

ABSTRACT (02/06)**Scrutinizing spatial potential behind the representation through perspective drawing**

Since its invention in the Renaissance, linear perspective has dominated (architectural) representation and spatial understanding in the West, providing a geometrical tool for a two-dimensional rendering of space. This doctoral design driven research however argues that there is a hidden potential to perspective as we know it and that it could be employed as an actor in the process of (three-dimensional) space-making as well. Furthermore will this generation of new spatialities provoke further reflection on how we look at space.

In a search for revealing the assumed formative features of perspective, this research operates within the Paduan Scrovegni chapel, more particular within the frescoes that are painted on the interior walls by Giotto (c. 1267 – 1337), a Proto-Renaissance painter/architect who is considered as one of the predecessors in the evolution of perspective, hence the pictorial style as we know today¹. St. Anne's house, depicted in *The Birth of the Virgin* is a first selected piece of architecture to undergo an initial reversal of projection: through performing analogue perspective drawing interventions, we are able to penetrate the picture plane and (re)construct possible versions of the depicted architecture - a transformation from 2D rendition into 3D reconstruction. This new spatiality can subsequently serve as accessible looking machine. The flexibility and instability of this fictive field allow for a context where confusion and ambiguity (characteristic for Proto-Renaissance depictions) are tolerated and, moreover stimulate the emergence of creative insights.

As artefact we would like to present the intermediary output of our dwelling behind the surface: the confrontation with Anne's house after being subjected to a perspectival disclosure. Central is the drawing showing the house, a peculiar one-room-building, approached as an autonomous architectural object but at the same time brought into relation with the physical reality of the chapel. Accompanying the drawing, modelling and video work will be included as well, addressing both the 2D gaze and the 3D experience. This mixed media approach has a propelling effect in the empirical research and enhances not only the comprehension of the physical outcome, but also the accessibility of the mental space. The objective is not the reconstruction of Anne's house as such, but the chances that this fiction enables. For this explorative research is an enquiry into the potentiality of (un)expected spaces beyond the representation and the ensuing knowledge production.



Giotto - *The Birth of the Virgin* (1304-1306)

¹ John White, *The birth and rebirth of pictorial space* (London: Faber and Faber, 1972).

RESEARCH STATEMENT (20/08)**Scrutinizing spatial potential behind the representation through perspective drawing**

The establishment of linear perspective, the geometrical tool to suggest a 3D systemized and infinite pictorial space on a 2D surface – based on the principle that all parallel lines converge to one central vanishing point –, dates from early 15th century. It was a significant feature in Renaissance art, and ever since it has played a substantial role – if not dominant – in (architectural) representation and spatial understanding. This doctoral design driven research however argues that there is a hidden potential to perspective as we know it and that it could be employed as an actor in the process of (three-dimensional) space-making as well. Furthermore will this generation of new spatialities provoke further reflection on how we look at space.

In the West, a tendency toward a more accurate architectural representation was resumed around 1300. Giotto di Bondone (c. 1267 – 1337), a painter-architect from Florence, is broadly seen as a central figure in the development of pictorial space, as it is largely within his frescoes that the concept of “portrait of architecture” was consolidated (Benelli, 2016). With a renewed interest in the corporeal reality, the figures became more detailed and concrete. In contrast with the flat iconic tradition of the foregoing medieval centuries, these actors were allowed to take up space, to become grounded. Parallel to this development the architectural space enveloping the figures became more elaborated as well. It was a way to create depth and suggest a sense of reality as experienced. The geometry of architecture offers a mathematical clarity and a place to posit one figure in relation to another or to his surroundings. It seems only logical that the development of depicted architecture and the evolution of “perspectivization” (Vesely, 2004) were interdependent processes. The architectural elements hold the painting together: as a visual composition, as a framework of relations, and as a significant actor in the narrative itself.

The period in which Giotto was active, the Proto-Renaissance, can thus be seen as a transition period between the flat iconic medieval space and mathematical Renaissance perspective. It is however not a mere, unskilled, predecessor, but holds a representational system as autonomous and authentic as any other culture or person at any other time had. “Realistic representation,” as Goodman (1968) outlined, “depends not upon imitation or illusion or information but upon inculcation”. And it is this inculcation, or “period eye” as Baxandall (2011) refers to it, which determines how we think about or understand space, what we define as standard. Interesting about Proto-Renaissance representation, and possibly contradicting how we perceive space today, is that depth was explored without the dominance of one central vanishing point (as linear perspective prescribes) which freezes a situation and locks the gaze. Paintings from that time are works of plurality, where the eyes can move across freely. There are different actions going on, there is a multitude of vanishing points, hence station points. Time is collapsed, not linear. Space was not conceived as a frozen moment in time, a view through a window on reality (Alberti, 1935), where everything happens simultaneously – like the unified and instantaneous photographic image of actual space that we are used to now. The Proto-Renaissance space was conceived as a combination of different structural elements, enabling time to move on and the narrative to take place. It is an imaginative space which can be read as a story: instead of monolithic it is a polyscenic depiction, where, instead of simultaneous, sequential viewing is facilitated.

This pictorial style, characterized by the multiplicity of sequences, and with the continuous narrative as a lever, is thus an ideal context for this research on perspective’s potential and the associated

perception. As it is contradicting the conventions of today – from the general assumption that a convincing representation implies simultaneity, offered by one point perspective (Lews, 1995) – this discrepancy can on the one hand question the prejudices (about alleged restrictions) that perspective suffers and on the other our conditioned attitude.

Within the context of this diverging representational style, this research aims to critically question the perspectival dogma in our spatial production and understanding as architects. For doing (designing) and thinking (perceiving) are strongly intertwined in the generation of creative and knowledge production, in architecture practice in general and this design driven research in particular. In order to defy the perspectival paradigm, two innovative and interconnected shifts are aimed for: liberating both (1) the practical process and the (2) mental one from the dominance of linear Renaissance perspective.

(1) On the practical level, we approach the conception of perspective as a geometrical construct, aiming for a shift in use: unlocking perspective's potential to become an innovative 3D tool that gives access to a milieu of spatial possibilities.

(2) Following from these pragmatic explorations, we will subsequently address the intended shift on the mental level. In this context, perspective is engaged as a cultural construct (Panofsky, 1991; Damisch, 1994; Elkins, 1994), shedding the dominant paradigm and opening up for a more conscious way of 'looking' – a shift in perception.

As a first case the fresco *The Birth of the Virgin* (200cm by 185cm) was selected. It was finished by Giotto and his workshop in 1305 and decorates the walls of the Padovan Scrovegni Chapel, as a part of the cycle that depicts the lives of Mary and Christ. The scene takes place in Anna's bedroom, a rather remarkable one-room-house, one side opened towards the onlookers in the chapel, but still feeling claustrophobic because it is packed with people. On the foreground two of the midwives are sitting on the ground around a basin of water, having prepared the cloths and taking care of the infant Mary. Central we see Anna in the bed, reaching out to the nursemaids standing next to her to take over the newborn. At the left, a similar gesture is taking place at the doorway where the bread is being handed from the outside to the inside. The Virgin is depicted twice; it is a polyscenic painting where different sequences in time happen at the same moment in the same peculiar room. Peculiar, but specific. It answers to the needs of the narrative. The architectural object organises three instants and does that from within an inner logic, not constructed by being subjected to external rules.

Our first step in the empirical exploration of Anne's house is interpreting the composition as a spatial organisation of three planes. These three planes, perpendicular to the surface of the fresco (from left to right: the portal between the columns, the wall with the door, the wall with the window) divide and structure the composition and the story. The three atmospheres (referring both the treefoldedness of the human actions and the built structures) are ingeniously assembled together into one image. Every aspect requires its own 'perspective' and therefore its own vanishing point, hence station point. Through performing analogue perspective drawing interventions, we are able to penetrate the picture plane and (re)construct possible versions of the depicted architecture; a reversal of projection leads to a transformation from 2D rendition into 3D reconstruction. The three station points that are related to the tree vanishing points as mentioned above, are located in front of the picture plane and plot a walk along the interior wall of the chapel. The movement from viewpoint to viewpoint, from instant to instant, corresponds with the sequential occurrence in the

painting. On the tracing paper, locating these station points is the primary step in the perspectival reversal, or physical articulation, of the representation. By casting out of these points the sight lines, projecting lines and the lines converging towards the vanishing point, the space emerges line by line behind the picture plane and spatial suggestion becomes spatial occupation.

This three-dimensionalization, is an amalgam of projections (three layers, related to the three vanishing points, on top of each other) that suggest a coinciding of different moments in time (the same depictions seen from the three points of view) joined together in one new space. The polyscenographic drawing of this composite space serves as a looking machine which is accessible and expresses the possible, the temporal, the narrative. It is a new space that is ambiguous and dynamic. Drawn out – literally – from Giotto's fresco, it is not a mere (re)construction, but a fiction that is unconventionally composed – and from some points of view even unsettling –, enabling the exploration of one's own looking while simultaneously exploring the space itself, comparing expectation with experience. The temporal aspect, which was already inherent to the original image, contributes to the flexible and instable, but fascinating character of the three-dimensionalized fictive field: a context where confusion and ambiguity (characteristic for Proto-Renaissance depictions) are tolerated and, moreover stimulate further virtual explorations and potentially subsequential innovation. The 'faults' and paradoxes serve as trigger and eye-opener, for they are cracks that open up to the network of possible places, challenging the potential of perspective as a tool when it breaks with the conventionally associated rigidity and how it in doing so can question perception.

References

- Alberti, L.B. (1435). *De Pictura*
- Baxandall, M. (2011). *Painting and experience in fifteenth century Italy: a primer in the social history of pictorial style*. Oxford: Oxford University Press.
- Benelli, F. (2016). *L'architettura dipinta nella pittura toscana medievale*. In S. Frommel & G. Wolf (Eds.), *Architectura Picta nell'arte italiana da Giotto a Veronese* (pp. 21-41). Modena: Panini.
- Damisch, H. (1994). *The Origin of perspective*. Cambridge: MIT Press.
- Elkins, J. (1994). *The Poetics of Perspective*. London: Cornwall University Press.
- Goodman, N. (1968). *Languages of art*. New York: The Bobbs-Merrill Company.
- Lewis, A. (1995). *Story and space in Renaissance art: the rebirth of continuous narrative*. Cambridge: Cambridge University Press.
- Panofsky, E. (1991). *Perspective as symbolic form*. New York: Zone Books.
- Vesely, D (2004). *Architecture in the age of divided representation: the question of creativity in the shadow of production*. Cambridge: MIT press.

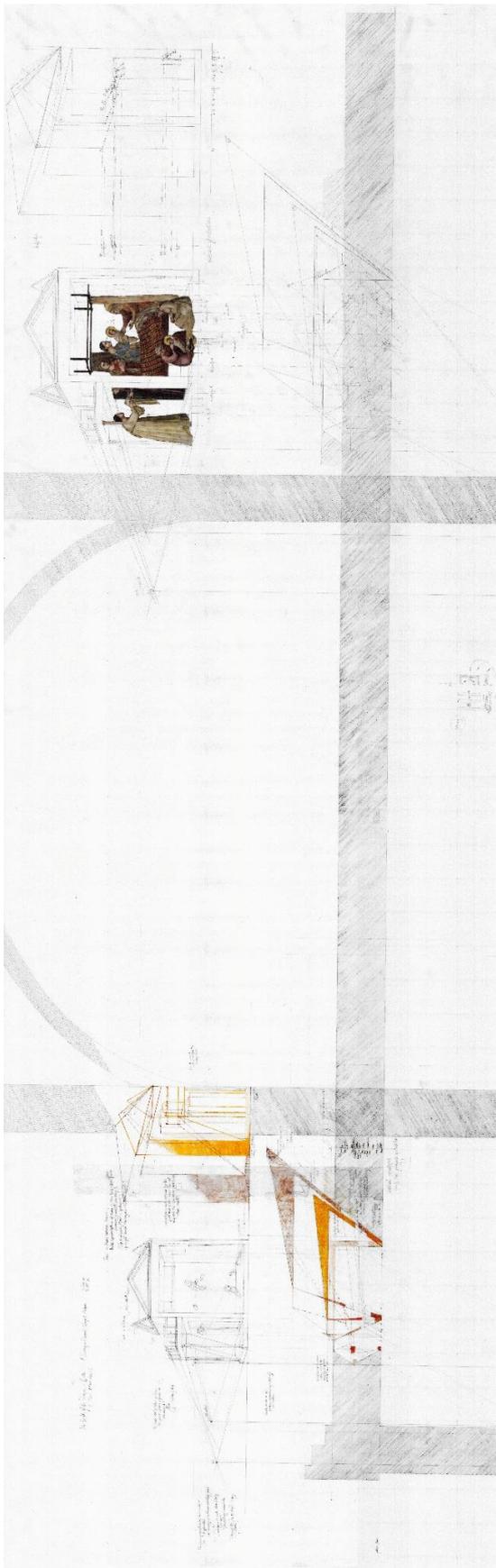
PROPOSAL

Artefact

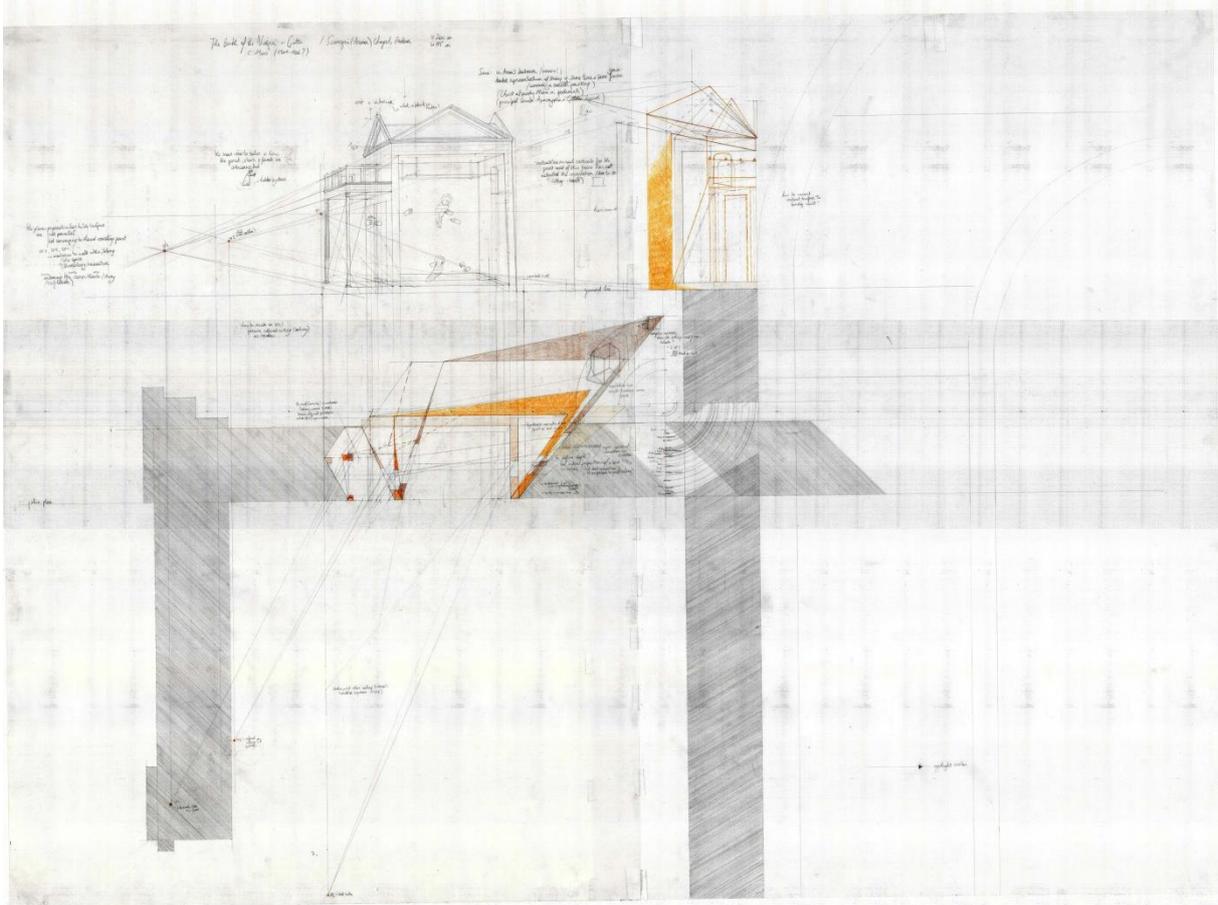
As artefact we would like to present the intermediary output of our dwelling behind the surface: the confrontation with Anne's house after being subjected to a perspectival disclosure. Central is **(1)** the drawing (pencil on tracing paper) that shows the represented house, approached as an autonomous architectural object but at the same time brought into relation with the physical reality of the chapel that incorporates the fresco. The original drawing will be physically presented at the conference. The paper measures 90 by 200 cm and should preferably be laid down. The extra **(2)** drawings and **(3)** models that accompany this centerpiece will be displayed in relation to it: placed on the paper, integrated within the surface area, so to form one whole and not to exceed the 90x200cm borders. (If there is possibly an empty wall available next to the table with the drawing, I would maybe opt to project the video of the model as well.)

[The work here presented is still in progress, for the exploration within this fresco has not yet been concluded.]

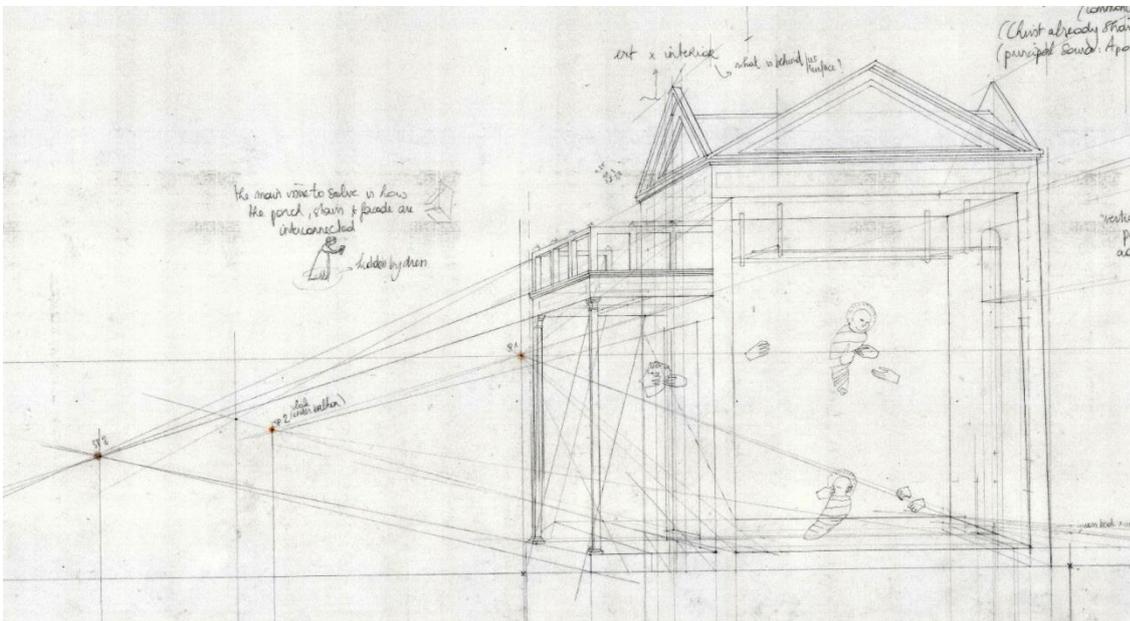
(1) The central drawing (full + details)



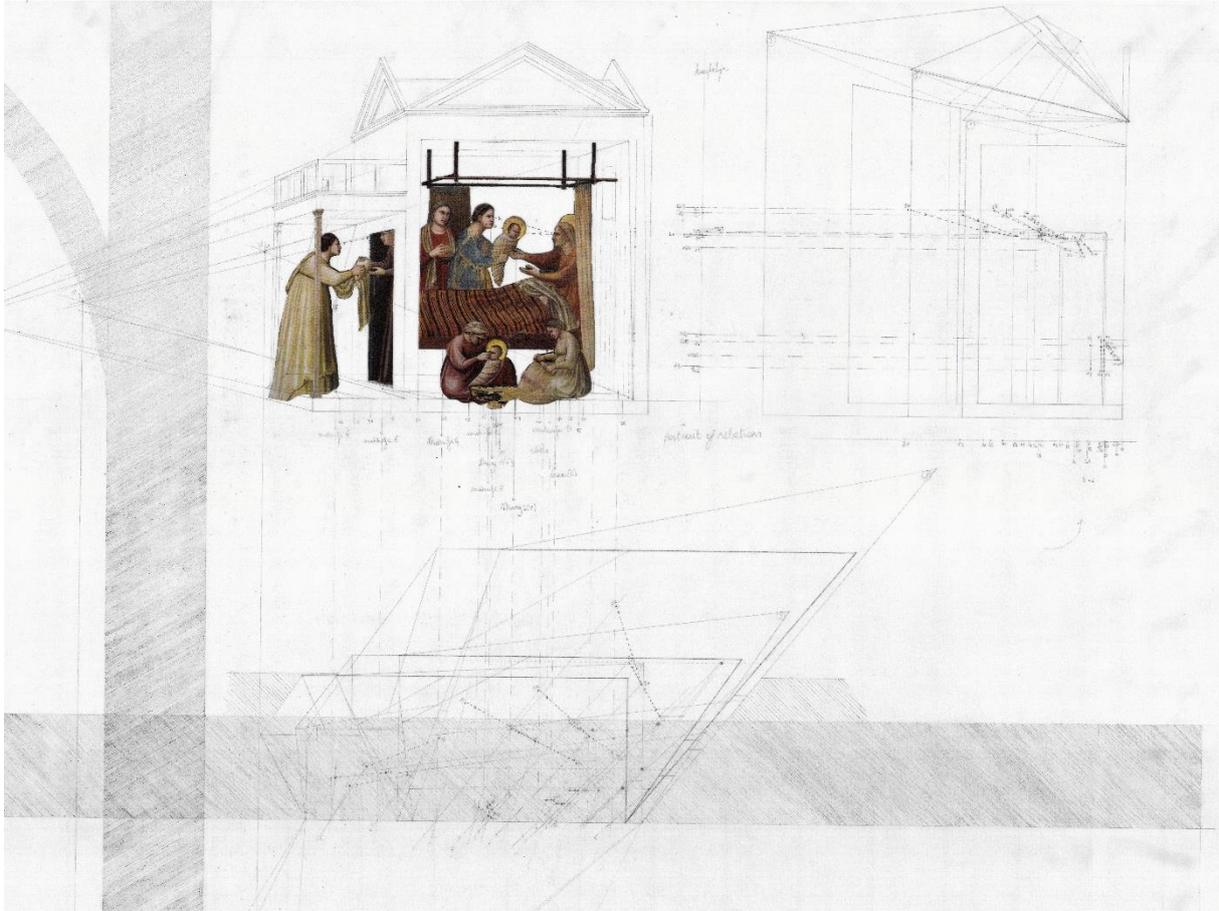
Drawing out *The Birth of the Virgin*. Pencil on tracing paper (200x 90 cm).



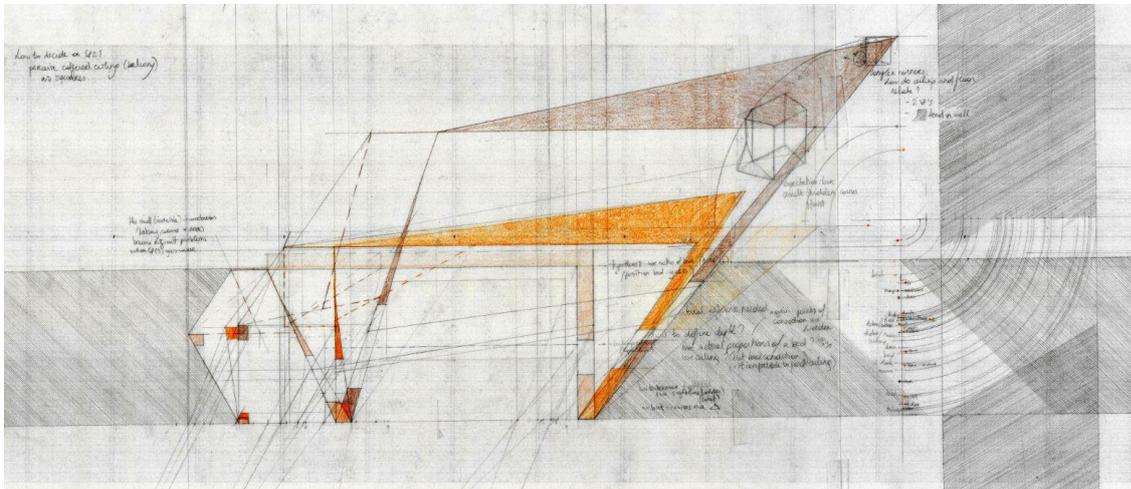
Detail of the previous phase of the drawing.



Detail of the drawing.

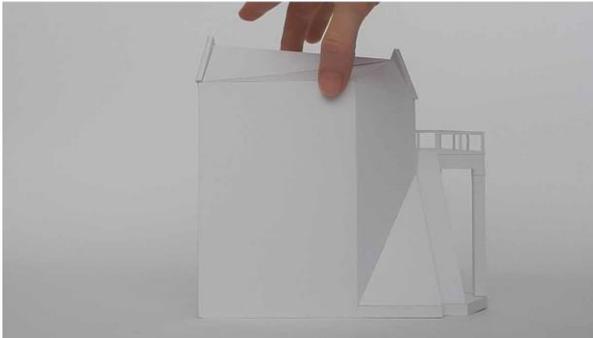


Detail of the drawing.



Detail of the drawing.

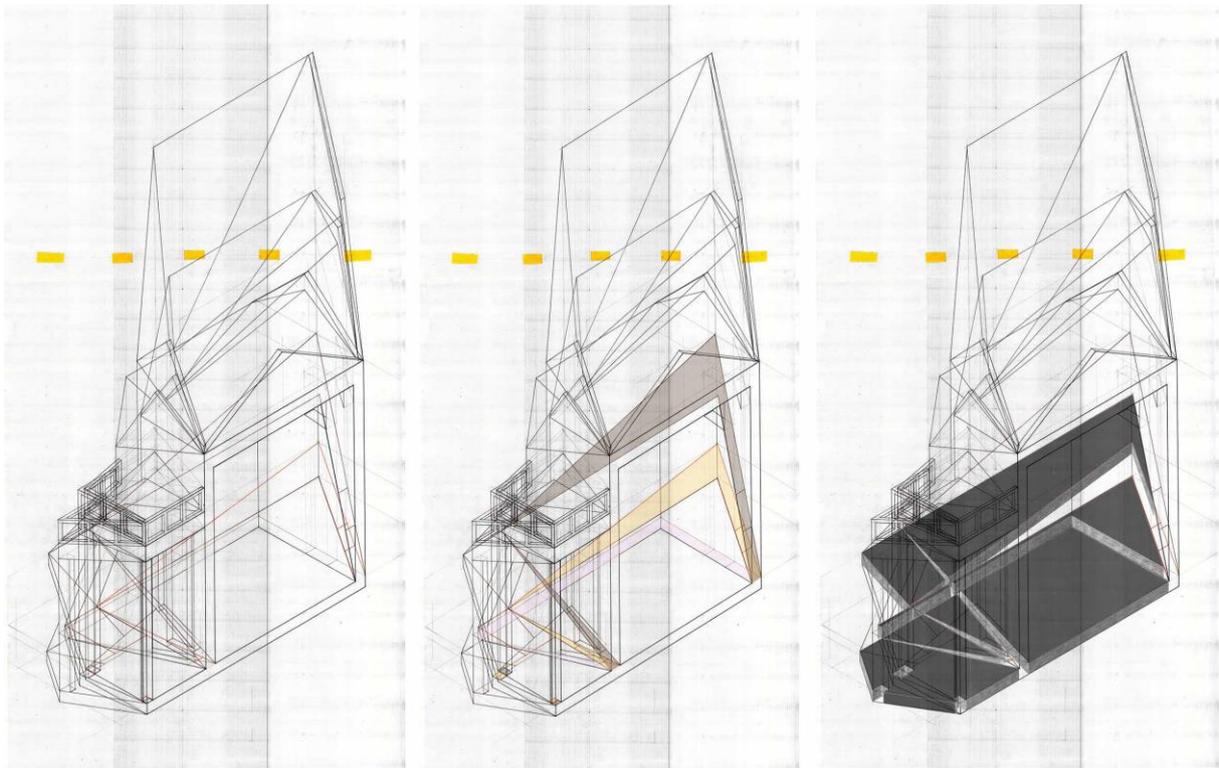
(2) The model



Stills from a video showing the *mise-en-scène* of the (distorted) paper model.

video url: <https://vimeo.com/user78638615>

(3) Extra drawings



Isometric drawing of Anne's house. Pen on tracing paper.

Activating empathy through the act of drawing

Abstract

We propose to present a set of drawings as an artefact. Through these drawings, we propose the act of drawing as a moment of embodiment and a tool to further enhance empathy in observations of phenomena related to architectural design which are difficult to understand otherwise. This research aims to develop ways of understanding fragility in architecture through initiating an (empathic) drawing process. We aim to critically assess and reflect on three series of drawings, their interrelation and how making those drawings contributes to understanding fragility through empathy.

We will discuss these three series of drawings:

Firstly, we will discuss a selection of drawings out of the first author's drawing archive, consisting of drawings made as a child, a youngster, an architectural student and an architectural researcher. To obtain insight in the author's way of drawing and hence observing, the author's drawing archive has been observed. The observation has indicated that drawings made two decades ago are interlinked with drawings made over the past five years.

Secondly, we will bring to the fore a series of sketches of a Belgian dune landscape made on site. We will elaborate on how these sketches are an initiator for current drawing cycles by serving as *memo drawings*.

To conclude, we will elaborate on a drawing series that comprises layered drawings that gradually decode and unravel spatial observations. Together with the sketches they are further enhancing empathy and provide a first stepping-stone to develop an understanding of fragility by becoming that which is not understood (Robinson, 2015; Vico, 1725).

Keywords: the act of drawing, moment of embodiment, empathy, fragility

References

- Robinson, S. (2015). Boundaries of Skin: John Dewey, Didier Anzieu and Architectural Possibility. In *Architecture and Empathy* (pp. 42–63). Finland: Tapio Wirkkala-Rut Bryk Foundation.
- Vico, G. (1725). *Scienza Nuova: Principi di Scienza Nuova d'intorno alla Comune Natura delle Nazioni*.

Activating empathy through the act of drawing

Introduction

In this paper we propose the act of drawing as a moment of embodiment and a tool to further enhance empathy in observations of phenomena related to architectural design which are difficult to grasp and understand otherwise. This research aims to develop ways of understanding fragility in architecture through developing different kinds of drawings. The paper aims to critically assess and reflect on three series of drawings, their interrelation and how making those drawings contributes to understanding fragility through empathy. The drawing series comprise: (1) A selection of drawings from the first author's drawing archive, (2) a series of sketches as *memo drawings*, employed and further elaborated in (3) a series of drawings that gradually unravel and decode spatial observations.

Fragility as facilitator

Pallasmaa advocates a fragile architecture, and more precisely an architecture of fragile structure and image, as opposed to an architecture of strong structure and image (Pallasmaa, 2000). However, in architecture, fragility's meaning, where and how it occurs, and the criteria that determine whether or not a context (material or mental) is fragile, are not explicitly defined. The use of the term fragility is often based on vital intuitive hunches (Lagrange, 2015). Fragility may well be intangible and understandings can therefore not only be communicated in words. The research therefore initiates, as a hypothesis, an (empathic) drawing process to (1) understand and (2) communicate the emergence and agency of fragility.

Archive/portrait

Drawing has been the most intense form of observation for the first author-as-draughtsman. To obtain insight in the author's way of drawing and hence observing, the author's drawing archive has been observed. The archive encapsulates drawings made as a child, a youngster, an architecture student and an architectural researcher. Over the course of multiple weeks, the archive has been brought together and the gathered drawings have been systematically revisited through photographing and chronologically ordering them, gradually dwelling in them.¹ Regardless of the indications that many of the drawings are interlinked on different levels e.g. techniques, tools, methods, and subjects, and that in every drawing, elements of previously made drawings are embedded, the observation gradually started to delineate a portrait of the author-as-draughtsman (Fig. 1). Bart Verschaffel states that a portrait is not merely about resemblance, but also about 'visag  t  ' (faciality), for which the 'pierced surface' is essential and reveals the presence of an inner something or someone. Every opening in a surface looks but also absorbs and pulls in (Verschaffel, 1999 and 2012). Each drawing in the archive lies on the table as a peeping hole and narrates the way it was made, how the subject was meticulously measured with the pencil or imaginarily made up, how the draughtsman was drawing to *understand* the drawing subject (Vico, 1725).

¹ The archive comprises 400-500 drawings. A selection of 150 drawings has been closely observed. The drawings have been categorized by their years of production, allowing the author-as-draughtsman to interlink drawings from different time periods.

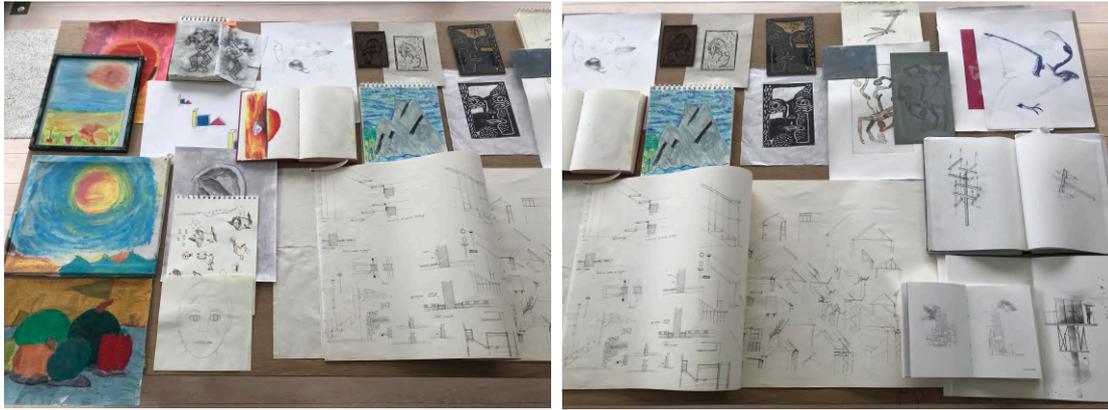


Figure 1. Photographs of a selection of archival drawings

The lens of empathy

Here, empathy comes into the scope. Empathy is an inborn and intuitive capacity that can be worked on intellectually, and enables us to project ourselves into the inner world of others on the basis of our own bodily states, regardless of whether these others are persons, creatures, places or things (Robinson, 2015). Giambattista Vico stated in his *New Science*:

“As rational metaphysics teaches that man becomes all things by understanding them, imaginative metaphysics shows that man becomes all things by not understanding them [...] for when he does not understand he [...] becomes them by transforming himself into them” (Vico, 1725).

Taking a Belgian dune landscape as a case study and subject of the drawings, we observe slowly, hence deeply through a lens of empathy, induced by the act of drawing: prolonged (empathic) looking and thus drawing steadily as a method of deep observation in order to understand, in this case fragility, through direct experience, observation and transformation (Pallasmaa, 2000; Vico, 1725).

Two drawing cycles have been made in the latest stage of the research:

- (1) A series of sketches as *memo drawings* made on site that initiated a second series of drawings.
- (2) A series of drawings that gradually unravel and decode spatial observations.

The drawings in the first cycle exhibit how the author dwells in the landscape and gradually develops focus through drawing on site. This landscape triggers a sense of solitude elicited by the absence of people and physically embodied by desolate buildings and especially their windows that are often closed off by curtains or window blinds. Edward Hopper always wondered what a room would look like when there was no one there to see it, or even to look in (O’Doherty, 2013). A similar solitude at those windowed edges of the dune landscape arouses interest because of the impossibility to look at the landscape through the windows, and to visibly and physically enter the spaces they enclose. Looking at the landscape through those windows and dwelling in the spaces they enclose is the only position that cannot physically be taken. Therefore the draughtsman tries to take that position through drawing. The drawn fragments and details are imaginations of how the windows and parts of the spaces they enclose might have been designed (Fig. 2).

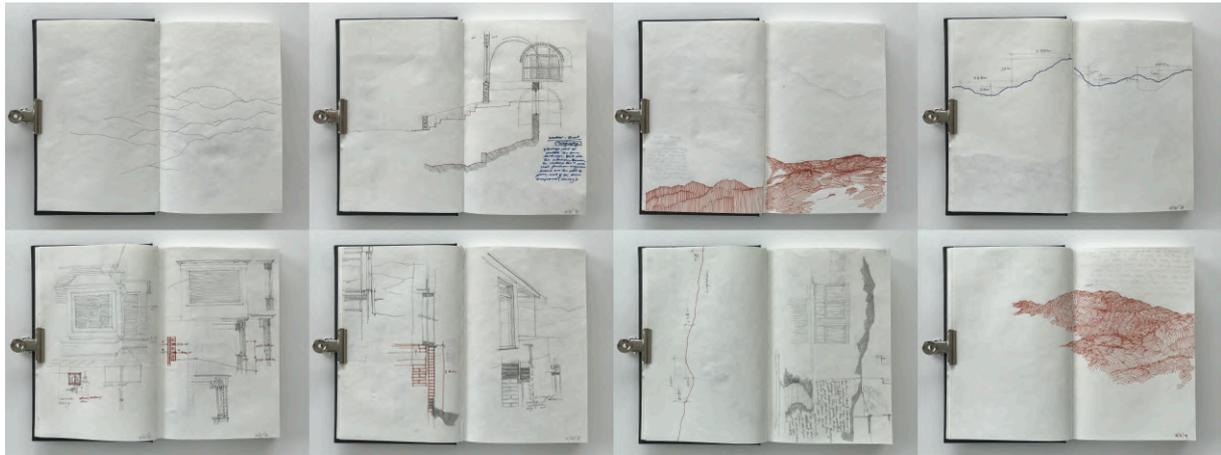


Figure 2. Selection of memo drawings made on site

Back in the research studio, the sketches as *memo drawings* have initiated a second drawing cycle consisting of three sub cycles.

Firstly, sketches of the dune landscape have been transposed to layered etchings comprising the sky, the landscape's section and topographical surface (Fig. 3). (Sub-cycle 1)



Figure 3. Etching in sub-cycle 1

Secondly, the sketches of details and fragments of windows, the spaces they enclose and the landscape they overlook have been further elaborated in a next series of drawings (Sub-cycle 2), hence sketches as *memo drawings*. They have been unravelled and taken apart (decoded) in drawings on silk paper (Fig. 4).² The draughtsman has drawn a way from one side of the window to the other, capturing the process of unravelling that imaginary movement.

² Silk paper was first used as a partition between wet printed etchings during transport. It turned out to be excellent drawing paper.

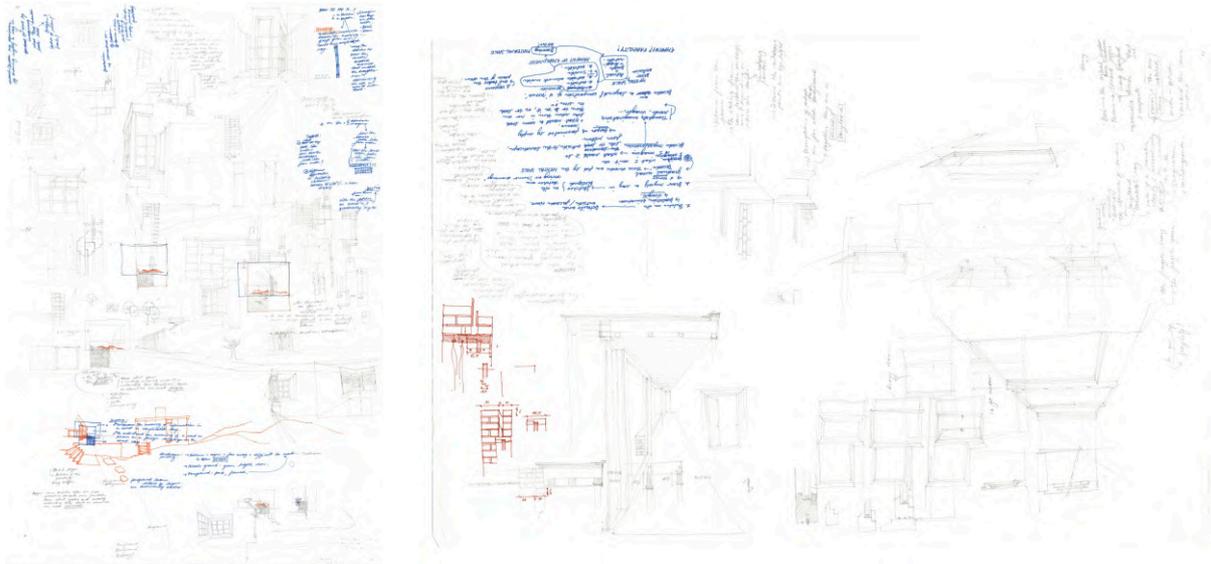


Figure 4. Two drawings in sub-cycle 2, silk paper, 50x75cm

Thirdly, but simultaneously, the first sub-cycle has been continued by drawing layered pencil drawings on the etchings to intermediately synthesize the stream of thoughts in the second sub-cycle (Fig. 5).



Figure 5. Two drawings in sub-cycle 1, 72,5x87,5cm and 49,5x68cm

To diminish the physical and mental distance between analysis (sub-cycle 2) and synthesis (sub-cycle 1) and to avoid that the act of drawing was continuously interrupted by alternately working on both drawings, they have been combined on the same sheet of paper (Fig.6). (Sub-cycle 3)

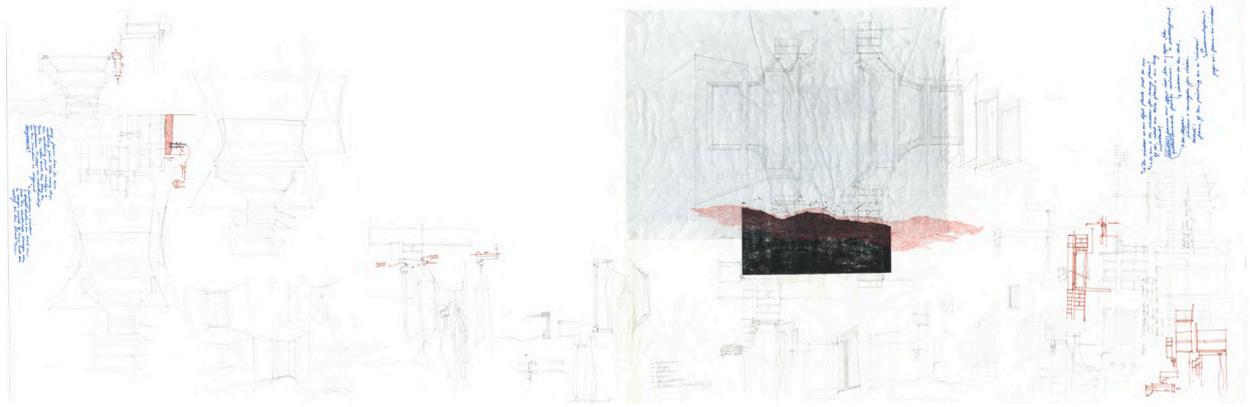


Figure 6. Drawing in sub-cycle 3, silk paper, 50x150cm

The drawing cycles and the way they interrelate exhibit how the draughtsman excavates through matter in order to understand. We call this process *decoding drawing* (verb), with *decoded drawings* (noun) as outcomes, as they reflect a process of unravelling and taking observations apart to understand the meaning of information given in a complicated way.

Conclusion

The drawing process as described above provided the research process with the leverage that was necessary to question the status of the window. First, the window has been drawn and understood as an object placed next to the draughtsman. Subsequently its possible different meanings and metaphoric relations to the way we observe and thus draw came to the fore (Friedberg, 2009). Is the window an object placed next to the draughtsman who is looking at one place? Or does the draughtsman personify the window for many places? If so, what are these places and are they important? These questions will be the subject of the next research phase. The drawing cycles as described above have been necessary steps to make this clear. The material window has become part of us, we are empathically becoming the window (Vico 1725) in order to see, look at and thus understand an underlying and elusive concept such as fragility. The research is making clear that the act of drawing is an intense and empathic moment of embodiment, hence being a moment it is temporal. In that moment the draughtsman dwells where his 'object of obsession' that he is drawing resides. In that moment the draughtsman and this 'object of obsession' coexist, become one another (Vico, 1725). This moment of becoming, and thus the empathic window through which we observe, is extremely fragile. This is the fragility we are seeking to investigate and understand through this research. Architect and draughtsman Umberto Riva talks about impermanence by choice: the fragility of the unstable as opposed to the certainty of the defined (Zardini, 2015). The drawings are a way to avoid the destruction in this moment by capturing it in drawing cycles of this kind so they can possibly give more permanence to 'the fragile'.

References

- Friedberg, A. (2009). *The Virtual Window: From Alberti to Microsoft*. Cambridge, MA: MIT Press.
- Lagrange, T. (2016). *Look Space! A story of Analogous Spaces*. Amsterdam, Netherlands: Idea Books.
- O'Doherty, B. (2013). *Hopper's Windows*. Retrieved from <https://www.whitney.org/WatchAndListen/968>
- Pallasmaa, J. (2000). Hapticity and Time: Notes on fragile architecture. *The Architectural Review*, 207(1239), 78-.
- Robinson, S. (2015). Boundaries of Skin: John Dewey, Didier Anzieu and Architectural Possibility. In *Architecture and Empathy* (pp. 42–63). Finland: Tapio Wirkkala-Rut Bryk Foundation.
- Verschaffel, B. (1999). Kleine theorie van het portret. *De Witte Raaf*, (81), 1–5.
- Verschaffel, B. (2012). Face/Facade: Van gevels en gezichten. *Dietsche Warande En Belfort*, 157(1), 74–83.
- Vico, G. (1725). *Scienza Nuova: Principi di Scienza Nuova d'intorno alla Comune Natura delle Nazioni*.
- Zardini, M. (2015). *Rooms You May Have Missed: Umberto Riva, Bijoy Jain*. Québec, Canada and Zurich Switzerland: Canadian Centre for Architecture and Lars Müller Publishers.

Exhibition proposal

The artefact comprises two short films and 7 drawings.

We propose to exhibit the artefact in two ways:

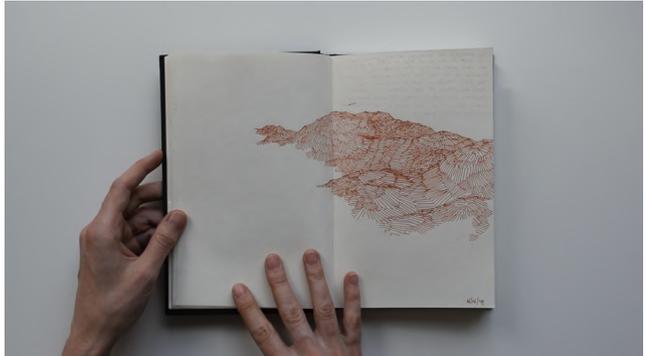
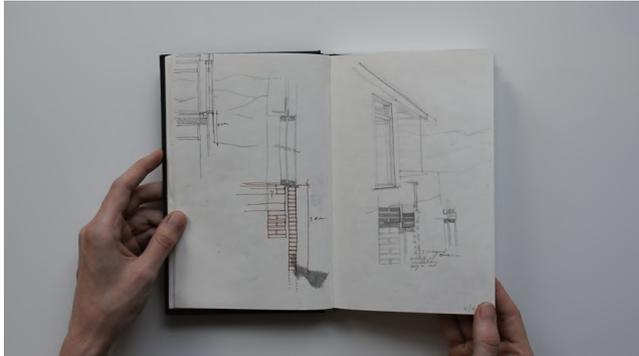
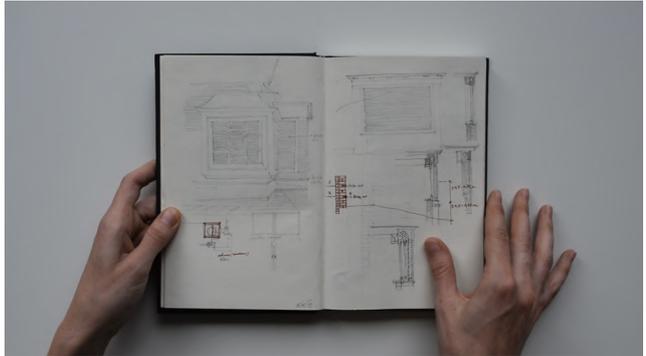
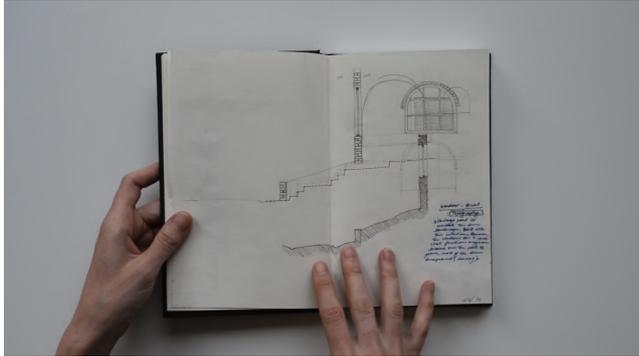
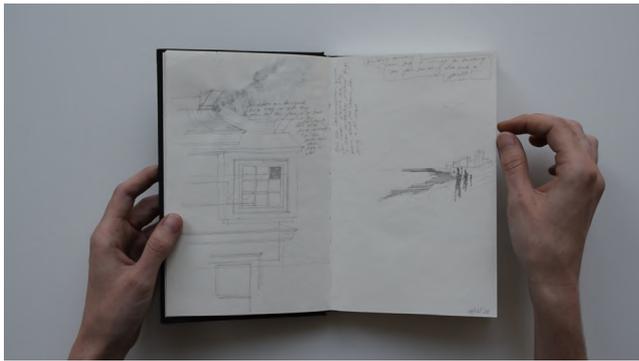
- (1) A composition of 7 drawings exhibited and presented around a long table.
- (2) Two short films projected on a wall to exhibit the archival drawings and on site sketches.

Together, the short films and physical drawings can form a composition that can clearly exhibit the research content.

Requirements:

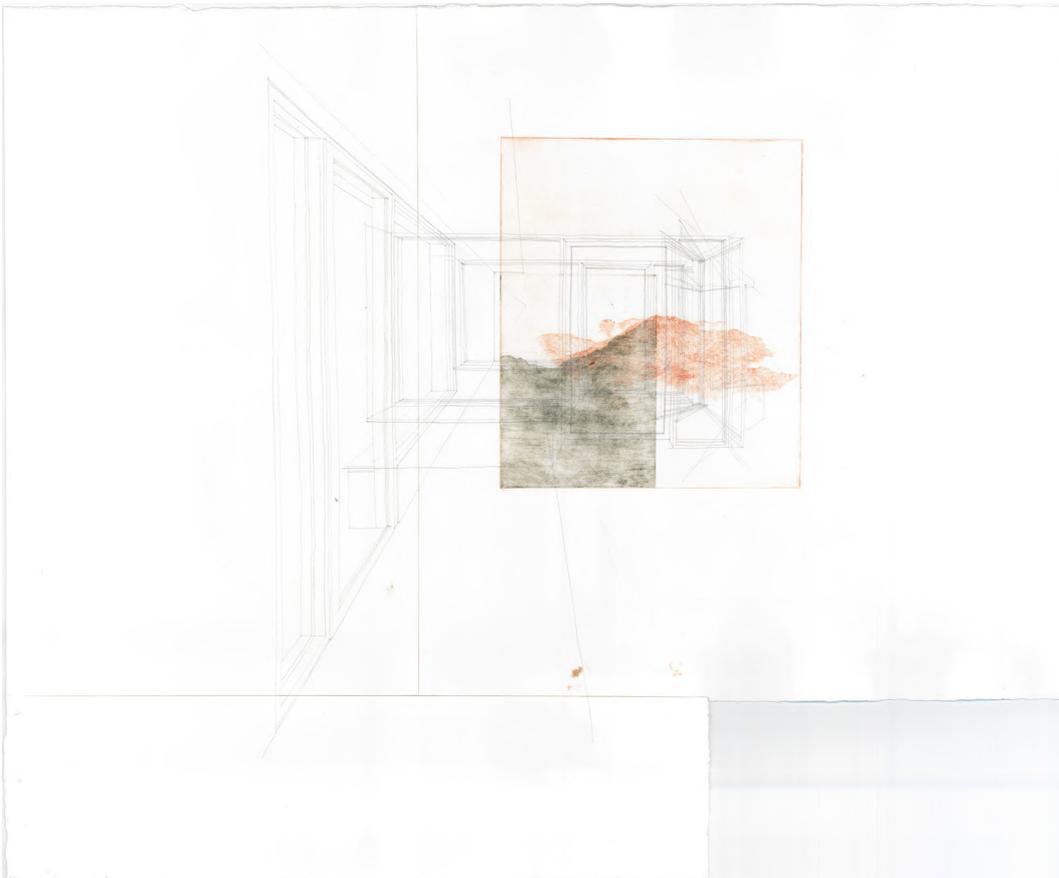
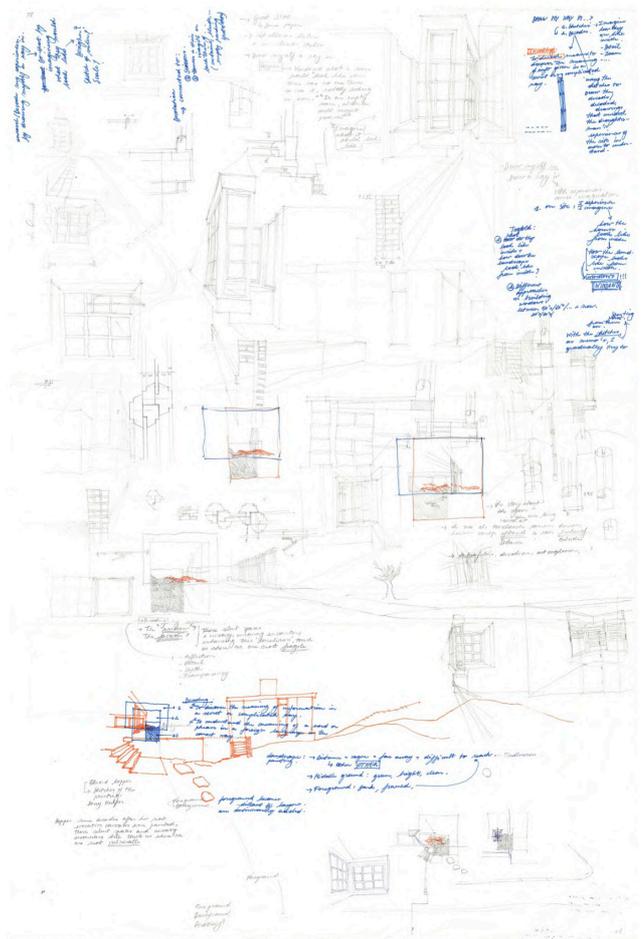
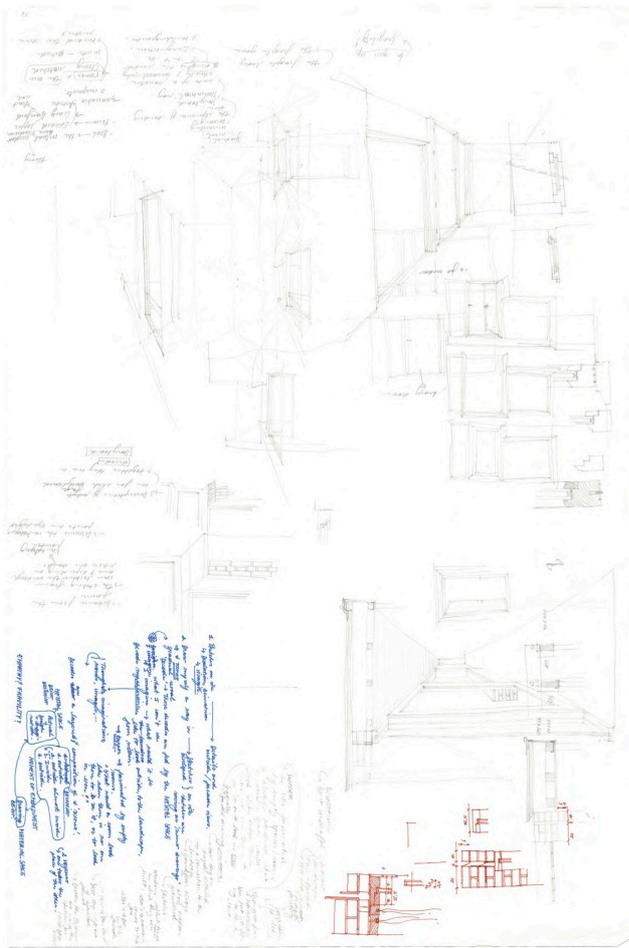
- Tabletops on trestles (+/-6m length)
- A wall close to the tables to project on
- Two beamers
- 4 drawing lamps

Artifact documentation

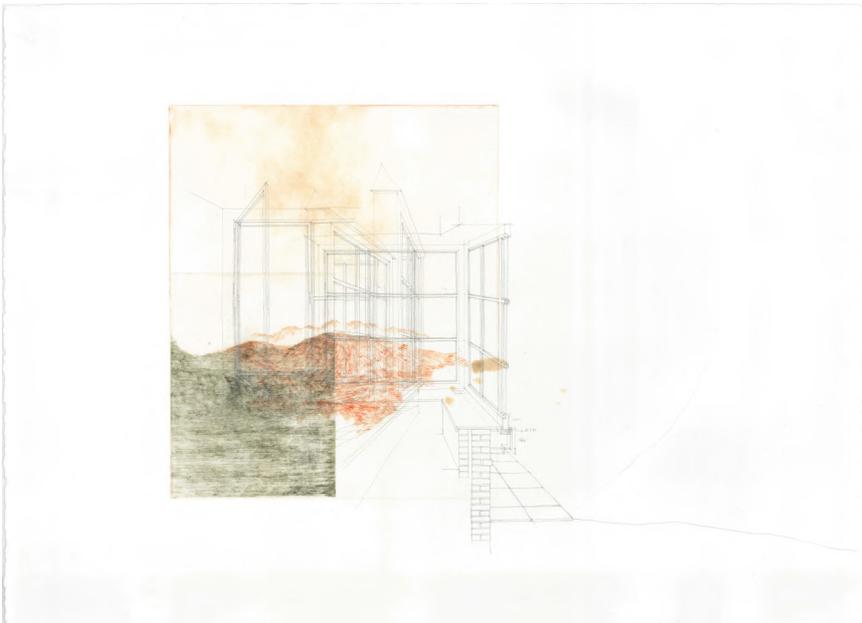
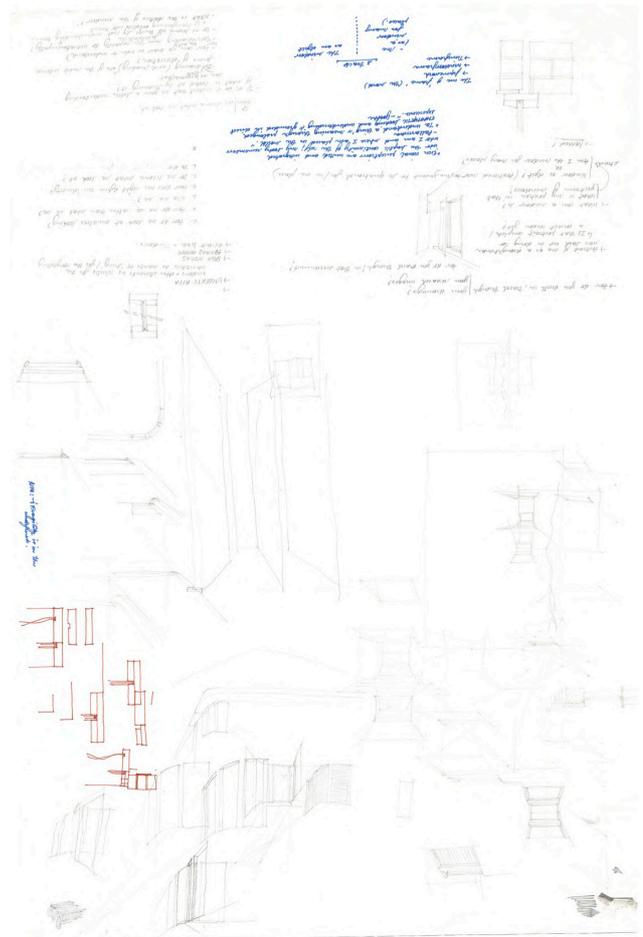
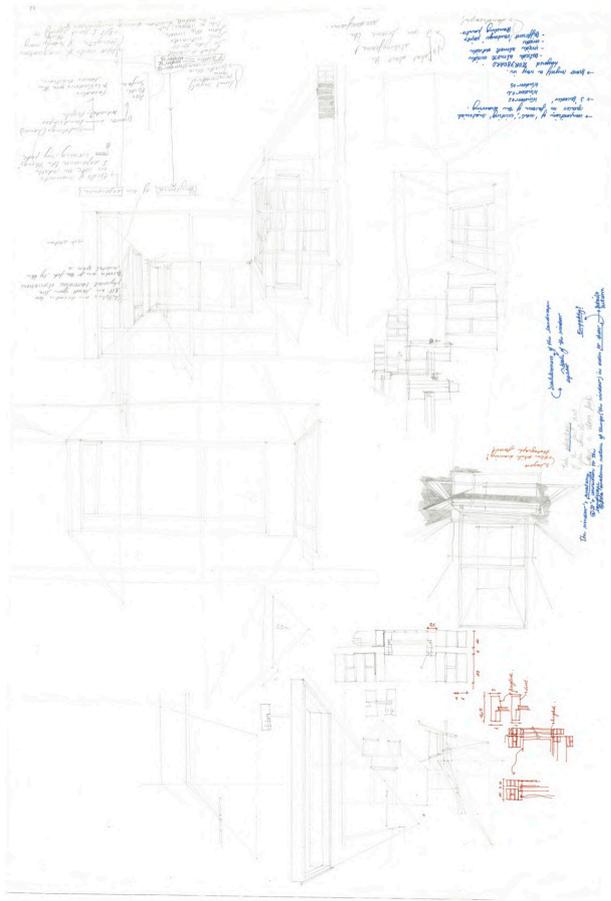


Stills of a short film of on-site sketches.

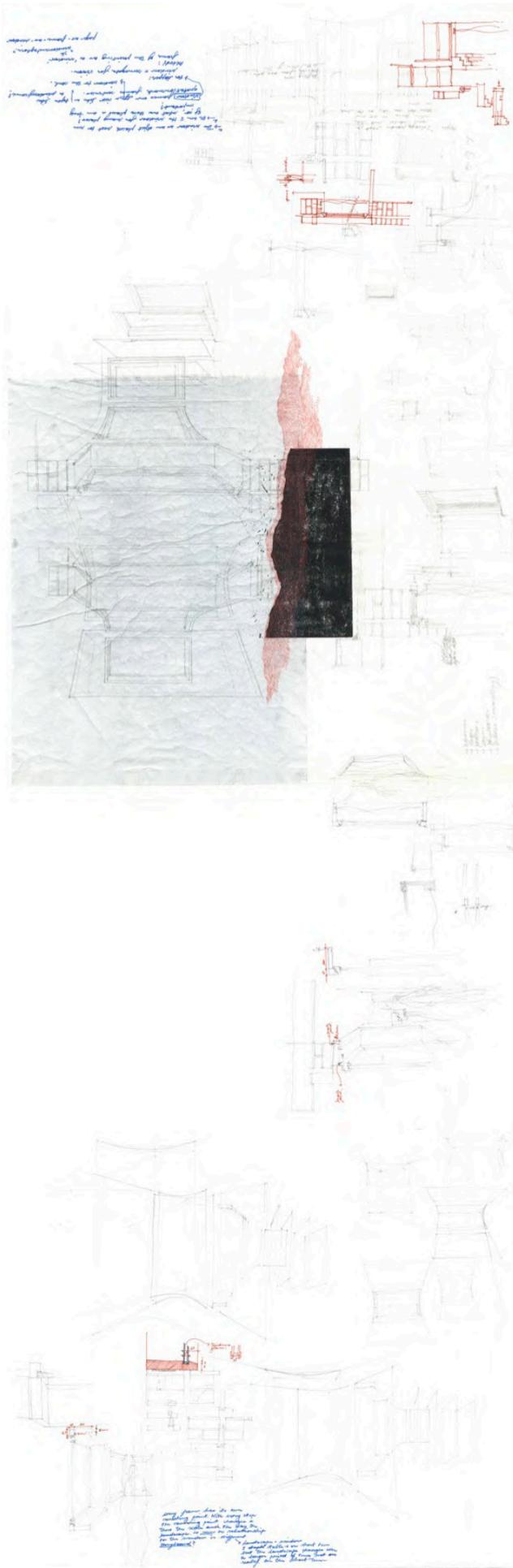
Link: <https://vimeo.com/354736752?activityReferer=1>



Decoded drawings, 50x75cm, 50x75cm, 72,5x87,5cm



Decoded drawings, 50x75cm, 50x75cm, 49,5x68cm



Decoded drawing, 50x150cm