16 (2013): 91–110.

2. “[Aedificationis tertia pars] dignissima et perquam valde necessaria.” Leon Battista Alberti, *L’architettura* (Milan: Il Polifilo, 1966), 6.1.445 (hereinafter cited as *De re aedificatoria*). “[T]he third [form of construction is] the noblest and most necessary of all.” Leon Alberti, *On the Art of Building in Ten Books*, trans. Joseph Rykwert, Neil Leach, and Robert Tavernor (Cambridge: MIT Press, 1988), 155.

3. This is no recent development, as the turn to rhetoric in art history can be dated to the publication of Rensselaer Lee, *Ut pictura poesis: The Humanistic Theory of Painting* (New York: Norton, 1967), although it came later to the historiography of architectural theory and with analyses of *De re aedificatoria* as a testing ground. See Veronica Biermann, *Ornamentum: Studien zum Traktat De re aedificatoria des Leon Battista Alberti* (Hildesheim: Olms, 1997); Alina A. Payne, *The Architectural Treatise in the Italian Renaissance: Architectural Invention, Ornament, and Literary Culture* (Cambridge, UK: Cambridge University Press, 1999); Caroline van Eck, “The Structure of Alberti’s *De re aedificatoria* Reconsidered,” *Journal of the Society of Architectural Historians* 56 (1998): 280–297; Caroline van Eck, “Language, Rhetoric and Architecture in *De re aedificatoria*,” in *The Language of Architecture: Constructing Identity in European Architecture, c. 1000–1650*, ed. Georgia Clarke and Paul Crossley (Cambridge, UK: Cambridge University Press, 2000); Caroline van Eck, *Classical Rhetoric and the Arts in Early Modern Europe* (Cambridge, UK: Cambridge University Press, 2007); and Hans-Karl Lücke, “Ornamentum, Reconsidered: Observations on Alberti’s *De re aedificatoria libri decem*,” *Albertiana* 7 (2004): 99–113.

4. On the translation of *pulchritudo*, see Fabienne Brugère and Jean-François Groulier, “Beauté,” in *Vocabulaire européen des philosophies: Dictionnaire des intraduisibles*, ed. Barbara Cassin (Paris: Robert et Le Seuil, 2004), 160–171.

5. Alberti, *On the Art of Building*, 156. “[U]t sit pulchritudo quidem certa cum ratione concinnitas universarum partium in eo, cuius sint, ita ut addi aut diminui aut immutari possit nihil, quin improbabilius reddatur.” Alberti, *De re aedificatoria* 6.2.449.

6. See the critical diagnosis established by Manfredo Tafuri, *L’architettura dell’Umanesimo* (1969; Bari: Laterza, 1973), 32ff.; and *Architettura dell’Umanesimo*, trans. and adapted by

Odile Seyler and Henri Raymond (Paris: Dunod, 1981).

7. See Jacques Derrida, *La vérité en peinture* (Paris: Flammarion, 1978). Available in English translation as *Truth in Painting*, trans. Geoff Bennington and Ian McLeod (Chicago: University of Chicago Press, 1987).

8. Alberti, *On the Art of Building*, 156. “Id si ita [i.e., a Cicerone] persuadetur, erit quidem ornamentum quasi subsidiaria quaedam lux pulchritudinis atque veluti complementum. Ex his patere arbitror, pulchritudinem quasi suum atque innatum toto esse perfusum corpore, quod pulchrum sit; ornamentum autem afficti et compacti naturam sapere magis quam innati.” Alberti, *De re aedificatoria* 6.2.449.

9. Lücke, “Ornamentum, Reconsidered,” 102, 108. Lücke continues, “The choice of words here seems very much to be driven by this sense, indeed moreover it endeavors to address the arbitrary character of the ornament as opposed to the strict nature of the *concinnitas*, which demands objectivity. Maybe, it is even possible to read the *ingere* as a reference to the mental, the *pangere* as one to the manual part of the operation” (102). The French translation of the passage in book 6 reads, “que l’ornement présente un caractère feint et ajouté”; Leon Alberti, *L’art d’édifier*, trans. Pierre Caye and Françoise Choay (Paris: Le Seuil, 2004), 279. The English version is much more faithful to the text because it provides “something attached or additional”; Alberti, *On the Art of Building*, 156. Still, in their glossary to *On the Art of Building*, the translators are less close to the literal translation of the passage, noting, “The distinction between beauty and ornament is clear here: beauty is the overall intellectual and primary framework—the essential idea—while ornament is the phenomenon—the individual expression and embellishment of this frame” (420).

10. See Lücke, “Ornamentum, Reconsidered,” 100: “*amoenitas*, grace and amenity, which I see as corresponding to a *subjective* judgment.” See also 110.

11. On this point, see Vasiliy Zubov, “La théorie architecturale d’Alberti/Arhitekturnaâ teoriâ Al’berti,” ed. F. Choay, F. Furlan, P. Souffrin, trans. Rénata Feldman, *Albertiana* 3 (2000): 33–62.

12. Alberti, *On the Art of Building*, 156. “[Est] pulchritudo quidem certa cum ratione concinnitas universarum partium in eo, cuius sint, ita ut addi aut diminui aut immutari possit nihil, quin improbabilius reddatur.” Alberti, *De re aedificatoria* 6.2.447. Alberti reiterates this definition in 6.5.815: “Atqui est quidem concinnitatis munus et paratio partes, quae alioquin inter se natura distinctae sunt, perfecta quadam ratione constituere, ita ut mutuo ad speciem respondeant.” (“It is the task and aim of *concinnitas* to compose parts that are quite separate from each other by their nature, according to some precise rule, so that they correspond to one another in appearance.” Alberti, *On the Art of Building*, 302.)

13. Alberti, *On the Art of Building*, 156; and Alberti, *De re aedificatoria* 6.2.447.

14. Alberti, *On the Art of Building*, 156. “[R]aroque, vel ipsi naturae, cuiquam concessum, ut in medium proferat, quod plane absolutum atque omni ex parte perfectum sit.” Alberti, *De re aedificatoria* 6.2.447.

15. Alberti, *On the Art of Building*, 302–303. “Quicquid enim in medium proferat natura, id omne ex concinnitatis lege moderatur. Neque studium est maius ullum naturae, quam ut quae produxerit, absolute perfecta sint.” Alberti, *De re aedificatoria* 6.5.814.

16. Alberti, *On the Art of Building*, 302–303. “Habetque campos latissimos, ubi exercentur atque efflorescat. Totam complectitur hominis vitam et rationes, totamque pertractat naturam rerum. [. . .] Hanc ipsam maiorem in modum res aedificatoria sectatur; hac sibi dignitatem gratiam auctoritatem vendicat atque in precio est. Cuncta, quae hactenus diximus, cum ita

esse ex ipsa rerum natura percepissent maiores nostri, nec dubitarent his neglectis se nihil assecuturos, quod ad operis laudem et decus faceret, non iniuria naturam optimam formarum artificem sibi fore imitandam indixere. Ea re leges, quibus illa in rebus producendis uteretur, quoad hominum industria valuit, collegerunt suasque ad rationes aedificatorias transtulerunt.” Alberti, *De re aedificatoria* 6.5.814.

17. Because they forget the sublunar register of architecture modern historians constantly underestimate the importance of *instauratio* in ancient art history. Restorations and repairs were signaled to posterity via an overabundance of dedicatory inscriptions, which modern historians wrongly associate with the decadence of the *res publica*, when they indicate exactly the opposite. See the epigraphic corpus assembled by Bryan Ward-Perkins, *From Classical Antiquity to the Middle Ages: Urban Public Buildings in Northern and Central Italy, A.D. 300–850* (Oxford, UK: Oxford University Press, 1984).

18. See Alberti, *On the Art of Building*, 156; Alberti, *De re aedificatoria* 6.2.449.

19. Alberti, *On the Art of Building*, 156; Alberti, *De re aedificatoria* 6.2.449; and Cicero, *De natura deorum* 1.28.79.

20. Alberti, *On the Art of Building*, 156; Alberti, *De re aedificatoria* 6.2.449.

21. “Quotus enim quisque formosus est, Athenis cum essem, e gregibus epheborum vix singuli reperiebantur. Video, quid adriseris, sed ita tamen se res habet. Deinde nobis, qui concedentibus philosophis antiquis adulescentulis delectamur, etiam vitia saepe iucunda sunt. Naevos in articulo pueri delectat Alcaeus; at est corporis macula naevos; illi tamen hoc lumen videbatur.” Cicero, *De natura deorum* 1.28.79, trans. H. Rackham (Cambridge: Loeb/Harvard University Press, 1968), 75–76.

22. *L'architecture et art de bien bastir, du seigneur Leon Baptiste Albert, gentilhomme florentin, divisée en dix livres, traduits du latin en françois, par deffunct Ian Martin, Parisien* (Paris: Jaques Kerver, 1553), 102.

23. Alberti, *On the Art of Building*, 301 (translation slightly modified). Where I have “totality,” *On the Art of Building* uses “one entity” (301), and Caye and Choay arrange their translation in relation to “*la réalité singulière*” (*L'art d'édifier*, 138). “Nam, quicquid unum illud, quod ex universo partium numero et natura exprimendum seligendumque sit aut singulis impartium ratione certa et coaequabili aut ita habendum, ut unam in congeriem et corpus plura iungat contineatque recta et stabili cohesione atque consensu, cui nos hic persimile quippiam quaerimus, profecto ipsum id eorum omnium vim et quasi succum sapiat necesse est, quibus aut coherescat aut immisceatur; alioquin discordia discidiisque pugnarent atque dissiparentur.” Alberti, *De re aedificatoria* 9.5.811.

24. Alberti, *On the Art of Building*, 301 (translation slightly modified). “A peritissimis veterum admonemur, et alibi diximus, esse veluti animal aedificium, in quo finiundo naturam imitari opus sit.” Alberti, *De re aedificatoria* 9.5.811.

25. Alberti, *On the Art of Building*, 302 (translation slightly modified). “Sed istaec ut prae caeteris placeat, efficere potuit quippiam, quod quale ipsum sit, non requiro. Ut vero de pulchritudine iudices, non opinio, verum animis innata quaedam ratio efficiet.” Alberti, *De re aedificatoria* 9.5.813.

26. In Cicero, *De natura deorum* 1.20.54, the verb *cohaereo* is used to designate the attachment by which atoms bind to one another.

27. As proposed by Caye and Choay, *L'art d'édifier*, 438 n. 51.

28. One of Stoicism's particularities is to make all beings into bodies, including the principles constituting the world and its parts; that is, the active and the passive principles. See

Émile Bréhier, *Chrysippe et l'ancien stoïcisme* (Paris: Presses Universitaires de France, 1971), 108; Richard Sorabji, *Matter, Space and Motion: Theories in Antiquity and their Sequel* (London: Duckworth, 1988), 79–105; Anthony Long and David N. Sedley, *The Hellenistic Philosophers* (Cambridge, UK: Cambridge University Press, 1987); and Jean-Joël Duhot, “Le stoïcisme: Une métaphysique de l’information ou le matérialisme impossible,” *Philosophie antique* 5 (2005): 31–47.

29. Aristotelian physics is an ontology of the sensible. See the aporias relating to combination in Aristotle, *On Generation and Corruption* 1.10.327b–328b. On the reliance, in the economy of Stoicism, on the theory of mixture (*krasis* or *mixis*) in these three modalities (juxtaposition or joining of surfaces, fusion, interpenetration), see Robert B. Todd, *Alexander of Aphrodisias on Stoic Physics: A Study of the De mixtione* (Leiden: Brill, 1976); Bernard Collette-Dučić and Sylvain Delcomminette, eds., “La théorie stoïcienne du mélange et sa postérité,” special issue, *Revue de philosophie ancienne* 24, no. 2 (2006); Bernard Collette-Dučić and Sylvain Delcomminette, eds., “La théorie stoïcienne du mélange et sa postérité II,” special issue, *Revue de philosophie ancienne* 25, no. 1 (2007); and Bernard Collette-Dučić and Sylvain Delcomminette, eds., “La théorie stoïcienne du mélange et sa postérité III,” special issue, *Revue de philosophie ancienne* 25, no. 2 (2007).

30. See Jackie Pigeaud, *L'art et le vivant* (Paris: Gallimard, 1995), 93.

31. Alberti, *On the Art of Building*, 302; Alberti, *De re aedificatoria* 9.5.815.

32. Alberti, *On the Art of Building*, 36. “Ex his patere arbitror, pulchritudinem quasi suum atque innatum toto esse perfusum corpore, quod pulchrum sit; ornamentum autem afficti et compacti naturam sapere magis quam innati.” Alberti, *De re aedificatoria* 6.2.449.

33. Alberti, *L'art d'édifier*, 279; Alberti, *On the Art of Building*, 156 and 420.

34. Giovanni Rossi, “Alberti e la scienza giuridica quattrocentesca: Il ripudio di un paradigma culturale, Alberti e la cultura del Quattrocento,” in *Atti del Convegno internazionale del Comitato nazionale VI centenario della nascita di Leon Battista Alberti*, Firenze, 16–18 December 2004, ed. Roberto Cardini and Mariangela Regoliosi (Florence: Polistampa, 2007), 1:66: “un vero e proprio ripudio della scienza giuridica.” Compare Giovanni Rossi, “Lo scaffale giuridico nella biblioteca di Leon Battista Alberti,” in *Leon Battista Alberti: La biblioteca di un umanista*, exh. cat., ed. Roberto Cardini, Lucia Bertolini, and Mariangela Regoliosi (Florence: Mandragora, 2005), 173: “ostentato distacco [*sc.* dell’Alberti] dalla scienza del diritto” ([Alberti’s] ostentatious detachment from the science of law). For the text of *De iure*, see “Leonis Baptistae Alberti *De iure* (*Du droit*),” ed. Cecil Grayson, trans. Pierre Caye, *Albertiana* 3 (2000): 157–248.

35. *Momus* can now be read in Leonis Battista Alberti, *Momus* (Paris: SILBA; Rome: Serra, 2016). In all probability, *Momus* was composed at the same time as *De re aedificatoria* and not completed. See Francesco Furlan, “Momus seu de Homine: Ruses et troubles de l’exégèse, ou des errances de l’histoire,” *Albertiana* 16 (2013): 75–90 (see also the introduction, xi–xxviii, esp. xiii).

36. See Rossi, “Alberti e la scienza giuridica quattrocentesca,” esp. 88: “il bagaglio di nozioni tecniche che, pure, l’Alberti possiede riemerge in realtà inopinatamente in una serie di luoghi, e verrebbe da dire che riaffiori quasi suo malgrado dal subconscio, a testimonianza dell’indelebile efficacia della formazione giuridica impartita all’epoca” (the baggage of technical concepts that Alberti possesses in fact reemerges in unexpected places, and one could almost say that it resurfaces from his subconscious against his will, proof of the indelible efficacy of the legal training imparted in this time period).

37. On the casuistic approach to *ius civilis*, of which he provided the model, see Yan Thomas, *Les opérations du droit*, ed. Marie-Angèle Hermitte and Paolo Napoli (Paris: Gallimard/Seuil, 2011); and Yan Thomas, *Legal Artifices: Ten Essays on Roman Law in the Present Tense*, ed. Thanos Zartaloudis and Francis Cooper, trans. Anton Schütz and Chantal Schütz (Edinburgh: Edinburgh University Press, 2021).

38. See Francesco Lucrezi, *La Tabula picta tra creatore e fruitore* (Naples: Jovene, 1984); Paola Maffei, *Tabula picta: Pittura e scrittura nel pensiero dei glossatori* (Milan: Giuffrè, 1988); Marta Madero, *Tabula picta: La peinture et l'écriture dans le droit médiéval* (Paris: Éd. de l'EHESS, 2004); and Marta Madero, *Tabula Picta: Painting and Writing in Medieval Law*, trans. Monique Dascha Inciarte and Roland David Valayre (Philadelphia: University of Pennsylvania Press, 2009).

39. See Francesco Musumeci, "Vicenda storica del *Tignum iunctum*," *Bollettino dell'Istituto di Diritto romano "Vittorio Scialoja"* 81 (1978): 201–265.

40. This can be seen clearly formulated by Pomponius in *Digest* 41.3.30. It can be compared to Seneca's classifications in the *Epistulae morales ad Lucilium* 102.6: "quaedam continua corpora esse, ut hominem; quaedam esse composita, ut navem, domum, omnia denique quorum diversae partes iunctura in unum coactae sunt; quaedam ex distantibus, quorum adhuc membra separata sunt, tamquam exercitus, populus, senatus. Illi enim per quos ista corpora efficiuntur iure aut officio cohaerent, natura diducti et singuli sunt." (There are homogeneous bodies, such as man; composite bodies, such as a ship, or a house, and finally and generally what owes its unity to the joining of separate parts; others are formed of discontinuous elements, and their parts remain separate: thus an army, a people, a senate. In fact, the parts that constitute these bodies, tightly linked by the law of their social function, exist by their nature separately and individually. Seneca, *Epistulae morales*, vol. 3, bks. 93–124, trans. Richard M. Gummere [1925; Cambridge: Loeb Classical Library, 1989], 170.) See also Aldo Dell'Oro, *Le cose collettive nel diritto romano* (Milan: Giuffrè, 1963); and Madero, *Tabula picta* (2004), 82, or Madero, *Tabula picta* (2009), 61, on the tripartition of corpora and its Stoic origins.

41. See Blaise de Vigenère, *La description de Callistrate de quelques statues antiques tant de marbre comme de bronze: 1602*, ed. Aline Magnien (Paris: Éd. La Bibliothèque, 2010), 125–127: "Il y a des doutes et controverses en cet endroit entre les jurisconsultes, qui s'arrêtent aux mots, non par aventure, bien entendus d'eux [. . .]. Cassius en Paulus met: 'la ferrumination crée un mélange dans le même matériau; la soudure au plomb ne fait pas la même chose en vérité.' Pomponius montrant s'y vouloir conformer: 'si tu as soudé au plomb ta coupe avec le plomb d'un autre, ou si tu as soudé avec l'argent d'un autre, il n'y a pas de doute que cette coupe soit à toi et que tu puisses la réclamer de bon droit.' Ce néanmoins, il entend que cette coupe soit d'argent. [. . .] Par tous lesquels lieux dessus dits, il appert que la ferrumination est prise pour toutes manières de colles, ciments, mortiers, soudures, et semblables agglutine-ments que les Grecs appellent *kollesis* et *sunapheia*." (There are doubts and controversies concerning this among jurisconsults, whose considerations, not by chance, come to a mincing of words. . . . Cassius and Paul state, "ferrumination creates a mixture in the same material; the melting of lead does not really do the same thing." Pomponius endeavors to conform to this, "if you soldered your cup with the lead of another, or if you solder it with the silver of another, there is no doubt that that cup belongs to you and you have every right to claim it." Nevertheless, he considers whether that cup be silver. . . . [I]n all of the above said places it appears that ferrumination is taken for all kinds of glues, cements, mortars, solders, and

similar agglutinants which the Greeks call *kollesis* and *sunapheia*.)

42. Ulpian, *Digest* 30.41.12: “Quid ergo in status dicendum? Si quidem inhaerent parietibus, non licebit: si vero alias existant, dubitari potest. Verum mens senatus plenius accipienda est: ut si qua ibi fuerunt perpetua, quasi portio aedium, distrahi non possint.”

43. Ulpian, *Digest* 30.43: “Senatus enim *ea quae sunt aedium*, legari non permisit. Haec autem mortis tempore *aedium non fuerunt*: heres ergo aestimationem praestabit. Sed si detraxerit, ut praestiterit, poenis erit locus: quamvis, ut non vendat, sed ut exsolvat” (emphasis added).

44. See Mario Bretone, *I fondamenti del diritto romano: Le cose e la natura* (Bari: Laterza, 1998), 14.

45. See Bretone, 13. Book 9 of *De Roma triumphante*, edited by Flavio Biondo ca. 1455, puts forward a description of the Roman house organized according to these three categories and explicitly fostered by the Roman jurists Ulpian and Paul. *Roma trionfante di Biondo da Forlì, Tradotta pur hora per Lucio Fauno di latino in buona lingua volgare* (Venice: Michiele Tramezzino, 1549), bk. 9, fols. 306r–v (on *istromenti per potere conservare i frutti*), 309v–310r (on *supellettile*), 316r–317r (on the marble).

46. See Giovanni Pontano, *I trattati delle virtù sociali: De liberalitate, De beneficentia, De magnificentia, De splendore, De conviventia, Introduzione, testo, traduzione e note a cura di Francesco Tateo* (Rome: Ed. dell’Ateneo, 1965), 131; Patricia Falguières, “La cité fictive: Les collections de cardinaux, à Rome, au XVI<sup>e</sup> siècle,” in *Les Carrache et les décors profanes: Actes du colloque de Rome 2–4 octobre 1986* (Rome: École Française de Rome, 1988), 266–267; and Bianca de Divitiis, “Giovanni Pontano and His Idea of Patronage,” in *Some Degree of Happiness: Studi di storia dell’architettura in onore di Howard Burns*, ed. Maria Beltramini and Caroline Elam (Pisa: Ed. della Normale, 2010), 107–131.

47. See Ulpian, *Digest* 30.41.7.

48. Ulpian, *Digest* 30.41.9. “Item hoc prohibetur haec legari, quod non alias detrahatur, subducatur, id est, marmora, vel columnae. Idem et in tegulis, et in tignis, et ostiis senatus censuit. Sed et in bibliothecis parietibus inhaerentibus.”

49. The author of the most accessible French translation of the *Digest*, Henri Hulot (1732–1775), a man of the eighteenth century, had the greatest difficulty in avoiding making nouns of “that which is attached and affixed.” He also had difficulty gauging the difference between Roman architecture and the classical aesthetic norm. For example, he translates “Marmora et columna” (Ulpian, *Digest* 30.41.2) as “les marbres, par exemple, les colonnes ou les statues” (marbles, for example columns or statues); “*tabulae adfixae*” (marble plaques affixed on the wall; Ulpian, *Digest* 30.41.13) as “moulures d’architecture” (architectural molding); “*sigilla adaequata*” (molded stuccowork; Ulpian, *Digest* 30.41.13) as “gravures” (etchings), and so on, so difficult is it for him to account for the singular materiality of *ornamenta*. *Les cinquante livres du Digeste ou des Pandectes de l’empereur Justinien*, trans. Henri Hulot (Metz: Behmer-Lamort; Paris: Rondonneau, 1803–1805), vols. 1–2.

50. See Ulpian, *Digest* 30.41.3, 30.41.7–9, 30.41.12, 30.41.43.

51. Ulpian, *Digest* 30.41.5–6.

52. In Ulpian, *Digest* 30.1.41, Ulpian points to the *senatus consultum Acilianum* dating from Hadrian’s reign, under the consulship of Aviola and Pansa, which prohibited the sale of *ornamenta* built into an edifice but allowed the owner to do so if this contributed to another of his properties. See José L. Murga, “El senado consulto Aciliano: Ea quae iuncta sunt legari non possunt,” *Bollettino dell’Istituto di Diritto romano “Vittorio Scialoja”* 79 (1976): 155–192.

53. *Senatus consultum Hosidianum*, in *Corpus inscriptionum Latinarum: Consilium et auctoritate Academiae litterarum regiae Borussicae editum, Berolini, Reimerus*, vol. 10, *Inscriptiones Bruttiorum, Lucaniae, Campaniae, Siciliae, Sardiniae Latinae*, ed. Theodorus Mommsen (Berlin: Georgium Reimerum, 1883), 158ff., no. 1401.

54. See *Codex Iustiniani* 8.10.12 (Severus Alexander to Diogenes, 22 December 222), “De aedificiis privatis”; and Fara Nasti, *L’attività normativa di Severo Alessandro: Politica di governo, riforme amministrative e giudiziarie* (Naples: Satura, 2006), 160, 194.

55. See Gaston May, “Les sénatus-consultes *Hosidien* et *Volusien*,” *Revue historique de Droit français et étranger* 14 (1935): 1–25; Yves Janvier, *La législation du Bas-Empire sur les édifices publics* (Aix-en-Provence: La Pensée Universitaire, 1969); and Ellen J. Philipps, “The Roman Law on the Demolition of Buildings,” *Latomus* 32 (1973): 86–95.

56. For the economic challenges of the kind of speculation pointed to in the *Hosidianum*, see Peter Garnsey, “Urban Property Investment: Appendix: Demolition of Houses and the Law,” *Studies in Roman Property: Cambridge University Research Seminar in Ancient History*, ed. Moses I. Finley (Cambridge, UK: Cambridge University Press, 1976), 123–136; and Federico Procchi, “*Si quis negotiandi causa emisset quod aedificium . . .*: Prime considerazioni su intenti negoziali e ‘speculazione edilizia’ nel Principato,” *Labeo* 47 (2001): 411–438.

57. Federico Procchi, “La tutela urbanistica: Un problema non nuovo: Considerazioni a margine del ‘SC. *Hosidianum*,’” in *Scritti in onore di Antonio Cristiani: Omaggio della Facoltà di Giurisprudenza dell’università di Pisa*, ed. Giovannangelo De Francesco (Turin: Giappichelli, 2001); Anna Bottiglieri, “La tutela dei beni artistici e del decoro urbano,” *Teoria e storia del diritto privato* 3 (2010), <https://www.teoriaestoriadeldirittoprivato.com/iii-annata-2010/>; Yuri A. Marano, “Fonti giuridiche di età romana (I secolo a.C.–VI secolo d.C.) per lo studio del reimpiego,” in *Riuso di monumenti e reimpiego di materiali antichi in età postclassica: Il caso della Venetia*, ed. G. Cuscito, *Antichità Altoadriatiche* 74 (Trieste: Editreg, 2012), 66–67; and Yuri A. Marano, “‘Roma non è stata (de)costruita in un giorno’: Fonti giuridiche e reimpiego in Età romana (I secolo a.C.–VI secolo d.C.),” *Lanx: Rivista della Scuola di Specializzazione in Archeologia dell’Università degli Studi di Milano* 6, no. 16 (2013): 1–54 (esp. 11–13). This was already the reading in May, “Les sénatus-consultes *Hosidien* et *Volusien*.” The misunderstanding was due in part to the fact that modern jurists have not distinguished the “materials” of the house in general from the *ornamenta*, generally distinguished as *marmora vel columnae* (marbles, that is, columns and other marble ornaments, which are the legal subject matter here), while, on the other hand, the freedom of reemployment that the texts in question also provide for the same patrimony has also been missed by modern commentators, with the exception of Joseph Alchermes, “*Spolia* in Roman Cities of the Late Empire: Legislative Rationales and Architectural Reuse,” *Dumbarton Oaks Papers* 48 (1994): 167–178, esp. 176, which, however, only concerns legislation in the late Roman Empire.

58. Yan Thomas, “Les ornements, la cité, le patrimoine, dans Images romaines,” in *Actes de la Table ronde organisée à l’École normale supérieure: 24–26 octobre 1996*, ed. Clara Auvray-Assayas (Paris: Presses de ENS, 1998), 44–75.

59. I analyzed this radical transformation of the problematics of redeployment in “Rome, dépouilles et parures: Les ornements de la ville,” in *Aux origines des cultures juridiques européennes: Yan Thomas entre droit et sciences sociales*, ed. Paolo Napoli (Rome: École Française de Rome, 2013), 47–69.

60. Thomas, *Les opérations du droit*, 266.

61. Thomas, “Les ornements,” 276, 281, 283.

62. On the concept of “universitas,” see Ernest Kantorowicz, *The King’s Two Bodies: A Study in Mediaeval Political Theology* (Princeton, NJ: Princeton University, 1957); Pierre Michaud-Quantin, *Universitas: Expressions du mouvement communautaire dans le Moyen Âge latin* (Paris: Vrin, 1970); Thomas, “Les ornements,” 44–75; Yan Thomas, “L’institution civile de la cité,” *Le débat* 14, no. 74 (1993): 23–45 (reprinted in Thomas, *Les opérations du droit*, 103–130); and Yan Thomas, “La construction de l’unité civique: Choses publiques, choses communes, choses n’appartenant à personne et représentation,” *Mélanges de l’École française de Rome: Moyen Âge* 114 (2002): 7–39.

63. Thomas, “L’institution civile,” 112–114. In *Digest* 30.22, Pomponius provides an apposite example: “Si grege legato aliqua pecora vivo testatore mortua essent in eorumque locum aliqua essent substituta, eundem gregem videri: et si deminutum ex eo grege pecus esset et vel unus bos superesset, eum vindicari posse, quamvis grex desisset esse: quemadmodum insula legata, si combusta esset, area possit vindicari.” (If a herd was inherited and some heads of cattle died and then were substituted with others, the herd is considered the same; and even if the herd is diminished to one, the legatee has the right to claim it, as when someone left a house if it burns down, can claim the plot.) See also *Digest* 30.24.[4]: “Si navem legavero et specialiter meam adscripsero eamque per partes totam refecero, carina eadem manente nihilo minus recte a legatario vindicaretur.” (If I bequeath a ship which I expressly had ascribed to be my own, even if I had repaired every part of it, the legatee would be able to take possession of it, because it is regarded as the same.)

64. Thomas “L’institution civile,” 112.

65. On the action of *tignum iunctum*, see Musumeci, “Vicenda storica del *Tignum iunctum*.”

66. For example, the Constitution of Constantine, 321 CE. See *Codex Justiniani* 8.10.6: “Si quis post hanc legem civitate spoliata ornatum, hoc est marmora vel columnas, ad rura transtulerit, privetur ea possessione, quam ita ornaverit—Const. a. Helpidio agenti vicem p.p.” (“If anyone, after the promulgation of this law, should remove from the city to the country any ‘ornamenta,’ that is to say, any marbles or columns, he shall be deprived of the building which he decorated in this way.” “The Emperor Constantine to Elpidius, acting as Deputy of the Praetorian Prefect,” *The Code of Justinian*, in *The Civil Law*, ed. and trans. Samuel P. Scott, vol. 14 [Cincinnati: Central Trust Company, 1932], 8.10.6, slightly altered.) The operation here is legal if the marbles and columns ornamenting an edifice that has fallen to ruin are transferred to another city to decorate a house belonging to the same owner. Another example is provided by the decree of Emperors Arcadius and Honorius, who, in 398, require magistrates of a district, before beginning construction of a new public building, to seek authorization from the praetorian prefect for the transfer of ornaments and marbles from elsewhere in that city [*ornamenta aut marmora . . . quae fuisse in usu vel ornatu probabitur civitatis*]. See *Codex Justiniani* 8.11.13; and *Theodosii imperatoris codex* 15.1.37.

67. The modern conception of the dignity and authority of the architect and the architecture would be affected. In Rome, however, the *actoritas* lay with the patrimony—that is, with the proprietor—as dedications to edifices attest. See Pierre Gros, “Statut social et rôle culturel des architectes (période hellénistique et augustéenne),” in *Architecture et société, de l’archaïsme grec à la fin de la république romaine: Actes du Colloque international: Rome, 2–4 Dec. 1980* (Paris: CNRS; Rome: École Française de Rome, 1983), 425–452. This is probably why juridical literature has been and still is ignored to so great an extent by art history and criticism.

68. Archaeological confirmation of this permanent recycling, appropriate to preindustrial economy, continues to be found. See *Il reimpiego in architettura: Recupero, trasformazione, uso*, ed. Jean-François Bernard, Philippe Bernardi, and Daniela Esposito (Rome: École Française de Rome, 2009); Simon Barker, “Roman Builders—Pillagers or Salvagers? The Economics of Deconstruction and Reuse,” in *Arqueología de la construcción*, vol. 1, *Los procesos constructivos en el mundo romano: Italia y provincias occidentales*, ed. Stefano Camporeale, Hélène Dessales, and Antonio Pizzo (Mérida: Instituto de Arqueología; Siena: Università di Siena; Paris: École Normale Supérieure, 2008), 127–142; Simon J. Barker, “Nineteenth-Century Labour Figures for Demolition: A Theoretical Approach to Understanding the Economics of Reuse,” in *TRAC 2010: Proceedings of the Twentieth Annual Theoretical Roman Archaeology Conference: University of Oxford, 25–28 March 2010*, ed. Dragana Mladenovi and Ben Russel (Oxford, UK: Oxbow Books, 2011), 89–101; Simon J. Barker, “Marble Salvaging during the Roman Period,” in *Interdisciplinary Studies on Ancient Stone: Proceedings of the Ninth Association for the Study of Marbles and Other Stones in Antiquity (ASMOSIA) Conference: Tarragona, 8–13 June, 2009*, ed. Anna Gutiérrez Garcia-M., Pilar Lapuente Mercadal, and Isabel Rodà de Llanza (Tarragona: Institut Català d’Arqueologia Clàssica, 2012), 22–30; and Beth Munro, “Approaching Architectural Recycling in Roman and Late Roman Villas,” in *TRAC 2010*, 76–88. See also *Memorie dal passato di Iulia Concordia: Un percorso attraverso le forme del riuso e del reimpiego dell’antico*, ed. Elena Pettenò and Federica Rinaldi (Portogruaro, Italy: Fondazione Antonio Colluto; Rubano, Italy: Turato, 2011); and Philippe Bernardi and Daniela Esposito, “For an History of Deconstruction,” in *Nuts and Bolts of Construction History: Culture, Technology and Society*, ed. Robert Carvais et al. (Paris: Picard, 2012), 2:453–460. For the Greek world, see Giovanni Marginesu, “Spoglio, reimpiego e vendita di materiali architettonici: Spigolature epigrafiche ateniesi,” *Annuario della Scuola archeologica di Atene e delle Missioni italiane in Oriente* 86, ser. 3, no. 8 (2008): 41–55; Marie-Christine Hellmann, *L’architecture grecque*, vol. 1, *Les principes de la construction* (Paris: Picard, 2002), 118; and Anne-Valérie Pont, *Orner la cité: Enjeux culturels et politiques du paysage urbain dans l’Asie gréco-romaine* (Bordeaux: Ausonius, 2010), 246.

69. Alberti, *On the Art of Building*, 176. “Visuntur passim crustationum continendarum gratia clavi parietibus affixi. Aetas docuit aeneos praestare. Perplacet qui clavicularum loco inter iuncturas ordinum per parietem factis minutis foraminibus extantes glebusculas siliceas confixere malleolo nimirum ligneo.” Alberti, *De re aedificatoria* 6.9.501.

70. Alberti, *On the Art of Building*, 178. “Tabulis continendis, si erunt illae quidem crassae, claviculi aut marmorei prominentes captus adinterfigantur parieti, subinde nudaee tabulae applicentur; sin autem erunt tenuiores, post secundas harenationes, calcis loco, caera pix resina mastix et gummarum omnis numerus confuse colliquefactus adhibeatur, sensimque concalefiat tabula, ne repentina ignis molestia crepet. Ponendis tabulis laus erit, si ex earum expaginatione ac serie aspectus concinnitas referetur. Maculae enim maculis et colores coloribus et talia talibus coaptanda sunt, ut alter alteri mutuo praestet gratiam.” Alberti, *De re aedificatoria* 6.10.507.

71. See particularly, Gustina Scaglia, “Alberti e la meccanica della tecnologia descritta nel *De re aedificatoria* e nei Ludi matematici,” in *Leon Battista Alberti*, exh. cat., ed. Joseph Rykwert and Anne Engel (Milan: Electa, 1994), 316–329; and Anthony Grafton, *Leon Battista Alberti: Master Builder of the Italian Renaissance* (New York: Hill and Wang, 2000), 71. See also Leon Battista Alberti, “Ludi rerum mathematicarum,” in *Opere volgari*, vol. 3, *Trattati d’arte, Ludi rerum mathematicarum, Grammatica della lingua toscana, Opuscoli amatori*,

*Lettere*, ed. Cecil Grayson (Bari: Laterza, 1973), 131–173.

72. This is particularly evident in *Picturing Machines: 1400–1700*, ed. Wolfgang Lefèvre (Cambridge: MIT Press, 2004). However, this is not the case in Gustina Scaglia, “Drawings of Machines for Architecture from the Early Quattrocento in Italy,” *Journal of the Society of Architectural Historians* 25 (1966): 90–114. See also *Gli ingegneri del Rinascimento da Brunelleschi a Leonardo da Vinci*, exh. cat., ed. Paolo Galluzzi (Florence: Giunti, 1996), 164–168 (on the transport, maneuvering, and erection of columns, obelisks, etc.); and Gianluca Belli, “Colonne, obelisch, piramidi: Le macchine per lo spostamento dei grandi pesi,” in *Prima di Leonardo: Cultura delle macchine a Siena nel Rinascimento*, exh. cat., ed. Paolo Galluzzi (Milan: Electa, 1991), 147–154.

73. Scaglia, “Drawings of Machines for Architecture,” 91–97. The drawings by Francesco di Giorgio Martini or his copyist or draftsman recall the exploit of the engineer Aristotile Fioravanti in 1455 in Bologna in moving the campanile of Santa Maria del Templo, known as “Torre della magione.” Popes Nicolas V, Paul II, and Sixtus IV consulted Fioravanti on the transfer of the Vatican obelisk.

74. The link between technological innovation and the transport of monoliths required in Florence for the projects of Brunelleschi at the Ospedale degli innocenti, San Lorenzo, and Santo Spirito, and in Rome for moving the Vatican obelisk under Nicholas V, Paul II, and Sixtus IV are described in Belli, “Colonne, obelisch, piramidi.” More generally, on the unprecedented appearance of column lifting mechanisms in the quattrocento in collections of drawings of machines, see Gianluca Belli, “Notes sur le transport et le soulèvement des colonnes dans l’architecture des XVe et XVIe siècles,” in *La colonne: Nouvelle histoire de la construction*, ed. Roberto Gargiani (Lausanne: Presses Polytechniques et Universitaires Romandes, 2008), 91–115, esp. 104.

75. Alberti, *On the Art of Building*, 176. “Circa parietem atque tectum exornandum plurimum tibi erit locus, ubi rarissima naturae munera et artis peritiam et artificis diligentiam ingenii vim explices.” Alberti, *De re aedificatoria* 6.5.469.

76. Alberti, *On the Art of Building*, 164. “De his nobis dicendum, quae sint et qui fiant. Sed quoniam maximorum lapidum movendorum mentio habita est, locus hic admonet, ut prius referamus, quo pacto tantae moles trahantur atque difficillimis locis imponantur.” Alberti, *De re aedificatoria* 6.6.473.

77. See Philippe Fleury, *La mécanique de Vitruve* (Caen: Presses Université Caen, 1993), 63. A theory of the lever opens the pseudo-Aristotelian *Questions of Mechanics* (847b) and defines mechanics as such as the paradoxical effects of the properties of the circle and lever with which the small can lift the large. On the implications of this definition for readers in the Renaissance, see Patricia Falguières, “Poétique de la machine,” in *L’art de la Renaissance entre science et magie*, ed. Philippe Morel (Paris: Somogy; Rome: Académie de France à Rome, 2006), 401–449; and Patricia Falguières, “Technè: Art, nature et mécanique dans l’Europe de la Renaissance,” forthcoming.

78. “Machina est continens e materia coniunctio maximas ad onerum motus habens virtutes.” Vitruvius, *On Architecture* 2.10, trans. F. Granger (Cambridge: Loeb/Harvard University Press, 2014), 274. A sixteenth-century French translation captures the sense of marvel: “Machine est une ferme conjonction ou assemblage de pièces de charpenterie, ayant une singulière et merveilleuse force à l’endroit du mouvement des fardeaux” (A machine is a solid conjunction or assemblage of pieces of carpentry having a singular and marvelous force at the point of moving a load). *Architecture ou art de bien bastir, de Marc Vitruve*

*Pollion, auteur antique mis de latin en francoys par Ian Martin secrétaire de monseigneur le cardinal de Lenoncourt* (Paris: Jacques Gazeau, 1547), fol. 135v. The first editions in English had already lost that valence. See “A machine is a composition of timber, its use being chiefly for moving of great weights.” *The Architecture of M. Vitruvius Pollio*, trans. W. Newton (London: James Newton, 1791), 2:229.

79. Alberti, *De re aedificatoria* 6.7.483; Alberti, *On the Art of Building*, 167.

80. In book 9, Alberti considers atlantes, pumice revetements (*pumex vivus*), artificial grottoes, mother of pearl revetments, and so on—which, in the next century, would make his treatise a source for mannerists.

81. Alberti, *De re aedificatoria* 6.13.521; Alberti, *On the Art of Building*, 183.

82. Alberti, *On the Art of Building*, 220–221. “Assuevere veteres cum in templis tum in porticibus res rarissimas ornamenti gratia imponere; quale illud in templo Herculis, qui formicarum cornua ab Indis devecta, et Vespasiani, qui coronas ex cinnamo in Capitolio, et Augustae, quae in Palatis primario templo maximam cinnami radicem aurea patera imposuit. Apud Thermum in Etholia, quam Philippus vastavit, fuisse in porticibus templi arma ferunt numero ultra quindecim milia et statuas ornamenti gratia ultra duo milia, quas omnes Philippum confregisse refert Polibius, praeter eas, quae nomen aut effigiem haberent deorum. . . . Apud Siculos fuere qui statuas ex sale formare instituerunt: auctor est Solinus. Et statuas—inquit Plinius—effecit ex vitro. Equidem istiusmodi rarissima erunt ad naturae atque ingeniorum admirationem dignissima.” Alberti, *De re aedificatoria* 8.10.611.

83. The encyclopedic collection titled *De inventoribus rerum* by Polydore Vergil (Polydorus Vergilius or Polidoro Vergilio, ca. 1470–1555) is the crystallization. On its connection to the *artes*, see Klaus Thraede, “Das Lob des Erfinders: Bemerkungen zur Analyse der Heuremata-Kataloge,” *Rheinisches Museum zur Philologie* 105 (1962): 158–186.

84. Pliny the Elder, *Natural History* 35.2.2. See also Pierre Gros, “Les statues de Syracuse et les dieux de Tarente: La classe politique romaine devant l’art grec à la fin du IIe siècle avant J.-C.,” *Revue des études latines* 57 (1979): 85–114.

85. For this equivalence, see Patricia Falguières, “L’ornement du droit” (paper presented at the “Questionner l’ornement” colloquium, Paris, 7–8 November 2011), <http://www.lesartsdecoratifs.fr/francais/colloques-et-journees-d-etudes/colloque-questionner-l-ornement>.

86. Alberti, *On the Art of Building*, 183–184. “In tota re aedificatoria primarium certe ornamentum in columnis est: nam et una plures appositae porticum parietem omneque apertionis genus ornant, et simplices utique non indecorae sunt; trivium enim theatra plateas honestant, trophea servant, monumento sunt, gratiam habent, dignitatem afferunt.” Alberti, *De re aedificatoria* 5.113.521.

87. Alberti, *On the Art of Building*, 244; Alberti, *De re aedificatoria* 8.1.667.

88. See, in particular, Alberti, *De re aedificatoria* 8.1.667; Alberti, *On the Art of Building*, 245. The Lex Agraria implicating the alienation of sepulchers aroused the opposition of the gentes to the Gracchis: the integral transmission of patrimony to heirs—even to those a great distance, if necessary—comprises a condition of respect to sepulchers, the tomb being an ornament for the family as well as for the whole city. See also Alberti, *De re aedificatoria* 8.2.673; Alberti, *On the Art of Building*, 247. The law in the Twelve Tables prohibits any additional or adverse use of the vestibule or entrance to a sepulcher, and another law protects the integrity of a tomb’s funerary columns from depredation.

89. Alberti, *On the Art of Building*, 159. “Quid demum non plus dico? Cloacis faciundis pulchritudine carere non potuerunt; ornamentisque usque adeo delectati sunt, ut vel eam

solam ob gratiam vires imperii profundere pulcherrimum duxerint, aedificando scilicet cui apte ornamenta adiungerent.” Alberti, *De re aedificatoria* 6.3.457.

90. See Hazel Dodge and Bryan Ward-Perkins, eds., *Marble in Antiquity: Collected Papers of [John] B. Ward-Perkins* (London: British School at Rome, 1992), 13–54; Patrizio Pensabene, “Amministrazione dei marmi e sistema distributivo nel mondo romano,” in *Marmi antichi*, ed. Gabriele Borghini (Rome: De Luca, 1989), 43–53; *Marmi antichi II: Cave e tecnica di lavorazione, provenienze e distribuzione*, ed. Patrizio Pensabene (Rome: L’Erma di Bretschneider, 1998); *I marmi colorati della Roma imperiale*, exh. cat., ed. Marilda De Nuccio and Lucrezia Ungaro (Venice: Marsilio, 2002); and Alfred M. Hirt, *Imperial Mines and Quarries in the Roman World: Organizational Aspects, 27 B.C.–A.D. 235* (Oxford, UK: Oxford University Press, 2010).

91. See Georges Dumézil, “Maiestas et gravitas,” in *Idées romaines* (Paris: Gaillimard, 1969), 128–152; and Yan Thomas, “L’institution de la majesté,” *Revue de synthèse* 112 (1991): 331–386.

92. Archaeologists have pushed back the chronology of reuse to well before the supposed decline of the third and fourth centuries. See Richard Krautheimer, *Rome: Profile of a City, 312–1308* (Princeton, NJ: Princeton University Press, 1980); Lucilla De Lachenal, *Spolia: Uso e reimpiego dell’antico dal III al XIV secolo* (Milan: Longanesi, 1995); Dale Kinney, “*Spolia: Damnatio and renovatio memoriae*,” *Memoirs of the American Academy in Rome* 42 (1997): 122–126; and Anna Anguissola, “Note alla legislazione su spoglio e reimpiego di materiali da costruzione e arredi architettonici: I sec. a.C.–VI sec. d.C.,” in *Senso delle rovine e riuso dell’antico*, ed. Walter Cupperi (Pisa: Scuola Normale Superiore, 2002), 13–30.

93. Thomas, “Les ornements,” 282. On protection of “ornaments of public splendor” (*publici splendoris ornatum*) in the Justinian and Theodosian Codes, see Janvier, *La législation*, 167–178; and Anguissola, “Note alla legislazione,” 13–30.

94. *Saxa rediviva* and *lapis redivivus* (reanimated stone and revived rock) are the usual designations for *spolia* in the later Roman Empire. See Anguissola, “Note alla legislazione,” 167 n. 2.

95. Thomas, “Les ornements,” 282; Anguissola, “Note alla legislazione,” 178; Ward-Perkins, *From Classical Antiquity*, 204, 207; and Maria Fabricius Hansen, *The Eloquence of Appropriation: Prolegomena to an Understanding of Spolia in Early Christian Rome* (Rome: L’Erma di Bretschneider, 2003).

96. See *Blondi Flavii Forliviensis Romae instauratae libri III* (Verona: Boninus de Boniniis de Ragusia, 1481), bk. 3, pts. 5–8, fols. 42v, 49r–v. This vocabulary reached Flavio Biondo through Cassiodorus’s *Variae*, the collection of letters and imperial directives written by this praetorian prefect to Theodoric the Great that Biondo chose as his primary source. On *renovatio* under Theodoric, see Maria C. La Rocca, “Una prudente maschera ‘antiqua’: La politica edilizia di Teodorico,” in *Teodorico il Grande e i goti d’Italia: Atti del XIII Congresso internazionale di studi sull’Alto Medioevo: Milano, 2–6 November 1992, s.e.* (Spoleto: C.I.S.A.M., 1993), 2:451–515; Ludovico Gatto, “Ancora sull’edilizia e l’urbanistica nella Roma di Teodorico,” *Romanobarbarica* 12 (1992–1993): 311–380; Letizia Pani Ermini, “Forma urbis e renovatio murorum in Età teodoricianiana,” *Teodorico e i goti tra Oriente e Occidente*, ed. Antonio Carile (Ravenna: Longo, 1995), 171–225; Valérie Fauvinet-Ranson, *Decor Civitatis, Decor Italiae: Monuments, travaux publics et spectacles au VIe siècle d’après les Variae de Cassiodore* (Bari: Edipuglia, 2006); and Michael S. Bjornlie, *Politics and Tradition between Rome, Ravenna and Constantinople: A Study of Cassiodorus and the Variae, 527–554*

(Cambridge, UK: Cambridge University Press, 2013).

97. Ward-Perkins, *From Classical Antiquity*, 122, presents the chronology of imperial legislation on spoliation but without associating it with *ornamenta*, which nevertheless are explicitly designated, e.g., in the 458 Edict of Majorian requiring the allocation of ornaments recuperated from ruined monumental edifices.

98. Ward-Perkins, *From Classical Antiquity*, 204.

99. Ward-Perkins, *From Classical Antiquity*, 205.

100. This was the era when the *Variae* of Cassiodorus were elected by Flavio Biondo and humanists of the Roman curia as the privileged source for their considerations of *decor urbis*. See Carmelo Occhipinti, *Pirro Ligorio e la storia cristiana di Roma: Da Costantino all'umanesimo* (Pisa: Ed. della Normale, 2007), 107–146. The use of the term *spolia* became more generalized in humanist circles during the quattrocento. See Alchermes, “*Spolia* in Roman Cities of the Late Empire,” 176; and Kinney, “*Spolia: Damnatio and renovatio memoriae*,” 121.

101. On the doctrinal apparatus of *renovatio* undertaken by Nicholas V, see Giuseppe L. Coluccia, *Niccolò V umanista: Papa e riformatore: Renovatio politica e morale* (Venice: Marsilio, 1998).

102. See Caroll W. Westfall, *In This Most Perfect Paradise: Alberti, Nicholas V, and the Invention of the Conscious Urban Planning of Rome, 1447–1455* (College Station, PA: Pennsylvania State University Press, 1974); Charles Burroughs, “Alberti e Roma,” in *Leon Battista Alberti*, ed. Rykwert and Engel, 134–157; Howard Burns, “Leon Battista Alberti,” in *Storia dell'architettura italiana*, ed. Francesco Fiore (Milan: Electa, 1998), 114–165; and Christoph L. Frommel, “Roma,” in *Storia dell'architettura italiana*, 374–382.

103. See Manfredo Tafuri, “‘Cives esse non licere’: The Rome of Nicholas V and Leon Battista Alberti: Elements toward a Historical Revision,” *Harvard Architecture Review* 6 (1987): 60–75; and Manfredo Tafuri, *Interpreting the Renaissance: Princes, Cities, Architects* (1992), trans. Daniel Sherer (New Haven: Yale University Press, 2006), 23–57.

104. See Christine Smith, “Leon Battista Alberti e l'ornamento: Rivestimenti parietali e pavimentazioni,” in *Leon Battista Alberti*, ed. Rykwert and Engel, 196–215; and Angela Dressen, *Pavimenti decorati del Quattrocento in Italia* (Venice: Marsilio, 2008), 104.

105. Cosimo il Vecchio is buried in the center of the chapel under porphyry marquetry, and the walls of the sepulchers of his brothers are signaled with encrusted porphyry rounds set in the walls. See Andreas Beyer, “Funktion und Repräsentation: Die Porphyry-Rotae der Medici,” in *Piero de' Medici 'il Gottoso' (1416–1469): Kunst im Dienste der Mediceer*, ed. Andreas Beyer, Bruce Boucher, and Francis Ames-Lewis (Berlin: Akademie, 1993), 151–168. On the Medici predilection for porphyry, see Rab Hatfield, “Cosimo de' Medici and the Chapel of His Palace,” in *Cosimo 'il Vecchio' de' Medici, 1389–1464: Essays in Commemoration of the 600th Anniversary of Cosimo de' Medici's Birth*, ed. Francis Ames-Lewis (Oxford, UK: Clarendon, 1992), 221–244; and Wendy Stedman Sheard, “Verrocchio's Medici Tomb and the Language of Materials: With a Postscript on His Legacy in Venice,” in *Verrocchio and Late Quattrocento Italian Sculpture*, ed. Steven Bule, Alan Darr, and Fiorella Superbi Gioffredi (Florence: Le Lettere, 1992), 63–90.

106. See Dale Kent, *Cosimo de' Medici and the Florentine Renaissance: The Patron's Oeuvre* (New Haven: Yale University Press, 2000), 305; and Dressen, *Pavimenti decorati*, 38.

107. See *Giovanni Rucellai e il suo Zibaldone*, vol. 2, *A Florentine Patrician and His Palace* (London: Warburg Institute, 1981), 73; and Charles R. Mack, “Nicholas V and the Rebuilding of Rome: Reality and Legacy,” in *Light on the Eternal City: Observations and Discoveries in*

*the Art and Architecture of Rome*, ed. Hellmut Hager and Susan Scott Munshowe (College Station, PA: Pennsylvania State University, 1987), 2:50ff.

108. Smith, 109.

109. On quattrocento restitutions of marbles and the ancient *corpus* (Pliny the Elder, Paul the Silentiary, Procopius, etc.), see Raniero Gnoli, *Marmora romana* (Rome: Ed. dell'Elefante, 1971), 59ff., 131ff.

110. This led, a century later, to Alberti being associated by Vasari with the resurrection of the arts of cutting porphyry, lost since antiquity. See Giorgio Vasari, “Delle diverse pietre che servono agl'architetti per gl'ornamenti e per le statue della scultura,” ch. 1 of “l'Introduzione di messer Giorgio Vasari pittore aretino alle tre arti del disegno cioè architettura, pittura e scultura, e prima dell'architettura,” *Le vite de' più eccellenti pittori, scultori e architettori nelle redazioni del 1550 e 1568: Testo*, vol. 1 (Florence: Sansoni, 1966), 34. See also Gnoli, *Marmora romana*, 131; and Suzanne B. Butters, *The Triumph of Vulcan: Sculptor's Tools, Porphyry, and the Prince in Ducal Florence* (Florence: Olschki, 1996).

111. See Roger Jones, “Mantegna and Materials,” *Tatti Studies: Essays in the Renaissance* 2 (1987): 76.

112. Other examples could be found in Venice, where serpentine (i.e., “green porphyry”) disks and red porphyry laid into marble façades were more often seen after 1450. The apogee of this enthusiasm for marble ornamentation was during the 1480s as polychrome marble with a rhythm of porphyry disks was installed on the interior and exterior of the Church of Santa Maria dei Miracoli. See Jones.

113. See Smith, 208.

114. See Jones, 79.

115. See Jones, 75, 77; and Smith, 210.

116. The same could be said of Isabelle d'Este's *studiolo*, whose décor is enriched with porphyry tabletops, alabaster vases, and so on, where Mantegna painted reliefs above doors with the appearance of bronze. This ornamental destination, which competes with the power of the marble, if examined from the perspective of the *aemulatio* between painting and sculpture, has until the present rarely been considered in relation to *ornamenta*.

117. See, in particular, Paola Novara, “Il reimpiego di marmi nel Tempio malatestiano,” in *Il tempio della meraviglia: Gli interventi di restauro al Tempio malatestiano per il giubileo (1990–2000)*, ed. Cetty Muscolino and Ferruccio Canali (Florence: Alinea, 2007), 129.

118. See Corrado Ricci, *Il tempio malatestiano* (Rome: Bestetti e Tumminelli, 1925), 177; Robert Tavernor, *On Alberti and the Art of Building* (New Haven: Yale University Press, 1998), 49; and Dressen, *Pavimenti decorati*, 47, who answers in the negative and locates redeployments in the interior, which is unexpected.

119. On pontifical legislation starting with Martin V, see David Karmon, *The Ruin of the Eternal City: Antiquity and Preservation in Renaissance Rome* (New York: Oxford University, 2011), 52. The pontificate of Martin V was decisive in the affirmation of a papal monopoly on excavation licenses over and above those of municipal authorities, the “Maestri di strade” (64).

120. See Ruth Rubinstein, “Pius II and Roman Ruins,” *Renaissance Studies* 2 (1988): 199, 203; and Paolo Fancelli, “Le rovine tra 'spolia' e restauri,” in *La Roma di Leon Battista Alberti: Umanisti, architetti e artisti alla scoperta dell'antico nella città del Quattrocento*, exh. cat., ed. Francesco Fiore with Arnold Nesselrath (Milan: Skira, 2005), 58. The papal bull of 1462 earned Pius II the honor of figuring in the anthology of founding texts of the UNESCO World

Heritage program. For the text of the bull, see Eugène Müntz, *Les arts à la cour des papes pendant les XVe et XVIe siècles: Recueil de documents inédits tirés de archives et des bibliothèques romaines*, vol. 1, *Martin V–Pie II: 1417–1464* (1878; Hildesheim: Olms, 1983), 357. But while it taxes and excommunicates for spoliations of the *ornatus urbis*, the way that it also explicitly affirms the pontifical monopoly on licenses authorizing the same manifests remarkable continuity with ancient legislation. Karmon, *The Ruin of the Eternal City*, 69–71, provides a different analysis.

121. There is therefore no contradiction here, contrary to what some modern historians claim (e.g., Fancelli, “Le rovine tra ‘spolia,’” 59).

122. See Rodolfo Lanciani, *Storia degli scavi di Roma e notizie intorno le collezioni romane di antichità*, vol. 1, *A. 1000–1530* (1902; Quasar, 1989), 62 (23 December 1451–17 June 1452); and Scaglia, “Drawings of Machines for Architecture,” 107–109. On which machines may have been used in the great movement of marble to Rome from Nicholas V to Sixtus IV, see Francesco Fiore, *Città e macchine del’400 nei disegni di Francesco di Giorgio Martini* (Florence: Olschki, 1978).

123. Lanciani, *Storia degli scavi*, 81.

124. Thucydides, *History of the Peloponnesian War*, trans. Rex Warner (London: Penguin Books, 1972), 90. “[H]oi gar themelioi pantoioñ dithōn hypokeintai kai ou xyneirgasmenōn estin hēi, all hōs hekaston pote prosepheron, pollai te stēlai apo sēmatōn kai lithoi eirgasmenoi egkatelegēsan. Meizōn gar ho peribolos pantakhēi exēkhthē tēs poleōs.” Thucydides, *History of the Peloponnesian War* 1.93.1. On the new historical consciousness evidenced in descriptions of walls and modes of construction from Pogge and Alberti and in Mantegna’s painting, see Arnold Esch, “L’iconografia dei muri antichi nei dipinti del Quattrocento e la descrizione delle mura di Roma di Leon Battista Alberti e Poggio Bracciolini,” in *La Roma di Leon Battista Alberti*, 81–89.

125. Alberti, *On the Art of Building*, 164. “Videre quidem licet, quam interdum ignobilis materia, quod arte tractata sit, plus afferat gratiae, quam afferat nobilis alibi confuse acervata. Murum Athenis, quem tumultuario factum opere scribit Tuchidides raptis etiam sepulchrorum stautis, quis ea re pulchrum esse affirmabit, quod clade statuarum refertus sit?” Alberti, *De re aedificatoria* 6.5.471.

126. Esch, 85–87.

127. Alberti, *On the Art of Building*, 179. “In his omnibus, quae recensuimus, vitabitur eiusdem coloris et formae nimium crebra et uno in loco plus satis conferta et perturbate compincta copia; vitabitur et coniunctionum hiatus; omnia ad unguem componentur atque deligabuntur, ut cunctae partes operis aequaliter sese absolutas praebeant.” Alberti, *De re aedificatoria* 6.10.511.

128. Alberti, *On the Art of Building*, 311–312. “[V]eluti qui in parietibus nihil curarint, praeterquam ut tecta substineant, nihil uspiam reliquerint, ubi apte atque distincte aut columnarum dignitatem aut statuarum decus aut tabularum et picturae venustatem aut crustationum lautitiam recte possis impartiri.” Alberti, *De re aedificatoria* 9.8.843.

129. “By ‘parts’ here are meant the elements that define form, such as lines, angles, surfaces, and so on.” Alberti, *On the Art of Building*, 311; Alberti, *De re aedificatoria* 9.8.843.

130. This provides an additional confirmation of the lack of any basis for an opposition between ornament and *concinnitas*.

131. Alberti, *On the Art of Building*, 313 (translation modified). “Exactam esse oportet condecorandi operis rationem atque porro expeditam, rebus illustribus non nimium crebre

confertis, non inculcatis unamque in congeriem coactis, sed ita diffinite apte appositeque distributis et collocatis, ut, qui mutarit, omnem concinnitatis iocunditatem perturbatam sentiat.” Alberti, *De re aedificatoria* 9.9.849.

132. Alberti, *On the Art of Building*, 314 (translation modified). “Iuvabitque certis locis paulo neglectiora intermiscere, quo excultoribus lumen comparatione sui reddatur illustrius. Illud omnino cavebitur, ne lineamentorum rationes pervantantur. [ . . . ] Ordini etiam suae dabuntur partes, nequid interrupte, nequid confuse disseminetur, sed locis et suis et aptis collocetur.” Alberti, *De re aedificatoria* 9.9.851.

133. “Set some of the outstanding [ornament] features in the most dignified positions, others in between among the less elegant, and still others among those of little importance. Here you should avoid mixing worthless with precious, large with minute, or tight and narrow with diffuse and expansive.” Alberti, *On the Art of Building*, 313–314. “Ex praestantissimis alia [ornamenta] ponet locis primariis, alia etiam collocabit media inter minus elegantes, alia iterum inter postremas. Illud in ea re cavebit, ne preciosissimis nimium frivola, ne grandioribus minutissima, ne retractioribus angustioribusque multo perfusa atque amplissima coniungat. . . .” Alberti, *De re aedificatoria* 9.9.851.

134. Alberti, *On the Art of Building*, 310. “Quare in primis observabimus, ut ad libellam et lineam et numeros et formam et faciem etiam minutissima quaeque disponantur, ita ut mutuo dextera sinistris, summa infimis, proxima proximis, aequalia aequalibus aequatissime conveniant ad istius corporis ornamentum, cuius futurae partes sunt. Quin et signa et tabulae, et quicquid insigne applicabitur, ita coaptentur necesse est, ut innata loci accommodatoribus et veluti gemella videantur. Veteres hanc parilitatis coaequationem tanti fecere, ut etiam ponendis marmoreis tabulis voluerint quantitate qualitate circumscriptione et situ et coloribus exactissime respondere.” Alberti, *De re aedificatoria* 9.9.839. This symmetry is so important to Alberti that he insists on what he considers to be a particularity of ancient sculpture, albeit one that receives less attention than it deserves because of the modern status accorded to the unity of the work: sculptural replicas and duplicates stem from the architectural use of antique statuary.

135. See Ricci, *Il tempio malatestiano*, 217; and Franco Borsi, *Leon Battista Alberti: L'opera completa* (Milan: Electa, 1973), 166.

136. Alberti, *On the Art of Building*, 314 (translation slightly modified). “Erunt denique omnia demensa et nexa et compacta lineis angulis ductu cohesione comprehensione, non casu sed certa et diffinita ratione; praebebuntque se, ut per coronas per intercapedines omnemque per intimam extimamque faciem operis quasi fluens libere et suave decurrat intuitus, voluptatem augendo ex voluptate similium dissimiliumque rerum; neque, qui spectent, satis diu contemplatos ducant se, quod iterum atque iterum spectarint atque admirentur, ni iterato etiam inter abeundum respicient; [ . . . ] totis numeris ad decus gratiamque consentiens.” Alberti, *De re aedificatoria* 9.9.851.