

# ARCHITECTURE AND BIRTH

WATER HEAT FURNITURE TIME

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# INTRODUCTION

My interest in this topic began with an observation. I went to the maternity hospital to visit a friend who had recently given birth, and I was struck by the various pink stickers of flowers and animals that decorated the walls. Giving birth is an action that connects us to the longer time of history, an action that is necessary for the survival of a society. Birth is “the time when the baby comes out of its mother’s body”. It can be joyful but also tragic. It surely is intense. It feels somehow incongruent for birth to happen under the watch of an oddly shaped whale on the wall. These observations on birth, a topic that touches so many women, one that I had never fully considered before, led me to the topic of the architecture of birth spaces.

## Context

Our research object, the birth space, is where a woman gives birth, where she “produces a baby from her body”.<sup>1</sup> While birth is not defined as an illness, the vast majority of women in France give birth in maternal hospitals.

In 2016, 97.4% of births happened in private or public maternal hospitals.<sup>2</sup> In 2018, only 0.5% of births happened at home with the assistance of a midwife or a doctor.<sup>3</sup> Therefore, the most common birth space in France is the labour rooms of maternal hospitals. By extension, the ante-natal space (where the expecting mother begins labour) and the post-natal rooms (where the mother and the newborn stay until they are discharged). Birth happens under the supervision of midwives and obstetricians.

In 2018, the report “Sexist Acts During Gynaecological and Obstetrical Care” conducted by the *Haut Conseil à l’Égalité entre les Femmes et les Hommes* revealed that 6% of women are dissatisfied with their birth experience.<sup>4</sup> This represents 50,000 women in 2016.<sup>5</sup> Additionally, in 2022, *Le Monde* published no fewer than 14 articles about maternal hospitals perturbations due to the shortage

of midwives<sup>6</sup>. In 2015, the *Ministère de la Santé et de la Prévention* experimented nine “birth homes”<sup>7</sup>, non-technical supervised birth spaces, outside of the hospital environment. These birth homes have been allowed to develop throughout France since 2020, in a context where the ecological crisis calls for frugal approaches to the use of construction resources. In France, the concept of maintaining the hospital in its current state as the most common birth space is under scrutiny. If birth spaces must evolve, how can we reconsider the relationship between giving birth and architecture?

## Theoretical framework

Scientific research defines birth as a highly subtle physiological phenomena that makes the birthing woman a very specific user and birth time a very specific one.

According to the *Medical Dictionary of French Medicine*, birth labour is “a combination of physiological and mechanical phenomena by which a woman delivers or is delivered by natural means of the product of conception, at a time when the foetus has begun to be viable (more than six months of pregnancy)”<sup>8</sup>.

Physiological labour starts with the onset of uterine contractions. These contractions push, “millimetre by millimetre”,<sup>9</sup> the baby through the cervix. First the uterus contracts for short and irregular periods of time; this is the latent phase. Progressively, contractions become more intense and regular, and, thus, more painful. This is the active phase, which continues until the cervix is dilated enough for the baby’s head to emerge. The length of this phase is highly variable and depends on the woman.<sup>10</sup> This phase can last for a number of hours or days before the baby becomes engaged in the vagina. The second stage of birthing, the descent phase, starts when the baby enters the vagina. In the expulsion phase, the mother pushes and the baby passes through the vulva to the outside world. After a few

<sup>1</sup> ‘Give Birth’

<sup>2</sup> Bellamy, ‘Les 784 000 Naissances de 2016 Ont Eu Lieu Dans 2 800 Communes - Insee Focus - 92’.

<sup>3</sup> Ibid.

<sup>4</sup> Bousquet, Couraud, and Collet, ‘Les Actes Sexistes Durant Le Suivi Gynécologique et Obstétrical’, 4

<sup>5</sup> Ibid.

<sup>6</sup> Personal research on lemonde.fr, from the 1/1/2022 to the 1/1/2023

<sup>7</sup> DGOS, ‘Les maisons de naissance’

<sup>8</sup> Académie de Médecine, ‘Dictionnaire Médical’

<sup>9</sup> Lahaye, *Accouchement Les Femmes Méritent Mieux*, p.45

<sup>10</sup> Ibid.

minutes, the woman has more contractions that expel the placenta out of the uterus.

The physiological process of birth relies on a subtle hormone combination that can be affected by the environment<sup>11</sup>. Contractions are produced by oxytocin, which is a hormone related to attachment and happiness. This hormone is also released when people giggle, fall in love or have an orgasm. In response to the pain of contractions, endorphins are also secreted during labour. Endorphins have a similar effect to opiate drugs; they can make the woman drowsy or euphoric. At the beginning of labour, multiple environmental factors (such as cold, noise, people, hunger, feelings of being observed, etc.) can increase secretion of adrenalin and noradrenalin, the hormones of stress and anxiety<sup>12</sup>. In this process, adrenaline obstructs the effects of endorphin and inhibits the oxytocin production. This blocking reduces the intensity of contractions and can even stop contractions. Once the baby is out of her body, the woman remains saturated with oxytocin and endorphin hormones that create a powerful mixture of emotions.

While giving birth, the woman is emotionally and physically exposed<sup>13</sup>. She can feel strong pain and physical sensations. She can be hungry. Her strength, emotions and perceptions are heightened. She may ask for a massage and a minute later refuse any physical contact. For mothers that give birth with an epidural, movement of the lower part of the body is restricted.

The reactions to the giving birth process vary greatly from one woman to another<sup>14</sup>. In a physiological birth, women tend to isolate themselves in what several midwives describe as a “mental bubble”<sup>15</sup>, a state of focus achieved in spaces with dim lights and very little talking, creating a feeling of intimacy.

To illustrate the intimate nature of the first stage of labour, Marie-Hélène Lahaye compares it to vomiting: “the inside of the stomach contracts involuntarily, uncontrollably, until the stomach contents

are expelled from the top”<sup>16</sup>. When a person vomits, they typically spontaneously move out of sight and search for calm. Outside interventions may make the situation more uncomfortable or even introduced complications. In the 1960s, Dr Odent described this situation as the “inhibiting effect”<sup>17</sup> of the environment on birth.

However, if there is information on how the environment affects the birth process, there is limited literature concerning the influence of giving birth on the design and construction of birth spaces. One reason is that this research object has been placed in the “oblivion into which women have been rejected for centuries”<sup>18</sup>. Another reason is that the maternal hospital only became the main birth space in the 1960s in France. Before the 1960s, the most common birth space was the house<sup>19</sup>. The specific relationship between birth and space becomes difficult to track when birth occurs in a variety of spaces.

On the one hand, historians relate this spatial shift to the demographic, and therefore political, stake of giving birth. Since ancient times, the state has regulated natality to ensure a large enough population, in particular for war. A Marxist reading suggests that capital forces require women to “breed more workers” to ensure the reproduction of the workforce. Controlling the conditions of birth by concentrating women in the institutional space of the hospital is a way of achieving capital accumulation. This non-linear process builds upon the early capitalist strategies until the 20th century’s “machine-determined” hospital form.

On the other hand, the shift between the home and the maternity hospital also relates to the improvement of hospital hygiene and the application of anaesthesia to birthing women, which aim to provide a safe birth environment for all women, regardless of their economic background.

If birth is affected by environment, how is architecture affected by such the action of giving birth?

## Research objectives

In France, birth spaces continue to come under scrutiny and receive calls to evolve, in the context of natural resources becoming scarce. How can we consider the relationship between giving birth and architecture?

The main objective of this research is to identify design tools for the evolution of birth spaces in France, in a context of resource scarcity. This research is intended as a stepping stone for the diploma project. We would like to understand the essential components of a birth space and explore strategies for making these components the core of the birth space’s design and construction.

## Methodology

Given the limited specific information on this topic, we developed a qualitative research strategy based on three elements.

First, we investigated historical material about midwifery, sociology and hospital typology, researching the relationship between birth and space throughout history until today. This process allowed us to identify the essential elements of a birth space.

Second, we also used sources on hospital typology history and contemporary institutional guidelines to observe how these elements can be incorporated into architecture and to extract principles for design tools. We took it as the occasion to conceptualise some architectural fascinations that we discovered during the research process.

Third, we used drawing as a research tool throughout the whole process. This choice allowed us to explore the spatial aspects of non-architectural sources, as well as observing and studying architectural cases. Therefore, the starting point of this essay was the images we

collected and we created. These images are presented on the right of the page with synthesised titles that allow for a first reading-level of the essay. More contextualised and detailed argumentation is presented in the left of the page to transmit a detailed landscape of the topic.

In the first chapter of this essay, we observe the influence of giving birth on birth space’s architecture, to identify the essential elements of birth spaces throughout history.

In the second chapter, we build a repertoire of birth space design tools, based on an observation of how the essential elements of birth spaces have been incorporated into architecture in different periods of time.

<sup>11</sup>Gagnon et al., ‘Le travail et l’accouchement’, 3

<sup>12</sup>Ibid.

<sup>13</sup>Lahaye, *Accouchement Les Femmes Méritent Mieux*, p.47

<sup>14</sup>Teissière and Suarez, *Naitre. De l’ideal de l’accouchement à La Réalité de La Naissance*, 32

<sup>15</sup>Ibid. 36

<sup>16</sup>Lahaye, *Accouchement Les Femmes Méritent*

*Mieux*, p.44

<sup>17</sup>Lahaye, ‘Michel ODENT’

<sup>18</sup>Perrot, ‘Foreword’, 7

<sup>19</sup>Lahaye, *Accouchement Les Femmes Méritent*

*Mieux*, p.73

<sup>20</sup>Mies, *Patriarchy and Accumulation on a World*

*Scale. Women in the International Division of Labour*, 105

## CHAPTER 1

TOWARDS AN ARCHITECTURAL  
DEFINITION OF THE BIRTHSPACE

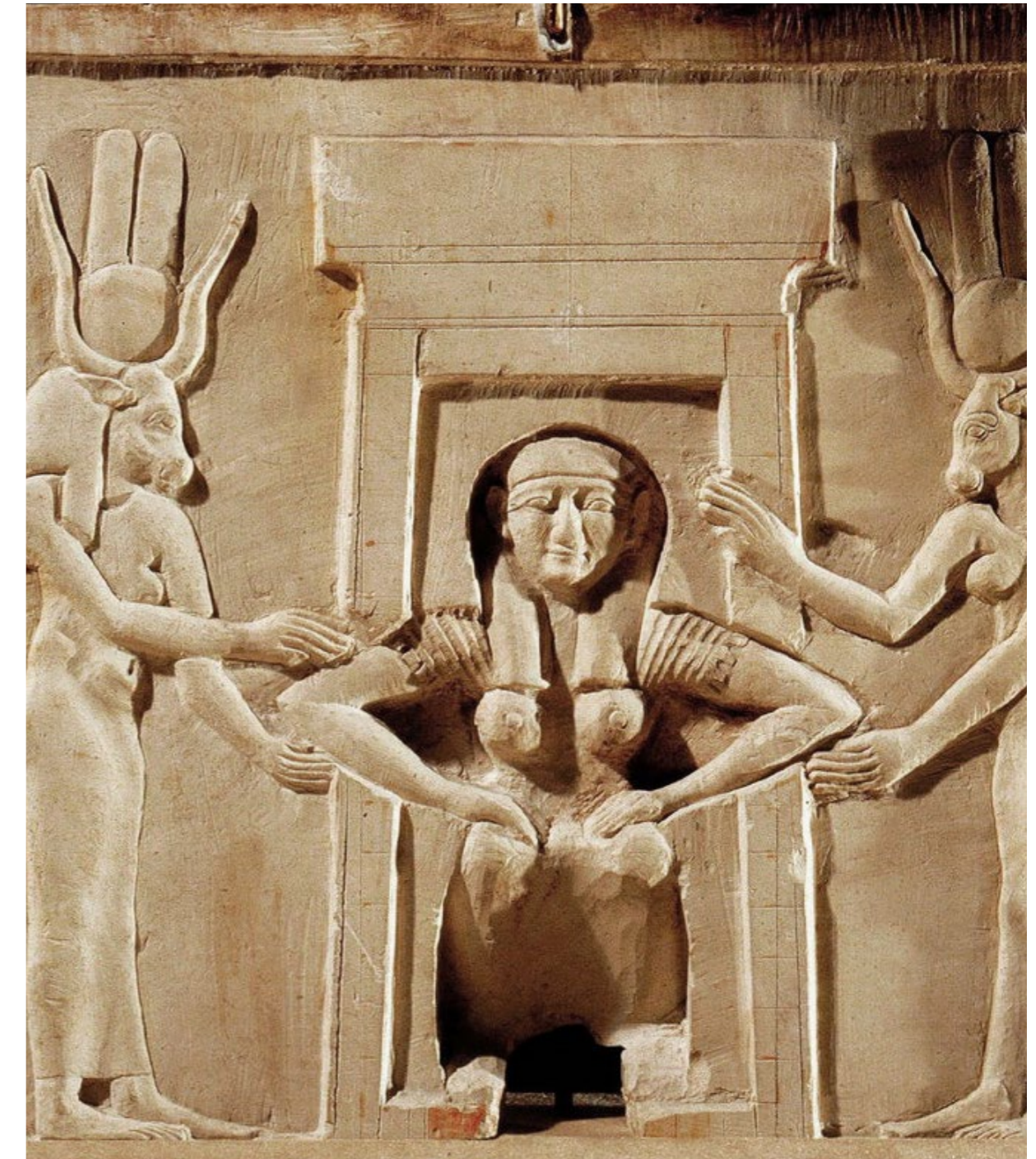


## ANCIENT EGYPT A SPECIFIC BIRTHING PAVILION

<sup>1</sup>Leroy and Papiernik, *Histoire de Naitre*, 44  
Ibid.  
<sup>2</sup>Wegner, 'The Magical Birth Brick', 35  
<sup>3</sup>Rose, 'Childbirth Magic', 43  
Image: AAG/ALIUM. *Un Accouchement Sur un Bas  
Relief du Temple de Denderah.*

In ancient Egypt, labour happened in specific "birthing pavilions"<sup>1</sup>. These spaces were light timber constructions with columns resembling papyrus. During the Ptolemaic period, "mammsi"<sup>2</sup> were the birth spaces for royalty. These spaces were sanctuaries built close to temples such as Denderah and Edfou.

Inside these spaces, women used meskhenet bricks in a sitting or upright position to give birth. These ritual objects were symbolised by the goddess Meskhenet and painted with "childbirth-related imagery"<sup>3</sup>. Fourteen days after giving birth, the woman went through the purification ritual at the temple. In her article "Childbirth Magic", Rose indicates that this ritual included "servants offering mirrors and ointments".



WE DO NOT KNOW THE DETAILS OF THE PAVILION DESIGN. HOWEVER, THEY WERE AUTONOMOUS SPACES FOR BIRTH. SOME OF THESE SPACES WERE IN SOCIAL AND PHYSICAL CONNECTION WITH THE TEMPLE BUILDING A CONSTELLATION OF SPACES USED FOR BIRTH. S,



<sup>1</sup>Leroy and Papiernik, *Histoire de Naître*, 87  
<sup>2</sup>Teissière and Suarez, *Naître. De l'ideal de l'accouchement à La Réalité de La Naissance*, 12  
<sup>3</sup>Tanghe, 'Il était une fois l'accouchement. Évolution des pratiques posturales de la préhistoire à nos jours en Occident', 26  
<sup>4</sup>Leroy and Papiernik, *Histoire de Naître*, 97  
<sup>5</sup>Ibid. 97  
<sup>6</sup>Ibid. 96  
Image: Unknown author. *Medieval Caesarean Section*.

The Middle Ages are commonly seen as a period of regression from Greek knowledge<sup>1</sup>.

The birth space in the Middle Ages was generally the house. Women invited their neighbours or female relatives into the house, while men were excluded and sent to retrieve water or wood for the fire<sup>2</sup>. Labour was cared for by matrons in rural areas and by midwives in urban areas, from the 13th century.

Labour happened in the kitchen or in a separate room for wealthier women. Daily furniture was appropriated for the space. For example, a chair or a table could serve as labour tools. However, "the marital bed" was "never" used, to "de-sexualise the event"<sup>3</sup>. Pre-existing architectural elements were manipulated but not specifically designed for the purpose of birthing. The hearth was used to provide heat for the mother and the newborn, as well as preparing warm drinks<sup>4</sup>. Windows and doors were blacked out with sheets to provide intimacy. A specifically designed birthing chair was only reintroduced in the late Middle Ages<sup>5</sup>.

In France, until 1234, birth was followed by the "purification"<sup>6</sup> ceremony: 40 days after giving birth, the mother was required to go to Church and follow mass in isolation. The priest had to bless her before she could join the congregation.

Giving birth was a collective, feminine practice in the domestic space. However, birth also involved imposed traditions, such as the concept of women carrying a "contagious stain" from the moment they became pregnant until the purification ceremony<sup>7</sup>.

## THE MIDDLE AGES

### HIJACKING DAILY FURNITURE AND ARCHITECTURAL ELEMENTS



THERE WAS NO SPECIFIC SPACE FOR BIRTH. IT OCCURRED IN THE HOUSE, WHICH WAS TEMPORARILY TRANSFORMED FOR BIRTHING. THE INFLUENCE OF BIRTH ON THE BUILDING HAPPENED THROUGH THE REAPPROPRIATION OF THE SPACE; DAILY FURNITURE AND EQUIPMENT.

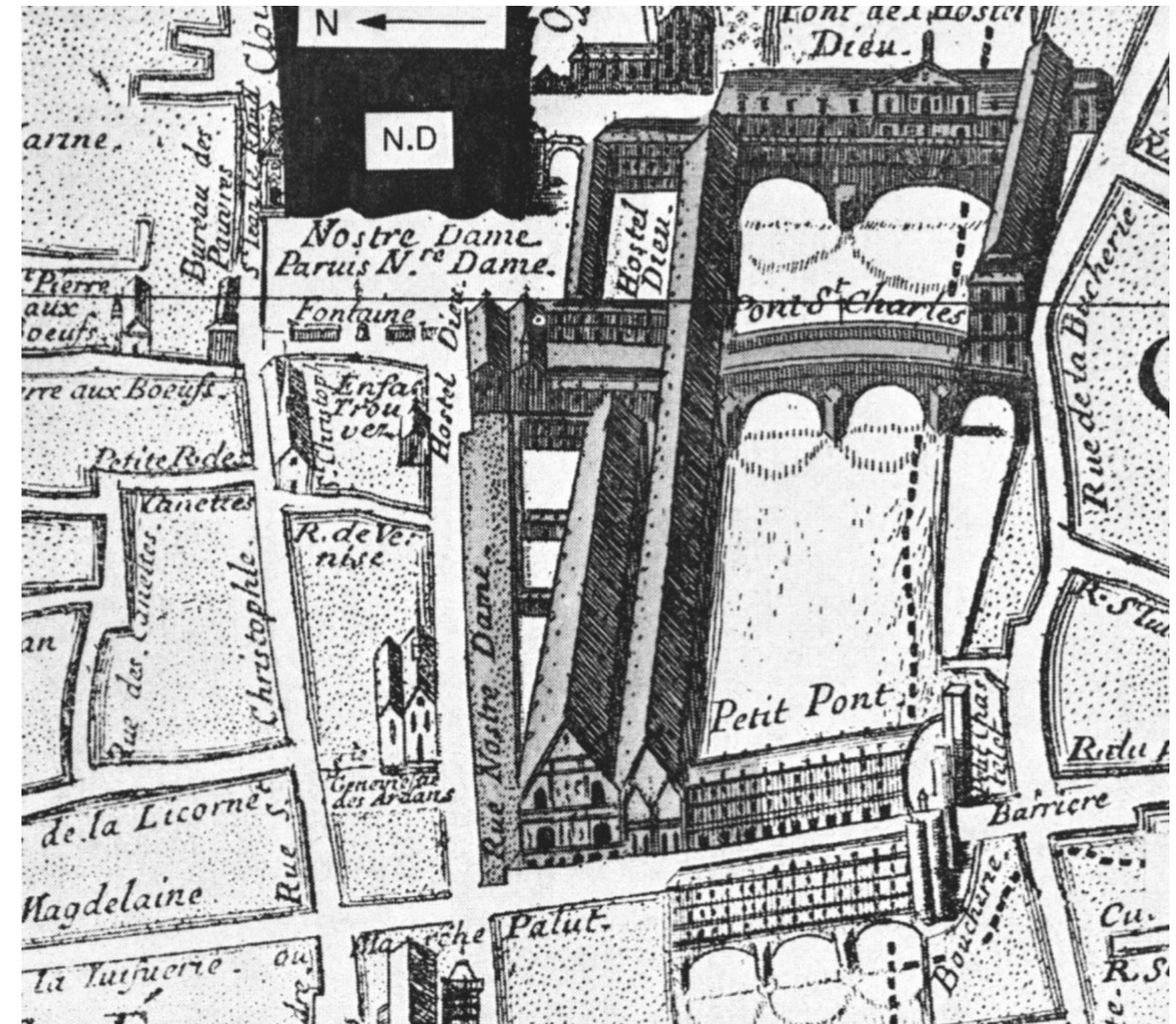


## THE MIDDLE AGES

### BIRTH SPACE INFLUENCED BY SOCIAL CONTROL

Until the 18th century, hospitals' roles were to provide material and spiritual assistance to the sick and to act as a transition between life and death. They were an instrument of social control of "the sick, the insane [and] the prostitutes"<sup>1</sup>, as much as they were a place of assistance for the deprived.

In the Middle Ages, deprived women's birth space was the hospital. The Hôtel-Dieu hospital's maternity ward in France can be traced back to the 13th century<sup>2</sup>. This labour ward is currently half-buried and located under the "Salle Neuve". It was a collective birth space, where the material conditions were difficult. The characteristics of the room respond to the aim of separating women who were considered deviant from the rest of the society. One 15th century charter describes the Hôtel-Dieu labour ward as 24 beds in a semi-buried, "hidden and secret place"<sup>3</sup>, and a 1515 letter from Francis I of France describes that the space as being as "low as a cellar"<sup>4</sup>. Moreover, the labour ward's location by the river Seine caused frequent infiltrations of water and floods. In 1661, up to five birthing women shared the same bed<sup>5</sup>. This overcrowded and unsanitary condition of the labour ward was common throughout the whole hospital<sup>6</sup>.



IN THE HÔTEL-DIEU OF PARIS OFFICE DES ACCOUCHEES, IT IS DIFFICULT TO FIND ANY INFLUENCE OF GIVING BIRTH ON THE SPACE. LABOUR WARDS ISOLATED WOMEN IN DYSFUNCTIONAL SPACES, WHERE THEY WERE INSTALLED IN COLLECTIVE BEDS: A CONDITION COMMON TO THE WHOLE HOSPITAL

<sup>1</sup> Foucault, 'L'incorporation de l'hôpital Dans La Technologie Moderne', 32

<sup>2</sup> Carrier, Origines de La Maternité de Paris. Les Maitresses Sages-Femmes et l'office de Accouchées de l'ancien Hôtel-Dieu (1378-1796).

<sup>3</sup> Ibid. 4

<sup>4</sup> Ibid. 27

<sup>5</sup> Ibid. 31

<sup>6</sup> Cheymol and Cesar, 'Hôtel-Dieu de Paris: Treize Siècles d'histoire... Panégyrique Ou Réquisitoire', 264

Image: Buffer, Blondel et Maillor. Plan de 1710 de l'Hôtel Dieu.



<sup>1</sup>Mies, *Patriarchy and Accumulation on a World Scale. Women in the International Division of Labour*, 88

<sup>2</sup>Ibid.

<sup>3</sup>Leroy and Papiernik, *Histoire de Naître*, 117

<sup>4</sup>Wilson, *The Making of Man-Midwifery*, 43

<sup>5</sup>Chollet, *Sorcières. La Puissance Invaincue Des Femmes*, 23

<sup>6</sup>Tanghe, 'Il était une fois l'accouchement. Évolution des pratiques posturales de la préhistoire à nos jours en Occident', 34

Image: Cruikshank, Isaac. *A Man-Mid Wife*.

The eradication of midwives due to witch hunts removed women from the reproductive knowledge field, creating the possibility for dominance over women's bodies and their reproductive capacity<sup>1</sup>. This removal also allowed authorities to direct accumulate these women's capital through the confiscation properties. Mies highlights that this process mainly benefitted the "capitalist class of merchants, mining industrialists [and] clothier capitalists"<sup>2</sup>.

During the Renaissance, certain instruments from antiquity were reintroduced<sup>3</sup>. Additionally, new instruments were invented, such as the Chamberlain family patenting the forceps in the 17th century, in England. However, the use of forceps was forbidden to midwives and reserved to doctors, who were men<sup>4</sup>.

In the Renaissance, the most common space of birth remained to be the domestic space. The iconography of the time demonstrate the permanence of previous architectural elements (chimney, window) and daily furniture (bed, tub, table) during the birth time. However, in order to allow the use of forceps in case of emergency, from the 17th century, the woman was expected to lie down to give birth<sup>5</sup>. Other postures were progressively considered as "bestial"<sup>6</sup>. Therefore, the appropriation of architectural elements and daily furniture during birth was affected by the newly prescribed medical norms.

## THE RENAISSANCE

### BIRTH'S INFLUENCE ON THE DOMESTIC BUILDING CHANNELED BY MEDICAL NORMS



THE COMMON SPACE FOR BIRTH REMAINED TO BE THE DOMESTIC SPACE. HOWEVER, THE TEMPORARY INFLUENCE OF BIRTHING ON BUILDINGS WAS PROGRESSIVELY CHANNED BY THE SPREAD OF MEDICAL INSTRUMENTS AND PRESCRIPTIONS.



## THE 19<sup>TH</sup> TO EARLY 20<sup>TH</sup> CENTURIES

### THE ARCHITECTURE OF INSTITUTIONAL BIRTH SPACES INFLUENCED BY THE GENERAL EVOLUTIONS OF THE HOSPITAL TYPOLOGY

<sup>1</sup> Mies, *Patriarchy and Accumulation on a World Scale. Women in the International Division of Labour*, 105

<sup>2</sup> Beauvalet, 'La Tragédie Des Maternités Hospitalières Au XIXe Siècle et Les Projets de Réaménagement', 23

<sup>3</sup> Foucault, 'L'incorporation de l'hôpital Dans La Technologie Moderne', 34

<sup>4</sup> Ibid. 35

<sup>5</sup> Ibid. 37

<sup>6</sup> Ibid.

<sup>7</sup> Ibid.

<sup>8</sup> Ibid.

<sup>9</sup> Lahaye, *Accouchement Les Femmes Méritent Mieux*, 70

<sup>10</sup> Beauvalet, 'La Tragédie Des Maternités Hospitalières Au XIXe Siècle et Les Projets de Réaménagement', 27

<sup>11</sup> Ibid. 27-28

Image: Unknown author. *St Bartholomew hospital courtyard, London.*

*In the 18th to 19th centuries, the sanitary conditions of institutional birth spaces held political stakes. The state needed to sustain pronatalist policies. Therefore, the proletarian woman, in particular, "ha[d] to be made to breed [...] workers", that is, give birth<sup>1</sup>. Despite this fact, proletarian women were more deprived, at times giving birth in hospices. However, between 1776 and 1786, puerperal fever in the Office des Accouchées of the Hôtel Dieu had a female death rate of 6.7%<sup>2</sup>. In the same period, the death rate was 1% in home births.*

*The high death rates in the hospital space were not specific to maternity wards. This drove the evolution towards the medical hospital principles that were also adopted in institutional birth spaces. In the 18th century, when the "value of the soldier"<sup>3</sup> increased because of the money spent to teach them the use of fire arms, maritime and military hospitals were redesigned to follow the principles of "discipline"<sup>4</sup>. Foucault defines discipline as control over the "development of [a person's] actions"<sup>5</sup> to maximise their outcome.*

*At the same time, the medicine of the milieu developed. This type of medicine understood illness as a "specific action of the environment on the individual"<sup>6</sup>. In this view, medical action is directed "towards the surrounding environment: air, water, temperature, regime, food"<sup>7</sup> to cure the patient. According to Foucault, the origin of the medical hospital in the late 18th century lay in the combination of medical discipline and the medicine of the milieu<sup>8</sup>. However, it was not until the middle of the 19th century that microbial theory was discovered, which led to the implementation of hygienic practices (e.g. hand washing) and the disinfection of medical instruments to avoid infections in the hospital<sup>9</sup>.*

In 1896, Ancelet published recommendations for improving sanitary conditions in maternity wards. These recommendations built upon the hospital typology of the time and were not specific to birth spaces. Ancelet recommends that maternity wards should be isolated from the rest of the hospital. They should consist of two entities, for sick and healthy women. The labour room should be "spacious [and] well-lit". The room requires access to water ("washbasins, an emptying machine, a hopper, a laundry drying room and a bathroom"). The wards should have individual beds, each one with its own cradle. There should be a garden or a space that allows ventilation. Ancelet also provides advice for heating, lighting and materials.



IN THE INSTITUTIONAL BIRTH SPACE IN A MEDICALISED HOSPITAL, THE ARCHITECTURAL RECOMMENDATIONS WERE INFLUENCED BY THE GENERAL HOSPITAL'S TYPOLOGICAL EVOLUTIONS, WHICH AIMED TO IMPROVE SANITARY CONDITIONS. THERE WAS LITTLE SPECIFIC INFLUENCE OF GIVING BIRTH IN THE DESIGN OF SUCH BIRTH SPACES



<sup>1</sup>Benoit et al., 'Medical Dominance and Neoliberalisation in Maternal Care Provision: The Evidence from Canada and Australia'

<sup>2</sup>Weisman, 'The Maternity Hospital: Blueprint for Redesigning Childbirth', 74

<sup>3</sup>Lahaye, *Acouchement Les Femmes Méritent Mieux*, 73

<sup>4</sup>Burpee, 'History of Healthcare Architecture', 2 Ibid.

<sup>5</sup>Weisman, 'The Maternity Hospital: Blueprint for Redesigning Childbirth', 76

<sup>6</sup>Pierson, 'Notes on Early Industrial Architecture in England', 2

<sup>7</sup>Weisman, 'The Maternity Hospital: Blueprint for Redesigning Childbirth', 76

Image: Marks, Barbara, *Axometric Drawing Depicting the Typical Linear Layout of a Conventional Obstetrical Ward*.

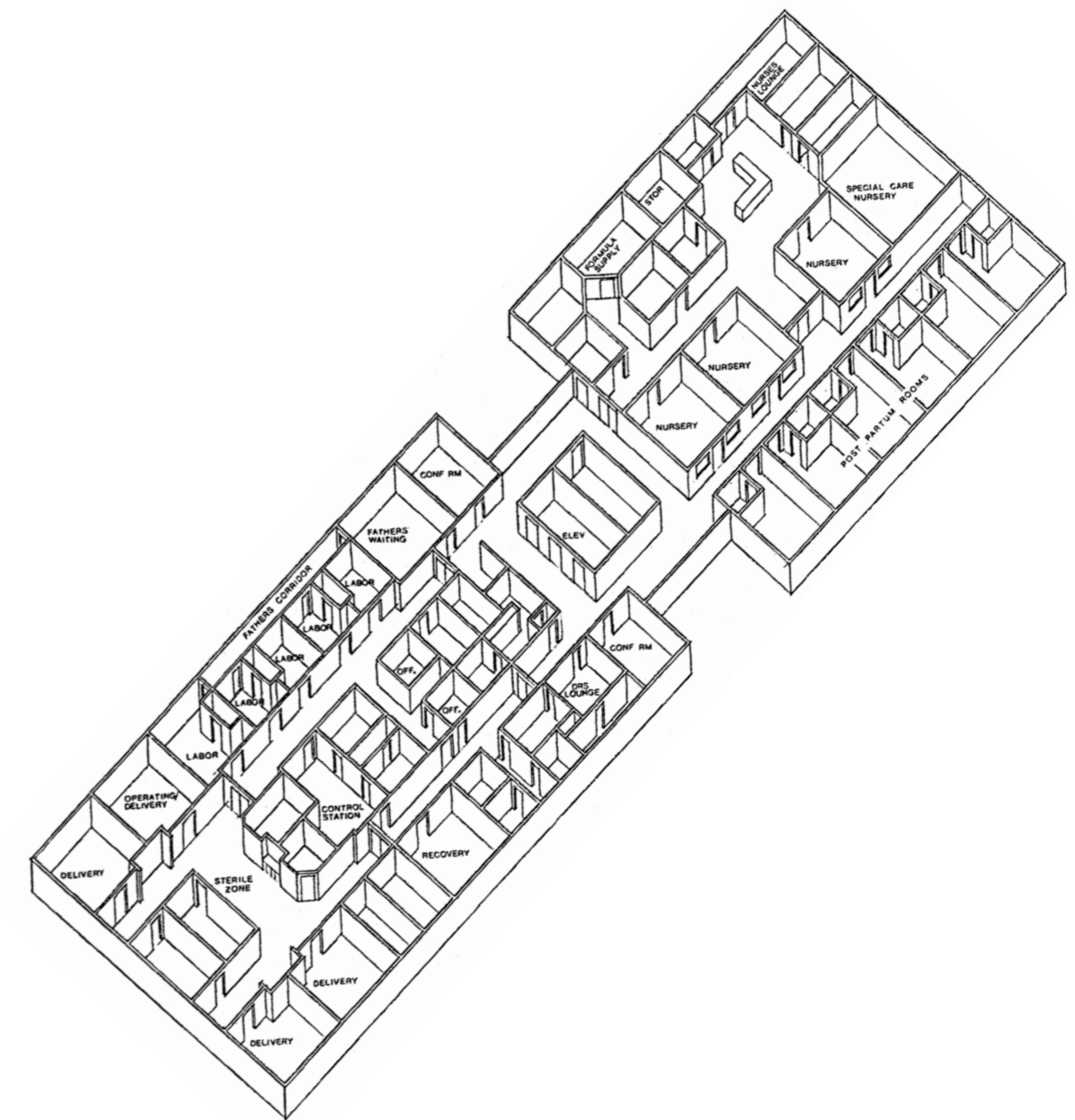
Between the 18th and 19th centuries, the state intervention in birth matters generated what C. Benoit et al. refer to as the "medical hegemony of maternity care": "childbirth is defined as an illness event that required frequent medical supervision and technological intervention"<sup>1</sup>. As following each woman in her house was considered to be too "time consuming"<sup>2</sup>, concentrating pregnant women in the hospital became a more rational way to share the burden of healthcare with a minimum loss of time. In 1960, there were more women giving birth in the maternity hospital than at home<sup>3</sup>.

According to P.J. Stone, the 20th century medical process was characterised by "growing diagnos[ti]c facilities", such as X-Ray and anaesthesia (Stone, 1965). These medical evolutions required more machines in the space, which was rendered possible by new building techniques. In 20th century hospitals, steel and reinforced concrete allowed for longer spans; therefore, buildings were able to adapt to the constant evolution of machines. Interior spaces could be ventilated mechanically and interior lighting improved; thus, bed spaces did not need to be connected to windows. Elevators allowed for moving people to be moved vertically, which allowed for hospitals to expand vertically too<sup>4</sup>.

This rationalisation led to maternity wards being designed according to the medical protocols for birth and, therefore, being organised according to the "division of labour principles"<sup>5</sup>. In a factory, machines form a "connected series", while the process of production is fragmented<sup>6</sup>. Similarly, the space of birth was divided into three components: the labour and delivery suite, the newborn nursery and the postpartum unit. These were arranged in an "assembly-line fashion"<sup>7</sup>.

## THE MID 20<sup>TH</sup> CENTURY

THE INFLUENCE OF BIRTHING ON THE INSTITUTIONAL BUILDING CHANNLED BY MEDICAL NORMS PROTOCOLS ORGANISATIONS



THE MOST COMMON SPACE FOR BIRTH IN FRANCE BECAME THE MATERNITY HOSPITAL. HOWEVER, THE INFLUENCE OF GIVING BIRTH ON ARCHITECTURE WAS LIMITED TO THE EFFECTS OF MEDICAL PROTOCOL ON SPACE

GENERAL



<sup>1</sup> DRESS, 'La Naissance: Les Maternités', 132

<sup>2</sup> Ibid.

<sup>3</sup> Ibid. 130

<sup>4</sup> Ibid.

<sup>5</sup> Ibid.

<sup>6</sup> Direction de l'Hospitalisation and de l'Organisation des Soins, 'Guide d'accès à La Réglementation et Aux Recommandations Relatives à La Construction et Au Fonctionnement Technique Des Établissements de Santé', 2

<sup>7</sup> Maïs et al., 'Nouvelles Organisations et Architectures Hospitalières', 223

<sup>8</sup> Ministère de la Santé et de la Prévention, 'Référentiel Dimensionnement Surfaccique et Préconisations Architecturales Pour Les Établissements Publics de Santé', 5

<sup>9</sup> Ibid. 8, 9

<sup>10</sup> Arrêté du 25 avril 2000 relatif aux locaux de prétravail et de travail, aux dispositifs médicaux et aux examens pratiqués en néonatalogie et en réanimation néonatale prévus à la sous-section IV.

*The perinatal decree of the 9th of October 1998 defines three types of maternity hospitals, depending on the pregnancy risk the hospitals can address<sup>1</sup>.*

*Following the 1998 decree, a process of concentrating institutional birth spaces was introduced. Between 2001 and 2010, one in five maternity hospitals in France was closed.<sup>2</sup> According to the 2020 DRESS report, the 1998 decree created larger, more specialised and better-equipped institutional birth spaces.<sup>3</sup> In 2010, while half of French women were still less than 17 minutes away from their place of giving birth ("acceptable"<sup>4</sup>), the median access time was over 30 minutes ("not acceptable"<sup>5</sup>).*

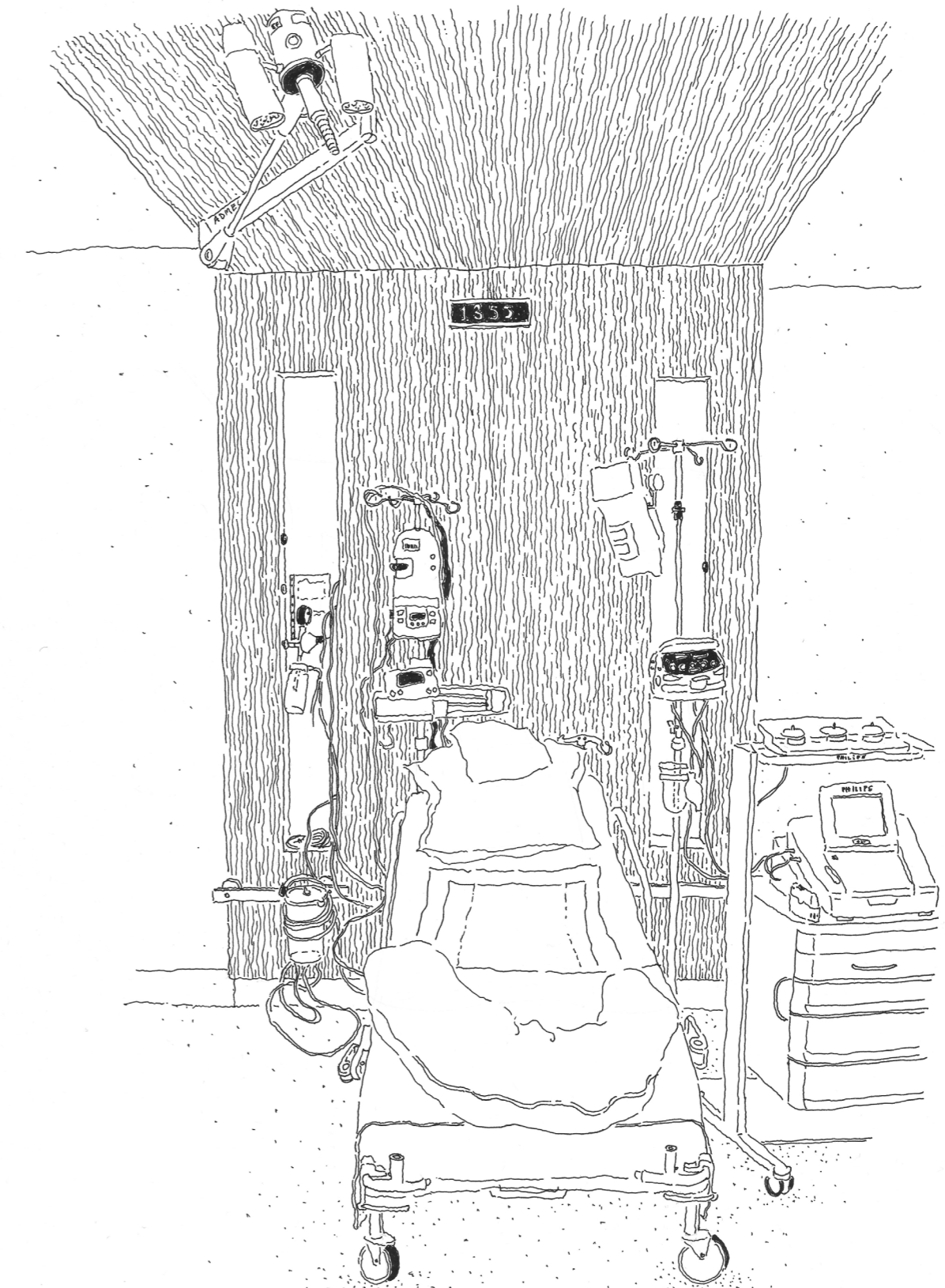
The institutional birth space has become increasingly designed by a series of guidelines and technical decrees that apply to the general hospital space.<sup>6</sup>

As noted in the "Nouvelles Organisations et Architectures Hospitalières" report, there are "abundant"<sup>7</sup> guidelines for surface allocation in the maternity hospital. Most guidelines are based on surface ratios common to the whole hospital space<sup>8</sup> (e.g. the ratio of technical rooms per bed, width of the corridors, distance of the surgical block from the labour room and maximum distance to the patient room from the nurses' office). Only the recommended ratio of SDO per bed is 2m<sup>2</sup> higher than in the rest of the hospital (37 to 42m<sup>2</sup> SDO per bed in obstetrics, compared to 35 to 40m<sup>2</sup> SDO per bed in medicine and surgery<sup>9</sup>).

The arrêté of the 25th of April 2000 sets the medical equipment requirements for each space of the maternity ward. Only the pregnancy monitoring, heated cradles and neonatal reanimation trolley are specific to birth spaces.<sup>10</sup>

## 21<sup>ST</sup> CENTURY

THE INFLUENCE OF BIRTHING ON INSTITUTIONAL BUILDINGS,  
CHANNELED BY LAW DECREES AND OFFICIAL DESIGN GUIDELINES



MATERNITY HOSPITALS RESPOND TO ABUNDANT DESIGN GUIDELINES APPLICABLE TO THE GENERAL HOSPITAL SPACE. ACCORDING TO THE DECREES AND GUIDELINES, GIVING BIRTH ONLY INFLUENCES THE BUILDING DESIGN THROUGH THE PRESENCE OF LIMITED SPECIFIC MEDICAL EQUIPMENT



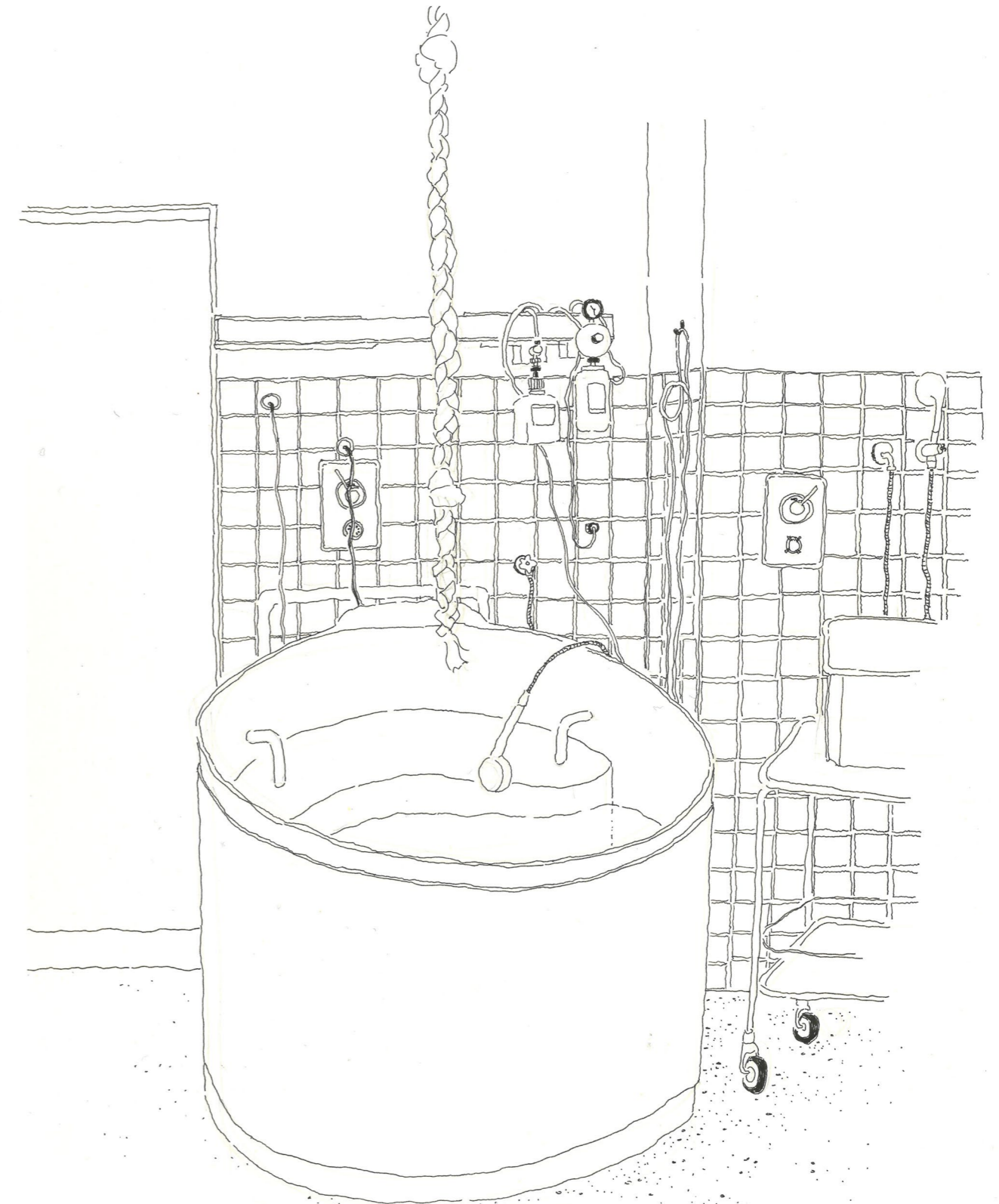
Michel Odent cited in Lahaye, 'Michel Odent'  
Ibid.  
Dujardin, 'Accouchement En Salle Nature', 39  
Ibid.

*In 1962, the obstetrician Dr Odent and his team discovered the "inhibiting effect" of the hospital environment on the labour process while working at the Pithiviers maternity hospital.*

Dr Odent and his team attempted to adapt the maternity hospital building and transform the labour rooms "into the rooms of a house" to create birth conditions more suitable to the specificities of the birthing phenomena. Progressively, a piano was installed, and they introduced an inflatable child's pool in the room to allow the pregnant women to give birth in the water if they preferred. In 2013, one in seven French maternity hospitals contained this type of "physiological" room, for the "monitoring of pregnancy, childbirth and the post-partum period in non-technical but secure conditions by referring midwives". However, birthing women cannot use epidural anaesthesia in these contexts unless they are moved to a non-physiological labour room or lying on a medicalised bed.

## 21<sup>ST</sup> CENTURY

AN ATTEMPT TO ALLOW BIRTHING AN INFLUENCE ON THE INSTITUTIONAL BIRTH SPACE



AN ATTEMPT TO ALLOW BIRTHING AN INFLUENCE ON THE INSTITUTIONAL BIRTH SPACE  
THIS INFLUENCE IS ENACTED THROUGH THE INTRODUCTION OF DOMESTIC AND LEISURE FURNITURE



<sup>1</sup> DGOS, 'Les maisons de naissance'  
<sup>2</sup> Ministère de la Santé et des Sports and Direction  
<sup>3</sup> Générale de la Santé, 'Plan Périnatalité 2005-  
2007', 36  
<sup>4</sup> Dujardin, 'Accouchement En Salle Nature', 45  
<sup>5</sup> Ibid.  
Image: Unknown author. *Chambre d'accouchement  
à la Maison de Naissance Manala.*

*The law of the 6th December 2013 and the decree of 30th July 2015 set the conditions for the trial of nine birth homes in France. These birth homes were made permanent by the law of the 14th December 2020. The "Plan Périnatalité 2005–2007" defines birth homes as "a means of diversifying the supply of care for physiological pregnancies".*

Domestic furniture is preferred to medicalised furniture, the bed does not need to have a prominent place in the room, and objects scale of water for interaction are required. Additionally, the guidelines emphasise the need for temporary elements in the space, including movable furniture and hidden medical equipment that is taken out when necessary (e.g. during obstetric emergencies and neonatal re-animation).

While the guidelines suggest including domestic, intimate, spaces is, collective kitchens are also recommended as spaces in which birthing women can interact with the midwives. The guidelines also insist on the spaces providing autonomy from the outside world (e.g. through distance from public space).

Birth homes are "less technical" birth spaces than maternity hospitals. They offer pregnancy, labour and post-partum care. However, they do not provide accommodation for birthing women and their newborns for more than a limited number of nights nor do they deal with obstetric emergencies or epidural anaesthesia.

European design guidelines for birth homes take into account a particular consideration of birthing needs: women need movement, intimacy, sensitivity and interaction with water during labour.

## 21<sup>ST</sup> CENTURY

REPLICATING THE TEMPORARY APPROPRIATION OF DOMESTIC BIRTH SPACES IN THE "BIRTH HOMES"



BIRTHING INFLUENCES ARCHITECTURE THROUGH THE SCALE OF FURNITURE AND ITS TEMPORAL DIMENSION. THE RECOMMENDED DESIGN PRINCIPLES AND DETAILS ARE BORROWED FROM THE DOMESTIC CODES.

## TOWARDS AN ARCHITECTURAL DEFINITION OF THE BIRTHSPACE

In this chapter we observed the influence of giving birth on the architecture of the birth space to identify the essential elements of birth spaces throughout history.

The architecture of birth spaces is informed by sequences, equipment, furniture, and details that are not specific to birth spaces but are borrowed from :

- a domestic relation to space through daily objects and spatial sequences (as in houses in the Middle Ages or in contemporary birth homes)
- a materialisation of the medical protocol in space, common to the whole hospital typology evolution

Indeed, the architecture of birth spaces has been influenced by different points of view, including an analogical approach to labour, a medical approach, and recently a physiological approach, but not an architectural perspective.

### Essential architectural components of a birth space

We examined each period to identify the elements through which the people participating in the birth relate to the space. This allowed us to identify water, heat, furniture and time as essential architectural components of a birth space :

#### Water

e.g. tub, river, tapping and plumbing, pools

#### Heat

e.g. fire, hearth, warm drinks, windows, chimneys, radiators, infrared lamps, heated baby bed

#### Furniture

e.g. domestic furniture, medical furniture

#### Time

e.g. temporary appropriation of domestic space, the medical protocol

## CHAPTER 2

A REPERTOIRE OF BIRTH SPACES

DESIGN TOOLS

WATER HEAT FURNITURE TIME

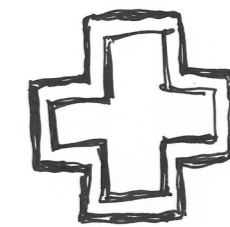
# WATER



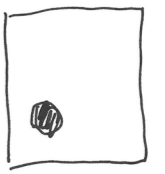
Sequencing  
the interior space



Sewage as a symbolic  
element



Revealing the wall  
as a space



Taking the scale  
of furniture



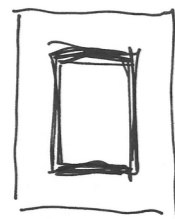
## WATER

Ancient Greek asklepieia are defined by Golden and Thompson as an “early form” of hospital.<sup>1</sup> Asklepieia consisted of a number of buildings, which included a stadium, treatment hall, hall for dreamers (which is further addressed below), bathing facilities and latrines. In these latrines, water was very important for removing bad air and waste, especially when the latrines featured a roof.<sup>2</sup>

The latrines of the North Market of Miletus are thought to be the same as the ones at the Asklepieion of Pergamon (which is in current-day Turkey). The latrines have a rectangular plan of approximately 7.5 m by 9.5 m. The space is between 5.4 m and 7 m high. The latrines include a perimetric bench with a series of openings. Urine and faeces go to an underground drain which leads to a vaulted channel, the sewer<sup>3</sup>. On the floor, approximately 45 cm from the benches, there is a rill that has a fresh water inlet and ends in the underground drain. The water in the rill is accessible to people in the latrines and it acts as a flush<sup>4</sup>. The water channel is sculpted into the same marble slabs that are used for the floor<sup>5</sup>.

One of the main elements of the design is its unity. The rectangular plan determines the layout of the bench and of the water channel, which is sculpted into the same material as the floor. The rill's 90° angles cause the water inflow to slow down. Additionally, the rectangular shape is efficient because it allows for many users to access the latrine at the same time<sup>6</sup>.

Second, the rill structures the interior space. The presence of the water defines the seating area and separates it from the centre of the room. The water creates a threshold between each side of the latrines and structures the interior space.



Sequencing the interior space

<sup>1</sup> Goldin and Thompson, *The Hospital: A Social and Architectural History*, 4

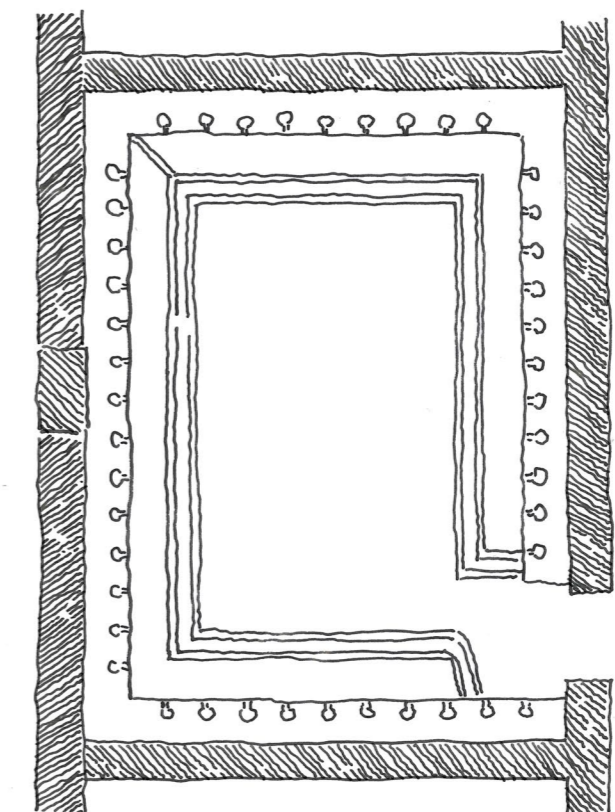
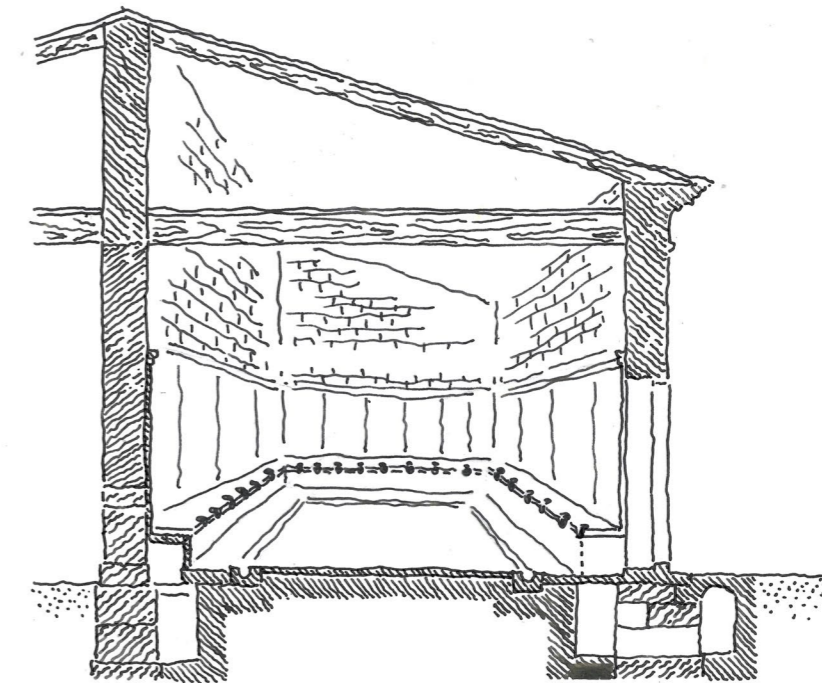
<sup>2</sup> Gülbay, 'Western Anatolian Public Latrines', 471

<sup>3</sup> Goldin and Thompson, *The Hospital: A Social and Architectural History*, 4

<sup>4</sup> Gülbay, 'Western Anatolian Public Latrines', 475

<sup>5</sup> Koloski-Ostrow, *The Archaeology of Sanitation in Roman Italy*, 148

<sup>6</sup> Gülbay, 'Western Anatolian Public Latrines', 475



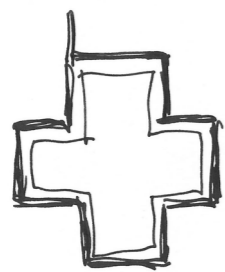
## SPATIAL QUALITIES OF THE ANCIENT FLUSH THE ASKLEPIEION OF PERGAMON LATRINES 2<sup>ND</sup> CENTURY AD

## WATER

Early hospitals were intended to guide the sick towards the afterlife. Thus, a key spatial principle of these hospitals was that patients need to see or hear mass from their bed. Hence, altars were connected to the open wards where the sick lay<sup>1</sup>. In turn, this strategy also allowed for easy supervision of all inpatients. The first plans for these spaces were derived from longitudinal monasteries. Cross-plans, with an altar at the perpendicular intersection of two open wards, progressively emerged to help accommodate more patients while still allowing everyone to follow mass<sup>2</sup>. The cross-ward plan incorporates practical reasons at the same time as symbolising the Christian faith.

In his design for the hospital Ospedale Maggiore in Milan, Filarete uses a double-cross plan. The north-east cross is for men, and the south-west cross is for women. Each ward is approximately 9.5 m wide and for two rows of beds, positioned against the walls. Filarete positions latrine corridors on the long-façade walls of each ward. These latrines are accessible every two beds and drained into an underlying sewage system connected to the water of the canal<sup>3</sup>. A terracotta ventilation pipe also allows an inlet of rainwater from the roof to the sanitary canal<sup>4</sup>.

Following the perimeter of the building is an efficient way to provide an inlet and outlet of water for carrying waste. It also allows for the provision of latrines for each patient without interfering in the relationship between the open ward and the altar. Similarly to the cross-ward plan, this double-cross strategy also draws a cross-shape sanitary canal. Thus, a sewage path determined by functional needs acquires a symbolic meaning.



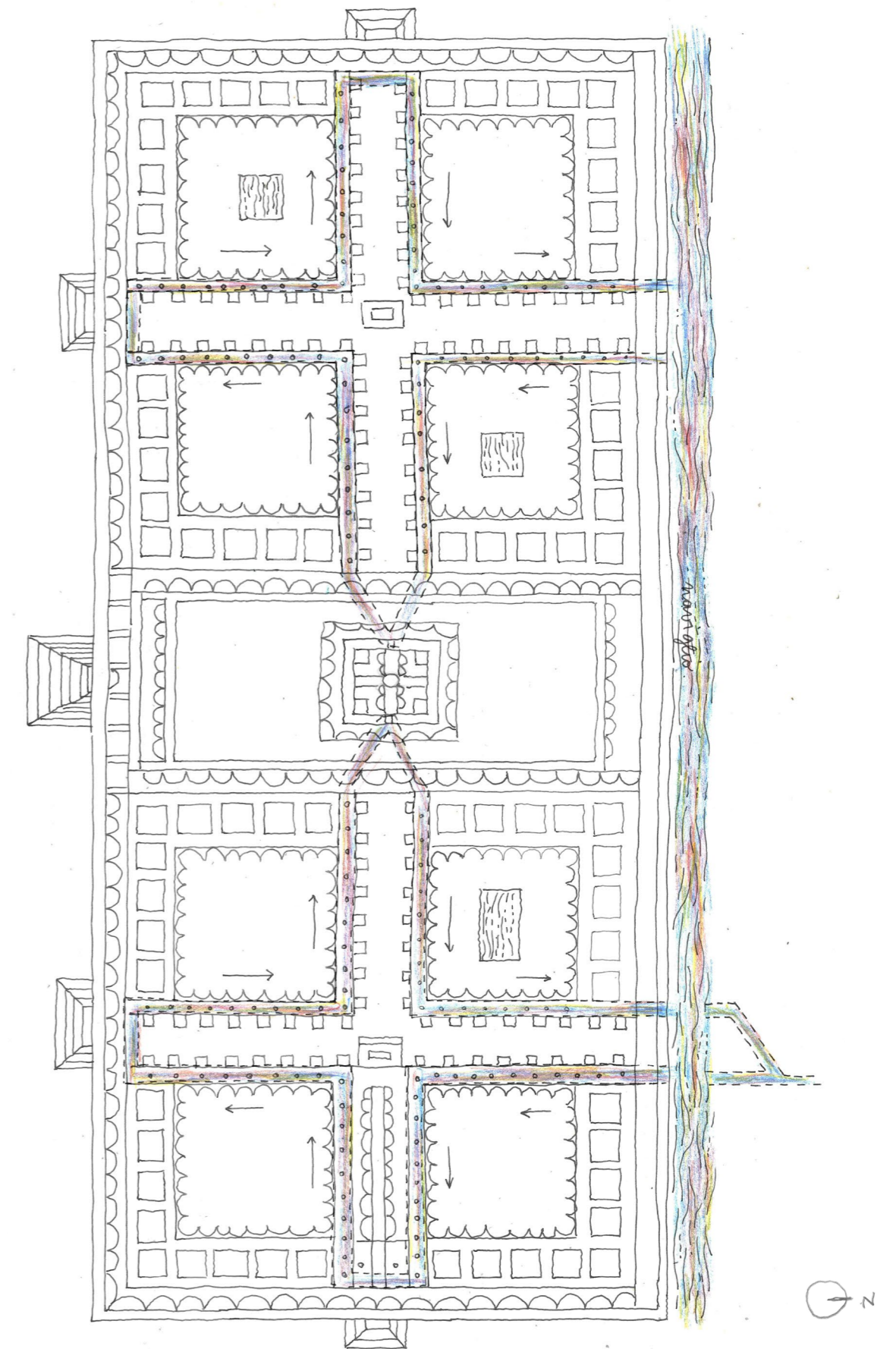
Linking the functional and the conceptual

<sup>1</sup> Goldin and Thompson, *The Hospital: A Social and Architectural History*, 21

<sup>2</sup> Ibid. 30

<sup>3</sup> Crippa, 'L'Ospedale Maggiore Di Milano, La Storia e i Restauri', 182

<sup>4</sup> Ibid.



## SEWAGE AS A SYMBOLIC ELEMENT

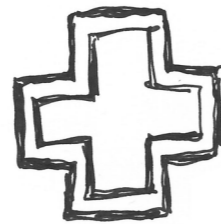
OSPEDALE MAGGIORE, MILAN 1456



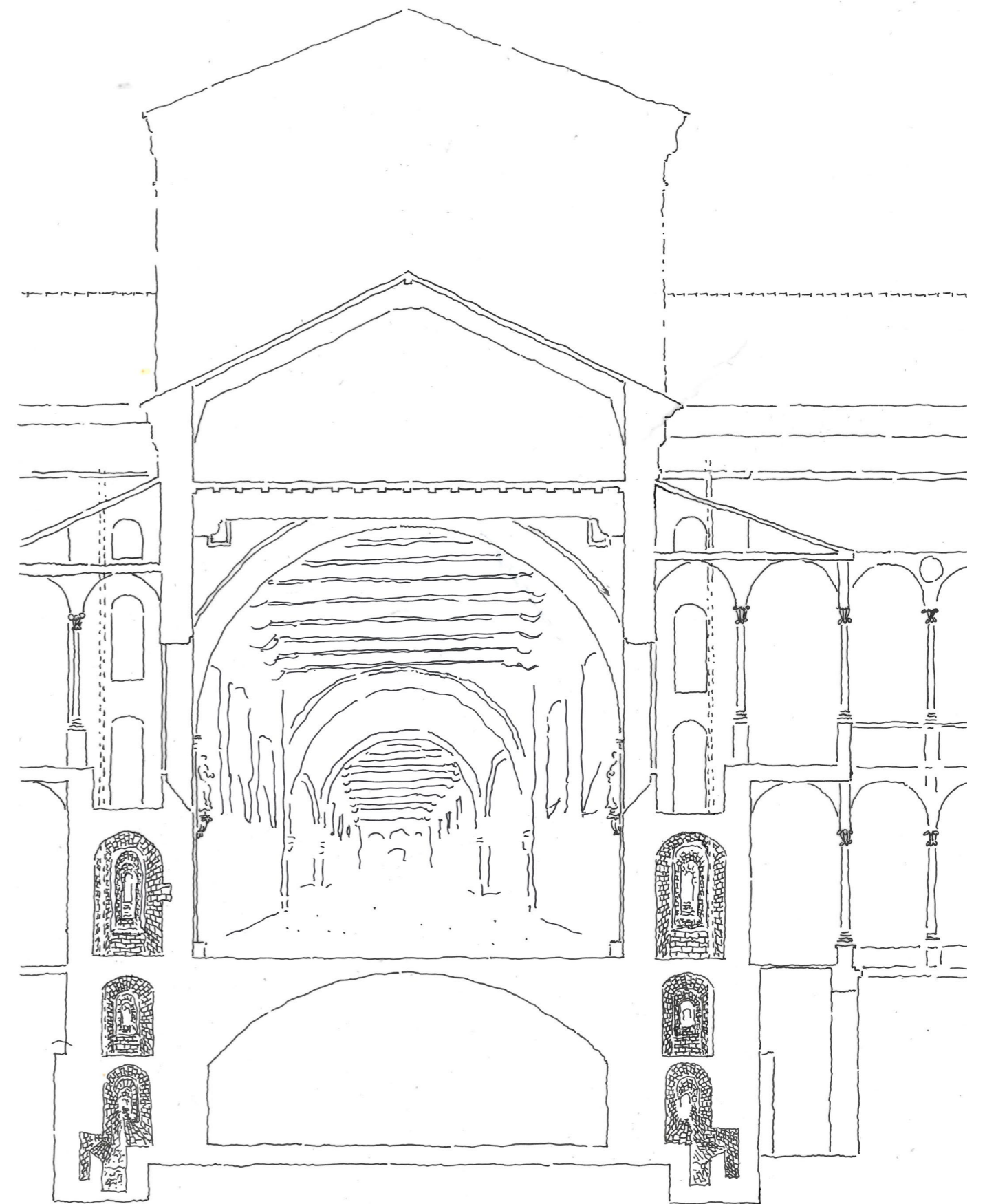
## WATER

The sewage path of the Ospedale Maggiore is also striking in section. On both sides of the open ward, there are three superposed masonry vaults, with the latrine corridor on top. The corridors are narrow spaces that decrease in size from top to bottom because of their respective uses and to preserve the foundations. The latrine corridor is a tall space that is 1.5 m wide and 2.45 m high, while the bottom corridor connected to the sanitary canal is 1.15 m wide and 1.75 m high<sup>1</sup>.

Because of the necessary thickness of masonry walls, these functional corridors give the impression of galleries excavated in a mass. The sanitary canal is not treated as an independent pipe-scale element; the wall itself generates a space for the water to pass. Therefore, the wall is not only a two dimensional boundary but also contains interior spaces.



Revealing the wall  
as a space



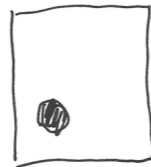
SANITARY CANAL REVEALING THE MASS

OSPEDALE MAGGIORE, MILAN, 1456

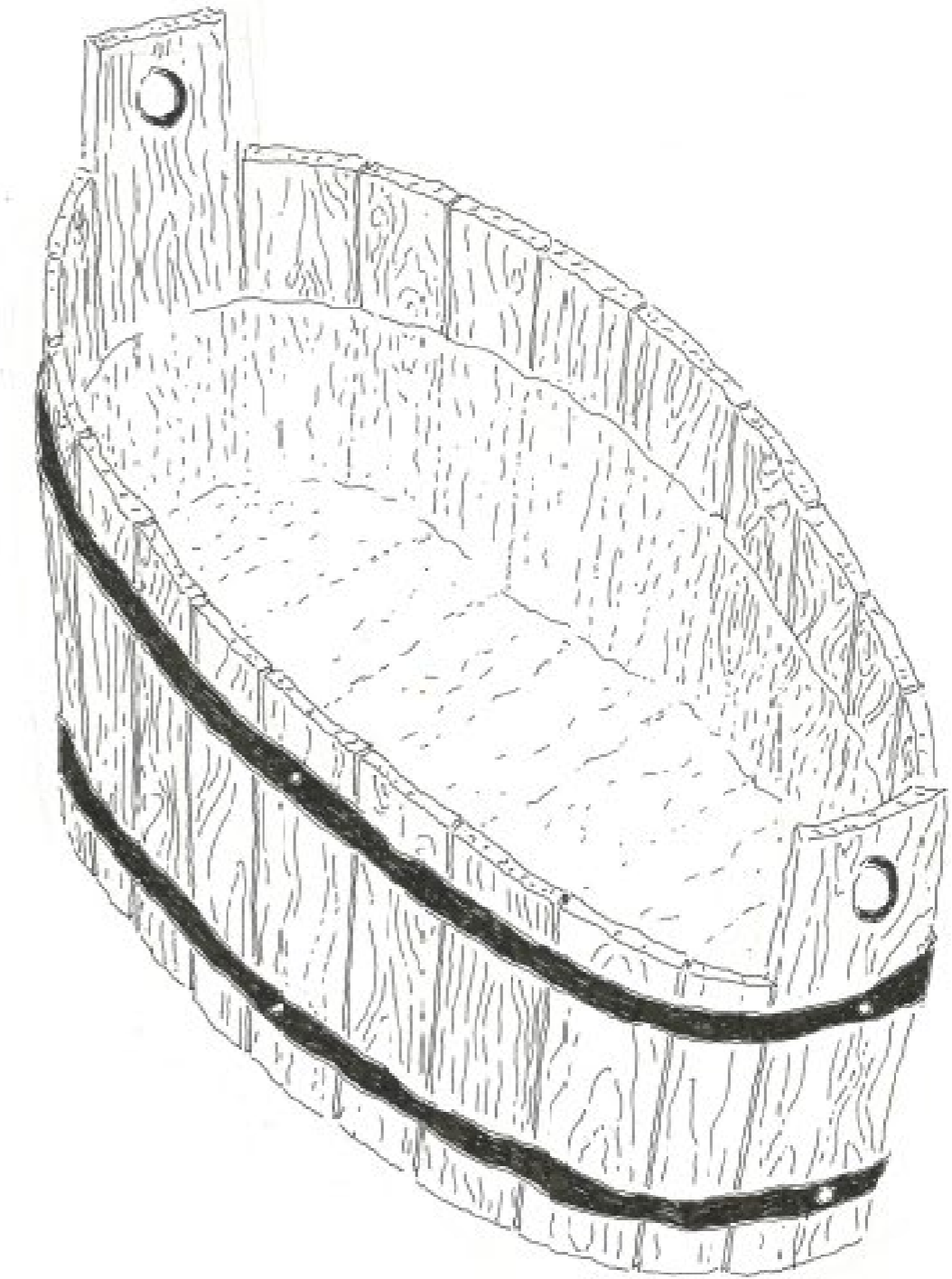
<sup>1</sup> Crippa, 'L'Ospedale Maggiore Di Milano, La Storia e i Restauri', 182

# WATER

Water was a key element in Middle Ages domestic births, at a time when there was no running water in the house. Hot water was used to wash the birthing mother and to make drinks for her and those attending the birth. Instead of the water inlet being embedded in the building, water was collected away from the house and used with objects that were distinct from the architectural scale. Buckets, jars or bathtubs filled with water could, therefore, be placed freely in the domestic space. In this case, any space could become the water space.



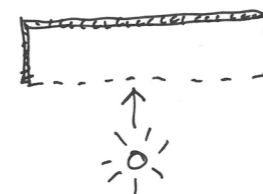
Taking the scale of furniture



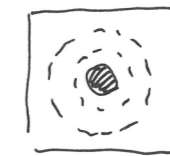
TAKING THE SCALE OF FURNITURE  
MIDDLE AGES BATHTUB TUB



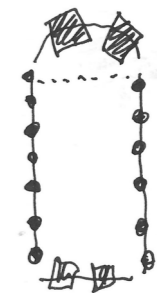
# HEAT



Determining the design of the building



Having a double use



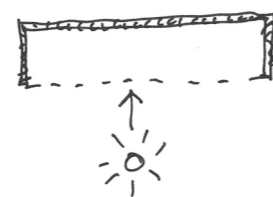
Linking the functional and the conceptual

# HEAT

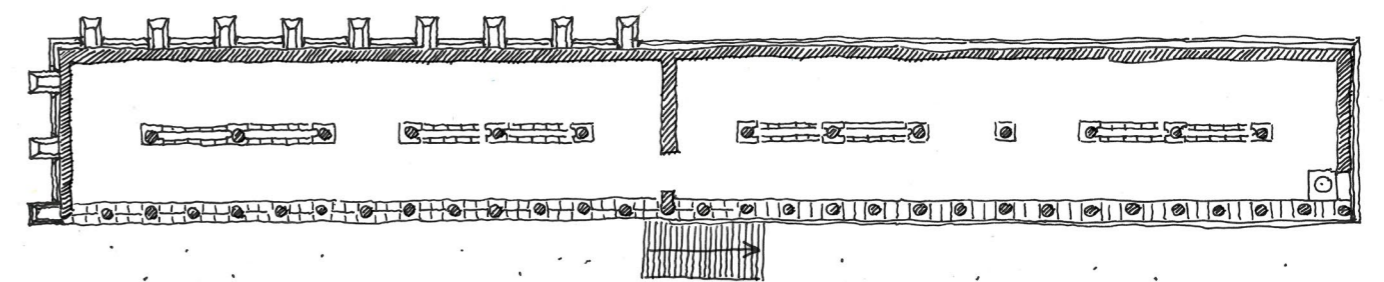
As mentioned previously, asklepieia were composed of several buildings, among which was the open-air hall for dreamers. The sick slept in this hall, in the hope that the god Asklepios would tell them the remedy to their illness in their dreams<sup>1</sup>.

The hall for dreamers in the Asklepieion of Epidaurus has a rectangular plan and is oriented on an east-west axis, with the long façades to the north and south<sup>2</sup>. The north façade is a wall, while the south façade is an open colonnade. The hall is divided into two narrow spaces, both approximately 7 m deep. The east section is approximately 33 m long and situated at ground level. The west section is approximately 29 m long and built below ground level, accessible through stairs on the south side.

The proportions of the building allow for the least amount of shaded interior space possible, thus benefiting from the radiation of the sun during the day. Part of this heat became stored in the stones and was released during the night, while the dreamers waited to be contacted by Asklepios.



Determining the design of the building



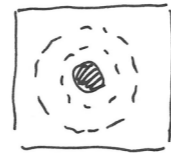
HALL FOR DREAMERS OPEN TO THE SOUTH

ASKLEPIEION OF EPIDAUROS, 5<sup>TH</sup> CENTURY B.C.

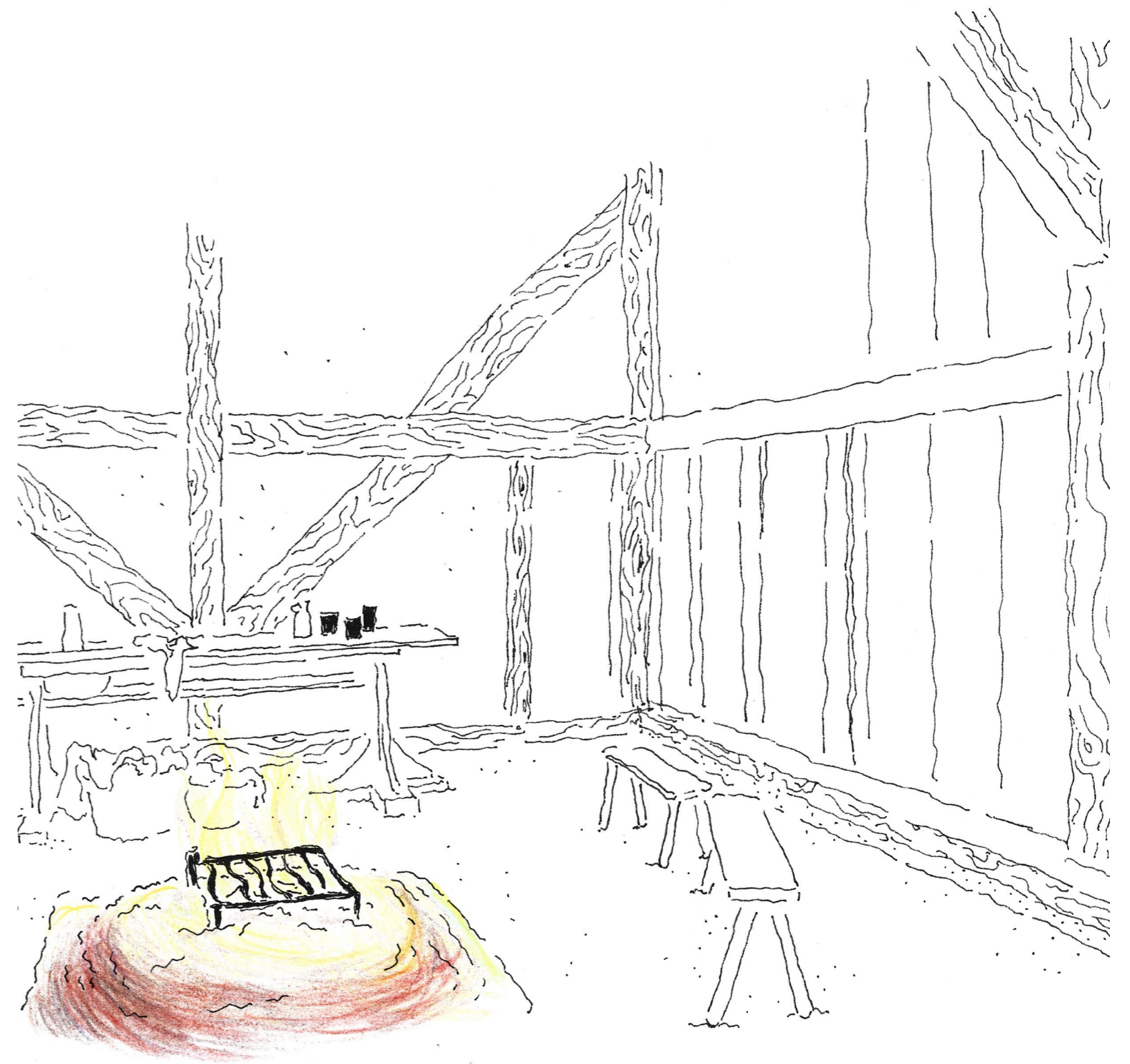
<sup>1</sup> Goldin and Thompson, 'The Hospital: A Social and Architectural History', 3  
<sup>2</sup> UNESCO, 'Sanctuary of Asklepios at Epidaurus'.

# HEAT

In Middle Ages domestic births, the fire had a double importance. First, it created the heat required for the survival of the newborn.<sup>1</sup> Second, the hearth allowed for the preparation of warm drinks for the woman in labour, for the midwife and for the guests.<sup>2</sup> Fire, therefore, had a physiological function, maintaining birth time as a largely feminine social moment. Domestic equipment had a central role during birth time, despite not being designed for birthing.



Having a double use



HEAT SOURCE HAS A FUNCTIONAL AND SOCIAL ROLE

MIDDLE AGES RURAL HOUSE

<sup>1</sup>Teissière and Suarez, Naître. De l'idéal de l'accouchement à La Réalité de La Naissance, 23  
<sup>2</sup>Wilson, The Making of Man-Midwifery.

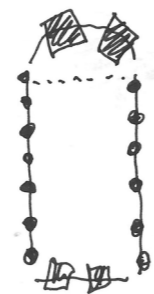


# HEAT

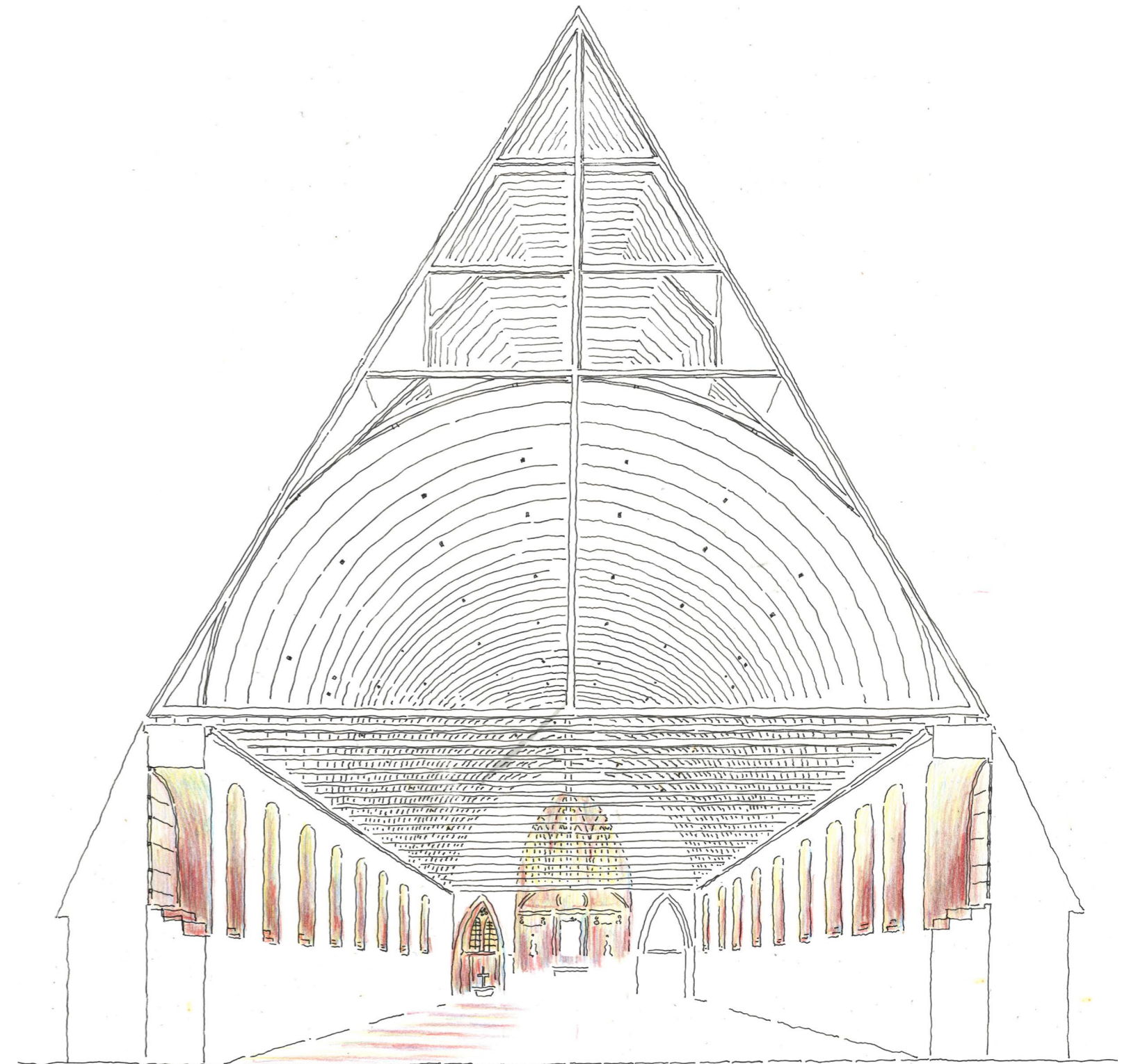
The hospital Notre-Dame des Fontenilles is an example of an open ward that is connected to a chapel, built in an east-west axis, like a church. The chapel is at the east end of the ward, where the sick would lie and from where the sick would be able to follow the mass.

The particularity of this hospital is that it has two different window details, corresponding to a symbolic hierarchy.<sup>1</sup> While the first type is located on the north and south façades of the open ward, the second type is on the east chapel wall. The first type is a secular window for the profane space; the second type is a sacred window for the religious space.<sup>2</sup>

However, these windows were not only designed according to the concept of profane and sacred spaces. Their detailing also responds to the needs of their respective positions. For example, the secular window can be opened; therefore, it allows for the necessary thermal adjustments and ventilation in the open ward. Contrastingly, the religious windows are larger and located both at the bottom and the top of the east façade. They providing more homogeneous light inside the building, particularly to the altar.



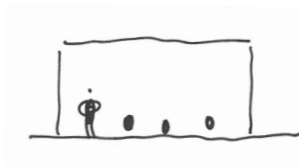
Linking the functional and the conceptual



SYMBOLIC HIERARCHY  
OF THE THERMAL REGULATION ELEMENTS  
NOTRE DAME DES FONTENILLES, TONNERRE, 1293

<sup>1</sup> Goldin and Thompson, *The Hospital: A Social and Architectural History*, 22  
<sup>2</sup> *Ibid.*

# FURNITURE



Independent furniture



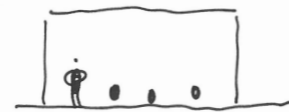
Micro architecture



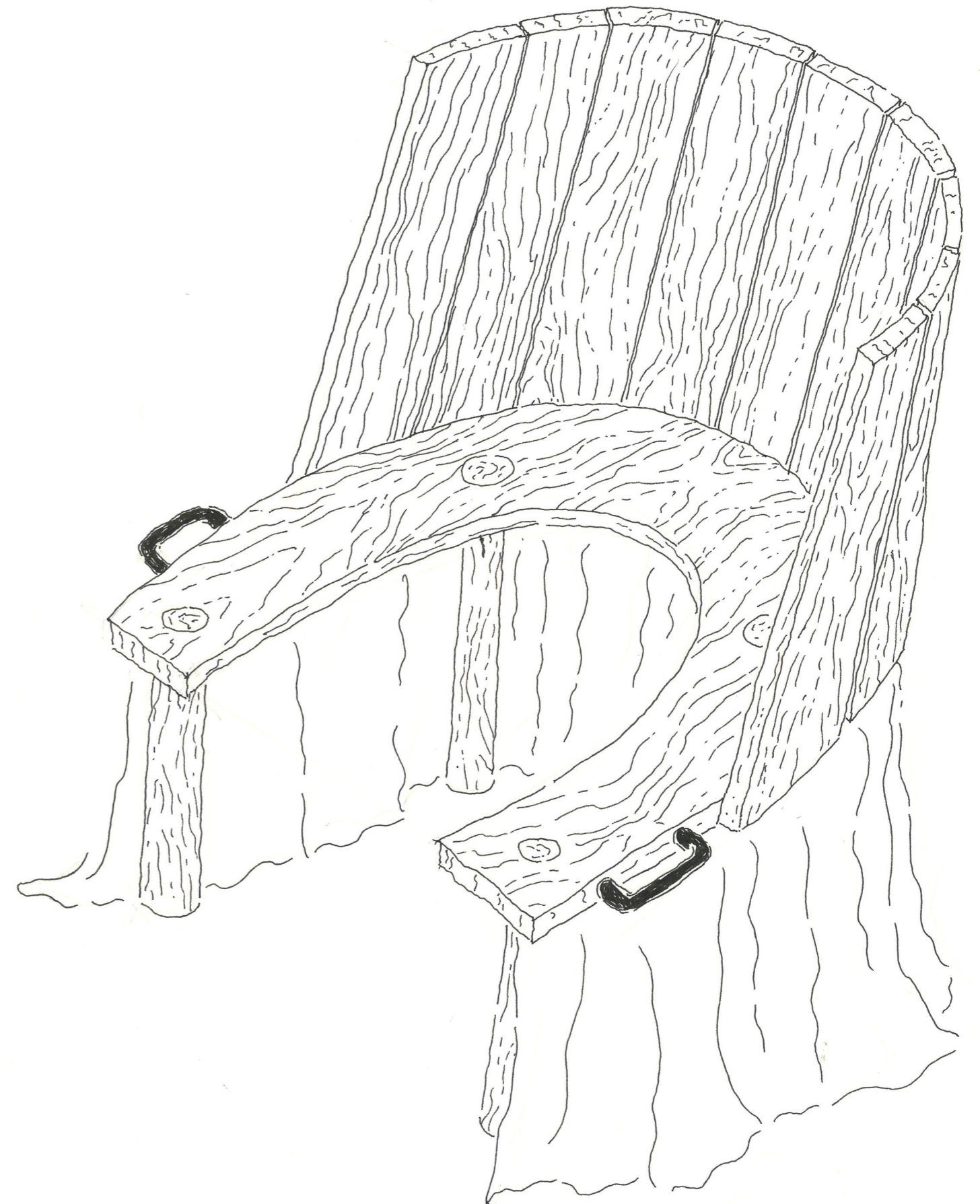
Determining the structure

## FURNITURE

As has been seen, furniture is often used to adapt generic spaces during birthing. Some furniture is specifically designed for birth, such as the birthing chair. However, in the case of home births, daily objects are typically appropriated for birthing purposes<sup>1</sup>. Space, then, is like a scene that hosts a constellation of independent elements re-arranged for birth time.



Independent furniture



INDEPENDENT ELEMENTS IN A SCENE

BIRTHING CHAIR 16<sup>TH</sup> CENTURY



## FURNITURE

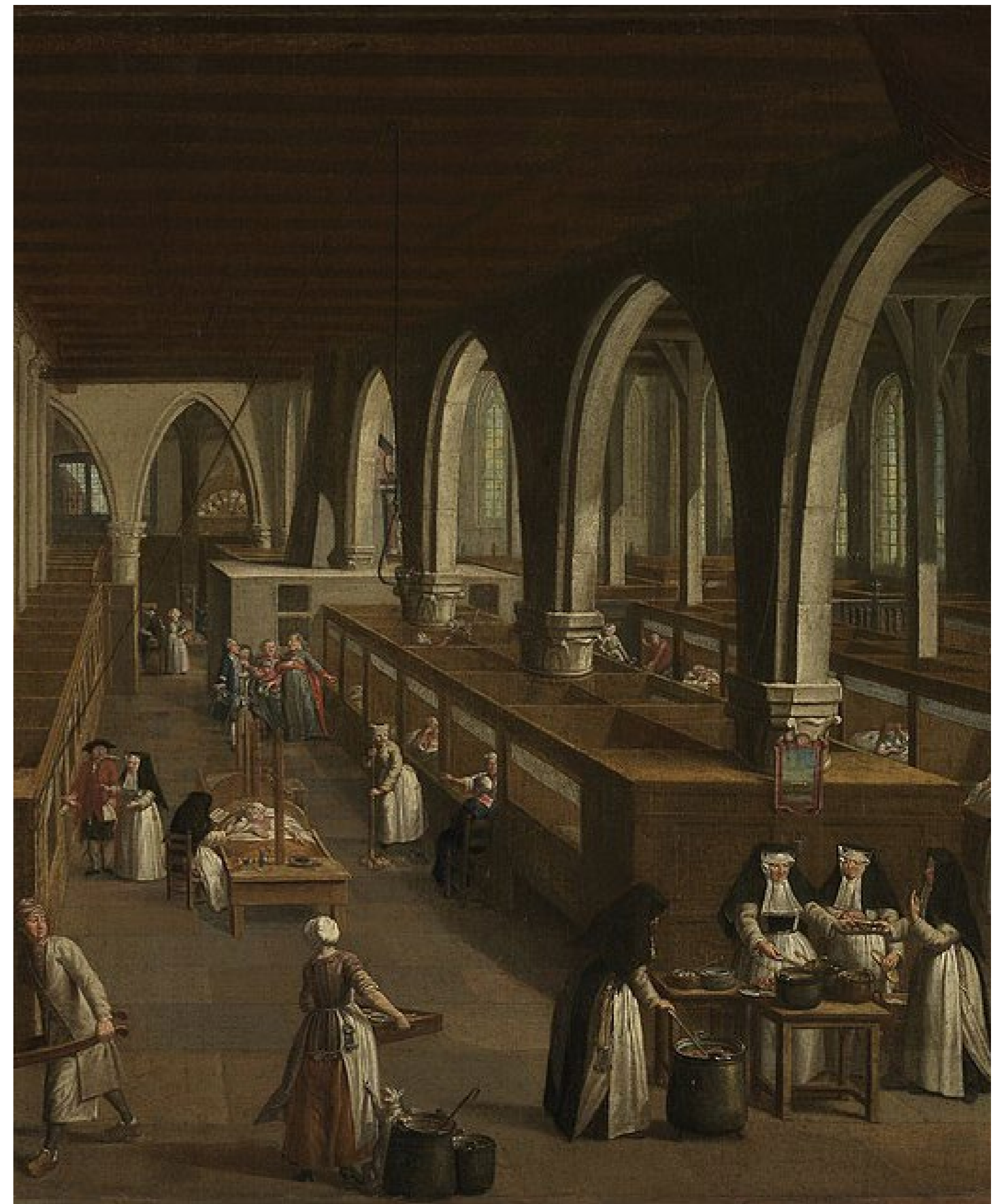
In large open wards, enclosure around lying spaces makes the beds easier to heat while providing intimacy and, in the period of the medicine of milieu, better control over vitiated air. In St. John's hospital ward, example, the enclosure of the beds consists of timber panels that create cubicles, approximately 2.5 m high, whose sides lift up and down.

Their layout follows the structure of the open ward. They are built in double rows and absorb the colonnades or arcades of the ward. Their height is strategically designed to arrive at the cornice level of the arches and at the bottom of the windows.

Thus, the rows of cubicles create an intermediary scale between the monumental ward arches and the furniture. The bed is no longer an independent piece of furniture in itself but a small structure that inhabits the architecture while providing a manageable scale for heating and intimacy.



Micro architecture



A STRUCTURE THAT INHABITS THE BUILDING

ST. JOHN'S HOSPITAL, BRUGES, 12<sup>TH</sup> CENTURY - 1850

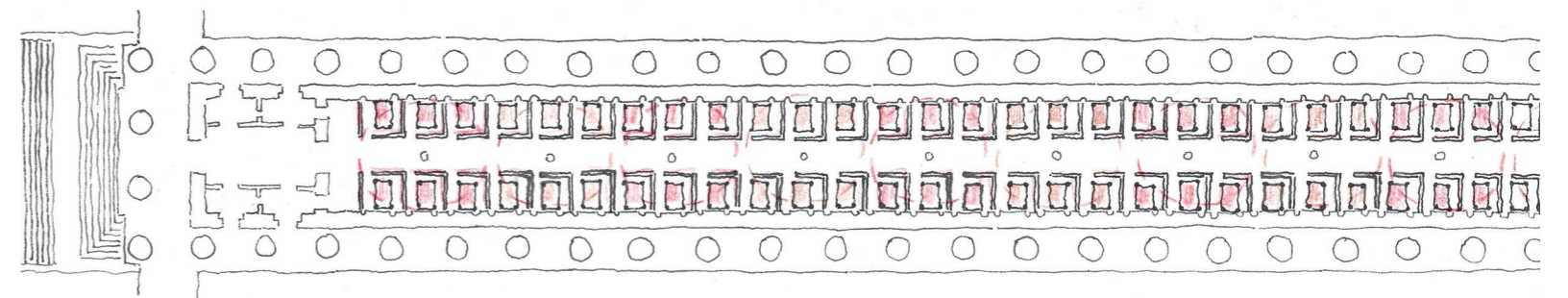
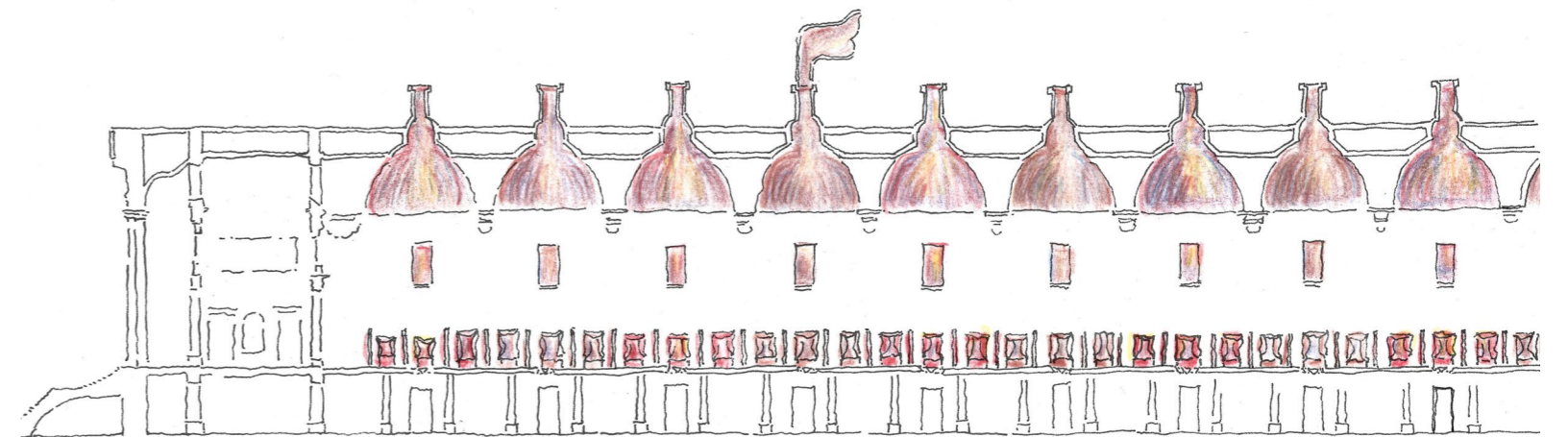
# FURNITURE

After a fire destroyed the Paris Hôtel-Dieu in 1772, a number of concepts for its reconstruction were created. Leroy and Viel's project consisted of long wards, which were approximately 5.5 m wide, and two floors.

Their project proposed ventilation domes, whose number and placement corresponded to the bed layout in the ward. A dome was placed every three beds, in an attempt to control air circulation at the patient level<sup>1</sup>. The bed became the "functional unit"<sup>2</sup> of the space, thus determining the structure of the building.



Determining the structure



THE BED BECOMES THE "FUNCTIONAL UNIT"  
OF THE SPACE

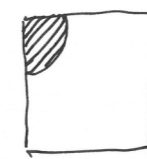
PROJECT FOR THE HÔTEL-DIEU, PARIS

1773 - 1777

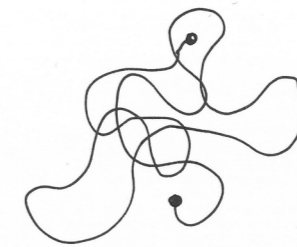
<sup>1</sup>Laboratoire East, *Studies on Types. Dormitories*, 18  
<sup>2</sup>Stone, 'Elements of the Hospital:1300-1900', 414



# TIME



Nesting



Wandering



Stop-and-go

## TIME

In a home birth, those involved in the birth include the birthing woman, her guests, the midwife, and the newborn. They have freedom of movement around the house and can be with the birthing woman or in a different room.

In her house, the birthing woman is not confined to a room, and two patterns of domestic birth emerge.<sup>1</sup> The first pattern involves women wandering around the rooms of the house (living room, kitchen, bathroom, bedroom).<sup>2</sup> The second pattern involves women staying in comforting small rooms that they have transformed into a “nest” for the birth.<sup>3</sup> The transformation of the room into a nest can include renting large equipment, such as a birthing pool if no bathtub is available; curating the light and sound; and installing emotional objects.

In both patterns, the planned domestic entrance sequence can be modified by the pregnant woman to enhance the intimacy. The midwife arrives, usually by car, after they are called<sup>4</sup>. In her 2021 article *Wait and transfer, curate and prosume*, Joyce describes how one of her interviewees was giving birth in the living room, and instead of allowing the midwife to enter in the usual way (gate, main entrance, living room), she made her enter through the back door and the kitchen<sup>5</sup>. The new entrance sequence created a longer period between the outside and the intimate space of birthing.

In a domestic birth, there must be an efficient connection between the house and the hospital<sup>6</sup>. In case of complications, long birthing, or a requirement for epidural anaesthesia, the pregnant woman must be driven to the hospital by a household member or the midwife. In case of serious complications, an ambulance will collect the pregnant woman. The midwife lets the maternity hospital know when the domestic birth starts, and the hospital reserves a surgical block in case of emergency until the midwife calls to say that the baby has been born.



Nesting

<sup>1</sup> Joyce, 'Wait and Transfer, Curate and Prosume', 549

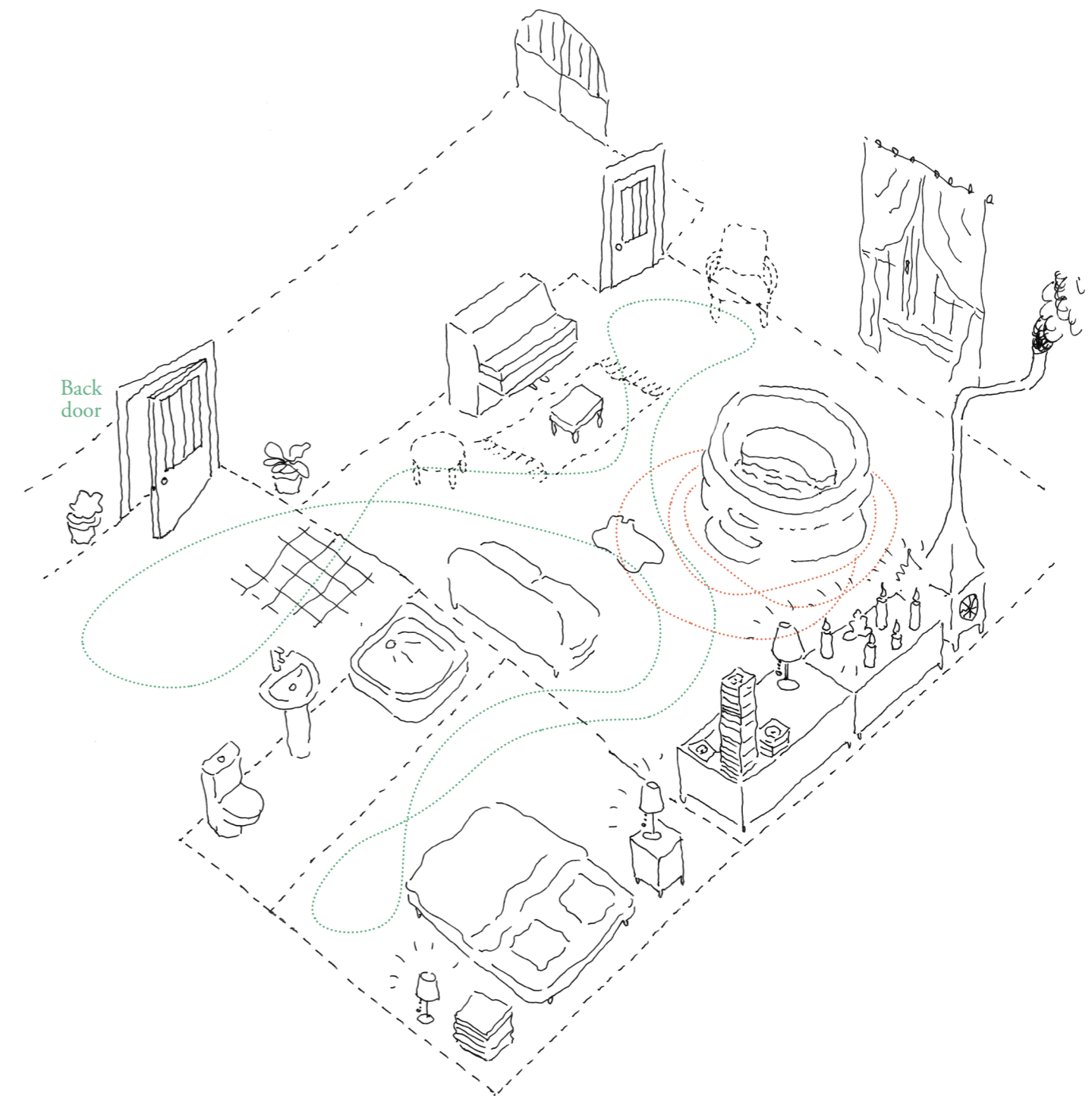
<sup>2</sup> Ibid.

<sup>3</sup> Ibid.

<sup>4</sup> Interview Evelyne Moreillon, founder midwife of La Grange Rouge, 7/11/2022

<sup>5</sup> Joyce, 'Wait and Transfer, Curate and Prosume', 548

<sup>6</sup> Interview Evelyne Moreillon, founder midwife of La Grange Rouge, 7/11/2022

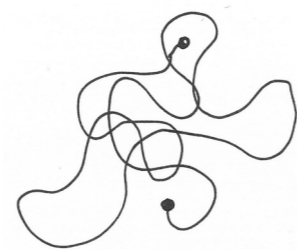


## DOMESTIC BIRT TIME PATTERNS

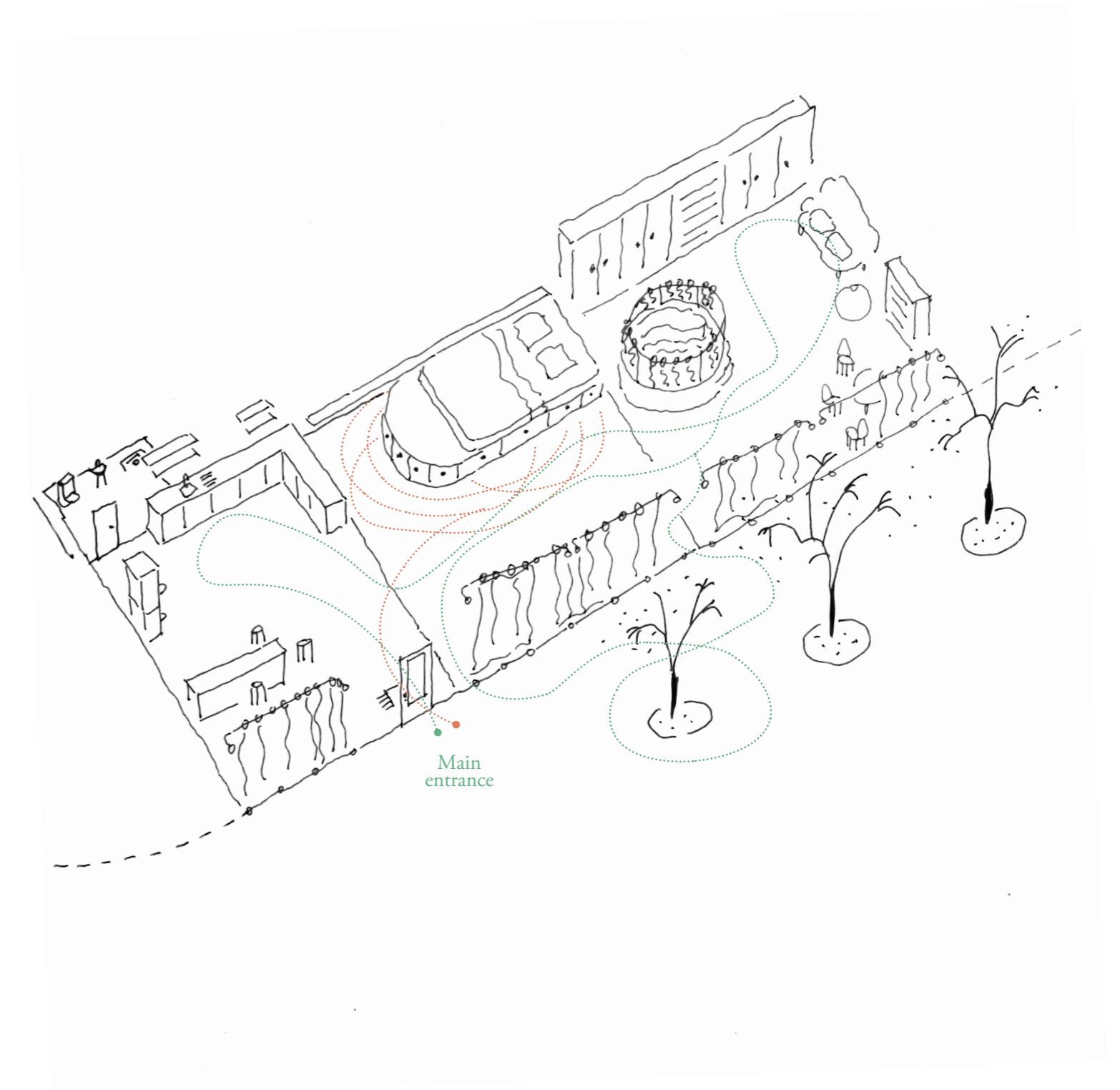
DOMESTIC

# TIME

The birth home La Grange Rouge is a semi-institutional space that has been designed as a domestic space to allow free appropriation of the space by the birthing women.<sup>1</sup> Users of the birth home include the birthing woman, her guests, the midwife and the newborn. According to our site visit, they can move freely in La Grange Rouge between the kitchen, the bathroom, the bedroom, and the living room. Because the space is on the ground floor, they can even go outside to a calm square with trees. According to our interview with the founder and midwife in charge, the patterns of birth time are similar to those previously identified for a domestic birth: nesting and wandering around.



Wandering



DOMESTIC BIRTH TIME PATTERNS

BIRTH HOME

<sup>1</sup>Interview Evelyne Moreillon, founder midwife of La Grange Rouge, 7/11/2022

# TIME

Those involved in a maternity hospital birth include the birthing woman, guest, receptionist, nurse, midwife, and obstetrician.

The pregnant woman's birth time is framed by the hospital procedures. In her 2021 article *Wait and transfer, curate and prosume*, Joyce shows that the route of the birthing woman in a maternity hospital follows a "stop and go" structure based on hospital procedures.<sup>1</sup> In Morges maternity hospital and La Source, the pregnant woman calls the hospital and the stage of the labour is assessed. She may be asked to wait longer at home.

At the hospital, she may arrive at the reception of the general hospital or at the emergency reception. Then, she is conducted to the maternal wing by a nurse (by foot or in a wheelchair). She may be asked to wait at the maternal ward reception until she is registered. Depending on the dilation of her cervix, she is conducted to the pre-labour room or the labour room. Once her cervix is dilated enough, she is taken to the labour room in a wheelchair. In both hospitals, they try to install women directly in the labour room so that they do not have to move spaces again. Efforts are made to build a more fluid sequence of birth in the hospital, with fewer stops for the pregnant woman.

When birth happens without complications, the mother is brought to an individual patient room with her baby (or the baby may be brought to the nursery on the same floor). In case of complications during labour, the birthing woman can be transported to the surgical block in the medical bed. There must be a straightforward sequence of corridor and elevator from the labour room to the surgical block. If the block is not available or in cases of extreme urgency, emergency procedures can be performed in the birthing room, thanks to the medicalised bed and surgical equipment.

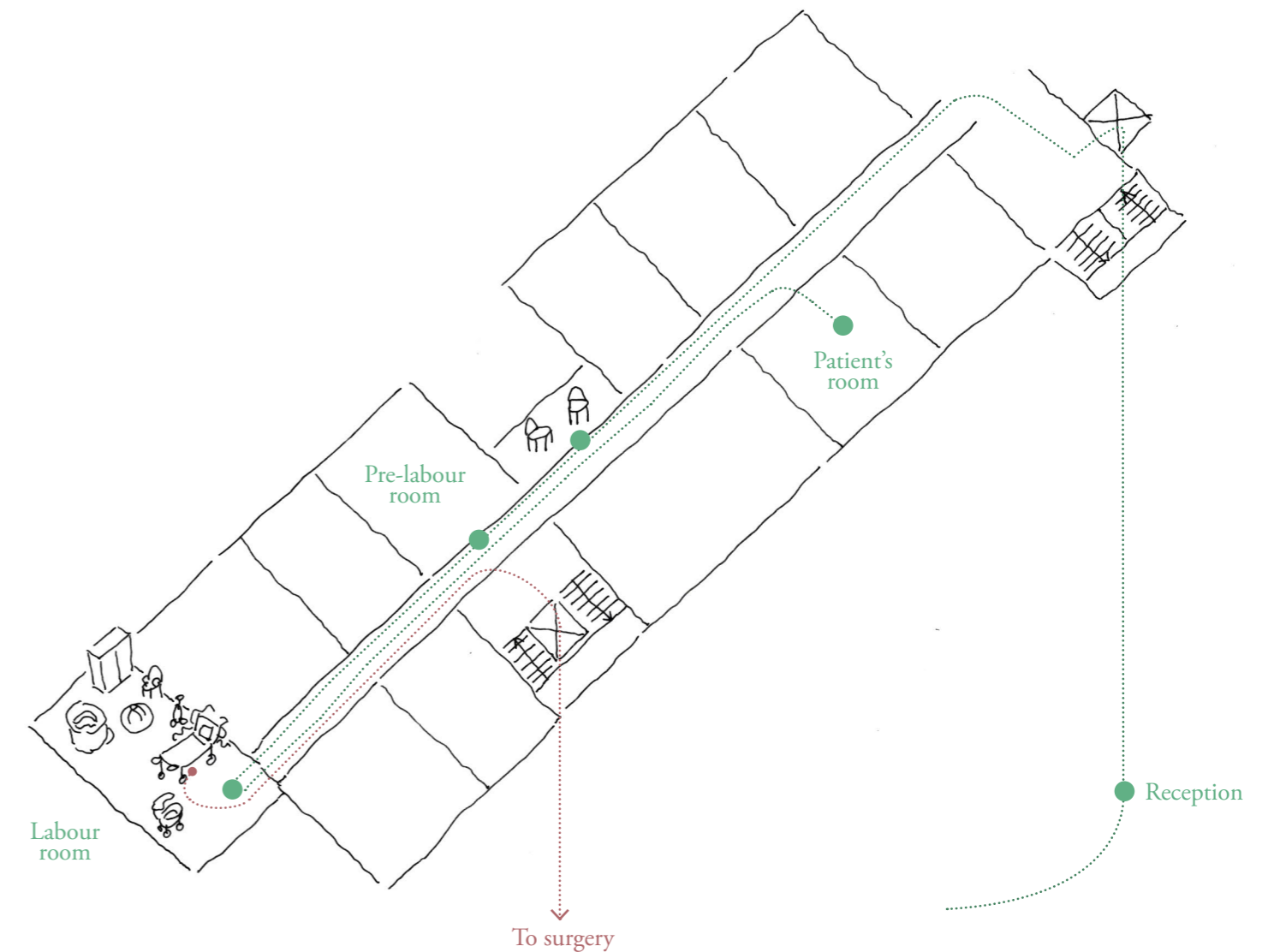
According to our interview with the founder and midwife in charge, at the room scale, the patterns of birth time are similar to those previously identified for a domestic birth: nesting and wandering around. The main difference is that birthing woman and her guest are generally confined to the room or the hospital waiting areas.<sup>2</sup>



Stop-and-go

<sup>1</sup> Joyce, 'Wait and Transfer, Curate and Prosume', 546

<sup>2</sup> Interview with La Source Maternal hospital Chief Midwifery Officer, 3/11/2022, and with Morges Maternal Hospital substitute Chief Midwifery Officer, 1/12/2022



DOMESTIC BIRT TIME PATTERNS

MATERNITY HOSPITAL

# REPERTOIRE OF BIRTH SPACES DESIGN TOOLS

In our case studies, the essential architectural components of birth spaces (water, heat, furniture, time) interact with core elements of the buildings : its structure, interior organisation, planned use, and concept of the building.



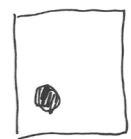
Sequencing the interior space



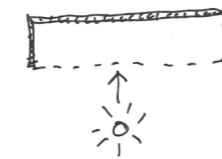
Linking the functional and the conceptual



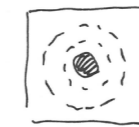
Revealing the wall as a space



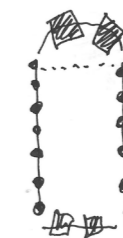
Taking the scale of furniture



Determining the design of the building



Having a double use



Linking the functional and the conceptual



Independent furniture



Micro architecture



Determining the structure



Nesting



Wandering



Stop-and-go

# ARCHITECTURE AND BIRTH

WATER HEAT FURNITURE TIME

This research allowed us to understand the essential components of a birth space from an architectural point of view and to build a repertoire of birth space design tools that will be the stepping stone for our diploma project.

## Towards an architectural definition of birth spaces

Our historical research showed that birth spaces have been influenced by social, medical, and physiological definitions of giving birth, but not architectural ones. Thus, the relationship between giving birth and architecture is materialised by sequences, equipment, furniture, and details that are not specific to birth spaces but borrowed from the domestic sphere and the medical hospital typology. Our research identified water, heat, furniture, and time as the essential architectural elements of a birth space that birth space design can build upon.

## Birth-specific design tools

Throughout history, water, heat, furniture, and time have been intertwined with the critical elements of the building, such as its structure, internal organisation, planned use, or concept. Thus, indispensable practicalities, such as a water flush or a bed, transcend their practical function and acquire a usage and poetic role. Observing such case studies allowed us to build a repertoire of birth space design tools we will test and enrich during our diploma project.

## The added value of an architecture approach

Giving birth is a subtle phenomenon; therefore, so should the birth space. There is a dissonance between the birth space - with the medical and archetypal domestic codes it entails - and the emotional and sensorial importance of the birth space. A specifically designed space can evolve the archetypal representations of giving birth, of pregnant women, and by extension, of the birthing person as a cis-gendered woman. It will be interesting to develop how architecture can contribute to a non-gendered approach to birth in the project phase.

The maternity hospital space in its current state is under scrutiny<sup>1</sup>. However, giving birth at home has a cost; it requires spaces and resources that only some birthing women can allow themselves. Thinking about the future of institutional or semi-institutional birth spaces is a matter of spatial justice to ensure equal possibilities of birth space choice for all women. There is a midwife, medical, and political debate about the evolution of such birth spaces. For the reasons mentioned above, an architectural approach to birth spaces should participate in this debate.

Since 2020, new publicly funded birth homes have been allowed to develop in France. Thus, now can be a strategic time to question the need for new constructions to host birth spaces and transform the scarcity of natural resources into a meaningful project driver. The design tools we identified aim to give functional elements a spatial and conceptual role, which can be interpreted as an optimisation of the material that is indispensable. To what extent can constructive frugality be a gateway to sensory and conceptually subtle birth spaces?

<sup>1</sup>Bousquet, Couraud, and Collet, 'Les Actes Sexistes Durant Le Suivi Gynécologique et Obstétrical'



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## Interviews

- a. Clinique La Source Maternal Private Hospital- 3/11/2022 - non-directive interview with the Chief Midwifery Officer
- b. Birth Home La Grange Rouge - 7/11/2022 - non-directive interview with Evelyne Moreillon, the founder midwife, who also accompanies home births
- c. Morges Maternal Hospital - 1/12/2022 - non-directive interview with the substitute Chief Midwifery Officer



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