Healing through Space

An essay on the meanings of space in the St. Caeciliagasthuis in Leiden

Mats Dijkdrent

Table of contents

Introduction

The St. Caeciliagasthuis which housed the old plague hospital (*pesthuis*) and madhouse (*dolhuis*) in Leiden is nowadays better known to most people under the name Museum Boerhaave. It is no coincidence that the Museum of the History of Medicine is located in this old hospital, for famous doctors, such as Francois de le Boë Sylvius and Herman Boerhaave, taught clinical medicine in this complex to students from all over Europe. Clinical teaching was a novelty in the 16th and 17th centuries. So, since professor Otto Heurnius introduced this teaching method to Leiden in 1636, the prestige of the medical curriculum of Leiden University grew.[1] The plague hospital and madhouse are, however, also interesting for another, lesser-known reason.

After the siege of Leiden in 1574, the city was in need of a new plague hospital and madhouse. The *gasthuismeesters* (administrators of a medical institution) of one of Leiden's other hospitals, organised in 1596 a lottery that funded the renovation of the old St. Caeciliaklooster (St. Caeciliamonastery) into a plague hospital and madhouse. For the renovation the *gasthuismeesters* wrote an elaborate architectural plan, in which they explained why they chose certain architectural forms. Not every architectural shape is explained. It is, however, possible to reconstruct why they decided to give the building a certain form, for the *gasthuismeesters* recorded which medical institutions advised them on how to create a healthy medical space. It is seldom possible to link theoretical, medical advice to an architectural plan. This makes the architectural plan of the St. Caeciliagasthuis very special.

The architectural plan is an excellent source to analyse the role knowledge plays in the creation of a 16th century medical space. The knowledge, on which the architecture is based, can give a space meaning and influence its architecture. Therefore this essay analyses: what roles does medical knowledge play in the creation of architecture and spaces in the St. Caeciliagasthuis (plague hospital and madhouse) in Leiden according to the architectural plan from 1598?

Questions and methodology

This question will be answered in three chapters that each focus on the meaning of a specific space of the complex in a certain time period. First we should, however, clarify some terms and concepts from the main question. The term 'medical knowledge' refers to theoretical ideas produced by specialists. The term 'space' is used to refer to a place in which objects and actions can exist. Although space can exist in an abstract way, such as in literature or in an architectural plan, this essay examines mainly the

---

[1] Harm Beukers, 'Clinical Teaching in Leiden from Its Beginning until the End of the Eighteenth Century', *Clio Medica; Acta Academiae Internationalis Historiae Medicinae* 21 (1988) 139-152; Hugo van Oerle, *Het Caecilia-Gasthuis; een onderzoek naar de bouwgeschiedenis van het 'Caecilia-Gasthuis' in de Camp te Leiden, ten behoeve van de renovatie en inrichting tot een museum voor de natuurwetenschappen* (Leiden 1978) 79-88, 103-104; Tim Huisman, *The Finger of God; Anatomical Practice in 17th-Century Leiden* (Leiden 2008) 110-144; J. A. J. Barge, 'Het Collegium medico-practicum in het voormalige Caecilia-Gasthuis', *Leidsch Jaarboekje* 29 (1937) 49-58.

meaning of space as a place that exists in three dimensions. Space can be demarcated by architecture, and can also exist within a bigger space such as a hospital in a city.

The chapters in this essay are arranged by specific space or room. The different spaces are: the plague hospital (*pesthuis*), the madhouse (*dolhuis*) and the St. Caeciliagasthuis as a whole. The first chapter looks at the plague hospital and examines: what roles does medical knowledge play in the creation of space in the plague hospital? The second chapter deals with the madhouse, and here too the question is: what roles does knowledge play in the creation of space in the madhouse? In many ways these two chapters are similar. Firstly, a large part of these chapters focuses on the medical meaning of the spaces. The chapters map which medical theories are used in the architectural plan and then interpret the architecture along the lines of those theories. We will see that the medical space was meant to create a healthy environment and even to contribute to the healing process. Secondly, the medical knowledge creates a space that has a social meaning and social implications. The medical architecture enforces certain social behaviours of patients and staff. At the same time the medical architecture legitimises certain actions, for example disciplining mentally ill inmates. Thirdly, both chapters rely heavily on the architectural plan as a source of information regarding which meanings the *gasthuismeesters* intended the spaces to have.

The third chapters look at the St. Caeciliagasthuis complex as a whole. This chapter maps which knowledge and context led to the combining of two institutions — the plague house and the madhouse — in one building, and analyses how social and historical knowledge, in combination with medical knowledge, creates a symbolical space of opposites.

The main research question mentions that the roles of medical knowledge in the creation of space and architecture will be examined. A space can however hold different layers of meaning, and different methods must be used to map every distinctive layer of meaning. Firstly, knowledge can create a space that is adapted for a specific functional task, in this case a medical task. By mapping which medical knowledge is used in the architectural plan, we can connect knowledge with architectural forms. Thereafter, we can reconstruct how the use of this knowledge forms the space for a certain function. A specialised space also has a certain meaning and function within a society and therefore evokes certain expectations and encourages some behaviour or feelings while discouraging other actions. Michel Foucault elaborated on this idea by pointing out that knowledge in a space is a form of power that can normalise and legitimise certain behaviour and actions.[2] Although it is difficult to determine how social interactions in the past have been influenced by architecture, it is interesting to use ideas of more contemporary theorists and explore the social possibilities of incorporating certain knowledge into architecture.

---

[2] John Archer, 'Social Theory of Space; Architeture and the Production of Self, Culture, and Society', *Journal of the Society of Architectual Historians* 64:4 (2005) 430-433; Lindsay Prior, 'The Architecture of the Hospital; A Study of Spatial Organization and Medical Knowledge', *British Journal of Sociology* 39:1 (1988) 86-94; Bill Hillier and Julienne Hanson, *The Social Logic of Space* (Cambridge 1984) 14-22; Robert T. Tally, *Spatiality* (Abingdon 2013) 116-128.

Secondly, knowledge can create a space with a symbolic meaning in which architectural forms and the space itself refer to something else. Someone needs knowledge in order to interpret the symbolic meaning or message of spaces. Architecture can form signs (signifiers) that refer to a concept or message (the signified). These signs can also be visual intertextual references or iconography. In order to interpret these signs, a certain (cultural) capital is needed, as well as knowledge of the context and history. Because the different participants in the space have different backgrounds and different knowledge, many interpretations of the meaning of the space become possible. Since a building exists through time, the interpretation of the signs often changes with the change of context and users of the building.[3]

Historiography

Although medieval healthcare in Leiden has been fairly well-researched, the history of early modern healthcare in Leiden is mainly unexplored territory.[4] A few short articles about the St. Caeciliagasthuis have been published, which describe either the building history, the clinical teaching by famous professors, or the lottery that financed the building.[5]

When the complex was restored over thirty years ago, historian Hugo van Oerle extensively described the building history.[6] Archivist Anna Versprille has inventoried and examined all sources about the construction history that are conserved in Erfgoed Leiden en Omstreken.[7] Because both reports served a practical purpose, an analysis of the significance of the architecture has been omitted. Other short articles are mainly limited to very brief architectural overviews.[8] Only A. Luyendijk-Elshout gives a brief analysis of the architectural meaning of the St. Caeciliagasthuis in comparison with the

---

[3] Mieke Bal and Norman Bryson, 'Semiotics and Art History', *The Art Bulletin* 73:2 (1991) 174-208; Archer, 'Social Theory of Space', 430-433.

[4] Rudolph Ladan, *Gezondheidszorg in Leiden in de late middeleeuwen* (Hilversum 2012) 78-79; Christina Ligtenberg, *De Armenzorg te Leiden tot het Einde van de 16e eeuw* (The Hague 1908).

[5] For studies on clinical teaching see: Huisman, *The Finger of God*, 110-144; Barge, 'Het Collegium medico-practicum', 49-58. For studies on the lottery see: Johan Koppenol, *Leids heelal; Het Loterijspel (1596) van Jan van Hout* (Hilversum 1998); Dick de Boer and Karel Bostoen, 'Sorte non sorte; De deelname van de Leidse elite aan de Gasthuisloterij in 1596' in: Jan de Jongste, Juliette Roding and Boukje Thijs, ed., *Vermaak van de elite in de vroegmoderne tijd* (Hilversum 1999) 218-241; Jane Kromm, 'The Early Modern Lottery in the Netherlands; Charity as Festival and Parody' in: David R. Smith, ed., *Parody and Festivity in Early Modern Art; Essays on Comedy as Social Vision* (London 2012) 51-62; Karel Bostoen, 'Adieu, mijn geld!; De Leidse loterij van 1596', *De zeventiende eeuw* 6 (1990) 34-39; Johan Koppenol, '(Naasten-)Liefde es tFondament; De Leidse rederijkers en de loterij van 1596', *De zeventiende eeuw* 6 (1990) 27-32.

[6] Van Oerle, *Het Caecilia-Gasthuis.*

[7] A. J. Versprille, 'Uit de bouwgeschiedenis van het Caecilia-gasthuis' (report) (Leiden 1969).

[8] G. T. Haneveld, *Oude Medische Gebouwen van Nederland; Uitgegeven voor het Genootschap voor Geschiedenis der Geneeskunde, Wiskunde, Natuurwetenschap en Techniek te Leiden* (1976 Amsterdam) 109-111; H. A. van Oerle, *Leiden binnen en buiten de stadsvesten; de geschiedenis van de stedebouwkundige ontwikkeling binnen het Leidse rechtsgebied tot aan het einde van de gouden eeuw; Beschrijving* (Leiden 1975) 173-175; Hugo van Oerle, 'De bouwgeschiedenis van het St. Cecilia Gasthuis in de Camp te leiden', *Leids jaarboekje* 33 (1941) 63-81.

adjacent Elizabethgasthuis. She characterises the architecture as very modern and progressive, as opposed to the old-fashioned Catholic architecture of the Elizabethgasthuis.[9]

This essay examines for the first time the medical background of building history in greater depth by identifying the medical institutions that gave advice, by mapping out their possible advice and by linking their knowledge to the architecture. The significance of the connection between architecture and medical knowledge has not been analysed before either. The social and symbolic meaning of architecture hardly appears in any of the aforementioned articles.[10]

The research into the role of knowledge in the meaning of the spaces of the St. Caeciliagasthuis adds some new insights to three major historiographical issues. Firstly, this essay makes a contribution to the historiography on 16th century and early modern hospital architecture. Much of this historiography focused on the degree of specialisation and 'medicalisation' of the poor-relief institution.[11] Especially older literature paints an image of hospitals without medical expertise or even medical staff.[12] Since the 1960s, this idea has been adjusted, but specialists still discuss whether specialisation and medicalisation was a gradual process from the Middle Ages till now,[13] or only really started from the Enlightenment onwards.[14] The architecture of the hospitals can give an indication of the degree of medicalisation of an institution.[15] The idea behind this is that medical insights, as well as society, shape the architecture.[16] Most studies that look at medical architecture tend to look at the 19th century, due to the availability of sources. Their analyses on the meaning of the connection between architecture and medical knowledge is often twofold. On the one hand, architecture is meant to support the healing process. On the other hand, it creates a professional, symbolic and medical space that supports the function of the place, for example by underlining the scientific character of an operating room.[17]

Similar research for the Middle Ages and Early Modern era hardly exists due to a lack of sources. Although several authors such as Hippocrates, Galenus, Vitruvius, Alberti, Filarete, Serlio,

[9] A. M. Luyendijk-Elshout, 'The Caecilia Hospital in Leiden', *Proceedings of the XXIII International Congress of the History of Medicine* (London 1972) 314-315.

[10] Only Jane Kromm briefly describes a possible symbolical meaning of a painting at the facade. Kromm, 'The Early Modern Lottery', 60.

[11] John C. Burnham, *What is Medical History?* (Cambridge 2005) 120; Lindsay Granshaw, 'The Hospital' in: W. F. Bynum and Roy Porter, *Companion Encyclopedia of the History of Medicine* (London 1993) 1186-1187.

[12] Burnham, *What is Medical History?*, 1-4; Gert Brieger, 'The Historiography of Medicine' in: W. F. Bynum and Roy Porter, *Companion Encyclopedia of the History of Medicine* (London 1993) 24-25.

[13] Granshaw, 'The Hospital', 1186-1188, 1198.

[14] See for example: Guenter B. Risse, *Mending Bodies, Saving Souls; A History of Hospitals* (New York 1999) 167-288; Michel Foucault, *The Birth of the Clinic; An Archaeology of Medical Perception* (Abingdon 1973); Michel Foucault, 'The politics of health in the eighteenth century' in: Colin Gordon, ed., *Power/Knowledge; Selected Interviews and Other Writings 1972-1977; Michel Foucault* (New York 1980) 168.

[15] Henry E. Sigerist, 'An outline of the development of the hospital', *Bulletin of the Institute of the History of Medicine* 4:7 (1936) 576.

[16] Prior, 'The Architecture of the Hospital', 93-94.

[17] For example: Robert Bruegmann, *Architecture of the Hospital: 1770-1870; Design and Technology* (Ann Arbor 1976); Jeanne Kisacky, *Rise of the Modern Hospital; An Architectural History of Health and Healing 1870-1940* (Pittsburgh 2017); Annmarie Adams and Thomas Schlich, 'Design for Control; Surgery, Science and Space at the Royal Victoria Hospital, Montreal, 1893-1956', *Medical History* 50 (2006) 303-324.

Scamozzi, and Palladio have written texts on the relationship between environment, architecture and health, it is still often impossible to connect existing buildings to these texts. Filarete's Ospedale Maggiore in Milan and some of Palladio's villas are exceptions.[18] Medievalists and early-modernists often use the social, religious and cultural context rather than medical theories when they explain the shape of the hospital architecture.[19] A lack of research made many authors believe that the architecture of hospitals and more specifically plague hospitals in the 15th and 16th century was not meant to cure any inmates. The only medical ideas that influenced the construction of plague hospitals were theories about preventing the spread of the plague.[20]

This essay discusses one of the few 16th-century examples of an architectural plan for a medical institution that was based on medical theories. This source allows us to establish, firstly, that architecture was used to create a healthy environment in a plague hospital. The architecture was even meant to cure plague victims, rather than only being focused on isolating plague victims from the rest of society. Secondly, that also in the Early Modern period, medical theories in architecture could have been used to give a space a professional, symbolic and medical meaning.

The second contribution of this essay is that it contradicts some historiography about the history of psychology. Here, too, historians, have discussed the purpose of asylums and the degree and nature of their medicalisation. Older historiography sees early modern asylums as inhumane, non-medical institutions with prison-like architecture. It was not until the 19th century, after the introduction of medical treatment methods, that doctors were able to help mentally ill people adequately.[21] In the 1960s Foucault presented a radically new grand narrative in his book *Folie et déraison; Histoire de la folie à l'âge classique*. According to him, madness was accepted in the Middle Ages. In the Early Modern period, administrators started to lock up madmen together with other groups that deviated from the

---

[18] Dieter Jetter, 'Das Mailänder Ospedale Maggiore und der kreuzförmige Krankenhausgrundriß', *Sudhoffs Archiv für Geschichte der Medizin und der Naturwissenschaften* 44:1 (1960) 64-75; Renzo Baldasso, 'Function and Epidemiology in Filarete's Ospedale Maggiore' in: Barbara S. Bowers, ed., *The Medieval Hospital and Medical Practice* (Aldershot 2007) 107-122; Barbara Kenda, *Aeolian Winds and the Spirtit in Renaissance Architecture* (London 2006) 1-21; Sandra Cavallo, 'Health, air and Material Culture in the Early Modern Italian Domestic Environment', *Social History of Medicine* 29:4 (2016) 695-716.

[19] For example: John D. Thompson and Grace Goldin, *The Hospital: A Social and Architectural History* (New Haven 1975); John Henderson, *The Renaissance Hospital; Healing the Body and Healing the Soul* (London 2006); John Henderson, 'The material culture of health: hospitals in renaissance Italy' in: Florian Steger and Kay P. Jankrift, ed., *Gesundheit – Krankheit; Kulturtransfer medizinischen Wissens von der Spätantike bis in die frühe Neuzeit* (Cologne 2004) 155-166; John Henderson, 'The art of Healing; Hospital wards and the sick in Renaissance Florence' in: P. Helas and G. Wolf, ed., *Armut und Armenfürsorge in der italienischen Stadtkulturzwischen 13. und 16. Jahrhundert; Bilde, Texte und sozial Pratiken* (Frankfurt am Main 2006) 79-96.

[20] Jane Stevens Crawshaw, *Plague hospitals; public health for the city in early modern Venice* (Farnham 2012); Leo Noordegraaf and Gerrit Valk, *De gave Gods; De pest in Holland vanaf de late middeleeuwen* (Amsterdam 1996) 197-198; A. Querido, *Godshuizen en Gasthuizen; Een geschiedenis van de ziekenverpleging in West-Europa* (Amsterdam 1967) 31-32. The following authors think that medicalisation of architecture only starts around 1750: Bruegmann, *Architecture of the Hospital*, 121; Agnes van den Berg and Cor Wagenaar, 'Healing by Architecture' in: Cor Wagenaar, ed., *The Architecture of Hospitals* (Rotterdam 2006) 255; Sigerist, 'An outline', 579; Stephen Verderber, *Innovations in Hospital Architecture* (New York 2010) 9-44.

[21] R. A. Houston, 'A Latent Historiography? The Case of Psychiatry in Britain 1500-1820', *The Historical Journal* 57:1 (2014) 292-293; Roy Porter and Mark S. Micale, 'Introduction: Reflections on Psychiatry and Its Histories' in: Roy Porter and Mark S. Micale, ed., *Discovering the History of Psychiatry* (Oxford 1994) 4-7.

norm such as vagrants, thieves and prostitutes in order to discipline them. After this disciplinary confinement they could return to society as 'normal citizens'. In the Enlightenment and in the 19th century, the method of disciplining these groups became medicalised, but according to Foucault, the goal remained the same. People believed that medical treatment would bring these people back to normal citizens.[22]

Within the history of psychiatry, Foucault's idea of disciplining the mentally ill has been criticised and nuanced,[23] but his assertion that the medicalisation of facilities for the mentally ill did not take place until the late 18th and early 19th centuries is still accepted. In Antiquity, the Middle Ages and Early Modern period, people tried to 'cure' madmen with miracle remedies and medicinal recipes.[24] The architecture of institutions for the mad is however believed to be without any medical purpose. The cells, in which madmen were locked up if they were unmanageable and aggressive, are for example seen as unmedical precursors of the modern padded cell.[25] From the late 18th century onwards, this changed. Sources from this period link medical theories to light, airy and open architecture. The Kirkbride plan for psychiatric institutions in the USA is a good example of this.[26] Although Roy Porter has stretched the 'therapeutic period' up to the entire 18th century,[27] and although Martje aan de Kerk recently showed that in the Dutch Republic medicalisation of madness was probably a gradual process,[28] the consensus is that there was no medicalised madhouse architecture in the 16th century.

This essay shows that in the Leiden case study medical knowledge was behind madhouse architecture, in particular the cells. At the same time, there also seems to be a disciplinary ideal behind the architecture in Leiden, which implies that the disciplining of madmen in Leiden was already medicalised in the Early Modern period.

The third contribution of this essay concerns some themes in the historiography of poor-relief institutions. Early modern healthcare institutions were only for poor citizens, and the Leiden plague hospital and madhouse cared only for 'the poor'. Historians from various backgrounds have often

---

[22] Michel Foucault, *Madness and Civilization; A History of Insanity in the Age of Reason* (Abingdon 1967).
[23] Martin Dinges, 'The Reception of Michel Foucault's Ideas on Social Discipline, Mental Asylums, Hospitals and the Medical Profession in German Historiography' in: Colin Jones and Roy Porter, *Reassessing Foucault; Power, Medicine and the Body* (London 1994) 115, 118-120.
[24] H. H. Beek, *Waanzin in de middeleeuwen; beeld van de gestoorde en bemoeienis met de ziekte* (Hoofddorp 1969); Elizabeth Mellyn, 'Healers and Healing in the Early Modern Health Care Market' in: Greg Eghigian, ed., *The Routledge History of Madness and Mental Health* (London 2017) 83-100.
[25] Inge Mans, *Zin der Zotheid; Vijf eeuwen cultuurgeschiedenis van zotten, onnozelen en zwakzinnigen* (Amsterdam 1998) 86-93; Andrew Scull, *Madness in Civilization; A Cultural History of Insanity from the Bible to Freud, from the Madhouse to Modern Medicine* (London 2015); Edward Shorter, *A History of Psychiatry; From the Era of the Asylum to the Age of Prozac* (New York 1997) 8-17; Dieter Jetter, *Das europäische Hospital; Von der Spätantike bis 1800* (Cologne 1986) 208-214; Joost Vijselaar, 'Van cellen, ketens en banden naar BOPZ', *Bang voor Dwang?; Verslag van een themadag over de toepassing van dwang in de psychiatrie* (1989) 91-96.
[26] Carla Yanni, *The Architecture of Maddness: Insane Asylums in the United States* (Minneapolis 2007).
[27] Roy Porter, *Mind-forg'd Manacles; A History of Madness in England from the Restoration to the Regency* (Cambridge 1987) 277-280.
[28] Martje aan de Kerk, *Madness and the city; Interactions between the mad, their families and urban society in Amsterdam, Rotterdam and Utrecht, 1600-1795* (Amsterdam 2019) 147-161.

depicted the 16th century as a period in which poor-relief institutions entered into domain of the urban government and changed character.[29] Social and economic historians emphasise the economic and demographic changes that took place from the Late Middle Ages to the Golden Age. Due to a surplus of poor people and a financial deficit, the role of the urban government in poor relief grew. Nevertheless, they emphasise that there is a lot of continuity of poor relief and healthcare from the 15th to the 17th centuries.[30] Charles Parker who looked at poor relief in the Low Counties from a religious angle, adds that, although there were big changes in the religious landscape in the 16th century, poor-relief institutions hardly changed.[31] Other historians see the 16th century more as a breaking point. They have suggested that the transition from Catholicism to Protestantism resulted in the secularisation of charitable institutions.[32] Historians of intellectual history have pointed at the influence of humanism and humanistic ideas and their importance in reorganising poor relief in cities.[33]

The essay researches one of the first new poor-relief institutions in Leiden after the transition from a Catholic to a Protestant government. This makes it an interesting case study regarding the history of poor-relief, as it will show how the Leiden municipal government and the *gasthuismeesters* tried to be innovative on the one hand and embedded the plague hospital and madhouse within the existing (Catholic) traditions and structures on the other hand.

---

[29] For example: Robert Jütte, 'Health care provision and poor relief in early modern Hanseatic towns; Hamburg, Bremen and Lübeck' in: Andrew Cunningham and Ole Peter Grell, *Health care and poor relief in Protestant Europe 1500-1700* (London 1997) 105-125.

[30] For example: Daniëlle Teeuwen, *Generating Generosity; Financing poor relief through charitable collections in Dutch towns, c. 1600-1800* (Utrecht 2014); Manon van der Heijden, et al., ed., *Serving the Urban Community; The Rise of Public Facilities in the Low Countries* (Amsterdam 2009); Catharina Lis and Hugo Soly, *Armoede en kapitalisme in pre-industrieel Europa* (Antwerp 1979) 40-44; Lex Heerma van Voss and Marco H. D. van Leeuwen, 'Charity in the Dutch Republic: an introduction', *Continuity and Change* 27:2 (2012) 175-197; Thomas Max Safley, 'Introduction' in: Thomas Max Safley, *The Reformation of Charity; The Secular and the Religious in Early Modern Poor Relief* (Leiden 2003) 1-14; Timothy G. Fehler, *Poor Relief and Protestantism; The Evolution of Social Welfare in Sixteenth-Century Emden* (Aldershot 1999).

[31] Charles H. Parker, *The reformation of community; Social welfare and Calvinist charity in Holland, 1572-1620* (Cambridge 1998) 158-162, 191-197; Charles H. Parker, 'Calvinism and Poor Relief in Reformation Holland' in: Thomas Max Safley, *The Reformation of Charity; The Secular and the Religious in Early Modern Poor Relief* (Leiden 2003) 107-120; Charles H. Parker, 'The Pillars of a new community; Conflicts and cooperation over poor relief in post-Reformation Holland' in: Manon van der Heijden, et al., ed., *Serving the Urban Community; The Rise of Public Facilities in the Low Countries* (Amsterdam 2009) 155-167. See also: A. E. Kok-Van den Bergh, 'Rotterdam en de Katholieke Armenzorg; Een vergeten proces', *Rotterdams Jaarboekje* 9:6 (1988) 216-225, E. Overgaauw, *Paaps mededogen of Protestantse zorg; De ontwikkeling van de armenzorg in de 16ᵉ en vroege 17ᵉ eeuw en de verandering hierin ten gevolge van reformatie en opstand, gespiegeld aan Rotterdam* (Utrecht 2016).

[32] Robert Jütte, *Obrigkeitliche Armenfürsorge in deutschen Reichsstädten der frühen Neuzeit; städtisches Armenwesen in Frankfurt am Main und Köln* (Cologne 1984); Robert Jütte, *Poverty and Deviance in Early Modern Europe* (Cambridge 1994) 108-109; Andrew Cunningham and Ole Peter Grell, *Health care and poor relief in Protestant Europe 1500-1700* (London 1997).

[33] Natalie Zemon Davis, 'Poor relief, Humanism, and Heresy: The Case of Lyon', *Studies in Medieval and Renaissance History* 5 (1968) 217-275; Gilbert Tournoy, 'Towards the roots of social welfare; Joan LLuís Vivès's De subventione pauperum', *City* 8:2 (2004) 266-273; J. Prinsen, 'Armenzorg te Leiden in 1577', *Bijdragen en Mededeelingen van het Historisch Genootschap* 26 (1905) 113-160.

The architectural plan and its context

The main source in this essay, namely the architectural plan for the plague hospital and the madhouse, was produced by the municipal government and thereby the urban elite. Jan van Hout, Leiden's town clerk, recorded the architectural plan in the so-called 'orphans and poor book'. This book was a document in which the civic government recorded decrees concerning poor-relief institutions in Leiden from 1598 to 1816. The source therefore contained transcripts of policy decisions and other sources of a practical nature. The architectural plan for the plague hospital and madhouse, being contained within the 'Resolution about the construction of the plague hospital and madhouse' can arguably be considered a policy decision by the municipal government. The Resolution gave the *gasthuismeesters* of the Catharinagasthuis the task of making an architectural plan for the new plague hospital and madhouse, but the government appears to have given them some directions. The Resolution also discusses the design process, in which the *gasthuismeesters* obtained advice from three medical institutes. Lastly, the Resolution includes descriptions of the exterior and interior of the plague hospital and madhouse in an elaborate architectural plan. The Resolution ends with the city council giving permission to execute the architectural plan on 7 May 1598. Someone also added a map of the architectural plan (figure 1) and the text is probably a transcript from resolution that was made during the meeting in which the plan was approved.[34]
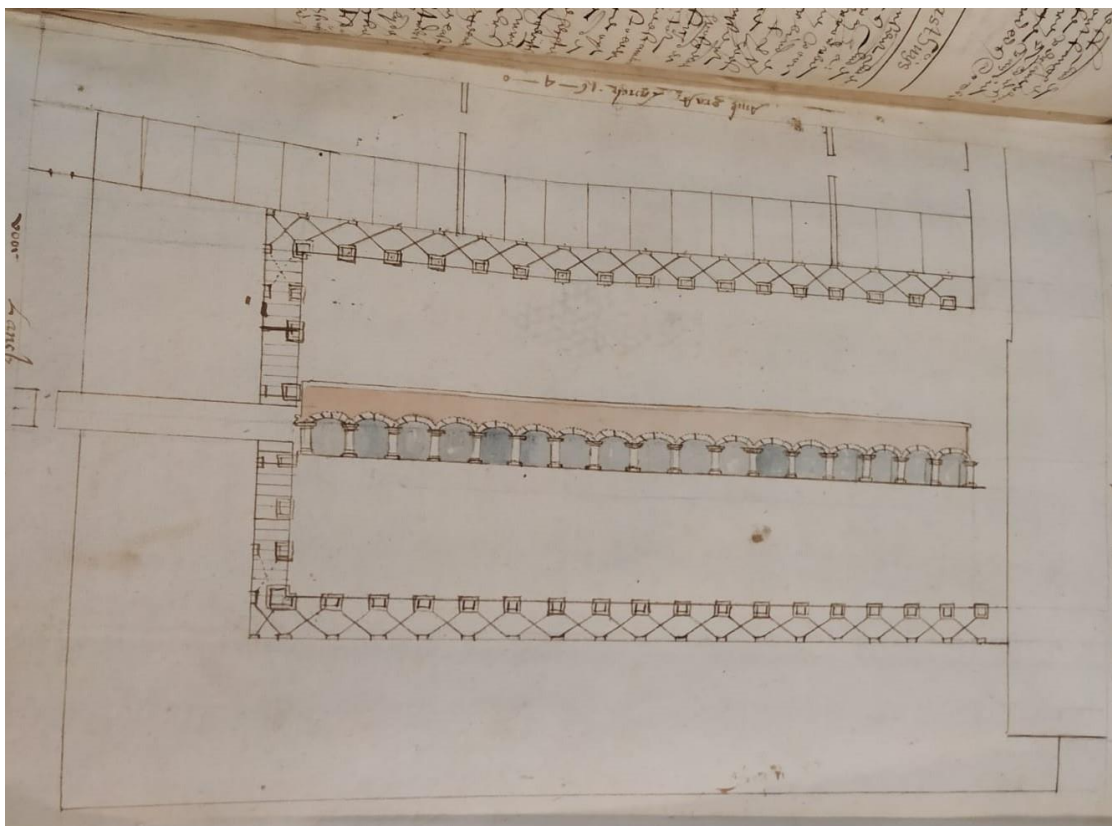

Figure 1
Map in the architectural plan of the new plague hospital and madhouse. The top of the picture represents the south side of the building and therefore the side where the plague hospital and madhouse were built. Although the architectural plan only describes the south side of the plot, this map seems to indicate that a similar construction was to be built at the north side of the plot (bottom of the picture).

---

[34] The map was added later for it has another watermark as the main text. ELO, SA II, 5938A, fol. 14r. See for a transcription: Van Oerle, *Het Caecilia-Gasthuis*, Appendix III.

To contextualise the main source, the genesis of the idea and the implementation of the architectural plan are briefly discussed here. The history of the building plan begins just before the siege of Leiden. For the people of Leiden, the siege of 1573 and a second siege in 1574 did not come out of the blue. When Alva took Haarlem in 1572 and then besieged Alkmaar, the Leiden city council anticipated the same scenario for Leiden. Thus, they ordered to cut down all the trees around the city and demolish the old buildings that surrounded the city, so that they had a clear line of sight. The old Lopsen monastery, which had been used by the large St. Catharinagasthuis to house plague victims, mentally ill and *proveniers* for forty years,[35] was also demolished.[36]

Aa a result, madmen, plague victims and *proveniers* had to be housed elsewhere. However, the St. Catharinagasthuis was full, and other hospitals 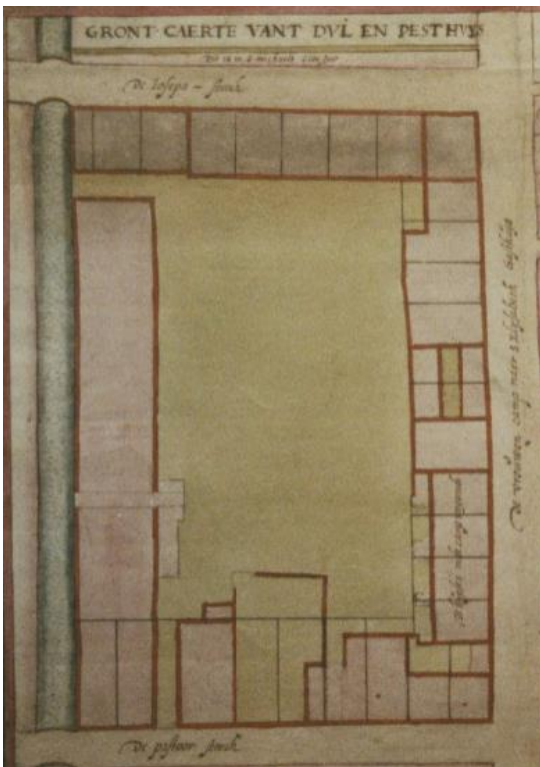-the Elizabethgasthuis and the Onze-Lieve-Vrouwegasthuis- probably had no room either. The *gasthuismeesters* of the St. Catharinagasthuis decided to house the mentally ill in the buildings of the St. Caeciliaklooster, an old women's convent of the Order of Augustine, located in '*de Camp*', which was formally disbanded in 1574.[37] This building became the new annex of the large St. Catherinagasthuis.[38] In 1577 Jan van Hout wrote the '*armenrapport*' which proposed a reorganisation of Leiden poor relief. The report stated that a new plague hospital should be built and that a lottery should to be held to raise money for the construction. The lottery in 1596 was a great success and the *gasthuismeesters* wrote an extensive architectural plan for the new plague hospital and madhouse to be built in the old St. Caeciliaklooster. In 1600 the new building was finished.

The plague hospital and madhouse were both situated on the south side of the plot of land. On the other sides of the plot stood *proveniershuisjes* (figure 2). Soon

Figure 2
A Map made in 1604 by Dou of the plague hospital and madhouse. On the left you see the plague hospital and madhouse (this is the south side). The courtyard is surrounded by houses. Most of those houses were probably proveniers houses.

---

[35] A *provenier* is someone that paid a certain amount of money so that he or she can live for the rest of his or her life in a certain institution.

[36] S. Groenveld, 'Leiden in de eerste jaren van de Nederlandse opstand; 1566-1574' in: R. C.. J. van Maanen, ed., *Leiden; De Geschiedenis van een Hollandse stad* 1 (Leiden 2002) 203-206; Ladan, *Gezondheidszorg in Leiden*, 77-79.

[37] Today, this 41.91 m by 61.53 m plot is sandwiched between Caeciliastraat on the north side, Sionsteeg in the west and Vrouwenkerksteeg in the east. At the south side there was a small moat at the time, but in the 17th-century it was filled up.

[38] Ladan, *Gezondheidszorg in Leiden*, 77-79, 98; Frans van Mieris, *Beschryving der stad Leyden; Haare Gelegenheid, Oorsprong, Vergrootinge, Oude en Hedendaagsche Gedaante, Stichtingen van Kerken, Kloosters, Godshuizen, en Andere aanmerklyke Gebouwen, zoo Geestlyke als Waereldlyke, derzelver byzondere Toestand en Bestieringe* I (Leiden 1762) 172.

after 1600, the plague hospital cared not only for plague victims, but for all kinds of sick people. In 1662, a two-story hospice with living quarters, a dining room, an infirmary and a regent's room arose on the north side of the plot (figure 13). During the 18th-century, some minor alterations were made to the madhouse. In 1834, the *gasthuismeesters* bought a warehouse south of the hospital plot and they converted it into a hospital for infectious diseases. In 1873 the hospital ceased to exist because a larger, more modern hospital was built near the *Morschpoortbastions*. In the 19th and 20th century, the complex housed an elementary technical school and primary school, a municipal warehouse, workshop, and housed students. Since 1991, the Rijksmuseum for the History of Natural Sciences, better known as Museum Boerhaave, occupies the building.[39]

The focus on the building and the architectural plan provides an interesting perspective, but this angle has also its limitations. It gives insights into what the *gasthuismeesters* intended the building to be, but it does not tell us anything about how the building was actually used. Because of a lack of sources it is very difficult to ascertain how the spaces were experienced and even what activities took place there. The *gasthuismeesters* for instance designed a building that was arguably medicalised to a high degree, suggesting their intention to provide care grounded in medical knowledge. However, subsequent users could have used and experienced the space in a completely different way. The epilogue will discuss the second perspective on the basis of the scarce sources available.

---

[39] Van Oerle, 'De bouwgeschiedenis', 73-81; Van Oerle, *Het Caecilia-Gasthuis*, 65-79, 89-102, 105-129; Van Oerle, *Leiden binnen en buiten de stadsvesten*, 173-175, 416; Commissie Geveltekens van de Historische Vereniging Oud Leiden, 'Verhaal: Museum Boerhaave, het voormalige St. Caecilia klooster en Gasthuis', *Erfgoed Leiden en omstreken*, https://www.erfgoedleiden.nl/component/lei_verhalen/verhaal/id/343 (30-3-2020).

Chapter 1

The plague hospital

In the historiography, the architecture of plague hospitals is often portrayed as focused on isolation.[40] Plague hospitals in Low Countries specifically are seen by historians Noordegraaf and Valk as places to die, without much medical purpose other than isolating plague victims to keep the rest of the city healthy.[41] Querido adds that the most neglected, poorest and terminally ill patients especially ended up in the plague hospitals instead of in normal *gasthuizen*.[42] The plague hospital therefore was a miserable place, without much medical help. This chapter focuses on the space of the Leiden plague hospital or *pesthuis*, and will discuss to what extent the Leiden case study can provide nuance to the current historiography.

The aim of this chapter is to analyse the role medical knowledge plays in the creation of the architecture and the space of the plague hospital. In order to do this, we must first look at which knowledge is used in the architectural plan. The *gasthuismeesters* requested three medical institutions to give them advice on how to build a medical space. The first paragraph describes these medical institutions and tries to establish which sources produced by these institutions can be used to reconstruct the advice that was given to the *gasthuismeesters*. The second paragraph links these sources to the architecture described in the architectural plan. This paragraph shows how medical knowledge has influenced and shaped the architecture of the plague hospital. It also demonstrates that the *gasthuismeesters* tried to create a healthy space and that the plague hospital was not just a place to die. The third paragraph examines which parts of the architectural plan were executed in the space of the real plague hospital. This shows which elements of the plague hospital created a medical, functional meaning of the space. The fourth paragraph looks at how the use of medical knowledge in the architectural program places the plague hospital in a tradition of plague hospital architecture. This paragraph shows how knowledge creates a symbolic meaning to the space. The fifth paragraph analyses how the medical architecture creates a social space which encourages and legitimises certain actions.

Practical and theoretical advice

According to the architectural plan, the *gasthuismeesters* asked three medical institutions to advise them on how to design a healthy hospital space. These medical institutions were three Leiden University professors from the medical faculty, a recent book on the plague written mainly by Italian doctors, and

---

[40] Crawshaw, *Plague hospitals*; Crawshaw, 'The Renaissance Invention of Quarantine' in: Linda Clark and Carole Rawcliffe, *The Fifteenth Century XII; Society in an Age of Plague* (Woodbridge 2013) 161-174; Risse, *Mending Bodies*, 202-208, 214-216.

[41] Noordegraaf, *De gave Gods*, 197-198.

[42] Querido, *Godshuizen en Gasthuizen*, 31-32.

the Utrecht plague hospital. This paragraph focuses on identifying, describing, and contextualizing the institutions. The exact advice or knowledge that the institutions gave has not been handed down to us. However, it is still possible to identify some existing written sources that can give an idea of what medical knowledge the *gasthuismeesters* derived from each institution and incorporated into the architectural plan. Each of the three institutions are discussed below. The next paragraph connects these sources to the architecture of the plague hospital.

The professors from Leiden

The architectural plan states that 'the professors of Faculty of Medicine from Leiden University' wrote a report with advice for the construction of the plague hospital.[43] The plan does not specify, however, who the professors were. The word 'the' implies that all professors in medicine in Leiden were approached. Gerardus Bontius (1536-1599), Johannes Heurnius (1543-1601) and Petrus Pauw (1564-1617) were the three professors at the medical faculty in the year 1598 and they probably co-authored the report that the *gasthuismeesters* used.[44] The architectural plan summarises that the professors advised that plague victims should be cared for at a 'high', airy place with fireplaces.[45] The architectural plan does not provide any further information on why plague victims should be cared for in a 'high' and airy place, nor does it tell anything else on what was in the report. By contextualising and studying the professors, we can identify written sources that might reflect the medical advice the professors gave to the *gasthuismeesters*.

Gerardus Bontius, the eldest of the trio, studied in Leuven and obtained his doctorate in Padua.[46] Medical education in Padua in the 16th century was characterised by a humanistic approach. Classical works by Hippocrates (*Aphorisms*), Galenus (*Tegni/Isagoge*) and Avicenna (*Canon I*) were studied during classes on theoretical medicine. Teachers at Padua also taught clinical or more practice-oriented medicine on the basis of Avicenna (*Canon III*) and Rhazes (*Almansor*). The classical authors were held in
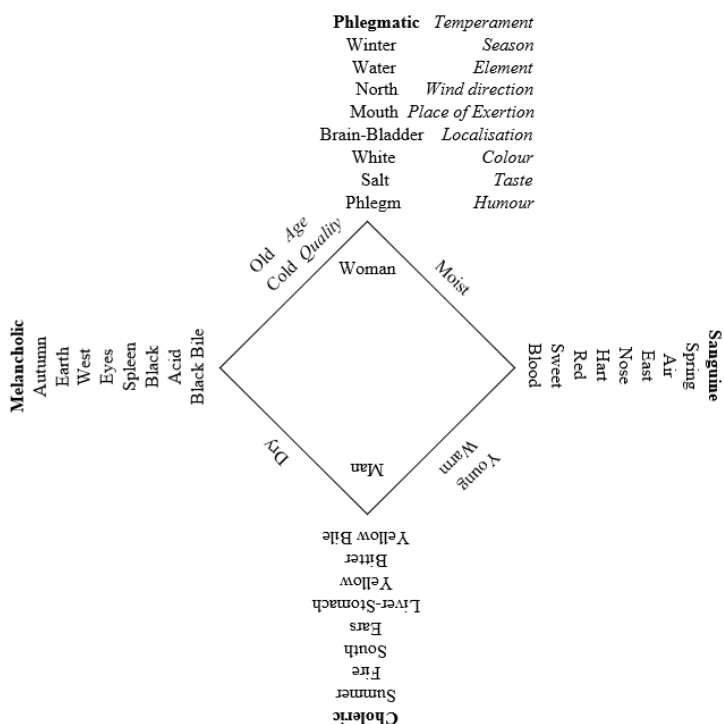
Phlegmatic	*Temperament*
Winter	*Season*
Water	*Element*
North	*Wind direction*
Mouth	*Place of Exertion*
Brain-Bladder	*Localisation*
White	*Colour*
Salt	*Taste*
Phlegm	*Humour*

Melancholic: Autumn, Earth, West, Eyes, Spleen, Black, Acid, Black Bile

Woman — Moist — Man — Dry — Young — Warm — Old Age — Cold Quality

Sanguine: Spring, Air, East, Nose, Hart, Red, Sweet, Blood

Choleric: Summer, Fire, South, Ears, Liver-Stomach, Yellow, Bitter, Yellow Bile

Figure 3
This scheme shows the Galenic system where several things that were associated with, and influenced a certain temperament

---

[43] ELO, SA II, 5938A, fol. 13r.
[44] Beukers, 'Clinical Teaching', 140. See also: Van Oerle, 'De bouwgeschiedenis', 72.
[45] ELO, SA II, 5938A, fol. 13r.
[46] P. J. Blok and P. C. Molhuysen, *Nieuw Nederlandsch biografisch woordenboek* Deel 4 (Leiden 1918) 196-197.

high esteem and their authority was hardly questioned in Padua.[47]

This means that Bontius was educated in a Galenic tradition. According to Galenus an imbalance in the four body fluids -blood, yellow bile, black bile and phlegm- caused diseases. All kinds of internal and external factors were connected to someone's temperament and imbalance of bodily fluids (figure 3). The body fluids were composed of a combination of qualities. Blood, for example, was a combination of moist and warm. A medicine containing dry and cold elements could outbalance a disease, caused by too much blood. Galenus also mentions the six factors, the so-called non-naturales, that are important if someone wants to stay healthy. The six non-naturales are: good air and winds, the right food and drink, a good alternation between exercise and rest, the right ratio between sleeping and being awake, regular excretion, and a good balance in emotions. Hippocrates wrote that the location of a place and the availability of water also influences the temperaments. In other words, in Galenic medicine environment and architecture are important in staying healthy, and they sometimes can even help to cure people.[48]

Bontius seemed to have internalised his Italian schooling thoroughly. As first professor of medicine in Leiden in 1575, he set up a medical program that was clearly inspired by Italian universities. This meant that Leiden held authorities such as Hippocrates, Galenus and Avicenna in high esteem. We know that Bontius taught about the 7th century Greek compiler Paulus Aegineta and about Hippocrates' ideas about the influence of air, water and locations on health.[49] This means that Bontius' advice to the *gasthuismeesters* on how to create a healthy space was probably based upon Galenic medical theories, as described above. Unfortunately, Bontius never published any book and he even explicitly forbade printing his notes after his death. Therefore, apart from the fact that he was a typical Galenic physician, it is not possible to find out what his possible recommendations were concerning the construction of the plague hospital.[50]

---

[47] Regina Andrés Rebollo, 'A Escola Médica de Pádua; medicina e filosofia no período moderno', *História, Ciências, Saúde-Manguinhos* 17:2 (2010) 307-331; Nancy Siraisi, *Avicenna in Renaissance Italy; The Canon and medical teaching in Italian universities after 1500* (Princeton 1987) 103-106; Nancy G. Siraisi, 'The changing fortunes of a traditional text: goals and strategies in sixteenth-century Latin editions of the Canon of Avicenna' in: A. Wear, R. K. French and I. M. Lonie, *The medical renaissance of the sixteenth century* (Cambridge 1985) 28.

[48] Rebollo, 'A Escola Médica de Pádua', 307-331; Ladan, *Gezondheidszorg in Leiden*, 14-16.

[49] A. M. Luyendijk-Elshout, 'l'Instruzione superiore a Padova; un punta di riferemento per la Faculta di Medicina di Leida (1575-1625)' in: Margherita Azzi Visentini and Loris Permuda, *I secoli d'oro della medicina; 700 anni di scienza medica a Padova* (Modena 1986) 79-85; A. M. Luyendijk-Elshout, 'Der Einfluß der italienischen Universitätten auf die medizinische Fakultät Leiden (1575-1620)' in: Georg Kauffmann, *Die Renaissance im Blick der Nationen Europas* (Wiesbaden 1991) 343-353. Just Emile Kroon, *Bijdragen tot de geschiedenis van het geneeskundig onderwijs aan de Leidse universiteit 1575-1625* (Leiden 1911) 23-24, 26-27, 44-46; Willem Otterspeer, *Groepsportret met Dame I; Het bolwerk van de vrijheid; De Leidse universiteit 1575-1672* (Amsterdam 2000) 402-403; Harm Beukers, 'Studying Medicine in Leiden in the 1630s' in: Richard Todd and Kathryn Murphy *'A man very well studyed'; New Contexts for Thomas Browne* (Leiden 2008) 55-56.

[50] Blok, *Nieuw Nederlandsch* 4, 196-197.

This is different for professor Johannes Heurnius. He, too, was educated in Leuven and Padua and also in Paris and Pavia, where he obtained his doctorate.[51] Heurnius stood in the same medical tradition as Bontius and he attached great value to authorities such as Hippocrates and Galenus.[52] After his studies he worked in Utrecht as a city doctor. In 1581 he was hired as a professor in Leiden. He was probably quite productive in this period because wrote a number of books about Hippocrates. Fortunately for us, he also wrote a book on the plague.[53]

In 1600 he wrote a book called '*Het noodigh pest boeck*'. This book on plague control was commissioned by the Leiden city council as a reaction on the plague outbreak of 1599. In twenty-one chapters, Heurnius advises his readers on what to do to prevent plague from spreading and which medicines are most effective for certain symptoms. Heurnius' intended audience were the townspeople of Leiden. The ingredients for the medicines are, however, in Latin. Heurnius explains that he has done this to prevent people from experimenting with home-made medicines without the intervention of a doctor.[54] The book was a great success, and soon it was translated into Latin under the name *De peste liber*.[55]

Heurnius gives a definition of 'plague' at the beginning of his book: 'The plague is a disease of the heart. Bad air that is inhaled, or inborn virulence, causes the plague'.[56] This quote shows that, to Heurnius, the plague is a disease of the heart; in a later portion of the book he attributed death by plague as the result of overheating of the heart. Heurnius thought that the plague was caused not only by bad air, but also by inborn virulence.[57]He names numerous remedies against the plague, varying from covering the floor with mint and saffron, to a recipe from 'Arabia' which consists of 8 grams of emerald and 20 grams of unicorn horn. However, the most effective medicine of all, according to Heurnius, is praying to God. Heurnius then advises elsewhere in his treatise that blood-letting of a plague victim should only be a last resort.[58] His book also gives advice related to making houses as healthy as possible. Heurnius wrote this book only two years after he wrote a report for the *gasthuismeesters* on the best

---

[51] Heurnius' supervisor in Pavia was professor Gabriel Cuneus, a Galenic scholar. See: Arturo Castiglioni, 'The attack of Franciscus Puteus on Andreas Versalius and the defence by Gabriel Cuneus' *Yale Journal of Biology and Medicine* 16:2 (1943) 143-145; Joseph P. Byrne, *The World of Renaissance Italy; A Daily Life Encyclopedia* I (Santa Barbara 2017) 313.

[52] He was educated by Hippocrates scholar Geronimo Mercuriali. Luyendijk-Elshout, 'Der Einfluß der italienischen Universitätten', 348-350.

[53] Kroon, *Bijdragen tot de geschiedenis*, 92-95; A. J. van der Aa, *Biographisch woordenboek der Nederlanden* 8 (Haarlem 1867) 734-738; Blok, *Nieuw Nederlandsch* 4, 746-747.

[54] Johannes Heurnius, *Het Noodigh Pest Boeck* (Leiden 1600) 40.

[55] Andrew Pettegree and Malcom Walsby, ed., *Netherlandish Books; Books Published in the Low Countries and Dutch Books Printed Abroad before 1601* (Leiden 2011) 647.

[56] '*Peste is eene Plaeghe des herten, die van de venijnighe locht toeghesonden wordet door ademinghe, of insendinghe; Of sij wordet door ingheboren venijn voordt-ghebraght*'; Heurnius, *Het Noodigh Pest Boeck*, 11.

[57] Some doctors in Leiden had other ideas about the origin of the plague. See: J. C. Overvoorde, 'Maatregelen ter bestrijding van het pestgevaar te Leiden in de 16e en de eerste helft der 17de eeuw', *Leidsch Jaarboekje* 19 (1924) 80-82.

[58] Heurnius, *Het Noodigh Pest Boeck*, 11, 29, 31, 47-49, 62.

architecture for a healthy plague hospital. This means that the passages on architecture and housing in his book probably resemble his advice to the *gasthuismeesters*.

The third professor, Pieter Pauw, specialised in anatomy and herbal medicine. Pauw was an alumnus of the young Leiden University, but he also studied in Paris, Copenhagen and Rostock.[59] After obtaining his doctorate he went to Italy to deepen his knowledge of dissection and botany at the University of Padua. After two years he returned to the Republic and got a position as assistant to his former teacher Bontius. In 1592 he was appointed professor of anatomy and herbology. Pauw wrote many books on anatomy, but he also gave lectures on the plague in 1600. The notes for these lectures were made into a treatise on the plague by Pauw's successor, professor Henricus Florentius, in 1636.[60]

The book, *Tractatus de peste; cum Henrici Florentii ad singula ejusdem tractatus capita additamentis*, consists of a *dedicatio*, a short introduction by Florentius, and eight chapters by Pauw. Each chapter ends with a number of additions, so called *additamenta*, also written by Florentius. The main text, however, is by the hand of Pauw. Pauw tells that there are internal and external causes of the plague. External causes are bad air, the wrong food and contact with plague victims. Internal causes are an imbalance in the humours. Like Heurnius, Pauw emphasises the role of the heart in curing the disease. Pauw furthermore describes how to prevent contamination, recognise symptoms, and how to cure the plague. Pauw also gives advice on buildings and healthy environment.[61] The notes where the main text in the plague treatise is based on, were written in 1600. This means that the book is probably a reliable source to reconstruct Pauw's view on what constitutes a healthy space in plague hospitals.

In summary, the Leiden professors stood in a classical, Galenic medical tradition. This tradition saw the environment and buildings as a factor in someone's health. We can use the books on the plague by Heurnius and Pauw to explain the architectural forms of the plague hospital in the next paragraph.

Italian scholars

The Italian education of the professors was not the only connection the architectural plan had to Italian plague medicine. The architectural plan states that the advice of the Leiden professors corresponds with the ideas of Italian physicians who recently wrote about the plague. The physicians are: Hieronymus Donzellinus from Verona, Johannes Philippus Ingrassia, Caesar Rincius from Milan and Joachimus Camerarius from Nuremberg. All these scholars contributed to the book *Synopsis quorundam brevium sed perutilium Commentariorum de Peste* which was printed in 1583.[62]

---

[59] He obtained his doctorate in 1587 in Rostock with the Galenic physician Henricus Brucaeus as his supervisor.
[60] Luyendijk-Elshout, 'Der Einfluß der italienischen Universitätten', 342; Kroon, *Bijdragen tot de geschiedenis*, 22, 97-100; Otterspeer, *Groepsportret met Dame*, 170-172, 306, 329; Peter Pauw, *Tractatus de peste; cum Henrici Florentii ad singula ejusdem tractatus capita additamentis* (Leiden 1636) dedicatio.
[61] Pauw, *Tractatus de peste*.
[62] ELO, SA II, 5938A, fol. 13r.

Synopsis was a popular work, judging by the different editions and translations.[63] The book was edited by Joachim Camerarius. He wrote a short introduction to the book in which he discusses the history of the plague. The first chapter by Hieronymus Donzellinus is an introduction to remedies for the plague. Donzellinus first tells his readers about the causes of the plague. He then gives advice on how to avoid a plague outbreak and how to treat the sick. The second contribution is by Johannes Philippus Ingrassia and consists of a description of the measures taken to stop the plague outbreak in Palermo in 1575 and 1576. Ingrassia focuses on the venom that causes the plague. This poison has to be expelled, and he gives a list of all kinds of medicinal treatments that can do this. The third treatise is by Caesar Rincius. He describes the plague outbreak in Milan in 1577, and gives a comprehensive description of the clinical picture from a Galenic angle. The fourth treatise is by Joachimus Camerarius himself. He focuses on methods to stop the outbreak of the plague. For example in his treatise he describes in detail how to cleanse an infected house. The texts concludes with some short additions by Camerarius on specific themes, for example the use of medical earths such as Armenian bol and *terra lemnia*.

The architectural plan does not provide specifics about the role the book played in the formation of the architectural plan. Did the Leiden professors include the book in their advice? Or did the *gasthuismeesters* read this book? Nevertheless, the book did inform the architectural plan and it says quite a bit about architecture and healthy space at the time of the plague. It can therefore explain the connection between medical theories and the plague hospital architecture [64]

The Utrecht plague hospital

The architectural plan states that a report was made on the architecture of the new plague hospital in Utrecht.[65] Some *gasthuismeesters* probably made a journey to Utrecht and they asked questions to the staff of the plague hospital. This section describes the architecture of the Utrecht plague hospital in order to determine what the Leiden *gasthuismeesters* borrowed from this hospital.

In 1567, a bequest by Agnes van Leeuwenbergh founded the Utrecht plague hospital. The hospital was located in the Servaasbolwerk on the outskirts of the city. Two high, barrel-vaulted ceilings spanned the double-naved wards. The naves were separated from each other and a corridor ran right through the building, creating four separate wards. The four rooms had their own fireplace. Box beds

---

[63] Within fifteen year a German version was printed: Joachim Camerarius, ed., *Synopsis commentariorum De Peste, Das ist Kurtzer Doch beständiger Begriff dreyer Außbündiger Tractätlein von der Pestilentz, deren Natur, Praeservation, Curation und sonsten in gemein von allerhand dißfals bedencklichen Sachen* (Lich 1597). The book was also known under the title: *Synopsis commentariorum de peste*. See: Richard J. Durling, *A Catalogue of Sixteenth Century Printed Books in the National Library of Medicine* (Bethesda 1967) 100.
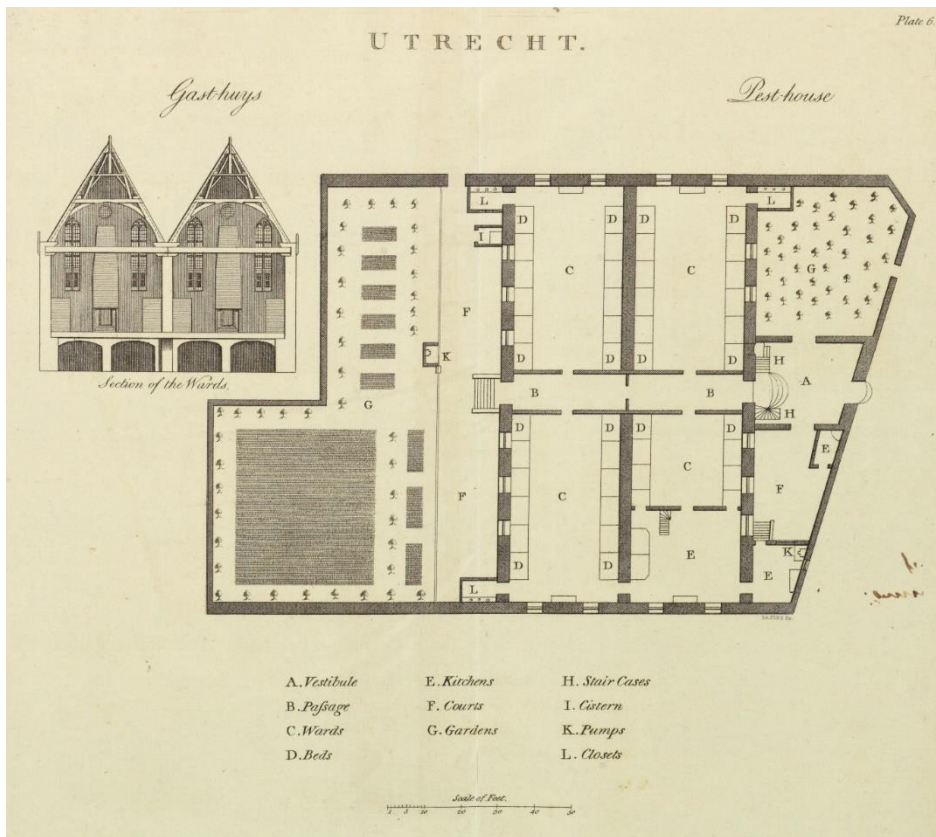[64] ELO, SA II, 5938A, fol. 13r.
[65] Idem.

Figure 4
This is a map of the plague hospital in Utrecht from the 18ᵗʰ-century. It gives a good impression of what the hospital probably looked like. the right-hand side of this picture is the front of the building that was directed towards the canals. This intersection gives a good impression of the hight of the wards.

were placed against the walls and above the box beds ran a gallery that may have served to open the windows, which were high up in the wall. At the far end of each ward, but not separated from it, was a toilet (figure 4). Under the wards were two large vaulted semi-basements that had small windows and probably accommodated the kitchen. Historian Dieter Jetter wonders if perhaps air was led from the cellar to the wards to improve air circulation. However, due to a lack of archival material on the subject, this remains unclear. The wing at the front of the building may have housed medical staff. The gardens were both at the front and the back of the building, isolating the plague hospital from the street and the rest of the city.[66]

The modern-day building might resemble the 16ᵗʰ century plague hospital, but has changed a lot over the years. In 1678, the building burned down almost completely and was then rebuilt. During the French period the building functioned as a military hospital. To serve the new needs, the interior was changed and extra windows were added. From 1844 to 1930, the building housed a laboratory. Utrecht University decided in this period to give the building a more Gothic look, with pointed arch windows and the wing at the façade disappeared. In 1930, after a restoration, the building became a Protestant church and therefore various rooms were merged into one.[67]

There are no written sources that tell anything about the medical ideas behind the architectural forms of the Utrecht plague hospital. The specific medical advice the Leiden *gasthuismeesters* took from Utrecht therefore remains unknown. When certain architectural forms of the Leiden plague hospital correspond to building elements from the *pesthuis* in Utrecht, we can suppose that the form of

[66] Jetter, *Das europäische Hospital*, 183-184; A. F. E. Kipp and W. Kastelein, 'Leeuwenbergh', *Maandblad Oud-Utrecht* 52:2 (1979) 41-47; Haneveld, *Oude Medische Gebouwen*, 165-166.

[67] Kipp, 'Leeuwenbergh', 44-46; Haneveld, *Oude Medische Gebouwen*, 166; H. J. Ph. G. Kaajan, 'Een streep door de (jaar)rekening; De brand van het pestgasthuis Leeuwenbergh', *Maandblad Oud-Utrecht* 51:9 (1978) 89-92.

that architectural element was modelled after the plague hospital in Utrecht. The medical meaning of this architectural form remains, however, uncertain. It is interesting that the *gasthuismeesters* not only relied on theoretical knowledge, such as the advice from the professors and the book, but also on a more practical kind of knowledge in the form of the Utrecht plague hospital. After having identified the sources, we can now look at how the advice shaped the architectural plan.

Healthcare through architecture

This paragraph analyses the medical meaning of the architecture of the plague hospital as proposed in the architectural plan. The interpretation is made by connecting architectural elements to medical knowledge that can be found in the sources identified in the previous paragraph. The architectural elements are grouped and explained around the following four medical themes: location, ventilation, isolation and emotions. A theme that also is addressed throughout the whole paragraph is the question to what extent the medical architecture functions as way to prevent the plague from spreading or whether it also was meant to cure inmates and/or create a healthy environment.

The location

The plot of land on which the Leiden plague hospital was supposed to be built, was initially situated on the edge of the city, next to the Agnietenconvent, which was also considered for the construction of the plague hospital (figure 5). Perhaps this was copied from the plague house in Utrecht, because that too was on the edge of the old city centre. It is probable that the choice for this location was based on medical theories on how the plague spreads through a city. According to doctors, poisonous air (miasma)

Figure 5
This map shows in colour the city of Leiden around 1580. The bottle green in the left upper corner was 'De Camp'. The red cross marks the St. Caeciliamonastery plot. The black cross shows where the Agnietenconvent was located.

spreads the plague. In a remote location a plague hospital could therefore do the least harm.[68] The

---

[68] Hieronymus Donzellinus, 'Commentarius de Peste doctissimus et accuratissimus' in: Joachim Camerarius, ed., *Synopsis quorundam brevium sed perutilium Commentariorum de Peste* (Nuremberg 1583) without page numbers. For the German version see: Camerarius, *Synopsis commentariorum*, 13.

armenrapport states that the plague hospital in neighbourhood '*de Camp*' would be the 'least harmful' location.[69] After all, '*de Camp*' was not so densely populated, because of the many monasteries located there. Moreover, the city council could relatively easily close the area off from the rest of the city if the plague broke out in this corner of the city. So, from a medical point of view, the location of the old St. Caeciliaklooster was very suitable to build the new plague hospital.

A wall of 10 feet tall (about 3 metres) around the complex was another way to ensure the separation of plague victims from the rest of the city. The wall stood at a distance of 1 rod (3.75 meters) from the hospital. The fallow ground between the hospital and the wall was a second measure to guarantee the insulation of the hospital from the city.[70] This idea came possibly from the Utrecht plague hospital. In Utrecht, gardens and walls separated the plague hospital from the street (figure 4).

However, social reasons might also have something to do with the choice for this location within the city walls. After all, '*de Camp*' was a rather poor neighbourhood. Social facilities in the 16th century served only poor people who could not make ends meet financially. Doctors treated sick rich citizens in their homes, also during the plague. By building the plague hospital in the poor neighbourhood '*de Camp*', the social care institution was brought to its target group.[71] Moreover, Hieronymus Donzellinus argues that the poor were much more susceptible to the plague than the rich, partly due to a lack of food.[72] Finally, rich citizens probably did not want an institution that only served the poor in their neighbourhood. All in all, this architectural measure was probably mainly based on the idea that a plague hospital should try to prevent the plague from spreading through the city.

Windows and wind

The architectural plan for the plague hospital attaches great value to good ventilation. The professors from Leiden give the following advice: 'the wards of plague victims must be as high and airy as possible'.[73] By placing the plague house on the first floor instead of on the ground floor, the *gasthuismeesters* followed the advice to treat plague victims 'at a high place'. Moreover, the room itself had a high ceiling. The architectural plan designed the walls of this floor to be 15 feet tall, which is 4.70 meters in current lengths. This was very tall, certainly compared to the ceiling of the ground floor, which probably barely reached 2 meters.

The windows, at a height of 7 feet (2.20 metres) on both sides of the ward, facing each other, made the space 'airy'. This position would enable the windows to catch wind.[74] The same principle is applied to the roof construction, where windows on either side of the roof provided air circulation. The

---

[69] Prinsen, 'Armenzorg te Leiden', 146-147.
[70] ELO, SA II, 5938A, fol. 13r-v.
[71] Ladan, *Gezondheidszorg in Leiden*, 23-26, 70-74.
[72] Donzellinus, 'Commentarius de Peste', without page numbers. For the German version see: Camerarius, *Synopsis commentariorum*, 5.
[73] '*de logysen van de personen die mit de pest zijn bevangen, gehouden werden hoe hooger ende luchtiger hoe beter*'; ELO, SA II, 5938A, fol. 13r.
[74] ELO, SA II, 5938A, fol. 13v.

architectural plan also states that two fireplaces had to be placed in each hospital ward. A 'little gallery' above the box beds made it possible for the staff to hang the sheets and contaminated linens between the open windows.[75]

From a medical point of view, it might seem illogical to build so many windows in the plague hospital. The plague spreads after all through bad air, toxic fumes, bad odours, and invisible particles in the air.[76] Through windows this poisonous vapour could escape and spread among healthy citizens. Doctors agree that open windows are a risk. Camerarius recounts that the Venetian city council ordered all citizens to close their windows in order to prevent contamination.[77] A Leiden plague ordinance from 1603 also says that houses with plague victims had to keep the windows and doors shut to prevent toxic fumes from infecting passers-by or neighbours.[78] However, the two fireplaces in each ward provided a solution to this problem. Donzellinus and Camerarius tell us that contaminated air can be purified by fragrant and pungent odours from, for example, walnut wood, fig wood, beech resin or rue juice. Fire in the hearth dispersed the odours through the wards, defusing the plague vapours.[79] Pauw adds that the smell emanating from the fire should have a dry complexion. Therefore juniper wood or laurel wood, should be used in winter. In summer, when there was less need for heating, sparging or sprinkling rose water in the wards would be sufficient.[80] Once the plague fumes had been purified, they could no longer harm the rest of the city.

According to the medical knowledge of the time, good clean air could help in the healing process. According to Camerarius, Pauw and Heurnius winds from any direction where the plague did not originate, were especially healthy.[81] Rincius emphasises that the right temperature inside the ward could sustain the healing process.[82] Heurnius adds that not only the temperature of these healthy winds should be right, but the sky must also be clear and the winds must have the right humidity.[83] Pauw stresses that the air that comes through the windows should be dry and cold. Because these *qualities*

---

[75] Ibidem, fol. 14r.

[76] Heurnius, *Het Noodigh Pest Boeck*, 14-15; Pauw, *Tractatus de peste*, 24-25, 53-57, 63 ; Donzellinus, 'Commentarius de Peste', without page numbers; Joachim Camerarius, 'De recta et necessaria ratione; praeservandi a pestis contagio tam imminente quam exoriente loca quaelibet' in: Joachim Camerarius, ed., *Synopsis quorundam brevium sed perutilium Commentariorum de Peste* (Nuremberg 1583) without page numbers. For the German version see: Camerarius, *Synopsis commentariorum*, 2-4, 7, 16, 55-57, 60.

[77] Joachim Camerarius, 'Ratio expurgandarum rerum infectarum vel propter contagium suspectarum; secundum modum apraefectis sanitatis publice Venetiis propositum' in: Joachim Camerarius, ed., *Synopsis quorundam brevium sed perutilium Commentariorum de Peste* (Nuremberg 1583) without page numbers. For the German version see: Camerarius, *Synopsis commentariorum*, 79-80.

[78] Overvoorde, 'Maatregelen ter bestrijding', 75.

[79] Donzellinus, 'Commentarius de Peste', without page numbers; Camerarius, 'De recta et necessaria ratione', without page numbers. For the German version see: Camerarius, *Synopsis commentariorum*, 16-17, 29-30, 57.

[80] Pauw, *Tractatus de peste*, 57; Heurnius, *Het Noodigh Pest Boeck*, 97-98, 100, 103-105.

[81] Camerarius, 'De recta et necessaria ratione', without page numbers. For the German version see: Camerarius, *Synopsis commentariorum*, 60; Pauw, *Tractatus de peste*, 57; Heurnius, *Het Noodigh Pest Boeck*, 31.

[82] Caesar Rincius, 'Disputatio accuratissima de peste Mediolanensi; quae anno Christi M. D. LXXVII. urbem afflixit' in: Joachim Camerarius, ed., *Synopsis quorundam brevium sed perutilium Commentariorum de Peste* (Nuremberg 1583) without page numbers. This text is not included in the German version.

[83] Heurnius, *Het Noodigh Pest Boeck*, 31, 33. See also: Pauw, *Tractatus de peste*, 57.

can balance the hot and humid complexion of the plague and the fevers associated with it.[84] The height of the wards plays a crucial role in 'catching' these healthy winds. By building the plague hospital on the first floor and making the walls extra tall, it was easier to catch the 'good' winds than if the hospital had been built on the ground floor and the surrounding houses had blocked these winds. The *gasthuismeesters* might also have borrowed the idea to build the plague hospital at the first floor from the Utrecht *pesthuis*.

The orientation of the building and the windows on the compass may also have had a medical significance. The windows in the wards face to the north and south. An explanation for this could be that winds from some directions were thought to be healthier than others. According to Camerarius, the northern wind purified contaminated clothing.[85] The *gasthuismeesters* could also have decided to place the windows in a north-south direction because it impedes the sun from shining in the ward. The sun barely shines its light directly through the windows during its east-west orbit, especially in summer. The rays that did fall through the windows did not reach the middle of the ward, where the box beds stood. This is in line with Heurnius' advice that plague victims should avoid the sun. This is probably to avoid unnecessary warming of the already overheated hearts of plague victims.[86]

Finally, the architectural plan speaks of a 'little gallery' above the box beds that serves to air the bedding. We know already how purifying through wind works, and that it is unwise to hang the contaminated bedsheets outside, in the open air. It was, however, also prohibited to air contaminated bedsheets in the streets. In a plague order from 1509 the Leiden city council forbade hanging contaminated clothes or bedding outside if the plague victim had not been cured for at least one month.[87] Similar restrictions were imposed in 1603 and 1664.[88] So some medical influences on the plague hospital design did not come directly from the advice of the consulted medical institutions, but from plague laws by the city council. On the whole, the architectural shapes that are examined in this section are based on medical advice. The forms are however not only to protect the city from plague victims, but also to sustain the curing process, and even to cure plague victims.

Isolation

The *gasthuismeesters* thought it was important to isolate the sick from each other. Two inner walls, described in the architectural plan, created three separate spaces. One was reserved for inmates who were in the midst of the disease and who had severe fevers. The second was for plague victims who had the worst behind them and for whom there was some hope that they would recover. The third room for

---

[84] Pauw, *Tractatus de peste*, 96-98.
[85] Joachim Camerarius, 'De recta et necessaria ratione', without page numbers. For the German version see: Camerarius, *Synopsis commentariorum*, 60.
[86] Heurnius, *Het Noodigh Pest Boeck*, 30.
[87] ELO, SA I, 387, fol. 24v.
[88] Jan van Hout, *Ordonnantie ende ghebot nopende de heete ziecte, ofte peste* (Leiden 1603) number VIII; Anonymous, *Resolutie vande Ed: Groot Mog: Heeren Staten van Hollandt ende West-Vrieslandt, Behelende middelen ende praecautien tegens het voortsetten vande Pest* (The Hague 1664) 5.

those inmates that were recovering. This all was 'so that the patients could not infect one another'.[89] To ensure that the three groups did not come into contact with each other, and that staff did not to walk through a ward to get to the next one, the *gasthuismeesters* designed a gallery at the exterior of the building.

Dividing plague victims into categories was probably based on a medical principle. However, the medical authorities that were consulted by the *gasthuismeester* divide plague victims only into two groups. The plague hospital in Utrecht had four wards, probably two rooms for each sex.[90] Heurnius advises to set up two rooms, one for plague victims that are definitely going to die and one for whom there is still hope.[91] Rincius divides the sick into two groups based on which part of the body is most contaminated.[92] Pauw says that plague fumes can make the plague victim even sicker, so he advises to keep inmates as far away from each other as possible.[93]

This kind of categorisation seems to be also rather common in institutions for poor relief. The *armenrapport* for example makes a clear distinction between 'idle poor' whose situation will never improve and 'real poor' who can be 'cured'. A Leiden report on a new *tuchthuis* (house of correction) says that incorrigible inmates and people who could improve should be housed in separate quarters of the institution.[94] The categorisation of plague victims could therefore also originate from more general thinking about the types poor people.

The architectural plan says that inmates of a different sex should be separated from each other. However, it is unclear whether a wall separated men and women from each other or that they were simply placed on opposite sides of the ward. The latter seems to be more likely because box beds stood with their backs against each other (figure 6).[95] One side could be used by the women and the other side by the men. Separating men and women was quite common in hospitals. The plague hospital in Utrecht separated men from women and so did the other Leiden hospitals. The separation on the basis of sex might have something to do with the different humoral balance men and women have, but the medical institutions give no explanation about this in their treatises. Preventing intercourse might also have been a reason to separate men and women from each other. Especially, plague victims should strive for moderation, also in sexual intercourse.[96]

Medical staff used the gallery to bring inmates to the right ward, without bringing plague victims in contact with patients from another category. A staircase connected the gallery to the ground

---

[89] ELO, SA II, 5938A, fol. 13v.
[90] This is deduced from the architectural plan, not from a written source.
[91] Heurnius, *Het Noodigh Pest Boeck*, 25-28.
[92] Rincius, 'Disputatio accuratissima de peste Mediolanensi', without page numbers.
[93] Pauw, *Tractatus de peste*, 117-118.
[94] Anne Hallema, 'Jan van Hout's rapporten en adviezen betreffende het Amsterdamsche tuchthuis uit de jaren 1597 en '98', *Bijdragen en Mededeelingen van het Historisch Genootschap* 48 (1927) 80, 96.
[95] ELO, SA II, 5938A, fol. 14r.
[96] Hub Sysmus says that newlywed are a high-risk group because of their active sex life. Hub Sysmus, *Pestbeschrijving waer in Naukeurigh de naeste oorzaeke der Peste onderzocht, en haer grondige genezing, in verscheyde geneeskundige aenmerkingen, voorgestelt wort* (Amsterdam 1664) 79.

floor and to the entrance to the building complex. The staircase was 1,60 meters wide, 7,5 meters long had only fourteen long steps. The risers must have been around 15 centimetres high and the treads more than 50 centimetres wide. This resulted in a 'lazy staircase' with an acute angle that rose slowly and steadily (figure 6). The designers might have chosen this type of staircase out of practical considerations, for a low and wide staircase made it easier to carry new patients on stretchers to the wards. This design could be based on the Utrecht plague hospital, because the plague wards in Utrecht were only accessible by a short staircase.[97] All in all, it is likely that the choice for the staircase and the gallery was inspired by medical practice. The categorisation system seems to have been a preventative measure, instead of a measure that was meant to cure inmates.
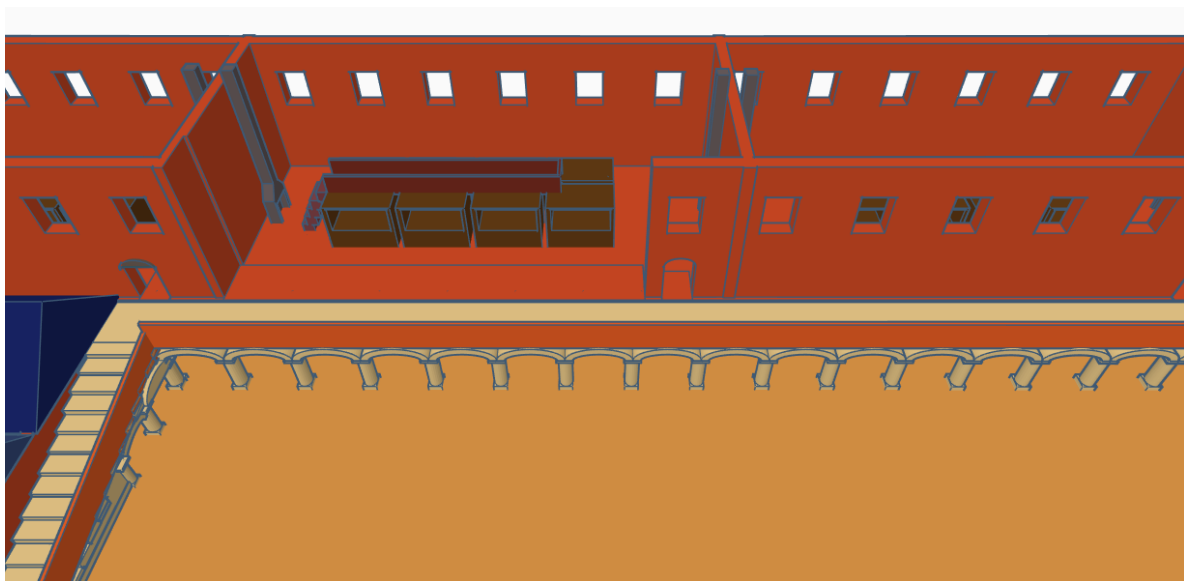

Figure 6
This reconstruction by the author, based on the architectural plan and the map, shows the possible position of the box beds, with the little wooden gallery to air linens above it. It also shows the larger gallery outside of the building, and the 'lazy staircase that led to the gallery.

Emotions

The architectural plan places the six to eight box beds per ward with their backs to each other (figure 6). This is an uncommon way of positioning the beds in wards, and therefore requires a (medical) explanation. The architectural plan itself says the box beds 'should be placed in such a way so that the inmates can see each other as less as possible'.[98] How should this quote be interpreted? It might have been a way to isolate patients even more, but 'seeing' is also a medical theme in itself. It is reminiscent of the intromission theory. According to that theory everything that is perceived enters the eyes influences the soul and by extention the physical condition of the person.[99]

---

[97] Haneveld, *Oude Medische Gebouwen*, 166.
[98] '*zulx zullen werden gestelt dat de ziecken malcanderen minst mogen zien*'; ELO, SA II, 5938A, fol. 14r.
[99] The report about the Amsterdam *tuchthuis* also mentions that seeing other inmates is counterproductive. This report was written only two years before the architectural plan. Hallema, 'Jan van Hout's rapporten', 96.

Henricus Florentius, the man who published Pauw's notes on the plague, mentions that seeing and even thinking of people from your surroundings who have the plague influences your soul, and makes you more susceptible for the disease.[100] Florentius goes on to say that people with a frightened disposition are even more susceptible to bad feelings that act as poison on the soul and cause the plague.[101] Although Florentius was not asked for advice by the *gasthuismeesters*, his thoughts on sight and emotions are common in 16th century medicine. Certain ideas might have led to the proposal to place the box beds in the middle of the ward.

Moreover, Heurnius seems to have had a similar thought. He says 'that the venomous air reaches more easily the heart if the heart is heated by sadness'.[102] He therefore advises people to avoid this emotion and sleep a lot. He repeats his point about emotions later in the book; 'sadness and anger should be avoided'.[103] He too links certain emotional dispositions to susceptibility to the plague. The plague can also arouse anger in patients.[104]

Based on the ideas of Florentius and Heurnius, not seeing the other patients could help to create a healthy space. Seeing other people's suffering and interacting with them, could cause wrong emotions and thus weaken the patient. There may also be less inconvenience by putting the box beds with their backs to each other. Isolating the inmates in this way prevents possible wrath and perhaps also ensures that the plague sufferers can sleep undisturbed, something that Heurnius recommends in most circumstances.[105] In conclusion, putting the box beds with their backs together can be explained as a preventative medical measure.

The execution of the plague hospital plan

The previous paragraph showed that various architectural elements in the architectural plan had a medical meaning. The architecture was not only supposed to protect the rest of the city from the plague, but was also expected to create a healthy environment for plague victims, and even cure inmates. This paragraph tries to match the medical meaning of the architectural plan with the space that was actually constructed by the master builder. Therefore this paragraph shows what medical meaning the space of the plague hospital had.

Strikingly enough the master builder and his construction workers did not fully implement the architectural plan. In 1599 and 1600 the plague struck again in Leiden,[106] and this might have been the reason why the builders wanted to finish the plague hospital as soon as possible. It is interesting to see

---

[100] Pauw, *Tractatus de peste*, 62.
[101] Ibidem, 61-62.
[102] '*Dan dringhet de besmette Locht lichtelicker tot aen het herte als het verhittet wordet door de onmatighe droefheydt*'; Heurnius, *Het Noodigh Pest Boeck*, 33.
[103] '*Droefheydt ende gramschap moet men vermijden*'; Heurnius, *Het Noodigh Pest Boeck*, 37.
[104] Ibidem, 74.
[105] Ibidem, 37, see also 71-72, 76.
[106] Ladan, *Gezondheidszorg in Leiden*, 246-247.

which ideas they did include in the final product, and which ideas they excluded, possibly because the ideas were not considered as effective as other architectural forms.

The architecture of the wards correspond roughly with the description of the plague hospital given in the architectural plan. The height of the ward was indeed around 5 metres. The master builder placed twelve large windows at a height of two metres high on the north and south side of the wards, with movable cross frames. Because the windows opposed each other, six on either side of the ward, air circulation was increased. According to historian Hugo van Oerle, there was a little gallery against the south wall that was used to air the linens.[107] The fireplaces were also executed, although there was probably only one fire per ward instead of two. So far, the interior of the ward was executed according to plan.

The master builder decided to leave the architectural plan aside in some instances. He chose, for example, to divide the old monastery building into two wards instead of three.[108] As a result, only men and women were separated from one another.[109] The medical staff could not therefore separate patients at different stages of their illness into different rooms. Since the master builder constructed two wards, the gallery that enabled staff the enter the room from the outside of the building had become redundant. Instead, a wide staircase was made, albeit a little steeper than the staircase in the plan. The staircase led from the courtyard via an inner vestibule to the men's ward on the left and the women's ward on the right.

The box beds were probably never placed with their backs towards each other. Chronicler Jan Jansz. Orlers mentions in 1614 that an odd number of box beds stood in the ward (21 for the men and 23 for the women).[110] This odd number can only be explained if the box beds were placed against the wall. The vestibule would have made it after all impossible to place any beds to the first two meters of the north side of the wall. Placing the box beds against the wall was against medical advice.

Overall, however, the master builder seems to have largely adhered to the architectural plan and thus the architecture of the new plague hospital would have created, according to 16th century medical theories, a healthy space that helped plague victims to get better. The *gasthuismeesters* and the master builder used medical knowledge to shape the architecture in a functional medical way. Therefore the space that the architecture created acquired a medical meaning.

---

[107] Van Oerle, *Het Caecilia-Gasthuis*, 55.
[108] Van Oerle, *Het Caecilia-Gasthuis*, 46.
[109] Jan Jansz. Orlers, *Beschrijvinge der stadt Leyden; Inhoudende 't Begin, den voortgang, ende den wasdom der selver: de stichtinge vande Kercken, Cloosteren, Gasthuysen, ende andere Publijcque Gestichten* Deel 1 (Leiden 1614) 130.
[110] Orlers, *Beschrijvinge der stadt Leyden* 1, 130.

The Leiden plague hospital in a broader tradition?

As argued in the introduction of this chapter, plague hospitals are often considered to be non-medical spaces.[111] Previous paragraphs showed however that the architecture of the Leiden case study was meant to cure plague victims. This paragraph looks at other plague hospitals in the Low Countries from the late 15th and 16th century, and examines whether or not we can extrapolate the findings on medical architecture of the Leiden case study to other plague hospitals with similar architecture. This paragraph examines how the Leiden plague hospital fits in the broader tradition of plague hospital architecture. Since a thorough study into Dutch plague house architecture is still lacking, the following paragraph can only give a superficial overview. The end of the paragraph elaborates on the symbolic significance of the fact that the building in a broader tradition fits for the plague hospital space.

First of all, it is important to note that the *gasthuismeesters* in Leiden were not the only ones who consulted (medical) authorities to advise them before designing an architectural plan for a charitable institution. In Italy, Alberti and Filarete advised architects to delve into all kinds of specialised (medical) knowledge before designing a specialised building like a hospital.[112] Historian Jetter mentions that the plague hospital in Augsburg was built after the hospital in Nuremberg.[113] The city council of Gouda visited the plots to inspect the best location for a new plague hospital.[114] In Leiden, town clerk Jan van Hout made in the 1590s three journeys to Amsterdam to visit the *tuchthuis*, because the Leiden city council considered building a similar specialised institution. He wrote reports in which he summarised the most important architectural and practical advice from the *tuchthuismeesters* in Amsterdam.[115] The city councils of Rotterdam and Leiden repeatedly consulted professors in medicine on legislation concerning health regulations.[116] And the city council of Hoorn commissioned in 1599 the town doctors Hogerbeets and Velius to advise them on how to make healthy plague hospital architecture.[117]

In terms of location, the Leiden plague hospital fits in a broader tradition. Italian plague hospitals, called *lazaretto*'s, were famous for their remote locations.[118] In the Low Countries however, plague victims were usually housed within the city walls. This is because the first plague hospitals in the 15th century were built next to their mother institutions, such as the plague hospital in Amsterdam that stood next to the St. Pietergasthuis. During the Reformation, city councils often laid claim to

---

[111] Noordegraaf, 197-198; Querido, *Godshuizen en Gasthuizen*, 31-32.
[112] Joseph Rykwert, Neil Leach and Robert Tavernor, *On the Art of Building in Ten Books; Leon Battista Alberti* (Cambridge 1988) 129-130; John R. Spencer, *Filarete's Treatise on Architecture; Being the Treatise by Antonio by Piero Averlino, Known as Filarete* (London 1965) 79r-81r.
[113] Jetter, *Das europäische Hospital*, 183.
[114] Johannes Bik, *Vijf eeuwen medisch leven in een Hollandse stad* (Amsterdam 1955) 112.
[115] Hallema, 'Jan van Hout's rapporten', 69-98.
[116] H. C. H. Moquette, 'Pestepidemieën in Rotterdam', *Rotterdamsch Jaarboekje* 3 (1925) 50; Ladan, *Gezondheidszorg in Leiden*, 140-141.
[117] J. Steendijk-Kuypers, *Volksgezondheidszorg in de 16e en 17e eeuw te Hoorn; Een bijdrage tot de beeldvorming van sociaal-geneeskundige structuren in een stedelijke samenleving* (Rotterdam 1994) 204-206.
[118] Jetter, *Das europäische Hospital*, 182-183; Crawshaw, 'The Renaissance', 161-174.

monastery buildings, and used it to accommodate charitable institutions. However, if the city council had the choice, they seem to have preferred to house plague victims near the ramparts, at the outskirts of the city, such as the plague hospital in Utrecht, the new plague house in Dordrecht from 1577, and the plague hospital in Haarlem in the old Magdalena monastery. Only from the beginning of the 17th century plague hospitals were built outside the canals. Behind this choice for isolated locations was probably the same medical reason that led to the choice for location of the Leiden plague hospital.[119]

Figure 7
This panel painting from 1504 shows a fictional hospital interior. Above the box beds in the front, the artist painted a gallery to air contaminated clothing.

Ventilation might also have been a medical theme that played a role in shaping plague hospital architecture in other towns. We know from Filarete's 15th-century treatise that there was an ingenious pipe system that ventilated the Ospedale Maggiore in Milan.[120] Jetter thinks that the plague institution Hôpital Saint-Louis near Paris from 1611 probably used a tubular ventilation system.[121] It is difficult to determine whether Dutch plague hospitals had some form of ventilation or air circulation system. Every plague ward had a fireplace, but a hearth has more uses than purifying the air. Sometimes it is said that the location the plague hospital is built has 'good, open air'.[122] The windows in most plague hospitals could be opened, so staff might have used them to purify the rooms from plague venoms. The plague hospital in Gouda from 1614 was even described as 'airy' as if it is an important characteristic of the architecture.[123] The plague hospital in Hoorn was positioned so that it could catch the north and eastern winds, because those winds were healthy according to Hogerbeets and Velius. They also tried to avoid sunlight from shining through the

---

[119] Noordegraaf, *De gave Gods*, 196-197, 200; Haneveld, *Oude Medische Gebouwen*, 20, 68-69, 77, 94-97; Bik, *Vijf eeuwen medisch leven*, 110-112.

[120] Jetter, 'Das Mailänder Ospedale Maggiore', 72-74; Baldasso, 'Function and Epidemiology', 107-122; Spencer, *Filarete's Treatise on Architecture*, 79r-81r.

[121] Jetter, *Das europäische Hospital*, 185-188.

[122] See Lopsen in Leiden and the Buitengasthuis in Amsterdam. Overvoorde, 'Maatregelen ter bestrijding', 79; D. A. Zoethout, 'Het oude buitengasthuis (pesthuis) te Amsterdam', *Elsevier's Geïllustreerd Maandschrift* 11 (1901) 400.

[123] Bik, *Vijf eeuwen medisch leven*, 113.

Figure 9
A little gallery can be found above the box beds in this relief from 1624 of the interior of the Haarlem St. Barbaragasthuis.

windows, because it was unhealthy.[124] Most (plague) hospitals also had quite high ceilings,[125] and the Rotterdam plague hospital from 1599 was located on the first floor.[126] The higher the plague ward, the easier it would be to catch good winds. Moreover, galleries above the box beds to purify clothes by hanging them in the wind, seem to have been quite common in hospitals (figure 7, 8 and 9). As soon as the plague arrived in a town, the magistrates were not that attentive to the architecture of a plague accommodation anymore. In Haarlem for example they used during a plague outbreak a vacant old monastery building to house plague victims without making adjustments to the architecture.[127] When it was urgent, plague victims in Utrecht could be lodged in a madhouse without proper ventilation.[128] All in all however, most 16th- and early 17th-century plague hospitals in the Low Countries seem to have had architecture that enabled the medical staff to ventilate the wards and create a healthy environment.

Figure 8
This relief from 1607 depicts the interior of the plague hospital in Alkmaar. Above the box beds, a little gallery is visible.

---

[124] Steendijk-Kuypers, *Volksgezondheidszorg*, 206.

[125] Because box beds were generally placed against the wall, windows had to be high up in the walls, and therefore the ceiling always had to be quite high. It is therefore difficult to determine the medical meaning of the high windows and high ceiling.

[126] M. J. van Lieburg, 'Die medizinische Versorgung einer Stadtbevölkerung um 17. Jarhhundert; Die Quellen und Forschungssituation für Rotterdam', *Münstersche Beiträge zur Geschichte und Theorie der Medizin* 18 (1982) 39.

[127] Haneveld, *Oude Medische Gebouwen*, 77.

[128] A. J. van der Weyde, 'Bijdrage tot de geschiedenis der pest te Utrecht', *Nederlands Tijdschrift voor Geneeskunde* 71 (1927) 3121.

Isolation among the plague victims themselves was deemed very important in Italian plague hospitals. In the 16th century, the Milanese and the Veronese developed a type of hospital in which each plague victim had his or her own cell, so plague victims were completely separated from each other. A system in which patients were categorised and put into different rooms also existed in Italy. In Florence, the 15th-century Ospedale di San Bastiano had four plague wards, two for men and two for women. Each sex had one room for plague victims who were still very sick and one for people who were recovering.[129] In the Low Countries, plague hospitals in general probably did not have this system of wards for different plague victims. Only men and women were separated. In plague hospitals in the Low Countries, every patient had, however, his or her own box bed, which could be closed off with curtains. Historian G. Vis thinks that this was a way to isolate patients from each other to prevent the spread of the disease.[130]

Little has been written about influencing emotions in plague hospitals. From treatises it is known that cheerfulness and joy can keep the plague away. To arouse this feeling, one could tell stories (as happens in the *Decameron*), hunt, or enjoy a garden.[131] Possibly the (religious) works of art that hung in medieval and Italian hospitals also influenced the emotions of patients.[132] Placing the box beds in the middle of the room instead of against the walls does not seem to have occurred in the Low Countries, nor is there any evidence that staff tried to influence emotions in other ways.

On the whole, the plague hospital architecture in Leiden is quite similar to *pesthuizen* from other cities, especially in terms of location and ventilation. This means, on the one hand, that medical knowledge probably shaped the architecture of a number of 16th- and early 17th-century plague hospitals in the Low Countries. This means that plague hospitals in general probably were seen as medical institutions that tried to cure plague victims, and not as places that were only meant to protect society.

This means, on the other hand, that the plague hospital in Leiden with regards to architecture probably stood in a broader, longer tradition. *Gasthuismeesters* and/or city councils probably often visited plague hospitals in other towns to get a better idea of what good plague architecture looked like. This means that there are probably several 'material' connections between plague hospitals in the Low Countries that were inspired after one another. If we look at this phenomenon from an angle of intertextuality, we see that the hospitals are referring firstly to the medical theories they are based on and secondly to each other. We could even approach them as material 'citations'. The Leiden plague

---

[129] Risse, *Mending Bodies*, 204-205; Dankwart Leistikow, *Ten Centuries of European Hospital Architecture; A Contribution to the History of Hospital Architecture* (Ingelheim am Rhein 1967) 57-58.

[130] J. G. Dijkstra thinks that the curtains also enabled doctors to protect patients from the light and air, and to let them sweat. He cannot, however, prove this with written sources. G. N. M. Vis, *650 jaar ziekenzorg in Alkmaar: 1341-1991; Hoofdstukken uit de geschiedenis en voorgeschiedenis van de Alkmaarse zieken- en gezondheidszorg* (Hilversum 1991) 67; J. G. Dijkstra, *Een Epidemiologische beschouwing van de Nederlandse pest-epidemieën der XVIIde eeuw* (Amsterdam 1921) 58; Haneveld, *Oude Medische Gebouwen*, 62.

[131] Sarah R. Kyle, *Medicine and Humanism in Late Medieval Italy; The Carrara Herbal in Padua* (London 2017) 78.

[132] Frances Gage, *Painting as Medicine in Early Modern Rome; Giulio Mancini and the Efficacy of Art* (University Park 2016); Henderson, *The Renaissance Hospital*, xxxi-xxxii;.

hospital therefore is interconnected with other plague hospitals in the Low Countries, and acquires meaning through this connection. By 'quoting' the Utrecht plague hospital and other hospitals in the Low Countries in its architecture, the Leiden hospital refers to the meaning of those other hospitals. As we have seen, had those other hospitals a medical meaning and because of its material similarities the Leiden plague hospital also acquired a symbolical medical meaning. The *gasthuismeesters* gave the plague hospital, by placing it in this tradition, a medical outlook and with it, medical legitimacy. So, medical knowledge is also used to place the Leiden plague hospital in a broader architectural tradition, and in doing so a symbolical meaning is created that refers to the medical credibility of the institution 'plague hospital'.

The power of knowledge

Medical knowledge shaped the architecture and space of the Leiden plague hospital. Knowledge created a space that isolated plague victims from society and from each other, and moreover a space that supported the health of the inmates, and in some ways a space that could even cure plague victims. This knowledge also placed the Leiden plague hospital in a broader tradition of medical plague hospital architecture. As we have seen the functional as well as the symbolical meaning of the plague hospital space created a medical space. However, what are the social meanings of the use of this medical knowledge and references? This paragraph discusses the social implications of the use of medical knowledge in the Leiden plague hospital. Unfortunately we do not have written sources that can show the social experience of the hospital, and therefore we must rely on sociological and philosophical theories. To better understand the social meaning of a space that was shaped by knowledge, we should look at the ideas of Michel Foucault.

According to Foucault, knowledge is 'power'. The concept of 'power' has a broad meaning in his work. On the one hand there is repressive power, that is, power produced by the threat of violence. On the other hand, there is normalising power, a more subtle and implicit power. In society, for example, there are all kinds of norms and values that influence our actions, and even shape our whole thinking. We are not constantly aware that this normalising power is there, because we are raised in a certain way and our thinking pattern is shaped by our education. Or, as Foucault would put it, society has disciplined us. If a society thinks that a certain body of knowledge is 'true', that knowledge is held in high esteem and will prevail over other, or lesser knowledge. This 'true' knowledge tells us what is best for us, what to believe and how to act.The modern-day equivalent would be knowledge that was produced by universities. This knowledge acts as a normalising power over us. Institutions and governments can use it to legitimise their policies and actions.[133]

---

[133] Stuart Hall, 'The work of representation', in: Stuart Hall, Jessica Evans and Sean Nixon, ed., *Representation* (Los Angeles 2013) 32-36.

Spaces influence and shape human actions and social interactions.[134] When knowledge is used to shape architecture, a specialised space is created. A specialised space, such as a plague hospital, has a normalising power over disciplined people, for it facilitates only certain actions and behaviour, while other behaviour is made impossible or is discouraged by the specialised space. Feelings can also be shaped by experiencing a certain space. By allowing medical knowledge to shape the architecture, the space becomes specialised and the medical space supports certain actions and behaviours, such as resting, caregiving and healing. By placing more patients in a room, there is more social control and patients are more likely to behave. After all, everything that makes noise is heard by the fellow inmates, and with the box beds against the wall, patients are always watched by other patients. All in all, medical architecture has a normalising power that enforces some behaviour and discourages other actions.

To a certain extent, the plague hospital was what Foucault calls a heterotopia. This is a space that is (partially)closed off from society and has its own *discours*. Through the eyes of the patient the heterotopia started at the entrance gate to the complex. The gate marked the boundary from public to private. By passing through the gate, the citizen turned into a patient, visitor or member of staff. The patient suddenly had to accept instructions from the medical staff, and he or she lost autonomy. The kinds of deformities in his or her body, or deviations in his or her behaviour are explained by medical theories. The citizen that became a member of staff, on the other hand, gains authority because of his or her knowledge and experience. He or she looks in this space with a medical gaze to the world. Sunlight and air in this space are not just sunlight and air anymore, but possible health threats. Thus the entrance gate symbolically marks the transition to another 'world' or mini-society, with a different discourse, different norms and values and another attitude towards behaviour, emotions and the world.[135]

Medical knowledge shaped the architecture and medicalised the space. Medical knowledge and 'quoting' other medical institutions made the plague hospital space look like a convincing medical space. This is important, because if a space looks specialised, people are more inclined to do what they are told by the medical staff. Medical architecture gives medical authority and control.[136] Doctors and medical staff had to give all kinds of instructions to the plague victims. By giving the room the architecture medical élan, the instructions of the staff automatically received more authority and legitimacy. If the patient realised that he or she was in a medical room, he or she would probably have been conditioned to follow the instructions. So architecture shaped by medical knowledge increased the control from medical staff over the patients. All in all, the use of medical knowledge in the hospital

---

[134] Tally, *Spatiality*, 116-128.

[135] Peter Johnson, 'The Geographies of Heterotopia', *Geography Compass* 7:11 (2013) 790-803. For the meaning of gates in madhouses see: Jane Kromm, 'Site and vantage; Sculptural decoration and spatial experience in early modern Dutch asylums' in: Leslie Topp, James E. Moran and Jonathan Andrews, ed., *Madness, Architecture and Built Environment; Psychiatric Spaces in Historical Context* (New York 2007) 19-20.

[136] Adams, 'Design for Control', 303-324.

architecture creates a social meaning to the space that enables and dictates certain actions, behaviours and feelings.

Conclusion

This chapter showed that medical knowledge gives meaning to the Leiden plague hospital space in a number of different ways. The first paragraph showed that there are still several sources that probably reflect the advice that the medical authorities gave to the *gasthuismeesters*. These written sources relied heavily on a Galenic theoretical approach to space, while the Utrecht plague hospital probably had a more practical approach. Firstly, the function of these medical ideas was to shape the space in such a way that it effectively isolated plague victims from the city, made an environment that supports good health, and even created a space that can cure plague victims. This last function of space in plague hospitals supplements the existing historiography, whichonly focuses on the isolating function of plague hospital architecture. Secondly, by using these medical ideas the *gasthuismeesters* designed a plague hospital that resembled other similar institutions and placed the Leiden plague hospital in a longer architectural tradition. At the same time, the architectural similarities between Leiden case study and other plague hospitals make it clear that plague institutions in other cities have also been shaped by medical knowledge. Thirdly, the knowledge created a space that supported medical actions, controlled patients and gave legitimacy and authority to medical staff.

Chapter 2

The Madhouse

The literature on madhouses has interpreted madhouse architecture in different ways. Older literature, like studies by George Henry, interprets the prison-like madhouse architecture as a lack of interest from society in the mentally ill.[137] Michel Foucault interprets in his book *Folie et déraison* madhouse architecture as an instrument of society to discipline anyone who deviated from the norm. The mentally ill, but also vagrants, thieves, and prostitutes are locked up in houses of improvement or other confinement institutions that tried to discipline them. During the Age of Enlightenment these disciplinary institutions were medicalised, and since that period doctors started to treat the mentally ill with medicines in order to 'cure' them.[138] From that point onwards it is thought that the architecture of institutions for the medically ill were based on medical theories.[139] Early modern mental institutions are interpreted as more about imprisonment and disciplining than about medical treatment. Especially the cells are interpreted as places where aggressive people were locked away to discipline them without any medical purpose.[140]

This chapter focuses on the architectural plan for the madhouse. The purpose of this chapter is to examine how medical knowledge created the spaces of the madhouse. A second goal is to show that the current historiography should be reconsidered, for the architecture of 16th-century madhouses seems to have been based on medical theories. The first paragraph tries to reconstruct which sources best reflect the advice the *gasthuismeesters* received. The second paragraph connects the theoretical ideas to the architectural forms in the architectural plan, and the third paragraph looks to which extent these medical ideas have been executed. The fourth paragraph explains the implications the use of medical knowledge in the architecture has for the social, disciplining character of mental institutions.

---

[137] George W. Henry, 'Mental Hospitals' in: Gregory Zilboorg, *A History of Medical Psychology* (New York 1941) 568-571, 574-576.

[138] Foucault, *Madness and Civilization* (Abingdon 1967).

[139] Yanni, *The Architecture of Maddness*; Foucault, *Madness and Civilization* (Abingdon 1967). See also: Benoît Majerus, 'The straitjacket, the bed, and the pill; Material culture and madness' in: Greg Eghigian, ed., *The Routledge History of Madness and Mental Health* (London 2017) 263-276; Benoît Majerus, 'Material Objects in Twentieth Century History of Psychiatry', *Low Countries Historical Review* 132:1 (2017) 149-169; Leonard Smith, 'The architecture of confinement; Urban public asylums in England, 1750-1820' in: Leslie Topp, James E. Moran and Jonathan Andrews, ed., *Madness, architecture and the built environment: psychiatric spaces in historical context* (New York 2007) 41-61.

[140] Jetter, *Das europäische Hospital*, 193-198; J. Schut, *Van dolhuys tot psychiatrisch centrum; Ontwikkeling en functie* (Haarlem 1970) 22-24, 38-41; Scull, *Madness in Civilization*, 65-67; Roy Porter, *Madness: A Brief History* (Oxford 2002) 122-129; Mans, *Zin der Zotheid*, 86-88; Vijselaar, 'Van cellen, ketens en banden', 91-96; Saskia M. C. Leupen, 'De kloosters van de cellebroeders en -zusters in het graafschap Holland en Zeeland tot aan de Reformatie', *Historisch Tijdschrift Holland* 30:2 (1998) 83-84.

Medical sources for mental illnesses

 As demonstrated in the previous chapter, the *gasthuismeesters* sought advice from medical institutions. The Utrecht plague hospital and the book by the Italian scholars, however, did not contain any specific knowledge to advise on the matter of mental illness. The professors however might have known a fair deal about the treatment of the mentally ill, for it is a common theme in Galenic medicine. For example, Avicenna wrote about it in his third book of the Canon of Medicine. Indeed, the architectural plan mentions that the professors wrote a report that amongst others advised that the mentally ill should be cared for in a dry environment, near the earth and in the dark.[141]

Heurnius is the only professor that left a source that can tell something about his possible advice to the *gasthuismeesters*. His ideas on mental illness are summarised in *De morbis qui in singulis partibus humani capitis insidere consueverunt* which was printed in 1594. The book discusses the diseases of the head. These include various skin and hair disorders, but also headaches, coma, epilepsy, brain inflammation, dizziness, hydrophobia, memory loss and sleep. Heurnius discusses also 'mental illnesses' such as *frenesis*, *lethargia* and *mania*. According to Heurnius, *frenesis* is a delirium with fever that is caused by hotness and dryness, blood and sadness.[142] *Lethargia* was the opposite of *frenesis*. It was a cold disease and the humour phlegm was thought to cause it. *Mania* was seen as a chronic condition with episodes of rage and beastly behaviour that can be caused by, among other things, yellow bile and an overheated brain and heart. In his description of the diseases, Heurnius based his information mainly on ancient authors such as Hippocrates, Galenus and Celsius.[143] Heurnius may also have paid attention to mental illness in his lectures, because in 1591 a certain Cornelius Niewenhove wrote a dissertation at the medical faculty in Leiden on the subject of mania.[144]

Confinement as medicine

The architectural plan states that the madhouse should be built on the ground floor. The madhouse would consist of twenty individual, vaulted, stone cells that could be closed with a door. The advice was to isolate the cells to mute the sounds made by the mad as much as possible'.[145] The doors of the cells opened into a wide corridor that ran along the entire south side of the building. The madhouse must have been pitch-dark, as the corridor had no windows, nor were there any windows in the cells. This darkness, together with the placement of the madhouse on the ground floor, was a deliberate choice

---

[141] ELO, SA II, 5938A, fol. 13r.

[142] The print from 1608 has another page numbering. Johannes Heurnius, *De morbis qui in singulis partibus humani capitis insidere consueverunt* (Leiden 1594) 96-99.

[143] Stanley W. Jackson, 'Galen – on mental disorders', *Journal of the History of the Behavioral Sciences* 5:4 (1969) 365-384; Beek, *Waanzin in de middeleeuwen*, 83-115; Heurnius, *De morbis*, 94-100; P. J. Koehler and G. W. Bruyn, 'Medische inzichten omtrent hoofdpijn en migraine in Nederland; 16ᵉ-19ᵉ eeuw', *Geschiedenis der geneeskunde* 24 (1994) 2597-2602.

[144] UB Leiden, Archief van Senaat en Faculteit, 347, fol. 63.

[145] ELO, SA II, 5938A, fol. 13v.

for the architectural plan says: 'the cells of the mad are the darker the better, and they must be made close to the earth in such a way that the place is dry and not moist'.[146] This quote states that the architecture of the madhouse was inspired by what was considered 'best' for the mad.

Medical theories seem to have determined what is the 'best' environment for the mentally ill, since the medical advice on a good environment found in Heurnius' book matches the madhouse construction designed in the architectural plan. Heurnius tells us that classical thinkers, such as Celsus, advised to lock up patients who had *frenesis* in dark rooms. Heurnius himself is a little more hesitant about this and says that patients who are afraid of the dark should be kept in a light room. However, as soon as they develop a delirium, they should be locked up in a completely dark space. According to Heurnius it is very important to keep *frenesis* patients far from visual stimuli such as paintings and many different colours.[147] Heurnius says that being locked up in the darkness is always good for inmates with *mania*, especially during an attack of madness. Manics are allowed to stay in an average-lit room, as long as there are no visual or auditory stimuli.[148] The lack of windows furthermore prevented the sun from heating up the cells. A cool environment is according to the Galenic system good for frenetics and manics. In addition, the cell was very small. This meant that the inmates could not move much and so their bodies would not heat up any further.[149] The dark, cool, soundproof cells described in the architectural plan are therefore ideal medical environments for manics and frenetics.

The architectural plan states that the cells should be built *laech bij der aerden*. The Galenic medical system connects earth to the temperament *melancholia*. The qualities dryness and coldness, and the colour black, strengthen this temperament. It seems, however, unlikely that the *gasthuismeesters* intended to strengthen this temperament by means of architecture, because *melancholia* is seen as the culprit for at least some mental illnesses, although it might have worked as a cure for some others. Yet, we can interpret the quote in a second way, namely, as low to the ground, instead of high in the air and windy, like the plague hospital. Wind probably was counter-effective for most medicinal treatments of the mentally ill. Doctors prescribed fragrant aromas as medicine for madness and these aromas would probably dissipate if the madhouse was too windy. In addition, recipes speak of 'making the air cool' as if this should be done artificially instead of through the wind.[150]

The architectural plan also said that the room should be dry and not moist. This statement is not easy to explain. *Frenesis* was caused by dryness and a medical advice for frenetics was to keep the environment as humid as possible. Only in the occasion that blood, which has a warm and moist

---

[146] '*de logysen van de dolle of uytsinninge menschen, hoe die donckerer zijn hoe beter ende zulx notelicken laech bij der aerden dien gemaeckt mit zulcken bescheyde nochtans dat de plaetse van hem zelfs drooch ende niet vochtich en zij*'; ELO, SA II, 5938A, fol. 13r.

[147] Heurnius, *De morbis*, 124-125. See also: Jonathan Andrews, ed., ea., *The History of Bethlem* (Londoparin 1997) 208.

[148] Heurnius, *De morbis*, 158.

[149] Ibidem, 125, 158.

[150] For example: Beek, *Waanzin in de middeleeuwen*, 89, 112.

complexion, causes *frenesis* the cold and dry environment is helpful.[151] *Mania* can be caused by all different temperaments and therefore it differs per patient what the remedy should be, but in general a moist environment is better than a dry one. Moist and coldness strengthen the clear mind, which is disturbed in the mentally ill.[152] Leiden was, however, not the only city that thought that moist was harmful to the mentally ill. The *dolhuismeesters* in Dordrecht wanted to move the madhouse because of the moist, and therefore unhealthy air.[153] Dry cells seem to have been a medically valid idea in the Dutch Republic. The other, abovementioned aspects of the cells match very well with medical theories on what a healthy environment for the mad is. Therefore we can interpret the cells in the architectural plan as medical architecture that tried to cure the inmates.

The execution of the madhouse plan

The master builder constructed the madhouse almost exactly as prescribed in the medically inspired architectural plan. Nineteen cells were built instead of the prescribed twenty. The construction workers built completely dark cells that were provided with a wooden toilet and a food hatch. The corridor running along the cells was probably without windows. The master builder also made an effort to insulate the cells: the interior was clad in thick wood with a layer of lime mortar (a type of concrete) behind it. Hugo van Oerle believes that the second corridor that ran on the north side along the cells also attenuated the noise. The courtyard was used for the mentally ill to get some fresh air.[154] The master builder apparently followed the medical advice to place the mentally ill in the dark, well insulated and close to the ground. Therefore we can interpret the madhouse as being a medical space.

There is one mental illness described by Heurnius, for which the prescribed environment does not match with the cells of the Leiden madhouse. Heurnius says that people who have *lethargia* should be kept in a light, sunny space. The room should also be warm and there should be a wide variety of stimuli, such as paintings, colourful clothing and many objects to stimulate vision, and noise as a auditory stimulus. Physical exercise is also good for these patients.[155]

There might, however, have been a room in one of the buildings surrounding the courtyard where lethargics were treated. When the St. Caeciliagasthuis buildings were disbanded in 1872, paintings were found. Of the 29 paintings, 12 were made by anonymous painters, the others are signed or attributed to an artist.[156] The subjects on the paintings are very diverse: there are four religious scenes, five still lifes, six genre paintings, six portraits, one history painting, six landscapes and one naval

---

[151] Heurnius, *De morbis*, 96-99.
[152] UB Leiden, Archief van Senaat en Faculteit, 347, fol. 63; Beek, *Waanzin in de middeleeuwen*, 97-107, 112.
[153] Katharina Manteufel, *'Zullen wy [...] malkanderen de hant niet bieden'; Policies of Asylum Care for the Insane in 17th and 18th-Century Dordrecht* (Utrecht 2012) 53-55.
[154] Van Oerle, *Het Caecilia-Gasthuis*, 52.
[155] Heurnius, *De morbis*, 144-145.
[156] The gasthuis owned works by Arnoldus van Anthonissen, Daniel de Bondt, Martinus de la Court, Frans van Mieris (de Jonge), Monogrammist E.v.B, Juriaen van Streek, Balthasar van der Veen, Dionys Verburgh, Jan de Vos, Adriaen Jansz. Van Witvelt and Cornelis van Zwieten.

battle.[157] The portraits probably hung in the *regentenkamer*, but this room was probably not large enough for all the paintings. Moreover, an inventory from the late 18th century shows that, firstly, the St. Caeciliagasthuis owned many more paintings and, secondly, that paintings also hung in other rooms in the north wing (built in 1662). The dining hall, for example, had 14 paintings, in the second room '*in de spind*'[158] hung 9 paintings and stood 2 statues in front of the chimney. On the first floor was a room with 8 paintings and in a second room on that level hung 10 paintings. This last room is especially interesting because the inventory says that apart from the paintings the room was completely empty.[159] Having a room only with paintings in a (mental) hospital seems strange, but this kind of space seems very well-equipped to treat lethargics. Heurnius recommends after all that lethargics can be cured in a room full of stimuli such as colours and paintings. All these stimuli would have an impact on the mind and worked as a cure. Most (24) of the paintings found in the St. Caeciliagasthuis were made in the 17th century. This could mean that, even before the construction of the north wing, one of the rooms in the buildings was used to treat *lerhargia* from the early 17th century onwards.

We can conclude that the space and the architecture of the madhouse in Leiden had a medical meaning. Especially, that the cells had a medical use. This means that the aforementioned historiography is incomplete, for this case study shows that madhouse architecture in the 16th century was already medicalised.

Disciplining society

The previous paragraphs showed that the space of the madhouse in Leiden is shaped by medical theories. This does not fit within the existing historiography as described previously. That does not, however, have to mean that the grand narrative about disciplining the mad that Foucault proposed, lost its meaning. This paragraph looks at the disciplining function of the Leiden madhouse in society. The end of the paragraph analyses what role medical knowledge plays in the social meaning of the space. Here we examine the implications that the use of medical knowledge has on the disciplining goal of the madhouse.

It is difficult to say anything with certainty about the disciplining function of the 16th- and 17th-century the madhouse in Leiden. However, there are two sources, made around the time of the construction of the madhouse, that seem to indicate that the city council had an ideal to discipline society, and especially the mad. The first source is the so-called *armenrapport*. This was a document commissioned by the urban government in 1577 and written by a committee, led by town clerk Jan van

---

[157] M. L. Wurfbain, *Stedelijk Museum de Lakenhal – Leiden; Catalogus van de schilderijen en tekeningen* (Leiden 1983) 2, 12, 15-16, 20, 22, 25, 26, 47-48, 73, 93, 107-108, 220, 227, 323, 347, 350, 351, 376, 377, 409, 412. The paintings have the following inventory numbers: S7, S34, S35, S55, S141, S144, S150, S166, S169, S175, S176, S246, S247, S257, S272, S273, S274, S309, S319, S418, S441, S448, S449, S450, S457, S458, S465, S466, S467.
[158] *Spind* probably means storage room.
[159] ELO, Gasthuizen, 226.

Hout. After the siege of Leiden, and the 'secularisation' of poor relief, the municipal government tried to find ways to make poor relief more efficient, and less costly.[160] The report defines three types of poor. First, the idle profiteers who have learned a trade, but prefer to beg rather than work. Second, the poor who lack an education, and who, because of their bad upbringing, are idle. Third, the 'real poor' who, through no fault of their own, have fallen into poverty. According to Van Hout, the solution to the problem is twofold. Firstly, that the city government should discipline the idle poor, and force them to work. Secondly, that the finances of the poor relief organisations should be managed centrally by the *huyssittenmeesteren*. All Leiden hospitals should also merge into one large organisation. In addition, the hospitals have to send away patients who, out of idleness, are staying in the hospital longer than strictly necessary. The city council has carried out most of these plans, one of them being the construction of a plague hospital.[161]

The *armenrapport* is an interesting document, because it shows that the Leiden city council was working on the theme of 'disciplining society'. The city government sought greater control of public and private life, by determining daily activities for the idle poor. Just before the construction of the plague and madhouse, the Leiden city council founded a *tuchthuis*. This was a disciplinary, educational institution where the poor, criminals and other people that fell outside of society, were disciplined by labour.[162] So, although the mentally ill are not directly mentioned in these documents, we can be certain that the city council tried to discipline its citizens through several charitable institutions.[163]

The *gasthuismeesters* that made the architectural plan for the madhouse were probably aware of the disciplining ideal of the urban government. The *gasthuismeesters* from the year the architectural plan was made, were: Dirck Gerritsz. van Hogeveen, Gerrit Lenaertsz., Pieter Adriaensz. vander Werff, Jan Marcussz. van Ypre and Jacob Dircsz. van Reygersberch.[164] Gerrit Lenaertsz. and Dirck Gerritsz. van Hogeveen were members of city council in 1598. Pieter Adriaensz. vander Werff was even burgomaster that year.[165] Thus they probably shared the disciplining ideals of the urban government. Vander Werff would have been aware of the content of the *armenrapport* because he was burgomaster when the report was approved.[166] The other *gasthuismeesters* were part of the same class of magistrates the city's officials were chosen from.[167]

[160] J. C. H. de Pater, *Jan van Hout; Een Levensbeeld uit de 16ᵉ eeuw* (Den Haag 1946) 77-80; Koppenol, *Leids heelal*, 45-47, 50-52; Parker, *The reformation of community*, 65-75.
[161] Prinsen, 'Armenzorg te Leiden', 124-160; Koppenol, *Leids heelal*, 52-56.
[162] A. Hallema, 'Uit de geschiedenis van de gevangenis en het tuchthuis binnen Leiden', *Leidsch Jaarboekje* 20 (1926) 26-71; Koppenol, *Leids heelal*, 57; Hallema, 'Jan van Hout's rapporten', 69-98.
[163] The mentally ill in Leiden had at least since 1456 their own juridical status. Ladan, *Gezondheidszorg in Leiden*, 81-83.
[164] ELO, Gasthuizen, 16a.
[165] ELO, SA II, 923B, iii verso, cxiii-cxiiii; G. D. J. Schotel, *Het leven van Pieter Adriaansz. van de Werff* (Leiden 1874) 61.
[166] Prinsen, 'Armenzorg te Leiden', 128.
[167] S. Groenveld and Jan A. F. de Jongste, 'Bestuur en beleid' in: R. C.. J. van Maanen, ed., *Leiden; De Geschiedenis van een Hollandse stad* 2 (Leiden 2003) 63-64.

We have seen that the city council tried to discipline its poor, and that the authors of the architectural plan probably shared this disciplining ideal. These sources still do not say much about the possible disciplining function of the madhouse. There is however, a second source that might be able to shed some light on this matter. The description of the plague hospital and the madhouse by Jan Jansz. Orlers in 1614 namely mentions, while describing the capacity of the wards, that there were two rooms with the name '*beter sael*'.[168] A *beterhuis* typically was a disciplining, private institution from the 17th and 18th century where mainly lunatics, but also drunkards, vagrants and criminals, were kept in custody. The purpose of *beterhuizen* was to correct bad behaviour through labour, to become, in the moral sense of the word, 'better'.[169] Historian Pieter Spierenburg characterises this institute as a kind of prison. He also thinks that we should interpret the Leiden '*beter sael*' as a *beterhuis*.[170]

Given these two sources, it is very probable that the Leiden madhouse was built with the goal to remove madmen out of public live, and discipline them in some way or another. We also saw that medical ideas shaped the madhouse space. This would mean that a medical institution functions as a disciplinary instrument. Let us look at the implications of the use of architecture based on medical theories in a space with a strong social meaning.

The disciplining institution for the mentally ill was already medicalised in Leiden in the 16th century, for Heurnius' medical ideas were able to explain the madhouse architecture. The implication of medicalising the madhouse space was also that it became possible to cure the mental illness. It was therefore for their own good, that people who showed signs of abnormal behaviour, were put in a madhouse. Hence the medical élan of the madhouse legitimised the confinement and other (disciplining) methods of the mentally ill for the Leiden citizens,[171] and it showed at the same time the good intentions of *gasthuismeesters*. The medical character of the madhouse was probably strengthened by the medical connotations citizens had with the (plague) hospital. The combination of a madhouse and a plague hospital in the same urban space emphasised the medical function of the madhouse.

This finding of very early medicalisation of a disciplinary institution raises the question whether or not these institutions were in the first place meant as disciplinary institutions. To say more about this, we have to briefly examine the history of madhouses.

---

[168] Orlers, *Beschrijvinge der stadt Leyden* 1, 130

[169] Pieter Spierenburg, 'The sociogenesis of confinement and its development in early modern Europe' in: Pieter Spierenburg, ed., *The Emergence of Carceral Institutions; Prisons, Galleys and Lunatic Asylums 1550-1900* (Rotterdam 1984) 11, 49, 56; Haneveld, *Oude Medische Gebouwen*, 25.

[170] Pieter Spierenburg, *The Prison Experience; Disciplinary Institutions and Their Inmates in Early Modern Europe* (Amsterdam 2007) 231.

[171] In the 18th century the disciplinary character of the madhouse in Leiden might have become even stronger. At the beginning of the 18th century madmen as well as drunkards were locked up in the St. Caeciliagasthuis. Medical theories were probably used to legitimise this confinement. ELO, Gasthuizen, 288, nr. 12; ELO, LB 28659 portfolio. For the relation between mental illnesses and alcohol see: Jaap van der Stel, *Drinken drank en dronkenschap; Vijf eeuwen drankbestrijding en alcoholhulpverlening in Nederland; Een historisch-sociologische studie* (Hilversum 1995) 95-114; Heurnius, *De morbis*, 126, 147.

Initially, family cared for the mentally ill. The mentally ill were sometimes chained to the wall in seclusion rooms in the house.[172] Some could have aggressive episodes, and they were therefore locked up in prisons or monastery cells 'for their own good'. In the Arab world the mentally ill were kept in specialised institutions, and in 1409 the first Christian madhouse was built in Valencia. Reinier van Arkel founded a madhouse or *dolhuis* in Den Bosch, the first in its kind in the Low Countries, in 1442. Other cities followed, like the madhouse in Utrecht founded by Willem Arntsz. in 1461, and the asylum in Amsterdam from 1569.[173] In 1596, Leiden wanted its own mental institution. Generally speaking, the madhouses in the Low Countries look more or less the same. The cells are dark, without windows, with heavy doors like small prisons. Madhouses were almost always built on the ground floor. In addition, there was often a courtyard, and the madhouse itself was often enclosed and isolated from the rest of the city.[174] We unfortunately do not have sources that elaborate on the medical meaning of cells in the 16th century.[175]

The material culture of other older places where mad people were kept resembled the Leiden madhouse, and therefore the architecture of those institutions was possibly also inspired by medical ideas. The ideas concerning medical confinement of the mentally ill were after all very old and widespread. Classical scholars such as Celsus recommend that caretakers chain madmen in order to limit their movements, and lock them up in the dark in order to make them come to their senses. Medieval authors like Avicenna and, encyclopaedist Bartholomeus Anglicus repeated this advice.[176] This indicates that seclusion as a way to treat the mentally ill is an older practice than the disciplinary ideal that, according to Foucault, only comes up in the Early Modern period.

In other words, judging from the medical theories, we should reconsider the interpretation of confinement of the mad in the 16th century as a solely restrictive measure, because it could very well have originated from ancient medical advice. If confinement was seen as a remedy against madness, it would mean that, either confinement as a disciplinary measure was already medicalised in the Middle Ages or even Antiquity. Or confinement in principle was not an instrument to discipline people, but

---

[172] Aan de Kerk, *Madness and the city*, 91-94.
[173] Beek, *Waanzin in de middeleeuwen*, 141, 148, 150-154, 167-168.
[174] Kromm, 'Site and vantage', 21-22; In Dordrecht there were, however, also some cells in the loft: Manteufel, *'Zullen wy [...] malkanderen de hant niet bieden'*, 54.
[175] The earliest medical references are from the 18th century. In 1759 doctors in Dordrecht, for instance, were worried about cold and humid fumes, which would be bad for fools. The French physician Guillaume Daignan says in 1777 about the Amsterdam madhouse that it is very clean, the mad cells are used to calm down raging mad and the courtyard provides fresh air for the other madmen. In the English madhouse Bethlem, the 18th-century administrators attached great value to the cleanliness of the area around the dolls. Attention was also paid to fresh air and light. Manteufel, *'Zullen wy [...] malkanderen de hant niet bieden'*, 53-55; Guillaume Daignan, *Reflexions sur la Hollande; Ou l'on considere principalement les Etablissements de charité, qui sont l'éloge de la bonté du cœur de ce Peuple, comme de la sagesse de son Gouvernement* (Paris 1777) 17; Andrews, *The History*, 204-209.
[176] Scull, *Madness in Civilization*, 65-67; Roy Porter, *Madness: A Brief History* (Oxford 2002) 48-49; Beek, *Waanzin in de middeleeuwen*, 84.

rather only later became associated with disciplinary measures because of its association with the punitive system of incarceration in prisons.

Conclusion

The architecture of the madhouse was shaped by the medical knowledge of Heurnius. This implies that confinement of mentally ill people in dark cells had a medical purpose, and seclusion in the dark had a medical origin. It is also interesting that architecture was also considered to cure the patients. This means we should reconsider Foucault's argument that confinement of the mad was not yet medicalised in the Early Modern period. The Leiden madhouse probably had a disciplinary ideal, but the medicalisation of madhouse architecture is probably older. Knowledge creates a medical environment and on a social level the specialisation of the space gives legitimacy to the disciplinary goal.

Chapter 3

The madhouse and plague hospital combination

The plague and mental illnesses are in many respects, opposites. Most doctors agreed that the plague was caused by outside influences, such as bad odours, and so the cause of the plague was fluid and elusive.[177] An imbalance of the humours in the body which results from people's own actions, was seen as the main cause of mental illness. Strenuous activities, certain emotions, some food and drunkenness can cause *frenesis*. *Melancholia* and *mania* are caused in similar ways, although the seasons also played a role in this.[178] The plague is a disease that mainly resides in the body. Mental illnesses were mostly diseases of the head. Finally, mental illnesses were often long-lasting diseases requiring lengthy treatment, while the plague was often a short illness, which resulted in up to 60 percent of the cases in death.[179] Because of the severity and contagiousness of the plague, doctors like Camerarius, Donzellinus and Pauw advised to separate plague victims from all other inmates. Even family should not be allowed to visit.[180]

Although doctors in the 16th century had a holistic understanding of the body and some doctors, such as Caesar Rincius, said that the plague could lead to a delirium,[181] to combine the madhouse and the plague hospital in one building seems rather illogical from a medical perspective. The combination of the madhouse and the plague hospital is therefore the subject of this chapter. The main question of this chapter is: what role did medical knowledge play in the combination of the two institutions? The first paragraph reconstructs the origin of the madhouse-plague hospital combination. This section argues that not medical knowledge, but social expectations and ideas in society, played an important role in the decision to combine the two institutions. The second paragraph examines the architectural implications of the combination of the two buildings in the same institution. This section argues that medical knowledge forced the *gasthuismeesters* to make certain architectural choices.

---

[177] See for example: Heurnius, *Het Noodigh Pest Boeck*, 11.
[178] Beek, *Waanzin in de middeleeuwen*, 85, 97, 100-102.
[179] Noordegraaf, *De gave Gods*, 197-198.
[180] Pauw, *Tractatus de peste*, 40-44; Camerarius, 'De recta et necessaria ratione', without page numbers; Donzellinus, 'Commentarius de Peste', without page numbers. For the German version see: Camerarius, *Synopsis commentariorum*, 11-12, 55.
[181] Rincius, 'Disputatio accuratissima de peste Mediolanensi', without page numbers. In the ward of the *Binnengasthuis* in Amsterdam in 1819, was a room for regular patients that had a delirium. See: H. W. Carter, *A Short Account of some of the Principal Hospitals of France, Italy, Switzerland, and the Netherlands with remarks upon the Climate and Diseases of those Countries* (London 1819) 209. See also: See also: Carl Rogge, *De betekenis van Ambroise Paré (1510-1590)* (Groningen 1973) 193.

Born out of necessity

Before the madhouse and plague hospital were built, the mentally ill in Leiden were cared for at home, in the monastery of Lopsen, by the Cellites, or in the Onze-Lieve-Vrouwegasthuis. Plague victims were also cared for at home, in the Lopsen monastery, by the Cellites or in the Catharinagasthuis. Just before the siege of Leiden the city council decided to destroy the Lopsen monastery, and after the siege they dissolved the Cellites. This likely resulted in a shortague of space for housing both for the mad and plague victims.[182] The combination of the new madhouse and plague hospital in the old St. Caeciliaklooster may therefore have been a practical solution for the capacity problem.

There is however probably also a underlying reason for the combination, since the combination of the two institutions is not the only one in the Dutch Republic. In other Dutch cities, such as Amsterdam, The Hague, Haarlem and Rotterdam, similar combinations can be found.[183] When we look at these examples, we find more general explanations for the combination.

The first, more general explanation for the combination of a madhouse and plague hospital in one place is that putting them in one institution was an efficient use of space. The plague is a cyclical epidemic, and therefore Italian plague hospitals were vacant for longer periods of time, and eventually fell into disrepair. For this reason administrators looked for other groups that could inhabit the plague hospital during the intermissions.[184] In Dutch cities, an empty plague hospital would mean that valuable space within the already crowded 16th- and 17th-century cities remained unused. Historian Haneveld adds that in 17th-century cities the demand for *dolcellen* was much higher than the supply. That was, according to him, a reason that old plague hospitals were converted into madhouses.[185] An additional explanation is that in the 15th and 16th centuries, a specialised institute like a plague hospital almost always fell under the management of a larger hospital. This hospital took care of the finances and therefore probably wanted to prevent buildings from being empty. In using the building as a madhouse, administrators could be certain that there were always patients.[186] It was therefore logical from a financial perspective to combine the two institutions.

This wish to use space efficiently does, however, not adequately explain why they chose to combine plague victims with the mentally ill. The origin of this specific combination can probably be explained when we look at the history of the Cellites. The lay movement of the Cellite brothers and sisters first emerged, in the 14th century. The patron saint of the Cellites was the beggar St. Alexus. This new order, which followed Augustine's Rule since 1458, dedicated itself to the seven works of mercy. The Cellites distinguished themselves from all other orders by their care for plague victims. Cellites

---

[182] Van Mieris, *Beschryving der stad Leyden* I, 172; Ladan, *Gezondheidszorg in Leiden*, 78, 83-85.
[183] Aan de Kerk, *Madness and the city*, 39-40; J. van der Leen, *Geschiedenis van het pest- en dolhuis der gemeente Rotterdam* (Rotterdam 1934) 9; A. J. Servaas van Rooijen, 'Toen en nu; Sint Anthnius-kapel, 'Siekhuis', Pesthuis, Dolhuis, Verbeteringhuis, Krankzinnigengesticht', *De Huisvriend* 2 (1900) 238-239.
[184] Jetter, *Das europäische Hospital*, 183.
[185] Haneveld, *Oude Medische Gebouwen*, 24.
[186] Beek, *Waanzin in de middeleeuwen*, 147; Noordegraaf, *De gave Gods*, 199.

were seen as plague specialists, and several town councils invited Cellites to come to their cities. Cellites were well-represented in the Northern Netherlands with 54 monasteries. Besides caring for plague victims, Cellites came to be known for their care of the mentally ill. When the number of plague epidemics decreased, the care for the mentally ill by Cellites increased,as did their other tasks such as visiting prisoners, burying the dead, and in some cities, taking care of orphans. After the Reformation, their monasteries were therefore sometimes converted into madhouses (see for example Dordrecht and Middelburg).[187]

We know that in Leiden the Cellites took care of plague victims. From 1555 onwards they even had the exclusive right to bury plague victims.[188] The Leiden Cellites looked after sixteen madmen whom they probably kept in cells. The Cellites in Leiden probably did not just look after plague victims and the mentally insane, and they might even have provided some sort of medical care. They worked with the plague doctor in the 16th century, and performed autopsies. One of the Cellites, Jan Aerntszn, became a surgeon after the Reformation and eventually obtained a doctorate in medicine.[189] The Cellites were successful in caring for plague victims and the mentally ill, because even after the disappearance of the Cellites, plague victims and madmen in the Low Countries were associated with each other and therefore often ended up in the same institutions. This shows that old Catholic poor-relief systems and even Catholic ideas played an important role in Leiden when the city council established new poor-relief institutions.

The question remains, however, why Cellites primarily cared for plague victims and madmen. Caring for the sick and visiting prisoners both fall under the seven works of mercy that were so important to the Cellites. The bailiff sometimes locked up aggressive madmen in a prison cell. In that way, these imprisoned madmen fell under the duties of the Cellites. A better explanation for why the Cellites cared for plague victims as well as the mentally ill can be found when we look at the social and cultural attitudes of society towards both groups.[190]

Plague victims were in the 16th and early 17th century seen as a disruptive, dangerous group that should be removed from a healthy society. Noordegraaf and Valk put emphasis on the plague hospital as an instrument to protect society against plague outbreaks and the entire social disruption that accompanied them. The city removed sick people that could cause social disruption from society until they were able to return without danger for the city. Plague hospitals often, for that reason, housed all citizens that had a contagious disease such as smallpox, syphilis or the plague. The main goal was to separate the sick citizen from a healthy society.[191]

---

[187] Leupen, 'De kloosters van de cellebroeders', 63-93; Haneveld, *Oude Medische Gebouwen*, 21-22; Beek, *Waanzin in de middeleeuwen*, 148.
[188] ELO, Weeshuis, HGW, 4547.
[189] S. M. C. Leupen, 'Het Leidse Cellebroedersklooster', *Leids Jaarboekje* 84 (1992) 39-43; Leupen, 'De kloosters van de cellebroeders', 79.
[190] Maurits Smeyers and Annemie Adriaenssens, *Werken van barmhartigheid; 650 jaar Alexianen in de zuidelijke Nederanden* (Leuven 1985) 181.
[191] Noordegraaf, *De gave Gods*, 197-198.

Society in the 16th and 17th century thought of madmen as being disruptive and even dangerous. Inge Mans says that there has been an intolerance for the inappropriate behaviour of fools in the Low Countries since the Late Middle Ages. Family members therefore locked up madmen in their homes, or if the situation had become untenable, in a madhouse. The mentally ill were removed from society, and due to their confinement they became invisible for ordinary people.[192] Beek and Scull state that the mentally ill could no longer fulfil a social role in society. Therefore urban authorities saw them, together with idle profiteers, vagabonds and the poor, as an imperfection of society that should be removed from the cityscape.[193]

In conclusion, the *gasthuismeesters* probably made the decision to combine the madhouse and plague hospital not only on the basis of a lack of capacity, but also because of social expectations, created by the precedent set by the Cellites and the Lopsen monastery, and because of the social acceptance of putting these culturally 'similar' groups together. Plague victims, as well as the mentally ill, were seen by early modern Dutch society as disruptive and even dangerous. They were seen as unwanted, and therefore probably were associated with each other. They ended up with other unwanted groups in the same institution such as lepers (see Haarlem, for example) or prisoners.[194] The Cellites especially seemed to have looked after 'unwanted' groups in society, which probably explains why they cared for both groups.[195] Poor-relief institutions such as madhouses and plague hospitals are in this respect materialised signifiers of the social 'otherness' of marginalised and unwanted groups in society, and in turn also had the potential to become instruments in indicating the social otherness of certain groups. Social knowledge creates a space with a social and symbolical meaning that functions as a marker of social otherness for everyone that enters that space as a patient.

Two opposite worlds

While the capacity problem and ideas in society forced the *gasthuismeesters* to combine the madhouse and the plague hospital into one institution, medical ideas still suggested that the two types of inmates should be housed separately, as stated in the introduction of this chapter. This paragraph looks at how the *gasthuismeesters* balanced between social ideas and medical requirements. It also shows how in a symbolical sense two opposite material spaces come into existence.

If we look at the St. Caeciliagasthuis building through the eyes of a citizen or patient, it immediately becomes clear that the plague and madhouse were separate entities in one space. They were closed off from the city, but also from each other. The exterior of the building was the face that was directed towards the outside world and the urban community. In the architectural plan the *gasthuismeesters* placed an isolation strip and a wall around the plague hospital and madhouse. As a

---

[192] Mans, *Zin der Zotheid*, 85-87.
[193] Beek, *Waanzin in de middeleeuwen*, 155; Scull, *Madness in Civilization*, 122-129.
[194] Mans, *Zin der Zotheid*, 82-84.
[195] Smeyers, *Werken van barmhartigheid*, 181.

result, the complex was completely separated from the city. If a citizen walked around the complex he or she would only see walls without windows. What was the function of this wall? Did it protect the city against the inmates, and are the patients imprisoned behind the wall? Or did the wall protect patients from prying eyes and harassment from citizens and gave the wall privacy?[196] The wall was not built by the master builder. The plague hospital and madhouse kept, however, a closed character towards the outside world. The exterior of the complex was ringed by *proveniershuisjes*, which ensured that no one could cast a glance from the street into the heart of the complex and the courtyard.

A gate on the east side of the complex gave access to the courtyard, the plague hospital and madhouse. In the architectural plan the different types of patients parted ways at the entrance. As the reconstruction of the building plan (figure 10) shows, the mentally ill had to go immediately to the left to enter the dark madhouse. The dark corridor that ran through the entire madhouse gave the patients access to their individual cells. If a mad person was allowed out of his or her cell, he or she could go to the courtyard through the door on the west side of the madhouse. This part of the courtyard was removed as far as possible from the entrance gate through which the plague victims entered the complex.
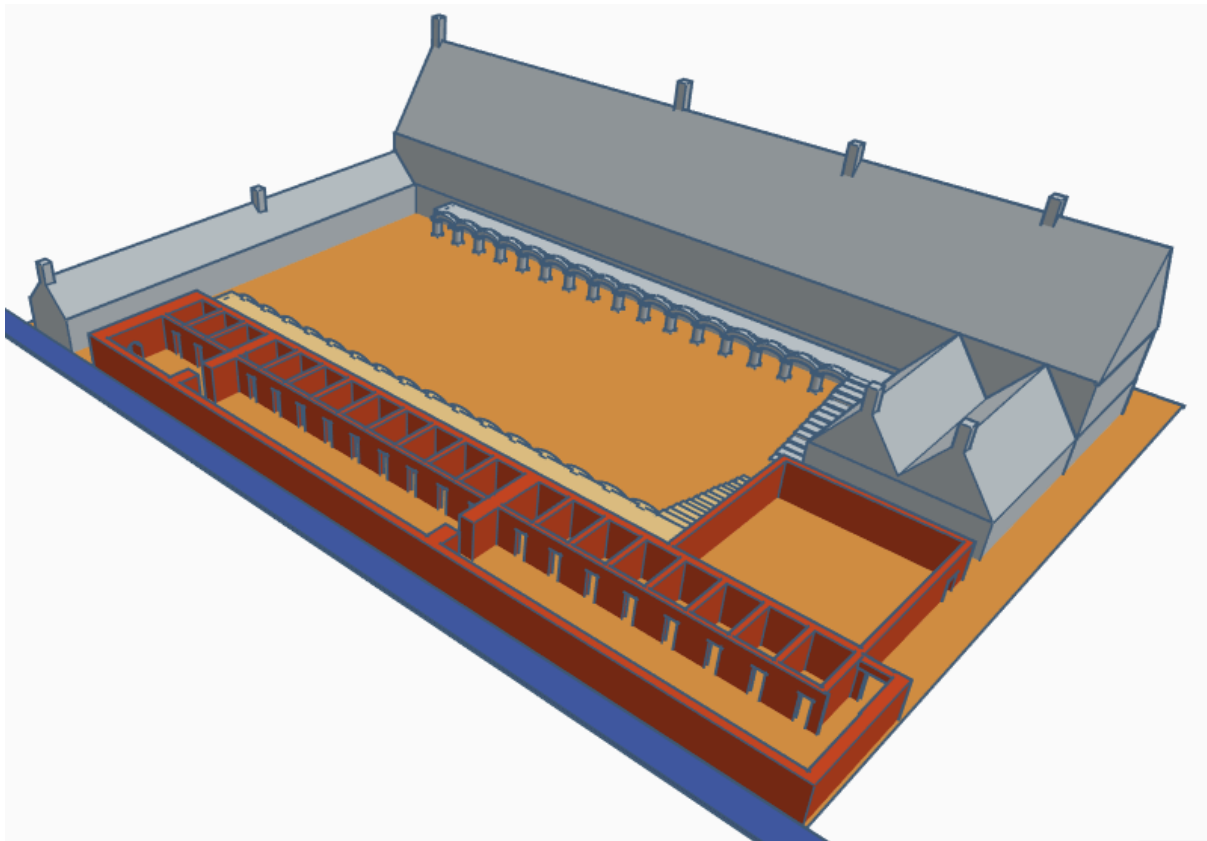
Figure 10
This reconstruction by the author of the architectural plan shows at the bottom a door that led to the cells. In the plan, the madmen could go directly from the street (on the right hand side) to the madhouse, without entering the courtyard. At the end of the dark corridor was a second door that led to the courtyard and the kitchens. The part coloured in grey is not described in the architectural plan, but is, however, shown in the map that accompanied the plan.

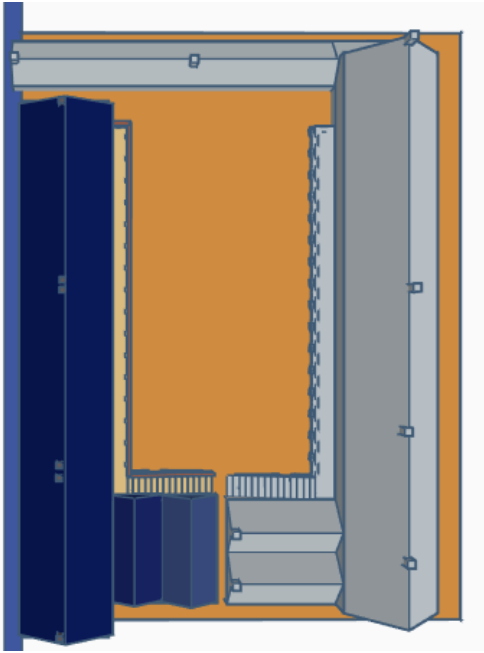[196] Kromm, 'Site and vantage', 19.

Figure 11
This top view of the reconstructed plague hospital shows that plague victims that to go through a narrow corridor, before they reached the staircase that led to the gallery. The left hand building is the plague hospital

In the architectural plan, the mentally ill and plague victims never crossed each other when they moved through the complex. The plague victims had to go through a narrow corridor and then turned immediately left when they reached the courtyard (figure 11). A wide staircase marked the entrance of their domain. The stairs took them to a gallery and from there to their wards. Plague victims would not leave the hall again until they had died or had been cured. Even when they left the plague house, they did not enter the domain of the madhouse. Although the plague hospital and madhouse were housed in the same building, they were designed to function as two separate worlds.

The master builder did not execute the architectural plan in its entirety. Nevertheless, even in the finished complex the worlds of the mad and plague victims seem to have been completely separate. After the gate, the patients followed a short corridor. The plague victims were led across the courtyard to a staircase that brought them straight to their wards. The mad went after the corridor to a door behind the stairs and through a hallway to their cells. A map from 1675 (figure 12) shows that the courtyard was divided into several parts. Mentally ill patients had their own
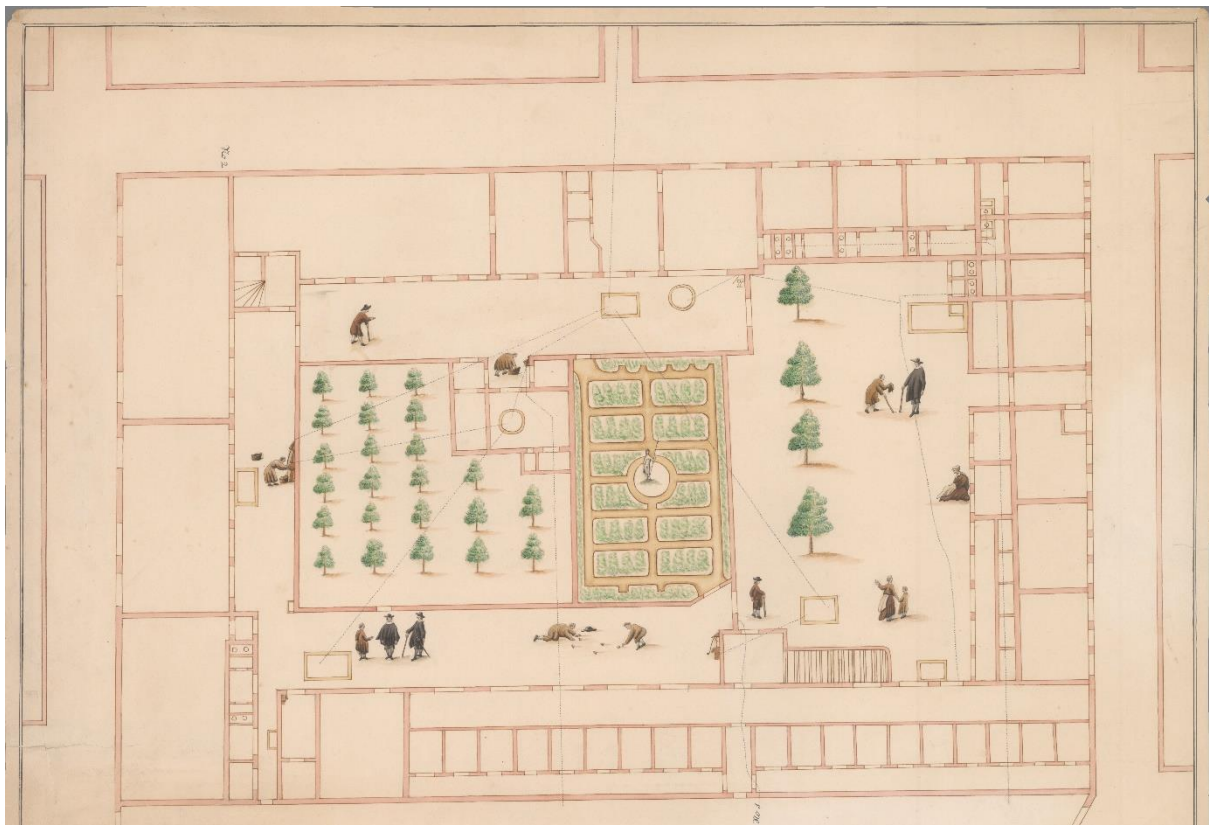
Figure 12
This is a 19th-century copy of a original map of the St. Caeciliagasthuis from 1675. The madhouse is at the bottom of the map, and the courtyard is subdivided into several parts. The map also depicts the new north wing of the hospital complex.

part of the courtyard. The sick and the mad could probably not have encountered each other in the courtyard, because little walls separated the different types of patients. Both the architectural plan and the final plague hospital and madhouse enforced, through its architecture, separation between the two groups of inmates.

The madhouse and the plague hospital were not only physically separated worlds, but are also distinct in an architectural-symbolical sense. The introduction to this chapter argued that from a medical point of view the two types of patients had opposing illnesses. These illnesses were translated into an architectural complex with opposing demands. Medically trained visitors, who were able to read the medical signifiers in the form of architecture, could decode a symbolic space that tried to unite two opposite spaces. Even a non-medical audience, however, would have seen some striking oppositions in the spaces created by the two different institutions.

Firstly, there are the opposites of light and air on the one hand, and darkness and earth on the other. Air and earth belong to opposite temperaments. In architecture, however, this mainly translates into low buildings, close to the ground (the madhouse), and tall, airy buildings, far from the ground (the plague hospital). To ensure that enough wind was caught the plague hospital had large windows, and therefore was very light, while the madhouse had no windows at all and was pitch-dark.

Secondly, the two spaces are opposites in terms of stimuli in the buildings. The madhouse was free of stimuli. There were no paintings or other depictions. The walls of the cells were as thick as possible so that the sounds of the other patients was muted. The plague hospital on the other hand, was light and patients were able to talk to each other. Moreover, Luyendijk-Elshout thinks that prints of historical figures hung in the wards.[197] Tim Huisman, however, argues that the specific prints Luyendijk-Elshout is talking about, hung in the *Collegium medico practicum*.[198] It is certain that these prints, but also the paintings, did not hang in the madhouse.[199]

Thirdly, the institutions were opposites in their use of solitary and communal space. In the plague hospital the space was shared by a lot of people. The *gasthuismeesters* placed in the architectural plan the box beds with their backs against each other. In the execution, however, the box beds were placed against the walls. In this way the plague victims could see each other, they could perhaps talk to one another. A feeling of shared sorrow and shared anguish may have arisen. Madman, however, ware completely on their own. In their own cells, they were deprived of any human contact.

Fourthly, the clinical picture of the two different diseases created a contradiction in architecture with regard to control and domination. Plague victims could, because of their disease, probably barely leave their beds. The architecture of the wards enabled caretakers, but also other inmates to oversee the whole ward from one position in the room. So even if plague victims wanted to leave their beds, social control and medical advice forced them to stay where they were. The mentally ill were, however, not

---

[197] Luyendijk-Elshout, 'Der Einfluß der italienischen Universitätten', 350.
[198] Huisman, *The Finger of God*, 123-125.
[199] ELO, Gasthuizen, 226.

receptive to social control, and they therefore had to be restrained in a more physical way. Because madmen could become very aggressive, the mad cell was set up to control every move of the inmate. Food could be thrown in through a food hatch if the madman was dangerous.[200] The large heavy door ensured that the mentally ill could not escape.

Although necessity and social knowledge had forced to two institutions to exist in one space, medical knowledge encouraged the *gasthuismeesters* to design a space that could function as two separate worlds. These distinct architectural shapes were not only opposite to each other, but also opposite to the healthy and 'normal' society that lay outside of the St. Caeciliagasthuis space. Doctors and other medical personnel may have been able to understand this space as a symbolic space of oppositions.

Conclusion

The decision to combine the madhouse and the plague hospital in one space was not based on medical considerations. Instead the decision was made on the basis of practical need, historical precedent and social ideas. Especially, the fact that Cellites cared for both groups seems to have played a major role in the connection between plague victims and the mentally ill. Social ideas, moreover, created a space in the city that functioned as a signifier for social otherness. This chapter has also urgued that poor-relief systems from the Catholic past still shaped Protestant charity institutions. In the combination of the madhouse and plague hospital, two types of knowledge, are competing with each other. Common knowledge forces the two institutions together, and medical knowledge forces the two types of patients to be apart. The competing ideas resulted in a shared space of oppositions. The architecture ensured that the two types of inmates could move through the space without crossing paths. Because the medical knowledge, which separately shaped the architecture of the two institutions, advises to treat plague victims in a very different way than the mentally ill, each space has a very distinctive architectural shape. The medical distinctiveness of the madhouse and plague hospital creates an opposite type of architecture, and thus, opposite symbolic spaces are made that refer to opposite medical knowledge. A second opposition in the symbolic space is the opposition between the space of the combined madhouse-plague hospital which cares for dangerous and ill groups on the one hand, and the space of the city which is healthy and normal on the other.

---

[200] Jetter, *Das europäische Hospital*, 194.

Conclusion

This essay argued that medical knowledge created a space and architecture with different layers of meaning. The first chapter showed that the *gasthuismeesters* used medical theories to shape the architecture of the plague hospital. The space did not only prevent the spread of the plague but also supported the health of plague victims and staff. Some architectural elements were probably even meant to cure inmates. In many ways, the architecture of the plague hospital resembled the architecture of existing medical buildings at the time. This means that other plagues hospitals too might have been built according to these medical architectural principles that were meant to cure plague victims. These findings nuance the current historiography which typifies 16th century plague hospitals in the worst case as unmedical, and in the best case focused on isolating plague victims from the rest of society. After all, the *gasthuismeesters* used medical theories to shape the architecture, a medical space came into existence. This medical appearance gave the space also a social meaning in which knowledge in architecture gave legitimacy for the actions of the medical staff. It worked furthermore as a source of normalising power over the inmates.

The second chapter showed that the architecture and the rooms of the madhouse are also shaped by medical knowledge. From a medical point of view, this architecture was intended to heal the mentally ill. This is therefore therapeutic architecture, and it is quite probable that madhouses elsewhere in the Low Countries had the same underlying medical idea. These findings show that the medicalisation of the treatment of the mad and the medicalisation of the architecture of mental institutions started much earlier than was previously thought. At the same time, the city council of Leiden had a 'disciplining' ideal for society and tried to correct deviant behaviour. The madhouse seemed to have been a disciplining instrument and in that case legitimised medical knowledge disciplining measures in the form of confinement.

The third chapter discussed the combination of the plague hospital and madhouse into one institution. This combination is illogical from a medical point of view. The direct reason for this combination was a practical one. The underlying cause for the combination is that the two were also linked in the past. After all, the Cellites took care of various marginal groups that society saw as undesirable and disruptive. The St. Caeciliagasthuis forms a space that signifies social 'otherness'. In spite of the fact that the combination of both institutions seemed logical from a social point of view, the *gasthuismeesters*, motivated by medical arguments, chose to strictly separate the spaces from each other. This created an architecture of symbolical opposite spaces.

This answers the main question about what roles medical knowledge played in the creation of architecture and spaces if the St. Caeciliagasthuis in Leiden. Medical knowledge shaped the architecture and created a functional space that supported the curing process in the plague hospital as well as in the

madhouse. The medical knowledge and the space that it created had also a social meaning. It created a heterotopia with its own discourse. It furthermore legitimised the actions of specialists (such as disciplining inmates), and it influenced certain behaviour in patients and staff. Medical knowledge gave also a symbolic meaning to the space, for it created a space of architectural opposites, and it placed the space within a medical tradition where it actively referred to. Social ideas forced the madhouse and the plague hospital to be housed in one institution. This knowledge gave this space a social meaning within society as a space for outcasts, and made the institution into a signifier of social otherness.

This essay has given a new interpretation of the medical significance of madhouse architecture. Future research that looks at 16th and 17th century madhouses in the Low Countries could further re-evaluate Foucault's grand narrative about a late medicalisation of the mad and madhouse architecture. A good study on the meaning of the combination of madhouses and plague hospitals in the 16th to 17th century is still to be written, and future research can further elaborate on the social meanings of this phenomenon.

Epilogue

The *gasthuismeesters* used medical knowledge to create the architecture of the St. Caeciliagasthuis that gave the space meaning. The plague hospital and madhouse were built, however, in an old monastery. I would like to use this epilogue to show briefly that the history and the old Catholic meaning of the building also influenced the reception of the users and added a symbolic meaning to the space.

The lottery that raised money for the construction of the plague hospital and madhouse was an important part of the history of the St. Caeciliagasthuis, and therefore gave meaning to the building. The *gasthuismeesters* organised the lottery in 1596. By the end of the 16th century, lotteries had become a popular way of financing the construction of large charitable institutions. A year earlier, for example, the city of Amsterdam had launched a lottery to build a new madhouse, and other cities such as Rotterdam, Enkhuizen, Haarlem and Middelburg held similar lotteries.[201] In 1592, the city council requested permission for the lottery from the States of Holland.[202] In 1595, the Leiden lottery could begin and the 'lottery masters' started their search for suitable trophies. There were 731 prizes of impressive and less impressive gold smithery. On the lottery poster, an engraving by Isaac Claesz Swanenburgh gave an artistic impression of the interior of a plague hospital and madhouse (figure 13).[203] The draw, which began on 1 August 1596, was a great success. 281,232 lottery tickets were sold and the draw lasted more than 52 days and nights. The proceeds of 52,000 guilders could be used for the construction of the new plague hospital and madhouse.[204]

*Figure 13
This lottery poster gives an artistic impression of a plague hospital interior, and a madhouse exterior (left).*

---

[201] Koppenol, *Leids heelal*, 61-65; Ladan, *Gezondheidszorg in Leiden*, 78-79; Kromm, 'The Early Modern Lottery', 57-58.

[202] ELO, SA II, 6238; Van Mieris, *Beschryving der stad Leyden* I, 172-173.

[203] R. E. O. Ekkart, 'Een Leidse Loterijkaart uit de Zestiende eeuw', *Leids Jaarboekje* 66 (1976) 112-122.

[204] Koppenol, *Leids heelal*, 74-80.

In addition to this financial role, the lottery had social significance. Before 1574, processions and *ommegangen* on various saint's days, with poems written by the chambers of rhetoric (*rederijkers*), created a sense of community. After 1574 many of these recurring rituals disappeared. As a result, incidental events, although they had also existed before 1574, acquired a greater social and symbolic significance. Citizens seized these opportunities to organise a large feast. During the Leiden lottery, the *rederijkers* led by Jan van Hout, wrote poems, made theatre plays, organised a poetry competition and held a large *redenrijkers*' feast. The prizes for the lottery were carried through the city in a festive parade, just like Catholic processions. Civilians carried the poster of the new madhouse and plague hospital through the city, as they had done with relics. This happened with the sounds of trumpets, drums and bells, and under the watchful eye of the Leiden magistrates who participated in the parade in new, beautiful clothing. The draw was such a spectacle that it resulted in a big feast in which all layers of society participated.[205] Hence, this lottery had almost religious elements, and at the same time had a social meaning by increasing the solidarity in the city.

The history of the building made the St. Caeciliagasthuis into a symbolic monument for civic solidarity. Historian Anita Boele says for example that the building of her case study, the *Oudemannenhuis* in Haarlem, functioned as a monument of solidarity within the city walls. The *Oudemannenhuis* was also financed by a lottery, and because the whole city helped to raise money for its construction, the eventual building was a visual sign that reminded the population of Haarlem of civic solidarity.[206] The St. Caeciliagasthuis in Leiden also might have been a monument that reminded everyone of the lottery. The architectural plan connects the building at least very explicitly to the lottery.[207] And according to art historian Jane Kromm, the painting of the interior of the madhouse and plague hospital that hung above the entrance gate of the St. Caeciliagasthuis (figure 14) echoed the lottery poster (figure 13) and therefore reminded every casual passer-by of the origin history of the complex.[208]

Figure 14
This painting on a copper plate hung above the entrance of the St. Caeciliagasthuis. It shows the interior of the (plague) hospital (on the left) and the interior of the madhouse (on the right). A member of staff is trying to lock up a madman in one of the cells.

---

[205] Anita Boele, *Leden van één lichaam; Denkbeelden over armen, armenzorg en liefdadigheid in de Noordelijke Nederlanden 1300-1650* (Hilversum 2013) 92-102; Koppenol, *Leids heelal*, 65-74; Anneke Huisman and Johan Koppenol, *Dear compt de Lotery met trommels en trompetten!; Loterijen in de Nederlanden tot 1726* ((Hilversum 1991) 41-51, 117-118; Kromm, 'The Early Modern Lottery', 57-60; De Boer, 'Sorte non sorte', 218-241; Bostoen, 'Adieu, mijn geld!', 34-39; Koppenol, '(Naasten-)Liefde es tFondament', 27-32; J. Prinsen, 'Bronnen voor de kennis van leven en werken van Jan van Hout (deel 2)', *Tijdschrift voor Nederlandse Taal- en Letterkunde* 23 (1904) 193-256.
[206] Boele, *Leden van één lichaam*, 93.
[207] ELO, SA II, 5938A, fol. 13r.
[208] Kromm, 'The Early Modern Lottery', 60.

The buildings of the St. Caeciliagasthuis complex in itself referred to its origin history and therefore to the lottery. The lottery was a social event that referred back to Catholic religious feasts, and that it had increased civic solidarity within Leiden. Everyone that had knowledge of the history of the St. Caeciliagasthuis could have interpreted the material signs as being a monument for the civic solidarity during the lottery.

Let us now turn to a second aspect of the history of the building. The complex was initially a monastery in the period prior to the Reformation. The *gasthuismeesters*, but also other civic magistrates, probably tried to obliterate this connection as much as possible. The first attempt was by designing fashionable architectural elements that gave the old building a modern outlook. A good example of this is the gallery. The Doric pillars made of sandstone and the round cross vaults, also made of sandstone, would have looked fashionable (figure 1). The gallery was designed in the Northern Renaissance style, a style which just came into fashion and was considered to be ultramodern at the time. The pillars also referred to Italy.[209] This gallery was, however, never built. A second attempt was by changing the name of the urban space. In the Middle Ages, the buildings on the plot of the later plague hospital and madhouse are known as the St. Caeciliaklooster. Even after 1574 the complex kept that name, as we know from the '*straten- en grachtenboek*'.[210] The *armenrapport*, however, suggested to cleanse the *gasthuizen* from their Catholic names and changing them into something more neutral.[211] For that reason the architectural plan only speaks of '*het pest ende dulhuys*'.[212] During the 17th century, officials referred to the complex with the designation '*dulhuys*' or '*peste ende dulhuys*'.[213] Changing Catholic names into 'neutral' names also occurred in other cities,[214] and in doing so, magistrates tried to rebrand the meaning of former Catholic institutions.

It seems, however, that most Leiden citizens kept using the old name of the complex. In a request from 1603 by Jan Ghijselen, messenger to England, to confine his mentally ill daughter in the madhouse, he referred to the complex twice as '*Ste Cecilia clooster*'. While town clerk Jan van Hout, who answered the request, carefully avoids the word 'Caecilia' and talks about the *gasthuis*.[215] Johan Blaeu refers to the complex as '*S. Cecilien Dulhuys*'.[216] Eventually, sometime around 1700, the

---

[209] The use of this architectural style was perhaps advised by Pieter Adriaansz. van der Werff. After all, he was renowned for his love of the Dutch Renaissance style. R. C. J. van Maanen, 'Stadsbeeld en ruimtelijke ordening' in: R. C.. J. van Maanen, ed., *Leiden; De Geschiedenis van een Hollandse stad* 2 (Leiden 2003) 34-35; Beukers, 'Clinical Teaching', 140. Zie ook: Van Oerle, 'De bouwgeschiedenis', 72.
[210] ELO, SA II, 5113 nr. 68; ELO SA II, 5153 nr. 29.
[211] Prinsen, 'Armenzorg te Leiden', 149.
[212] ELO, SA II, 5938A, fol. 13r.
[213] UB Leiden, Archief van Curatoren I, 1575-1815, 230; Versprille 'Uit de bouwgeschiedenis', 2, 3. In the financial record, the space is sometimes already referred to as St. Caeciliagasthuis.
[214] For example the Amsterdam Binnengasthuis.
[215] ELO, Gasthuizen, 289
[216] ELO, PV351.1.

gasthuismeesters changed their minds and they started using the name (St.) Caeciliagasthuis in official documents.[217]

It is probably not a big surprise that citizens kept using a name that referred to the old St. Caeciliaklooster, for on the whole, the plague hospital and madhouse complex actually looked fairly traditional and old-fashioned. Firstly, as was established in Chapters 1 and 2, the plague hospital and the madhouse looked a lot like most traditional hospitals and madhouses. Secondly, the old St. Caeciliaklooster had only been renovated. The entrance gate of the monastery was, for example, completely intact. Two old Gothic heads from the old monastery on both sides of the door stared at each passer-by (figure 15). The master builder decided to reuse the retaining walls from the monastery and therefore the old subdivision stayed intact (compare the buildings on figure 16 with the retaining walls on figure 1). The presence of old, Catholic paintings in the *gasthuis* (figure 17 and 18), [218] made the space even more into a continuation of the old St. Caeciliaklooster, rather than a new, hyper modern, innovative hospital.

Figure 15
The medieval gate that gave entrance to the old monastery. The two gothic heads at either side of the door are nowadays replicas. The originals can be found in the collection of Museum de Lakenhal. The cartouche above the gate is probably from the late 17th century.

If the name someone uses for a place, indicates what meaning he or she gives to that place, then we could conclude that Leiden citizens saw the plague hospital and madhouse complex as a continuation of the old St. Caeciliaklooster. Apparently, the change in appearance (and the change in function),[219] were not radical enough that

Figure 16
This is a water colour of the old St. Caeciliaklooster. It shows the south side of the plot, seen from the canal. The madhouse and plague hospital were constructed in buildings with the blue roofs.

---

[217] See for example the list of *regenten*: Martinus de la Court and Hermanus van Groen sr., *Regenten van het St Catharina- en Caeciliagasthuis* (1701) Lakenhal: S 55; Anonymous, *Naambord regenten Catharina- en Caeciliagasthuis* (1724) Lakenhal: 700.

[218] Wurfbain, *Stedelijk Museum de Lakenhal*, 2. De Lakenhal, 'Drieluik met Maria als hemelkoningin', *De Lakenhal*, https://www.lakenhal.nl/nl/collectie/s-246 (4-4-2020).

[219] Versprille 'Uit de bouwgeschiedenis', 1.

citizens felt the urge to refer to the complex with a new name. We can at least conclude that the modern and innovative character of the medical architecture was not good enough understood by the general public to instigate a name change. If however we interpret this onomastic evidence less strictly, we could also say that the non-medical audience saw a (material) continuity between the St. Caeciliamonastery and the plague hospital and madhouse.

We can conclude that, although the buildings were inspired by medical knowledge, the history of the complex, namely its former function as monastery and the lottery also created symbolic meaning. This meaning placed more emphasis on the traditionality and continuity of the space. Therefore, if audiences make use of different kinds of knowledge to look at a space, opposite interpretations of the space can occur. The St. Caeciliagasthuis space has at the same time a very modern medical and a very traditional symbolical meaning.
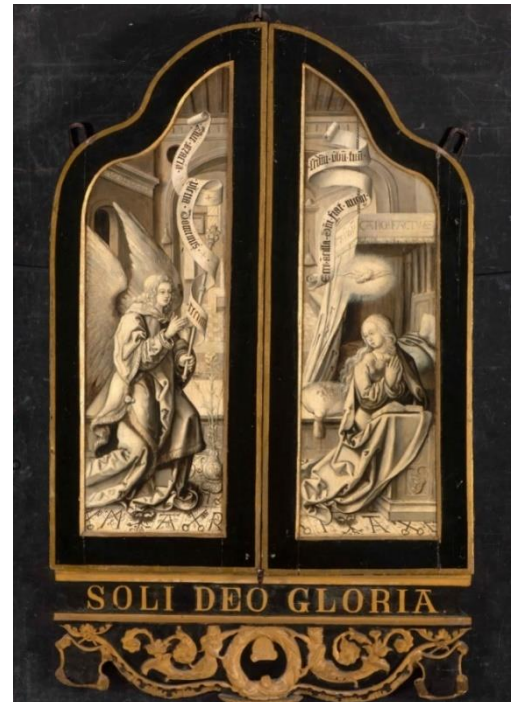
Figure 17
The exterior of the triptych shows an Annunciation in grisaille. Archangel Gabriel greets Mary. The crossed keys on the floor tiles refer to the city of Leiden.

Figure 18
This is a triptych, painted around 1525 that was found in the St. Caeciliagasthuis. On the central panel, we see the Madonna who is crowned by two angels in priest's garments. Mary stands on a crescent moon and radiates light. On either side of her, angels are playing music. The left hand panel shows a kneeling donor in black, with six kneeling sons behind him, one of whom is a canon. Behind the donor stands his patron saint, Saint Peter with his keys. The right side panel shows a kneeling woman, probably the donor's wife. At her feet lies a new-born baby. Behind the woman stands Mary Magdalene with her ointment pot. Someone added a predella in a 17th-century style. The text on the predella, 'soli deo gloria', is a Calvinist slogan. The bell in the wreath held by the two mermaids could refer to the heraldry of Meindert van Aakeren or Pieter Mouringsz. van der Aa.

Bibliography

Primary sources

Archival

ELO = Erfgoed Leiden en Omstreken
UB Leiden = Universitaire Bibliotheek Leiden

ELO, Gasthuizen, 16a.
ELO, Gasthuizen, 226.
ELO, Gasthuizen, 288.
ELO, Gasthuizen, 289.
ELO, LB 28659.
ELO, PV351.1.
ELO, SA I, 387.
ELO, SA II, 923B.
ELO, SA II, 5113 nr. 68.
ELO, SA II, 5153 nr. 29.
ELO, SA II, 5938A.
ELO, SA II, 6238.
ELO, Weeshuis, HGW, 4547.
UB Leiden, Archief van Curatoren I, 1575-1815, 230.
UB Leiden, Archief van Senaat en Faculteit, 347.

Printed

Anonymous, *Resolutie vande Ed: Groot Mog: Heeren Staten van Hollandt ende West-Vrieslandt, Behelende middelen ende praecautien tegens het voortsetten vande Pest* (The Hague 1664).

Camerarius, Joachim, ed., *Synopsis commentariorum De Peste, Das ist Kurtzer Doch beständiger Begriff dreyer Außbündiger Tractätlein von der Pestilentz, deren Natur, Praeservation, Curation und sonsten in gemein von allerhand dißfals bedencklichen Sachen* (Lich 1597).

Camerarius, Joachim, 'De recta et necessaria ratione; praeservandi a pestis contagio tam imminente quam exoriente loca quaelibet' in: Joachim Camerarius, ed., *Synopsis quorundam brevium sed perutilium Commentariorum de Peste* (Nuremberg 1583).

Camerarius, Joachim, 'Ratio expurgandarum rerum infectarum vel propter contagium suspectarum; secundum modum apraefectis sanitatis publice Venetiis propositum' in: Joachim Camerarius, ed., *Synopsis quorundam brevium sed perutilium Commentariorum de Peste* (Nuremberg 1583).

Camerarius, Joachim, ed., *Synopsis quorundam brevium sed perutilium Commentariorum de Peste* (Nuremberg 1583).

Carter, H. W., *A Short Account of some of the Principal Hospitals of France, Italy, Switzerland, and the Netherlands with remarks upon the Climate and Diseases of those Countries* (London 1819).

Daignan, Guillaume, *Reflexions sur la Hollande; Ou l'on considere principalement les Etablissements de charité, qui sont l'éloge de la bonté du cœur de ce Peuple, comme de la sagesse de son Gouvernement* (Paris 1777).

Donzellinus, Hieronymus, 'Commentarius de Peste doctissimus et accuratissimus' in: Joachim Camerarius, ed., *Synopsis quorundam brevium sed perutilium Commentariorum de Peste* (Nuremberg 1583).

Heurnius, Johannes, *Het Noodigh Pest Boeck* (Leiden 1600).

Heurnius, Johannes, *De morbis qui in singulis partibus humani capitis insidere consueverunt* (Leiden 1594).

Hout, Jan van, *Ordonnantie ende ghebot nopende de heete ziecte, ofte peste* (Leiden 1603).

Mieris, Frans van, *Beschryving der stad Leyden; Haare Gelegenheid, Oorsprong, Vergrootinge, Oude en Hedendaagsche Gedaante, Stichtingen van Kerken, Kloosters, Godshuizen, en Andere aanmerklyke Gebouwen, zoo Geestlyke als Waereldlyke, derzelver byzondere Toestand en Bestieringe* I (Leiden 1762).

Orlers, Jan Jansz., *Beschrijvinge der stadt Leyden; Inhoudende 't Begin, den voortgang, ende den wasdom der selver: de stichtinge vande Kercken, Cloosteren, Gasthuysen, ende andere Publijcque Gestichten* 1 (Leiden 1614).

Pauw, Peter, *Tractatus de peste; cum Henrici Florentii ad singula ejusdem tractatus capita additamentis* (Leiden 1636).

Rincius, Caesar, 'Disputatio accuratissima de peste Mediolanensi; quae anno Christi M. D. LXXVII. urbem afflixit' in: Joachim Camerarius, ed., *Synopsis quorundam brevium sed perutilium Commentariorum de Peste* (Nuremberg 1583).

Sysmus, Hub, *Pestbeschrijving waer in Naukeurigh de naeste oorzaeke der Peste onderzocht, en haer grondige genezing, in verscheyde geneeskundige aenmerkingen, voorgestelt wort* (Amsterdam 1664).

Secondary sources
Printed

Aa, A. J. van der, *Biographisch woordenboek der Nederlanden* 8 (Haarlem 1867).

Ackerknecht, Erwin H., *Medicine at the Paris hospital, 1794-1848* (Baltimore 1967).

Adams, Annmarie, and Thomas Schlich, 'Design for Control; Surgery, Science and Space at the Royal Victoria Hospital, Montreal, 1893-1956', *Medical History* 50 (2006) 303-324.

Andrews, Jonathan, ed., ea., *The History of Bethlem* (London 1997).

Archer, John, 'Social Theory of Space; Architeture and the Production of Self, Culture, and Society', *Journal of the Society of Architectual Historians* 64:4 (2005) 430-433.

Bal, Mieke, and Norman Bryson, 'Semiotics and Art History', *The Art Bulletin* 73:2 (1991) 174-208.

Baldasso, Renzo, 'Function and Epidemiology in Filarete's Ospedale Maggiore' in: Barbara S. Bowers, ed., *The Medieval Hospital and Medical Practice* (Aldershot 2007) 107-122.

Barge, J. A. J., 'Het Collegium medico-practicum in het voormalige Caecilia-Gasthuis', *Leidsch Jaarboekje* 29 (1937) 49-58.

Beek, H. H., *Waanzin in de middeleeuwen; beeld van de gestoorde en bemoeienis met de ziekte* (Hoofddorp 1969).

Berg, Agnes van den, and Cor Wagenaar, 'Healing by Architecture' in: Cor Wagenaar, ed., *The Architecture of Hospitals* (Rotterdam 2006) 254-257.

Bergh, A. E. Kok-Van den, 'Rotterdam en de Katholieke Armenzorg; Een vergeten proces', *Rotterdams Jaarboekje* 9:6 (1988) 216-225.

Beukers, Harm, 'Studying Medicine in Leiden in the 1630s' in: Richard Todd and Kathryn Murphy *'A man very well studyed'; New Contexts for Thomas Browne* (Leiden 2008) 49-64.

Beukers, Harm, 'Clinical Teaching in Leiden from Its Beginning until the End of the Eighteenth Century', *Clio Medica; Acta Academiae Internationalis Historiae Medicinae* 21 (1988) 139-152.

Bik, Johannes, *Vijf eeuwen medisch leven in een Hollandse stad* (Amsterdam 1955).

Blok, P. J., and P. C. Molhuysen, *Nieuw Nederlandsch biografisch woordenboek* 4 (Leiden 1918).

Boele, Anita, *Leden van één lichaam; Denkbeelden over armen, armenzorg en liefdadigheid in de Noordelijke Nederlanden 1300-1650* (Hilversum 2013).

Boer, Dick de, and Karel Bostoen, 'Sorte non sorte; De deelname van de Leidse elite aan de Gasthuisloterij in 1596' in: Jan de Jongste, Juliette Roding and Boukje Thijs, ed., *Vermaak van de elite in de vroegmoderne tijd* (Hilversum 1999) 218-241.

Bostoen, Karel, 'Adieu, mijn geld!; De Leidse loterij van 1596', *De zeventiende eeuw* 6 (1990) 34-39.

Brieger, Gert, 'The Historiography of Medicine' in: W. F. Bynum and Roy Porter, *Companion Encyclopedia of the History of Medicine* (London 1993) 24-44.

Bruegmann, Robert, *Architecture of the Hospital: 1770-1870; Design and Technology* (Ann Arbor 1976).

Burnham, John C., *What is Medical History?* (Cambridge 2005).

Byrne, Joseph P., *The World of Renaissance Italy; A Daily Life Encyclopedia* I (Santa Barbara 2017).

Castiglioni, Arturo, 'The attack of Franciscus Puteus on Andreas Versalius and the defence by Gabriel Cuneus' *Yale Journal of Biology and Medicine* 16:2 (1943) 135-148.

Cavallo, Sandra, 'Health, air and Material Culture in the Early Modern Italian Domestic Environment', *Social History of Medicine* 29:4 (2016) 695-716.

Crawshaw, Jane Stevens, 'The Renaissance Invention of Quarantine' in: Linda Clark and Carole Rawcliffe, *The Fifteenth Century XII; Society in an Age of Plague* (Woodbridge 2013) 161-174.

Crawshaw, Jane Stevens, *Plague hospitals; public health for the city in early modern Venice* (Farnham 2012).

Cunningham, Andrew, and Ole Peter Grell, *Health care and poor relief in Protestant Europe 1500-1700* (London 1997).

Davis, Natalie Zemon, 'Poor relief, Humanism, and Heresy: The Case of Lyon', *Studies in Medieval and Renaissance History* 5 (1968) 217-275.

Dijkstra, J. G., *Een Epidemiologische beschouwing van de Nederlandse pest-epidemieën der XVIIde eeuw* (Amsterdam 1921).

Dinges, Martin, 'The Reception of Michel Foucault's Ideas on Social Discipline, Mental Asylums, Hospitals and the Medical Profession in German Historiography' in: Colin Jones and Roy Porter, *Reassessing Foucault; Power, Medicine and the Body* (London 1994) 111-124.

Durling, Richard J., *A Catalogue of Sixteenth Century Printed Books in the National Library of Medicine* (Bethesda 1967).

Ekkart, R. E. O., 'Een Leidse Loterijkaart uit de Zestiende eeuw', *Leids Jaarboekje* 66 (1976) 112-122.

Fehler, Timothy G., *Poor Relief and Protestantism; The Evolution of Social Welfare in Sixteenth-Century Emden* (Aldershot 1999).

Foucault, Michel, 'The politics of health in the eighteenth century' in: Colin Gordon, ed., *Power/Knowledge; Selected Interviews and Other Writings 1972-1977; Michel Foucault* (New York 1980) 166-182.

Foucault, Michel, *The Birth of the Clinic; An Archaeology of Medical Perception* (Abingdon 1973).

Foucault, Michel, *Madness and Civilization; A History of Insanity in the Age of Reason* (Abingdon 1967).

Gage, Frances, *Painting as Medicine in Early Modern Rome; Giulio Mancini and the Efficacy of Art* (University Park 2016).

Granshaw, Lindsay, 'The Hospital' in: W. F. Bynum and Roy Porter, *Companion Encyclopedia of the History of Medicine* (London 1993) 1180-1203.

Groenveld, S., and Jan A. F. de Jongste, 'Bestuur en beleid' in: R. C.. J. van Maanen, ed., *Leiden; De Geschiedenis van een Hollandse stad* 2 (Leiden 2003) 54-83.

Groenveld, S., 'Leiden in de eerste jaren van de Nederlandse opstand; 1566-1574' in: R. C.. J. van Maanen, ed., *Leiden; De Geschiedenis van een Hollandse stad* 1 (Leiden 2002) 201-211.

Hall, Stuart, 'The work of representation', in: Stuart Hall, Jessica Evans and Sean Nixon, ed., *Representation* (Los Angeles 2013).

Hallema, Anne, 'Jan van Hout's rapporten en adviezen betreffende het Amsterdamsche tuchthuis uit de jaren 1597 en '98', *Bijdragen en Mededeelingen van het Historisch Genootschap* 48 (1927) 69-98.

Hallema, A., 'Uit de geschiedenis van de gevangenis en het tuchthuis binnen Leiden', *Leidsch Jaarboekje* 20 (1926) 26-71.

Haneveld, G. T., *Oude Medische Gebouwen van Nederland; Uitgegeven voor het Genootschap voor Geschiedenis der Geneeskunde, Wiskunde, Natuurwetenschap en Techniek te Leiden* (1976 Amsterdam).

Heijden, Manon van der, et al., ed., *Serving the Urban Community; The Rise of Public Facilities in the Low Countries* (Amsterdam 2009).

Henderson, John, *The Renaissance Hospital; Healing the Body and Healing the Soul* (London 2006).

Henderson, John, 'The art of Healing; Hospital wards and the sick in Renaissance Florence' in: P. Helas and G. Wolf, ed., *Armut und Armenfürsorge in der italienischen Stadtkulturzwischen 13. und 16. Jahrhundert; Bilde, Texte und sozial Pratiken* (Frankfurt am Main 2006) 79-96.

Henderson, John, 'The material culture of health: hospitals in renaissance Italy' in: Florian Steger and
  Kay P. Jankrift, ed., *Gesundheit – Krankheit; Kulturtransfer medizinischen Wissens von der
  Spätantike bis in die frühe Neuzeit* (Cologne 2004) 155-166.
Henry, George W., 'Mental Hospitals' in: Gregory Zilboorg, *A History of Medical Psychology* (New
  York 1941) 558-591.
Hillier, Bill, and Julienne Hanson, *The Social Logic of Space* (Cambridge 1984) 14-22.
Houston, R. A., 'A Latent Historiography? The Case of Psychiatry in Britain 1500-1820', *The
  Historical Journal* 57:1 (2014) 289-310.
Huisman, Anneke, and Johan Koppenol, *Dear compt de Lotery met trommels en trompetten!;
  Loterijen in de Nederlanden tot 1726* ((Hilversum 1991).
Huisman, Tim, *The Finger of God; Anatomical Practice in 17th-Century Leiden* (Leiden 2008).
Jackson, Stanley W., 'Galen – on mental disorders', *Journal of the History of the Behavioral Sciences*
  5:4 (1969) 365-384.
Jetter, Dieter, *Das europäische Hospital; Von der Spätantike bis 1800* (Cologne 1986).
Jetter, Dieter, 'Das Mailänder Ospedale Maggiore und der kreuzförmige Krankenhausgrundriß',
  Sudhoffs Archiv für Geschichte der Medizin und der Naturwissenschaften 44:1 (1960) 64-75.
Johnson, Peter, 'The Geographies of Heterotopia', *Geography Compass* 7:11 (2013) 790-803.
Jütte, Robert, 'Health care provision and poor relief in early modern Hanseatic towns; Hamburg,
  Bremen and Lübeck' in: Andrew Cunningham and Ole Peter Grell, *Health care and poor
  relief in Protestant Europe 1500-1700* (London 1997) 105-125.
Jütte, Robert, *Poverty and Deviance in Early Modern Europe* (Cambridge 1994).
Jütte, Robert, *Obrigkeitliche Armenfürsorge in deutschen Reichsstädten der frühen Neuzeit;
  städtisches Armenwesen in Frankfurt am Main und Köln* (Cologne 1984).
Kaajan, H. J. Ph. G., 'Een streep door de (jaar)rekening; De brand van het pestgasthuis
  Leeuwenbergh', *Maandblad Oud-Utrecht* 51:9 (1978) 89-92.
Kenda, Barbara, *Aeolian Winds and the Spirit in Renaissance Architecture* (London 2006).
Kerk, Martje aan de, *Madness and the city; Interactions between the mad, their families and urban
  society in Amsterdam, Rotterdam and Utrecht, 1600-1795* (Amsterdam 2019).
Kipp, A. F. E., and W. Kastelein, 'Leeuwenbergh', *Maandblad Oud-Utrecht* 52:2 (1979).
Kisacky, Jeanne, *Rise of the Modern Hospital; An Architectural History of Health and Healing 1870-
  1940* (Pittsburgh 2017).
Koehler, P. J., and G. W. Bruyn, 'Medische inzichten omtrent hoofdpijn en migraine in Nederland;
  16^e-19^e eeuw', *Geschiedenis der geneeskunde* 24 (1994) 2597-2602.
Koppenol, Johan, *Leids heelal; Het Loterijspel (1596) van Jan van Hout* (Hilversum 1998).
Koppenol, Johan, '(Naasten-)Liefde es tFondament; De Leidse rederijkers en de loterij van 1596', *De
  zeventiende eeuw* 6 (1990) 27-32.
Kromm, Jane, 'The Early Modern Lottery in the Netherlands; Charity as Festival and Parody' in:
  David R. Smith, ed., *Parody and Festivity in Early Modern Art; Essays on Comedy as Social
  Vision* (London 2012) 51-62.
Kromm, Jane, 'Site and vantage; Sculptural decoration and spatial experience in early modern Dutch
  asylums' in: Leslie Topp, James E. Moran and Jonathan Andrews, ed., *Madness, Architecture
  and Built Environment; Psychiatric Spaces in Historical Context* (New York 2007) 19-39.
Kroon, Just Emile, *Bijdragen tot de geschiedenis van het geneeskundig onderwijs aan de Leidse
  universiteit 1575-1625* (Leiden 1911).
Kyle, Sarah R., *Medicine and Humanism in Late Medieval Italy; The Carrara Herbal in Padua*
  (London 2017).
Ladan, Rudolph, *Gezondheidszorg in Leiden in de late middeleeuwen* (Hilversum 2012).
Leen, J. van der, *Geschiedenis van het pest- en dolhuis der gemeente Rotterdam* (Rotterdam 1934).
Leistikow, Dankwart, *Ten Centuries of European Hospital Architecture; A Contribution to the
  History of Hospital Architecture* (Ingelheim am Rhein 1967).
Leupen, Saskia M. C., 'De kloosters van de cellebroeders en -zusters in het graafschap Holland en
  Zeeland tot aan de Reformatie', *Historisch Tijdschrift Holland* 30:2 (1998) 63-93.
Leupen, S. M. C., 'Het Leidse Cellebroedersklooster', *Leids Jaarboekje* 84 (1992) 32-49.

Lieburg, M. J. van, 'Die medizinische Versorgung einer Stadtbevölkerung um 17. Jarhhundert; Die Quellen und Forschungssituation für Rotterdam', *Münstersche Beiträge zur Geschichte und Theorie der Medizin* 18 (1982) 29-48.

Ligtenberg, Christina, *De Armenzorg te Leiden tot het Einde van de 16e eeuw* (The Hague 1908).

Lis, Catharina, and Hugo Soly, *Armoede en kapitalisme in pre-industrieel Europa* (Antwerp 1979).

Luyendijk-Elshout, A. M., 'Der Einfluß der italienischen Universitätten auf die medizinische Fakultät Leiden (1575-1620)' in: Georg Kauffmann, *Die Renaissance im Blick der Nationen Europas* (Wiesbaden 1991) 339-354.

Luyendijk-Elshout, A. M., 'l'Instruzione superiore a Padova; un punta di riferemento per la Faculta di Medicina di Leida (1575-1625)' in: Margherita Azzi Visentini and Loris Permuda, *I secoli d'oro della medicina; 700 anni di scienza medica a Padova* (Modena 1986) 79-85.

Luyendijk-Elshout, A. M., 'The Caecilia Hospital in Leiden', *Proceedings of the XXIII International Congress of the History of Medicine* (London 1972) 312-317.

Maanen, R. C. J. van, 'Stadsbeeld en ruimtelijke ordening' in: R. C.. J. van Maanen, ed., *Leiden; De Geschiedenis van een Hollandse stad* 2 (Leiden 2003) 17-41.

Majerus, Benoît, 'Material Objects in Twentieth Century History of Psychiatry', *Low Countries Historical Review* 132:1 (2017) 149-169.

Majerus, Benoît, 'The straitjacket, the bed, and the pill; Material culture and madness' in: Greg Eghigian, ed., *The Routledge History of Madness and Mental Health* (London 2017) 263-276.

Mans, Inge, *Zin der Zotheid; Vijf eeuwen cultuurgeschiedenis van zotten, onnozelen en zwakzinnigen* (Amsterdam 1998).

Manteufel, Katharina, *'Zullen wy [...] malkanderen de hant niet bieden'; Policies of Asylum Care for the Insane in 17th and 18th-Century Dordrecht* (MA dissertation) (Utrecht 2012).

Mellyn, Elizabeth, 'Healers and Healing in the Early Modern Health Care Market' in: Greg Eghigian, ed., *The Routledge History of Madness and Mental Health* (London 2017) 83-100.

Moquette, H. C. H., 'Pestepidemieën in Rotterdam', *Rotterdamsch Jaarboekje* 3 (1925) 10-52.

Noordegraaf, Leo, and Gerrit Valk, *De gave Gods; De pest in Holland vanaf de late middeleeuwen* (Amsterdam 1996).

Oerle, Hugo van, *Het Caecilia-Gasthuis; een onderzoek naar de bouwgeschiedenis van het 'Caecilia-Gasthuis' in de Camp te Leiden, ten behoeve van de renovatie en inrichting tot een museum voor de natuurwetenschappen* (Leiden 1978).

Oerle, H. A. van, *Leiden binnen en buiten de stadsvesten; de geschiedenis van de stedebouwkundige ontwikkeling binnen het Leidse rechtsgebied tot aan het einde van de gouden eeuw; Beschrijving* (Leiden 1975).

Oerle, Hugo van, 'De bouwgeschiedenis van het St. Cecilia Gasthuis in de Camp te leiden', *Leidsch jaarboekje* 33 (1941) 63-81.

Otterspeer, Willem, *Groepsportret met Dame I; Het bolwerk van de vrijheid; De Leidse universiteit 1575-1672* (Amsterdam 2000).

Overgaauw, E., *Paaps mededogen of Protestantse zorg; De ontwikkeling van de armenzorg in de 16^e en vroege 17^e eeuw en de verandering hierin ten gevolge van reformatie en opstand, gespiegeld aan Rotterdam* (BA dissertation) (Utrecht 2016).

Overvoorde, J. C., 'Maatregelen ter bestrijding van het pestgevaar te Leiden in de 16^e en de eerste helft der 17de eeuw', *Leidsch Jaarboekje* 19 (1924) 68-82.

Parker, Charles H., 'The Pillars of a new community; Conflicts and cooperation over poor relief in post-Reformation Holland' in: Manon van der Heijden, et al., ed., *Serving the Urban Community; The Rise of Public Facilities in the Low Countries* (Amsterdam 2009) 155-167.

Parker, Charles H., 'Calvinism and Poor Relief in Reformation Holland' in: Thomas Max Safley, *The Reformation of Charity; The Secular and the Religious in Early Modern Poor Relief* (Leiden 2003) 107-120.

Parker, Charles H., *The reformation of community; Social welfare and Calvinist charity in Holland, 1572-1620* (Cambridge 1998).

Pater, J. C. H. de, *Jan van Hout; Een Levensbeeld uit de 16^e eeuw* (The Hague 1946).

Pettegree, Andrew, and Malcom Walsby, ed., *Netherlandish Books; Books Published in the Low Countries and Dutch Books Printed Abroad before 1601* (Leiden 2011).

Porter, Roy, *Madness: A Brief History* (Oxford 2002).

Porter, Roy, and Mark S. Micale, 'Introduction: Reflections on Psychiatry and Its Histories' in: Roy Porter and Mark S. Micale, ed., *Discovering the History of Psychiatry* (Oxford 1994) 3-36.

Porter, Roy, *Mind-forg'd Manacles; A History of Madness in England from the Restoration to the Regency* (Cambridge 1987).

Prinsen, J., 'Armenzorg te Leiden in 1577', *Bijdragen en Mededeelingen van het Historisch Genootschap* 26 (1905) 113-160.

Prinsen, J., 'Bronnen voor de kennis van leven en werken van Jan van Hout (deel 2)', *Tijdschrift voor Nederlandse Taal- en Letterkunde* 23 (1904) 193-256.

Prior, Lindsay, 'The Architecture of the Hospital; A Study of Spatial Organization and Medical Knowledge', *British Journal of Sociology* 39:1 (1988) 86-113.

Querido, A., *Godshuizen en Gasthuizen; Een geschiedenis van de ziekenverpleging in West-Europa* (Amsterdam 1967).

Rebollo, Regina Andrés, 'A Escola Médica de Pádua; medicina e filosofia no período moderno', *História, Ciências, Saúde-Manguinhos* 17:2 (2010) 307-331.

Risse, Guenter B., *Mending Bodies, Saving Souls; A History of Hospitals* (New York 1999).

Rogge, Carl, *De betekenis van Ambroise Paré (1510-1590)* (Groningen 1973).

Rooijen, A. J. Servaas van, 'Toen en nu; Sint Anthnius-kapel, 'Siekhuis', Pesthuis, Dolhuis, Verbeteringhuis, Krankzinnigengesticht', *De Huisvriend* 2 (1900) 238-239.

Rykwert, Joseph, Neil Leach and Robert Tavernor, *On the Art of Building in Ten Books; Leon Battista Alberti* (Cambridge 1988).

Safley, Thomas Max, 'Introduction' in: Thomas Max Safley, *The Reformation of Charity; The Secular and the Religious in Early Modern Poor Relief* (Leiden 2003) 1-14.

Schotel, G. D. J., *Het leven van Pieter Adriaansz. van de Werff* (Leiden 1874).

Schut, J., *Van dolhuys tot psychiatrisch centrum; Ontwikkeling en functie* (Haarlem 1970).

Scull, Andrew, *Madness in Civilization; A Cultural History of Insanity from the Bible to Freud, from the Madhouse to Modern Medicine* (London 2015).

Shorter, Edward, *A History of Psychiatry; From the Era of the Asylum to the Age of Prozac* (New York 1997).

Sigerist, Henry E., 'An outline of the development of the hospital', *Bulletin of the Institute of the History of Medicine* 4:7 (1936) 573-581.

Siraisi, Nancy, *Avicenna in Renaissance Italy; The Canon and medical teaching in Italian universities after 1500* (Princeton 1987).

Siraisi, Nancy G., 'The changing fortunes of a traditional text: goals and strategies in sixteenth-century Latin editions of the Canon of Avicenna' in: A. Wear, R. K. French and I. M. Lonie, *The medical renaissance of the sixteenth century* (Cambridge 1985) 16-41.

Smith, Leonard, 'The architecture of confinement; Urban public asylums in England, 1750-1820' in: Leslie Topp, James E. Moran and Jonathan Andrews, ed., *Madness, architecture and the built environment: psychiatric spaces in historical context* (New York 2007) 41-61.

Smeyers, Maurits, and Annemie Adriaenssens, *Werken van barmhartigheid; 650 jaar Alexianen in de zuidelijke Nederanden* (Leuven 1985).

Spencer, John R., *Filarete's Treatise on Architecture; Being the Treatise by Antonio by Piero Averlino, Known as Filarete* (London 1965).

Spierenburg, Pieter, *The Prison Experience; Disciplinary Institutions and Their Inmates in Early Modern Europe* (Amsterdam 2007).

Spierenburg, Pieter, 'The sociogenesis of confinement and its development in early modern Europe' in: Pieter Spierenburg, ed., *The Emergence of Carceral Institutions; Prisons, Galleys and Lunatic Asylums 1550-1900* (Rotterdam 1984) 9-77.

Stel, Jaap van der, *Drinken drank en dronkenschap; Vijf eeuwen drankbestrijding en alcoholhulpverlening in Nederland; Een historisch-sociologische studie* (Hilversum 1995).

Tally, Robert T., *Spatiality* (Abingdon 2013).

Teeuwen, Daniëlle, *Generating Generosity; Financing poor relief through charitable collections in Dutch towns, c. 1600-1800* (Utrecht 2014).

Thompson, John D., and Grace Goldin, *The Hospital: A Social and Architectural History* (New Haven 1975).

Tournoy, Gilbert, 'Towards the roots of social welfare; Joan LLuís Vivès's De subventione pauperum', *City* 8:2 (2004) 266-273.

Verderber, Stephen, *Innovations in Hospital Architecture* (New York 2010).

Versprille, A. J., 'Uit de bouwgeschiedenis van het Caecilia-gasthuis' (report) (Leiden 1969).

Vijselaar, Joost, 'Van cellen, ketens en banden naar BOPZ', *Bang voor Dwang?; Verslag van een themadag over de toepassing van dwang in de psychiatrie* (1989) 91-96.

Vis, G. N. M., *650 jaar ziekenzorg in Alkmaar: 1341-1991; Hoofdstukken uit de geschiedenis en voorgeschiedenis van de Alkmaarse zieken- en gezondheidszorg* (Hilversum 1991).

Voss, Lex Heerma van, and Marco H. D. van Leeuwen, 'Charity in the Dutch Republic: an introduction', *Continuity and Change* 27:2 (2012) 175-197.

Weyde, A. J. van der, 'Bijdrage tot de geschiedenis der pest te Utrecht', *Nederlands Tijdschrift voor Geneeskunde* 71 (1927) 3119-3139.

Wurfbain, M. L., *Stedelijk Museum de Lakenhal – Leiden; Catalogus van de schilderijen en tekeningen* (Leiden 1983).

Yanni, Carla, *The Architecture of Maddness: Insane Asylums in the United States* (Minneapolis 2007).

Zoethout, D. A., 'Het oude buitengasthuis (pesthuis) te Amsterdam', *Elsevier's Geïllustreerd Maandschrift* 11 (1901) 399-407.

Websites

Commissie Geveltekens van de Historische Vereniging Oud Leiden, 'Verhaal: Museum Boerhaave, het voormalige St. Caecilia klooster en Gasthuis', *Erfgoed Leiden en omstreken*, https://www.erfgoedleiden.nl/component/lei_verhalen/verhaal/id/343 (30-3-2020).

De Lakenhal, 'Drieluik met Maria als hemelkoningin', *De Lakenhal*, https://www.lakenhal.nl/nl/collectie/s-246 (4-4-2020).

List of figures

Figure 11
Mats Dijkdrent, *Top view of the reconstructed plague hospital.*

Figure 12
J. C. Wendel, *Map of the St. Caeciliagasthuis* (Copy), Erfgoed Leiden en Omstreken (Leiden)
PV28381A (original: PV28381).
Date, 1854 (original 1672-1675); Measurements: 18 x 24 cm; drawing on paper.
https://www.erfgoedleiden.nl/collecties/beeldmateriaal/zoeken-in-beeldmateriaal/detail/4e247e90-
3b5c-083d-865c-c72072e31edf/media/f2d5131e-b6bc-98e4-a611-
8460f73074d4?mode=detail&view=horizontal&q=Caeciliagasthuis&rows=1&page=30.

Figure 13
Isaac Claesz Swanenburgh, *The lottery poster*, Koninklijke Bibliotheek Royale (Brussel) S.I 31840.
Date, 1596; Measurements, unknown; etching on paper.
Image not in the public domain. file:///C:/Users/My%20Acer/Downloads/155997.pdf

Figure 14
Anonymous, *Interior of the St. Caeciliagasthuis*, Museum de Lakenhal (Leiden) S 277.
Date, around 1650, Measurements, 51 x 82,5 cm; oil paint on copper.
https://www.lakenhal.nl/nl/collectie/s-277.

Figure 15
Anonymous, *Entrance gate of the old St. Caeciliaklooster*, In situ (Leiden).
Date, 15th century; Measurements, unknown; granite (?)
https://rijksmonumenten.nl/monument/25101/poortje-van-voormalig-caeciliagasthuis-museum-
boerhaave/leiden/.

Figure 16
Salomon Davidsz van Dulmanhorst and Jan Pietersz Dou, *Southside of the old St. Caeciliamonastery*,
Erfgoed Leiden en Omstreken (Leiden) SA II 5113 ('Grachtenboek' nr. 68)
Date, 1583-1589; Measurements, unknown; water colour on paper.
https://www.erfgoedleiden.nl/collecties/archieven/archievenoverzicht/scans/NL-LdnRAL-
0501A/1.2.2.8.1.6.3.2/start/0/limit/10/highlight/1.

Figure 17
Anonymous, *Triptych with the coronation of the Madonna*, Museum de Lakenhal (Leiden) S 246
Date, ca. 1525; Measurements (when closed), 80 x 61 cm; oil paint on panel.
https://www.lakenhal.nl/nl/collectie/s-246.

Figure 18
Anonymous, *Triptych with the coronation of the Madonna* (Closed), Museum de Lakenhal (Leiden) S
246
Date, ca. 1525; Measurements (when closed), 80 x 61 cm; oil paint on panel.
https://www.lakenhal.nl/nl/collectie/s-246.