

A Window to the Soul: Depth in Early Modern Section Drawing

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If only human beings had a window opening onto their hearts, said Vitruvius citing Socrates, then one's soul could not be hidden and would be open to direct visual inspection.¹ This vital Vitruvian image inspired many Renaissance elaborations in emblem books as well as in texts on physiognomy, gestures, and even Giulio Camillo's description of his memory theater: "Our artificial mind, this construction of ours ... is so endowed with windows that Socrates himself could have not desired it to be more open."² Apparently, the paradox of using allegory to illustrate "naked truth" was not a concern.

The desire for direct access to unmediated knowledge expressed by Vitruvius as core to his project of rationalizing the mythology of architecture also opens questions of signification, of the possibility of meaning without metaphor. Daniele Barbaro's commentary on the passage specifically related it to signs, Claude Perrault's translation added an explicit reference to drawings and others compared the window into the heart with the holy shroud, the unmediated, divinely derived *acheiropoietos* ("made without hands") image of Christ.³ Too often today, as if there is a window in the heart of architects, it is assumed that drawings can be the direct transcription of inner ideas and similarly that the building can be entirely predetermined by design drawings.

Tellingly, Vitruvius misattributed this statement to "the wisdom of Socrates" which was actually from a fable about the trickster Momus (god of satire and mockery), who had criticized Zeus's design of human beings.⁴ Even though *Aesop's Fables* were widely known in the Renaissance, Vitruvius's attribution to Socrates was consistently accepted as more "true," revealing the mythic within the rational. The implications of striving for ontological transparency will be explored through examining the originating ideas and practices associated with the architectural section drawing. This view into the interior developed in the Renaissance with the beginnings of modern architectural drawing that was fueled by the widespread availability of paper and the departure of the architect as a presence on the construction site.⁵ Tracing the section's origins will allow us to reconsider its true

depth as a window into the heart that relates how interior and exterior, visible and invisible are translated into each other.

THE TRIO OF DRAWINGS: PLAN, SECTION AND ELEVATION

Today we understand the "orthographic drawing set" as plan, section and elevation, where each drawing occurs along one plane of the X, Y and Z Cartesian spatial axes.⁶ The order in which the three drawings are inevitably listed is not accidental; it reflects the prevailing idea of their role in design and explains why they are so consistently recited in the same sequence. Jean-Nicolas-Louis Durand (1760–1834), who began the rationalization of architectural drawing by applying Cartesian principles of descriptive geometry to architecture, introduced the current modern order of the three drawings as central to his notion of architecture as "utility plus economy."⁷ Durand's prescribed ordering of all three drawings on the same sheet remains the preferred stacking of presentation drawings to this day and corresponds with what he called the "natural order" of the three drawings as the modern triad of "plan, section and elevation." After the plan, section is second since its purpose is to "convey [the design's] vertical arrangement or its construction" and elevation is last because it is "no more than the result of the first two."⁸ This narrow idea of the section as a technical explanation of a building's structural assembly is still dominant today. Curiously, while the section precedes the elevation in modern design, conceptually it follows it as a "cut" of the whole.

Prior to Durand, the sequence was just as certain, although different: plan, elevation, and section. This order followed Vitruvius—*ichnographia*, *orthographia* and *scaenographia*—and continued to be dominant through the eighteenth century.⁹ Authors of Renaissance architectural treatises consistently used this sequence while experimenting with the nature of the drawings themselves. So ingrained is the modern understanding of the drawing types, that it is sometimes unknowingly imposed upon our idea of the past, overwhelming the quite different historical significance of these drawings.

The centuries-long continuity of the Vitruvian drawing sequence was due to its conformance with the actual process of composition and construction as revealed by applied geometry.¹⁰ First, the plan, like a geometrical plane, set out the horizontal dimensions of length and width, while, second, the elevation established the vertical dimension. This was long made clear in treatises such as *Practica geometriae*, a manuscript from about 1120 attributed to Hugh of St. Victor, which describes the measures of *planimetry* as a planar extension across the earth in length and width and *altimetry* as vertical extension.¹¹ The same approach is described by many others including Thomas Digges in England, 1571, where *planimetra*, the measurement of planes, is for "disposing all manner Ground Plattes of Cities, Townes, Fortes, Castles, Pallaces or other Edifices."¹² The same pattern is echoed in Renaissance architectural treatises, including Alberti from his close study of Euclid and Francesco di Giorgio from practical geometry.¹³ Scamozzi's architectural treatise published in 1615 makes clear this relationship of plan to

length and breadth and the orthographic view to the upright in this anonymous English translation from about 1680.¹⁴

The parts which are to be sett forth (to use Vitruvius his owne order, but more plainly) are three, which the Grecians terme Ideas: viz. Ichnographie, which we call the plant, which containes the designe of laterall and like wayes circular things, whereby is comprehended ye description of ye forms of buildings, ye descriptions of the lengths, and breadths, and all their parts which are to be set downe in a plane.

The second is Orthographie, viz. ye representation of ye front erected, which we call the upright of ye buildings, which must be punctuallie designed both in its whole, and in its parts correspondent to ye plant, with its so altitudes, and distances just in that manner, as the worke is to be done.

Earlier ideas of the architectural drawings, very different from Descartes, were built upon the Aristotelian bodily spatial dimensions of front/back, left/right, and up/down. Including longitude and latitude within the plan is not only more consistent with architectural and building practices, it also describes the spatial order that is integral with human experience in the gravitational world, unlike the far more abstract Cartesian coordinates. For centuries prior to Durand, the first two drawings alone provided a comprehensive three-dimensional explanation of a building. Thus, with only plan and elevation drawings, all three dimensions are taken into account by traditional practice. What, then, was the place of the third drawing, Vitruvius's *scaenographia*?

This quandary was sometimes resolved by treating elevation and section as essentially a shared drawing type, since they are both representations of altitude. Sebastiano Serlio, in listing the drawings he used to represent ancient buildings, describes section (*profilo*) as another word for elevation (*diritto*).¹⁵ Palladio in the *Four Books* also uses the drawing names *alzato* and *diritto* for elevations and sections interchangeably to describe both exterior elevations and sections in the same project.¹⁶ This overlapping terminology for elevation and section may be in part because prior to modern construction technology where buildings are now constructed in horizontal layers, buildings were then constructed, foundation to roof, sequentially in vertical bays, and that the elevational visibility of a "section" would be more present in the mind of the architect not as an imaginary cut so much as a view of the continuing process of construction, which could extend over decades or more.¹⁷ The absence of a clear linguistic distinction between section and elevation suggests the absence of a clear intellectual distinction between them.

Conceiving of section and elevation as a shared kind of drawing through the interior elevation is also related to the common Renaissance practice of dividing the upright drawing along its central axis into a front elevation and a section. Here, the viewer is reading the building from left to right by imaginatively moving more deeply into it, in some cases through numerous planes.¹⁸ This practice is not for efficiency, rather for a comparative understanding based on the simultaneous presence of multiple building layers. The problem of looking from outside to inside,

returning to the Vitruvian windowed soul, does not impart pure knowledge, but provides a partial object, requiring the engaged imagination of the viewer. While conceived today as two separate drawings, elevation and section are experientially conjoined twins sharing some body parts. Related to the problem of the overlap is the well-known letter to Leo X (c. 1519), almost certainly written by Raphael and Baldassare Castiglione, which proposes a procedure for creating drawings of ancient Rome from its ruins.¹⁹ It explains that architectural drawing is divided into three parts, first the plan (*pianta*), then the elevation or exterior wall (*parete di fuori*), and finally, the interior wall (*parete di dentro*). This third part of drawing is to be coordinated with the exterior elevation but shows the "inside of the building—half, that is, as if cut [divided] down the middle" (*come se fosse diviso per mezzo*) in order to show "the courtyard, with the correspondence of the heights of the exterior cornices with those inside, and the height of the windows, doors, arches and vaults."²⁰ While numerous commentators today associate the third drawing with the modern section, *divisio* probably refers not to the modern transverse section cut, but rather to the cleaving between halves of exterior and interior elevations.²¹ The description suggests an immediate comparison between the two elevation drawings through their "correspondence of heights." Furthermore, this interpretation is consistent with the similarity of the letter's names for the last two drawings. Indeed, the courtyard is another façade. By naming both types of drawings *parete*, it emphasizes not any unique material sectioning of the third drawing, but the similarity of the last two drawings as upright surfaces with their ornaments. *Parete* has more specific connotations of "surface" rather than wall as *muro*, which would include thickness. Since an early meaning of *parete* was a net to catch birds, a more literal translation of *parete di dentro* might be "interior surfaces" or in the modern sense an "interior view" that "catches" your eye.²² With the interior elevation, its supporting sheet of paper does not become an imaginary cut like the modern idea of section, but the physical surface of the wall itself. In these drawings, the exterior and interior are not describing Cartesian planes at right angles to each other; they are instead parallel constructions that suggest the complex interrelation of surfaces between inside and out. Rather than two half-complete drawings, it might be more useful to consider these two aspects of a single drawing like the modern breakaway section with a break line between outside and inside, showing the sagittal depth of the building facing the viewer. All this suggests that, well into the Renaissance, the section drawing remained largely uncoded.

A MULTIPLICITY OF SECTIONS

Of the three sorts of modern orthographic drawings only the section is described as a "cut." This "cutaway view," according to a typical modern handbook, is made in imaginary material "by slicing ... much as one would cut through an apple or a melon." The conceptual sectioning is explained as a knife becoming a vertical geometrical plane. The "cutting plane" is assumed to be passed through the ... design. Then the cutting plane is removed and the two halves drawn apart, exposing the

interior construction. ...[F]or the purposes of the section the other half is mentally discarded."²³ Thus, the design on paper is imagined as a real material thing already existing in three dimensions so that it can be dissected and examined.

There is a lack of specificity regarding histories of the section and some studies focusing on the interior elevation have been misunderstood as examining section.²⁴ While interior elevations are closely related to sections, the idea of section need not precede the interior elevation since the interior elevation lacks any cut. This study focuses on the cut of the section itself: not how the section enables seeing the interior as if it is an exterior, but how the cut itself reveals deep truth. The single name "section" occludes the drawing type's multiplicity, both as many kinds of sections as well as many originary ideas of sections. There has been little effort to distinguish and theorize the different cuts and viewing practices that constitute the many sorts of sections that have been and are still being crafted.²⁵ The semantic field of the originary dreams of sections includes: geometry, profile, shadow, ruin, wound and dissection; all of which play key roles in this intriguing puzzle, not only as possible sources but also as animators of the section's overlap with the meanings of silence, secrecy, solidity and the uncanny.

The broad importance of geometry to Renaissance architectural design included sections of volumes. Alberti, who did not identify an architectural section drawing, did intriguingly describe the importance of understanding "how we observe the outlines of the body by sections [*sectionibus corporis*]." For, if someone cuts an upright cylinder [i.e. a column] so that the part you can see is divided from the part you cannot see, two bodies are made out of this cylinder If that outline were drawn properly on a wall, it would produce a figure exactly like the one a shadow would make." However, he concluded that "observing sections and outlines" is more a matter for the painter.²⁶ Daniele Barbaro copied Dürer's drawings of conic sections to describe a cut through a cone (*sectione, schnit*). But, these cases were not directly transferred to architectural drawing terminology.²⁷ Instead, Barbaro used the word *profilo* to describe the third drawing. Barbaro also uses *sciografia* to name Vitruvius's third drawing because *scio* (or *scia*, shadow) draws upon the idea of the side of the face casting its shadow in profile.²⁸ Profile portraiture was especially popular in the fifteenth century and may have been made following the technique described in Pliny's story of the origin of drawing when Dibutades' daughter traces her lover's shadow on a wall.²⁹ Alternatively, as a continuous rend in a building's fabric, a ruin provides a sort of naturally occurring section, though without a distinct cutting plane.³⁰ Many buildings drawn as ruins are fantasies, ambiguously under construction and/or in ruin. The ruin is the origin of the modern drafting convention of a section break line. Perhaps most key to ideas of architectural section is anatomical dissection. Leonardo, famous for his studies of the human body, drew architectural sections much like his anatomical sections, even on the same sheets of paper.³¹ When Barbaro describes the profile drawing, he writes that the architect should demonstrate all the interior and exterior parts of the proposed building just as anatomical drawings demonstrate all the parts of a body.³² The explicit idea of the section as a cut and its modern name, however, appear only later in the seventeenth century with the great anatomist-architects,

Claude Perrault and Sir Christopher Wren. At least some of Wren's section drawings are labeled "dissection."³³ Again, there are different sorts of anatomical cuts that result in different representations. To strip off layers by flaying, like Vesalius's musculen, does not result in the standard spatial architectural section.³⁴ Anatomizing, on the other hand, shows the position, structure, and relation of various parts but rarely with a continuous cut. Skull dissection drawings, like those by Leonardo or Vesalius, tend to be the most architectural because a saw makes a continuous cut through the enclosing skull to reveal the interior contents.³⁵

The family of words related to section briefly outlined above implies different sorts of section drawings. For example, the geometrical shadow is closely related to the modern cross section where interiors are represented while the sectioned area that is cut is a single continuous tone, often dark. The profile is an outline section like that of moulding profiles. The flayed section is more like brick wall elevations without their stone cladding or Rusconi's peeled layers of walls. The anatomical section is much closer to sections that illustrate the materials and construction within the areas that are cut. For example, Perrault's section drawing reconstructing the basilica by Vitruvius shows the materials themselves, where wood trusses are splintered off, stones show their stepped stacking in courses, and a stone column is hanging in the air as if an organ that is being removed from its body.³⁶ Rather than a geometrical planar slice, the building is anatomized. The close proximity between problems of knowledge and sectional representation can be highlighted through considering in more detail the cutaway section, which is a *wound into the heart of the building*.

THE WOUND SECTION

Standing in the courtyard of the Teatro Olimpico in Vicenza is a late Renaissance statue that has been identified with the Vitruvian tradition of the open breast as "Sincerity" from Cesare Ripa's *Iconologia*. The heart appears through an open wound in the statue's chest.³⁷ The laceration, though closely related both to the ruin and the dissection as a source of section drawing, is unique in its relation to the viewer since the interior is revealed through the building exterior. The wound follows the overarching metaphor between body and building but in this case it is the grotesque, Rabelaisian body with orifices subject to penetration and leakage.³⁸ While dissection is doubtlessly important to the development of the section, architectural section drawings had already begun to appear before public dissections of human corpses were first allowed and before Vesalius's first publication of his *De humani corporis fabrica* in 1543.

Prior to widespread human dissection, due to official restrictions and the morbid dread of cutting open a human corpse, direct medical knowledge of the body's interior was largely derived from inspecting people suffering from wounds. The son of a distinguished Roman architect, Galen, whose late antique medical writings were dominant well into the Renaissance, frequently treated wounds of gladiators and combatants, while his dissections were limited to animals.³⁹ Galen



9.1 "Sincerity," allegorical garden statue at the Teatro Olimpico (Andrea Palladio, architect), Vicenza, It
A vertical mandorla-shaped wound opens a window to the heart. Photo by author

noted that some claim "enough [anatomy] can be learned from the 'observation of wounds' that occur from time to time." Although Vesalius later criticized Galen for a lack of human dissections, Galen himself strongly advocated the value of human dissection and was highly critical of the "occasional" anatomy of the "exploration of wounds" as "utterly futile."⁴⁰ Observing through wounds thus yields only partial understanding.

Especially important to the Renaissance understanding of wounds is the religious significance of Christ's five crucifixion wounds (four from nails in each hand and foot, and one from a Roman soldier's lance in the side).⁴¹ Masses and prayers devoted to Christ's wounds began in the thirteenth century and by 1507 were widespread, particularly in Italy.⁴² The side wound became a pre-eminent object of veneration and led to devotion of the sacred heart.⁴³ Bleeding for all Christians was considered redemptive; the Church was born of the side wound.⁴⁴ Christ's wound was explicitly conceived as a doorway, a mystical threshold in which believers were instructed to "dwell." The wound was also associated with a cave in a rocky outcropping or a ruinous hole in a wall.⁴⁵ Doors of the Temple of Solomon and Noah's Ark were often equated with Christ's side wound. Religious scholars emphasized that Longinus did not puncture Christ, but "opened [*aperuit*] the side of Christ ... truly just as a door or window is opened."⁴⁶ This sempiternally open door is singularly an entryway without egress.

Beginning in the late Middle Ages, the side wound was represented in images as an isolated object. One broadside print (c. 1490) shows the side wound turned upright with Christ's head, hands and feet attached, making the wound a synecdoche, as absence becomes the presence of the body and part—here, a negative part—serving as the whole.⁴⁷ In this image and many others, the wound is in the shape of an almond or mandorla, which iconographically is a radiance surrounding a theophany by framing an island of the sacred within the profane world.⁴⁸ Geometrically constructed of the intersection of two overlapping circles, the mandorla is the bringing together of two worlds. Similarly, the woundly sort of section brings together exterior with interior. The devotional imagery of Christ's wounds was used to heighten the union between symbolic and real space.⁴⁹ Probably associated with apotropaic powers, wound veneration was granted indulgences if the faithful attached a wound image to their dwelling and kissed it with devotion.⁵⁰ This effort to remove unwanted spirits was located where the wound was "naturally" related to the threshold function. By physically placing one's lips on the image, which when horizontal is a mouth, one unites with the represented divine opening in a corporeal meditation.⁵¹ Some fifteenth-century prints of Christ's wound have an actual cut in the support, creating a physical opening that may have been made by what was believed to be the "true" spear that pierced Christ—combining relic and representation.⁵² The slit in the wounded paper is a physical opening to the verso of the paper, which also moves one to another realm. As St. Thomas, doubting the Resurrection, was said to have inserted his fingers into Christ's wound, physically touching the space of the divine interior, so might some worshipers have done with the printed wounds. In this transgressive practice, touch is a simulacrum of the vision. These same concepts,

though intensified with the sacred wound, also appear in the architectural wound section.⁵³

Beyond the breakaway drawings discussed above that cleave interior and exterior elevations with a break line, some early Renaissance sections "tear" an opening in the exterior to show part of the interior, a punctured version of the Vitruvian window in the breast.⁵⁴ We have an example of an early wound section in a drawing by Giuliano da Sangallo (c. 1443–1516), in a portfolio of drawings of Roman ruins assembled over several decades, from about 1465 to 1500.⁵⁵ This sheet has ink and wash drawings of two circular Roman temples side by side, both with a plan below and section above.⁵⁶ Despite the sheet layout, suggesting they were conceived together, the two sections are executed in very different modes. The drawing has an exterior view with the center of a temple cut away ruinously to reveal the interior. Since neither section shows the actual state of the buildings, the wound-like opening must have been the invention of the draftsman. And since the edifice was already in ruins, Giuliano first envisaged it fully reconstructed in plan and elevation and then gashed it with a wound to open the interior view. The admittedly "peculiar" opening, not at all imitating the way a building might collapse, is reminiscent of the vertical mandorla—recalling the side wound of Christ.⁵⁷ Sangallo's drawing was executed before public dissections in Rome and seemingly draws upon the wound as a mode of viewing interiors.

The wound defines the interior as a (Lacanian) partial object, heightening one's desire to know it, but occluding the rest with the veil of the exterior, suggesting an interior completeness that does not actually exist in the drawing. The ruinous edge of the woundly section does not show materials, and its thickness is uniform, like a continuous skin (no matter the material reality) that suffers a gash, creating an infra-thin gap between exterior and interior. The edge thus becomes an aura, cleaving two worlds with a radical separation of distance and quality. The wound as a breach of the body offers a glimpse rather than a panorama, its secretive otherness making the viewer a witness. By locating the viewer outside the object facing its exterior, it joins two worlds in a double framing; first between viewer and exterior and then through the cut to the interior, as if on two sides of the paper support.⁵⁸ One imagines passing beyond the two-dimensional exterior image through a rupture or cut in the surface to visually enter the interior. Like Vitruvius's windowed breast, the gap is heightened by a veiled absence.⁵⁹ The wound section, rather than absolute transparency, demands a reconstructive effort on the part of the curious viewer.

The wound section continues in modern practice as a "cutaway view" and is often used to illustrate the secret workings of an inner mechanism.⁶⁰ Even the cutaway section has many variations; a "cutout" is a true wound with only a portion of the interior opened while a "breakaway" shows the entire interior as a ruin.⁶¹ The wound becomes an important type of section because it illuminates the issues of the cut and articulates the relationship between inside and outside, by emphasizing the depth between them through the "ruinous" break line. With the wound section, the hidden side is not only the back of the object; it is also in front, where it is not open to view.

DEPTH

Vitruvius's third drawing type, *scaenographia*, was variously understood in the Renaissance as a perspective or a section. Some, relating *scaeno-* to theatrical scenery, found its identity in perspective; while others related it to *scia-* as shadow and identified it with profile and section.⁶² Today these two sorts of drawings seem mostly unrelated and the assumption is it must have meant one or the other. This confusion is itself indicative of the vast difference separating Renaissance drawing ideas from modern ones. For Renaissance readers, *scaenographia* was understood as both a perspectival view and an orthogonal section.⁶³ What is commonly shared is their representation of depth as a natural mode of perception.⁶⁴

What, then, is the role of the third drawing, whether section or perspective, since the three primary dimensions are already established by the first two drawings? The third drawing was to show depth—not the Cartesian notion of depth as a measurable dimension, as length turned sideways—but depth as the experience of facing into the mysterious world. We do not see into a living world but into the world of the “undead”—the partial object that survives “apart from” the body and, hence, has the ability to be both interior and exterior. This also explains section and perspective intermingling, for they share the representing of depth as a complex presence. Confronting the lived world, we encounter the depth that Merleau-Ponty calls the “primordial dimension.”⁶⁵ This idea of depth as a fourth dimension was invoked by Paul to describe Christ to the Ephesians, probably as a reference to their temple, which was one of the seven wonders: “to comprehend ... [his] breadth and length and height and depth (*profundum*).”⁶⁶ In a parallel everyday sense, when perceiving objects, like the wound section, primordial, fourth-dimensional depth concerns what remains invisible from one’s particular viewpoint: partial objects as blind spots. Whether mundane or sacred, this notion of depth is, from its Latin origin, profound.

Cesare Cesariano, a student of Bramante, drew a section through the Milan Cathedral to illustrate Vitruvian *scenographia*. The most dominant elements in his drawing were, however, the overlapping, multiple proportional triangles and circles. In discussing scenography, Cesariano explained *skia* as shadow and invoked the Tabernacle as a presence indicated by the superimposed geometric figures. The earthly Tabernacle was understood as a microcosmic copy or shadow of the heavenly Temple, imparting a manifestation of spirit to shadow.⁶⁷ Thus, Cesariano’s section was an adumbration of the hidden divine geometrical order; a profound depth. Similarly, Barbaro’s discussion of *sciographia* followed Cesariano. His image of the circular tempio drawn by Palladio integrated all three drawing types and included a triangle in the dome as a sectional foreshadowing of the invisible.⁶⁸ In text adjacent to the image of the profile, Barbaro discussed human cognition, both of sense and soul, at first confused at a distance, but at closer view, visible in every part.⁶⁹ Perceptual depth correlates with meaningful depth.

SOLIDITY AND THE EXTIMATE

A section cut indicates the secret life within the wall itself. Like the anatomical “*secrecies of the passages*” of nerves and arteries, so the apparently solid walls of a building contain circulations.⁷⁰ A drawing in the thirteenth century sketchbook of Villard de Honnecourt shows the elevation of a buttress at the Cathedral of Notre-Dame, Reims, that includes both exterior and interior elements and so has been called an early section.⁷¹ Lacking clear section cuts, parallel waving lines seem to indicate solid stone wall. The darkest marks on the drawing, however, unexpectedly indicate open slots in the large masonry piers as shadowy spaces for humans to stand amidst them, as if within the stone. Renaissance architects referred to “secret” corridors and stairways that were conceived as tunnels carved within the thickness of masonry walls.⁷² Interior staircases, like chimney flues, were deemed “vertical openings in the wall.” Alberti also recommended secret listening tubes embedded in walls for eavesdropping, which Athanasius Kircher illustrated in cutaway sections.⁷³ Corridors excavated within walls later allowed servants to appear only where needed and the master of the house to secretly observe the household.⁷⁴

While not a place for physical occupation, the section cut into solid mass invites a deeper imaginative inhabitation. When Merleau-Ponty wrote that “to look at a thing is to inhabit it,” he described this primordial projecting of self into objects in the world. The mosaic of the *Apparition* in San Marco (Venice) is an early building section from the mid-twelfth century. When St. Mark’s remains were stolen from Alexandria and translated to Venice in the ninth century, they were concealed within the church that still bears his name.⁷⁵ Their exact location was kept secret. Two centuries later, after a devastating fire leaving the church in ruins, everyone feared the relics had been lost. The citizens of Venice prayed, fasted, and processed around the city, when, on the third day, a pillar “opened up” in the original undamaged part of San Marco to reveal the relic’s hiding place. The mosaic recounting the miraculous event is located beside the “*pilastrò del miracolo*” itself.⁷⁶ The solid column contains the saintly body, upright as if a literal demonstration of the Vitruvian idea of the body as column. The Saint’s rent column is contained within the building section that holds the congregation. The five domes shown in section in Byzantine architecture represent the five holy wounds.

A primary feature of a mass element such as a column or wall is its solidity. Solidity is, according to John Locke, drawing upon Aristotle, resolutely impenetrable.⁷⁷ Solidity is an idea that is received primarily from touch—present not so much to the eye as through a solid pushing back against one’s hand. A solid body touches us as we touch it. The psychological import of solidity, then, is the awareness of the other while at the same time the empathetic projection of a self, an other, within the solid. Locke distinguishes solidity from hardness because solidity has repleteness. A surface can be hard, but only a body can be solid. Thus, *firmitas*, first in the Vitruvian triad, is translated as “firmness” but never “hardness.”⁷⁸ When today *firmitas* is narrowly conceived of as “structure” it reduces the concept to mere

quantitative calculations that lack the psychological dimension of the powerful tactile presence of solidity.

The often-discussed body/building metaphor shows how one imagines oneself with the living presence of the building. The body is not *like* a column, it is *within* the column, related through solidity, as a self *against* an other. Renaissance architect and author Francesco di Giorgio Martini emphasized the primary importance of drawing "which above all deals with the visible as well as the invisible."⁷⁹ For him, the relationship of interior and exterior was a key issue that revealed the richness of architecture and implied levels of meaning exceeding physical appearance. He wrote that the greatest challenge is to "demonstrate the extrinsic, intrinsic and the occult things all at the same time."⁸⁰ Di Giorgio's treatise was studied in detail by Leonardo as well as Giuliano da Sangallo, other architects that we have seen were key in developing section drawings.⁸¹ In di Giorgio's translation of Vitruvius's story of the origin of the Corinthian column, the maiden from Corinth is buried within the shaft of a column.⁸² He illustrates the origin story with the young woman visible inside the column as if it were transparent. Since he illustrates other columns similarly, it is not so much a misreading as a point of theory.⁸³ As di Giorgio writes: "columns contain hidden human bodies."⁸⁴ The anthropomorphic transparent section view is related to the cutaway because both show the inside through the outside. The transparent view necessarily reduces the exterior to a ghostly outline, while the cutaway allows the exterior to be expressed as a material thing. In this context, di Giorgio's description of holes in walls as "wounds" makes perfect sense: the wound is the uncanny transaction between exterior visibility and the "prohibited/un-dead" interior.

This perception of the solidity of a building simultaneously as the self and other resonates generally with Freud's concept of the *unheimlich*, when the familiar becomes frightening. Freud asserts that "the most uncanny thing of all" is "to some people the idea of being buried alive"—neither dead nor alive but "undead"—relating this to the original intra-uterine existence. Freud's discussion of the uncanny noted its close relationship to the double, such as shadows, spirits and reflections (including the soul as double for the living body), or in the present case, body and building.⁸⁵ The double, which is both a twin of self to overcome death and a confrontation with an Other, is the solidity of the building in relation to the individual. The sense of solidity is the Absolute Other, but it is also empathetically the place where we dwell through a secret at-homeness with an "eerie unfamiliarity"—unfamiliar but at the same time a part of ourselves. The French psychoanalyst Jacques Lacan extended the uncanny to a theory of the "extimate" (*extimité*) as a blurring of interior and exterior where the most intimate interiority coincides with the exterior.⁸⁶ With Lacan's observation that the unconscious resides outside the self, the realm of architectural solidity can also be our most intimate core.

IMMURATION

Sir Thomas Browne's 1642 description of the soul as "immured in the wals of flesh" suggests that as the soul is to the body, so the body is to building.⁸⁷ To immure is to enclose within a wall; not in a room, but where body literally becomes wall. Immurement is concretized in numerous traditions. Some ancient Chinese burial stones are inscribed in reverse so they can be read from inside the stone by spirits of the dead.⁸⁸ Ancient Greeks used funeral stones to pin down the spirit of the dead to keep them within the earth.⁸⁹ Foundation legends tell of the life of a structure deriving from human life immured within.⁹⁰ This petrifying reverie is the unspoken foundation of the body-building analogy.⁹¹ Immurement captures a psychological reality that is also at the core of the *apparitio* of San Marco and the drawings of Francesco di Giorgio. This is the profound depth comprehended through the section.

Section cuts of Palladio's buildings drawn by Ottavio Bertotti Scamozzi have a consistent *poché* of closely spaced diagonal hachure at forty-five degrees from upper left to lower right, still a common practice today.⁹² These lines are the projection of shadow from above to below into the solid wall where it is cut. The repetitive drafting of evenly spaced section lining is the architect's experience of ritual immurement. Bertotti Scamozzi's detail column sections, however, are most often shown as a roughly broken line, as di Giorgio had rendered them much earlier. Sometimes Bertotti Scamozzi's wandering pen invented plants growing in the ruinous ends of the columns. As Marco Frascari has pointed out, through this undergrowth, the plants open into another world, at times erupting into fully rendered fantasies of worlds within worlds in a sectional reverie. The unquestioned values of transparency and openness, deny dwelling when uncritically applied to architecture. Contemporary architecture obsessively multiplies thin planes in an attempt to reconcile transparency with the need for depth; but, like Zeno's arrow, these planes never arrive at their goal. Purely transparent buildings are meant to have no shadow, but in achieving this they have lost their soul. The section, as it was understood by di Giorgio and Scamozzi, can reveal the other as unconscious self, the body-building, dwelling in a chthonic realm of solidity and in the profound depths of immurement.

Like the movement in anatomical study from wounds to dissections, the partial view of the interior through a wound has largely been supplanted by the technical section. By this, the section cut has been promoted into second-place among the classic drawings of architectural design. The "invasion of objectifying knowledge" has made the modern Cartesian section an exoteric description of construction; an "external knowing" of interiority.⁹³ Lost, in this "delirium of absolute translucidity," is the troubling, uncanny presence of profound depth, where resides the *extimate unconscious*.⁹⁴ This woundy paradigm shows up the purely transparent structure without solidity as a sham incapable of psychological inhabitation. Laurence Sterne's parody of Momus's window into the soul reminds us that the desire for absolute transparency is always inevitably postponed.⁹⁵ The popularity of Vitruvius's windowed image of certain knowledge in Renaissance allegory

ironically demonstrates the importance of accepting partial understanding. The uninhabitable solidity of the section can help us to remember this mysterious vision of depth. Ficino explained Socrates' approach as "to hide divine mysteries everywhere behind the mask of figuration and language, to conceal wisdom discreetly, to jest in seriousness and play in earnest."⁹⁶ The section cut, more than the ability to see an unobstructed interior, can reveal the site of such traumatic truth.

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NOTES

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- 2 Giulio Camillo, *Pro suo de eloquentia theatro ad Gallos oratio* (Venice, 1587), 40, quoted in Lina Bolzoni, *The Gallery of Memory: Literary and Iconographic Models in the Age of the Printing Press*, trans. Jeremy Parzen (Toronto, 2001), 151f.
- 3 Mario Andrea Rigoni, "Una finestra aperta sul cuore (Note sulla metafora della 'Sinceritas' nella tradizione occidentale)," *Lettere italiane* 4 (1974): 434–458, 456. Daniele Barbaro, *Vitruvio, I Dieci Libri Dell'Architettura, tradotti e Commentati da Daniele Barbaro*, 1567 (Milano, 1997), Bk. III, "Preface," §1, 96–97. "Nos pensees & nos dessins," Claude Perrault, *Vitruve, Les dix livres d'architecture* (Paris, 1673), Bk. III, "Preface," §1, 55.
- 4 "Momus and the Gods," *Aesop's Fables, A New Translation by Laura Gibbs* (Oxford, 2002), 518.
- 5 Marco Frascari, "A Reflection on Paper and Its Virtues within the Material and Invisible Factures of Architecture," *From Models to Drawings: Imagination and Representation in Architecture*, ed. Marco Frascari, Jonathan Hale, and Bradley Starkey (London, 2007), 23–33.
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- 7 Alberto Pérez-Gómez, *Architecture and the Crisis of Modern Science* (Cambridge, MA, 1983).
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- 9 Vitruvius, *De architectura* I, 2, 2; Granger, *On Architecture* 1, 25. For example: Colen Campbell, *Vitruvius Britannicus, or the British Architect, Containing the Plans, Elevations, and Sections of Regular Building* (London, 1715–1771). Germain Boffrand, *Livre d'architecture: contenant les principes généraux de cet art, et les plans, elevations et profils de quelques-uns bâtimens faits en France & dans les pays étrangers* (Paris, 1745). Sir John Soane, *Designs in Architecture; consisting in plans, elevations and sections* (London, 1778/1790).
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- 11 Hugh of St. Victor (attr.), *Practical Geometry*, trans. Frederick Homann (Milwaukee, 1991), 34.

- 12 Thomas Digges, *A Geometrical practical treatise named Pantometria, divided into three Bookes, Longimetra, Planimetra and Stereometria, Containing rules manifold for mensuration of all Lines, Superficies and Solides* (London, 1591 [1571]), Preface to the Reader, n.p.
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- 14 Sir John Soane Museum Library, Anonymous manuscript English translation (c. 1680) of Vincenzo Scamozzi, *L'idea della Architettura Universale* (Venezia, 1615), 46.
- 15 Sebastiano Serlio, *On Architecture*, trans. Vaughan Hart and Peter Hicks (New Haven, 1996), 50v, 100.
- 16 *Alzato* (lit. raised), *diritto* (upright). Andrea Palladio, *The Four Books on Architecture*, trans. Robert Tavernor and Richard Schofield (Cambridge, MA, 1997), 11, 64, 187, 202, 221, 241, 276, 379f.
- 17 This is visible in Palladio's buildings where only some vertical bays are completed even to this day. A notable example is the Palazzo Porto-Breganze (c.1570) in Vicenza.
- 18 In the case of temple buildings, this order may include a column portico elevation on left, then front wall with door elevation, then interior section and back wall to the right. See for example: Palladio, *Four Books*, 32–33.
- 19 Ingrid Rowland, "Raphael, Angelo Colocci, and the Genesis of the Architectural Orders," *The Art Bulletin* 76, 1 (March, 1994): 81–104. "The Letter to Leo X by Raphael and Baldassare Castiglione (c.1519)," *Palladio's Rome*, trans. Vaughan Hart and Peter Hicks (New Haven, 2006), 177–192. "A Letter to Pope Leo X on the Architecture of Ancient Rome" in Carlo Pedretti, *A Chronology of Leonardo Da Vinci's Architectural Studies after 1500* (Geneve, 1962), 157–171.
- 20 Amended translation from "The Letter to Leo X" in *Palladio's Rome*, 189–190. I disagree with their use of "section" for "parete di dentro."
- 21 But, see "orthographic projection of the interior" in Rowland, "Raphael," 97; and "the interior wall," James Ackerman, *Origins, Imitation, Conventions: Representation in the Visual Arts* (Cambridge, MA, 2002), 50.
- 22 This interpretation was elaborated through generous contributions by Marco Frascari and Jonathan Foote.
- 23 Frank Bourne and H. V. von Holst, *Architectural Drawing and Lettering* (Chicago, 1920), 10.
- 24 Lotz's seminal essay is referenced today as a study in the origin of section, but as its title states, its focus is primarily on the interior elevation. Wolfgang Lotz, "The Rendering of the Interior in Architectural Drawings of the Renaissance," *Studies in Italian Renaissance Architecture*, ed. James Ackerman (Cambridge, MA, 1977 [1956]), 1–65.
- 25 Francesco P. di Teodoro, "Vitruvio, Piero della Francesca, Raffaello: note sulla teoria del disegno di architettura nel Rinascimento," *Annali di architettura, Rivista del Centro Internazionale di Studi di Architettura Andrea Palladio di Vicenza*, 14 (2002): 35–54.
- 26 "Sectionis et limbi." Leon Battista Alberti, *On Painting and On Sculpture, The Latin texts of De Pictura and De Statua*, ed. Cecil Grayson (London, 1972), 139. This discussion may have been derived from Peithon or Serenus of Antinoë, ancient Greek geometers.

- Serenus d'Antinoë, *Le Livre de la Section du Cylindre et le Livre de la Section du Cône*, French trans. Paul Ver Eecke (Paris, 1969), 58, 63.
- 27 Albrecht Dürer, *The Painter's Manual: A Manual of Measurement of Lines, Areas and Solids by Means of Compass and Ruler*, trans. Walter Strauss (New York, 1977), 95. Barbaro, *Vitruvio*, 399.
- 28 Barbaro, *Vitruvio*, 30f. Donald Kunze, "Skiagraphy and the *Ipsium* of Architecture," *Via, Architecture and Shadow* 11 (1990): 62–75.
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- 30 Jacques Guillaume and Hélène Vérin, "The Archaeology of Section" *Perspecta* 25 (1989): 226–256, 230.
- 31 Carlo Pedretti, *A Chronology of Leonardo Da Vinci's Architectural Studies after 1500* (Geneve, 1962), 68, Windsor 19077v.
- 32 Peter Laven, *Daniele Barbaro, Patriarch elect of Aquileia with special reference to his circle of scholars and to his literary achievement* (University of London: PhD Dissertation, 1957), 475. Alberto Pérez-Gómez and Louise Pelletier, *Architectural Representation and the Perspective Hinge* (Cambridge, 1997). Marco Frascari, "Professional Use of Signs in Architecture," *Journal of Architectural Education* 36, 2 (Winter, 1982): 16–23.
- 33 Anthony Geraghty, *The Architectural Drawings of Sir Christopher Wren at All Souls College, Oxford: A Complete Catalogue* (Burlington, VT, 2007), 117.
- 34 Manuela Antoniu, "Fugitives in Sight: Section and Horizon in Andreas Vesalius's *De Humani Corporis Fabrica*," *Chora: Intervals in the Philosophy of Architecture*, ed. Alberto Pérez-Gómez and Stephen Parcell, 5 (2007): 1–21.
- 35 Martin Kemp, "Il Concetto Dell'Anima in Leonardo's early skull studies," *Journal of the Warburg and Courtauld Institutes* 34 (1971): 115–134.
- 36 "Basilique de Vitruve à Fano," Perrault, *Vitruve*, Bk. III, Ch. 1, 154. The significance of this drawing is demonstrated by its being included in the headpiece of the entire treatise.
- 37 Rigoni, "Una finestra aperta," 446.
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Architecture Post Mortem

The Diastolic Architecture of Decline, Dystopia, and Death

Edited by

Donald Kunze
Penn State University, USA

David Bertolin
Louisiana State University, USA

Simone Brott
Queensland University of Technology, Australia

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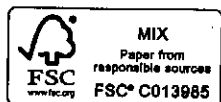
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