The Squaring of the Circle:

THE BODY ACCORDING TO VITRUVIUS – NOT DAVINCI

by
Carlo Luigi Pasini

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Master of Architecture

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AUTHOR'S DECLARATION

I hereby declare that I am the sole author of this thesis.
This is a true copy of the thesis, including any required final revisions,
as accepted by my examiners.

I understand that my thesis may be electronically available
to the public.

A LETTER TO THE READER

This research was initially proposed in the spring of 2013
for the self-directed research/design component of my certification,
after having completed all of my coursework in the first year of graduate studies.

It was not until the spring term of 2015, however,
that I would settle on this research-topic with my committee,
after having worked on lab-researches, conferences, and academic papers.

The first draft of this thesis was submitted in the fall of 2015.
Following a medical leave of absence, a second would be defended
at the end of the fall term of 2016 that would be accepted with revisions.

Unfortunately, a breakdown in communication over these major revisions would begin,
shortly thereafter, that would lead to a period of inactivity in my graduate studies,
and further delay the publication of this thesis until the winter term of 2019.

ABSTRACT

An excerpt from a literary work of Classical literature is rendered in a self-directed manner. The literary passage in question is a description that was given at the turn of the current era by the architect, Vitruvius, in the treatise that he wrote for the Roman imperator, Augustus. The description is the same one that later inspired the Renaissance artist, Leonardo daVinci, to sketch the figure of a nude male, whose hands and feet are transposing a square and circle – The Vitruvian man. After the most reliable copy of the treatise by Vitruvius is determined to be the Mediæval manuscript archived at the British library, under the code number, 2767, in its Harlian collection, a digitisation is obtained from the library's digital imaging services; the folios onto which the excerpt was copied are then isolated from it and further formatted, so that these facsimiles of the script can be layered to allow for the description to be traced. To begin the rendering process, the tracing of this script is transcribed into a legible format; then, the transcription is emended of idiosyncratic punctuations, shorthands, and spellings, which its Carolingian copyist adopted, but that its Classical author would not have adopted. Next, the part-of-speech of each word is analysed through a prototypical mnemonic system; and then, the stylistic word-orders used by the author/copist are parsed into analytical ones. To end, the parsed text is edited to give value to as many of the zero-value terms as possible, before the edited text is translated word-per-word, using either a word's cognate or latinate. Once done, the translation is enacted with the aid of architectural drawings to get feedback on whether or not it makes sense in time and space. In turn, this feedback loop repeats itself until an iteration is rendered that yields a reenactment, which cannot make any more sense.

CREDIT OF SUPPORT

Foremost, I want to acknowledge my grandfather for his support, for closely following all of my academic work and for pushing me to see my graduate studies through to the end. Next, I want to acknowledge the supervisors of my thesis, Eric Haldenby and Robert Jan van Pelt, as well as the external reviewer of my work, Claudio Sgarbi, for their contributions as I feel honoured to have had such esteemed professors supervise and review my work, respectively. I would then like to acknowledge all of the professors who encouraged me during the course of my studies, namely: Reimer Faber, Luis Castaño, Barbara Ross, John Straube, Peter Roe, Brian Hunt, Ric Andrighetti, Robert Wiljer, Fred Thompson, George Soulis, Michael Elmitt, Teresa Boake, Valerio Rynnimeri, Adrian Blackwell, Anne Bordeleau, and Juhani Pallasmaa. After my professors, I would like to acknowledge all of my colleagues, friends, and relatives, especially those among whom who took the time to go through the all of the work with me: Stephane Gaulin Brown, Harry Sildva, Allen MacLure, Petra Bogias, and Ardavan Mozafari. In addition to this, I need to credit actress, Shannon Kingston, cameraman, Geoff Christou, and model, Mark Zupan, for helping me to carry-out the photo-session of this thesis work. Moreover, I want to credit my three writing instructors, Ryann Vogt-Martin, Ricardo Wever, and Luigi Benetton, for helping me to improve my proficiency in English. Last, but not least, I need to credit my long-standing colleague, as well as my long standing friend, Justin Breg, for helping me so many times with the editing of the written component of my thesis work. Without such support, encouragement, and help, I would have never been inspired to finish, but if it were not for my pursuit of wisdom, I would have never been inspired to begin at all.

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INTRODUCTIONS

"It turns out that nothing is more useful than the useless."

— *Roger Scruton*

¶Just over two thousand years ago, a treatise was written on the topic of architecture for the "Imperator Cæsar [Divi filius Augustus]", which was serendipitously never lost to posterity. Its author is generally accepted to be "the architect, Vitruvius" – based on a single reference. The opening address to Augustus claims that the treatise was written to help him formulate his plans to personally finance the expansion of a public infrastructure across the provinces. Accordingly, Vitruvius divides his work into ten volumes, each addressing a set of principles that Augustus should consider in developing his plans for Rome's infrastructural expansion. Each volume opens with an anecdote and description that are meant to introduce its themes. The first addresses how to select a site for the erection of a settlement; the second addresses how to source the raw materials for the construction of such settlements; the third addresses the composition of sacred dwellings; the fourth addresses how sacred dwellings are ordered. The fifth addresses the design of public buildings; the sixth addresses that of private estates. None of these volumes address the material-finishes of sacred, public, and private buildings. In turn, the seventh volume addresses how to finish the surfaces of these types of buildings. The eighth addresses the infrastructure of water-supply, and the ninth, that of timekeeping. The erection, operation, and reparation of these settlements, buildings, and infrastructures, though, as well as their defence/besieging, would not be possible, were it not for machinery. So to conclude his work, the final book addresses the ingenuity of such engines/machineries. In its own right, his work falls into a genre of literary works that are called *specula* (mirrors) – that is, it was written to help the *Princeps civitatis*, Augustus, reflect on his imperial plans.

See [B-1.1], *Vol. 1, p 2*

See [B-1.2], *pp 170-173*

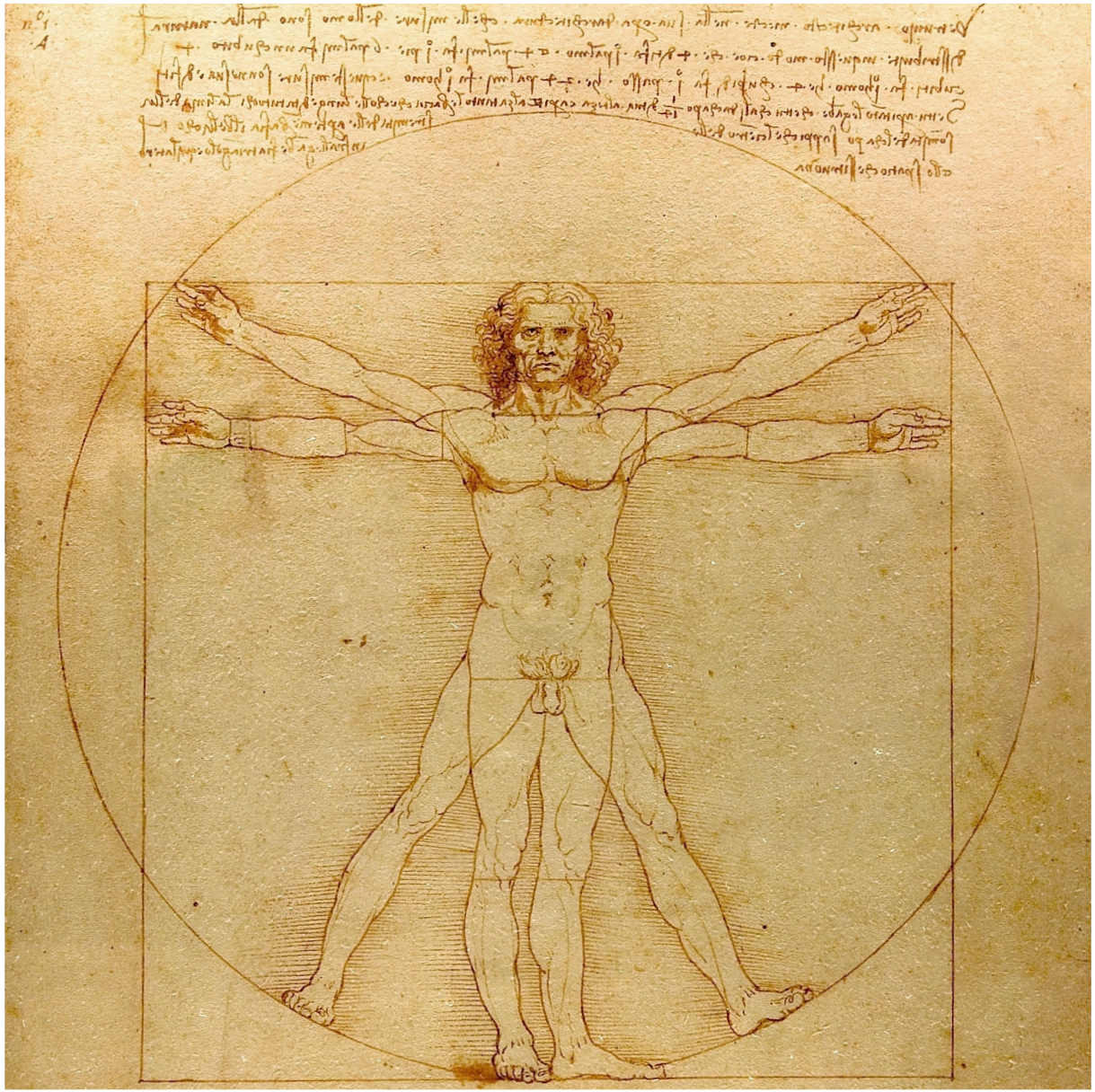
See [B-1.1], *Vol. 1, pp 2-4*

See [B-1.24], *p 316*

¶Arguably, the most misunderstood literary passage of Vitruvius' treatise is that in which he describes how a well-figured man's body is a tool for measuring. Fifteen hundred years later, this description would inspire one of the most famous figures in history, Leonardo da Vinci, to sketch a male figure transposing his hands and feet between a square and circle. Evidence of his inspiration – that this passage by Vitruvius is what inspired him to sketch this figure – is evinced by the loose précis that he gives in the caption above the sketch, wherein he states: "Vitruvio puts [it] in his [literary] work that, the measures of man are distributed by nature …and these measures are in his edifices". On account of daVinci name-dropping "Vitruvio", the figure in the sketch would come to be popularly known as "The Vitruvian man". In fact, today, his name may be more associated with the work of da Vinci, than with his own work. Ask anyone, today, if they "are familiar with Vitruvius?", and do not become surprised if almost everyone replies back, "who?"; but ask instead those same people, if they "are familiar with Leonardo da Vinci's *Vitruvian man*?", and watch them each promptly react, "oh yes!". Even among those who may be familiar with this incidentally famous author from antiquity, fewer still will have intimately perused the treatise in its original form, not just a translation. So, many can still be led to believe that Leonardo's *Vitruvian man* accurately represents how Vitruvius described the body of man within the third volume of his treatise on architecture; that its caption is an Early italian quotation of the Classical latin description – not the case. Contrary to what popularisers of Science claim, only this loose précis is crediting Vitruvius; the rest, while similar at times to what Vitruvius wrote, is not, if the caption is read properly.

See [B-1.3],
Quote translated by author
See [B-1.4], *p 57*
Refer to [B-1.5] & [B-1.6]
Read précis quoted above

The Digital facsimile [B-1.3] *of the Vitruvian man sketch by Leonardo daVinci, c.1499, has been formatted so that, the entire image of the figure along with the upper caption, which has been cited herein, fits within the space of this document's body.*



¶Retroactively, the *Vitruvian man* by da Vinci appears to be the archetypal *Renaissance man*. The figure in the sketch appears both wise and fit: he has a pensive stare, like a philosopher, and a lean physique, like an olympian. The man appears to be compressing time and space: he has multiple sets of limbs arranged within a kinetic array, like a mythological Vedic deity. He even appears to be transfiguring life and death; he has a hatched silhouette, like an aura. Taken at face-value, it should be no wonder that so many claimants of arcane insight would preach about sacred geometry having been esoterically encoded into this sketch by da Vinci. This obsession with a *DaVinci Code*, though, is phenomenal, considering how little it has to do with the supposed esoteric exercise that inspired daVinci: Vitruvius' account of the body. While da Vinci does credit Vitruvius, he also digresses into his own observation on the body. So even if Vitruvius did locate the navel at the centre of a circle, he did not digress into how: "if you open the feet so as to cut from the top, 1/14 of your height, and lift the arms enough, so that with the longest finger you touch the line of the head's summit, […] the centre of the extremities […] be the navel and the space […] between the legs be an equilateral triangle" – this digression is daVinci's alone. Academics and claimants, alike, then, should be obsessing over how Vitruvius described the body of man in his treatise, not over how a self-proclaimed "man without letters" – a man could not read/write Latin – tried to render this description. One has to focus on trying to draw the lines of the text to the letter, not on trying to rework a sketch that da Vinci likely made for the pleasure of filling another page in his sketchbook, after hearing about it, one evening over dinner, from a friend, who happened to have a copy.

See [B-1.7]

Reference to [B-1.8]

Refer back to [B-1.5] & [B-1.6]

See [B-1.3], *upper caption*

Quote translated by author.

See [B-1.9], *p. 64*

See [B-1.10] *reg. relationship between daVinci & da Ferrara*

Expression taken from [B-1.11]

¶The natural starting point for an architect or "architect to be" who has to render an excerpt of Classical latin is to try to surmise the provenance of the literary work to which it belongs. Retrospectively, the extent to which Vitruvius' ten volumes had disseminated the readerships of the era of the Roman principate remains difficult to surmise. For all intents and purposes, the manuscript that he wrote for Augustus could have been the only copy in circulation. Yes,

See [B-1.12], *pp 253-254*

copies of *volumes* – the Classical term for what would nowadays be referred to as a 'scroll' – were widely produced, distributed, and collected by Rome's gentry class, as a sign of wealth, but this treatise could have remained a one-off as much as it could have become a best-seller.

See [B-1.13], *table of contents*

The fact that, the compiler, Pliny, lists a"Vitruvius" among the authors that he consulted for his literary compendium on *Natural history*, a hundred years later, only proves that, at least, one copy of a treatise by this author resided among the newly built public libraries of Rome, but not necessarily this one. The fact that, the surveyor, Sextus Frontinus, around that time,

See [B-1.14], *p 366*

refers to a "Vitruvium architectum" in his survey of Rome's aqueducts, only establishes that he was an architect, and not that he was the author of the work that was gifted to Augustus. In fact, the only Classical author through whom we tie Vitruvius to this treatise is a certain,

See title / opening paragraph

Faventinus, who "briefed a book for the private uses of the architectonic arts [described] by

of [B-1.15] *&* [B-1.16]

Vitruvius, Pollio, and other authors..." during the third century crisis of the Roman Empire

See [B-1.17] *re: Third century crisis*

– i.e. the decentralisation of Augustus' public infrastructure into Diocletian's private estates. Apart from Faventinus' account, though, there is little else to go on from Classical antiquity. The dissemination of this treatise is far easier to surmise from the eighth century, onwards.

¶The first discernible mention of Vitruvius and his treatise on architecture, since Faventinus, occurs in letters shared by the author of *Vita Caroli Magni*, Einhard, with his pupil, Vussin. The timing of which coincides with the diffraction of Vitruvius' treatise in manuscript form. In 1967, Carol Krinsky catalogued all of the extant hand-copies of Vitruvius' literary work. The catalogue details the production, provenance, and format of seventy-eight manuscripts, including how complete is each copy of the treatise, which parts of the text are illuminated, and what notes are found in the margins, as well as who may have produced the manuscript. Among these details, corollaries standout regarding the dissemination of Vitruvius' treatise. The production of these manuscripts all but ended with the advent of Gutenberg's printing-press, at the turn of the sixteenth century A.D., and all but started, at the end of the eighth, with the advent of Charlemagne's scriptorium, in a pattern that diffracts from a single copy. She refers to this copy as "the archetypal copy on which all Vitruvius-texts studied depend". The possibility of an archetypal copy was first put forth by Valentin Rose and Fritz Krohn in their German edition of Vitruvius' treatise, concurred by Frank Granger in his English translation of the text, and confirmed by Pierre Ruffel and Jean Soubiran in their survey of every reference that is thought to be in some way related to Vitruvius. Where their opinions differ, though, is in how many direct copies were made of this archetype before it had deteriorated – i.e. how many lineages of the text run through the seventy eight copies that are still extant. Such a difference in opinion, though, would be proven to be a moot point if even just one of these seventy-eight extant manuscripts could be proven to be a direct copy of this archetype.

See [B-1.18] *Life of Charlemagne*

See prologue [B-1.19], *pp 43*

See catalogue [B-1.19], *pp 40-70*

See prologue [B-1.19], *pp 41*

Refer to [B-13.50] & [B-13.56]

Refer to [B-1.2]

See B.L.'s archival record for [B-1.20] *re: Harlianus 2767*

¶The manuscript that would come to be collected by Robert Harley (1662--1724), passed-on to his son, Edward (1689--1741), and sold-off to the British museum in 1753, upon his death, where it would later be archived by Eyre, Strahan, and Spottiswoode in 1808, along with the rest of the codices collected by them, under the collection name, *harlianus*, and call number,

Read Granger's Introduction [B-1.1]

Read Krinsky's prelogue [B-1.19]

See entry [B-1.19] *re: h-2767 dating by different scholars*

2767, is the oldest copy of the treatise by Vitruvius among the seventy-eight that are extant. Rose, Krohn, and Granger, as well as Ruffel and Soubiran, all agree with this fact. However, they all give different time periods for when this manuscript would have been copied exactly.

See [B-13. 56] *re: accessibility of Harlian 2767*

Access to the h-2767 would remain limited until it would be transferred to the British library in 1973; and, without proper access, it would have been difficult to date it to in and around the time that coincides with the first mention of Vitruvius, and his treatise, since Faventinus. Moreover, the dating of manuscripts was still in its infancy as a domain of study in the first half of the twentieth century, when these scholars were surveying the manuscripts. Whereas, the discipline has since become a much more reliable field of inquiry. With greater reliability, the h-2767 can now be argued to date to the same time as that when the archetype surfaced.

Consult [B-1.21] *re: the Carolingian minuscule script, Patronage of Benedictine monks, and the Uncial minuscule script.*

¶Certain idiosyncrasies with h-2767 help to trace its creation to during Charlemagne's reign. The h-2767 manuscript is a very early example of the Carolingian minuscule script. Notably, Carolingian minuscule was first developed by the Benedictine monks at Corbie abbey, c. 780, under the patronage of Charlemagne. The script is based on what is now known as 'uncial', but its letterforms were meant to appear more legible than the more compact uncial variety. Charlemagne’s hope was to use this more legible script to unify the Frankish nobility during

Refer to [B-1.18] *re: Charlemagne's achievements*

Refer to catalogue entry in [B-1.9]

Visible in [B-1.20]

[B-1.18]

Consult [B-1.22]

Consult [B-1.23]

his reign by promoting literacy among them. By the end of his reign, in 814, upon his death, the Uncial script had been all but abandoned in favour of Carolingian, as the new standard. Uncial script is still visibly used at the start of each of the sections in the h-2767 manuscript, in red, which denotes that the script was still in use when the production of the copy began. The latter copyist(s) were also inconsistent with their script in that, they sporadically revert back to uncial letterforms, probably by force of habit. These inconsistencies suggest that the h-2767 would have been copied as early as when the Carolingian script was being developed. Respectively, then, it can be dated to have been produced between the years, 780 and 814 AD.

¶The script is not the only feature that allows for h-2767 to be dated to Charlemagne's reign. A rather distinguishing characteristic of the Carolingian script is its system of punctuation, which is based on the one that St. Jerome put forth within his Latin translation of the Bible. Vitruvius wrote at a time in which the Greek practice of “continuous writing” was standard. Moreover, abbreviations for inflections, prepositions, and words as well as phrases were only just being explored at the time Vitruvius’ wrote his treatise, and were by no means standard. Whereas, a distinctive feature of the Carolingian script is its extensive use of shorthands to maximise the use of page-space, such as the abbreviations, marks and glyphs seen in h-2767. The distinction further allows for the production of the h-2767 to be more accurately dated to the timing that coincides with an archetypal copy finding its way to Charlemagne's court.

' Since no other extant copy can be remotely dated this period, h-2767 is the only manuscript that can be argued to be a direct copy of the archetype; and as such, to be the most reliable.

¶Now that the most reliable version of the treatise written by Vitruvius has been established, the description that he gives on man's body in the third volume of the text may be rendered. The first process is to have each folio from the manuscript upon which the excerpt is copied digitised in such a way as to allow for such facsimiles to be formatted for further processing. The second process is for each digitisation to be layered in such a way as to allow for strictly the specific parts of the text that pertain to the description of the body to be traced from it. The third process is for this tracing to be transcribed in such a way as to allow for the transcription to be emended with a more legible script from Carolingian latin into Classical latin. The fourth process is for this emendation to be analysed in such a way as to allow for analytical word-orders to be parsed from the stylistical word-orders of the Classical latin excerpt. The fifth process is for this parsing to be edited in such a way as to allow for an edition to be translated from Classical latin to Modern english using their English cognates and latinates. Together, these processes yield an iteration that has to be reenacted with the aid of architectural drawings to resolve its spatial-temporal reasoning. These reenactements and drawings, in turn, inform the creation of yet another iteration. This feedback loop then continues until an iteration is yielded that cannot make much more sense than all those that came before it. The final iteration is what is presented for review, along with the reenactments and drawings that informed its creation. To my knowledge, having conducted an exhaustive due diligence, and having spoken to experts, regarding this fact, since having started in the spring of 2013, no one has ever rendered this description, nor man's body in general, as I have in this thesis.

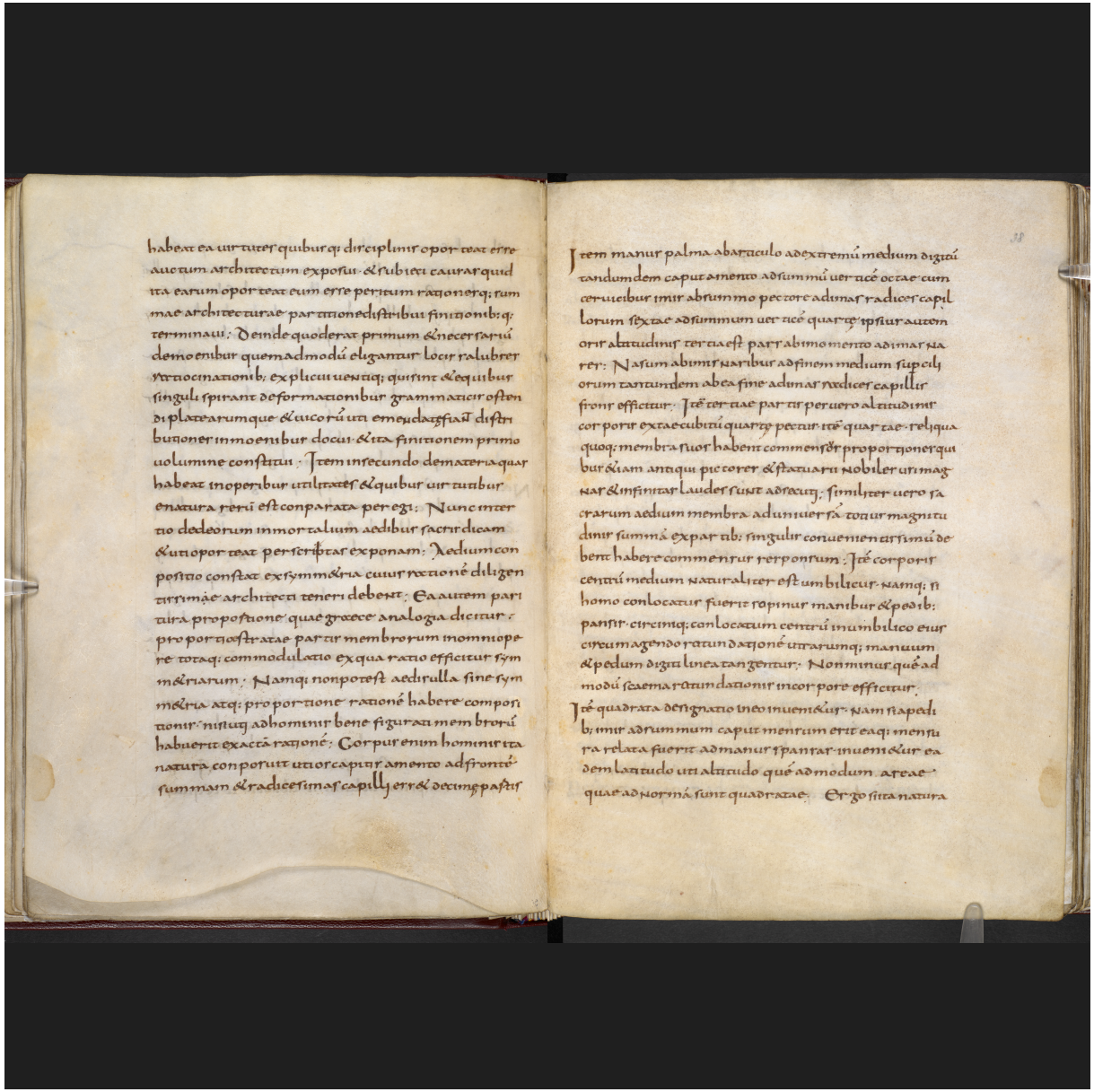
Consult Bibliography from [B-13.1-64] *to* [B-14.1-32] *for additional information*

PROCESSES

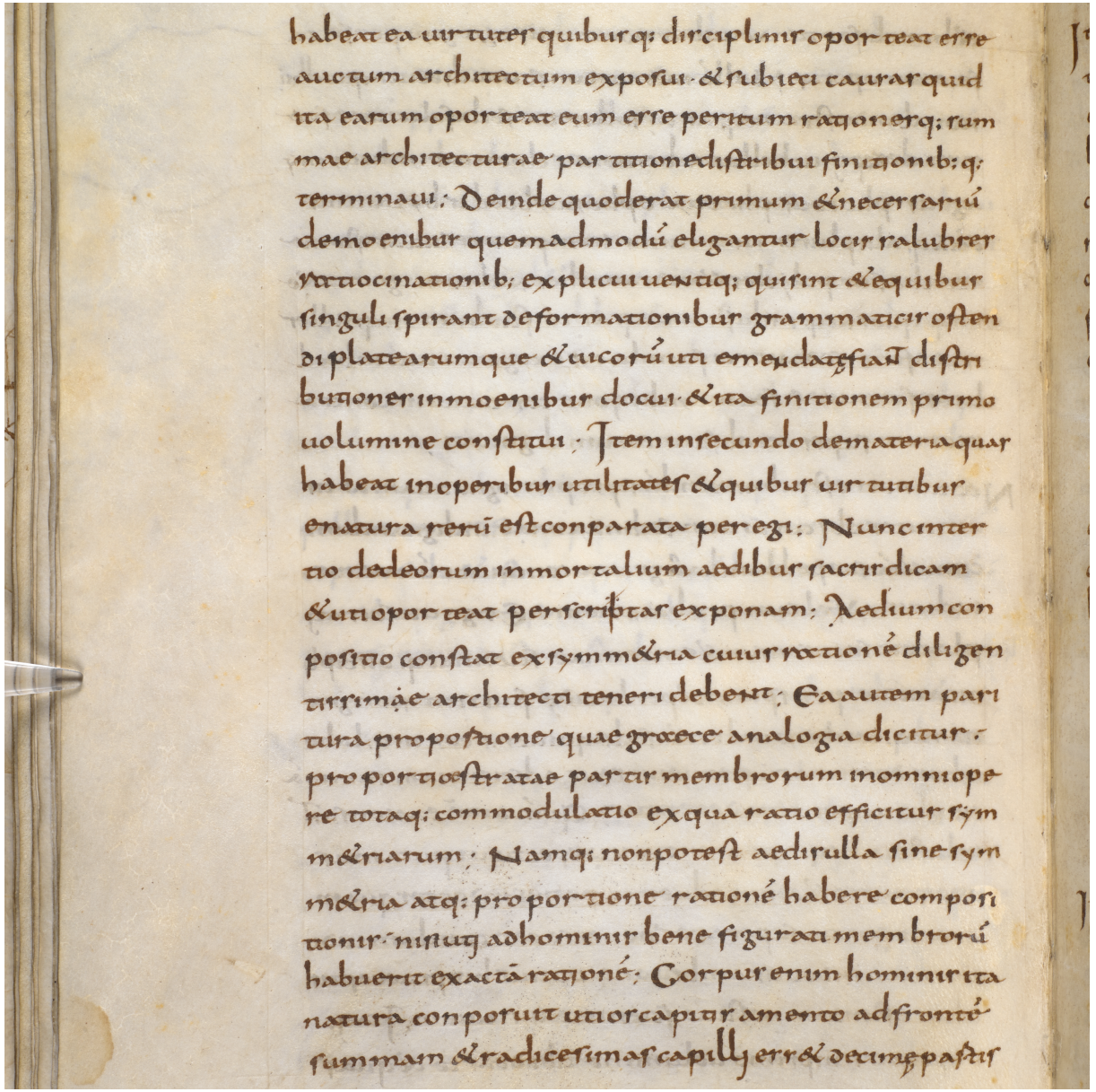
"A good question is always greater than the most brilliant answer."

— *Louis Kahn*

The digitisation of the folios where the literary passage is located in the harley 2767 manuscript are available from the Digital imaging services of the British library, upon its request. These two digital images have been formatted to fit into this document. the passage in question can be located within the h-2767 manuscript by flipping through the manuscript and perusing the text for the start of the third volume, which is noted in red. Vitruvius opens the third volume of his treatise as he opens every other: with an anecdote and a review that is addressed to the intended reader, his Imperator, which, in this case, is a story about the oracles at Delphi.

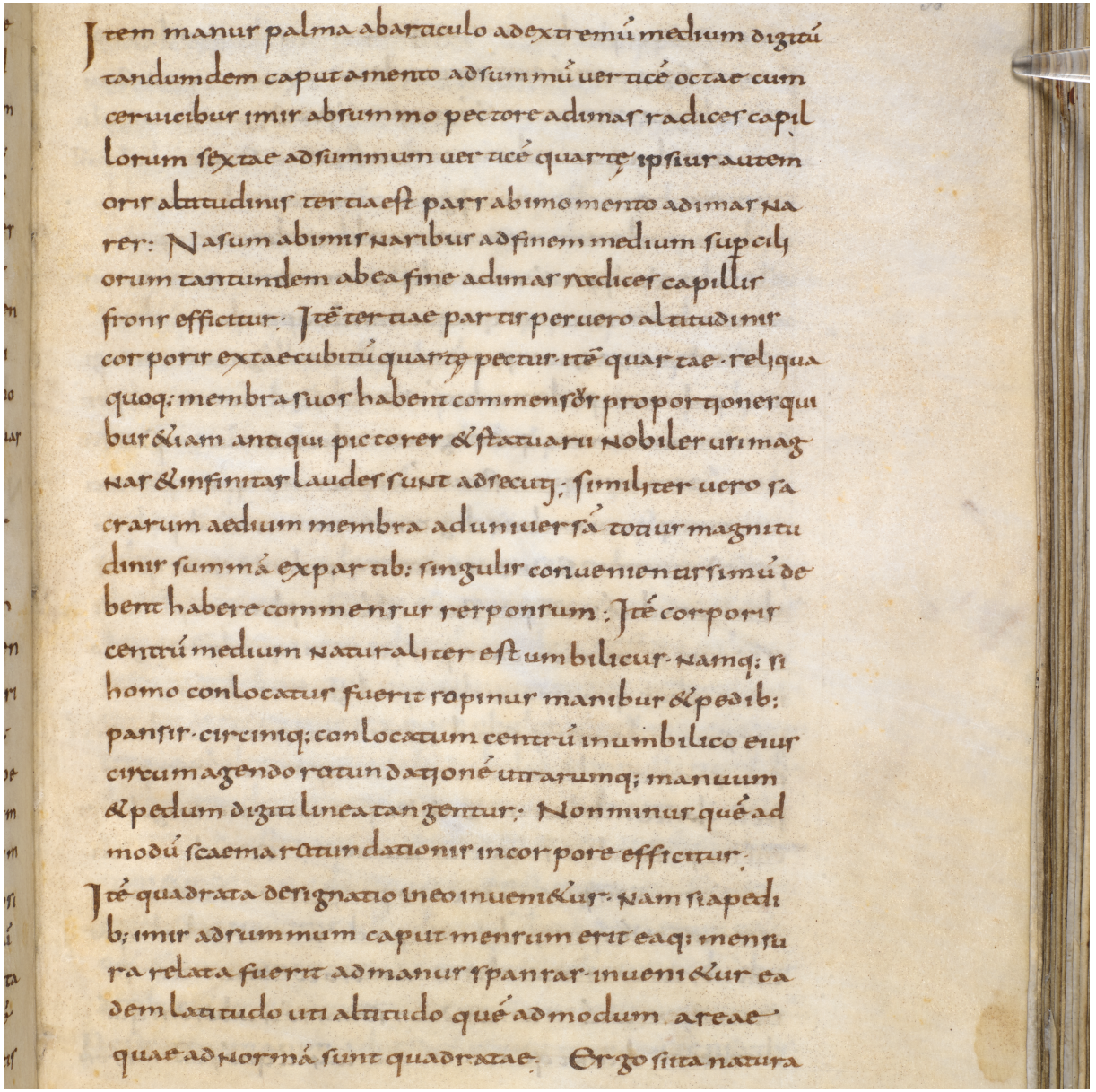


Vitruvius proceeds, as he does with each of his volumes, to give a review the previous volumes of his treatise on architecture to his reader, Cæsar, in an attempt to justify the order by which he has organised his treatise. Afterwhich, he without fault reveals the theme of the following volume: how the sacred dwellings of the Immortal gods may be figured well by the architect by understanding how nature has figured man's body well. The point in third volume occurs in which the revealing of the theme occurs is mid way down the recto-side of the 37th folio in the manuscript. However, the specific point in which the description of man's body starts is nearer to the bottom of the page, when Vitruvius first refers to the body of man; that is, *corpus hominis*.



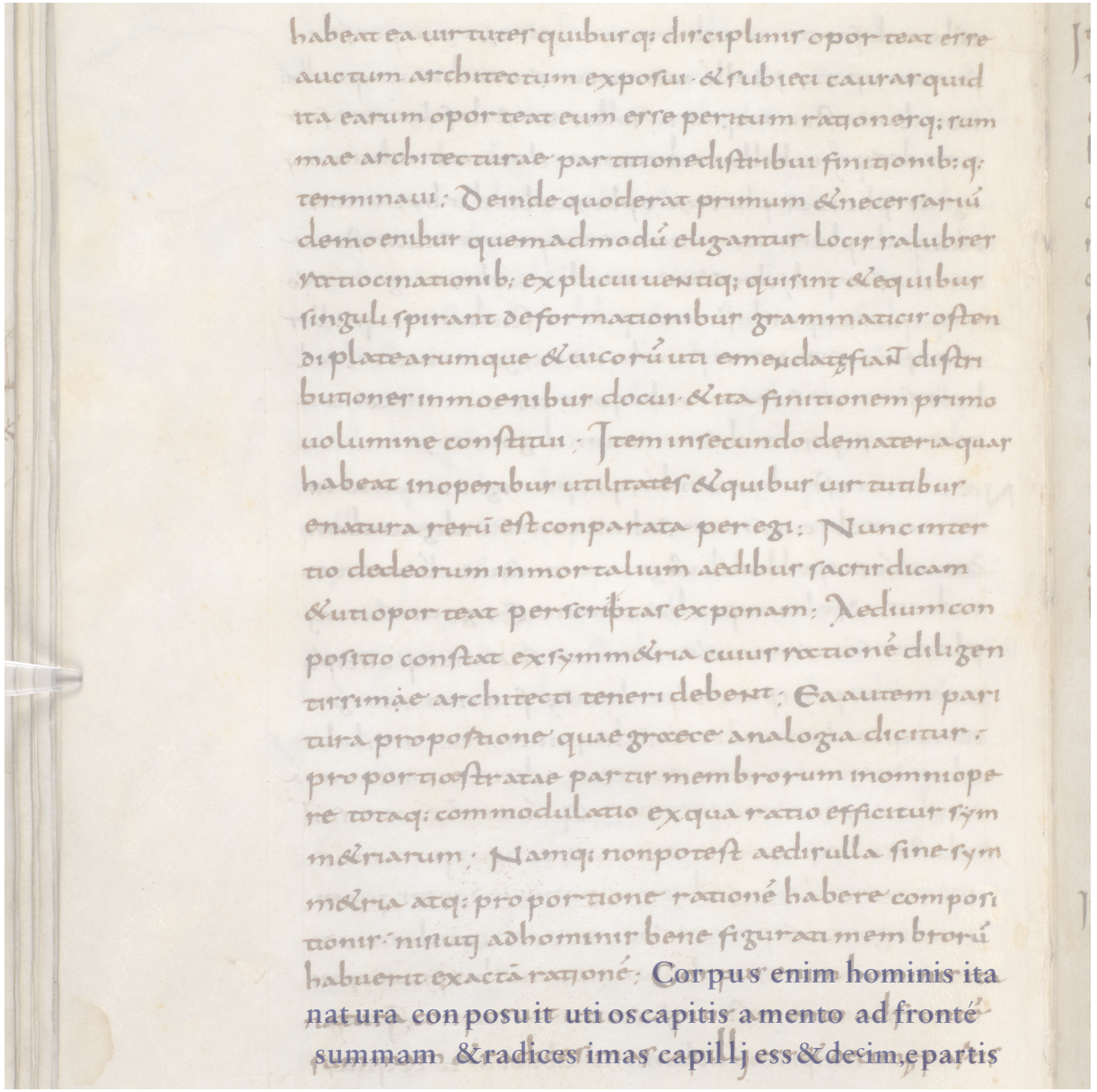
habeat ea uir tuter quibus q; disciplinis oportteat esse
auctum architectum exposui. & subiecti caui arquid
ita earum oporteat eum esse peritum rationes q; tum
mae architecturae partitionedistribui finitionib; q;
terminaui; Deinde quoderat primum & necessariú
demonstrabur quemadmodú eligantur locis salubres
ratiocinationib; explicui uentiq; quisint & equibus
singuli spirant deformationibus grammaticis ostendi
platearumque & uicorú uti emendatisfiant distri
butiones in moenibus docui. & ita finitionem primo
uolumine constitui; Item in secundo de materia quae
habeat in operibus utilitates & quibus uirtutibus
en natura rerũ est comparata per egi; Nunc inter
tio de deorum immortalium aedibus sacris dicam
& uti oporteat perscriptas exponam; Aedium com
positio constat ex symmetria cuius rationé diligen
tissimae architecti teneri debent; Ea autem pari
tura proportione quae graece analogia dicitur;
proportio est tratae partium membrorum in omni ope
re totaq; commodulatio ex qua ratio efficitur sym
metriarum; Namq; non potest aedis ulla sine sym
metria atq; proportione rationé habere composi
tionis; nisiq; ad hominis bene figurati membrorú
habuerit exactã rationé; Corpus enim hominis ita
natura composuit uti or capitur a mento ad frontis
summam & radices imas capilli esse & decimã pastis

Subsequently, the literary passage in question continues to the next page, which is the front of the 38th folio. The description of the body of man continues the full length of the page until Vitruvius segues onto how the decimal and hexadecimal system of numbers that the Ancient greeks developed were derived from the body. This segue is marked by Vitruvius's use of the conjunctive adverb, *Ergo*.



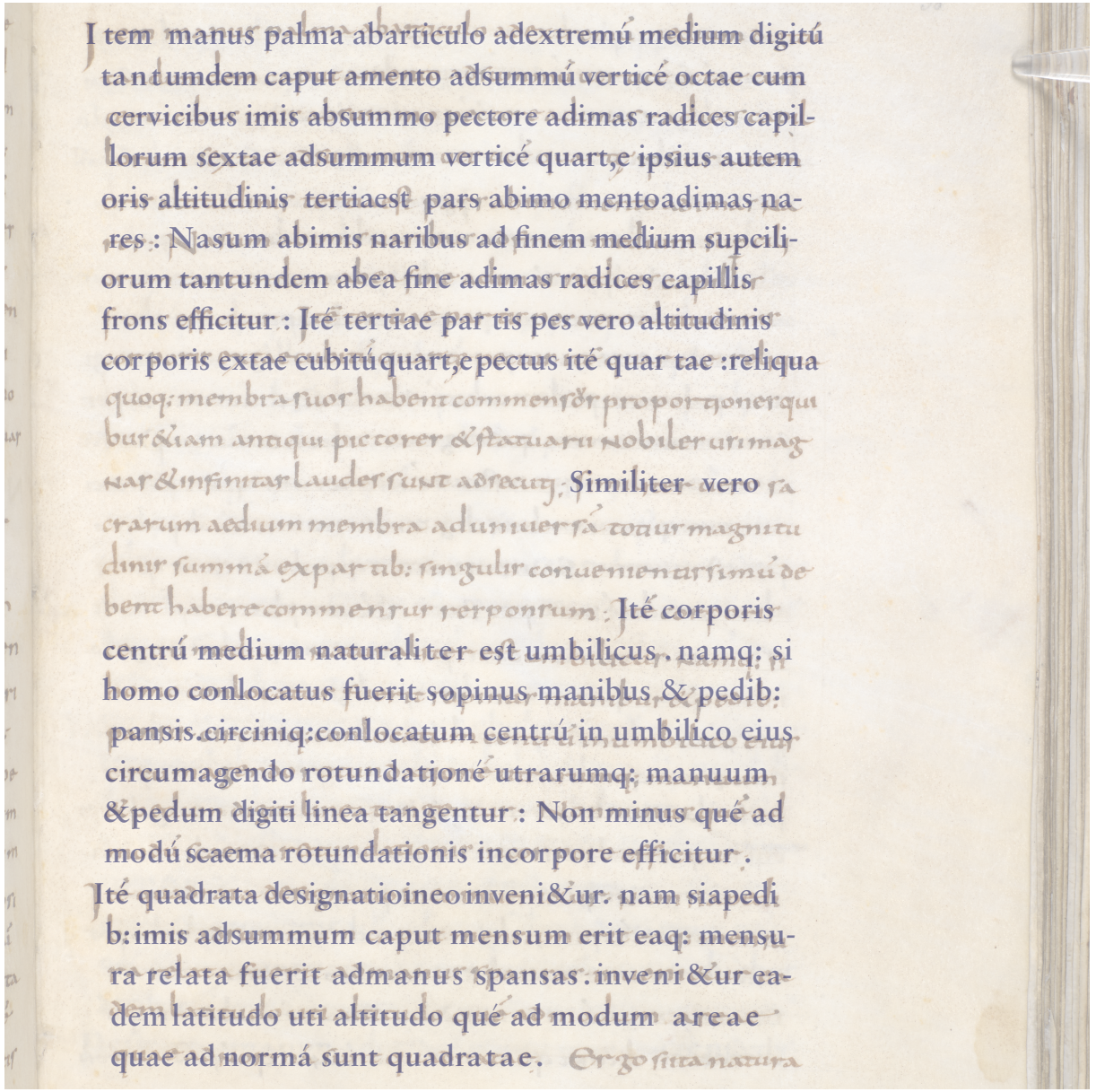
Item manur palma abaraculo adextremú medium digitú
tandumdem caput amento adsummú uertícé octae cum
ceruicibur imir abrummo pectore adimar radicer capil
lorum sextae adsummum uertícé quartę ipsiur autem
orir altitudinir tertia est parr abimomento adimar pa
rer: Nasum abimir naribur adfinem medium supcily
orum tantundem abea fine adimar radicer capillir
fronr effictur: Itẽ tertiae par tir peruero altitudinir
corporir extaecubitú quartę pectur itẽ quartae reliqua
quoq; membra suor habent commensõr proportioner qui
bur &iam antiqui pictorer &statuarii nobiler uri magi
nar &infinitar lauder sunt adrecutę; similiter uero sa
crarum aediũm membra aduniuersá totiur magnitu
dinir summá expartib: singulir conuenientissimú de
bent habere commenrum rerpontum: Itẽ corporir
centrú medium naturaliter est umbilicur. namq; si
homo conlocatur fuerit rapinur manibur &pedib:
panstr circumq; conlocatum centrú inumbilico eiur
circumagendo ratundationẽ utrarumq; manuum
&pedum digitu lineatangentur: Nonminur quẽ ad
modú scaemarũtundationir incorpore efficitur.
Itẽ quadrata designatio ineo inuenitur. nam siapedi
b; imir adrummum caput mentum erit eaq; mensu
ra relata fuerit admanur rpantrar. inuenitur ea
dem latitudo uti altitudo quẽ admodum areae
quae adnormá sunt quadratae. Ergo sitta natura

The digital images of the two folios on which the passage in question is found within the h-2767 manuscript have been formatted to allow for the text of the manuscript to be traced. This tracing gives the chance for the start and end of the portions of the text that belong to the passage to be revealed as well as for such portions to be traced with more legible letter forms than Carolingian letterforms.



habeat ea uir tuter quibur q; dirciplinir oportear erre
auctum architectum exposui & rubieci caurar quid
ita earum oportear eum erre peritum rationer q; rum
mae architecturae partiones distribui finitionib; q;
terminaui; Deinde quoderat primum & necessariú
demoenibur quemadmodú eligantur locir ralubrer
ratiocinationib; explicui uentq; quirint & equibur
singuli spirant deformationibur grammaticir ostem
di platearumque & uicorú uti emendatq fiat distri
butioner inmoenibur docui & ita finitionem primo
uolumine constitui; Item insecundo demateria quar
habeat inoperibur utilitates & quibur uir tutibur
enatura rerú est conparata peregi; Nunc inter
tio dedeorum immortalium aedibur sacrir dicam
& uti oportear perscriptar exponam; Aediumcon
positio constat exsymmetria cuius rationé diligen
tissimae architecti teneri debent; Ea autem pari
tura proportione quae graece analogia dicitur;
proportio stratae partir membrorum omniope
re totaq; commodulatio exqua ratio efficitur sym
metriarum; Namq; nonpotest aedirulla sine sym
metria atq; proportione rationé habere composi
tionir nisiuq adhominir bene figurati membrorú
habuerit exactã rationé; **Corpus enim hominis ita**
natura conposuit uti oscapitis amento ad fronté
summam & radices imas capilljess & decim epartis

The tracing reveals that the passage is made up of two portions of text: a first that spans over the two folios, and a second that is separated from the first by statements which are off-topic to the description of the body of the well-figured man. Specifically, the statements that separate the two portions of text are not traced from the manuscript because these revert back to the theme of how the architect can figure well sacred dwellings. To mark how these two portions of text are disconnected by these statements that are left out of its tracing, the second portion has an ellipsis.



Item manus palma abarticulo adextremú medium digitú tantumdem caput amento adsummú verticé octae cum cervicibus imis absummo pectore adimas radices capillorum sextae adsummum verticé quart,e ipsius autem oris altitudinis tertiaest pars abimo mentoadimas nares : Nasum abimis naribus ad finem medium supciliorum tantundem abea fine adimas radices capillis frons efficitur : Iteé tertiae par tis pes vero altitudinis corporis extae cubitú quart,e pectus iteé quar tae :reliqua quoq; membra suor habent commensor proportioner quibus &iam antiqui pictorer &statuarii nobilerum magnar &infinitar lauder sunt adrecuq; Similiter vero sacrarum aedium membra adunuersa totaur magnitudinis summá expartib: singulis conuenientissimú debent habere commentur rerpontum . Iteé corporis centrú medium naturaliter est umbilicus . namq; si homo conlocatus fuerit sopinus manibus & pedib: pansis.circiniq:conlocatum centrú in umbilico eius circumagendo rotundationé utrarumq; manuum &pedum digiti linea tangentur : Non minus qué ad modú scaema rotundationis incorpore efficitur .

Iteé quadrata designatioineoinveni&ur. nam siapedi b:imis adsummum caput mensum erit eaq: mensura relata fuerit admanus spansas. inveni&ur eadem latitudo uti altitudo qué ad modum areae quae ad normá sunt quadratae. Ergo sitta natura

The tracing of the excerpt has to be transcribed so that the excerpt may be read without the digital image of the manuscript's folio still behind it. The letter-forms of the tracing have been further refined in this process, and the two portions of the passage have been reorganised into separate entities on their own separate pages. Steps have also been taken to revert how the copyist of the manuscript wrote the passage to how Vitruvius would have originally written it out. The left column contains the transcription of the excerpt as it appears within the manuscript and the right contains the emended version of it. Essentially, the left column contains a Carolingian latin copy of the text, and the right, a Classical latin copy. The purpose of having the two side-by-side is to allow for a reviewer to readily note the differences as noted by the italicised lettering in the text.

rationé : Corpus enim hominis ita natura conposuit uti os capitis a mento ad fronté summam & radices imas capillj ess& decim,e partis.

Item manus palma ab articulo ad extremú medium digitú tantumdem caput a mento ad summú verticé octae cum cervicibus imis ab summo pectore ad imas radices capillorum sextae ad summum verticé quart,e ipsius autem oris altitudinis tertia est pars ab imo mento ad imas nares : Nasum ab imis naribus ad finem medium supciliorum tantundem ab ea fine ad imas radices capillis frons efficitur : Ité tertiae partis

…~~rationem~~ corpus *e'*n*a*m hominis ita natura *cum*–posuit u*t* os capitis a*b* mento ad front*em* su*per"*mam *et* radices i*nfer"*mas capill*i* esse*t* decim*æ* par-t*i* item manus palma ab articulo ad ext*er"*m*um* medium digit*um* tantum–'dem caput a*b* mento ad su*per"*m*um* vertic*em* oct*avæ* cum cer'–vicibus i*nfer"*mis ab su*per"*mo pectore ad i*nfer'* 'mas radices capill*i* sextæ ad su*per'* 'mum vertic*em* quart*æ* ipsius autem oris altitudinis tertia est pars ab i*nfer'* 'mo mento ad i*nfer"*mas nares nasum ab i*nfer"*mis naribus ad finem mediu-m sup*er'*–ciliorum tantu*m*–'dem ab ea fine ad i*nfer"*mas radices capill*i* frons *ex*–ficitur it*em* tertiæ part*i*

Of course, how the text was scribed into the codex by its copyist cannot be perfectly reverted back to how it would have been originally written-out by Vitruvius without an original copy of the treatise on architecture. Nonetheless, three basic things may be done to the text with confidence to revert the Carolingian script back to a Classical form of writing latin. The first, is to drop all of the punctuation in lieu of continuous script. The second is to write-out all of the shorthands as longhands. The third is to swap all of the Carolinian spelling of words for the Classical ones. Beyond these reversions to the text, the excerpt has to be emended of all of the copying errors of the copyist. The extent of which is addressed in the annotation section of the work.

pes vero altitudinis corporis extae cubitú quart,e pectus ité quartae: reliqua :

Similiter vero

Ité corporis centrú medium naturaliter est umbilicus . namq: si homo conlocatus fuerit sopinus manibus & pedib: pansis . circiniq: conlocatum centrú in umbilico eius circumagendo rotundationé utrarumq: manuum & pedum digiti linea tangentur : Non minus qué ad modú scaema rotundationis in corpore efficitur . Ité quadrata designatio in eo inveni&ur. nam si a pedib: imis ad summum caput mensum erit eaq: mensura relata fuerit ad manus spansas . inveni&ur eadem latitudo uti altitudo qué ad modum areae quae ad normá sunt quadratae.

pes vero altitudinis corporis *sext*æ cubit*um* quart*æ* pectus it*em* quart*æ* ~~reliqua~~…

similiter vero…

~~*item*~~ corporis centr*um* medium naturaliter est umbilicus nam– si homo *cum*–locatus fuerit s*u*pinus manibus *et* pedib*us* passis *et* circini *cum*–locatum centr*um* in umbilico eius circum–agendo rotundation*em* utrarum *qu'* manuum *et* pedum digiti linea tan -gentur non minus qu*em* ad mod*um* sc*h*ema rotundationis in corpore *ex*–ficitur it*em* quadrata designatio in eo in–veni*et*ur nam si a*b* pedib*us* i*nfer'* *'*mis ad su*per"*mum caput mensum *fu*erit *et* ea mensura relata fuerit ad manus *pas*sas in–veni*et*ur eadem latitudo u*t* altitudo qu*em* ad modum are*æ* qu*æ* ad norm*am* sunt quadrat*æ*

The emended version of the passage in question is analysed with the use of a mnemonic notation that marks the lexical/grammatical category of each term in the excerpt and parsed based on the notation. In parsing it, some minor realignment of the text is required to delineate the phrases. The analysis of the text is found on the left hand, while its re-alignment is found on the right hand, facing it. This mnemonic notation is detailed in the glossary section of this work, along with a list of the grammatical and lexical categories of each of the terms that are found in the excerpt. The notation is unique insofar that, styles of handwriting, highlighting, and underlining that note-takers use for the purposes of perusing, copying or proofing literary documents, are ascribed unique meanings, here. The list of grammatical and lexical categories is equally unique insofar that, it was established by reviewing several literary-sources, dictionaries and commentaries, cross-examining this data, and then, through process of elimination, decide how Vitruvio would have used each term in both, this excerpt and his general writing.

~~rationem~~
corpus e' nam hominis *ita* natura cum *posuit´* ***ut*** os capitis ab mento ad frontem super"mam et radices infer"mas capilli *esset* decimæ parti *item* manus palma ab articulo ad exter"mum medium digitum *tantum* 'dem caput ab mento ad super"mum verticem octavæ cum cer'vicibus infer"mis ab super' 'mo pectore ad infer"mas radices capilli sextæ ad super"mum verticem quartæ ipsius autem oris altitudinis tertia *est* pars ab infer"mo mento ad infer"mas nares nasum ab infer"mis naribus ad finem medium super'ciliorum *tantum* 'dem ab ea fine ad infer"mas radices capilli frons ex `*ficitur item* tertiæ parti

¶ nam |natura| *posuit´* |corpus hominis| cum e'* | *ita* ***ut*** | os capitis | ab ⦸ mento ad super' 'mam frontem ⦸ et infer"mas radices capilli* | *esset* | decimae parti ⦸ | *item* ⦸ | palma manus... |ab articulo ⦸ ad exter"mum medium digitum| ⦸ *tantum* |'dem*¶ ⦸ |caput| ab ⦸ mento ad super"mum verticem| ⦸ |octavæ | ⦸ | ⦸ cum infer"mis vicibus cer' |ab super' 'mo pectore ad infer"mas radices capilli*| ⦸ |sextæ*| ⦸ |...| ...ad super"mum verticem| ⦸ | quartæ*¶ autem |tertia pars oris altitudinis| *est* | ⦸ ipsius* | ab infer"mo mento ad infer' 'mas nares | ⦸ | nasum |ab infer"mis naribus ad medium finem super'ciliorum*|⦸*tantum*| 'dem*| ⦸ | frons ⦸ || ⦸ | `*ficitur*| ex ⦸ || ab ea fine ad infer"mas radices capilli* | ⦸ *item* | tertiæ parti |

The benefit of producing such a list is that it allows for the translator to parse the stylistic word-order of the Roman author to a more analytical one without having to search for info on the catagroies while doing so. The benefit of including such a list in the document is that it allows for a reviewer to readily check what info the the translation is based upon. Whereas, the benefit of producing a mnemonic notation system this info is that it allows for the translator to conduct the translation without hav-ing to go back and forth between a glossary and the parsing. Likewise, by clearly describing this mnemonic notation system within the glossary of the document, the review has the chance to learn it and benefit from its practicality in reviewing the text.

pes *vero´* altitudinis corporis sextæ cubitum quartæ pectus *item* quartæ ~~reliqua~~ *similter vero´* ~~*item*~~ corporis centrum medium *naturaliter est* umbilicus nam ***si*** homo cum *`locatus fuerit* supinus manibus ***et*** pedibus *passis* ***et*** circini cum *`locatum* centrum in umbilico eius circum *`agendo* rotun-dationem utrarumqu' manuum et pedum digiti linea *`tangentur non minus* quem ad modum schema rotundationis in corpore ex *`ficitur item `quadrata* designatio in eo in *`venietur* nam ***si*** ab pedibus infer"mis ad super"mum caput *`mensum fuerit* ***et*** ea mensura *`re-lata fuerit* ad manus *`passas* in *`venietur* eadem latitudo ut altitudo quem ad modum areæ quæ ad normam *sunt `quadratæ*

¶ ⦸ | *vero´* | ⦸ | pes | ⦸ | sextæ* altitudinis corporis | ⦸ |cubitum| ⦸ |quartæ*| ⦸ | pectus| ⦸ *item* |quartæ¶ ⦸ |*similter vero´* | ⦸ | medium centrum corporis | *est naturaliter* | umbilicus ¶ nam | ***si*** | homo | *fuerit locatus* | supinus |cum manibus* et pedibus* *`passis*| ***et****|centrum circini| ⦸ *locatum* |in umbilico| cum *agendo´*⦸ eius* circum rotundationem| digiti utrarum qu'*| manuum et pedum |*non minus `tangentur*| linea | ad quem modum | ⦸ | schema rotundationis |*`ficitur* | ex ⦸ | in corpore ¶ ⦸ *item* ⦸ | ⦸ | designatio ⦸ | in eo* | *`venietur* in|| ⦸ |⦸ *quadrata*¶ nam | ***si*** | ⦸ ⦸ | ab infer"mis pedibus ad super"mum caput | *fuerit mensum* |***et****| ea mensura | *fuerit relata* | ad manus *`passas* | ... | *`venietur* in || ⦸ | ⦸ | areæ ⦸ | ⦸ | latitudo*| ⦸ | eadem*| *ut* ⦸ | altitudo*| ad quem modum | ⦸ | quæ*| *sunt quadratæ* | ad normam ⦸ |

The re-aligned text of the excerpt is edited on the left-hand column, and then translated from Classical latin to Modern english, word-per-word, on the right-hand side, respectively. The process of editing the Classical latin is done hand in hand with that of translating it to Modern english. To close the feedback loop between these processes, the text is reenacted in the spatio-temporal field with the aid of architectural designs; in turn, this feedback loop continues until it finally yields an iteration of editing, that cannot achieve any more sense. Of course, the benefit of having the two versions of the text side-by-side is that the Latin text becomes easier to interpret for the English reviewer. The reviewer may go back and forth between the two and tally each English expression with each Latin one; even detect if there is an expression from the English translation that is unfounded within the Latin edition. The extent of which has to take into consideration nuances with the text; such as: how unqualified terms were qualified in parentheses; how 'nulls' were evaluated in brackets; how key terms were anchored in italics; how clauses were negotiated by punctuation marks; and how redundancies were dealt with through strikes.

Nam natura ita '~~po~~/suit corpus hominis cum e*a* (ratione), ut os capitis, ab [*'i*mo infero] mento ad *'i*mam super*am* frontem[oris], et *'i*mas infer*as* radices capilli, esset decimæ parti[corporis altitudinis]; item, [ut] palma manus{et eius medius digitus}, ab articulo[digiti]ad *'i*mum ex/ter*um* medium digitum, [esset] tan/tum *ei*dem (parti);

[Ut]caput, ab[*'i*mo infer*o*]mento ad *'i*mum super*um* verticem[eius],[esset]octavæ(parti); [et][id caput] cum *'i*mis infer*is* vicibus cer*ebri*, ab *'i*mo super*o* pectore ad *'i*mum super*um* verticem,[esset]sextæ(parti); {sicut...}, {ab...} ad *'i*mas infer*as* radices capilli, [esset]quartæ.

Autem tertia pars altitudinis[capitis]oris est[os]ipsius, ab *'i*mo infer*o* mento ad *'i*mas infer*as* nares[nasus]; [ut]nasum, ab *'i*mis infer*is* naribus ad medium finem super*orum*(oculorum)ciliorum,[est]tan/tum *ei*dem(parti);[et]frons[oris][quæ]ficitur ex[reliquis], ab ea fine ad *'i*mas infer*as* radices capilli,[est]item tertiæ parti.

For nature has set/~~up~~ the body of man with such(reason), so that the *os* of the head, from [most down] the chin to most up the front[of the *os*], and most down the roots of the hair, wouldbe for the tenth *pars*[of the body's height]; and so[that]the palm of the hand{and its middle *digit*}, from the *article* [of the *digit*] to most out/ward the middle *digit*,[would be] so/much for the same(*pars*).

[As]the head, from [most down]the chin to most up the *vortex*[of it],[would be]for the eighth(*pars*);[and][the head]with most down the *vices* of the *cerebrum*, from most up the *pectus* to most up the *vortex*,[would be] for the sixth(*pars*);{so that...},{from...}to most down the roots of the hair, [would be] for the fourth.

But the third *pars* of the height of the head's *os* is the [*os*] of itself, from most down the chin to most down the nostrils[of the nose];[as]the nose, from most down the nostrils to the middle end of up the(eye)lids,[is]so/much for the same(*pars*); [and]the *front*[of the *os*][that] is made from [the *rest*], from this end to most down the roots of the hair, [is] also for the third *pars*.

To do a word-for-word translation, the existing glossary for the lexical/grammatical categories of the terms from the excerpt must be developed upon further to also list the English latinates and cognates of each term. Latinates are words of Latin origin, which exist in the English language. Cognates are words of either Celtic, Germanic, Hellenic or Slavic origin, from the Modern english language, which shares a Proto-Indo-European root with some Classical latin term. Such a list has to be drafted because the Latin terms must only be translated by using their equivalent English latinate and/or English cognate. Latinates must be given precedence over cognates except where a degree of semantic shift exists between the Latin term and the English latinate. In which case, the cognate has to be used to avoid nuance in its meaning. If such a latinate, or cognate, is not available, then the transliteration of the Latin term should be employed, in italics, instead of an English term that is not its latinate or its cognate. This italicised transliteration has an effect of anchoring the term within the translation. The effect of which, in turn, lets readers interpret terms for themselves, instead of having a translator decide what is the meaning of the term for them.

(Ego)vero: [ut] pes[est]sextæ(parti)corporis altitudinis; [ut] cubitum[est]quartæ; [et][ut]pectus[est] item quartæ.

(Ego)similter vero:[ut]medium centrum corporis est naturaliter umbilicus.

Nam, si homo fuerit locatus supinus cum(suis)manibus et pedibus passis, et(~~si~~) centrum circini [fuerit] locatum in umbilico cum agendo[linea]eius circum rotundationem, digiti utrarum~~quarum~~, manuum et pedum, non minus tangentur linea ad modum, quem schema rotundationis ficitur ex[agendo ea linea] in corpore.

(Ego)item[vero]:[ut]designatio [alius rotundationis schemæ] in eo(corpore) venietur/in, [quæ][est]quadrata.

Nam, si[corpus hominis] fuerit mensum, ab'*i*mis infer*is*(suis)pedibus ad'*i*mum super*um* (suum)caput, et(~~si~~)ea mensura fuerit relata ad manus passas, latitudo [erit] eadem(mensura) ut(~~est~~)altitudo ad modum, quem quæ(passas manus) sunt quadratæ ad normam, {et designatio rotundationis schemæ in corpore} venietur in, [quæ][est]areae [eius relationis].

(I)truth:[that]the foot [is] for the sixth(*pars*) of the body's height; [that] the *cubit* [is] for the fourth; [and][that]the *pectus* [is] also for the fourth.

(I)similarly truth:[that] the *middle centre* of the body is naturally the navel.

For, if a man will have been laid supine with(his)hands and feet having been *spanned*, and(~~if~~) the centre of a *circinus* [will have been]laid on the navel when acting[the line]of it *circum* a *rotundation*, the *digits* of both ~~these~~, the hands and feet, will be no less touched by this line at the *mode*, when the *shape* of the *rotundation* is made from[acting the line] by the body.

(I)also truth:[that]the *designation* of [another *rotundation's shape*] by this(body) will be come/at, [which][is]squared.

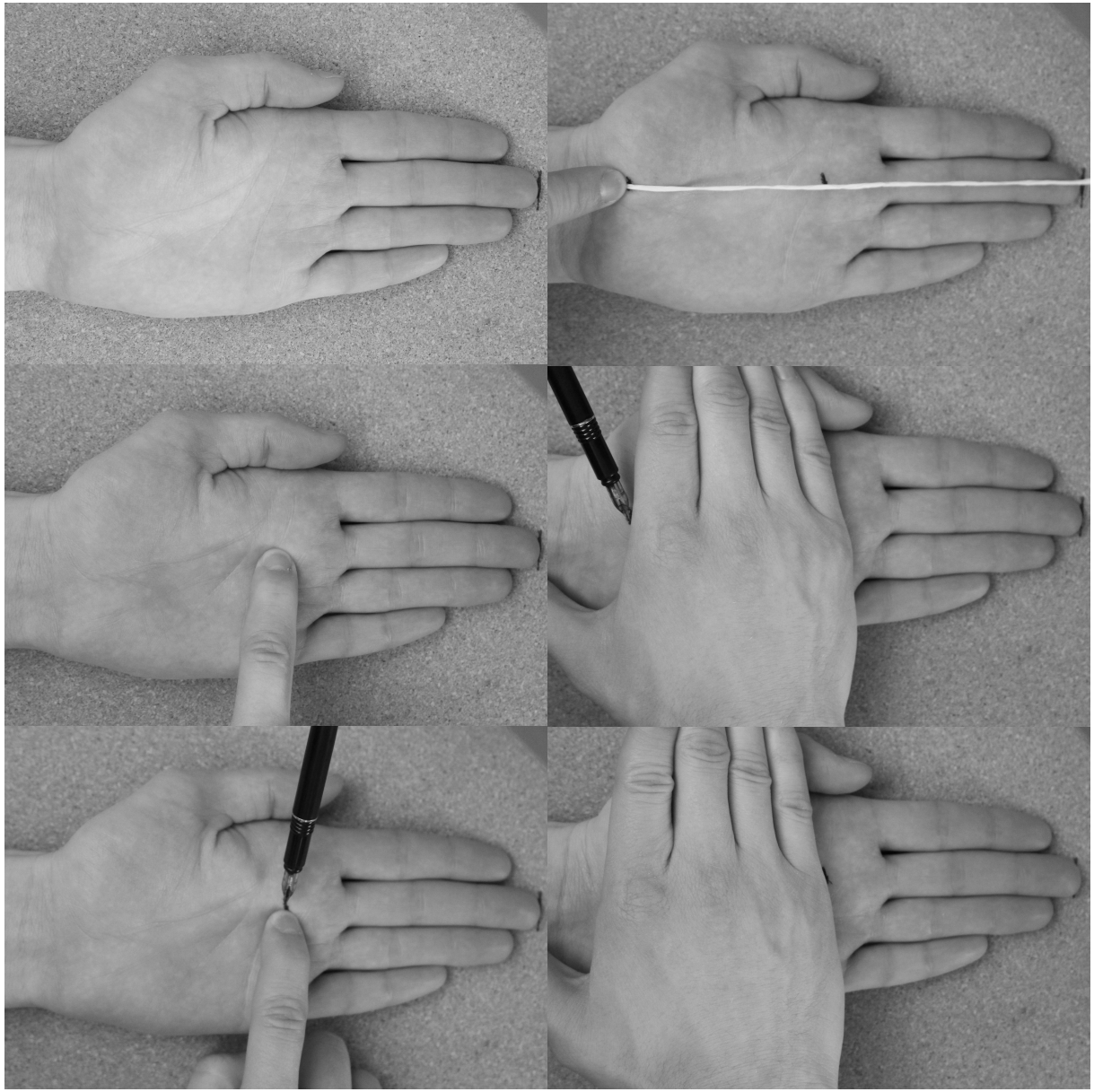
For, if[the body of a man]will have been measured from most down(its)feet to most up (its)head, and(~~if~~)this mensure will have been related to the hands having been spanned, the width [will be]the same(measure)as the height at the *mode*, when those (*spanned* hands) are squared to the *norm*, {and the *designation* of a *rotundation's shape* by the body} will be come/at, [which][is]for the *area*[of this relation].

REENACTMENTS

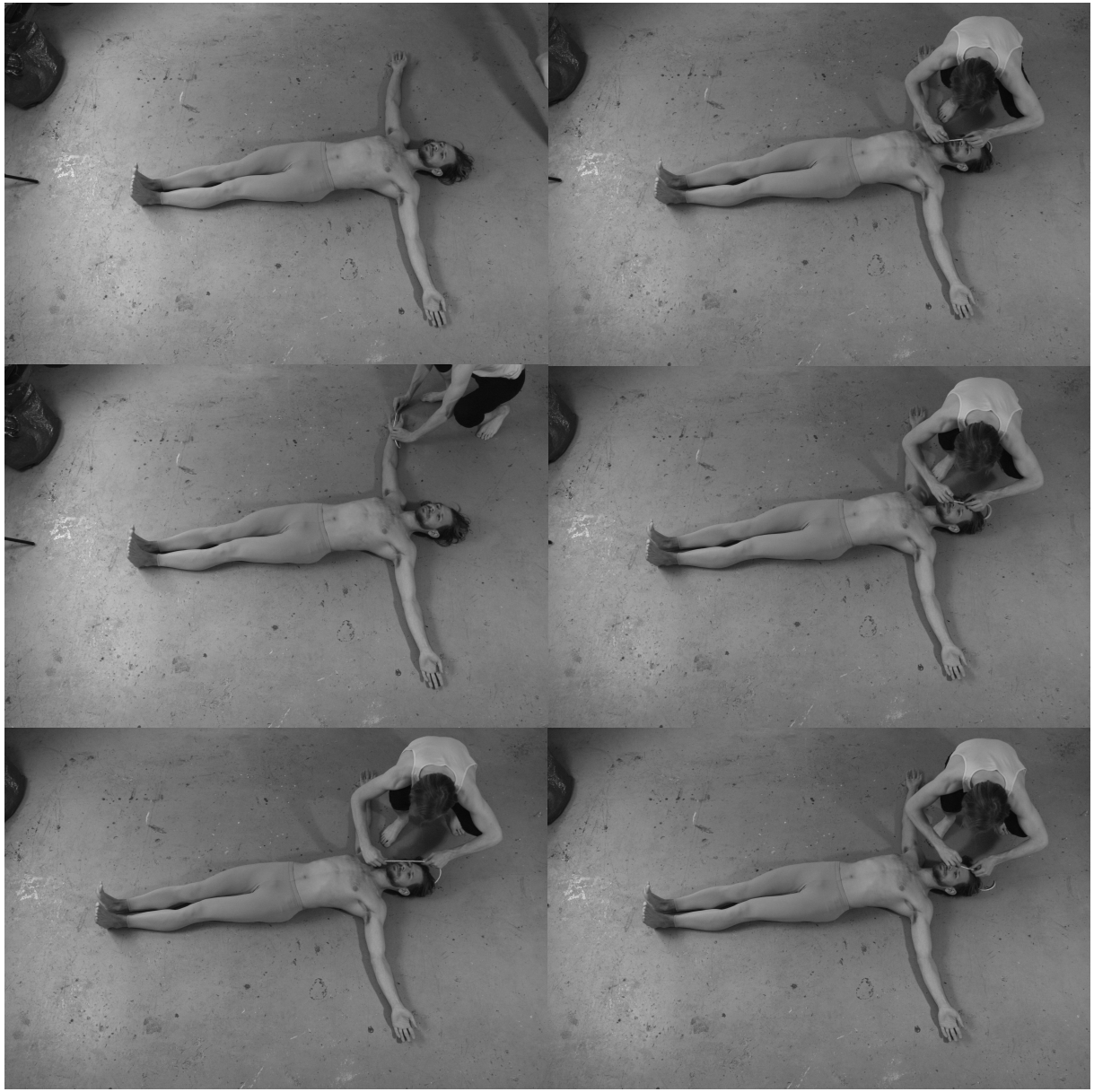
"Now is not the time to think of what you do not have,
but to think of what you can do with what is there."

— *Ernst Hemingway*

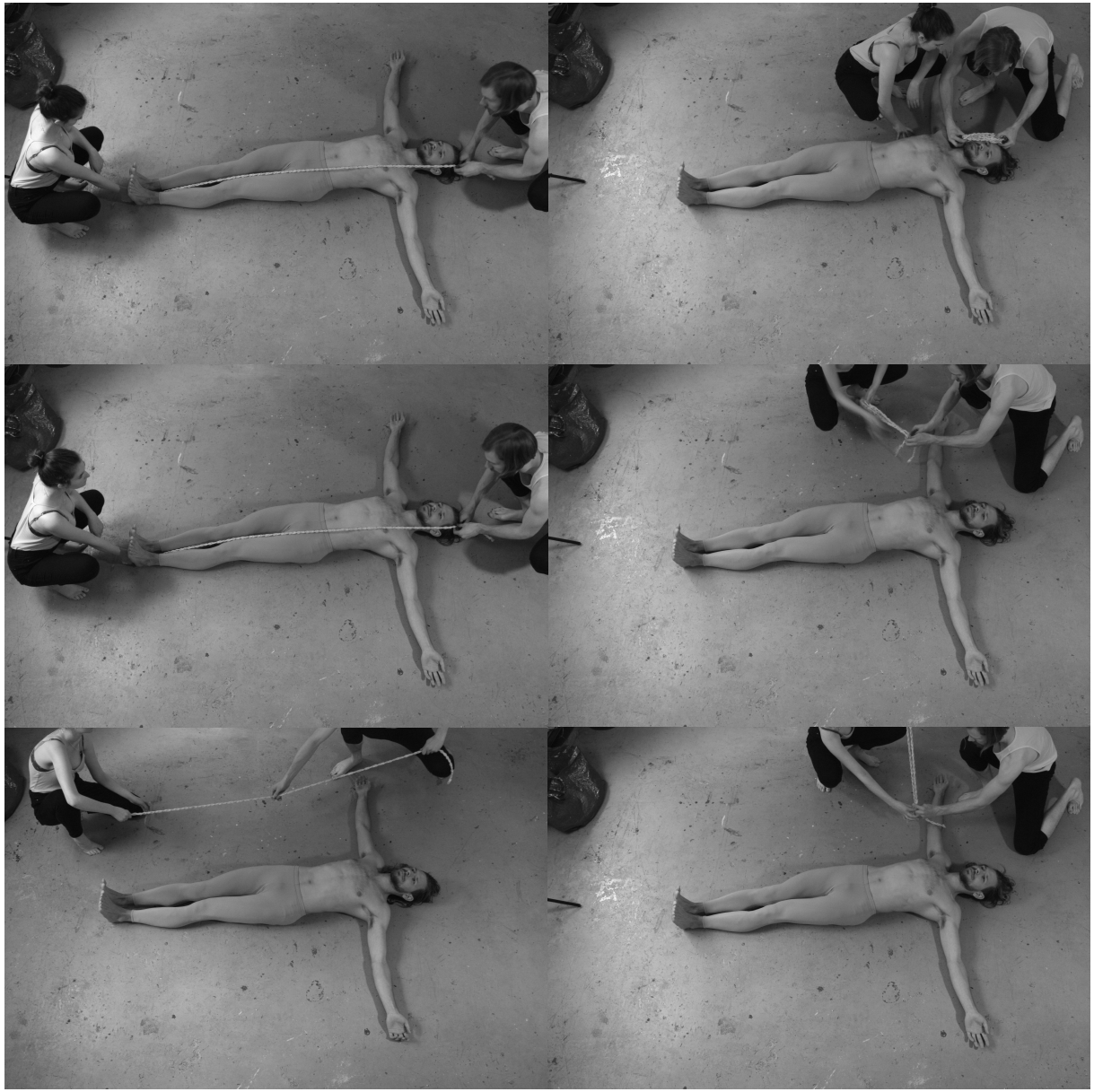
Counterclockwise from the top/left: the hand is laid flat; the location of the middle finger's knuckle is found by feeling around for it in the palm; the location of the joint is marked with a pen; the palm of the other hand is laid beside the mark; then the width of the palm is marked with the pen; and the distance from the tip of the middle finger to this second mark is measured with a rope that will be used to compare this measurement to the height of the face in the next enactment.



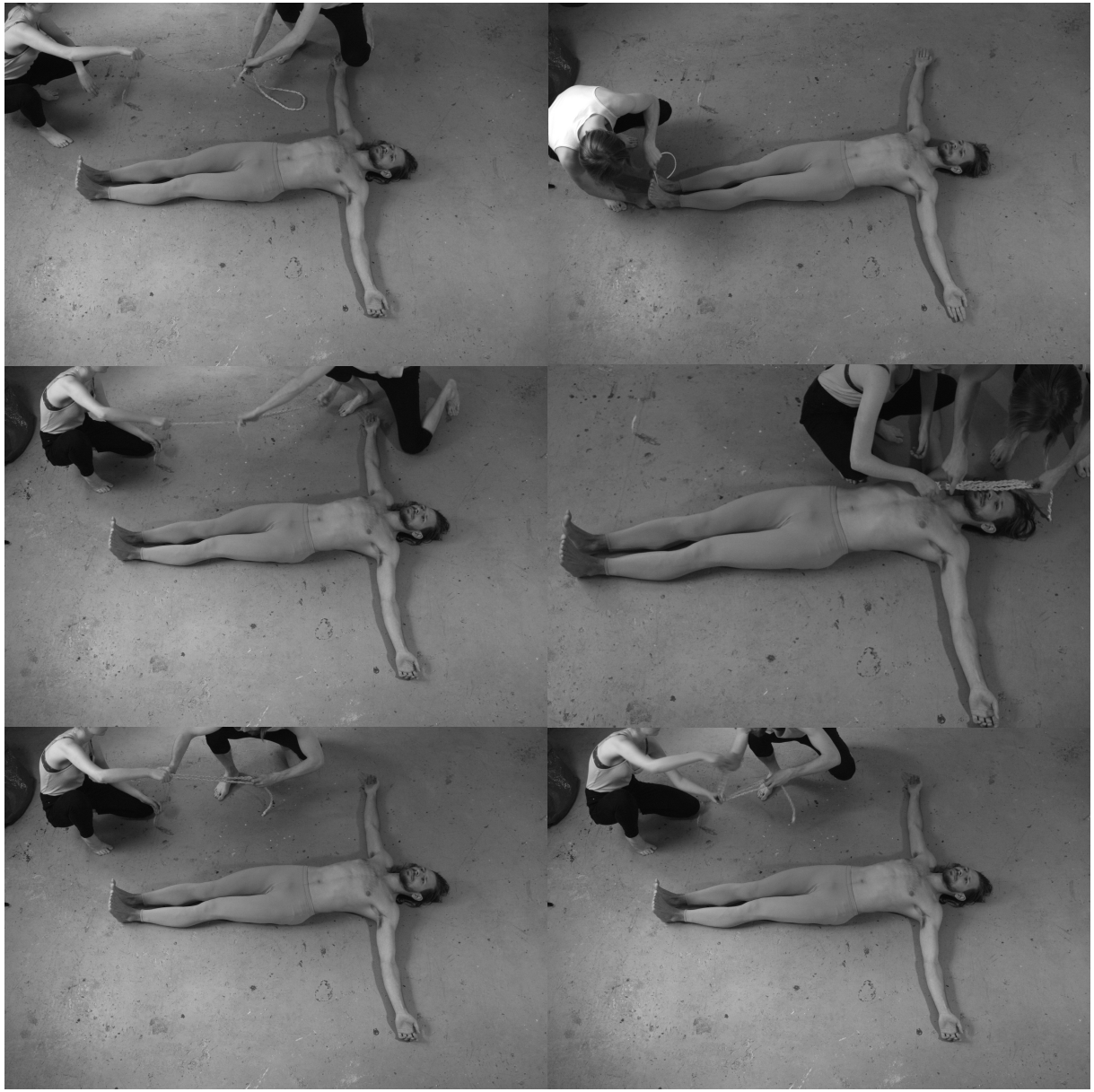
Counterclockwise from the top/left: the model is laid supine; the length of the hand's palm plus the middle-finger is measured as in the previous enactment; this length is equated to the face's height, from the bottom of the chin to the hairline's peak; after which, the forehead, the nose, and the mouth of are checked to see if these three features are equal to one another in height.



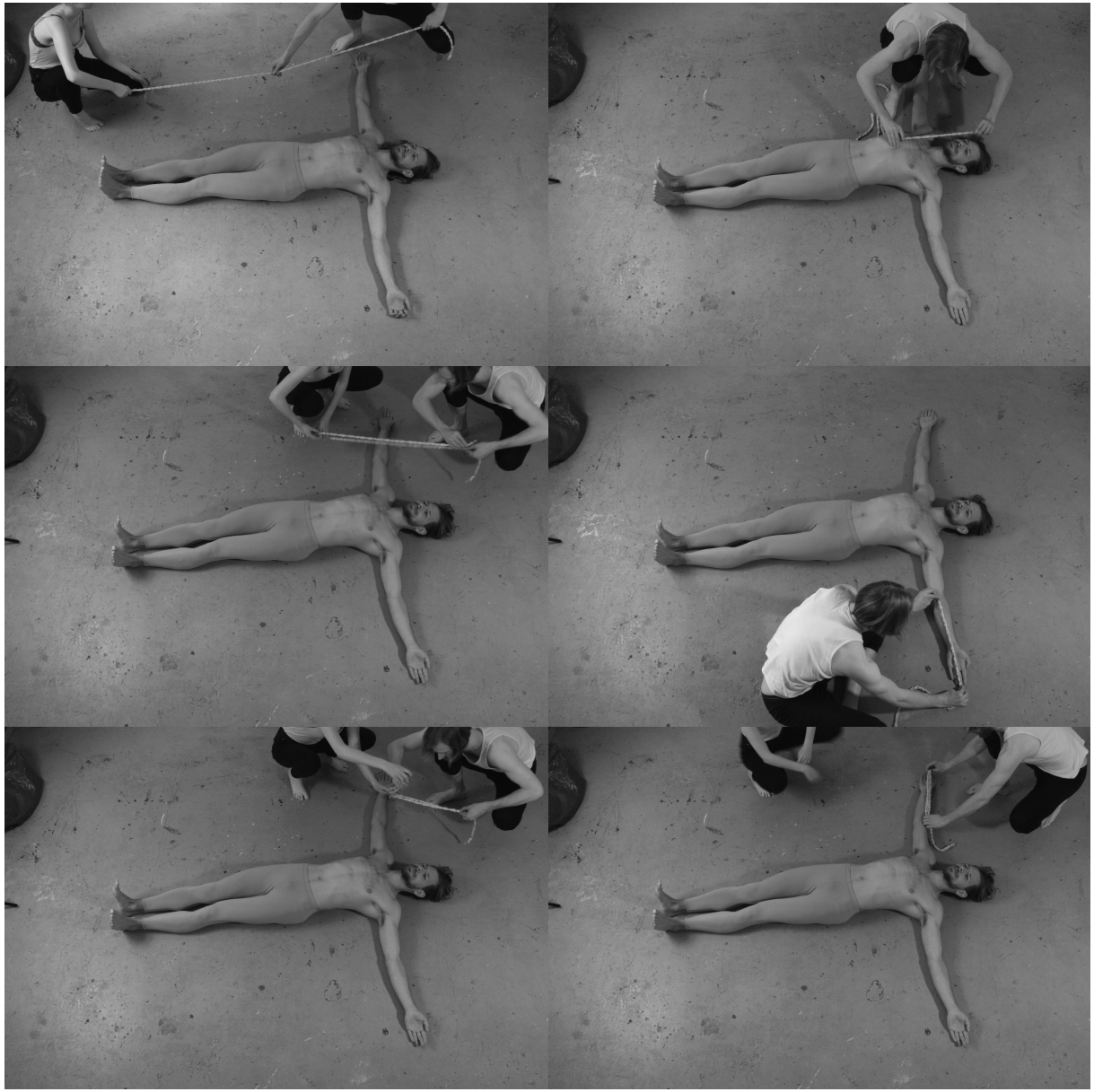
Counterclockwise from the top/left: the height of the model is measured from the bottom of the feet to the top of the head, using a long rope; to take this measurement correctly, the placement of each of the rope's end has to be checked to assure that the one end is placed inline with the souls of the feet and the other end is placed against the top of the head; after which, the measurement of the height is folded in half three times to establish an eighth of the height; the eighth is then equated to the height of the model's head.



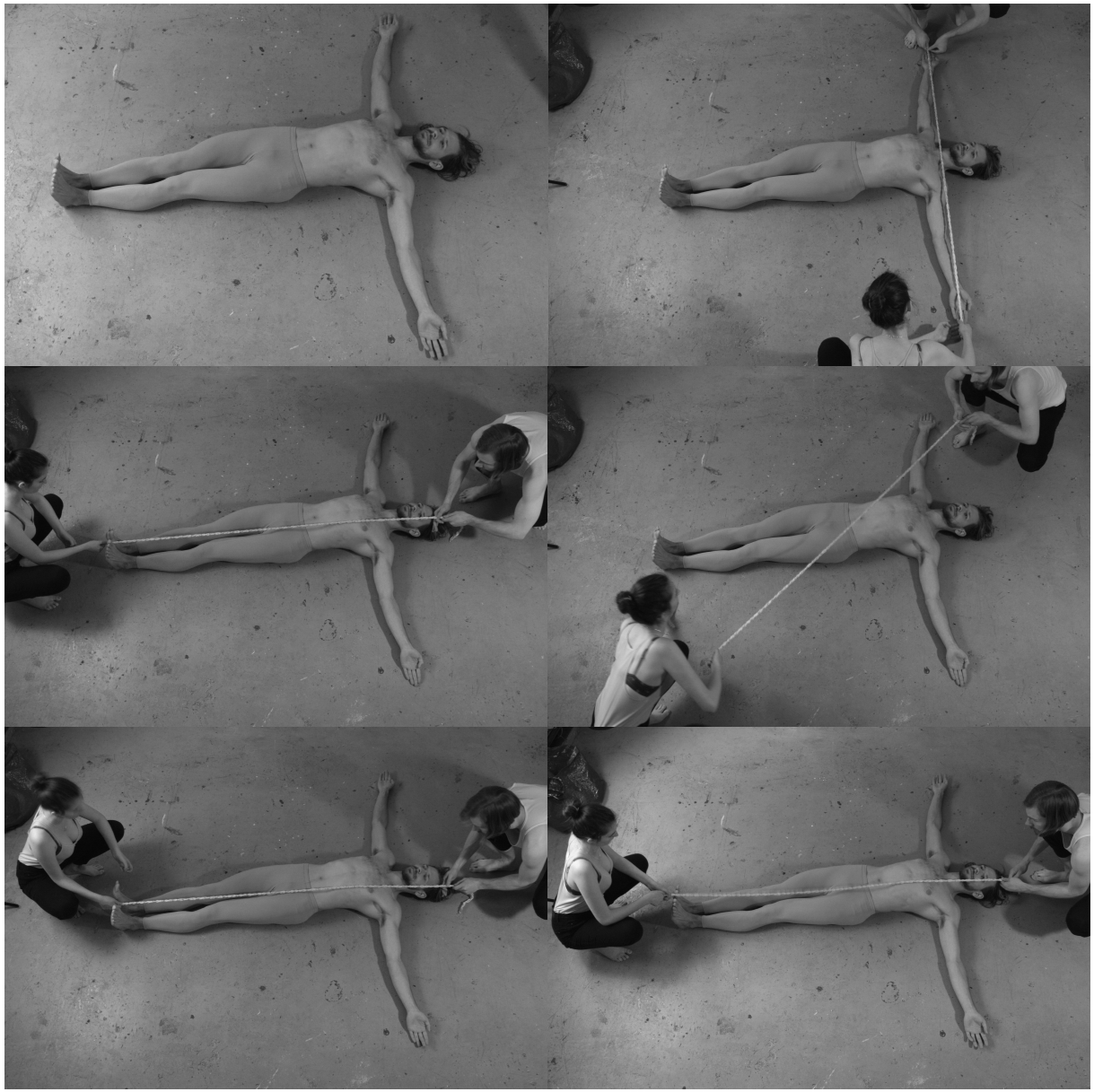
Counterclockwise from the top/left: using the same rope and technique to establish the height of the model as before, the long rope is divided in thirds and then in half to establish the sixth of the height; the sixth is then equated to the distance from the top of the head to the top of the sternum as well as the foot's length.



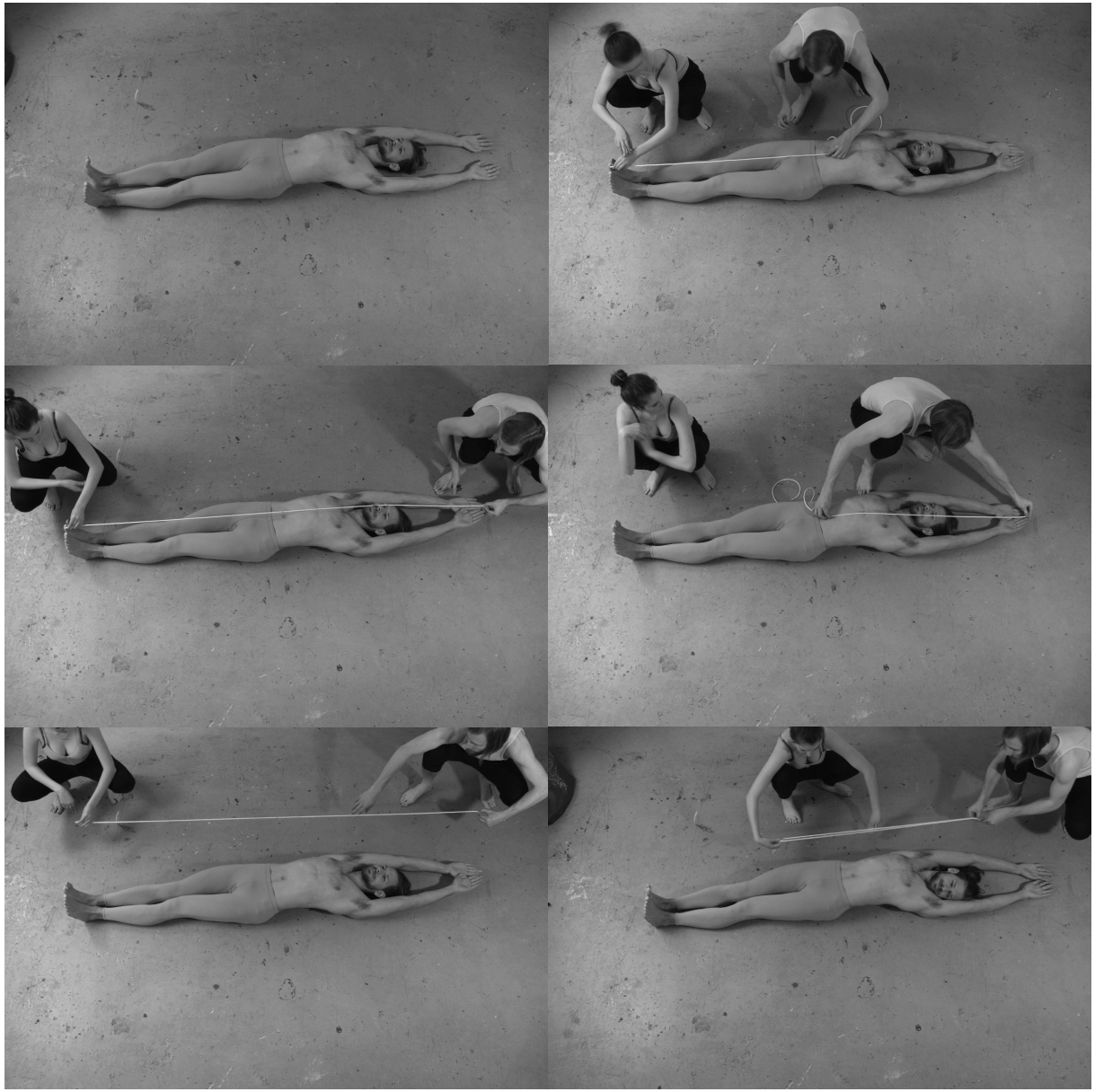
Counterclockwise from the top/left: using the same rope and technique to establish the height of the model as before, the long rope is divided in half twice this time to established a fourth of the man's height; in turn, the quarter is equated to both of his forearms, as well as to the distance from the hairline's peak to the meta sternal crevasse of the sternum.



Counterclockwise from the top/left: the model is laid supine, as before, but this time making sure his arms are held at a right angle to his body, as if he were standing straight with his arms held out at a right angle; the height is then taken with a rope by first making sure that one end is held inline with the soul of the feet, and then by making sure that the other is held inline with the top of the head; once the height is taken, the rope is carefully lifted, turned, and placed along the arm-span in order to equate the breath of the man's arm-span with his height.



Counterclockwise from the top/left: the model is laid down in the supine position with his arms held straight, his middle fingers reaching, and his hands overlapping, as well as with his legs straight, his feet together, and all of his toes pointed upwards, as if the man were standing on the balls of his feet reaching as high as he can; after which, the man's reach is measured with the long rope by, first, placing one end at the tip of his middle-fingers and then placing the other at the tip of his big-toes; thereafter, this measure is divided, by folding the rope once, in order to establish what is half of his reach; the half is then used to locate the navel at the middle of his reach by checking to see if the navel is the same distance from either end.

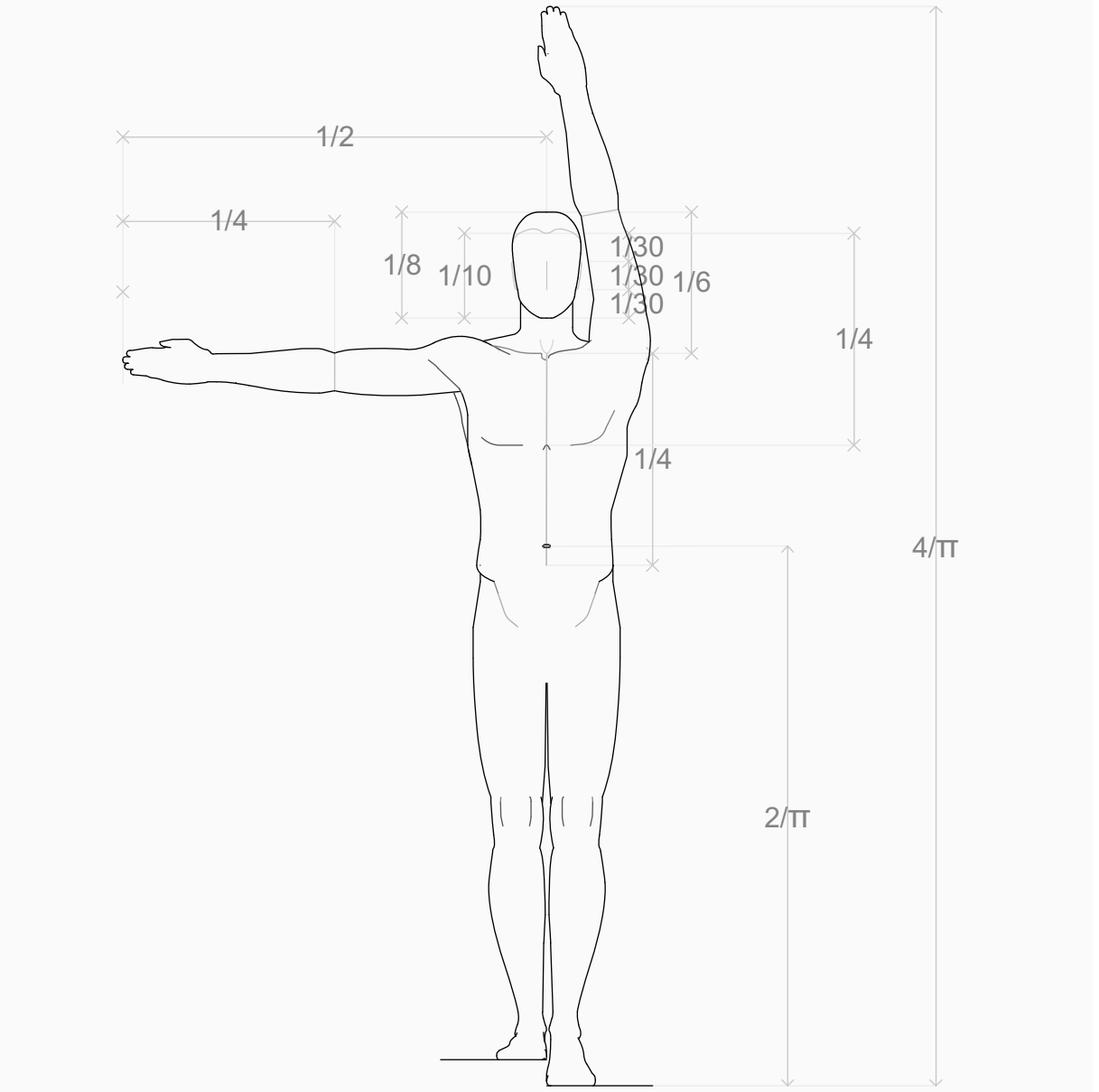


DRAWINGS

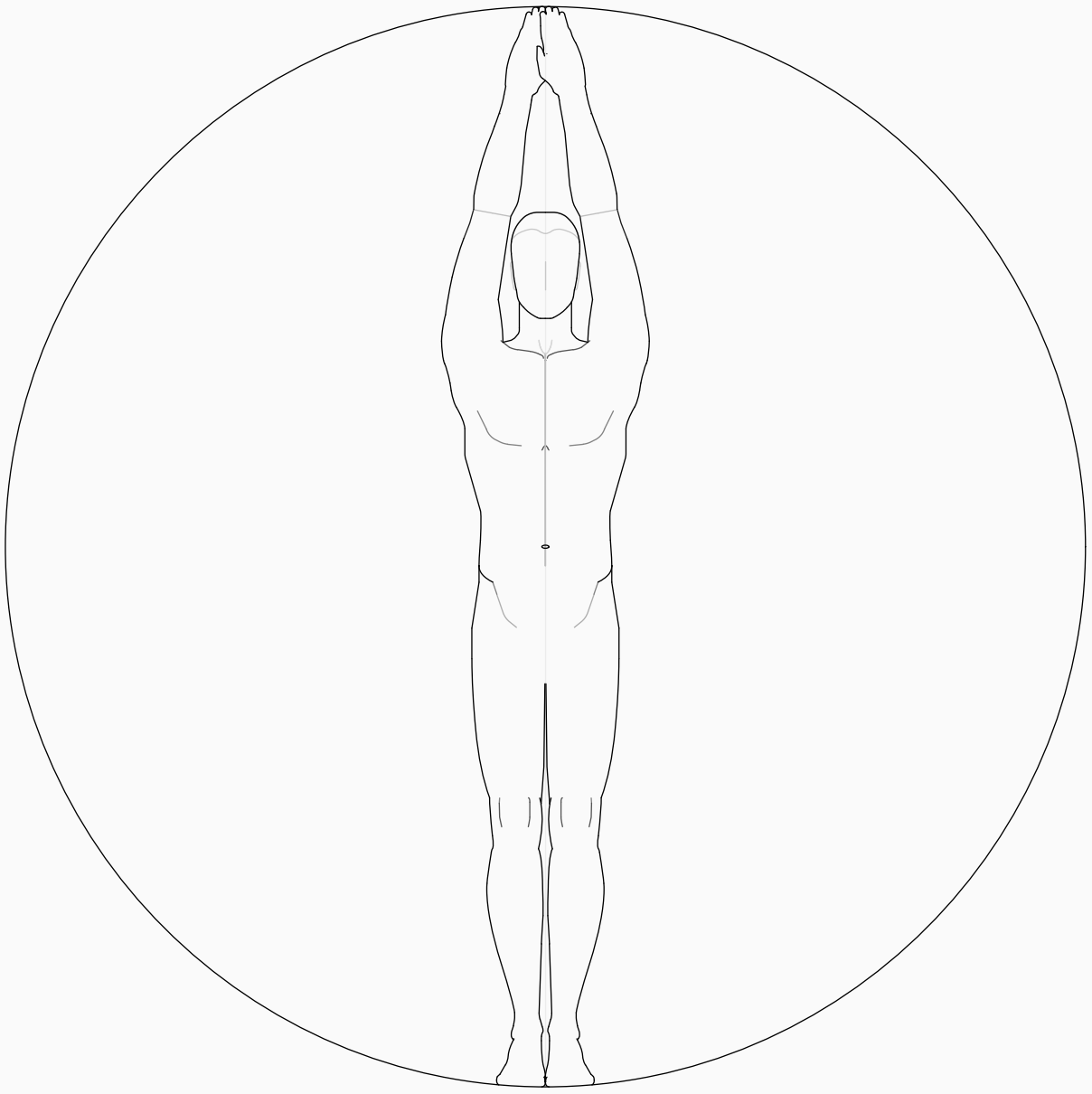
"A pattern that requires enactment, review and adjustment…
requires a continuous reframing […] at successive scales…
[as only the] continuous reframing of phenomena…
serves to overcome the inertia of certainty."

— *Sidney K. Robinson*

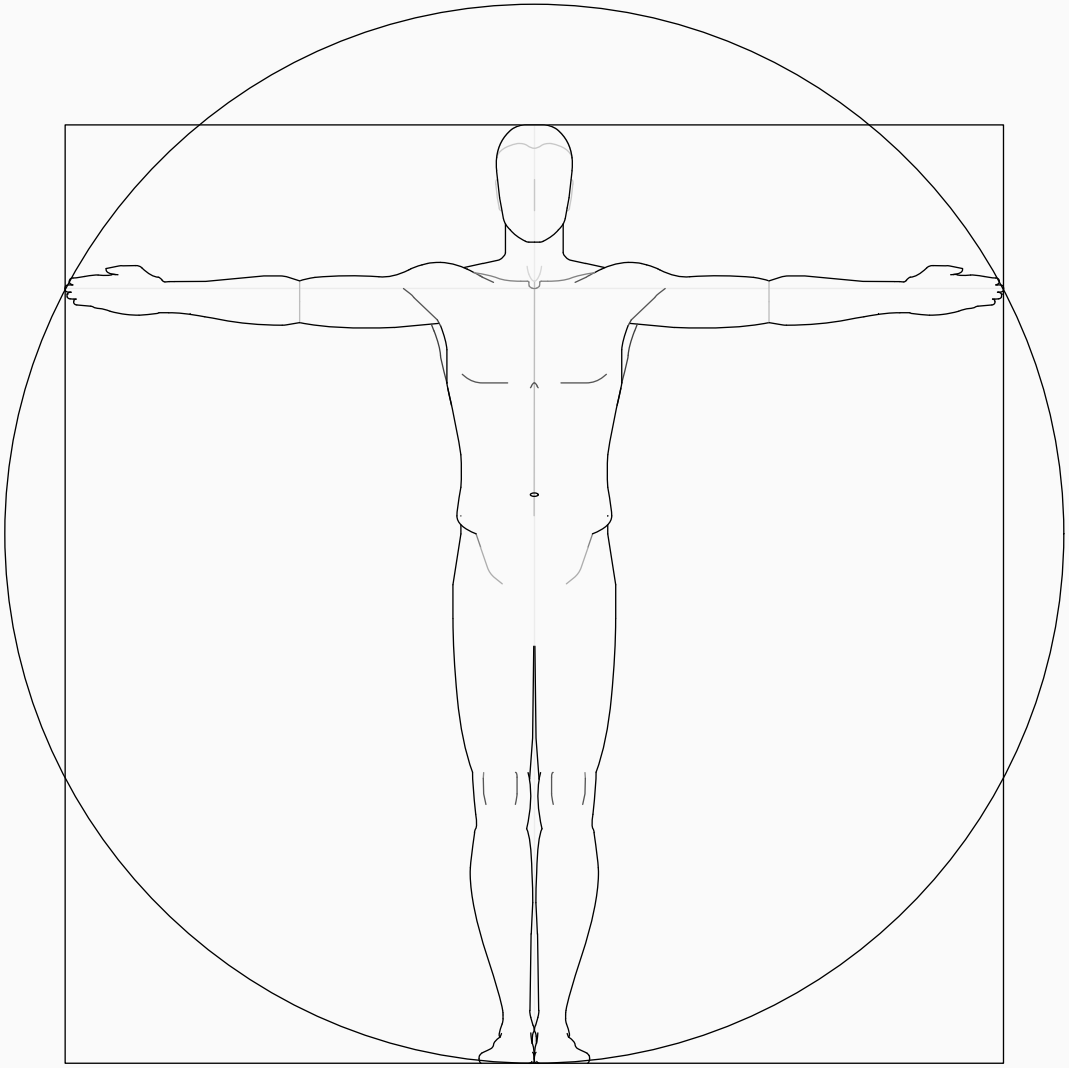
Diagram of all of the ratios enacted: the ratio between a man's body and his face; the ratio between his body and his head; the ratio between his body and his head plus his neck; the ratio between his body and mouth, nose, or forehead; the ratio between his body and his head with his neck plus his sternum; the ratio between his body and his *pectus* (the height from the clavical notch to the start of the hip-bone); the ratio between his body and his *cubit* (i.e. forearm); the ratio between his height and his greatest reach; the ratio between his height and his arms-span.



Design of the middle/centre of man: the model is laid down in the supine position with his arms and legs held as if he were standing on the ball of both of his feet, reaching as high as he can above his head; after which, a circle is designed upon the ground around the model's greatest straight line reach with the same instrument that would be used for marking out distances; the circle is defined by the diameter that is formed between the two ends the this straight-line reach along the the centreline of the body; as previously measured, the middle of this diameter should be his navel; the pivoting end of the instrument, then, should be placed at the navel, and the marking-end should start at the middle-fingertip of either of the model's hands; as this marking-end is drawn around the hands and feet, it should touch the middle-fingertip of both of the hands, all of the toes, and the ball of both of the feet.



Design of the squaring of the circle: the model is laid down in the supine position with his arms and legs held as though he were standing upright, with his feet together, and his hands as far apart as possible; after which, a circle is designed upon the ground around the model's greatest breadth and centre-line with the instrument that would be used for marking out distances; the circle is defined by the triangle that is formed between the two ends of this arm-span's breadth and the end of his body's centreline; the triangle's middle-point does not align with any feature in the body; the pivoting end of this instrument, though, is still placed at this point; and the marking-end would start at either of the model's hands' middle-fingertips; then, as this marking-end is drawn around the hands and feet, it should touch the middle-fingertip of both of the hands as well as the base of the body's centre-line.



Superimposition of the drawing for the body's middle centre and that of the squaring of the circle. The only purpose for superimposing the two drawings was to provide a drawing that may be compared to Leonardo da Vinci's *Vitruvian man* sketch and other drawings of the sort on a one-to-one basis. By superimposing the two gestures, a certain dynamism is given to the quality of the drawing. One that may be able to help people to look past the aesthetic, and on to the logic behind what Vitruvius describes in his treatise. The irony with producing this icon is that it feels as though I am producing a *DaVincian man* and not what is supposed to be another *Vitruvian man*; the irony of which reveals a useful double-speak.

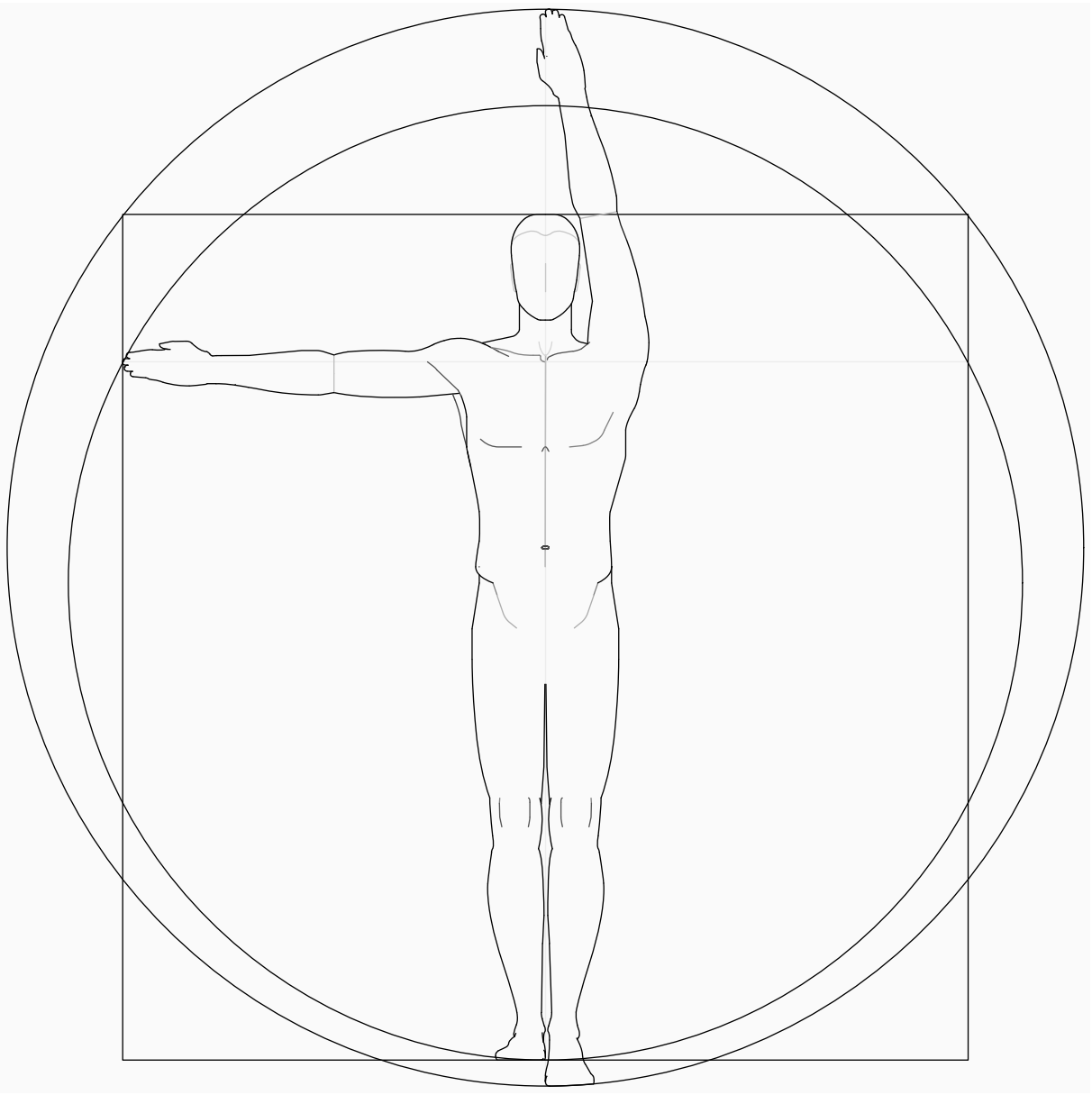
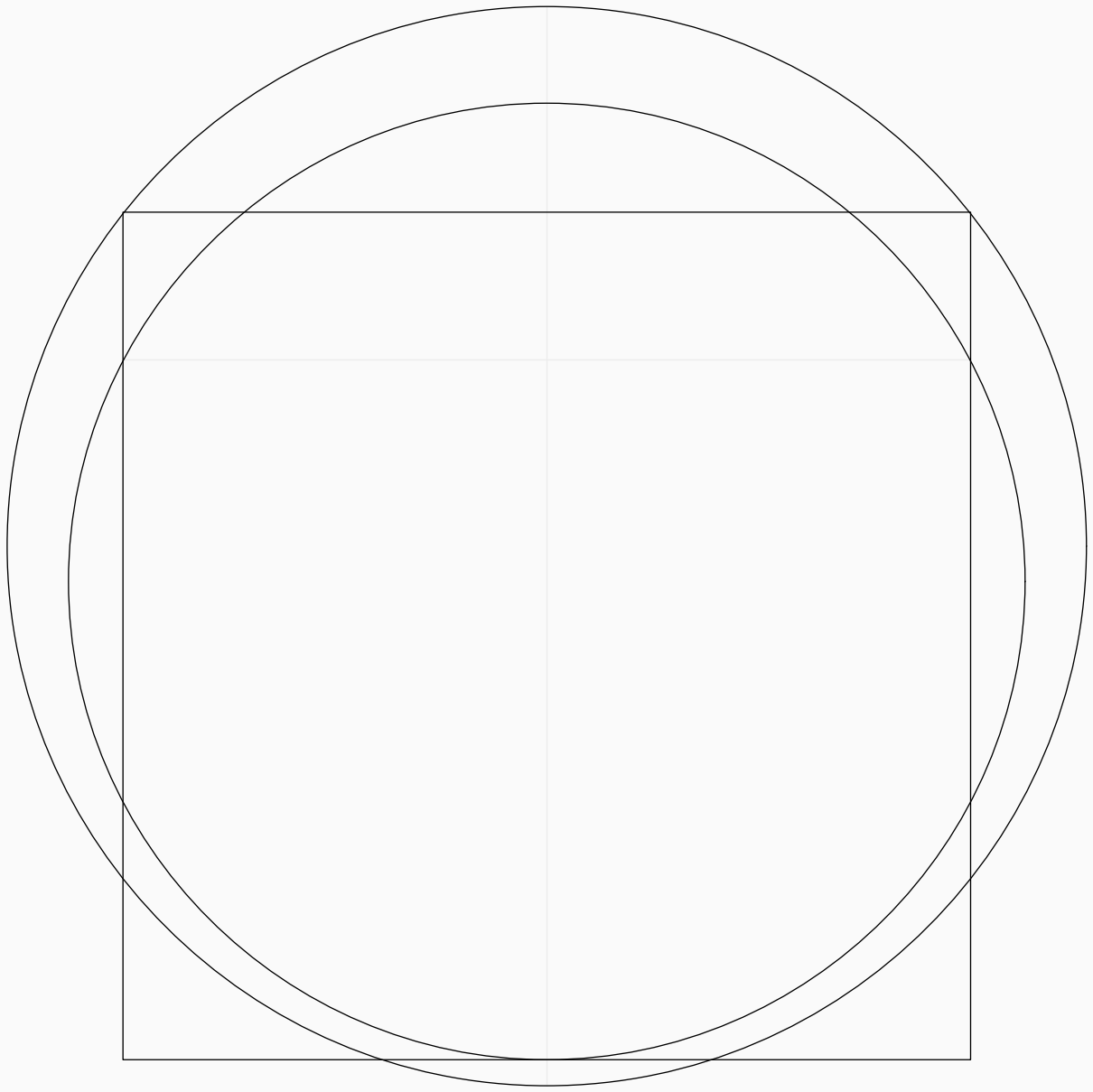


Diagram of the two ratios designed: the ratio between a circle that is defined by a man's greatest reach and square that is defined by his height; ratio between a circle that is defined by his arm-span with the bottom of his body's centreline and the square that is defined by his height.



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"All the revision in the world will not save a bad first draft:
for the architecture of the thing comes, or fails to come, in the first conception;
revision will only affect its details and ornaments."

— *T.E. Lawrence*

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MNEMONICS

“Il suffit que d’un peu de bonheur pour que tout recommence.”

— *Émile Zola*

UNDERLINES (ANALYSIS & PARSING)

Grey	unknown gender (verbs)
Blue	masculine gender
Red	feminine gender
Green	neuter gender
None	stop words
Solid	singular
Broken	plural

STYLES (ANALYSIS & PARSING)

Italic	adverbs, infinitives, and participles
Plain	adjectives, prepositions, and particles
Bold	nouns, pronouns, and coordinating conjunctions
Bold Italic	finite verbs, verbal nouns, and adverbial conjunctions
Grey	verbs, adverbs, and undeclined participles
Blue	nominative case
Red	accusative case
Green	genitive case
Yellow	ablative case
Purple	dative case
Black	no case

STYLES (EMENDATION, EDITING, & TRANSLATION)

Aa emended text, edited text, and anchored terms

~~Aa~~ extra/unnecessary text(s)

Aa auxiliary verbs

Aa null articles

SYMBOLS (GENERAL)

... missing text(s)

' missing letter(s)

– two words compounded

/ apposition between terms

¶ separation between parts

| seperation between clauses

|| separation of internal clause

| separation between phrases

* term in need of clarification

´` active v. passive voice verbs

⦸ zero-value word

[ ] inserted null text

( ) inserted clarification

{ } inserted missing text

GLOSSARIES

"Everything is interesting if you go into it deeply enough."

— *Richard Feynman*

A

ab preposition/prefix; indicates ablative-locative noun phrase [cognate: from, by ; latinate: ab–]

ad preposition/prefix; indicates accusative-locative noun phrase [cognate: to ; latinate: at]

agere verb; infinitive [latinate: to act]

agendus participle; gerundive; masculine; sing; nominative [latinate: having to be acted]

–agendo participle; future passive; masculine/neuter; singular; dative/ablative [see *agere*]

–agendo gerund; singular; masculine/neuter; dative/ablative [latinate: for acting / by acting]

–actam participle; perfect passive; feminine; singular; accusative [latinate: acted]

altitudo feminine noun; singular; nominative [cognate: height ; latinate: altitude]

altitudinis feminine noun; singular; genitive [cognate: height's ; latinate: altitude's]

areæ feminine noun; plural; nominative [latinate: areas]

areæ feminine noun; singular; genitive/dative [latinate: area's]

articulo masculine noun; singular; dative/ablative [cognate: wrist ; latinate: article]

at–que (*adque*) adverb + conjunction [cognate: and yet]

at (*ad*) adverb [cognate: yet]

autem conjunction [see *aut* & *en*]

aut conjunction of Ancient greek origin [cognate: but, and/or, or]

B

bene adverb [cognate: well]

–brum / –bri suffix; neuter noun; singular; genitive; indicates instrumental form of noun [latinate: -brum]

C

capilli masculine noun; singular; genitive [cognate: hair / hair(line)]

capillis masculine noun; plural; dative/ablative [cognate: hairs]

capillorum masculine noun; plural; genitive [cognate: hairs']

capitis neuter noun; singular; genitive [cognate: head's]

caput neuter noun; singular; nominative [cognate: head]

centrum neuter noun; singular; nominative/accusative [latinate: centre]

cerebri neuter noun; singular; genitive [cognate: braincase/skull/neck ; latinate: cerebrum's]

cercivibus feminine noun, plural; ablative [see *vicis* + *cere–bri*]

ciliorum neuter noun; plural; genitive [cognate: lids']

circinus masculine nominalised adjective; singular; nominative [latinate: circuline]

circini masculine nominalised adjective; plural; nominative [see *circinus*]

circini masculine nominalised adjective; singular; genitive [see *circinus*]

circus masculine noun; singular; nominative [cognate: ring ; latinate: circus]

circum– preposition/prefix; indicates accusative-locative indirect object [see *circus*]

cum preposition/prefix; indicates ablative-instrumental noun phrase [cognate: with]

corpore neuter noun; singular; ablative [cognate: body ; latinate: corpse]

corporis neuter noun; singular; genitive [cognate: body's ; latinate: corpse's]

corpus neuter noun; singular; nominative/accusative [cognate: body ; latinate: corpse]

cubitum neuter noun; singular; nominative/accusative [cognate: forearm ; latinate: cubit]

D

de(-) preposition/prefix; indicates ablative noun phrase [cognate: on, off of ; latinate: de-, dis-]

designatio feminine verbal noun; singular; nominative [latinate: designation/design]

decimæ numeral; feminine; singular; genitive/dative [cognate: tenth]

–dem particle suffix; contraction of pronoun + particle [cognate: as it/them; as this/these]

digitus masculine noun; singular; nominative [cognate: finger/toe ; latinate: digit]

digiti masculine noun; plural; nominative [cognate: fingers/toes ; latinate: digits]

digiti masculine noun; singular; genitive [cognate: finger's/toe's ; latinate: digit's]

digitum masculine noun; singular accusative [cognate: finger/toe ; latinate: digit]

dum particle; emphatic/contrasting/relative conjunction [cognate: only/while/as]

E

ea(*d*) third person pronoun; feminine; singular; nominative/ablative [cognate: she, it]

ea(*d*) third person pronoun; neuter; plural; nominative/accusative [cognate: they/them]

ea(*d*) demonstrative; neuter; plural; nominative/accusative [cognate: those]

ea(*d*) demonstrative; feminine; singular; nominative/ablative [cognate: this, that]

eadem compound; pronoun + interjection/particle [cognate: the same]

em/*en* interjection; serves as either a supperlative, conjunction, or adverb [cognate: *as*]

ex preposition/prefix; indicates an ablative noun phrase [cognate: out-of / from]

ef– verb prefix; indicates ablative indirect object [see *ex*]

eius third person pronoun; singular; genitive [cognate: his, hers, its]

eius demonstrative; singular; genitive [cognate: of whom, whose]

enim ablaut contraction; conjunction + dative/ablative demonstrative [see *nam* + *ea*/*eo*/*eiis*]

e'nam ablaut contraction; conjunction + dative/abaltive pronoun [cognate: for (by) it]

eo(*d*) third person pronoun; masculine; singular; ablative [cognate: him; it]

eo(*d*) determiner; masculine; singular; ablative [cognate: that, this]

est verb; third; singular; present; active; indicative [cognate/latinate: is]

esset verb; third; singular; imperfect; active; subjunctive [cognate/latinate: would be]

et co-ordinating conjunction [cognate: and]

extremum masculine nominalised superlative; singular; accusative [cognate: beyond]

extremus superlative; masculine; singular; nominative [cognate: utmost ; latinate: extreme]

F

–ficitur/*fit* verb; third; singular; present; passive; indicative [cognate: to do]

figurati participle; perfect passive; masculine; plural; nominative [latinate: figured]

figurati participle; perfect passive; masculine; singular; genitive [latinate: figured]

fine masculine/feminine noun; singular; ablative [cognate: end]

finem masculine/feminie noun; singular; accusative [cognate: end ; latinate: finish]

frons feminine noun; singular; nominative [cognate: forehead ; latinate: front]

frontem feminine noun; singular; accusative [cognate: forehead ; latinate: front]

fuerit verb; third; singular; future perfect; active; indicative [cog/latinate: will have been]

fuerit verb; third; singular; perfect; active; subjunctive [cognate/latinate: were]

H

habent verb; third; plural; present; active; indicative [cognate/latinate: have]

habuerit verb; third; singular; future perfect; active; indicative [cog/latinate: will have had]

habuerit verb; third; singular; perfect; active; subjunctive [cognate/latinate: were]

hominis masculine noun; singular; genitive [cognate: man's]

homo masculine noun; singular; nominative [cognate: man]

I

iam adverb [cognate: still]

id pronoun/demonstrative; neuter; singular; nominative [cognate: he / it / this]

imus/infimus/inferissimus superlative; masculine; singular; nominative [cognate: most infer]

imo/infimo/inferissimo superlative; masculine/neuter; singular; dative/ablative [see *imus*, *inferus*]

imas/infimas/inferissimas superlative; feminine; plural; accuastive [see *imus*, *inferus*]

imis/infimis/inferissimis superlative; masculine/feminine/neuter; plural; dative/ablative [see *imus*, *inferus*]

in preposition; indicates accusative locative noun phrase [cognate: by/about ; latinate: in]

in preposition; indicates dative-locative noun phrase [cognate: by/about/in ; latinate: in]

in– verb prefix; indicates locative indirect object [see *in*]

in– adjective prefix; indicates opposite [cognate: un-; latinate: in-]

ipsius pronoun; masculine/feminine/neuter; singular; genitive [cognate: of himself, herself, itself]

ita adverb [cognate: so]

item adverbial conjunction [cognate: as/like ; latinate: ~~item~~]

L

latitudo feminine noun; singular; nominative [cognate: width ; latinate: latitude]

linea feminine noun; singular; nominative/ablative [latinate: line]

–locatus participle; perfect passive; masculine; singular; nominative [cognate: laid ; latinate: located]

–locatum participle; perfect passive; neuter; singular; nominative/accusative[latinate: having been laid]

M

manibus feminine noun; plural; ablative [cognate: hands]

manus feminine noun; singular; nominative [cognate: hand]

manus feminine noun; plural; nominative/accusative [cognate: hands]

manus feminine noun; singular; genitive [cognate: hand's]

manuum feminine noun; plural; genitive [cognate: hands']

medium neuter noun; masculine; singular; nom./acc. [cognate: middle ; latinate: medium]

medium adjective; masculine; singular; accusative [cognate: middle ; latinate: medium]

medium adjective; neuter; singular; nom./acc. [cognate: middle ; latinate: medium]

membrorum neuter noun; plural; genitive [latinate: members']

mensura feminine verbal noun; singular; nominative/ablative [latinate: measure]

mensura participle; future active; feminine; singular; nominative/ablative [see *mensurus*]

mensura participle; future active; neuter; plural; nominative/accusative [see *mensurus*]

mensum participle; perfect active; masculine; singular; accusative [latinate: measured]

mensum participle; perfect active; neuter; singular; nominative [latinate: having to be measured]

mensum participle; perfect active; neuter; singular; accusative [latinate: having to be measured]

mensum supine; nominative [latinate: to measure]

mento neuter noun; singular; dative/ablative [cognate: chin]

modum masculine noun; singular; accusative [cognate: way, end, while ; latinate: mode, mood]

minus adjective; neuter; singular; nominative [cognate: less ; latinate: minor, minus]

minus adjective; neuter; singular; accusative [cognate: less ; latinate: minor, minus]

N

nam conjunction [cognate: for, since; latinate: nay]

naturaliter adverb [latinate: naturally]

nares feminine noun; plural; nominative/accusative [cognate: nostril]

naribus feminine noun; plural; dative/ablative [cognate: nostril]

nasum masculine noun; singular; accusative [cognate/latinate: nose]

nasi masculine noun; singular; genitive [cognate/latinate: nose's]

natura feminine noun; singular; nominative/accusative [latinate: nature]

ni adverb [latinate: not]

non particle [latinate: no, not]

normam feminine noun; singular; accusative [latinate: norm]

O

os neuter noun; singular; nominative/accusative [cognate: mouth]

oris neuter noun; singular; genitive [cognate: mouth]

P

palma feminie noun; singular; nominative/ablative [latinate: palm ; cognate: folm]

pars feminine noun; singular; nominative [latinate: part]

partis feminine noun; singular; genitive [latinate: part's]

passus participle; perfect passive; masculine; singular; nominative [latinate: passed]

passas participle; perfect passive; feminine; plural; accusative [latinate: passed / spanned]

passæ participle; perfect passive; feminine; plural; genitive [latinate: panned / spanned]

passis participle; perfect passive; masculine/fem/neuter; plural; dative/ablative [see *passus*]

pectus neuter noun; singular; nominative/accusative [cognate: n/a ; latinate: n/a]

pectore neuter noun; singular; ablative/dative [see *pectus*]

pedibus masculine noun; plural; ablative/dative [cognate: foots]

pedum masculine noun; plural; genitive [cognate: foots']

pes masculine noun; singular; nominative [cognate: foot]

–posuit verb; third; singular; perfect; active; indicative [cognate: set ; latinate: posed]

Q

quadratæ participle; perfect passive; feminine; plural; nominative [latinate: squared]

quadratæ participle; perfect passive; feminine; plural; genitive [latinate: squared]

quadratæ participle; perfect passive; feminine; plural; dative [latinate: having been squared]

quadrata participle; perfect passive; feminine; singular; ablative [latinate: having be quadrated]

quadrata participle; perfect passive; feminine; singular; nominative [latinate: squared]

quadrata participle; perfect passive; neuter; plural; nominative/accusative [see *quadratus*]

quadratus participle; perfect passive; masculine; singular; nominative [latinate: quadrated]

quartæ numeral; feminine; plural; nominative [cognate: fourth ; latinate: quarter]

quartæ numeral; feminine; singular; genitive/dative [cognate: fourth ; latinate: quarter]

quæ pronoun; feminine; relative/interrogative; singular/plural; nominative [cognate: these]

quæ pronoun; neuter; relative/interrogative; plural; nominative/accusative [cognate: these]

quem pronoun; masculine; relative/interrogative; singular; accusative [see *quis*/*qui*]

quibus pronoun; masculine/feminine/neuter; plural; dative/ablative [see *quis*/*qui*]

–que particle suffix; coordinative conjunction [cognate: and ; latinate: &]

quei pronoun (old latin); relative/interrogative; no declension [see *quis*/*qui*]

quis pronoun; masculine; interrogative; singular; nominative [cognate: that/which]

quis pronoun; masculine; adverbial; singular; nominative [cognate: where/when/how]

qui pronoun; masculine; relative; singular [cognate: that/which]

R

radices feminine noun; plural; nominative/accusative [cognate: roots]

rationem feminine noun; singular; accusative [cognate: logic ; latinate: ratio, rating]

relata participle; perfect passive; feminine singular; nominative/ablative [latinate: related]

relata participle; perfect passive; neuter; plural; nominative/accusative [see *relatus*]

rotundationem feminine noun; singular; accusative [cognate: circle ; latinate: rotundation]

rotundationis feminine noun; singular; genitive [cognate: circle's ; latinate: rotundation's]

S

sextæ numeral; feminine; plural; nominative [cognate/latinate: sixth]

sextæ numeral; feminine; singular; genitive/dative [see *sextus*]

schema (*scæma*) feminine noun; singular; nominative/ablative [latinate: scheme ; cognate: shape]

schemæ feminine noun; singular; genitive [latinate: scheme ; cognate: shape]

si conjunction [cognate: if]

sunt copulative verb; third; plural; present; active; indicative [cognate/latinate: are]

summa/*suprema*/*superissima* superlative; feminine; singular; nominative/ablative [congate: highest]

summa/*suprema*/*superissima* superlative; neuter; plural; nominative/accusative [cognate: upmost ; latinate: most super]

summam superlative; feminine; singular; accusative [see *summus*]

summum superlative; masculine; singular; accusative [see *summus*]

summum superlative; neuter; singular; nominative/accusative [see *summus*]

supinus (*sopinus*) adjective; masculine; sigular; nominative [latinate: supine]

superciliorum preposition + neuter noun; plural; genitive [cognate: above-eyes]

super– noun preposition [cognate: over-/above- ; latinate: super-]

T

tam adverb [cognate/latinate: so, such]

tangentur verb; third; plural; future; passive; indicative [cognate/latinate: will be touched]

tantum nominalised adjective; neuter; nominative [cognate/latinate: so, such, as much]

tantum nominalised adjective; neuter/masculine; accusative [see *tam*]

tantu(n)-dem	pro-sentence [see *eadem, & tantum*]
tertia	numeral; feminine; singular; nominative/ablative [cognate/latinate: third]
tertia	numeral; neuter; plural; nominative/accusative [cognate/latinate: third]
tertiæ	numeral; feminine; plural; nominative [see *tertius*]
tertiæ	numeral; feminine; singular; genitive/dative [see *tertius*]

U

umbilico	masculine noun; singular; ablative/dative [cognate: navel]
ut	relative adverb [cognate: as]
ut	interrogative [cognate: how]
ut	indicative/subjunctive conjunction [cognate: as, that]
uti	verb; infinitive; present active [cognate: to use]
utrarum	adjective; feminine; plural; genitive [cognate: both]
utrarum-quarum	adjective + demonstrative; functions as a pronoun [cognate: both of the…, both of those…]

V

vero	adjective; masculine/neuter; singular; dative/ablative [cognate: true]
vero	verb; first; present; active; indicative [cognate: (I) truth, (I) tell you]
vertex	masculine noun; singular; nominative [cognate: whorl ; latinate: vertex, vortex]
verticem	masculine noun; singular; accusative [cognate: whorl, scalp ; latinate: vertex, vortex]
–venietur	verb; 3rd; singular; future; impersonal; indicative [cognate: come ; latinate: vent]
vicis	feminine noun; plural; nominative [cognate: pivots ; latinate: n/a]

ANNOTATIONS

“Dice un antico proverbio che, al goditore non manca mai roba.”

— *Giorgio Vasari*

-,e > -ae/æ	Shorthand frequently used in Mediæval latin manuscripts for this Classical latin ligature, which has to be restored to avoid confusion with other case-inflections, that end in 'e'.
uti > ut	Alternative spelling for this Classical latin particle, which is favoured over the more common form in order to distinguish it from a Classical latin participle of same spelling.
-&, -&-, & > *-et*, *-et-*, *et*	Carolingian logogram for the coordinating conjunction and as a ligature, the spelling of which is reverted for to avoid confusion as to what is a conjunction and what is a ligature.
-ú, -á, -é > -um, -am, -em	Carolingian shorthands that are found in both the manuscripts of the codex-era and prints of the incunabula-era, which are reverted to avoid confusing them with other case-endings.
-q: > -que, -qu', …	Carolingian shorthand that is found in both the manuscripts of the codex-era and prints of the incunabula-era, which is resolved to clarify what particle the suffix refers to in each case.
-que > et	Classical suffix for the conjunction, *et*, which is parsed and replaced with its standard form to facilitate the text's realignment and avoid confusing it with particles of a similar spelling.
–dem > 'dem	Contracted compound is parsed and marked, herein, to facilitate the realignment of the text and to avoid confusion about the function of the relative pronoun/demonstrative, *isdem*/*etc*.

a > *ab*

Various spellings were adopted over the course of the Latin language for the preposition, *ab*. Its original spelling, *ap*, is theorised to have began as a shorthand for the preposition, *apud*. The spelling, *af*, is found in old inscriptions in front of words that start with certain letters. Same with the spelling, *ab*, in front of all vowels and most consonants, but namely with 'h'. Eventually, the 'f' stopped being written, creating the 'long a' in its place. As a verbal prefix, this preposition is written with even more variations to its spelling. The variations of which can be confused with the varied spelling of the preposition, *ad*, as a verbal prefix. Therefore, all of the spellings used for this preposition in this excerpt are defaulted to the spelling, *ab*.

con-, com-, col- > *cum*

All of the spellings of the verbal prefix, *cum*, are reverted to the preposition's standard form. This reversion clarifies the fact that, the verb has an indirect object in the instrumental case; as well, the prefix is parsed from the verb in order to facilitate its re-alignment in the text.

scæma > *schema*

Unattested alternate spelling for this noun that may be Carolingian, Vitruvian, or Classical. Either way, its spelling is corrected so as to reflect its most attested spelling in Classical latin.

enim > *e'–nam*

Contracted compound of the conjunction, *nam*, and the ablative particle, *e–*, that allows for a reference to be carried over from a previous clause. The ablaut is reverted here; meanwhile, the null ablative inflection is marked. In this way, the terms can be uncompounded and their respective roles parsed; that is, the particle can be analysed separately from the conjunction.

im–, sum– /
infim–, suprem– /
inferissim–, superissim– /
infer"m–, super"m– .

The Classical latin, *imus* and *summus*, are contractions of the terms, *infimus* and *supremus*, which are the superlatives of the adjectives, *inferus* and *superus*, via the Old latin spellings, *inferissimus* and *superissimus*, respectively. Even though these spellings are interchangeable, the long-form is favourable, since the adjective to which it serves as the superlative is visible. However, there are so many variations in the spelling of its long-form in Classical latin that, it is simpler to mark the letters that experience this variation than to favour a one of them.

extim– /
extrem– /
exterissim– /
exter"m– .

The Classical latin, *extimus*, is the contracted form of the Classical latin spelling, *extremus*, of the Old latin superlative, *exterissimus*, of the adjective, *exterus*, from the preposition, *ex*. While these spellings for the superlative may be interchangeable, its older form is favourable. Moreover, given how many variations in the spelling of its long-form in Classical latin exist, it is simpler to mark the letters that experience this variation than to favour a one of them.

sopinus > *supinus*

Misspelt adjective, which can either indicate a copying error on the part of the manuscript's copyist or an example of an unattested, alternate form of spelling for this specific adjective.

octae > *octavæ*

Misspelt numeral, which can either indicate a copying error on the part of the manuscript's copyist or some unattested form of shorthand. Either way, the numeral's inflection is valid.

extæ > *sextæ*

Copyist clearly forgot to writer the initial letter of the term *sextae*, misspelling it as *extae*.

efficitur > *ex ficitur*

The prefix is parsed and reverted back to the standard spelling for this ablative preposition, so as to facilitate its realignment within the text, and to avoid confusion about the fact that, the verb must have an indirect object that has to be inflected with an ablative case-ending.

…imas radices capilli
…imas radices capillorum
…imas radices capillis >
…imas radices capilli
…imas radices capilli
…imas radices capilli

What is initially inflected in the singular genitive is later inflected in the plural genitive case, and then the singular dative case. In each case, this phrase should be spelt in the same way, as the context remains immutable. As such, the inconsitent inflections are resolved. Notably, the singular case of this Classical latin noun can express either 'hair', or 'hairline'. As such, the singular genitive inflection works best, here, to suggeset the 'lowest roots of his hairline', which is why this inflection is the one to which the inflections in the other cases are adjusted.

si fuerit…et fuerit…
si erit…-que fuerit
> *si fuerit…et fuerit…*
si fuerit…-que fuerit

Where the copula is conjugated in the future active indicative is changed to the perfect active subjunctive so that this second sequence of copulas mirrors the first, of subjunctive copulas. The conjunction, *si*, conjoins conditions, which are always conjugated with the subjunctive. While it may also conjoin assumptions, which would be conjugated with an indicative verb, this never occurs after the introductory conjunction, *nam*, so it has to be a copying error.

–eb:, *–ib:* > *–ebus*, *–ibus*

This shorthand is found in both the manuscripts of the codex-era as well as the prints of the incunabula-era for the ablative/dative case-inflection of the third and the fourth declensions; the shorthand is written in long-form in all cases, to avoid confusion it with punctuation.

pansis > *passis*
spansas > *passas*

A mispelling of the perfect passive participle, *passus*, from the Classical latin verb, *pandere*, that is common to Mediæval latin. This misspelling derives from an apophony that dates to from the Classical latin period, which changes the 'n' of the perfect participle of this verb to an 's' when conjugating it with the verbal prefix, *ex–*; in other words, the alternative spelling of the perfect passive participle, *expansus*, of the verb, *expandere*, as the spelling, *expassus*, came to displace the spelling of the perfect passive participle of this verb to become, *passus*; the Mediaeval scholar, Maurus Servius Honoratus, actually addresses the misspelling of this verb's perfect participle in his *Vergilii Æneidem Commentarii*; and so, it is corrected, herein.

invenietur > *in venietur*

The Classical latin verb, *venietur*, is an intransitive verb that only has an active voice with an impersonal voice; and so, for it to be a transitive verb with both, an active and passive voice, it needs to be given a prefix such as, *in–*; and yet, the prefixed form of the verb does not have to necessarily be translated as a new verb, such as "*will be invented*", but could be translated as the base verb with the prefix as a postposition-particle, such as "*will be come at*"; as such, the decision was taken to parse the prefix from the verb so that it may be aligned in this way.

decimæ partis... tertiæ partis >
decimæ parti... tertiæ parti

throughout Vitruvius' treatise and across Classical literature, these terms are found together, most frequently after the auxiliary verb 'to have' and dative copula 'to be for'; and everytime, the two are inflected the same; even here, but the inflection should be dative not the genitive; therefore, the inflection of the second term has been adjusted to reflect this concordance.

...rationem... reliqua...
> *...~~rationem~~... ~~reliqua~~...*

These terms occur at the beginning of each section of this excerpt transcribed, respectively. The reasoning behind their inclusion is circumstantial, and does not preclude the fact that, neither belong to any of the noun phrases of interest; and so, both must be stricken-out.

Vero...
Similiter vero... et...

In between the two sections of text, which make up the description of man's body, that have been transcribed, a conjunctive phrase from the preceding clause, *vero*, is echoed. Therefore, the echoing adverb and verb are included in the transcript, as an isolated grammatical unit, in order to not loose the organisation of Vitruvius' three-part argument in its transcription.

…~~item~~ centrum medium.. vs
Item quadrata designatio…

the adverbial conjunction, *item*, is used to compare a previous statement to a following one; since this statement is left out of the excerpt in the first case; the adverb is stricken-through, whereas, in the second case, it also compare the description that follows to the previous one, but that description is included in the excerpt; therefore, the adverb is not stricken-through.

supciliorum >
super' ciliorum

In Classical latin, prepositions, such as, *super*, can only serve as a prefix to verbs, not nouns, like, *ciliorum*; and so, if see, in Carolingian shorthand, a preposition affixed to a noun, like, *superciliorum*; then, this affixation would actually represent a contraction of a noun phrase, such as, *superorum ciliorum*. In this case, though, the Carolingian contraction is miss-spelt. The spelling is corrected to note copyist's error, but the prefix is parsed and marked so as to note that letters are missing – to note that this prefix is an adjective that has to be inflected.

tantundem...tantumdem > *tantumdem...tantumdem*

The adjective, *tantus*, is derived from the adverb, *tam*, but it may equally serve as an adverb, to imply 'so much', when it is inflected in what is called its accusative adverbial case, *tantum*. For the compound, *tantumdem*, an alternate form exists, *tantundem*. Within this transcript, both spellings occur, despite the fact that, in both cases, the adjective is acting as an adverb, which we know to be the case because the copula is null – a construction that is known as a 'pro-sentence' in Classical linguistics. Neither spelling is more correct, per se; what matter is that the spelling for the adverb are consistent across the entire course of the text's transcript.

'dem... eadem = the same

The relative pronoun, *isdem*, is actually a Latin compound of the determiner, *is*, and adverb, *dum*. Notably, the adverb, *dum*, is suffixed to many words as, *–dum*, except to this pronoun, where it is suffixed as, *–dem*. This ablaut enabled two changes to the compound's semantics: it enabled its meaning to evolve, from 'as it' to 'the same' ; and it enabled it to serve as a contracted pronominal suffix without running the risk of being mistaken for the suffix, *–dum*. Therefore, the term may act as an a relative pronoun, and an undeclined pronominal suffix.

rationem = ratio

Vitruvius defines the abstract verbal Latin noun, *ratio*, of the perfect active participle, *ratus*, at the start of the third volume – a definition that would warrant its own micro-translation. Its definition is complex; its definite sense is 'that which has been rated', while its partitive is 'logic'. As such, it must be anchored in the text by transliterating it with its English latinate, *ratio*, of the same transliterated spelling to encourage further discussion on its semantics.

os capitis… [os] ipsius
= os of the face... [os] of itself

Vitruvius compares the face to the height of man's body, then the mouth to that of the face. Curiously, the same word is used in Classical latin to refer to a mouth as is to refer to a face, because both were thought to represent an opening: the face as the opening of the head and the mouth as the opening the face. In order to mitigate this double-entendre within the text, Vitruvius refers to the mouth through the uses of a reflexive pronoun and a cataphotic null. Respectively, the noun, *os*, is transliterated to preserve the semantics of this play on words.

ad frontem... frons
= to the front... the front

This term is translated as the English latinate, *front*, instead of as the compound 'fore-head', to preserve its semantics, and avoid confusing its translation with that of the noun, *caput*.

ad frontem summam
et capilli radices imas

Vitruvius describes the point to where the height of the face is to be measured, in two ways: first, up the forehead, then down the hair. He does likely does so because, even at that time, the Classical latin language lacked an explicit term to refer to 'the peak' of a man's hairline, and he was trying to be as accurate as possible with th language available to him at the time.

[*reliquis*]... ~~*reliqua*~~... = *rest*

Vitruvius uses this noun in a portion of the excerpt that does not pertain to the description, but, in doing so, sets a precedence for using this term to refer to what would other otherwise be referred to in English with the noun 'the rest'. It is included in the transcription just to set up its use as a null within a preceding sentence. The noun is difficult to translate to English, though; and so, it is translated with this English cognate/latinate, instead of being anchored.

decimæ parti... tertia pars = *the tenth pars... the third pars*

The English expressions 'a tenth part' and 'a third part' derive directly from Latin. However, the derivation is grammatically incorrect. The original Latin sense is only preserved as long as the indefinite is used. Therefore, the term must be transliterated to preserve its semantics.

verticem = *vortex*

The accusative singular, *verticem*, of the noun, *vertex*, is the Classical form of the Old latin, *vortex*, in the same way that the verb, *vertere*, is the Classical latin spelling of the Old latin, *vortere*. These two spellings would have been used interchangeably during the Augustan era. Remarkably, a similar interchangeability occurs with the English cognate of this noun/verb; that is, its Modern english cognate, 'whirl', can be equally written as 'whorl'. More notably, the noun, *vertex*/*vortex*, was used in Classical/Old latin to refer to any 'whirl', such as how, in this case, it refers to the pattern according to which the head-hair grows, or 'head-whorl'. Unfortunately, the use of this term to refer to the 'the top of the head' led to its adoption by mathematicians as a metonymy to refer to any angular point found in any geometric shape; and so, only the English latinate 'vortex', and not 'vertex', can be used to anchor the term.

pectore... pectus = *pectus*

The English latinate, *pectus*, is a technical term that can be found in any anatomy textbook. Anatomy textbooks define it as the part of the body that lies between the neck and the hips. This definition seems to best align with the measure that is given for the term in the excerpt. Notably, the *pectus* should not be confused with what daVinci refers to in the lower caption of the *Vitruvian man* sketch as 'the full width of the shoulders', which is also a fourth part.

palma = *palm*

This term derives from the Ancient greek, παλαμη (palame); it was a standard measure during Antiquity that is consistently defined as the width of four fingers across Classical literature; Vitruvius, himself, even defines it as such later on in this part of the text in the third volume; there is no reason to assume that his use of the term in this excerpt is idiosyncratic; as such, the term can be expected to mean the same as its latinate, palm, in Modern english, today.

articulo = *article*

This noun is best translated as its English latinate, even if it sounds a bit off when being red, as to do so allows for it to refer to any articulation until the correct interpretation is evident.

digitum = *digit*

The decision was taken to translate this term, *digitus*, by using its Modern english latinate, as to be consistent in translating it, instead of in some case as 'toe' and in others as 'finger'.

cubitum = *cubit*

This term must be translated as its English latinate, as it is a specific unit of measure.

os capitis… esset decimæ, item palma manus {et medius digitus}, ab articulo [medii digiti] ad extremum medium digitum, [esset] tantun eadem [pars].

As previously discussed, the palm of the hand cannot refer to anything else but four fingers. It cannot be qualified as any measure that involves the tip of the middle finger nor can it be equated to the height of the face. Some piece of text must be missing from the description – probably some copying error. Luckily, to what the missing piece of text refers is still present: 'the middle finger'. That is to say, if we measure the middle digit, from the knuckle to the tip, and add this length to the palm, then we find that this adidtion is equal to the face's height.

cervicibus
= *vices of the cerebrum*

At the time that Vitruvius was writing this text, the singular form, *cervix*, of the compound, *cervices*, was just starting to be used, and was by no means standard, or wide spread in use. The term, itself, is a compound of the genitive singular Latin noun, *cerebri*, and noun, *vices*, which lacked proper a singular form. Therefore, the same term may refer to a singular point, as it may multiple points, in the body. Unfortunately, this meaning is highly nuanced; and so, it has to transliterated as a noun phrase to encourage further discussion about its semantics.

Vero [*ut*]
pes [est] *sextæ*
corporis altitudinis
[*et*] *cubitum* [*est*] *quartæ*

At the time that Vitruvius was writing his treatise on architecture, there were two competing views as to what should be considered the standard ratio between the foot and man's height: the seventh and sixth. Severl kinds of cubits were also being considered at that time, such as, whether to include the fingers or not; to measure from the inside or outside of the elbow etc. So, through this conjunctive use of the expression, *vero*, which translates to '(I) truth (that)', Vitruvius essentally intends to decribe what he believes to be the 'true foot' and 'true cubit'.

medium centrum =
middle centre

Vitruvius uses the same expression, *centrum medium*, within the first volume of his treatise, to express the middle of a diametre that serves to construct a wind-diagram. In this context, the implication is that the man's limbs are intended to be stretched in a straight line similar to the diametre of the circle within this wind-diagram, and the navel would be its mid-point. Notably, the fact that, the adjective, *medium*, qualifies the noun, *centrum*, would imply that, the body has more than one centre to it, and, therefore, that it has more than one circle to it.

circum = *circum* — The preposition, circum, is the singular accusative nflection of the masculine noun, *circus*, which is a transliteration of the Ancient Greek, κιρκος, and the cognate to the English 'ring'. This particular spelling was used in Classical latin as a preposition in much the same that a particle like 'around' would be used in English. As a verbal prefix, the term denotes that the verb has an indirect object inflected in the accusative-locative. It is transliterated to English, here, to encourage further discussion on its semantics, instead of attempting to translate it.

circin– = *circinus* — The genitive singular inflection, *circini*, of the noun, *circinus*, is the diminutive of the noun, *circus*, and the transliteration of the Ancient greek, κίρκινος; the cognate of which is 'ringlet'. What exactly was the shape of this instrument is too difficult to ascertain so as to be able to, today, simply translate the term as 'a pair of compasses'. Instead, the word is transliterated, so as to anchor it within the translation and encourage discussion around what sort of tool the Romans would have referred to as 'a ringlet' – i.e. 'a little ring' – during Classical times.

rotundatio– = *rotundation* — The only examples of this abstract verbal noun within all of Classical Latin literature are in Vitruvius' treatise on architecture; the reason for this occurrence may be because at the time, there was no standard term to refer to what mathematicians would refer to, today, as 'circle'. The term may not mean 'circle', though; it is the abstract verbal noun form of the participle, *rotundatus*, which means 'having been rounded'; the product of which nuanced in this case; and so, the term is transliterated to anchor it and encourage discussion about its semantics.

manibus et pedibus passis vs. manus passas

The perfect passive participle, *passus*, of the Classical latin verb, *pandere*, appears but twice in Vitruvius' entire treatise on architecture; both of these are found within this very excerpt; and in both cases, the term denotes the act of holding two members as far apart as possible. For, if the expression, *manus passas*, denote, in the first case, holding one's two hands as far apart as possible, then likewise, *manibus et pedibus passis*, must denote, in the second case, holding the hands as far apart from the feet as possible, which can only yield one gesture.

cum manibus et pedibus passis...
cum agendo [*linea*] *eius* = *with the hands and feet having been spanned...*
when acting [*the line*] *of it...*

Whenever this term appears as a preposition, or a verbal prefix, such as *col-*, *con-*, or *com-*, it expresses the instrumental case, and is typically translated into English as 'with'; whereas, if this term appears as a subordinating conjunction that is introducing a conditional clause, then it is translated instead into English as 'when'. That said, it is still possible for this term to be a verbal prefix and still be translated as 'when', if it relates to a gerundive phrase, like, in this case, where it introduces a transitive gerund that is inflected in the instrumental case.

...[*fuerit*] *locatum umbilico, cum agendo* [*linea*] *circum rotundationem* = *...*[*is*] *located in the navel, when acting* [*the line*] *circum a rotundation...*

The perfect passive participle, *locatum*, often has an indirect object inflected in the locative, without a locative preposition being present, as in this case, with the locative indirect object, *umbilico*. When it is prefixed by the preposition, *cum–*, then it must additionally have an indirect object inflected in the instrumental case, which, in this case, is the gerundive, *agendo*. In turn, this participle must have both, a direct and an indirect object, which are the objects, 'line' and 'rotundation', respectively, since it is transitive, and has the locative prefix, *circum*.

non minus tangentur = *will be no less touched*

The adverb, *minus*, comes from the neuter, singular accusative of the Latin adjective, *minor*, which is the comparative form of the adjective, *parvus*, which means 'little' – it means 'less'. When this adjective is beside the Latin particle, *non*, it can only be interpreted as an adverb. This adverbial phrase serves to qualify the passive, future perfect, indicative verb, *tangentur*, in this case, which makes sense. By it, Vitruvius essentially means to describe how the tips of his middle fingers and those of his toes are located, equidistant, from his navel. This phrase, *non minus*, is tricky to translate to Modern english from Classical latin, though, as 'no less' is a phrase that serves to infer that an action was still able to occur despite its circumstances. The original sense of this adverbial phrase, though, was not circumstancial, but parametric. Notably, to retain this parametric sense, it has to be properly situated in relation to the verb.

schema = *shape*

The Classical latin noun, *schema*, is the transliteration of the Ancient hellenic noun, σχῆμα. Its English cognate 'shape' has the same meaning as this Classical latin/Ancient greek noun. Whereas, the latinate 'scheme' has a broader meaning within English than its original sense; which is why a decision was taken to translate this noun by its cognate and not its latinate.

designatio– = *designation*

The abstract noun, *designatio–*, of the perfect passive participle, *designatus*, of the verb, *de signare*, with the alternate spelling, *dissignare*, compouds the prefix, *de–*, with the root verb, *signare*; although the term could just as well be translated to Modern english as the latinate 'design', it is instead transliterated, here, to encourage further discussion on its semantics.

in = *in/by/about/at/on*

The Classical latin preposition, *in*, is the transliteration of the Ancient greek preposition, ἐν. As with the Ancient greek language, this preposition has both, a spatial and temporal sense; it is followed by the ablative case when its sense is spatial, and by the dative, when temporal. In English, the term could be translated by a number of prepositions, depending on context. To ubiquitously translate this preposition to English as 'in' would be extremely mis-leading.

manus passas = *the hands having been spanned*

Although participles are modifiers like adjectives, they are unlike them in that they express a change in the state of a noun as a result of an act. While adjectives help form noun phrases, participles can form their own participle phrase. A participle phrase will often be shortened to a noun phrase in English, but such shortening looses the resultative sense of the participle and should strictly be done anaphorically. For example, the participle phrase, *manus passas*, is first translated as a participle phrase, then later, as a null, it is translated as a noun phrase.

quem, ad modum > *ad quem modum* > *ad modum, quem* ... = *that, at the mode* > *at that mode* > *at the mode, that* ...

The singular masculine, accusative demonstrative, *quem*, of the noun, *modum*, is placed be fore the preposition, *ad*, when the phrase needs to be distinguished as a relative conjunction. The noun phrase, *ad quem modum*, was not idiomatic in Classical latin like, say, the phrase, 'to that end', or 'in that way', is in Modern english. The noun, *modus*, has two significances in Classical latin: one signifying a location in space; another a location in time. Respectively, the two significances would translate to English as 'at that end' and 'at that while'. However, the noun phrase should be translated using the latinate 'mode' if the significance is nuanced.

area = *area*

The english latinate 'area' carries the exact same definition as the Classical latin noun, *area*. Mathematicians may now have a standard unit of length according to which areas are taken (S.I. units); whereas, the Romans would have related a measure of unit of length. By default, areas have forever been defined by a squared measure of length – forever defined by a square. So to say that 'a circle is squared' is in fact the same as saying that 'a circle's area is defined'. In other words, the very use of the term, *areæ*, in this particular description, should in and of itself imply that both, a square and a shape, which is not a square, are being described.

normam [*corporis*] = *norm* [*of the body*]

The noun, *norma*, is not interpreted, here, as some sort of a tool for the righting of angles. Notably, the Ancient greek surveyors, masons, and carpenters would have called such a tool, '*gnomon*', and the Romans, '*regula*'. So I fail to see how such an interpretation makes sense. In Classical latin, the term, *norma*, would have approximated the definition that the English latinate term 'norm' still has in today's common parlance as well as in English mathematics: as in 'the norm of something'. Within this context, Vitruvius seems to use this term in much the same way the nominalised adjective 'normal' is used within Euclidean geometry today – to refer to the axis that is perpendicular to a plane, say, like a plumbline is perpendiculat to the plane of the ground during a survey. It makes more sense for Vitruvius to be referring to the axis that would be created by a plumbline if it were placed at the vertex of a man's head, while he is standing straight, which would be perpendicular to the ground-plane of the feet. Accordingly, the term is anchored as 'norm' and qualified by the genitive 'of the body'.