

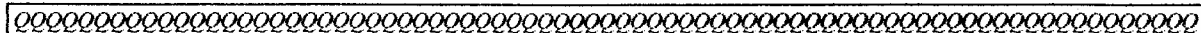
QUALELIBET

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International Society of Hildegard von Bingen Studies



In this edition of *Qualelibet* includes details of two important upcoming events and an essay by Lorenzo G. Buonanno., who presented his paper at this year's International Congress on Medieval Studies and is completing his doctorate at Columbia University.

CALENDAR OF EVENTS

May 8 – 11, 2008

43rd International Congress on Medieval Studies

The Medieval Institute
Western Michigan University
1201 Oliver Street
Kalamazoo, MI 49008-3801, USA
Phone: (616) 387-8745
Fax: (616) 387-8750
Email: mdvl_congress@wmich.edu
Web site: www.wmich.edu/medieval

May 29 – June 1, 2008

25th Anniversary of ISHBS

Donna Smith
Chestnut Hill College
9601 Germantown Ave.
Philadelphia, PA 19118, USA
Email: smithdo@chc.edu

MEMBERSHIP DUES

We would like to remind our members at this time that annual membership dues of \$10 are payable by May of each year. Funds from membership dues are necessary for us to continue promoting research and providing *Qualelibet* as a platform for Hildegard-related activities.

ISHBS NEWS

ISHBS 25th Anniversary Celebration

Plans for our 25th anniversary on May 29-30-31 and June 1 are well under way and the activities will include:

- Welcoming address by Chestnut Hill College President Dr. Carol Jean Vale, SSJ
- Keynote address by ISHBS founder Prof. Bruce Hozeski of Ball State University

The following Plenary speakers:

- Carmen Acevedo Butcher (Shorter College, Georgia),
- Robert Cogan (New England Conservatory)
- Dr. Irena Koprowski, Philadelphia physician
- Christe Meier (Muenster University, Germany)
- Marcello Sorce Keller (Lugano, Switzerland)
- Dr. Victoria Sweet (University of California, San Francisco).

Other activities include performances and presentations by:

- Harvard University Organist Carson Cooman
- Sopranos Joan Heller (SMU, Texas) and Patrice Pastore (Ithaca College, New York),
- Poetry reading by Ruth Lepson,
- Drama presentation by Meg Van Baalen and Margaret Wilson (University of Wyoming)

And special exhibits by:

- Lydia Rhyle (University of Northern Colorado)
- Ellen Wiener of New York
- Prof. Karen Schneider
- Shields and Frances Flynn of North Carolina.

The deadline for submissions of presentations or exhibits is December 1, to Pozzi Escot at pescot@newenglandconservatory.edu

Vendors wishing to sell books or other Hildegard-related items may do so at the celebration for a small donation (we suggest 5% of sales) to ISHBS. This will help us defray our costs.

Victoria Sweet's book is now published and will be available at the celebration. Here is a description.

"Rooted in the Earth, Rooted in the Sky is a detailed study of the medicine of Hildegard of Bingen, . . . Although there has been an explosion of interest in Hildegard's music, theology, illuminations and medicine in the last two decades, this is the first book to use her remarkable text to revise not only our conception of Hildegard but also of premodern medicine itself. It does so by contextualizing her work with primary and secondary historical sources, unedited manuscripts, anthropological and archeological evidence and linguistic analyses. Its surprising conclusion is that the premodern body was more like a plant than a machine or a computer program, and the physician more like a gardener than a mechanic or a computer programmer."

Australian performers Kim Cunio and Heather Lee would be glad to perform at other events while they are in America around the time of the celebration. Please go to lotusfoot.com for more information about them and their music and contact them at oscarmarigold@lotusfoot.com.

The detailed finalized program for our 25th anniversary will be given in our next *Qualelibet*. Chestnut Hill College has assigned two coordinators to help participants and exhibitors. They are Andrea Imperatore and Anne Stewart. For more information contact Anne Stewart at stewart@chc.edu.

KALAMAZOO CONGRESS

The 43rd International Congress on Medieval Studies of Western Michigan University in Kalamazoo will take be held May 8 – 11, 2008. The exact time and location of the ISHBS Session will be published in January by the Congress and can be obtained from their web site. Our presenters at that Congress will be:

Dr. Victoria Sweet, University of California/San Francisco, "Hildegard, the Pigmentarius"

Prof. Peter Evans, Longy School of Music, Cambridge, Massachusetts, "Vox Multitudinis of *Ordo Virtutum*:"

Prof. Patricia Moorhead, Columbia College, Chicago, Illinois, "From the 12th to the 21st Centuries – On Being a Composer"

Daniel Sonpal, Delbarton School, Morristown, New Jersey, "The Travels of Hildegard – The Travels of Harry Partch 750 Years Later".

We will also have a business meeting and an evening program with a concert of Hildegard's chants performed by Profs. Kim Cunio and Heather Lee of the University of Western Sydney, Australia.

AN ESSAY

Vitruvius, Hildegard, and the *Liber divinatorum operum*.

**Lorenzo G. Buonanno
Columbia University, New York.**

Over the last decades, art-historical scholarship has disproved the once-held belief that the writing of the Roman architect, Vitruvius (b.80/70BCE), so influential upon the art and architecture of the Renaissance, had been unfamiliar to medieval builders. However, the so-called *De Architectura Libri Decem (Ten Books on Architecture)* of Vitruvius does not figure prominently—if at all—among the established sources for the scholarly production of Hildegard of Bingen (1098CE-1179).¹ This paper will focus upon the probability of Hildegard's contact with that ancient architectural treatise, as well as explore the possible influence of Vitruvius on Hildegard's conception and depiction of the macrocosm and microcosm in her last great work, the *Liber divinatorum operum*.

Little is known about the Roman architect Marcus Vitruvius Pollio other than what can be gleaned from his own writing.² Only a basilica in the Augustan colony of

¹ Vitruvius is not mentioned in the main biographical works on Hildegard of Bingen such as *Voice of the Living Light*, Barbara Newman (ed.), Berkeley and Los Angeles, 1998; Sabina Flanagan's *Hildegard of Bingen: A Visionary Life*, London and New York, 1989; Regine Pernoud's *Hildegard of Bingen*, New York, 1998; Fiona Maddocks's *Hildegard of Bingen, The Woman of Her Age*, London, 2001; or Barbara Newman's *Sister of Wisdom, St. Hildegard's Theology of the Feminine*, Berkeley, 1989. Peter Dronke, in the magisterial edition of the *Liber divinatorum operum* produced along with Albert Derolez (Brepols, 1996), does not include any citation in his *Index Auctorem* linking Vitruvius with Hildegard.

² For a more complete treatment of the life of Vitruvius see the introductory essays in the editions of the *De Architectura* by Pierre Gros

Fanum Fortunae (modern-day Fano, in the Marche region) is known to have been designed by him; other buildings bearing inscriptions with a name similar to his—previously thought to constitute authorship—having since been discredited. From his repeated references to Rome as simply “the city”,³ and to the numerous inscriptions bearing the name of the *gens Vitruvia* in southern Latium and northern Campania, it is thought that Vitruvius was born and educated in that area, or in Rome itself. Through his writing Vitruvius displays a vast array of knowledge, both theoretical and practical, likely the result of a liberal-arts education paired with extensive studies of his own,⁴ much as he recommends to the aspiring architect in the first part of his book.

Vitruvius wrote *De Architectura Libri Decem* between the years 30 and 20 BCE and dedicated it to Augustus Caesar, who, it would appear, had granted Vitruvius a stipend of sorts (*commoda*), thus providing him also with the free time to write.⁵ *De Architectura* is distinguished from other contemporary works on the subject for its vast array of information and its completeness of content, an aspect of which Vitruvius himself was quite proud.⁶ In his written work Vitruvius provides information on the topics most commonly associated with the practice of architecture in a modern sense, such as city planning, the choice of materials, and the form and proportions of buildings and their individual elements. He also dedicated a significant portion of *De Architectura* to subjects which may appear peripheral to modern eyes (for example: weapons, hydraulics, the winds, acoustics, harmonics, and astrology), but which he considered integral to the comprehensive preparation that a learned architect ought to receive.

De Architectura is the only surviving architectural treatise from the ancient world,⁷ and for a considerable period of time its ‘rediscovery’ had been placed in the Renaissance when Poggio Bracciolini and Cencio Rustici found a copy of it in the monastery of St. Gall in 1416. Numerous studies in the 20th century, however, have shown that Vitruvius’s writing was anything but lost or forgotten in

(Turin, 1997, pp.x-xxvii); Ingrid Rowland and Thomas Noble Howe (Cambridge, UK, 1999, pp.2-8), and Thomas Smith (New York, 2003, pp.12-15). The subsequent paragraph is based primarily on the arguments presented in these works.

³ See for instance, Vitruvius 2.7.1 (Gros, p.136) “Sunt enim aliae molles, uti sunt circa urbem Rubrae Pallenses Fidenates Albanae...” and 2.7.4. (Gros, p.138) “Quae si prope urbem essent, dignum esset ut ex his officinis omnia opera perficerentur.”

⁴ Rowland and Howe, p.5.

⁵ On the problems regarding the definition of the word *commoda* see Gros, pp.xv-xvi, and Rowland and Howe, p.6, p.135.

⁶ Gros, p.xl.

⁷ Smith, T., p.9; and Christine Smith, review of Stefan Schuler, *Vitruvius in Mittelalter: Die Rezeption von “De Architectura” von der Antike bis in die frühe Neuzeit*, in *Speculum*, Vol. 76, No.3, July 2001, p.790. The oldest manuscript is that of the British Museum, Harleian Mss. 2767, originally from Cologne, see Carol Krinsky, “Seventy-Eight Vitruvius Manuscripts”, *Journal of the Warburg and Courtauld Institutes*, Vol. 30, 1967, p.51.

the period between the end of the Roman Empire and the beginning of the 15th century.⁸ Many copies of the *De Architectura* were available in the libraries of northern Europe, as was an abridged version by the later Roman author M. Celsus Faventinus. Vitruvian ideas reappeared in many forms in the middle ages. His theory of human proportions was appropriated and expanded upon in the philosophical works of the time, most notably perhaps, in the *Speculum Naturale* of Vincent of Beauvais;⁹ and along with the discussion of the winds in Aristotle and in Pliny, Vitruvius’s treatment of the subject and his description of the anemoscope were familiar to readers of the middle ages.¹⁰ Vitruvius furnished medieval builders with a wide range of important architectural knowledge, and his influence has been detected in a number of places: correspondence from Carolingian times mentions a design for a temple executed according to Vitruvian specifications,¹¹ Conant found Vitruvian proportions in the design of Cluny III,¹² a copy of the ancient text was owned by the monastery of Saint Michael’s at Hildesheim and was consulted for the building of that church.¹³

A ‘smoking gun’ linking Hildegard of Bingen to Vitruvius is, unfortunately, unlikely to exist. As was customary for scholars at the time, Hildegard insisted upon the divine provenance of her visions; knowledge, after all, was the property of God. This denial, coupled with her refusal to cite ‘earthly’ authors, makes the identification of her sources speculative. One is left with a three-fold task: to provide abundant probability that Hildegard could have read Vitruvius; to demonstrate that she also would have wanted to; and to identify commonplaces in her writing and illuminations that show his possible influence.

Despite her claim to the contrary, it is generally agreed that Hildegard was quite learned.¹⁴ We recognize that in adulthood she had an impressive erudition and the ability

⁸ See in particular: Kenneth J. Conant, “The after-Life of Vitruvius in the Middle Ages”, *The Journal of the Society of Architectural Historians*, Vol.27, No.1, March, 1968; Krinsky (op. cit.); and Schuler, 1999.

⁹ Umberto Eco, *Art and Beauty in the Middle Ages*, New Haven and London, 1986, p.29; see also Schuler, section 1 of part B.

¹⁰ Barbara Obrist, “Wind Diagrams and Medieval Cosmology”, *Speculum*, Vol.72, No.1, January 1997, p.42.

¹¹ Roger Hinks, *Carolingian Art*, Ann Arbor, 1962, pp.109-110. The letter from Einhard, architect of Charlemagne’s palace at Aachen, to a monk at Fulda (see note 26 below), is reprinted in Caecilia Davis-Weyer, *Early Medieval Art 500-1150*, Englewood Cliffs, New Jersey, 1971, pp.107-108. In the letter, Einhard refers to a reliquary made “after the example of ancient works”, likely similar to one he designed after a Roman triumphal arch.

¹² Conant, p.33.

¹³ Otto Von Simson, *The Gothic Cathedral*, New York, 1962, pp.30-31.

¹⁴ Anna Rosa Calderoni Masetti and Gigetta Dalli Regoli, *Sanctae Hildegardis Revelationes*, Lucca, 1973, pp.7-8; Dronke, 1996, p.xvi; Maud Burnett McInerney, “Hildegard of Bingen, Prophet and Polymath”, in *Hildegard of Bingen. A Book of Essays*, Maud Burnett McInerney (ed.), New York and London, 1998, p.xxi; Barbara Newman, review of *Liber divinorum operum*, A. Derolez and P. Dronke, *Speculum*, Vol.75, No.2, April, 2000, pp.479-480.

to read Latin.¹⁵ The inspiration for her mystical visions has been traced to a large number of sources ranging from texts of the classical world, such as Aristotle and Plato, to those of the middle ages, such as Isidore of Seville and Bernard Sylvestris. That Hildegard was esteemed for her intellect is made clear by her correspondence with prominent individuals throughout Europe; even the master of the University of Paris sought her input regarding a question of philosophy.¹⁶

De Architectura of Vitruvius contained several sections that would have been of interest to a polymath such as Hildegard. In Book 1 of his treatise Vitruvius discusses the nature of the winds and their importance when planning a city and its streets; he uses the following analogy to explain how wind is formed:

It is produced when heat meets moisture, the rush of heat generating a mighty current of air. That this is the fact we may learn from bronze eolipiles....Set before a fire, not a breath issues from them before they get warm; but as soon as they begin to boil, out comes a strong blast due to the fire.¹⁷

In the *Causae et Curae*, completed by 1158, Hildegard employs a remarkably similar analogy to explain stormy weather:

It is like what happens when a kettle is placed over a hot fire; it boils up and froths over the sides.¹⁸

The example of a vessel of water being placed upon a fire is not present in the relevant sections on winds in the *Cosmographia* of Bernard Sylvestris or in the *Etymologiae* and *De rerum natura* of Isidore of Seville; nor is it among the passages included in the section on winds in Faventinus's abridged version of the *De Architectura*. This absence in the redaction by Faventinus suggests that Hildegard would have borrowed her analogy directly from Vitruvius's treatise. Vitruvius also dedicates an entire chapter to the zodiac and astrology in which he states:

I have shown how the firmament, and the twelve signs with the constellations arranged to the north

and south of them, fly round the earth, so that the matter may be clearly understood.¹⁹

It is difficult not to be reminded of this passage from Vitruvius when reading the beginning of the second vision of Hildegard's *Liber divinorum operum*:

I looked-and behold!-the east wind and the south wind, together with their side winds set the firmament in motion with powerful gusts, causing the firmament to rotate around the Earth from east to west.²⁰

Hildegard's *Liber divinorum operum* is ripe with sources and analogues, as attested, in particular, by the *Index Auctorem* in Peter Dronke's examination of the work.²¹ Among the writers with whom Hildegard was familiar was Pliny the Elder,²² one of only five writers of later antiquity to mention Vitruvius.²³ Also among these five was the mid-fifth century Christian writer Sidonius Apollinaris, one of whose *epistolae* shares a similarity with a passage from Hildegard's *Liber divinorum operum*.²⁴ In another of his letters, Sidonius gives the following advice regarding architecture to his friend Namatius:

As for Vitruvius and Columella, you do well to study either or both, for you are competent to deal with either admirably, as one who is equally at home in agriculture and in building.²⁵

A passage such as this would certainly have caught Hildegard's eye, considering her interest in both natural science and architecture. To heed the advice of Apollinaris would have been easy enough. In addition to the flow of ideas between monasteries along the Rhine,²⁶ Hildegard traveled extensively, and on these trips she would have had the opportunity to consult the great monastic libraries of Germany, many of which owned copies of Vitruvius.²⁷ The earliest manuscripts of *De Architectura* date between the 8th and 13th centuries, and

¹⁵ *De Architectura*, 9.6.1. Trans. Morgan, p.269.

¹⁶ *Liber divinorum operum*, 3.1. Translation by Robert Cunningham, in Matthew Fox (ed.) *Hildegard of Bingen's Book of Divine Works*, Santa Fe, 1987, p.56.

¹⁷ See note 1.

¹⁸ Dronke, 1996, 498. Flanagan (p.103) points out that Hildegard gives the same remedy for baldness as does Pliny.

¹⁹ Rowland and Howe, pp.6-7. The other four authors being Frontinus, M. Cetus Faventinus (see corpus), Servius, and Sidonius Apollinaris (see corpus).

²⁰ Dronke, 1996, p.500. It should be noted that Dronke does not imply that there is a direct connection between the two works.

²¹ Sidonius Apollinaris, *Epistolae*, 8.6.10, Translation by Dalton, O. M., Oxford, 1915, p.148.

²² Charles Burnett, "Hildegard of Bingen and the Science of the Stars", in Charles Burnett and Peter Dronke (eds.), *Hildegard of Bingen: The Context of Her Thought and Art*, London, 1998, p.120.

²³ Editions were present in Bamberg, Fulda, Melk, St. Gall, Murbach, Regensburg, and Reichenau (see Krinsky, p.36).

¹⁵ Though the full extent of her command of Latin is still debated, she would have had, at worst, a rudimentary acquaintance with the language. See: Flanagan, p.45; McInerney, p.xxi; Newman, 1998, pp.6-7.

¹⁶ See letter 40, "Odo of Soissons to Hildegard", in Joseph Baird and Radd Ehrman (trans.) *The Letters of Hildegard of Bingen, Volume 1*, New York and Oxford, 1994, pp.109-110. It should be recognized that Odo did believe in Hildegard's claim at never having studied.

¹⁷ *De Architectura*, 1.6.2. Translation by Morris H. Morgan, *Vitruvius: Ten Books on Architecture*, New York, 1960 (reprint of 1914 edition), p.25.

¹⁸ Hildegard of Bingen, *Causae et Curae*, Part 1, "The Weather." Translation by Manfred Pawlik and Patrick Madigan, *Hildegard of Bingen: Holistic Healing*, Collegeville, Minnesota, 1994, p.3.

originated in northern Europe.²⁸ Copies were present in Bamberg and Cologne,²⁹ both of which Hildegard visited on her preaching tours, the latter stop taking place in 1163; that same year she began work on the *Liber divinorum operum*. Her contact with the city of Cologne would continue later in her life: she counted the town's Bishop as a friend,³⁰ and her nephew Wezelin—who assisted in the preparation of the *Liber divinorum operum*--was a prior there at the church of Saint Andrew.³¹

Two years after the tour, in 1165, Hildegard founded the abbey at Eibingen.³² Much like the earlier construction of the monastery at Rupertsberg,³³ she must have overseen the building of this new complex and taken part in its design. At Rupertsberg, Hildegard had likely followed the famous design of St. Gall,³⁴ another monastery that owned a copy of Vitruvius.³⁵ Hildegard's interest in architecture is evident in her first major work, the *Scivias*, which is marked by numerous architectural analogies and descriptions of walls, towers, and fortresses. This architectural imagery also made its way into the illustrations executed with the text. The *Liber divinorum operum* is ripe with architectural description and metaphor as well, but is notably different from its predecessor. While in the *Scivias* Hildegard takes pains to describe the buildings in terms of precise measurement and enumeration, in the *Liber divinorum operum* she changes approach, and is more concerned with expressing symbolic proportional relationships between the elements contained in the visions.³⁶ Typical passages from the *Scivias* state:

Next, I saw an iron-colored tower...it was four cubits in length and seven cubits in height.³⁷
The width of the inner part of the tower was five cubits....³⁸

²⁸ See Krinsky, pp.43-70; Schuler, pp.347-395.

²⁹ Flanagan, p.9; Krinsky, p.36, p.44, p.48, p.51, p.65.

³⁰ See letter 24, "Hildegard to Christian, Archbishop of Mainz", in Baird and Ehrman, p.81.

³¹ Gottfried and Theodor, *The Life of Holy Hildegard*, Adelgundis Führkötter and James McGrath (trans.), Collegeville, Minnesota, 1995, p.82. See also p.111 in the same text, under *Chronology*. See also: Dronke, 1996, p.xii.

³² Calderoni Masetti and Dalli Regoli, p.7.

³³ Madeline Caviness, "Hildegard as designer of the illustrations of her works" in *Art in the Medieval West and its Audience*, Burlington, Vermont, USA, 2001. Originally in Burnett and Dronke (eds.), 1998, p.29, p.33.

³⁴ Heinrich Schipperges, *Hildegard of Bingen: Healing and the nature of the Cosmos*, John Broadwin (trans.) Princeton, 1997, p.18. Schipperges underscores Hildegard's role as architect again in *The World of Hildegard of Bingen*, Kent, 1998, p.26. Cf. Werner Lauter, "Rupertsberg and Eibingen: Two Monasteries of Hildegard von Bingen", *Qualelibet* Vol. XXIV, No. 1, 2007, pp.3-6.

³⁵ Krinsky, p.36; Nicholas Pevsner, "The Term 'Architect' in the Middle Ages", *Speculum*, Vol.17, No. 4, October, 1942, p.558.

³⁶ This has also been observed by Flanagan, p.145.

³⁷ *Scivias*, 3.3. Translated by Bruce Hozeski in *Hildegard von Bingen's Mystical Visions*, Rochester, Vermont, 1995, p.203.

³⁸ *Scivias*, 3.9. Trans. Hozeski, p.305.

Inside this same building, I also saw seven marble columns of white color. They were standing near the tower. They had been made wonderfully round and were seven cubits high.³⁹

While in the *Liber divinorum operum*:

And just as we consider in advance, according to our builder's plan, all the parts of a house we plan to erect, the soul orders all deeds within us in accord with its own capacity.⁴⁰

The understanding of the soul surrounds the body and all its structures by moving everything in the body to the correct degree toward whatever the flesh demands with respect to our sense of touch and taste, just as a builder correctly measures out a house as the proper abode for human beings.⁴¹

As demonstrated by Pozzi Escot,⁴² Hildegard—much influenced by the theories of Boethius—employed symbolic proportions in her musical compositions, adopting the geometries of a gothic cathedral and translating them into the intervals of her antiphons. The connection between music and architecture is also stressed a number of times by Vitruvius,⁴³ who includes an entire section in his treatise on harmonics and the acoustics of the theatre. Harmony and musical ratio are consonant with Vitruvius's concept of *symmetria*, one of his six components of architectural method.⁴⁴ *Symmetria* is not to be understood in the modern sense, but rather as "a concept of interconnected elements calibrated to create a sense of beauty that comes from wholeness and harmony of proportion."⁴⁵ When viewed not only in light of the influence of Boethius, but also in that of Vitruvius, Hildegard's move towards the conception of the micro- and macro-cosm in terms of ratios, rather than set measurements, becomes easier to chart.

Vitruvius was one of the most important sources for transmitting the concept of proportion from Plato's

³⁹ *Scivias*, 3.9. Trans. Hozeski, p.306.

⁴⁰ *LDO*, 4.82. Trans. Cunningham, p.117.

⁴¹ *LDO*, 4.17. Trans. Cunningham, p.92.

⁴² Pozzi Escot; "Gothic Cathedral and the Hidden Geometry of Hildegard von Bingen," in *The Poetics of Simple Mathematics in Music*, Belmont, MA, 1999, pp.8-34.

⁴³ Matilda Ghyka, "Gothic Canons of Architecture", in *The Burlington Magazine*, Vol.86, No.504, March, 1945, p.74. The section on music made *De Architectura* appealing also to Gunzo, an architect of Cluny III (Conant, p.33).

⁴⁴ Vitruvius lists his six principles of architecture in Chapter 2 of the first book: other than *Symmetria*, there are *Ordnatio*, *Dispositio*, *Decor*, *Distributio*, and *Eurythmia*. For further analysis of the meaning of these terms see Rowland and Howe, pp.143-151.

⁴⁵ Smith, T.G., p.18. In Vitruvius's own words *symmetria* is "the selection of modules from the members of the work itself and, starting from these individual parts of members, constructing the whole work to correspond." (Trans. Morgan, p.13)

Timaeus,⁴⁶ and Hildegard's conception of the divine nature of man—as evidenced in the proportions of his body—betrays a more than subtle echo of this ancient theory.⁴⁷ In *De Architectura*, Vitruvius equates the proportions of a temple to those of a “well-shaped man”⁴⁸ and he goes on to list the measurements of the human body as a series of ratios, among which: the face is divisible into three equal parts, while its entirety equals 1/10 of the height; the hand, from fingertip to wrist, is equal in length to the face; the head is 1/8 the total height. In this same chapter he includes the famous passage where he presents the idea that a man's measurements demarcate the form of both a circle and a square:

For if a man be placed flat on his back, with his hands and feet extended, and a pair of compasses centred at his navel, the fingers and toes of his two hands and feet will touch the circumference of a circle described therefrom. And just as the human body yields a circular outline, so too a square figure may be found from it. For if we measure the distance from the soles of the feet to the top of the head, and then apply that measure to the outstretched arms, the breadth will be found to be the same as the height, as in the case of plane surfaces which are perfectly square.⁴⁹

These passages of Vitruvius, like that on the formation of wind, were also not to be found in Faventinus's shortened version of *De Architectura*; they are echoed, however, in the *Liber divinorum operum* in the second, third, and fourth visions. In the second vision, Hildegard describes the figure of man (the microcosm) inscribed within the universe (the macrocosm) which, differently from her earlier egg-shaped conception of it in the *Scivias*, now takes on a circular form.⁵⁰ Here, as in Vitruvius's example, man's fingertips reach towards the circumference of the circle:

The fingertips of the right hand are extended to the right while those of the left hand are extended to the left, both of them towards this vision of light as if the figure had stretched out its arms.⁵¹

⁴⁶ Ghyka, p.73.

⁴⁷ G.del Guerra, Introduction to Ubaldo Ceccarelli, *Il “Liber divinorum operum” di S. Ildegarda di Bingen*, in *Scientia Veterum*, Pisa, 1960. Vol. 10, p.5. Ceccarelli, in turn (p.36), stresses the debt to the thought of Hippocrates. It should be noted that Dronke (p.xvii) believes that Hildegard knew Plato's *Timaeus* through the version of Calcidius.

⁴⁸ *De Architectura*, 3.1.1. Trans. Morgan, p.72.

⁴⁹ *De Architectura*, 3.1.3. Trans. Morgan, p.73.

⁵⁰ Charles Singer, *From Magic to Science, Essays on the Scientific Twilight*, London, 1928, pp.211-212; Matthew Fox, *Illuminations of Hildegard of Bingen*, Rochester, Vermont, 2002. It is generally agreed that Hildegard was attempting to bring her own cosmological theory more in line with the mainstream conception of the universe being diffused at the time.

⁵¹ *LDO*, 2.15. Trans. Cunningham, p.35.

In the fourth vision, she writes at length on the proportions of man's body and their symbolic theological meaning; the soul's “accord with the body” is evidenced in the ratio between a man's height and his arm-span:

...because the human form has the same length and width, if we extend both our hands and arms out from the chest, just as the firmament is also as tall as it is wide.⁵²

Not every proportion listed by Hildegard, however, is precisely the same as those of Vitruvius; she, for example, divides into thirds the entire head rather than just the face. What is important, though, is that she adopted one of the ancient architect's central themes—the production of beauty and harmony from ratio—and applied it to her theological conception of the relationship between micro- and macro-cosm. The illumination for the second vision of the *Liber divinorum operum* from the codex now in Lucca⁵³ provides a visual embodiment for this idea. The Lucca codex is the only one to have come down to us with a set of illustrations. Since it was likely produced in conjunction with the submission for canonization of Hildegard,⁵⁴ which took place in 1227 (over forty years after her death), its ten illustrations have been the subject of debate regarding their authorship and their debt, if any, to Hildegard's designs. Madeline Caviness makes a convincing argument that they are based upon originals done to Hildegard's specifications.⁵⁵ If one accepts Caviness's attribution, the illuminations serve as further proof of the Vitruvian connection in Hildegard's thought.

A number of Vitruvian proportions are indeed present in the figure, though they operate with slightly different modules. The length of the face is the same as that of the hands, and is one tenth the height of the figure from head to heel, while the entire head measures one eighth that length—precisely as Vitruvius prescribes. This alone contradicts Panofsky's assertion that in the middle ages the only Vitruvian *schemae* to be followed were the division of the face into thirds and the inscribability of the human figure within circle and square.⁵⁶ According to Vitruvius,

⁵² *LDO*, 4.15. Trans. Cunningham, p.90.

⁵³ Notes written in Italian in the margins of the manuscript show that it arrived in Italy during the fourteenth century (Dronke, p.civ); how it then came into the possession of Giovanni Domenico Mansi (1692-1769), the archbishop of Lucca, remains unclear (though a number of possibilities has been proposed by Calderoni Masetti and Dalli Regoli, note 1 p.22; cf. Dronke, p.civ).

⁵⁴ Caviness, 1998, p.34; Dronke, p.cvii. That the codex was destined for public use is also affirmed by Calderoni Masetti and Dalli Regoli, p.10, and Maria Luisa Moriconi, “Hildegard von Bingen. Revelationes” in *Manoscritti e opere a stampa della Biblioteca Statale di Lucca*, Lucca, 1994, p.11.

⁵⁵ Caviness, 1998, pp.34-41. Caviness's assertion has been supported, more recently, by Thomas Dale “Monsters, Corporeal Deformities, and Phantasms in the Cloister of St. Michel de Cuxa”, *The Art Bulletin*, Vol.83, No.3, September, 2001, note 48 p.342.

⁵⁶ Erwin Panofsky, “The History of the Theory of Human Proportions as a Reflection of the History of Styles” in *Meaning in the Visual Arts*,

the forearm ought to measure one quarter the height of the figure, and it does so quite precisely if the body is instead measured from head to toe. Measured thusly, the east-west cosmic ray neatly bisects the body, and the lower pectoral muscle then establishes the point at which the torso is further divided into two, as specified by Vitruvius. By fully extending the arms, their length would appear to be the same as the distance from head to toe.

The inconsistencies in the proportion systems within the figure of Hildegard's second vision as well as the lack of proportional consistency between it and the figure of the third vision, have led several scholars to claim that an analysis of these from a geometric standpoint is futile.⁵⁷ This observation, however, does not take into account the possibility of distortion caused by the hand of the illustrator, or rather, copyist; it appears to me that any minor inconsistencies in the body's proportions were simply amplified at the time of the codex's copying. The argument also fails to take into account the difficulty in faithfully and accurately representing a man in both circle and square in the manner described by Vitruvius. Even during the Renaissance, when a number of artists tried their hand at depicting the now-famous image, the results were not always convincing or correct from a proportional point of view. One need only refer to the gangly version of the figure by Cesare Cesariano to see the challenge in positioning the figure of man so that his limbs would appear of natural length while reaching toward a square and circle both centered upon his navel. In the most famous rendering of the idea, Leonardo da Vinci solved the problem by centering the circle and square along different points in the man's body. Even modern artists have made mistakes in depicting this ensemble: an illustration in a recent redaction of *De Architectura* shows the man's arm bent at about 120 degrees from his torso that reaches an equal distance from his shoulder as when bent at a ninety degree angle⁵⁸—something geometrically impossible as the two arms effectively form the hypotenuse and the longer leg of a right triangle.

Encoded in the cosmic rays emanating from the stars and the mouths of the beasts along the *ignis niger* is a nearly perfect square, turned on its corner. The height and width of the square correspond quite closely to the height of the human figure measured head to toe. It should be noted here that the editions of the *De Architectura* which came down to the middle ages contained no illustrations, and that while Vitruvius states the proportional relationship between man and the two shapes quite explicitly, he is silent on how (or if) all three were to be juxtaposed

Garden City, New York, 1955, Footnote 64, pp.90-91. Panofsky's statement is upheld by Piero Morselli, "The Proportions of Ghiberti's *Saint Stephen*: Vitruvius's *De Architectura* and Alberti's *De Statua*", in *The Art Bulletin*, Vol.60, no.2, June, 1978, footnote 13 p.237.

⁵⁷ Calderoni Masetti and Dall'i Regoli, p.16.

⁵⁸ I refer to David Ligare's drawing of 1991, figure 37 in Smith, T.G.

simultaneously.⁵⁹ The illustration, therefore, can be seen not only as a depiction of Hildegard's conception of the micro- and macrocosm, but also as her solution to the problem of representing a Vitruvian man according to what the Roman architect had stated as well as contending with what he had not.⁶⁰ I propose that Hildegard, in designing the illustration for the second vision, faced the same problem as other artists in showing a human figure in this way, and solved it in a manner which is—to the best of my knowledge—extraordinary and unique.

The visual evidence presented in this illustration of the Lucca Codex, along with the many opportunities for contact and study of the ancient treatise, and its manifold appeal to a polymath such as Hildegard of Bingen, make it more than likely that she was familiar with Vitruvius's *De Architectura*. In having considered the connections between the *De Architectura* of Vitruvius and the *Liber divinorum operum* of Hildegard of Bingen, I hope not only to have brought attention to a new aspect of Hildegard's intellectual formation, but perhaps also inspire further questions about the transmission of classical knowledge during the middle ages and the distinction between them and the period known as the Renaissance.

We apologize to our readers and to Mr. Bronanno for being unable to include the illustrations that accompany this essay. Unfortunately our format and lack of space prevented us doing so. Please contact the Editor, Frances Flynn at frances@trafford-flynn.com if you would like to receive these illustrations by email.

⁵⁹ Cf. Gros, p.279, note 39.

⁶⁰ To the best of my knowledge, no scholar has stated explicitly that these illustrations from the Lucca codex are the result of Hildegard's reading of Vitruvius. Dale (p.408) raises the idea by drawing a comparison with Leonardo's "Vitruvian Man" but stops short of asserting a direct influence of Vitruvius upon Hildegard. Patrizia Castelli in "Temi ermetici in Hildegarda di Bingen", in *La miniatura italiana in età romanica e gotica*, Grazia Vailati Schoenburg Waldenburg (ed.), Firenze, 1979, p.315, sees Hildegard's use of the *homo ad quadratum* simply as the mere re-adoption of a theme, without identifying its precise source. Madeline Caviness, in "Images of the Divine Order and the Third Mode of Seeing", *Gesta*, Vol.22, No.2, 1983, mentions the Vitruvian canon in relation to other medieval depictions of men set within a circle representative of celestial harmonies. It should also be noted, however, that Caviness believes that those illustrations, owing to the imprecise measurements of the bodies, are not to be considered proportional studies. While Hanno-Walter Kruft, *A History of Architectural Theory from Vitruvius to the Present*, New York, 1994, p.35, does comment on the parallels between the passages of Vitruvius's *De Architectura* and Hildegard's *Liber divinorum operum* relating to the figure of the *homo ad quadratum*, and on the debt of the Lucca codex illustration to Vitruvius, he still claims that Hildegard's actual knowledge of Vitruvius's writing was "rather indirect".

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