Anatomy Towers in Göttingen and Jena in the Eighteenth-Century: Knowledge Production between Privacy and Secrecy

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Abstract
Using the example of the anatomical towers of Göttingen and Jena, this text will examine the relationship between architecture and privacy in the production of knowledge. By tracing the relocation of the dissection rooms of Göttingen and Jena considering the local context in terms of research as well as the architectural, social and performative values embodied in the built environment, it will be shown that architectural and performative strategies of privacy were deliberately used to gain scientific credibility and claim interpretive sovereignty. The study therefore provides insight into the different regimes that constituted the making, displaying and reception of medical science in early modern Germany.

Keywords
Architecture – anatomy – Germany – 18th century

Introduction

Different locations provide different conditions for the creation, validation, and dissemination of knowledge. Physical divisions in space not only accommodate practices but also shape behavioural patterns.[1] The architectural form and location of buildings therefore play a central role in shaping a distinctive ideological and physical knowledge landscape.[2] This study examines the impact of architectural forms on legitimizing anatomy as a scholarly discipline and their influence on knowledge production, exploring the extent to which building types and architectural motifs contributed to the reputation and practice of the discipline of anatomy in early modern Germany. What role did architecturally enabled visibility and accessibility play in the acceptance and representation of anatomy? Conversely, what practical and ideological reasons may have led to withdrawal or seclusion, and how were these aspects expressed in the architectural representation? By analysing the significance and use of three buildings – two towers and an anatomical institute – in relation to various forms of privacy and secrecy, this study aims to provide insight into the different regimes that shaped the development, visibility, and reception of medical science in early modern Germany.

Anatomy is a discipline unlike any other. Dissecting corpses is dirty work full of filth and stench and ethically charged due to the religious, social, and political connotations of the human body. Gaining insights into the microcosm of the human body, therefore, has always required special legitimation and justification. The location and design of the buildings in which dissections were carried out had an impact on the reputation of the activity. Furthermore, the buildings formed the metaphorical framework through which the human body was viewed and interpreted. As the dignity of the institution, the credibility of its representatives, and the public benefit of research had to be clearly demonstrated, medical faculties attached great importance to the design of their anatomy rooms. With the institutionalization of anatomy as an academic discipline during the sixteenth century, medical faculties like those in Padua and Bologna implemented designated rooms within their university palaces. The venues known as anatomical theatres soon spread throughout Europe and became an indispensable part of university buildings.[3]

In contrast to the early Italian examples, the medical faculties in Göttingen and Jena distanced themselves in the eighteenth century from housing these rooms in the main university building. In Göttingen, the first anatomist practised in a medieval fortified

1 Herewith, I declare that I have no relevant or material financial interests related to the research described in this paper. I express my gratitude to the following colleagues and friends who generously shared documents and ideas with me: Hubertus Steinke, Antje Fehrmann, Christian Freigang, Christiane Salge, Sebastian Fitzner, Stefan Gerber, Natalie Körner, Marian Füssel, Maximilian Schuh, and Svenja Schürmann.

2 The sociologist Steven Shapin has been particularly vocal in his advocacy of considering the spatial situatedness of knowledge. Steven Shapin, "'The Mind Is Its Own Place': Science and Solitude in Seventeenth-Century England," *Science in Context* 4, no. 1 (1991): 191–218. https://doi.org/10.1017/S026988970000020X.

3 For the architectural and epistemological context of the anatomical theatres at the universities of Padua, Bologna, and Ferrara, see Christine Beese, "Imaginationsraum oder Sehmaschine? Anatomische Theater als Gegenstand kunsthistorischer Forschung," *Kunsttexte.de* 1 (2023): 1–23. https://doi.org/10.48633/ksttx.2023.1.94346.

tower near a city gate, in Jena dissections were held in a tower that formed part of the town wall. While the fortified tower in Göttingen was abandoned in 1738 and replaced by an anatomical institute, the faculty of medicine in Jena erected its tower as late as 1750 and continued using it until the nineteenth century. This development raises several questions: why were these two anatomical theatres built in a tower rather than within the university? How can we explain that the medical faculty in Göttingen moved away from using the tower, while the anatomists in Jena decidedly opted for this type of building?

In my study, I argue that this difference is due to diverging views on the importance and legitimacy of privacy and secrecy regarding the production of scientific knowledge. Following the moral philosopher Sissela Bok, I understand privacy as the "state of being protected from unwanted access by others" and secrecy as the "act of deliberately hiding something".[4] Both phenomena are intertwined and can be observed in the case studies presented here. In Göttingen, the prevailing view was that science should serve the common good and that the medical faculty should also reflect this aspiration in its architecture. In Jena scholars were committed to a more arcane conception of science and therefore chose a building design that staged their teaching as an initiation into the secrets of nature. But even though the Anatomical Institute in Göttingen was designated as a public institution due to its building type, there were areas to which access was restricted. The privacy of these locations was staged through architectural and performative strategies to enhance the professor's authority. And although the anatomy tower in Jena resembles a reliquary in its form, thereby dramatizing the hidden mystery of the human body, its prominent position on top of a rondel was chosen for general visibility.

4 Sissela Bok, Secrets: *On the Ethics of Concealment and Revelation* (Knopf Doubleday, 1989), 11. Numerous historians of knowledge have examined the role played by the categories of the private and the secret in the production of knowledge in the early modern period. Cf. for example Aleida Assmann, "Der Dichtung Schleier aus der Hand der Wahrheit. Esoterische Dichtungstheorien in der Neuzeit," in *Schleier und Schwelle. Geheimnis und Öffentlichkeit*, ed. Aleida Assmann and Jan Assmann (Wilhelm Fink Verlag, 1997), 263–80; Pamela O. Long, *Openness, Secrecy, Authorship: Technical Arts and the Culture of Knowledge from Antiquity to the Renaissance* (Johns Hopkins University Press, 2004); Koen Vermeir and Dániel Margócsy, "States of Secrecy: An Introduction," *The British Journal for the History of Science* 45, no. 2 (2012): 153–64. https://doi.org/10.1017/S0007087412000052; Koen Vermeir, "Openness versus Secrecy? Historical and Historiographical Remarks," *The British Journal for the History of Science* 45, no. 2 (2012): 169–70. https://doi.org/10.1017/S0007087412000064. Key studies are available, particularly on the history of natural philosophy and medicine: William Eamon, *Science and the Secrets of Nature: Books of Secrets in Medieval and Early Modern Culture* (Princeton University Press, 1994) and Elaine Leong and Alisha Rankin, eds., *Secrets and Knowledge in Medicine and Science*, 1500–1800 (Routledge, 2011). An analysis of the history of space and media on the subject of privacy and secrecy in the early modern period is provided among others by Gadi Algazi, "At the Study: Notes on the Production of the Scholarly Self," in *Space and Self in Early Modern European Cultures*, ed. David Warren Sabean and Malina Stefanovska (University of Toronto Press, 2012), 17–50; Elizabeth Harding, *Der Gelehrte im Haus: Ehe, Familie und Haushalt in der Standeskultur der frühneuzeitlichen Universität Helmstedt* (Harrassowitz, 2014); Christine Göttler, "Realms of Solitude in Late Medieval and Early Modern European Cultures: An Introduction," in *Solitudo: Spaces, Places, and Times of Solitude in Late Medieval and Early Modern Cultures*, ed. Karl A.E. Enenkel and Christine Göttler (Brill, 2018), 1–28; Peter Eversmann further explores the philosophical ambition to reveal the 'secrets of nature' within the anatomical theatre. Peter G.F. Eversmann, "What Did They See? Science and Religion in the Anatomical Theatres of the Sixteenth and Seventeenth Centuries," in *Quid est secretum? Visual Representation of Secrets in Early Modern Europe, 1500–1700*, ed. Ralph Dekoninck, Agnès Guiderdoni, and Walter Melion (Brill, 2020), 260–84.

To substantiate my thesis, the following text examines the form and function of anatomical theatres in their institutional, urban, and social context. In a first step, I will explain why the anatomy department of Göttingen was initially housed in a peripheral tower and how the reputation of the location changed from a place of torture to a place of study with the appointment of a new professor. In a second step we will see why the Göttingen professor insisted on the construction of an anatomical institute and how the shape of the building reflected the principles of an enlightened understanding of science. It will become clear that the construction of the anatomical institute was part of a spatial differentiation of urban and political order that went hand in hand with demands for the public benefit of science. At the same time, it will become apparent that the anatomy professor was interested in establishing spheres of privacy and secrecy for both practical and representative reasons. In a third step, I will explain why the anatomists in Jena built a separate tower for their anatomical theatre and to what extent the form of the building can be interpreted as an expression of the local understanding of science. In the case of Jena, it becomes clear that the scholars wanted to mark the rise of anatomy as the leading discipline at the university and, at the same time, improve their social standing vis-à-vis the nobility. While the first version of the tower can be interpreted as a kind of reliquary in which the human body and its exploration are elevated to the sublime, structural changes linked the building to the form of garden pavilions. In line with the new courtly ideal of 'natural' behaviour, the tower's interior space, designed for introspection, then emphasized the scientists' claim to interpretive authority.

The Göttingen tower

Johann Wilhelm Albrecht and the "tower of malediction"

When Johann Wilhelm Albrecht, the first professor of anatomy, arrived at the newly established University of Göttingen in September 1734, he found himself without a proper space for conducting dissections and teaching anatomy.[5] Initially the faculty's rooms – particularly the anatomical theatre – were intended to be housed within the repurposed building of the former Paulinerkloster (fig. 1). Located on the first floor, directly above the main entrance and illuminated by five large windows, the medical auditorium could have played a central role in elevating the status of the medical discipline, which was considered inferior to theology and jurisprudence at the time in terms of both reputation and size. However, due to the inability of previously invited professors to come to Göttingen, the medical discipline lacked a distinguished advocate, and the plans failed. One year after Albrecht's arrival, the Göttingen city council granted him the use of a fortified tower located at the eastern edge of the city.[6]

Previously employed by the musketry, the tower had undergone makeshift renovations and was furnished with benches and tables. An eighteenth-century depiction of the town shows the stone round tower, part of the Alban Gate (fig. 2). The space was described as

5 Brita Thode, "Die Göttinger Anatomie 1773–1828" PhD diss. (Universität Göttingen, 1979).
6 Thode, "Die Göttinger Anatomie," 6–11.

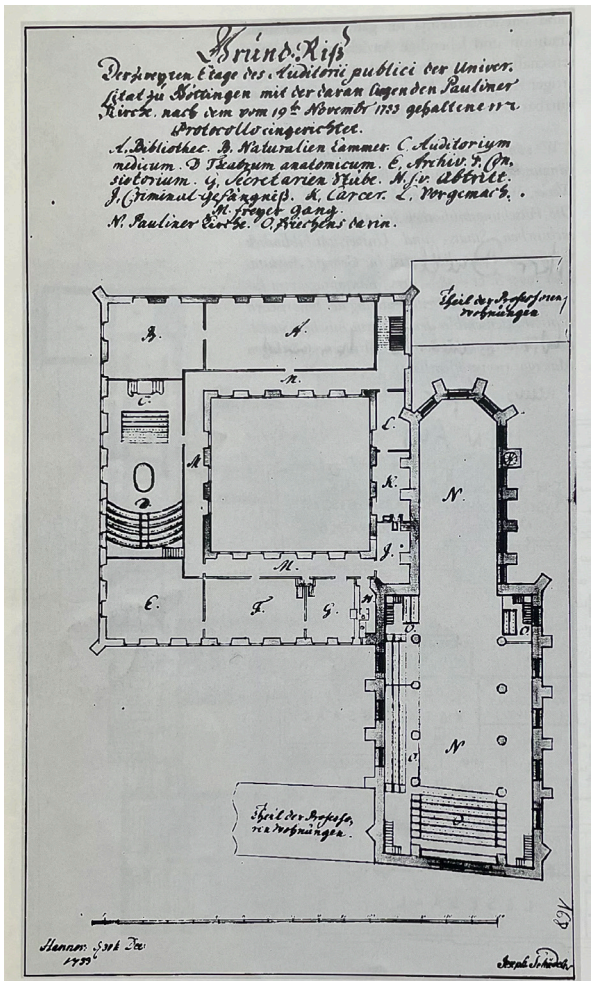

Fig. 1: Plan for the conversion of the Pauline monastery into a collegium, floor plan of the first floor, letter D: medical lecture hall with anatomical theatre, plan by architect Joseph Schädeler, Göttingen 1733.

damp, unsanitary, and difficult to work in. A correspondent noted that no one was willing to assist Albrecht in carrying water and wood, as his work was deemed dishonourable. On his way from his home to the tower, young people insulted him, expressing disapproval of his work as an anatomist and his perceived involvement in the desecration of bodies.[7] Albrecht died of tuberculosis on 7 January 1736 at the age of 32. Contemporaries speculated that his death was related to his work as an anatomist and the poor working conditions in the tower.[8] The fact that the anatomy department was housed in a fortified tower clearly did not enhance the reputation of the anatomist or his work. The tower was not part of the university building complex and therefore lacked any architectural connection to it. Although Albrecht carried out his official duties there, the building was likely not regarded as the official seat of the medical faculty.

Apart from its lack of connection to a recognized institution, the tower was also associated with dishonour, witchcraft, and torture. To supplement his meagre university salary, Albrecht had to practice as a doctor and produce his own medicines.[9] Unlike his colleagues, his status thus hovered between the spheres of scholar and craftsman. Although the lower art of surgery had now been ennobled by academic anatomy, it was still considered inferior to natural philosophy. Alchemical practices, i.e. the transformation of materials into other states, were suspected of imbuing their practitioners with magical powers,[10] which may have contributed to the suspicion surrounding Albrecht's work. The fact that witches were tortured in towers and bodies of executed individuals were usually dissected in the anatomy department,

7 Samuel Christian Hollmann, *Die Georg-Augustus-Universität zu Göttingen: In der Wiege, in ihrer blühenden Jugend und reifferem Alter* (Vandenhoek & Ruprecht, 1787), 51.
8 Thode, "Die Göttinger Anatomie," 16.
9 Thode, "Die Göttinger Anatomie," 11–21.
10 Paola Bertucci, *Artisanal Enlightenment: Science and the Mechanical Arts in Old Regime France* (Yale University Press, 2017), 1–30.

added a punitive aspect of the fortified tower.[11] In the nineteenth century, the Alban Tower was even referred to as the 'Tower of Malediction'.[12]

Fig. 2: Göttingen city wall with view of the Albaner Tor Gate (no. 10 on the left outer edge of the image), which initially housed the anatomical theatre. Copperplate engraving by Georg Daniel Heumann from „Wahre Abbildung der Stadt Göttingen" Tafel IV, 1747.

Albrecht Haller and the new perception of the tower as a study

Albrecht's successor, Albrecht Haller, immediately called for the establishment of a prestigious anatomical institute upon his arrival on 30 September 1736. This demand was supported by important figures at the university.[13] However, until this new building was opened on 17 September 1737, Haller was required to perform dissections in the tower. While the tower had been perceived as a place of shame under Albrecht, its reputation shifted under Haller. The anatomist and botanist from Basel began his service in Göttingen under far more advantageous financial and social conditions. He was appointed to the faculty's second professorship, rather than the third as Albrecht had been, and with a salary double that of his predecessor, he was not reliant on additional practical work to

11 Heinz-Jürgen Stebel, *Die Osnabrücker Hexenprozesse* (Wenner, 1998), 34; Karin Stukenbrock, *'Der Zerstückte Cörper': Zur Sozialgeschichte der anatomischen Sektionen in der Frühen Neuzeit (1650–1800)* (Franz Steiner Verlag, 2001), 235–40.

12 Emil F. Rössler, *Die Gründung der Universität Göttingen: Entwürfe, Berichte und Briefe der Zeitgenossen* (Vandenhoeck & Ruprecht, 1855), 354.

13 Christine Beese, "Bauen für die Wissenschaft. Zum Entstehungsprozess des anatomischen Theaters in Göttingen zwischen 1733 und 1737," in *Bauten – Bilder – Geschichten. Kunsthistorische Perspektiven auf Architektur,* ed. Florian Abe and Christine Beese (Gebr. Mann Verlag, 2024), 219–36.

supplement his income.[14] He set up a respectable household in Göttingen with his wife Marianne and their three small children. Sociologist of science Steven Shapin has emphasized that a researcher's social status – and that of their patrons – is fundamental to the perceived credibility of their findings.[15] Haller exemplified this principle.

Albrecht Haller's professional ambition and his enjoyment of anatomical research were somewhat at odds with his strict Calvinist faith. As Otto Sonntag explains, Haller justified his thirst for knowledge with the declaration: "God did not make the marvels of nature to be known by the beasts […] this beautiful spectacle was destined for man,"[16] which, to Haller, meant that God had bestowed curiosity upon humanity to explore creation and recognize His greatness within it. Haller saw the exploration of nature as a service to God, considering the Bible and the Book of Nature as equally important sources of knowledge. However, the tension between the righteous search for God and the worldly pursuit of pleasure and fame continued to trouble him. The death of his wife, just one month after their arrival in Göttingen, was a particularly poignant experience in this regard and Haller began keeping a religious diary, a 'register of sins', in which he confided his feelings of guilt and his resolutions for self-improvement.[17] Struck by his melancholy, Haller sought solace in the tower, where he devoted himself tirelessly to his research. He is said to have withdrawn into the solitude of the tower, particularly on Sundays, a day of worship and social gatherings. The tower provided the perfect place for Haller's mourning and his need for seclusion and solitude.[18]

The reinterpretation of the tower from a place of shameful secrets to a private retreat drew on various clusters of terms and topoi associated with architectural spaces of privacy since the Middle Ages. Firstly, the monastic ideal of eremitism played a significant role. The act of turning away from a worldly and sinful life by withdrawing physically or mentally into solitude was regarded as a way of following Christ. Towers or deserts were typical locations for hermits' renunciation of the world. In the hagiographic tradition, the so-called *turris speculationis* denotes the tower as a place of contemplation and vision.[19] Secondly, within this monastic tradition, the hermit's existence was closely linked to the production of knowledge. So-called study cells were established within the dormitories of monasteries, serving as spaces for work and sleep.[20] Thirdly, the idea of the monastic and scholarly space of the study cell was combined with the secular and political retreat that provided a distance from the demands of everyday life.

14 Beese, "Bauen für die Wissenschaft," 226.

15 Steven Shapin, "The Man of Science," in *The Cambridge History of Science*, ed. Katherine Park and Lorraine Daston (Cambridge University Press, 2006), 177–91.

16 Albrecht von Haller, "Letter of Nov. 30, 1754, to Johann Georg Zimmermann," in *Von und über Albrecht von Haller*, ed. Eduard Bodemann (Meyer, 1885), 28, quoted in Otto Sonntag, "The Motivations of the Scientist: The Self-Image of Albrecht von Haller," *Isis* 65, no. 3 (1974): 336–51.

17 Hubert Steinke, Urs Boschung, and Wolfgang Proß, eds., *Albrecht von Haller. Leben-Werk-Epoche* (Wallstein, 2008), 37.

18 Rössler, *Die Gründung der Universität, Göttingen*, 354.

19 Wolfgang Liebenwein, *Studiolo: Die Entstehung eines Raumtyps und seine Entwicklung bis um 1600* (Gebr. Mann Verlag, 1977), 37–42.

20 Christiane Wiebel, *Askese und Endlichkeitsdemut in der italienischen Renaissance. Ikonologische Studien zum Bild des heiligen Hieronymus* (Wiley-VCH, 1988), 11.

Especially the princely study-room combined the ideal of the contemplative life with the virtuous study of literature and art.[21] Often the princely study was equipped with tools such as an astrolabe and a lathe, reflecting the belief that the cultivation of manual skills contributed to both external and internal self-moulding. Woodturning, in particular, was regarded as an *imitatio Christi*, and the sons of German princes, especially, were trained in the craft of ivory turning.[22] Furthermore the princely study functioned as a symbol of intellectual authority and the superiority of his station.[23] From his window, the prince could survey his domain, enabling him to pursue a forward-looking political agenda while also enjoying the surrounding landscape. If we summarize these topoi, the tower could be read in various ways: a space for philosophical and religious inspiration and contemplation, a symbol of provident rule, God-given superiority, and duty, and, finally, a place for spiritual and manual self-formation.

As we have seen, the tower can evoke both positive and negative associations. In the case of Albrecht, who faced suspicion, struggled to gain recognition as an anatomist in Göttingen, and suffered from poor health, and whose work as a pharmacist bordered on the magical, the tower was seen as a hiding place for dubious activities. In contrast, Haller, regarded as a respected, righteous, and pious scientist, legitimized his voluntary retreat to the tower through grief, spiritual exercises, and public duty. Consequently, in the case of Haller the tower was interpreted as a kind of study. Haller's manual labour in the tower was understood as an act of devotion, a process of self-awareness and understanding of nature, intertwined with elements of self-mortification. Furthermore, Zimmermann asserts that Haller also endeavoured to fulfil his responsibilities to his clients and apprentices in the tower, which the chronicler describes as public works.[24]

Haller had mixed feelings about the tower. He adhered to the idea that science should serve the glory of the Creator and the improvement of the human condition. It should not be driven by vanity or self-interest but should contribute to the common good and be made accessible to the public. Consequently, Haller rejected the monastic ideal of isolation and called for the establishment of a public institute.[25] Nevertheless, he also valued having an uninterrupted environment where he could carry out his investigations and experiments. For this reason, he later campaigned to preserve the tower as a kind of auxiliary laboratory for the anatomical institute. However, his request to the city council was rejected.[26]

21 Arnold A. Witte, "Sociable Solitude: The Early Modern Hermitage as Proto-Museum," in *Solitudo: Spaces, Places, and Times of Solitude in Late Medieval and Early Modern Cultures*, ed. Karl A.E. Enenkel and Christine Göttler (Brill, 2018), 405–50.

22 Klaus Maurice, *Der drechselnde Souverän. Materialien zur fürstlichen Maschinenkunst* (Ineichen, 1985).

23 Müller, *Das Schloß als Bild des Fürsten*, 259–79.

24 Zimmermann, *Das Leben des Herrn von Haller*, 166.

25 "The whole purpose of man, which is obviously to do as much good and to contribute as much to the best of the world as possible, whereas […] in a solitary cell even the highest virtue remains without visible effect." "Review of a 'Saint's Life'," *Göttingischen Gelehrten Anzeigen* (1771): cclxxiii–cclxxiv, quoted in Sonntag, "The Motivations of the Scientist," 340.

26 Beese, "Bauen für die Wissenschaft," 230.

Haller's anatomical institute in Göttingen

The anatomical institute as the embodiment of public order

To keep pace with leading national and international universities and to highlight the aspirations of the new university, Albrecht Haller had already called for the creation of a suitable anatomical theatre upon his arrival in Göttingen.[27] Based on the plans of university architect Joseph Schädeler, a free-standing building was constructed starting in 1637, which would go down in history as the first anatomical institute in university architecture.[28] According to the first volume of Pütter's *Versuch einer academischen Gelehrten-Geschichte* from 1765, the two storey half-timbered building was set back slightly within

Fig. 3: Rear view of the medical garden in Göttingen. On the left is the gardener's house and anatomy building (1737), on the right is Haller's residence (1739). Copperplate engraving by Georg Daniel Heumann from „Wahre Abbildung der Stadt Göttingen" Tafel VIII, 1747.

27 Hubert Steinke, "Science, Practice and Reputation: The University of Göttingen and Its Medical Faculty in the Eighteenth Century," in *Centres of Medical Excellence? Medical Travel and Education in Europe, 1500–1789*, ed. Ole Peter Grell, Andrew Cunningham, and Jon Arrizabalaga (Routledge, 2010), 288–89; André Wakefield,. "The Fiscal Logic of Enlightened German Science," in *Making Knowledge in Early Modern Europe: Practices, Objects, and Texts, 1400–1800*, ed. Pamela H. Smith and Benjamin Schmidt (University of Chicago Press, 2008), 273–86.

28 Since none of the original plans have survived, and the building itself was demolished in 1953, conclusions about its structure and form can only be drawn from contemporary engravings, descriptions, and a floor plan from 1829. The history of the anatomical institute in Göttingen is detailed in Beese, "Bauen für die Wissenschaft," 219–36.

the botanical garden, measuring 40 feet in length and 60 feet in width.[29] The garden itself was bordered to the north by a raised embankment, which served as a public promenade, offering an unobstructed view of both the garden and the rear of the anatomical institute (fig. 3).

Since the urban space was understood as a public place, the urban buildings themselves – whether occupied by a private individual or serving public purposes – were part of the public order. Following the Aristotelian tradition, architecture was seen not only as a reflection of the virtue and social status of the builders but also as an indicator of the organization and functioning of the community. Through its appropriate design – the *decorum* – architecture was intended to move the observer and inspire virtuous living in harmony with both the natural and social order.[30] Architectural manuals sought to define standards – or even exemplary models – for the increasingly diverse range of building types.[31] In his *Architectura Civilis* from 1628, the Ulm master builder Joseph Furttenbach had developed design proposals for special building types, such as hospitals, based on the basic type of Central European residential buildings.[32] Leonhard Christoph Sturm later adopted this approach in his 1721 publication on exemplary building types, integrating it with the principle that architectural design should be appropriate to both the client and the building's intended function.[33]

In his publication, Sturm proposed the construction of a detached two-storey building with a square floor plan as an exemplary college.[34] A central staircase, which also supported an observatory tower, was flanked by four square lecture halls, one of which housed an anatomical theatre with semi-circular tiers (fig. 4). The warden's quarters were situated in the basement, while the library occupied the second floor. The façade featured Doric semi-columns on the lower floor and Ionic semi-columns on the upper floor.

29 Johann Stephan Pütter, *Johann Stephan Pütters Versuch einer academischen Gelehrten-Geschichte von der Georg-August-Universität zu Göttingen* (Vandenhoeck & Ruprecht, 1765), 233–34.

30 Brian Vickers, "Humanismus und Kunsttheorie in der Renaissance," in *Theorie der Praxis. Leon Battista Alberti als Humanist und Theoretiker der bildenden Künste*, ed. Kurt W. Forster and Hubert Locher (Akademie-Verlag, 1999), 9–74, 41. By the seventeenth century, the relationship between the built environment and social or state order had already become a topic of discussion in German political theory. In 1632, the philosopher Johann Angelius Werdenhagen identified the street as a communal public space. See Hermann Hipp, "Die öffentliche Ordnung der Deutschen Renaissance," in *Stadtgestalt und Öffentlichkeit. Die Entstehung politischer Räume in der Stadt der Vormoderne*, ed. Stephan Albrecht (Böhlau Verlag, 2010), 333–52. The architectural-theoretical and urbanistic concept of the public sphere therefore referred explicitly to a socio-political understanding and distinguished itself from a media-based understanding that soon became more common in Germany. Cf. Peter von Moos, *'Öffentlich' und 'privat' im Mittelalter: zu einem Problem historischer Begriffsbildung; vorgetragen am 22.6.1996* (Winter, 2004).

31 Ulrich Schütte, *Architekt und Ingenieur. Baumeister in Krieg und Frieden* (Herzog-August-Bibliothek, 1984), 156–65.

32 Hans-Georg Lippert, "Das Haus in Architekturtraktaten zwischen 1450 und 1950," in *Das Haus in der Geschichte Europas,* ed. Joachim Eibach, Inken Schmidt-Voges, and Roman Bonderer (De Gruyter, 2015), 701–24, 710.

33 Lippert, "Das Haus in Architekturtraktaten," 710.

34 Leonhard Christoph Sturm, *Leonhard Christoph Sturms Vollständige Anweisung, allerhand öffentliche Zucht- und Liebes-Gebäude, Als hohe und niedrige Schulen, Ritter-Academien, Waysen-Häuser, Spitäle vor Alte und Krancke, und endlich besonders also genannte Zucht-Häuser und Gefängnusse wohl anzugeben* (Wolff, 1720), Table VII.

Although the Göttingen Anatomy Institute was considerably less elaborate in design, it shared certain similarities in building typology with the exemplary college proposed by Sturm. Both were based on the form of a detached urban residential structure, incorporated the warden's apartment alongside lecture halls, and aligned the semi-circular tiers of the anatomical theatre with a window front. It is evident that the Göttingen architect Schädeler intended to construct a public building that adhered to principles of appropriateness while blending seamlessly into the urban landscape. A surviving copper-engraved view of the complex, set against the backdrop of other municipal buildings in Göttingen, shows that the new structures were seen as essential components of a proper university town, as emphasized by the caption (fig. 3).

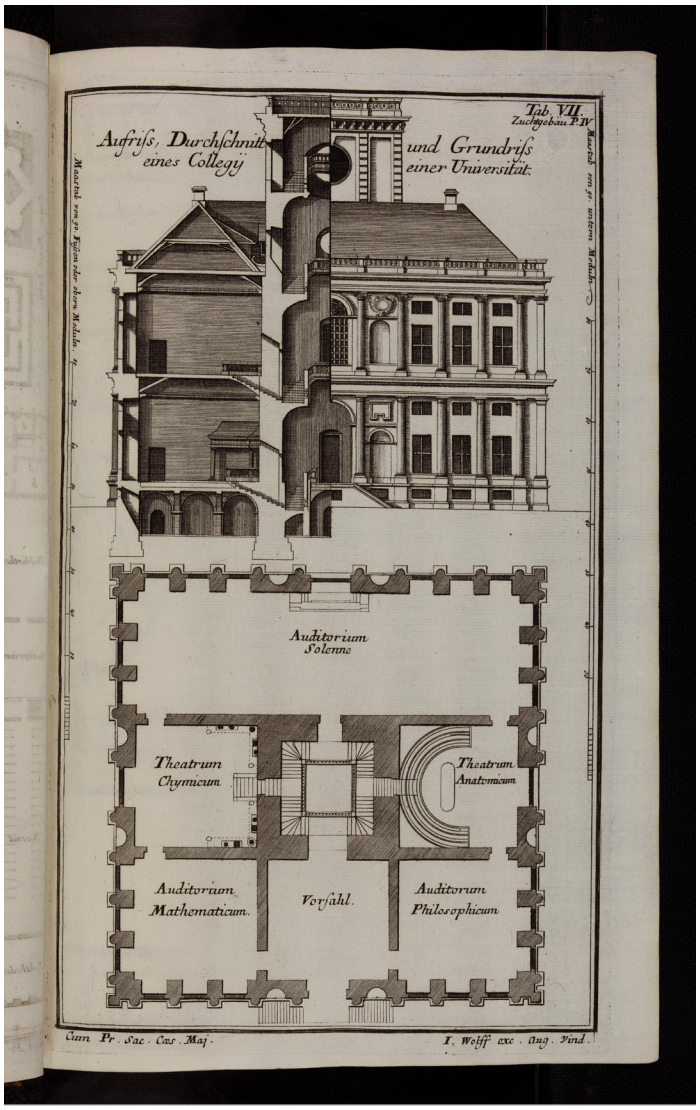

Fig. 4: Floor plan and section of an exemplary university building with anatomical theatre according to Leonhard Christoph Sturm.

By integrating the anatomical theatre into the gardener's house, in Göttingen a completely new typological context was established. Whereas universities had previously housed their anatomical theatres either in their main building (e.g. Padua) or in converted chapels (e.g. Leiden and Strasbourg), the space now emerged within a new architectural reference system. Drawing on the architectural type of the free-standing townhouse, the anatomical institute was presented as an independent public institution. The motif of a polygonal oriel at the facade referenced both town hall architecture and the architecture of patrician houses. Originally, the oriel evolved from castle architecture, where it projected from the building structure as the apse of the castle chapel.[35] During the sixteenth century, this motif was incorporated into urban architecture, particularly town halls, where courtrooms were often located in the central oriel.[36] In

35 Wolfgang Haubenreißer, "Der Erker als Architekturmotiv in der dt. Stadt. Seine Typen, Formen, Entwicklung und architektonische Bedeutung unter bes. Berücksichtigung der Erker in Leipzig" PhD diss. (Universität Tübingen, 1959), 61–67.

36 Haubenreißer, "Der Erker als Architekturmotiv," 32–33. See also Kurt Pilz and Manfred F. Fischer, "Erker/Oriel," in *Reallexikon zur Deutschen Kunstgeschichte*, vol. 5, ed. Otto Schmitt (C.H. Beck, 1967), 1248–79.

Göttingen, the oriel played a central role as a symbol of transparency. In his 'Gelehrtengeschichte', Pütter noted that the window on the façade was designed so that light could enter unobstructed from all sides and no shadows would be cast on the theatre.[37] The emphasis on good lighting during the Age of Enlightenment was certainly no coincidence. Both literally and figuratively, insight into the structure of nature was regarded as the foundation of critical thought, a rational social order, and both scientific and societal progress.

The anatomical theatre was designed to engage both its audience and the wider urban society. Thus, the public anatomy demonstrations were intended not only for the limited circle of medical students but also for a broader audience, including members of the university, the city, and society at large. Given the average number of 60 medical students, the theatre's capacity of an audience of 200 shows Haller's intention to engage a wider public. In this regard, paragraph eight of the medical faculty's bylaws, established by Haller in 1737, is particularly revealing: the professor of anatomy was required to announce dissections publicly, invite dignitaries, and sell admission tickets.[38] Furthermore, from 1750 onwards, all physicians intending to practice in the county were required by royal decree to conduct a public dissection in the anatomical theatre.[39] This practice highlights the intersection of two aspects of publicity: public dissections not only made the researchers' work visible to a broader audience but also emphasized the communal benefits of the space, particularly in its role in licensing and approving physicians. This dual claim to publicity is reflected in the large window front, which not only illuminated the room, but also provided a view of Göttingen's civic centre, linking the dissector's performance to broader public matters.

The anatomical institute in terms of privacy and secrecy

At first glance, the institute of anatomy seemingly met the requirements of being a public institution. As a freestanding building with a prominent portal featuring Doric columns, it adhered to the architectural *decorum* expected of public institutions (fig. 5). The interior of the theatre, with its staggered tiers and large window, offered a clear view of both the dissection and the city (fig. 6). However, on closer inspection, ambivalences emerge. The motif of the oriel references not only the authority of town halls and the status of the patricians but also retains its ecclesiastical aspect. Both the design of the apse and the logic of the pulpit – protruding into the public and functioning as a place of proclamation – remain linked to the oriel.[40] Thus, the oriel in the newly built anatomical institute can be interpreted as a symbol of publicity on the exterior, while on the interior, it functions as a motif of distancing and separation. Like a priest in the apse, the anatomy professor

37 As Pütter describes the room: "To illuminate this hall, the windows are curved out in the manner of a free lantern and arranged in such a way that the light falls freely and unhindered from all sides, and especially from above, without casting any shadows on the theatre and illuminating it sufficiently." Pütter, *Johann Stephan Pütters Versuch einer academischen Gelehrten-Geschichte*, 233–34.

38 Thode, "Die Göttinger Anatomie," 34.

39 Hans-Heinrich Himme, *Stich-haltige Beiträge zur Geschichte der Georgia Augusta in Göttingen. 220 Stiche aus den ersten 150 Jahren der Göttinger Universität* (Vandenhoeck & Ruprecht, 1987), 109.

40 Haubenreißer, "Der Erker als Architekturmotiv," 57–59.

Fig. 5: Albrecht Haller's anatomy building, with central glass front, designed by Joseph Schädeler and Johann Paul Heumann, Göttingen 1737. Copperplate engraving by D.L. Wallis ca. 1800.

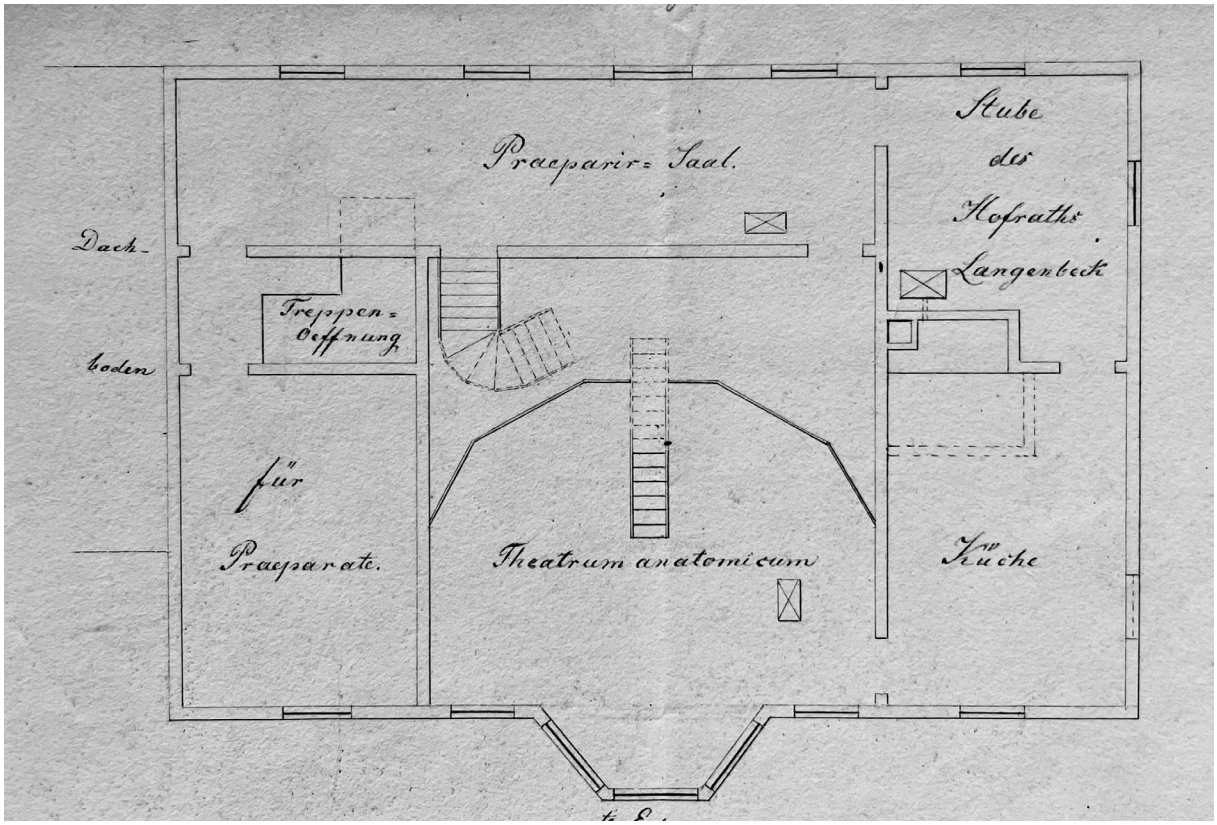

Fig. 6: Floor plan of Haller's anatomy theatre on the first floor of the garden house, designed by Joseph Schädeler and Johann Paul Heumann, Göttingen 1737. Drawing by W. Heider, condition in 1829.

stood in the backlight and performed the ritual of the initiated. This distancing primarily served to establish scientific authority. Although the anatomist presented himself to the audience, he remained within a distinct, more enlightened sphere.

This deliberate use of spatial strategies, balancing visibility and concealment, also reflects the institute's decision to selectively reveal backstage processes to the public. Students and other interested attendees could purchase tickets for public dissections held in the afternoon at a cost of one Reichstaler, while participation in a morning preparation session cost two Reichstaler.[41] Selling admission tickets to a broader audience had become standard practice since the establishment of anatomical theatres, and even for private lectures in the professor's house, students were required to pay fees to cover the anatomist's expenses.[42] However, it was relatively unusual to allow observers during the preparation stage for an additional charge. The ostensibly private nature of experimentation and preparation is illustrated by the frontispiece of Haller's first volume on the sensitivity of animals (fig. 7). The picture shows a group of scientists conducting anatomical experiments in a quiet and secluded location. The situation is reminiscent of the privacy of a princely study, in which selected visitors devote themselves to the intellectual study of nature. Just like the paying visitor to a preparatory dissection, the viewer of the image is granted the paradoxical privilege of witnessing an exclusive event that is actually hidden from outsiders.

Fig. 7: Anatomists dissecting animals, presumably at the anatomical institute of the University of Göttingen.

Haller meticulously controlled the presentation of his knowledge to satisfy competing demands: exposing his methods to validate knowledge by anchoring his findings in both academic and public spheres, fostering a sense of exclusive community among students and dignitaries, and asserting authority to elevate anatomy as an honourable scholarly discipline. As described by the historians of science Elaine Long and Alisha Ranking, the opportunity to gain insight into the anatomists' insider knowledge by looking behind the scenes created a "shared community of privileged knowledge".[43] Although considered necessary for adver-

41 Thode, "Die Göttinger Anatomie," 34.
42 This was also the case in Bologna; see Giovanna Ferrari, "Public Anatomy Lessons and the Carnival: The Anatomy Theatre of Bologna," *Past & Present* 117, no. 1 (1987): 50–106.
43 Leong and Rankin, *Secrets and Knowledge*, 9.

tisement or social and moral justification, openness in the form of public presentation and involvement in the process of knowledge production had its limits. As before, the knowledge possessed by academics had to be marked as special and therefore, in a certain sense, secret, accessible only to genuine scientists. On the other hand, research results had to be kept unknown until they could be presented to the public as a discovery. In fact, Haller was known to prefer publishing an unfinished work rather than risk someone else pre-empting his innovations.[44] His demand to keep the tower even after the construction of the anatomical institute can be attributed to this desire for privacy.

The anatomical tower in Jena

The Hambergers and their anatomical theatre: a question of status and reputation

While the anatomical theatre in Göttingen was relocated to a decidedly public building, the medical faculty in Jena decided in 1749 to move its anatomical theatre out of the university building. The new anatomical theatre of Jena had an exceptional layout: it was built atop a rondel forming part of the ancient city wall, which enclosed both the botanical garden and two sides of the Collegium Jenense (fig. 8 and 9). While the tower-like lower section retained its fortified character, the theatre itself adopted an elegant, pavilion-like, octagonal form, with tall windows on every side and a cylindrical roof. A few years later, a small gallery was added, encircling the pavilion and further enhancing its

Fig. 8: View of the anatomical theatre in Jena after its renovation by Justus Christian Loder. Coloured outline drawing by E. F . U. Schenk, Jena 1792.

44 Sonntag, "The Motivations of the Scientist," 349.

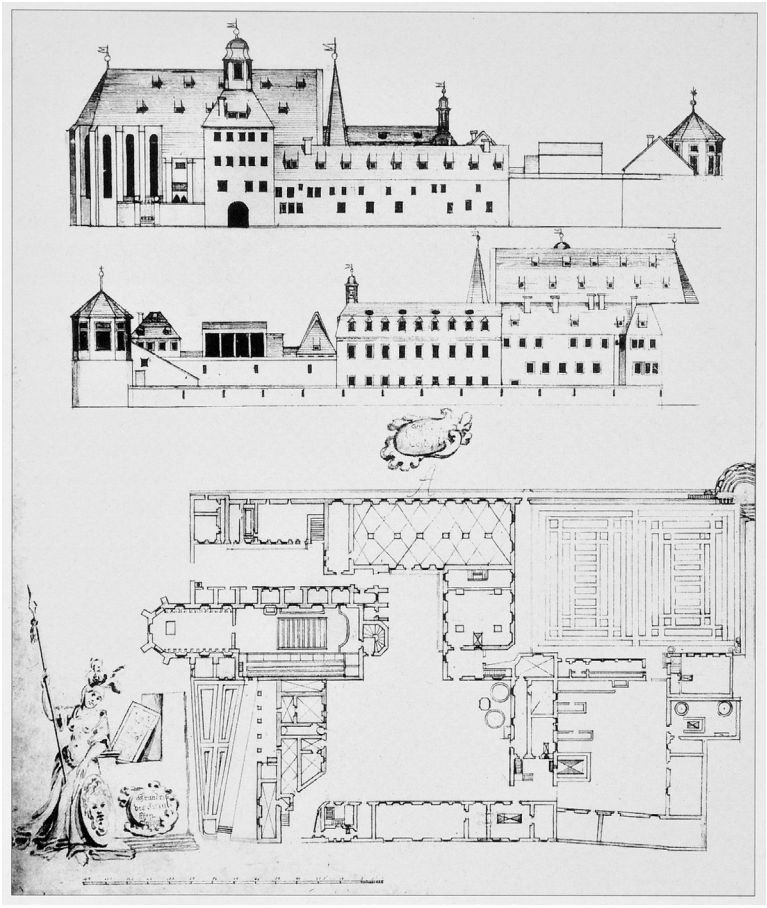

Fig. 9: Floor plan of the Collegium Jenense drawn around 1770 by architect Johann Wilhelm Haase.

refined yet authoritative appearance. Inside, several octagonal tiers provided seating for 50 to 60 spectators, creating an intimate arrangement centred around the dissection table. Although well connected to the medical faculty via a roofed staircase, the anatomical theatre functioned as an autonomous structure, bathed in sunlight and fresh air, and was easily recognizable to passers-by, while the lower section of the tower allowed corpses to be kept cool. In 1783, two annexes, each two storeys high, were added. These housed rooms for the prosector as well as spaces where students conducted dissections. Additionally, a pumping station was installed to supply the theatre with fresh water.[45]

As the new anatomical theatre was erected as a freestanding building, it differed significantly from earlier facilities in Jena. When the Collegium Jenense had become a state university in 1558, the court architect Nikolaus Gromann had transformed the former Dominican cloister into a university building, incorporating student rooms, a library, and several auditoria.[46] Initiated by elector Christian II, the first anatomy auditorium was established within the central Collegium Jenense, above the library. In 1655, another anatomical theatre was added as an extension of the lecture hall.[47] The anatomy lesson conducted in this theatre were of an exclusively academic nature and did not address a broader audience.[48]

45 Johann Ernst Basilius Wiedeburg, *Beschreibung der Stadt Jena nach Ihrer topographisch- politisch- und akademischen Verfassung; Nebst vier Kupfer-Tafeln den Grund- und Auf-Riß nebst einer Karte über den nähern Distrikt, und einige denkwürdige Inschriften und Siegel darstellend* (n.p., 1785), 238.

46 Volker Wahl, "Das Collegium Jenense - Die Gründungsstätte Der Universität Jena in den ersten Jahrzehnten ihres Bestehens," *Wissenschaftliche Zeitschrift der Friedrich-Schiller-Universität Jena* (1985): 635–66.

47 See Rosemarie Fröber, *Museum Anatomicum Jenense. Die anatomische Sammlung in Jena und die Rolle Goethes bei ihrer Entstehung* (Jenzig, 2003), 7–19 and Franz-Joachim Verspohl, ed., *Jenaer Universitätsbauten. Festschrift des Thüringischen Landesamtes für Denkmalpflege zum Tag des offenen Denkmals am 10. September 1995* (Rhino Verlag, 1995), 12–15 and 24–31.

48 See a student's sketch from 1735 in Helmut G. Walther, *Universitäres Leben Im Collegium Jenense: 1548 bis heute* (Garamond, 2008), fig. 35.

With the new building constructed in 1749, Georg Erhard Hamberger, his son Adolph Friedrich Hamberger, and Carl Friedrich Kaltschmidt – the three medical professors under whose leadership the new anatomical theatre was established – presumably pursued three distinct objectives: Their primary aim was to restore the prominence of the Jena medical dynasty and keep pace with other universities. The University of Jena operated as a typical 'family university', where professorial positions were passed from father to son.[49]

In contrast to his father, Adolph Friedrich chose to base his work as a physiologist on practical anatomy, travelling to the medical centres of Strasbourg, Paris, and Leiden. After his return in 1748, he became Jena's first prosector and, in 1749, professor of anatomy. However, just a year later, shortly after the new anatomical theatre was completed, he died suddenly of a fever.[50] Adolph Friedrich was integral to the planning of the new anatomical theatre in Jena due to his intimate knowledge of the building type: during his studies abroad, he had encountered anatomical theatres housed in former chapels[51] or designed as temple-like circular structures.[52] These buildings were the pride of their institutions[53] and served as architectural statements that symbolized the prestige of empirical and practical research. Adolph Friedrich's mentor, Kaltschmidt, whose financial support enabled the theatre's construction, strongly advocated this approach.[54] Jena's new anatomical theatre thus served a dual purpose: to enhance the university's international standing and to emulate Haller's model of public engagement in Göttingen.

In 1748, the year Hamberger Junior returned from Paris, Haller commissioned – or perhaps even authored – a journal report referencing his decade-long dispute with Hamberger Senior. The report accused Hamberger of relying on ancient Galenic arguments supported by geometric demonstration, while Haller was praised for basing his conclusions on anatomical dissections conducted in his own institute. Furthermore, it asserted that Haller's work held equal standing with that of contemporary anatomists, including Boerhaave (Leiden) and Winslow (Paris), as his key experiments had been conducted

49 On the term 'Familienuniversität' introduced by Peter Moraw, see Peter Moraw, "Aspekte und Dimensionen älterer deutscher Universitätsgeschichte," in *Academia Gissensis. Beiträge zur älteren Gießener Universitätsgeschichte*, ed. Peter Moraw and Volker Press (Elwert, 1982), 1–43; Matthias Asche, "Über den Nutzen von Landesuniversitäten in der Frühen Neuzeit – Leistung und Grenzen der protestantischen 'Familienuniversität'," in *Universität Würzburg und Wissenschaft in der Neuzeit*, ed. Peter Herde and Anton Schindling (Schöningh, 1998), 133–49.

50 Wiedeburg, *Beschreibung der Stadt Jena*, 25.

51 In Leiden, the anatomical theatre had been located in the apse of the former Beguinage church since 1596. See Tim Huisman, "The Finger of God: Anatomical Practice in 17th Century Leiden" PhD diss. (Leiden University, 2008) and Rina Knoeff, "Herman Boerhaave at Leiden: Communis Europae praeceptor," in *Centres of Medical Excellence? Medical Travel and Education in Europe, 1500–1789*, ed. Ole Peter Grell (Routledge, 2010), 269–87. In Strasbourg, the anatomical theatre was located in the Chapelle Saint-Erhard, which belonged to the city hospital. See Marc Klein, "La Faculté de Médecine de Strasbourg au temps de Goethe," in *Revue d'Allemagne et des pays de langue allemande* 3, no. 1 (1971): 98–122.

52 In 1742, the medical faculty of Paris replaced its old anatomical theatre with the so-called Winslow Theatre, a circular building. Christian Hottin, "Un lieu d'enseignement: l'amphithéâtre, espace du cours magistral," in *Universités et grandes écoles à Paris: les palais de la science*, ed. Christian Hottin and Géraldine Rideau (Action Artistique de la Ville de Paris, 1999), 45–52.

53 Christine Beese, "Gloire et mémoire – die Architekturmünzen der Pariser Mediziner als Hoffnungsdinge," *Hoffnung handeln – L'espérance en action*, September 15, 2023, https://doi.org/10.58079/posi.

54 Fröber, *Museum Anatomicum Jenense*, 10.

just as successfully before numerous witnesses.[55] The controversy attracted considerable attention, not least because it was regarded as a rivalry between the established Jena and the newer Göttingen University.[56]

At the beginning of his tenure in Göttingen, Haller had founded the review journal *Göttingische Gelehrte Anzeigen*. In 1749, Hamberger Junior followed suit by editing the *Jenaische Gelehrte Anzeigen*, thus giving the University in Jena its own public organ.[57] To expedite scientific progress within the context of international competition, Haller advocated for the public recognition of scientific achievements and their proponents. In the planning of the *Göttinger Sozietät der Wissenschaften* (society of sciences), he emphasized the necessity of maintaining strong ties with the state and securing the sovereign's patronage. The society's prestige, he argued, could also be solidified by including prominent aristocrats as honorary members.[58] In 1749, Haller himself was knighted – precisely at the moment when Hamberger Junior was appointed professor at Jena. It is highly likely that the Hambergers sought to restore both the faculty's and their family's reputation by offering a distinctly Jena-specific response to Haller's methods of public engagement in Göttingen.

Establishing a new leading discipline: anatomy and the secrets of nature

The second goal of the Jena scholars was to establish anatomy as a leading discipline in comparison to mathematics. As early as 1656, Erhard Weigel, a professor of mathematics and astronomy, had an observatory constructed above the entrance gate of the university. This tower was later crowned with a baroque dome by Adolph Friedrich's grandfather, Georg Albrecht Hamberger. An engraving of Caspar Junghanß from 1710 illustrates how the cupola of the observatory dominated the entire Collegium complex, both literally and symbolically (fig. 10).[59] Astronomy, it seems, sought to establish itself as the preeminent discipline: The astronomical tower merged the symbolism of a philosopher's study with that of a princely domain, positioning the scientist as a privileged interpreter of God's order and will. By rivalling the authority and status of a prince, scholars asserted their influence not only in theoretical matters but also in practical affairs. The 'nobility' of a scholar's character and practice was crucial, influencing not only their social standing but also ensuring the credibility of their work.[60] The anatomical tower may have served as a direct counterpart to the observatory tower built by Hamberger's ancestor which still stood at the time.

55 Andrew Cunningham, *The Anatomist Anatomis'd: An Experimental Discipline in Enlightenment Europe* (Routledge, 2016), 160–62.

56 Hubert Steinke, *Irritating Experiments: Haller's Concept and the European Controversy on Irritability and Sensibility*, 1750–90 (Brill, 2005), 131–65.

57 For the importance of legibility as a means of creating publicity, see William Clark, *Academic Charisma and the Origins of the Research University* (University of Chicago Press, 2005), 33–67. Regarding the relationship between Göttingen und Jena see Walter Brednow, *Jena und Göttingen: Medizinische Beziehungen im 18. und 19. Jahrhundert* (Fischer, 1949).

58 Johannes Joachim, *Die Anfänge der Königlichen Sozietät der Wissenschaften zu Göttingen* (Weidmann, 1936), 39 and 53–56.

59 Wahl, "Das Collegium Jenense," 636.

60 Concerning the status of scholars in early modern Germany, see Marian Füssel, *Gelehrtenkultur als symbolische Praxis: Rang, Ritual und Konflikt an der Universität der Frühen Neuzeit* (WBG, 2006).

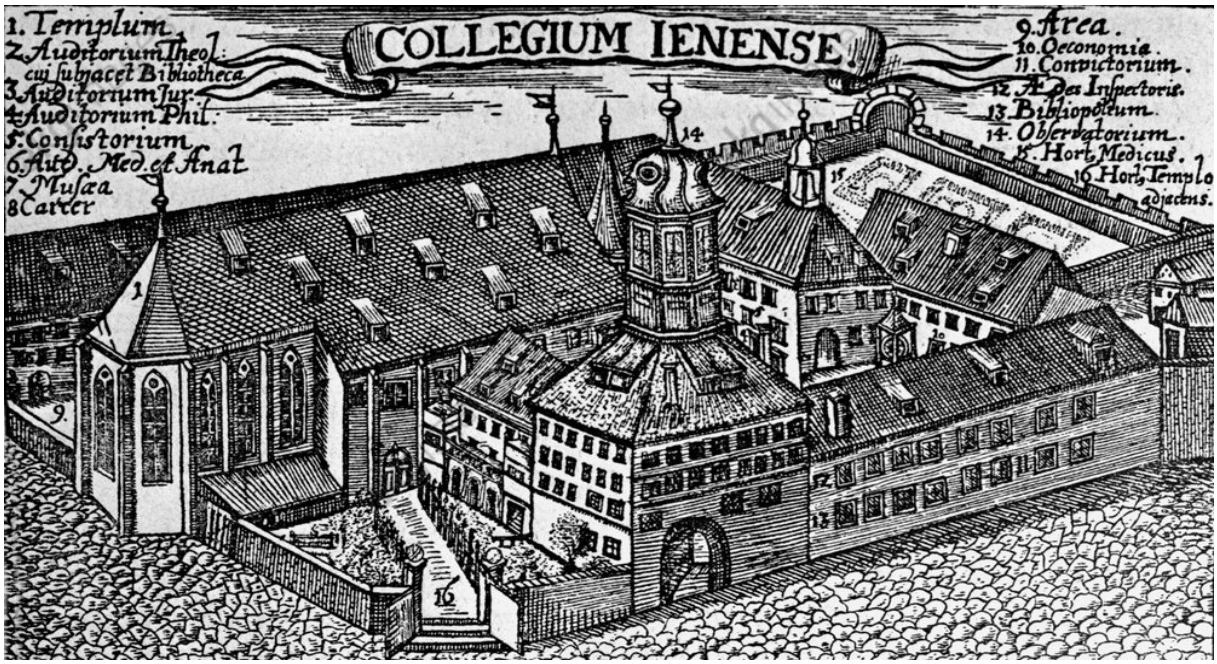

Fig. 10: Depiction of the observatory tower built by Georg Albrecht Hamberger on the gatehouse of Jena University, copperplate engraving by Caspar Junghanß, Jena 1710, from the autograph book of Karl Wilhelm Woelcker, p. 2.

This parallel reinforced the idea that scholars gained knowledge and authority not only from gazing into the stars but also from examining the human body, both pursuits offering wisdom essential to life and governance. The physicians created a meaningful setting for this claim. The octagonal building, with its high rectangular windows, could be interpreted as two apses joined together, evoking the appearance of a circular temple. In this way, the anatomical theatre in Jena seems to merge the architectural features of the anatomical theatres in Strasbourg, Leiden, and Paris into a new typology. Due to its prominent and elevated position on the city wall, the building is visible from afar. However, more so than the oriel in Göttingen, it deliberately navigates the balance between openness and concealment. Analogous to sacrament houses – often tower-like structures conceived as miniature replicas of relic chapels – the tower designed by Kaltschmidt embodies both accessibility and separateness.[61]

Conceptually, the artistic strategies of revealing and concealing in Jena mirror the use of reliquaries, whose design is fundamentally based on staging processes of revelation and concealment. Embodied by the relic within, reliquaries contain the sacramentum – the invisible holy. Holiness is not only demonstrated through presentation but is also amplified by concealment. This phenomenon is particularly evident in the Sainte-Chapelle in Paris, which is conceived as an architectural reliquary for the relics of Christ's Passion. Only on special feast days dedicated to these relics would a select group of privileged individuals – usually the king – ascend to the elevated reliquary stage. In the ethereal glow of incoming light, the king would first open the shrine and contemplate the relics in solitude, before turning the open shrine towards the spectators. A series of spatial boundaries gradually heightened the sacredness and reverence of the Passion relics. The

61 Achim Timmermann, *Real Presence: Sacrament Houses and the Body of Christ, c. 1270–1600* (Brepols, 2010), xv.

power of the relics was amplified by the reliquary, and in turn, the reliquary was exalted by the architecture of the chapel itself.[62]

Analogous to the logic of revealing and concealing relics, the anatomical theatre in Jena must have appeared to contemporaries as a space where the mystery of the human body was revealed through the authority of the anatomist. The anatomist's expertise allowed for the interpretation of bodily structures and signs in relation to the invisible. Just as the virtue of inconspicuous relics became undeniable through their heightened staging, the dead body on the dissecting table was similarly elevated as an indisputable source of knowledge. Much like the relics of the Passion – whose very use affirmed Christ's role as humanity's redeemer – the anatomical instruments on display signified how the hidden laws of God could be discerned within the human body, offering insights that might prolong life.[63] As the chronicler Wiedeburg reported in 1751, human dissections were exceedingly rare in the early years of the Jena anatomical theatre.[64] This, too, mirrors the treatment of relics in the Sainte-Chapelle, where they were presented to the public only on specially designated feast days by the king himself. In this sense, the anatomical theatre functioned as a symbolic structure – a tangible assertion of the authority of the human body as a source of knowledge and the medical faculty's role as the custodian of legitimate knowledge production.

Investigating private nature. The anatomical tower as a space of self-knowledge and introspection

In contrast to Göttingen, where the anatomical theatre could accommodate up to 200 people, the tower in Jena had only 50-60 seats. This confined space fostered an intimate, inward-looking atmosphere that encouraged contemplation and self-reflection. As early as the anatomical theatre of Leiden, built in 1595, public anatomy had been associated with the pursuit of self-knowledge. Awareness of one's own mortality, and preparation for death and the Last Judgment, were integral aspects of the performances in early modern anatomical theatres.[65] However, while public anatomies in Leiden in the seventeenth century were primarily intended as a deterrent – discouraging spectators from leading sinful lives that could endanger the community – by the eighteenth century, these events had shifted their focus toward the individual cultivation of refined sensory per-

62 Christian Freigang, "Capella sacrosancta. Die Pariser Sainte-Chapelle als sakraler Raum und gebautes Reliquiar," in *Palatium Sacrum: Sakralität am Hof des Mittelalters; Orte, Dinge, Rituale*, ed. Manfred Luchterhandt and Hedwig Röckelein (Schnell & Steiner, 2021), 323–52.

63 An inscription on the portal of the anatomical theatre of the surgeons of Paris read: "Ad cades hominum prisca Amphitheatra patebant, Ut discant longum vivere nostra patent." Loosely translated, this means: "In the ancient amphitheatres, people learned how to die; here, ways of prolonging life are shown." This topos was also adopted by other anatomical theatres. Jens-Oliver Kempf, *Die Königliche Tierarzneischule in Berlin von Carl Gotthard Langhans* (Reimer, 2008), 121.

64 Basilius Christian Bernhard Wiedeburg, *Ausführliche Nachricht von dem gegenwärtigen Zustande der Jenaischen Akademie* (Melchior, 1751), 55.

65 Eversmann, "What Did They See?", 260–84. For more general information on self-awareness and anatomy, see Robert Jütte, "Die Entdeckung des 'inneren' Menschen 1500–1800," in *Erfindung des Menschen. Schöpfungsträume und Körperbilder 1500–2000*, ed. Richard van Dülmen (Böhlau Verlag, 1998), 240–58; Robert Dimit, "Divine Grace, the Humoral Body, and the 'Inner Self' in Seventeenth-Century France and England," in *Space and Self in Early Modern European Cultures*, ed. David Warren Sabean and Malina Stefanovska (University of Toronto Press, 2012), 153–64.

ception. As Marieke Hendriksen has shown, both medical and philosophical concept of *aesthesis* – the sensibility to beauty and perfection in materiality – played a significant role in the anatomical collections of eighteenth-century Leiden.[66] Albrecht Haller and Justus Christian Loder also praised the perfection of individual organs, considering them beautiful, and believed that this beauty could be appreciated not only by scholars but also by philosophers, royalty, and 'even' women.[67]

The concept of sensitivity ("Empfindsamkeit"), as a further development of metaphysical rationality, was integral to Enlightenment ideals and had a profound influence on physiologists, moral philosophers, artists, and writers.[68] So-called naturalness and authenticity were to guide moral behaviour, and physiological knowledge became a relevant topic in both aristocratic and bourgeoise education. In August 1780, the *Hessen-Darmstädtische priviligirte Land-Zeitung* proudly reported that Justus Christian Loder – trained in Göttingen and since 1778 professor of anatomy at the University of Jena – had been summoned to Weimar to conduct a dissection of the brain in the presence of Duke Carl August, his wife Luise, Wolfgang von Goethe, Johann Gottfried Herder, Johann Friedrich Hufeland, the Duke's personal physician, and other gentlemen of the court. Anna Amalia, the former Duchess of Weimar and a patron of the university, had even travelled to Jena to attend a dissection at the anatomical theatre.[69] While her predecessor, Duke Ernst August I, had openly expressed his opposition to academic knowledge and scholars' claims to worldly authority, Anna Amalia actively supported Loder's expansion of the anatomical theatre, even providing financial assistance.[70]

The primary reason Loder's predecessor, Kaltschmidt, rarely performed dissections in the anatomy theatre was the population's resistance to donating corpses for dissection. The faculty constantly struggled with a lack of human cadavers, and students were hesitant to engage with the ones available. The presence of aristocratic guests was therefore also welcomed, as it helped to reduce the public's prejudice against anatomy. As one journalist stated: "Although the meanest and poorest people do not yet want to have their illegitimate children anatomized, it is already enough honour of reason that Professor Loder is not only allowed to drag his cadavers unsealed from the cart, but that even princes and

66 Marieke Hendriksen, *Elegant Anatomy: The Eighteenth-Century Leiden Anatomical Collections* (Brill, 2014), 10–34.

67 On Haller, see Stukenbrock, 'Der Zerstückte Cörper', 252–53. On Loder, see: Ulrike Enke, "Soemmerrings erste Professur am Collegium Carolinum zu Kassel," in *Samuel Thomas Soemmerring in Kassel (1779–1784)*, ed. Manfred Wenzel (Fischer, 1994), 75–141. This quotation can be found on p. 80.

68 Based on systematic anatomical experiments, Albrecht Haller demonstrated the essential physiological nature of sensory perception, which he published as the concept of irritability and sensibility in 1753. See Steinke, *Irritating Experiments* and Nikolaus Wegmann, *Diskurse der Empfindsamkeit: Zur Geschichte eines Gefühls in der Literatur des 18. Jahrhunderts* (Metzler, 1988), 37–39. Concerning the close connection between physiological and emotional (moral) sensitivity, see Catherine J. Minter, "Literary 'Empfindsamkeit' and Nervous Sensibility in Eighteenth-Century Germany," *The Modern Language Review* 96, no. 4 (2001): 1016–28. https://doi.org/10.2307/3735867. On the paradox of staging authenticity, see Felix Vogel, *Empfindsamkeitsarchitektur. Der Hameau de la Reine in Versailles* (Diaphanes, 2023).

69 *Hessen-Darmstädtische privilegirte Land-Zeitung*, August 10, 1780.

70 Joachim Bauer, "Die Universität Jena zwischen Tradition und Reform," in *Die Universität Jena. Tradition und Innovation um 1800*, ed. Gerhard Müller, Klaus Ries, and Paul Ziche (Franz Steiner Verlag, 2001), 53; Miriam von Gehren, *Die Herzogin Anna Amalia Bibliothek in Weimar. Zur Baugeschichte im Zeitalter der Aufklärung* (Vandenhoeck & Ruprecht, 2013), 62.

princesses consider it decent and important enough to learn the machine of the human body".[71] Between 1783 and 1785, Loder is said to have dissected around 80 cadavers in the anatomical theatre. Evidence of the tower's functionality includes a pumping station commissioned by him, a trapdoor for hoisting the corpse, and a surrounding balcony for bleaching bones.[72] The anatomical tower in Jena thus merged the practical demands of anatomy with a prestigious architectural form. Visible from afar, the tower publicly underscored the authority of physicians and the epistemic and social relevance of their research. At the same time, its elevated position and self-contained structure conveyed a sense of distance, emphasizing the exclusivity and dignity of anatomical knowledge-making.

Under the Hamberger dynasty, the Weimar court had already served as a point of reference for the professors in Jena. The third reason for establishing a new anatomical theatre in Jena, therefore, was likely to emphasize the status of scholars above that of the nobility. Against this backdrop, it is not surprising that the raised octagonal shape of the anatomical theatre also references the tower room of Weimar's Belvedere Palace (fig. 11).

Fig. 11: View of Belvedere Palace in Weimar with octagonal roof structure, built between 1724 and 1748 by the architect Gottfried Heinrich Krohne. Photograph by Paul Wolff, circa 1920.

The construction of the hunting lodge began in 1724 under Duke Ernst August I, based on plans by master builders Adolph Richter and Gottfried Heinrich Krohne, and it was extended in the 1740s as a summer residence – concurrently with the construction of the anatomical theatre in Jena.[73] However, Anna Amalia left this residence and relocated to the New Palace near Ettersdorf after transferring the reins of government to Carl August. The garden at Ettersdorf, laid out from 1776, demonstrated a thoughtful engagement with nature. In 1777, the Duchess commissioned the construction of a two-storey garden house at the so-called corner of Hottelstedt, complete with a surrounding wooden gal-

71 *Hessen-Darmstädtische privilegirte Land-Zeitung*, August 22, 1780.
72 Fröber, *Museum Anatomicum Jenense*, 12–13.
73 Susanne Müller-Wolff, *Ein Landschaftsgarten im Ilmtal: Die Geschichte des herzoglichen Parks in Weimar* (Böhlau, 2007), 19–24.

lery offering panoramic views. A similar gallery characterizes the extensions made by Loder to the anatomical theatre in Jena in 1785. During the winter months, Anna Amalia resided in Weimar at the *Wittumspalais*, located near the city wall. In 1775, she had the old, fortified tower fitted with a pointed conical roof and transformed into a garden salon.[74] Surviving illustrations of this space reveal striking formal similarities to the anatomical theatre in Jena (fig. 12).[75]

Fig. 12: View of the Chinese pavilion in the garden of the Wittumspalast Weimar, watercolour probably painted by Duchess Anna Amalia around 1785.

Anna Amalia's pleasure house ("Lusthäuschen") in Ettersdorf and her garden salon in Weimar, both of which signalled a shift toward intimacy, can be seen as social and architectural models for Loder's anatomical tower in Jena. The elegant shape of the anatomical tower, its elevated position, and its ostentatious connection to landscape through a wooden gallery created an environment in which the beauty and perfection of the natural matter on display were both evoked and suggested to the spectator. The intimate design of the interior encouraged a personal, sensory experience, fostering a sense of privileged belonging. In an era defined by the rise of sensitivity, the sensual and emotional engagement with the authentic body aimed to guide each individual – regardless of gender and social status – toward undisguised, supposedly natural behaviour. The anatomist asserted authority over the interpretation of what was considered natural. The focus shifted from rehearsed gestures to the direct and individual expression of sensitive inwardness, now made visible in the body. While it was impossible to entirely escape the paradigm of showiness, explicit display was now veiled under the guise of authenticity and immediacy. In line with the growing demand for authenticity, Loder's anatomical theatre in Jena no longer conformed to the traditional building types of anatomical theatres. Instead, much like a garden pavilion, it created a space where the private self could trace its natural, inner essence.

74 Müller-Wolff, *Ein Landschaftsgarten im Ilmtal*, 25 and Taf. III Abb. 4.

75 Gert-Dieter Ulferts et al., *Schloß Belvedere: Schloß, Park und Sammlung* (Deutscher Kunstverlag, 1998), 32.

Conclusion

More than 40 years ago, the sociologist of science Steven Shapin emphasized the situated nature of science. He highlighted the structural, social, and cultural conditions that shape scientific practice and imbue it with meaning. According to Shapin, science is generated and evaluated according to the requirements of specific contexts, meaning that interpretations are constructed by differently situated communities, each adapting their understanding to local purposes.[76] The buildings presented here serve to illustrate this very point. Although Göttingen and Jena are just 200 kilometres apart, and the time frame under consideration spans only 50 years, the contexts in which knowledge was produced and interpreted differed significantly. These differences were influenced not only by the social circumstances in which the actors operated but also by the physical landscape in which knowledge production took place, where human nature and the legitimacy of anatomy were debated. Central to this negotiation was the role that privacy and secrecy played for the actors involved. In my conclusion, I will outline how the protagonists' different attitudes towards these categories influenced the form of the buildings and their staging.

In the 1730s, the small town of Göttingen was set to be transformed from an economically weak provincial settlement into the new educational centre of the Electorate of Hanover. The university's legitimacy rested on its role in training theologians, lawyers, and physicians, all essential to the state. As key elements of this public institution, the academic buildings were designed to shape and organize the space of the city, symbolizing the order of the community. The fact that the university's first anatomical theatre was located in a tower on the outskirts of Göttingen highlighted the marginal status of anatomy at the time. Fortress towers, often repurposed as prisons, were places where delinquents were incarcerated and, as was the case in the anatomical theatre, sometimes dissected. Coupled with the early death of the first appointed anatomist, these circumstances did little to enhance the discipline's reputation. Although the tower had not been chosen specifically for reasons of concealment, it nonetheless carried the aura of being a dubious place where unsettling secrets were kept. The perception of the tower changed, however, when Albrecht von Haller – a highly regarded scientist and devout Calvinist – assumed the chair of anatomy. His presence lent the space new meaning, drawing on established topoi such as retreat as a means of coping with grief, personal devotion, and self-discipline. In the tradition of the *studiolo*, the tower was reimagined as a private site for philosophical contemplation and the fulfilment of scholarly duty. The re-evaluation of anatomy and its practitioners, which began with Haller's appointment, was further reinforced by the establishment of the anatomical institute in a more central location within the city. This relocation mirrored the discipline's growing social status, signalling its increasing importance within the academic and civic landscape of Göttingen.

The anatomical institute in Göttingen was constructed with the explicit goal of reflecting the status and public mission of the medical faculty. The commission for its design was

76 Ophir and Shapin, "The Place of Knowledge," 7. See also Katharine Park and Lorraine Daston, eds., *The Cambridge History of Science*, vol. 3 (Cambridge University Press, 2006).

awarded to architects in public office, and the building followed the guidelines set out in architectural theory manuals. Its design adhered to the principles of architectural *decorum* appropriate for public institutions, with the inclusion of an oriel symbolizing the connection between the institution and public affairs. Furthermore, the tiered seating and large windows were designed to provide an unobstructed view of the cadavers during dissections. Despite its public location, the anatomical institute was not devoid of zones of seclusion and exclusivity. Access to the public anatomical demonstrations was regulated by fees, and non-public preparatory works could only be visited for an additional charge. However, this did not result in spectators freely looking over the scientists' shoulders as they went about their daily work, as suggested in the frontispiece of Haller's first volume on the sensitivity of animals. Rather, the access to backstage processes was also staged, in this case, to provide insight into private, and therefore privileged, practices. The architectural feature of the oriel also subtly alludes to the elevated and thus ultimately inaccessible position of the anatomist in its space-dividing effect. Haller likely sought to retain the tower alongside the newly built institute, not only for better preservation of cadavers but also as a retreat where he could conduct experiments undisturbed and keep his findings secret until they were ready for publication. While knowledge production was framed as accessible, it was clear that it also required spaces of retreat and exclusivity, both in practical and social terms.

Scientific credibility has always been a question of social status.[77] The anatomical theatre in Jena was built to assert authority on multiple fronts. It was built to lift the social and academic standing of individual physicians, enhance the institution's prestige within both the national and international scientific community, bridge the status gap between scholars, the aristocracy, and the bourgeoisie, while asserting the primacy of anatomy over other academic disciplines and solidifying its reputation among the general public. Interestingly, the physicians in Jena chose not to highlight the public nature of anatomical science, but instead its private, inward-looking character. In contrast to the mathematical tower, which directs the gaze outward toward the stars, the anatomical tower focused attention on the human body. By making the anatomical theatre visible to the outside world, Jena's anatomy department proclaimed itself as a modern science that grounds knowledge production in empirical and practical research. However, by adopting the shape of an octagonal tower – which, like a reliquary, both reveals and conceals the interior – the physicians presented anatomy as a discipline reserved for those with a specific vocation. As the tower was accessible only through the university building complex, the physicians were staged as gatekeepers to bodily knowledge. Just as the perception of the body and authentic self was changing due to emerging sensibility, architectural design also reflected this shift. The proximity of the anatomical theatre to noble yet informal garden pavilions became evident, reinforcing a sense of intimacy. The sensual appreciation of the beauty of divine creation was intended to evoke a response from the viewer. For aristocrats and commoners alike, the anatomical theatre became a place for a shared, intimate connection with their own private nature.

77 Ophir and Shapin, "The Place of Knowledge," 7.

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