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Spatial Reading of Inventories: A New Approach to Reconstructing Seventeenth-Century Amsterdam Interiors

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Abstract: This article introduces a novel methodological framework—the "spatial reading of inventories"—to reconstruct domestic interiors in seventeenth-century Amsterdam. By integrating probate inventories with architectural floor plans, this study establishes three house typologies with schematic 3D drawings that resolve ambiguities in room labels and spatial organization, bridging the gap between architectural history and material culture studies. Focusing on methodological innovation, this article both reveals how house size and structure created distinct spatial context and breathes new life into the well-researched probate inventories by using its untapped spatial information. While using seventeenth-century Amsterdam as a case study, this approach offers a model for studying historical domestic spaces across contexts and provides a foundation for future analyses of object placement, sensory experience, and cultural practices at home.

Keywords: spatial reading; probate inventories; house typologies; early modern Amsterdam; schematic 3D reconstruction

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1. Introduction

Domestic interiors in early modern Europe are long recognized as a dynamic realm where social, economic, and cultural practices converged (Kodres and Mänd 2014; Baer 2015; Jurkowlaniec et al. 2017; Brundin et al. 2018; Maurer 2019; Burghartz 2021). From the display of artworks and luxury goods to the organization of rooms for work, leisure, and family activities, these spaces provide a rich source of insight into the material and social worlds of the past, attracting attention from various historical fields, from art history and architectural history to material cultural studies. The study of these domestic interiors—their spatial arrangement and use—requires understanding their construction. However, existing research regarding the construction and function of domestic spaces is polarized. On the one hand, architectural historians deploy archaeological evidence to chart a building's structure without probing its content inside (cf. Zantkuijl 2007). On the other hand, with a few exceptions, most cultural and art historians focus chiefly on itemized cultural goods without embedding the objects into the concrete physical environments to which they belonged (cf. Baarsen 2007; Fock 2001a). In recent years, scholars from both sides have tried to bridge this gap: architectural historians have started to value inventories (cf. Van Tussenbroek 2016; Li and Piccoli 2024); art historians and cultural historians have categorized possessions by abstract room names and divided houses into public and private spaces (cf. Sluijter 2001; Loughman and Montias 2000). Nevertheless, their attempts are still far from bringing together the structure of houses and the experience within them. Recent scholarship has emphasized sensory and spatial dimensions of historical interiors (cf. Tullett et al. 2022; Karmon 2021; Luengo 2020; Underhill 2018; Karmon and Anderson

2016), yet foundational challenges persist in reconstructing coherent spatial frameworks from archival sources. This article addresses this gap by proposing the "spatial reading" of inventories, a methodology that reconstructs house typologies to enable future studies of object placement and lived experience. Focusing on seventeenth-century Amsterdam, this study demonstrates how resolving ambiguities in room labels and spatial sequences can effectively connect architectural history and material culture. This article will first embed this approach within the state-of-the-art research that uses inventories to reconstruct domestic interiors in early modern homes. The third section will introduce the data sources and supplement them with complete accounts of all spaces available in the houses. With these expanded data, the fourth section develops typologies of Amsterdam homes to guide the analysis of hundreds of inventories in the dataset. By developing the house typologies, this article aims to demonstrate the potential of the new methodology of "spatial reading" of inventories that integrates architectural structures and probate inventories, laying the foundation for future studies that analyze sensory experiences and cultural practices in early modern homes.

2. Inventories as the Source for the Reconstruction of Domestic Interiors in the Dutch Republic

Death, divorce, and debt: the three Ds that drive the auction business today also spurred the compiling of inventories of seventeenth-century households. Their earthly material possessions were translated into written (legal) statements and preserved in various archives. In seventeenth-century Amsterdam, probate inventories often open with a brief statement, indicating the author(s) of the inventory, the owner(s) of the property concerned, the reason for compiling—be it at the request of heirs or creditors—the date(s) on which the objects were documented, and sometimes the location of the residence. A list of movable goods comes after the prelude, often sectioned based on the partitions of the residence, room by room, following the notary or the appraiser's steps through the house. The inventories usually conclude with non-movable properties, credits, and debts, ending with signatures of the notary, appraisers, and witnesses.

The interest in examining early modern inventories coincided with the emergence of art history as an academic discipline in the nineteenth century. Scholars turned to inventories to trace the provenance of works of art, centered on wealthy, royal, and even imperial collections. In the early twentieth century, the use of inventories in art historical research became commonplace. Although still mostly focusing on the more sizable holdings of art, art historians started to use inventories to divulge the taste of collectors, the organization of collections, and the attributions of paintings. In the Netherlands, the research using inventories went beyond the study of wealthy families and reached the households of painters. Dutch art historian Abraham Bredius published the seven-volume *Künstler-Inventare* between 1915 and 1921 that accounted for the belongings of over 300 early modern painters from various cities in the Dutch Republic, fueling numerous studies of individual artists for an entire century (Bredius 1915–1921).

In the 1970s, the new economic history and quantitative social history introduced statistical methods to the study of inventories. Economic and social historians began to amass large bodies of inventories and analyze them collectively to understand the composition of wealth, material culture, consumption patterns, and economic cycles (e.g., Van der Woude and Schuurman 1980; Schuurman 1980, 1988; Schuurman et al. 1997). In the 1980s, French American economist John Michael Montias first applied inventory studies and their methodologies to the research of Dutch art in his *Artists and Artisans in Delft* (Montias 1982). Since then, quantitative analyses and inventory studies have become standard tools in art and cultural history (e.g., Bok 1994; Jager 2020).

Parallel to this trend of quantitative analysis of inventories was the increasing popularity of Dutch *wooncultuur* research, a term, according to art historian Mariët Westermann, encompassing "domestic culture", "domestic lifestyle", "culture of living", and "material culture" (Westermann 2000, 2001). Many studies of the *wooncultuur* development have mined the rich vein of (probate) inventories. Among them, the Rapenburg project concentrated on the most prosperous and architecturally distinguished canal in Leiden (Lunsingh Scheurleer et al. 1986–1992; Fock 1987, 2000, 2001a). It made excellent use of probate inventories, wills, and auction catalogues in conjunction with the archaeological evidence and residents' biographies to scrutinize the household interior and the building specifications for every land parcel on the Rapenburg (1986–1992; Fock 1987, 1990, 2000, 2001b). This project has not only provided a wealth of information on the use of domestic space but also stimulated the detailed study of Dutch interior design and furnishing (Dibbits 1996; Wijsenbeek-Olthuis 1997, 1987; Van der Veen 1997, 2000). However, it took the research team over twenty years to study houses on a single canal for the project, which makes the research method hardly scalable. In the following decades, the studies of *wooncultuur* went beyond the houses of affluent burghers living on the grand canals into ordinary burghers' homes that required a scalable methodology to draw on a large body of sources in their studies (cf. Molen et al. 1986; Wijsenbeek-Olthuis 1987; Fock 2001a).

Engaging with both threads of research, Montias grafted a statistical approach to *wooncultuur* studies when he expanded his inventory collection to Amsterdam, an undertaking that is now preserved in the Montias database at the Frick Collection and partially in the Getty Provenance Index (Montias 1991, 1996, 2004, 2006). In *Public and Private Spaces*, Montias, together with John Loughman, uses the Amsterdam inventory database to study the patterns of artworks displayed in various rooms in the house, showcasing the benefit of examining inventories collectively to understand the use of interior space (Loughman and Montias 2000). They reach several convincing conclusions, two of which are particularly relevant to this research. First, larger numbers of paintings were exhibited in rooms intended for, judging by their names, public use, such as the *voorhuis* (front entrance hall), the *beste kamer* (best room), and the *zaal* (hall). The change in scale and disposition of these rooms over time affected the display of art within them. Second, the functions of spaces (implied by room names) had little bearing on what was exhibited within them. In most cases, the arrangements of subject matters defy logic as paintings of various genres were found on one wall. The only exception is the ancestral portraits, which were frequently hung in relatively private spaces used primarily by the family (Loughman and Montias 2000).

Loughman and Montias' study, albeit pioneering and inspiring, did not fully illustrated the contemporary use of interior spaces because their quantitative analysis did not consider the various house structures and derived the function of spaces mainly out of the room names. Taking the room name by their "face value" can result in false aggregation in two ways. First, rooms in different houses carrying the same name may have functioned differently. Loughman and Montias largely disregarded possible variations in house size that undoubtedly shaped or altered the functioning of interior space. Their statistical analysis of the painting display implies a universal house model containing all rooms mentioned in the inventories (Loughman and Montias 2000). However, few, if any, Amsterdam houses managed to pack a *beste kamer*, *grote kamer* (great room), *zaal*, and *salet* (salon) under one roof. Second, the same room can be labelled differently. Philip Vingboons' drawing in Figure 1 shows that the *beste kamer* can take the place of the *binnenhaard* (inner hearth) located behind the *voorhuis*, or be called *binnenkamer* (inner room), *dagskamer* (day room), or even *kelderkamer* (cellar room). These naming confusions are rooted in the lack of understanding of house structure and common room labeling. Therefore, to better understand the actual use of house interiors, the rooms mentioned in inventories need to

be studied within the coherent narratives of spaces within Amsterdam houses instead of as isolated spaces.

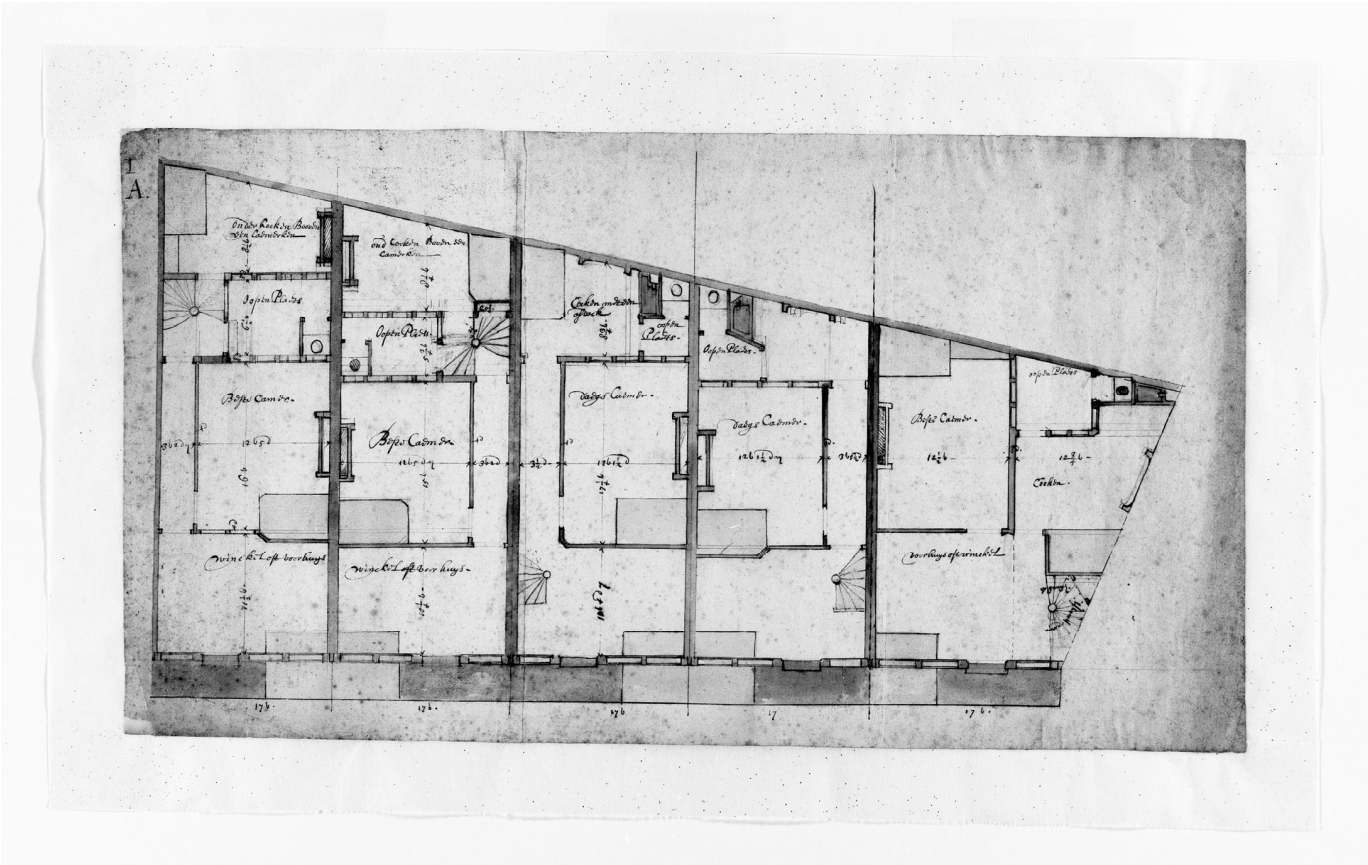


Figure 1. Philip Vingboons, *Floorplan of five houses on the Sint Luciënsteeg*, 1652, Amsterdam: Amsterdam City Archive, inv. 010056916906 (artwork in public domain).

A holistic understanding of the spatial arrangement of domestic interiors can improve the methodology developed in *Public and Private Spaces*. Without such knowledge, we cannot fully grasp how ordinary burghers used their domestic spaces for their professional and personal lives and how they arranged household objects and displayed artworks at home. Fortunately, the spatial arrangement of Amsterdam houses is a subject that has fascinated architectural historians for the past fifty years. Architectural historians have been delving into building archives, striving to establish a typology of historical dwellings using floor plans, sometimes assisted by extant exteriors (cf. Zantkuijl 2007; Dolfin et al. 1989). Yet it was not until recently that they sought help from inventories to understand the functions of individual rooms within the houses. Gabri Van Tussenbroek (2016) scouted sixteenth-century inventories and pinpointed several house typologies. His research exemplifies what I call the "spatial reading" of inventories. Nevertheless, like other architectural historians, Van Tussenbroek did not investigate the inventories' content inside the house. The gap between studies of the building structure and the experience within remains wide open.

This study hence attempts to bridge this gap by introducing the "spatial reading" of inventories as a middle ground connecting both historical sources and architectural evidence. This "spatial reading" method first extracts spatial information such as room names from probate inventories to reconstruct the routes of notaries or their clerks in the inventory process. It then links the reconstructed sequences of rooms to extant building floor plans to derive house typologies typical of Amsterdam. These house types will help

future studies capture the distinctive uses of interior space and the variation in (art) objects on display in each house type. With this knowledge of the house structure, the discussion of important factors in domestic interiors, like illumination, airflow, olfactory considerations, and other sensory aspects of daily lives, can be embedded into their original space (cf. Tullett et al. 2022; Karmon 2021; Luengo 2020; Underhill 2018; Karmon and Anderson 2016). As we shall see in the next section, the sources for this study are derived from a selected sample of Amsterdam inventories of the houses of ordinary burghers as well as of artists and art dealers.

3. Data Sources and Methodology

This section outlines the main sources and the process that makes "spatial reading" of inventories feasible, with a focus on demonstrating how to integrate floor plans with inventory data as a methodological framework.

3.1. Inventory Sample Composition

My sample of inventories is composed of two parts: around 50 fully transcribed inventories for artists and art dealers, and over 200 inventories of artworks drawn from Amsterdam burghers outside the painting industries. The first part of my inventory sample is based on published sources, mainly from Abraham Bredius' *Künstler-Inventare*. I was able to collect forty-eight inventories of Amsterdam painters and art dealers that both described the full interiors by room and were drawn up during the owners' lifetimes or shortly after their death. Since Bredius was highly selective in his transcription and focused chiefly on works of art, the published inventories were not sufficient to reconstruct painters' use of interiors. To overcome Bredius' limitation, our research team traced the inventories back to the original sources in the archive, transcribed the inventories in their entirety, and compiled the listed objects in the dataset (Li 2022). In doing so, our dataset encompasses all belongings present in painters' workshops and art dealers' shops, filling in the missing information that once hindered our comprehension of how artists and art dealers organized their studios, shops, and living quarters.[1]

The second part of my inventory sample warrants more explanation. The inventories of artworks come from probate inventories drawn up between 1610 and 1699, published in two online databases. The first is the Montias database at The Frick Collection.[2] It consists of 1,280 Amsterdam inventories (562 of which registered objects by room) from 1597 to 1681, selected and transcribed by John Michael Montias. Since the last record in the database dates to 1681, I consulted the Archival Inventories within the Getty Provenance Index to fill in inventories from the last two decades of the seventeenth century.[3] The Getty database contains 159 inventories in Amsterdam drawn up between 1680 and 1699 (out of 731 Amsterdam inventories spanning from 1620 to 1798).[4] The wealth of information offered by both databases has powered various research into buying, selling, and collecting art in Amsterdam (cf. Montias 2002; Crenshaw 2006; Sluijter 2015). Since both databases focus solely on art ownership, they have been overlooked by cultural historians for their partial representation of the material culture in the domestic sphere. This study bypasses this limitation by using these sources from a spatial perspective. Combining these databases of a similar kind will offer a comprehensive, albeit incomplete, collection of artworks presented in the houses in seventeenth-century Amsterdam.[5]

The major drawback of the Montias and Getty databases for this research is their insufficient information concerning location. Both datasets document room names only when they contain art objects. More rooms may have been mentioned in the inventory but omitted in the datasets. To study the display pattern of artworks within houses, it is critical to have a whole picture of spaces available in the house, including unadorned

rooms. For this reason, I revisited the original archival documents of the inventories to supplement the existing datasets with all rooms mentioned in the inventories and screen out the incomplete ones.

3.2. Screening Inventories by Criteria

I selected a sample of 226 inventories (including 88 appraised ones) between 1610 and 1699 out of the Montias and Getty databases. These sample inventories were selected based on three criteria: (1) the inventories must assign objects to rooms, covering the entire house; (2) they are probate inventories from the Notarial Archive (excluding insolvency inventories from the Bankruptcy Chamber or *de Desolate Boedelkamer*); and (3) they can be traced back to the original documents in the archive. The reason to dismiss insolvency inventories lies in the fact that these inventories only itemized the possessions of the liable individual and were hence a partial account of items present in the house (cf. Montias 1996; Jager 2016). Consequently, this sample consists mainly of inventories of large merchants and the "middling sort"—tradesmen, brokers, petty officials, and craftsmen who enjoyed a comfortable lifestyle, therefore inevitably inheriting the selection bias in the Montias and Getty databases. It represents primarily, as Montias said, inventories of art consumers who decorated their homes with works of art (Montias 1996).

For every selected inventory in the Montias and Getty databases, I first traced it back to the original documents in the City Archive of Amsterdam and transcribed all indications of location within the house mentioned by the notary and their clerks. Then, I connected these locations to the content registered in the two existing databases. If a room in the original document is absent from the Montias or Getty database, it is assumed that that room contained no works of art. This sample suggests that there are, on average, 10 spaces mentioned in the inventory (including the *gang*, or corridor; and the *op de plaats*, or courtyard), and less than half of them are adorned with artwork. By bringing back the omitted spatial information, this study develops house typologies and uses the spatial arrangement of rooms to bring art objects back to their original location. Although doubts arise in rare cases where objects were moved to a particular room (usually the *voorhuis*) before they were inventoried, such cases seem to have been exceptional. Very few inventories, at least in my sample, have a lopsided distribution of artworks skewed towards one room.[6] In most cases, the paintings were found in all primary and functional spaces. In addition to using the inventories from these two published databases, I also included an inventory of 31 painters and 11 art dealers from my previous research (Li 2023) that met all the criteria outlined above. Combining all these inventories resulted in a total sample size of 268.

3.3. Spatial Reading Methodology

The "spatial reading" methodology reconstructs domestic spatial frameworks by synthesizing probate inventories with architectural evidence. Developed in response to historiographical gaps between architectural and material culture studies, this approach prioritizes spatial coherence over nominal room labels, addressing inconsistencies in early modern room naming conventions in the Netherlands. Applying the "spatial reading" of inventories to the selected data sample mentioned above involves three key steps:

(1) Sequential space reconstruction

Each inventory was analyzed in the sequence recorded by notaries, approximating their pathways through the house. This analysis revealed a spatial organization of rooms, providing critical clues for mapping functional zones, such as kitchens near courtyards or (painters') workshops directly accessible through staircases.

(2) Floor plan alignment

Sequences were then cross-referenced with extant seventeenth-century floor plans, such as those by Philip Vingboons (Figure 1), to anchor ambiguous room labels within physical structures. Discrepancies in terminology—such as a *beste kamer* (best room) in a modest house spatially corresponding to a *binnenkamer* (inner room) in a larger dwelling—were resolved by contextualizing labels within architectural layouts. This alignment confirmed that room functions were often determined by proximity to key features (e.g., hearths, stairwells) rather than room names alone.

(3) House typology development

Based on the results from the first two steps, houses in the inventory database were categorized into three typologies—Type I (single-story deep houses), Type II (two-story variants), and Type III (grandiose double houses)—based on room count, sequences, and functional zoning. Figure 2 visualizes these house types in 3D schematic drawings, each with variations of the *achterhuis*. Table 1 shows the distribution of the inventories across house types. These house typologies prioritized spatial logic over nominal labels, acknowledging both Amsterdam's architectural idiosyncrasies (cf. Zantkuijl 2007) and the general patterns that emerged from the inventories.[7] The resulting typologies reflect structural differences that shaped domestic life with given spaces, echoing Lefebvre's (1991) assertion that spatial organization mediates social practice.

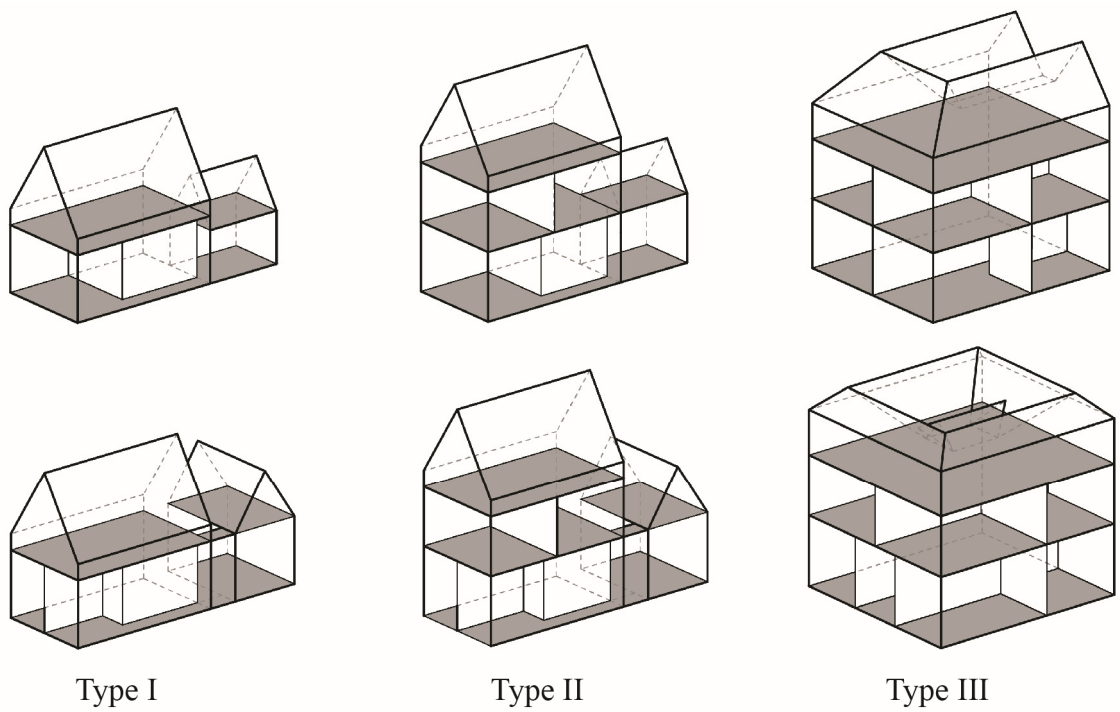


Figure 2. Three major house types derived from inventory samples with variation in the *achterhuis*.

Table 1. Number of inventories by each time, divided into two time periods.

	Burghers	Painters	Art Dealers	Total
Type I	60	4	4	68
Type II	133	25	5	163
Type III	33	2	2	37
Total	226	31	11	268

3.4. Methodological Discussion and Application

The methodology was tested against 268 inventories, revealing patterns invisible to traditional label-based analysis (cf. Loughman and Montias 2000). For instance, from the inventory sample on painters, their workshops in Type II houses were consistently located in north-facing rooms upstairs, regardless of whether inventories labelled them as a *schilderkamer* (painter's room) or a generic *voor-* or *achterkamer* (front or back room) (Li 2023). Such spatial consistency underscores the limitations of nominal approaches and validates the spatial reading and typological framework. The methodology's reliance on two elements—room sequences in inventories and architectural evidence—ensures scalability and application beyond early modern Amsterdam. Probate inventories across early modern Europe and colonial contexts similarly record room sequences (cf. De Groot 2022; Vickery 2009), while architectural norms (e.g., axial corridors, hearth-centric layouts) provide cross-cultural comparability. Future applications could map object placement (e.g., paintings in Type II *voorkamers*) or sensory conditions (e.g., olfactory gradients in Type I houses), advancing interdisciplinary dialogue between architectural history and material culture studies (Knowles and Hillier 2008).

4. Peeking into the Three House Types Revealed in Amsterdam Inventories

The three major house types identified through the spatial reading of inventories provide a clear framework for understanding how seventeenth-century Amsterdam homes were organized and accessed. The following section examines each type, detailing its key architectural features, layout, and functional priorities. These typologies serve as a foundation for future studies of material culture, sensory experience, and social practices, illustrating how domestic space influenced—and was influenced by—the everyday lives of early modern households.

4.1. Type I: Single-Story "Deep House"

The first and most basic type is a single-story "deep house", which is characterized by its narrow construct—a floor plan of greater depth than width—and a gable roof perpendicular to the façade. A deep house often occupied a parcel between twenty and twenty-five Amsterdam *voet* (around five to seven meters) in width and generally consisted of one or two main floors, with attics and cellars.[8] Type I covers those old-fashioned single-story deep houses, a type that gained momentum during the Middle Ages before gradually giving way to the two-story houses after the late sixteenth century. Sixty-eight inventories in my sample were drawn from houses in this category. Such houses were, albeit outmoded, still standing along the most prestigious canals in Amsterdam in the seventeenth century. Some even kept their Middle Ages wood façade until the late eighteenth century, as seen in Caspar Philips' *Grachtenboek* (the left-most full house, nr. 94 in Figure 3).

The interior space in Type I houses consisted principally of two main parts: a *voorhuis* and a *binnenhaard* (see Figure 4). The *voorhuis*, or the front hall, is directly accessible from the street through the front door. Often an undivided space with a high ceiling, it spans the entire width of the house. Behind the *voorhuis* is the *binnenhaard* or *binnenkamer* (inner hearth/room), a room built around the central fireplace (*haard*) where food could be prepared and family members sheltered during cold winter months—that is why it was occasionally referred to as the *binnenkeuken*, *middelkeuken*, or *winterkeuken* (inner kitchen, middle kitchen, or winter kitchen). Above the *voorhuis* and *binnenkamer* lay the *solder* (attic).

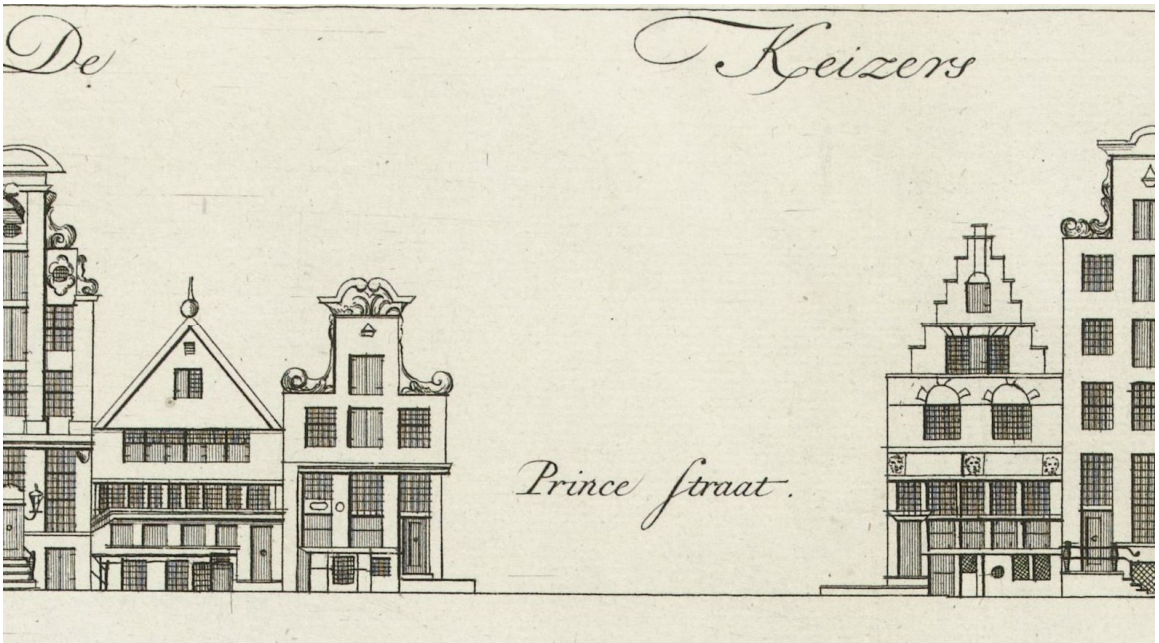


Figure 3. Caspar Philips, Keizersgracth 94, 92, 90 (left to right), drawing published in *Het Grachtenboek*, 1786, digitized through Digitaal Grachtenboek (artwork in the public domain).

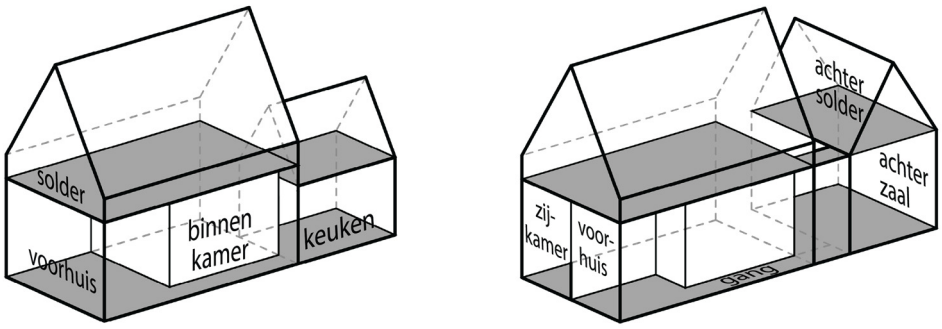


Figure 4. Schematic drawing of the Type I house, with two variances (by the author).

For modest households, especially those living in humble Type I houses, the *binnenkamer* was the main living space. Willem Pietersz. Buytewech (1591–1624) captured a moment of domestic life inside the *binnenkamer* (Figure 5). A family and their house cat are half-circled around an open hearth. Two women (perhaps the mother and daughter, according to the height of their chairs) sit in front of the hearth, attending to their household duties. A man with a hat (presumably the father), leans against the fireplace, tilting the book in his hand towards the fire to catch some light. For many families, the open fire in the hearth was the main light source at night. Next to the man, we see a child cozily tucked in a box bed next to the hearth, a typical arrangement, as seen in Vingboons' drawing (Figure 1) and many other contemporary building floor plans. Evident in Buytewech's drawing, the hearth was also the primary heating source in the house, providing the warmth necessary for the night. Above the hearth fire hangs a cauldron (*ijser pot*), the rising steam from which suggests that food was being prepared. Next to the hearth, a large map, a cheaper substitute for paintings, served as the only wall decoration in this crowded room. Buytewech's illustration connects the objects found in the *binnenkamer* to various functions and therefore attests to the central role of this room in domestic life in Type I houses.

Figure 5. Willem Pietersz. Buytewech, *Interior with women by the hearth*, 1617, brown ink on paper, 188 × 290 mm, Hamburg: Hamburger Kunsthalle, inv. 21773.

Behind the *binnenkamer*, one may find an additional *achterkeuken* (back kitchen), dedicated to cooking, or another back room (*achterkamer*) appended to the inner hearth (Corbeau 1993), as Daniël van Breen's floorplan shows (Figure 6). The space beyond the inner hearth—be it a kitchen, a courtyard (*binnenplaats*), or an *achterhuis*—could be reached through a *gang* (corridor), connecting the rear side of the house back to the *voorhuis* without passing through the rooms behind *voorhuis* on the ground floor (such as the space marked N in van Breen's drawing). In some cases, an *achterzaal* (back hall) or a *beste kamer* (best room) could be added to the basic layout, often as an adjacent space behind the *binnenkamer*. More often, they appeared in the inventories after the *gang*, *portaal* (passageway), or *open plaats* (inner courtyard), and therefore were more likely located in the *achterhuis*.

It is worth noting that the term *beste kamer* (and less often *grote kamer*), unlike other rooms, did not point to a fixed space in the house. It seems to have been used interchangeably not only with the *achterzaal* but also, and more frequently, with the *binnenkamer/binnenhaard*, as Vingboons has shown in Figure 1. Judging by the sequence of rooms registered in the inventories, the *beste kamer* in Type I houses repeatedly turned up right after the *voorhuis* and thus is likely to take the place of the *binnenkamer*, which, in turn, went missing from the registration.[9] The different labels—*binnenkamer/binnenhaard* or *beste kamer*—seem to have borne little bearing on the content of that room. The room behind the *voorhuis* in this house type was generally well decorated regardless of the labels it was given in the inventories.[10] In other cases, the *beste kamer* referred to the *achterzaal* when it appeared after the *binnenkamer*, *gang*, and *open plaats*. In short, Type I houses offer only limited spaces, which makes the *binnenkamer* the most important space for the household. For burghers, the *binnenkamer* was, unlike in other house types, probably the best-decorated room. For painters, the limited space in Type I houses may have forced them to negotiate professional and personal spaces and limited their choices in the art market. The *binnenkamer*'s centrality in Type I houses created a multifunctional space where cooking, heating, and family activities converged. This layout centralizes olfactory and

thermal experiences, as discussed by Karmon (2021), contrasting with segregated kitchens in the other two types. This methodology clarifies that a constrained space with limited lighting (reliant on hearth fire) shaped the family's experience, as illustrated in Buytewech's drawing (Figure 5). These spatial conditions—not room labels—determined functional priorities, exemplifying how typologies contextualize future studies in object placement and in-depth analysis of olfactory and thermal experiences.

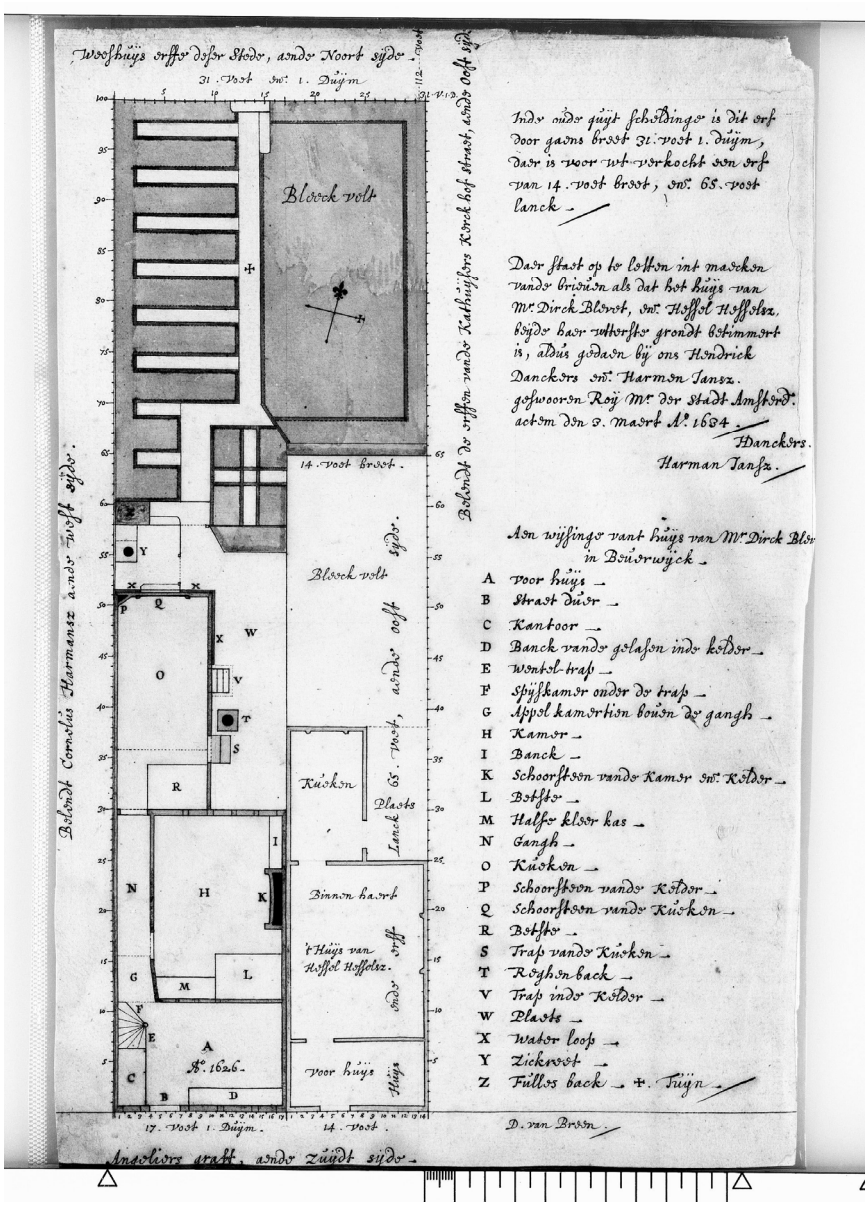


Figure 6. Daniël van Breen, *Floor plan of two houses in the Anjeliersgracht in Amsterdam*, 1634, Amsterdam: Amsterdam City Archive, inv. 010056914692 (artwork in the public domain).

4.2. Type II: Typical Two-Story "Deep House"

The second house type is a two-story "deep house", which retains the same narrow construct of the Type I house but includes an additional floor between the ground floor and the attic (Figure 7). This house type portrays the foremost common canal houses and defines the urban landscape in the inner city of Amsterdam to the present day. Type II houses were home to a large portion of the city's middle-class households in the seventeenth century, comprising more than half of the inventory sample in this study.

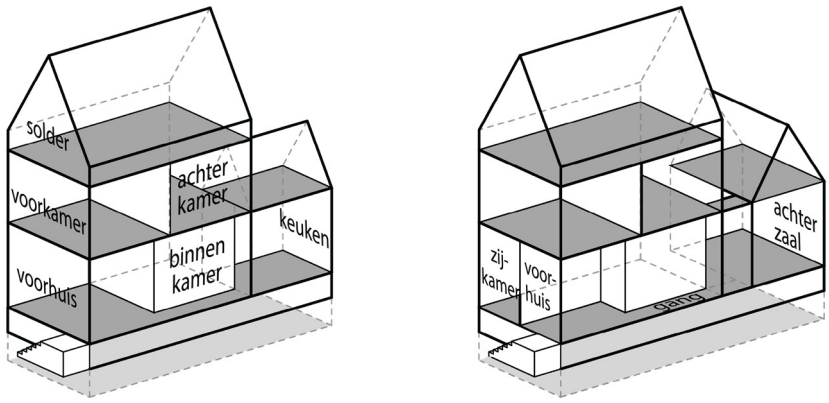


Figure 7. Schematic drawing of Type II house, with two variances (by the author).

The ground floor of the Type II house often mirrors that of Type I, comprising a *voorhuis*, a *binnenkamer*, and a kitchen at the rear. In the *voorhuis*, besides a doorway to the corridor, one is likely to find a spiral staircase. Jan van der Heyden's cross-section drawing of a house on fire gives a clear view of such a Type II house with a stairwell cutting through the middle of the main house (Figure 8). From the *voorhuis*, up a flight of stairs, one reaches the first floor, which was mostly partitioned into a street-facing *voorkamer* (front room) and a courtyard-facing *achterkamer* (back room). From the first floor, with more stairs up, one reaches the *solder* (attic). Because most traditional houses had rather steep gable roofs, the high attics are often sliced into two layers, adding a *vliering* (upper attic) on the top of the common attic to make the most of the ceiling space (see Figure 8). One probably needed to take a ladder or simple stairs to reach the upper attic, as most spiral stairs stop at the attic, if not before. Van der Heyden, in his drawing, illustrated such a combination of solder and *vliering* connected by a flight of straight and simple stairs, distinct from the winding staircases below. It is worth mentioning that the solder and *vliering* combination, if seen from the façade and section, can be mistaken for the houses having a second floor built on top of the *voor-* and *achterkamer* (as in Figure 8). In the inventories, however, this "second floor", if any, was labelled as a *solder*, and the space under the roof was called the *vliering*. In such cases, the *solders* could have been quite spacious. In Van der Heyden's drawing, such a large solder was divided into a *turfsolder* (peat attic) in the front—where peat, the staple fuel at the time, was stored—and a *kleersolder* (laundry attic) to the back, in which laundry was hung and folded. Above the solder lay the *vliering* directly under the gabled roof.

The *voorhuis* in Van der Heyden's drawing was bisected and had a *comptoir* (office) on the inserted floor. This partition in Type II houses was a common technique to make use of the space offered by the high ceiling on the ground floor. For the same reason, the *binnenkamer* was sometimes compressed into an *opkamer* (mezzanine) in order to add a cellar below. This cellar, half-sunken into the ground, is often used as a *kelderkeuken* (cellar kitchen). The basement (*kelder*) under the *voorhuis* fronting the street was often used for storage or rented out, as it has its own access to the street. The *kelder* in Van der Heyden's drawing spanned the entire ground floor and was used as a wine cellar.

Similar to the Type I house, the main building of the Type II house was often extended with an annex. In the full-fledged *achterhuis* behind the main house, Van der Heyden placed a kitchen on the ground floor and extra living space upstairs. Sometimes, the rear part of the house was so well integrated into the layout that it was barely noticeable from the floor plan that the backside belonged to a separate building. Philip Vingboons' design of 1639 for a house on Keizersgracht exemplifies such an integrated double structure of such a Type II house (Figure 9). The space marked as *Oopen Plaets* (inner courtyard) and the passageway (or *Portael*, as in other Vingboons drawings) to its right signal a transition between the front and rear parts of the house. The *portaal*, a covered passageway running along the courtyard,

connected the corridor (*gang*) in the main house to the *achterhuis*. The *open plaats* or *portaal*, when mentioned in the inventories, gives cues for a location switch from the front house to the back. The spaces registered before and after the courtyard and passageway were likely located in different buildings of the house. Passing the *open plaats* and *portaal*, one enters a *zaal* (hall)/*beste kamer* or an *achterkeuken* (back kitchen) in the *achterhuis*. The rooms above them were mostly called "room above the hall/kitchen" (*kamer boven de zaal/keuken*), and therefore can hardly be mistaken as one of the upstairs rooms in the front house.

Figure 8. Jan van der Heyden (1637–1712), *Cross-section of a burning house with firefighters*, ca. 1690, drawing, 34 × 46.1 cm, Amsterdam: Amsterdam City Archives, inv. JVDH00007000001. Design for the second print published in *Beschryving der nieuwlyks uitgevonden en geotrojeerde slang-brand-spuiten* 1690 (description of the recently invented and patented hose fire engine) (artwork in public domain).

In a nutshell, the most common Type II houses offered families more space to arrange their professional practice and living quarters. The layout of the Type II houses suggests that the first floor was easily accessible through stairs from the *voorhuis* without disrupting the living spaces in the *binenkamer*. Van der Heyden's cross-section illustrates how this vertical extension reduced the impact of odors or smoke in upstairs living areas (cf. Karmon 2021; Karmon and Anderson 2016; Tullett et al. 2022), a stark contrast to Type I's single-story arrangement, where the hearth dominated. Moreover, the difference in accessibility between the upstairs *voorkamer* and the more secluded *achterzaal* challenges Loughman and Montias' (2000) neat division of public versus private spaces, suggesting the first floor was not exclusively for family use. Painters, for instance, often established their workshops as uniformly located in the north-facing upstairs rooms, the *voor-* or *actherkamer*, depending on the direction the house faced (Li 2023). Meanwhile, ordinary burgers sometimes furnished the upstairs *voorkamer* (upstairs front room) most lavishly with paintings and expensive furniture, underscoring that the "best" room was not fixed. By mapping these configu-

rations, the "spatial reading" reveals that better-lit upstairs rooms were more likely used for hosting guests and showcasing valuables, underscoring how structural features—not just labels like "salon" or "back room"—determined functional choices. As with Type I, these conditions create a richer framework for future studies of object placement, including questions of lighting and social accessibility.

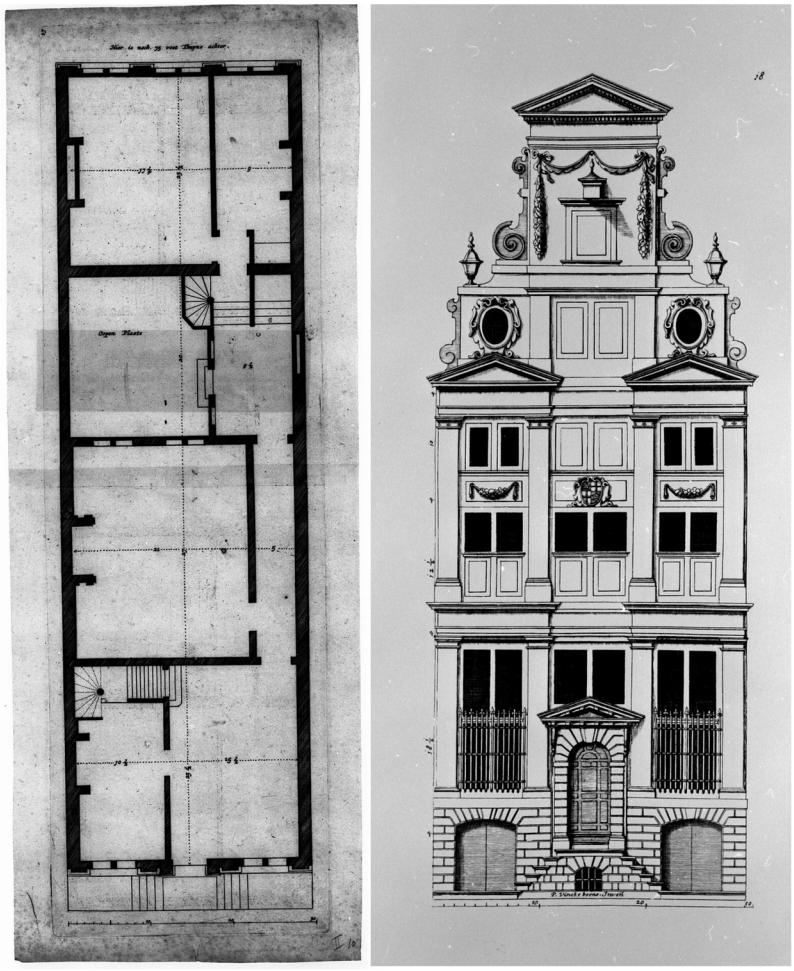
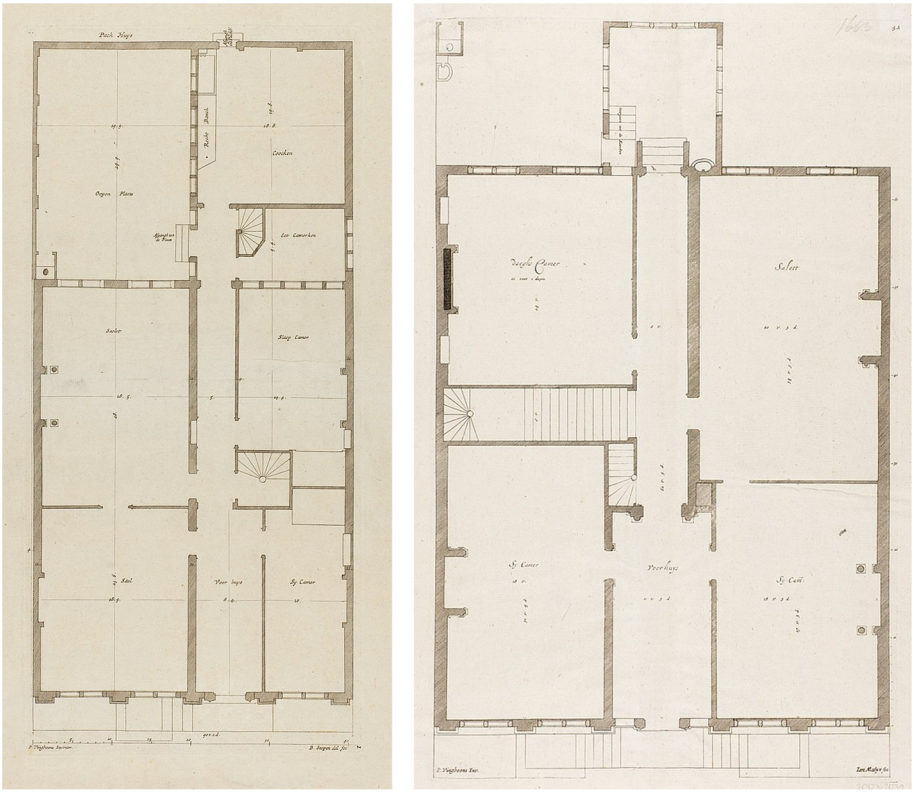


Figure 9. Johannes Vingboons after Philip Vingboons, Plan of the house built for Daniel Soyhier, Keizersgracht 319, Amsterdam, 1639, from *Afbeeldsels der voornaemste gebouwen uyt alle die Philips Vingboons geordineert heeft, Amsterdam*, 1674, engraving, Amsterdam: Amsterdam City Archive, Amsterdam, inv. 010056916268 (**left**), BMAB00037000081-002 (**right**) (artwork in public domain).

4.3. Type III: Double House

The last house type concerns the grandiose "double houses" that are built on at least two adjacent land lots, usually fronting one of the prestigious canals in the city. In contrast to Type I and Type II houses, which harbor cramped rooms lined up behind their narrow façade, Type III houses offer ample spaces for more rooms parallel to the *voorhuis* and the *binnenkamer*. These additional ground floor rooms, often grand in size, are often named *salet* (salon) or *zaal* (hall) in the inventories. These rooms separate the reception function from the *voorhuis*, which, in turn, becomes narrower and functions as a vestibule and corridor leading to the new and formal reception space. The *binnenkamer*, on the other hand, recedes to the private realm as a *slaapkamer* (sleep room) or *dagskamer* (day room). This new arrangement is evident in Philip Vingboons' design for the wealthy wool merchant Nicolaes van Bambeeck in 1650 (Figure 10a), in which a thick central wall marked a clear division. To its right, the layout mirrors Vingboons' own design of the typical Type II house

in Figure 9, with a *voorhuis* with a *zijkamer*, a *dagskamer*, and a roomy kitchen at the back. To its left, a spacious *Sael* (hall) is followed by an even deeper, perhaps more imposing *Saelet* with a prominent fireplace. The two large windows of the *Saelet* look onto the sizable courtyard connected to the warehouse at the back. The quotidian experience of domestic life is likely confined to the right side of the house, leaving the left side in charge of the ostentatious display of wealth and status.



(**a**) (**b**)

Figure 10. Johannes Vingboons after Philip Vingboons, (**a**) Plan of the house built for Nicolaes van Bambeeck, Kloveniersburgwal 77, Amsterdam, 1650; (**b**) Plan of the house built for Karel Gerards, Herengracht 386, Amsterdam, 1663–1665. From *Afbeeldsels der voornaemste gebouwen uyt alle die Philips Vingboons geordineert heeft*, Amsterdam, 1674 (artwork in public domain).

In the second half of the seventeenth century, the newly built Type III houses often strived for a higher degree of symmetry in their layout. Vingboons, in another design for the house of merchant Karel Gerards on Herengracht 386 (which houses the Grachtenmuseum today), placed the *voorhuis* in the middle (Figure 10b). This constricted *voorhuis*, flanked by two large *Sy camers* (side rooms), tapered into a narrow corridor connecting to the rear of the house. The *voorhuis* and corridor marked the central axis of the house, with doorways to every room on the ground floor. The large salet was now placed in the far-right corner, with its door opening to a flight of stairs to the upper floor. The first floor often consisted of multiple front and back rooms and rooms that were assigned to family members or maids. Above them lay the *kleersolder, turfsolder*, and *vliering*, as in Type II houses depicted in Van der Heyden's drawing. The kitchen, pantry, and other spaces serving mundane needs were now moved to the basement. The basement (souterrain), spanning the entire house, now contained large *pakkelders* (storage cellars) to store the merchandise of the owner. This type of merchant home came in endless variations in the second half of the seventeenth century. But they are characterized by the presence of a *salet*, a *zaal*, or two *zijkamers* on the ground floor, and numerous rooms on the first floor, as shown in Figure 11.[11]

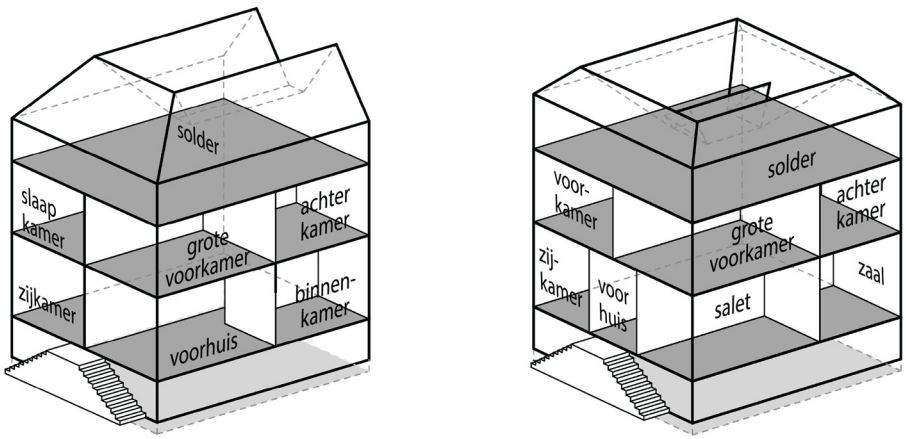


Figure 11. Schematic drawing of Type III house, with two variances (by the author).

In the inventories, these Type III houses can be easily recognized by the consistent presence of parallel rooms, often on multiple floors, and possibly with fireplaces on both sides of the house. The *voorhuis*, *zijkamer*, *binnenkamer*, and *zaal*/*salet* usually appeared in sequence in the inventories before the *gang* or *portaal* showed up. Notably, the *binnenkamer*, instead of the *slaapkamer* or *dagskamer*, as in Vingboons' drawings, frequently recurred in the inventories. Slightly different from Vingboons' designs, the *voorhuis* in most inventories of Type III houses, judging by their content, retained ample space and continued to serve as a reception chamber. Two *zijkamers* flanking the *voorhuis* (like those in Figure 11 right) occurred only seldom in the inventories. Equally rare were both the *zaal* and the *salet* mentioned in one house. Consequently, it seems that four main spaces—the *voorhuis*, *zijkamer*, *binnenkamer*, and *zaal* or *salet*—made up most of the ground floor of Type III houses. The *open plaats* is missing from most inventories of Type III houses—large gardens now replaced the inner courtyard and provided sufficient lighting and nice views for the rooms at the back.

Unlike the decorative patterns in Type I and II houses, the value and number of paintings alone could not reflect the level of luxury in Type III houses, as other decorative elements, such as gold-stamped leather and tapestries, increasingly replaced paintings in the most prominent rooms in homes. For instance, rooms like the *zijkamer*, *salet*, and *zaal* were often used for formal receptions and were lavishly decorated with textiles, furniture, and, occasionally, family portraits, rather than large numbers of paintings (Li and Piccoli 2024). These shifts in decorative practices highlight a trend among the elite: while they owned a sizable collection of paintings, they preferred more luxurious and elaborated alternatives to embellish their homes, adhering closely to the fashion and social norms of the time. As a result, this analysis shows that the overall function and decoration of rooms in Type III houses became much more uniform than in smaller Type I and II houses. This preference for alternative decorations among social elites influenced the art market after the 1670s, marking a shift away from easel paintings. Consequently, high-end painters increasingly relied on social networks to win over these wealthy patrons and secure commissions. This shift, combined with economic stagnation that reduced the number of lower- and middle-class buyers, further accelerated the decline in the mass market for art (Li 2023).

Spatially speaking, Type III homes, often spread across two or more land parcels, afforded owners greater differentiation than their Type I or II counterparts. Formal reception rooms (e.g., *zaal* or *salet*) were positioned away from kitchens, mitigating olfactory and acoustic disruptions (Karmon 2021 etc.). Expansive gardens provided natural lighting, contrasting with the hearth-centered illumination of smaller houses. This methodology reveals that in Type III dwellings, segregated service areas freed grand rooms for lavish

decorative schemes—such as tapestries or gilded leather—underpinned by a clear division of public-facing spaces and private family quarters. As with Type I and II, these spatial factors (room size, light sources, and accessibility) often dictated decoration and functions more than room labels did, thereby illustrating how typological analysis contextualizes future studies of art display, comfort, and social rituals in elite Amsterdam homes.

5. Conclusions

This article introduced and demonstrated the potential of a new methodological framework, the "spatial reading" of inventories, for reconstructing seventeenth-century Amsterdam domestic interiors. By combining probate inventories with extant architectural floor plans, this study developed three major house typologies, visualized in schematic 3D drawings. With a detailed analysis of each house type, this study offered a first step in bridging the pressing gap in early modern scholarship: connecting the structural dimensions of houses to the material culture within them. While many existing studies focus on either building design or itemized inventories, the spatial reading methodology establishes a middle ground, offering a platform to examine how interior layouts shaped—and were shaped by—daily life, cultural practices, and patterns of object placement. The methodological steps laid out in this article resolved inconsistencies in historical terminology by focusing on spatial coherence rather than room labels alone. This new framework also supports future explorations of object distribution, sensory dimensions, and social behaviors within domestic interiors, applicable to other locations and time periods when the required sources, namely, inventories that assigned objects to rooms and architectural floor plans, are available.

5.1. Discussion and Limitations

While this methodology offers significant advantages, its limitations warrant consideration. First, the reliance on probate inventory introduces selection biases: these documents disproportionately represent households with the need to have their assets itemized under certain circumstances (death, debt, divorce etc.), failing to offer a representative sample of the urban populations. Second, extant floor plans—primarily from architects like Vingboons—favor elite residences, potentially skewing typological patterns. Third, the methodology captures the moment when the inventory was drawn, without accounting for the spatial and material changes with time. Future studies could mitigate these biases by incorporating ego documents and other supplementary sources to broaden the socio-economic scope.

5.2. Future Applications

Despite these limitations, the spatial reading methodology's potential invites applications beyond seventeenth-century Amsterdam. For example, this framework can be applied to cities like Antwerp, Paris, London, and Rome for a comparative perspective. Such studies will reveal how urban structure and architectural norms in different regions affect the spatial organization of domestic interiors. The house typologies developed through this methodology can facilitate spatial analysis of object placement. It will also enable future studies in digital humanities to visualize the spatial experience of moving inside houses or simulate sensory conditions such as light diffusions and olfactory experiences. Such simulations, combined with the spatial analysis of objects present in the house types, will provide new insight into the social and cultural practice in early modern domestic lives.

5.3. Toward a Spatial–Material Synthesis

By bridging architectural history and material culture studies, the "spatial reading" of inventories offers a new framework for integrating the spatial and material contexts

in reconstructing early modern interior and domestic practices. The resulting typologies embed household possessions within their original spatial environment, which will enable scholars to analyze objects in relation to their functional and structural space. This approach not only resolves ambiguities in historical records in probate inventories but also facilitates richer, more contextualized interpretations of material culture.

With its focus on methodological innovation, this study lays the groundwork for examinations of materiality, mobility, and sensory experience within historical interiors. Ultimately, the spatial reading of inventories presents a replicable method that will help scholars to decode the material and social worlds of the past. Its adaptability—to digital tools, diverse archives, and interdisciplinary questions—ensures its relevance as a foundational step in reimagining early modern domesticity.

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Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: The data used in this study are from public databases or has been published.

Conflicts of Interest: The author declares no conflict of interest.

Notes

1 Bart Reuvekamp transcribed the inventories after the selection and the database design by the author. Judith Brouwer improved the transcriptions. My thanks go to both colleagues.

2 https://research.frick.org/montias (accessed on 12 December 2023).

3 https://piprod.getty.edu/ (accessed on 12 December 2023).

4 The inventories in the Getty between 1680 and 1699 were collected and transcribed by Marten Jan Bok based on the inventories Abraham Bredius marked in his unpublished notes. Marten Jan Bok used only the unpublished notes in the personal archive of Bredius and purposefully eschewed the published ones, such as those in *Künstler-Inventare*. The personal archive of Bredius is preserved in the Netherlands Institute for Art History. See RKD, Archief A. Bredius [NL-HaRKD.0380].

5 Regarding the representativeness of the Montias and Getty databases, Montias tested his database against a random sample and concluded that the inventories in the Montias database represent relatively affluent families who owned (attributed) paintings (Loughman and Montias 2000, p. 51). Montias (1996) also collected a random sample of inventories, which included far fewer works of art. As for their descriptions, I have argued elsewhere that the descriptions of paintings in the inventory are not consistently or significantly biased towards high-value, larger collections (Li 2018, p. 46 & Appendix I).

6 The few inventories with lopsided distribution of paintings towards one or few rooms spread across house types and time. Therefore, it is unlikely that they reflect wealthy houses with a painting cabinet while other rooms were covered with costly textiles or other wall hangings. See Montias database inv. 286, 1049, 1141 as examples.

7 The diversity of Amsterdam houses is visible through many historical maps. In his seminal work (Zantkuijl 2007), Zantkuijl illustrated the divergent layouts of residential houses and their details in early modern Amsterdam. In addition, the parcels and buildings in Amsterdam ranked high in heterogeneity, which persisted for centuries: the *verponding* (tax on the 8th penne), which was based on the rental value of the residence, revealed a wide range of properties, from 6 guilders to over 3000 guilders (rental value per year), and the first cadaster had 45 tax classes. There was little residential segregation, at least at the block level (Van den Berg et al. 1998; Stenvert 2019). The same idea is expressed in (Loughman and Montias 2000, p. 22).

8 Although the house type is summarized by Dolfin, Kylstra, and Penders using the cases in Utrecht, the same observations apply to Amsterdam too (Dolfin et al. 1989, p. 59).

9 See the inventories in the Montias database, with inventory numbers 124, 178, 325, 465, 467, 474, 1116, 1133, 1257, 1308, and 1352.

10 Some literature (cf. Schama 1987) calls this room a "parlour," alluding to its function as a living room rather than its name.

11 The roofs of Type III houses vary more than those of Type I or II. The structures of the roofs are not evident from the façade. The roofs in Type III house are based on archaeological studies of seventeenth-century roofs. For the section drawing and 3D visualizations of roofs, see Derksen (2010); Van Tussenbroek (2012).

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