

There has been a wealth of very imaginative and sometimes provocative takes on the drawing of the plan and beyond. So thank you all for an absolutely inspiring couple of days.

So today I will talk about my response to what I see as the veiled matrix of architectural representation.

Even in its recent digital phase, architectural drawing is still under the hegemony of orthographic projection, the matrimony between the drawing of the plan and the section, instituted during the Renaissance.

Through the invention of monocular perspective, projection and the introduction of the flat picture plane, ichnographia and orthographia came together to give birth to scenographia, which also led to our conception of space as homogenous, or Cartesian, and split space from the dimension of time.

Orthographic projection is a potent and often unquestioned, underlying syntax of visual thought, an efficient, but also unavoidably limiting instrument for organizing space: it constitutes an invisible 'matrix' dominating spatial thinking throughout the Modern period and up to today, not only in architecture, but also fine art and cinema. As it is intertwined with all modes of representation in the form of the page, the drawing surface, the computer and the cinema screen, it is very difficult to break through and see beyond it. So how can this veiled matrix be exposed and questioned?

In my work, I have tried to define the limitations of the matrix of architectural representation by using the drawing itself as a method. In this talk, I will present three drawings that deal with forgotten, implicit, or taken for granted aspects of orthographic projection: the other eye, the lost surface and time. To break through the assumptions of architectural representation, I look at disciplines and methods beyond current architectural practice: in fine art, filmmaking and the drawing techniques of the past.

The first drawing *The Act of Looking*, 2007, is an architectural analysis of *Given: The Waterfall*, 2. *The Illuminating Gas...*, 1946–66, a built diorama by French artist Marcel Duchamp.

*With-drawing Room on Vellum*, 2016, is a two-fold drawing that reflects on the recent vanishing of the architectural drawing surface, physically and notionally.

Finally, *Déjà vu: Restaging Resnais's Last Year at Marienbad*, 2009, is drawing/model/film that performs an analysis of the film *Last Year at Marienbad*, 1961.

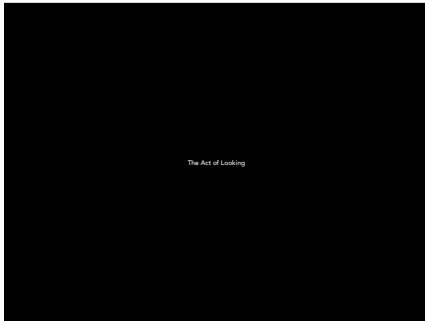
To put out there some disclaimers

First of all this talk is only implicitly about the plan and perhaps attempts to show some paths of thinking about spatial representation without it.

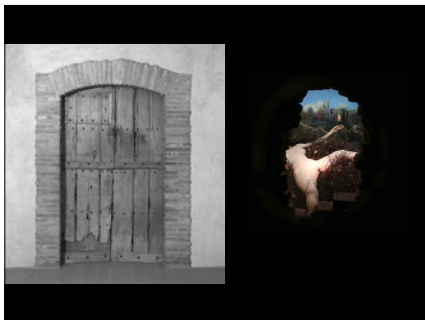
Second the work presented here is of a very particular register. Although I am a trained architect and use what I think of as architectural drawing, my practice is removed from the construction of buildings. Instead I am interested in how architectural drawing can be applied as a method, or an epistemology, to think through ideas in other disciplines.

Perhaps using drawing as a form of theory.

Thirdly I must confess that like many architects, perhaps unavoidably, I am attracted to rules, geometry and order. However, this, as we discussed in previous sessions, coincides with a simultaneous compulsive desire to break these rules, go against them, or expand them. This creates a paradox, which reminded me of a term that Duchamp used to describe himself in an interview: he used the term Cartesian defroque, or defrocked Cartesian. So my third disclaimer is that I am also perhaps very much a defrocked Cartesian.



The first drawing entitled Act of Looking is connected with Marcel Duchamp's final enigmatic assemblage



Given the waterfall and the illuminating gas from 1946-1966.

In my research on Duchamp and architecture, I have seen Given as a fleshing out of the desirous gaze in the form of a complex allegorical architecture.



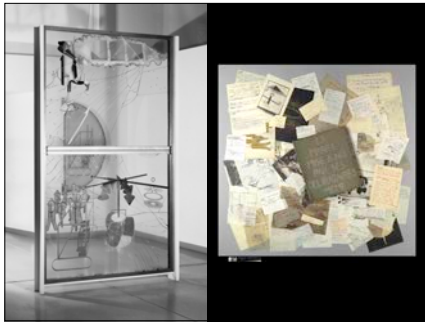
Most of my research is contained in my book Marcel Duchamp and the Architecture of Desire, where I employ design, drawing and making – the tools of the architect to perform an architectural analysis of Duchamp’s Given. My practice-led investigation serves as research methodology able to grasp meaning beyond just textual analysis.

This novel reading of his ideas and methods adds to, but also challenges, other art-historical interpretations.



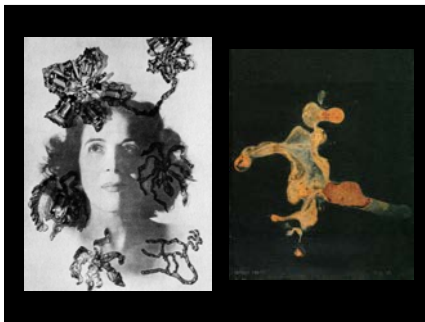
Through three main themes – desire, but also allegory and visibility – I perform, define and theorise an alternative drawing practice positioned between art and architecture.

Additionally, I propose this exists throughout the history of architectural drawing, which predates, includes and succeeds Duchamp.



The link between the Large Glass, Duchamp’s other major piece, and architectural drawing, although allegorically coded in his notes is perhaps evident, may I say transparent.

Given could not be more different in form, it is veiled and opaque, but it shares the same themes.



It has a very real Bride at the centre of its conception, Duchamp’s lover Maria Martins, here on the left. On the right is a work dedicated to her, entitled Paysage Fautif, Faulty landscape, whose medium chemical analysis disclosed as seminal fluid.

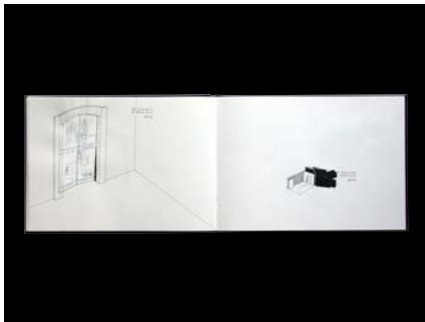
So Given is definitely the construction of a daydream,



an architecture that Duchamp built to house his desire.

However, as I argue in my book, like the Large Glass, it is also a meticulous drawing, which is perhaps even more compellingly 'architectural'.

Given is permanently installed at the Philadelphia Museum of Art. Although most might have seen the images related to it – the door and the pornographic view beyond – it is often useful to explain the strange topological arrangement of the piece, for someone that has never visited the piece in the museum.

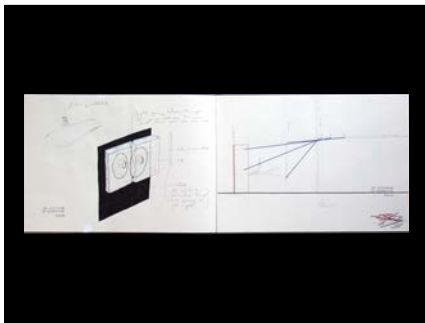


This is a spread from my Philadelphia sketchbook when I first visited Given.

On the right we have the vestibule

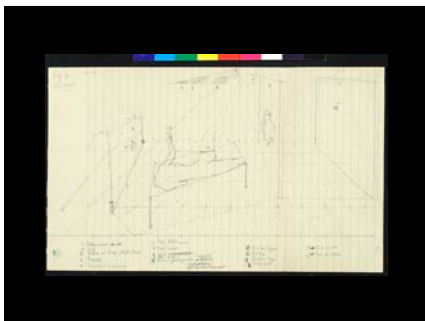
On the left we have the first interface, the door

Alcove for the feet that welcomes the body of the voyeur



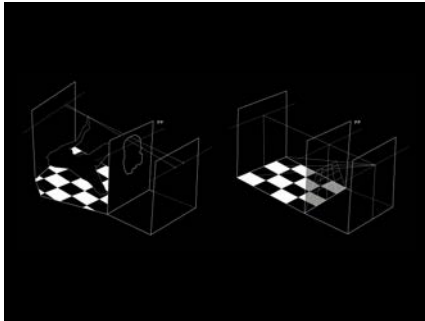
On the left peepholes and a gap in the middle that allows the nose in so that the door fits like a mask.

On the right is a simple section



My reading of Given as a drawing of the space of desire stems from French philosopher Jean Francois Lyotard's observation that the mise en scene of Given is a physical expansion of the abstract diagram of perspective construction by Alberti.

Here is Lyotard's sketch of the arrangement of the interior



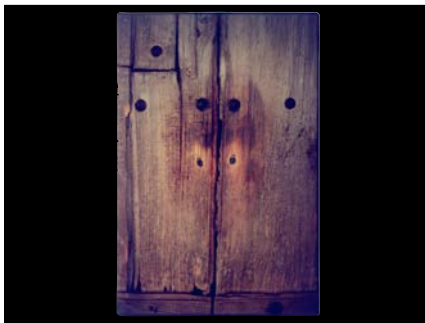
Here is a comparison between Alberti's diagram on the right and Duchamp's Given on the left.



So I hope that it is obvious now that Given is a deep space constructed by these different elements, that may have a link with perspective.

But how exactly does Given expand the rules of perspective and the Cartesian understanding of vision?

This is the main research question that I tried to answer in my practice-led research and I will present a very short summary of my process.



The start of my investigation is placed on the fact that we have not one but two peep-holes



Stereoscope, a 19th century device that foregrounds normal binocular vision.



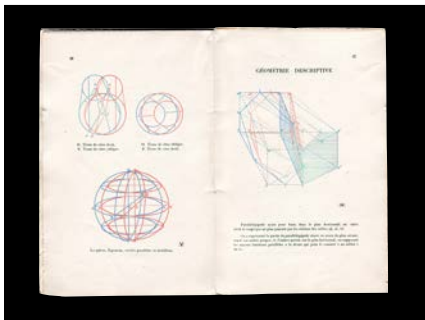
By merging the two images the stereoscope offers a sensation of depth beyond perspective as if the flat image blossoms in our mind.



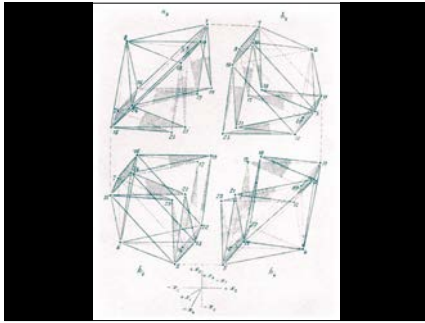
Stereoscopy was linked to pornography, but was also a technique that Duchamp was very fond of.



Handmade Stereoscopic slide, 1918-19



Owner of a book of anaglyphs by H. Vuibert



I believe that stereoscopy and eroticism were linked to Duchamp's interest in four-dimensional and non-Euclidean geometry, here a diagram by French mathematician Esprit Jouffret.



I took two images from the peepholes and created a stereoscopic pair

left image does not show the hair

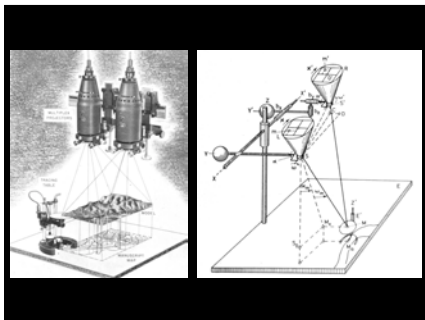


I then constructed my own wall-mounted stereoscope

When viewed in the stereoscope the pair of images renders depth and allows the nude to blossom in three dimensions.

The study of stereoscopy made me wonder:

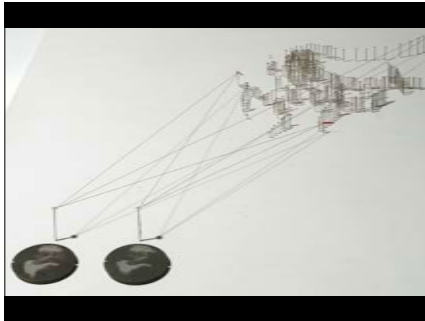
Can this illusory depth be measured and fleshed out in matter?



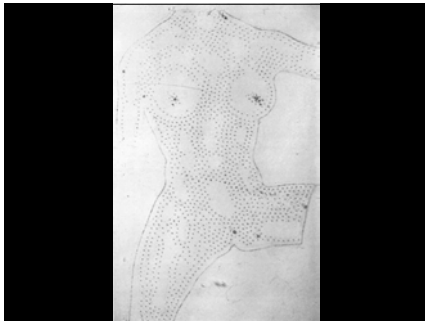
Indeed stereo-photogrammetry a 20th century technique based on stereoscopy uses two images to record depth with accuracy.







And built a drawing, entitled landscape, where the elevation of each of the touched points of the skin forms a terrain.



So I have speculated that Duchamp may have used this most peculiar study  
Which is brilliantly displayed in front of a black background in the gallery



to print the volume of the recorded stereoscopic image of his lover in vellum.

These are two pieces of earlier failed attempts to form the skin that are kept in the Philadelphia Museum of art.

I suggest therefore that the construction of the nude might be one of the earliest examples of 3D printing from an entirely visual source.

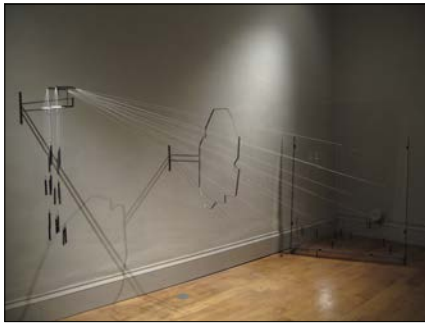


The Act of Looking is the culmination of this research and is informed by my study of stereoscopy and stereo-photogrammetry.

A full-scale representation of Given in steel and waxed thread, my drawing/installation, gives material substance to the act of looking through Given's two peepholes.

It was the central piece, I designed specifically for my solo show 'The Blossoming of Perspective' at the DomoBaal Gallery in 2007, and was shown again in 'Speculative Models', a two-person show at London Gallery West in 2009. For the construction of the piece I collaborated with Belgian architectural designer and researcher

Emmanuel Vercruysse.

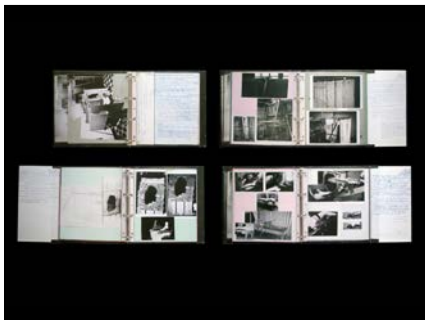


The Act of Looking is a ghost image of Duchamp's assemblage, where all the main constituent elements – door, wall, nude body and illusionistic landscape – lose their materiality, while the hidden architecture of the gaze acquires substance in the form of intersecting weighted strings.

Restaging the pattern of the visual rays that start on the two peepholes on the door and cross to optically touch the elements composing the interior view, The Act of Looking weaves a diagram of the binocular visual field.

Additionally, it is a three-dimensional drawing, meticulously plotting points describing the volume of the pornographic scene by hand.

Although modelled on Duchamp's assemblage, The Act of Looking could be seen as a physical diagram of any binocular gaze from a static position, and a drawing in matter of the architecture of binocular visual space.



Apart from direct analysis of Given, through photography and drawing in situ at the Philadelphia Museum of Art, significant in the design and manufacture of my work was the study of Duchamp's Manual of Instructions, the ringbound folder providing numbered 'operations' for assembling Given.

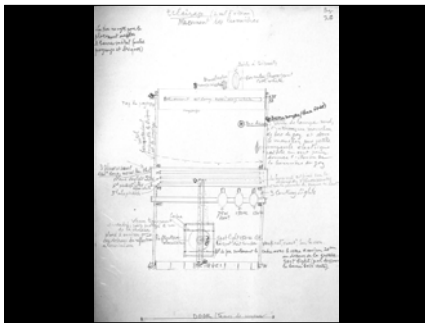
Duchamp took the opportunity to compose the manual when he transferred the assemblage to a new studio in 1965. He records every detail thoroughly: the folder contains:



hand-written descriptions in French, accompanied by black and white photographs



covered with explanatory inscriptions, marks and numbers,



supplemented by diagrams, plans, elevations, sketches



and a scaled, folded cardboard model.



By offering important information about the materials and construction details of Given, the Manual resembles an 'architectural construction specification', a document used in architectural practice offering detailed written descriptions of building components alongside drawings and diagrams.

As such, it was instrumental during the final installation of Given at the Philadelphia Museum of Art.

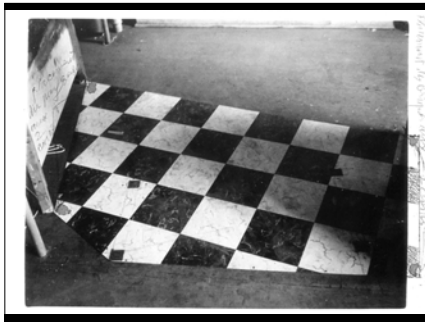
But it also played an important role in the inception and composition of The Act of Looking, offering information about important construction details, materials and dimensions.



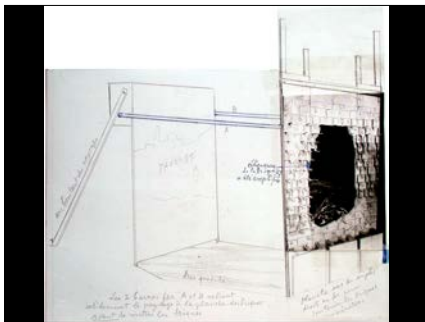
The visceral impact of its subject matter – the blatant presentation and dazzling light effects – masks Given's underlying architecture.

However, a study of Duchamp's Manual of Instructions reveals that although handmade and in a seemingly disorderly manner, Given is a precise structure.

The scene has been carefully arranged according to covert measuring and organizing grids:



hidden from view, a black and white squared lino on the floor provides markings for the positioning of different elements, similarly to an underlying drawing of a grid organizing a perspective view,



and the numbered bricks on the broken wall act like notional threads on a gridded picture plane or **Alberti's veil**.

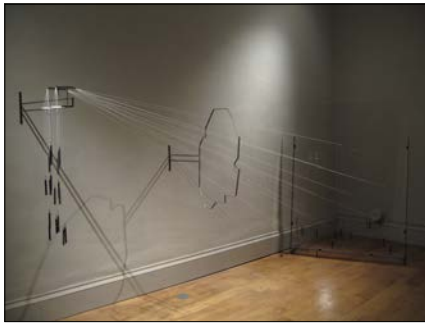


The Act of Looking, here in an early model of the piece, attempts to foreground Given as a meticulous drawing.

It negates its visceral materiality and figurative render, and attempts to isolate and expose the voyeuristic gaze that it generates.

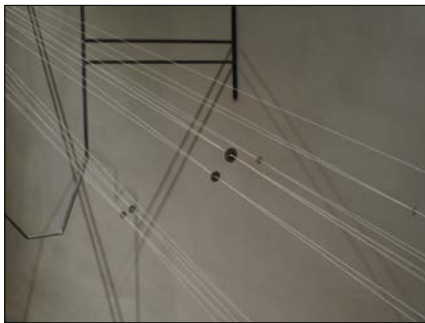
In comparison to the physicality of Given, which is often described as vulgar, The Act of Looking is perhaps delicate and ethereal.

But is also a drawing that treads the world of things: drawn not on paper but in space, in steel, Perspex and waxed thread, it is a full-scale diagram rendered in matter.

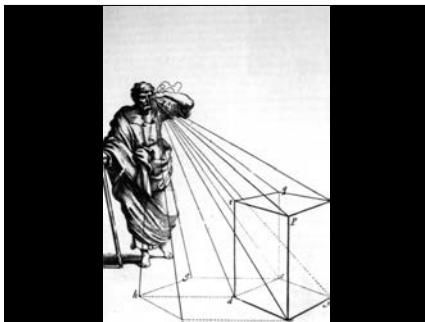


The Act of Looking is constructed from a series of components, which directly reference the constituent elements of Given.

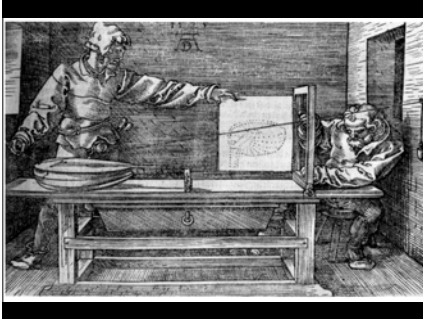
The door and its peepholes becomes a steel structure carrying 'binoculars and spectacles'; the visual rays emanating from the eyes of the viewer are 'weighted strings'; the breach on the wall is an irregular 'steel frame'; selected points in the scene are marked by 'nickel silver discs', and the illusory landscape at the back becomes a 'perforated Perspex sheet'.



I used whipping twine, a material for securing the loose ends of ropes in sailing, in white – in subtle contrast to the grey colour of the walls at the DomoBaal gallery, where the piece was first installed. The white colour makes the strings glow when lit and differentiates them from their shadows on the wall.



My use of waxed twine to represent notional visual rays in The Act of Looking is inspired by the portrayal of visual rays as strings or threads in Renaissance perspectivists' treatises.

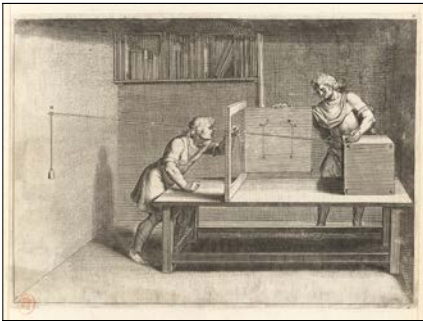


The process of 'drawing' the strings in *The Act of Looking* relates to *Man Drawing a Lute*, Albrecht Dürer's woodcut.

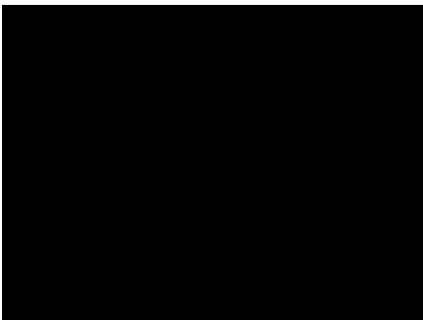
Dürer portrays a drawing exercise taking place in a small room dominated by a heavy wooden table, with two men performing the drawing. Placed on one side of the table is an empty vertical frame, the picture plane resembling a window. A panel hinges out from the frame to reveal the drawing as it is being plotted. As the title attests, the drawing is of a lute, positioned on the other side of the table.

In Dürer's woodcut, the first man, the instructor, touches the lute with a pointer attached at one end of a string; the other end is counterweighted and threaded through a hook on the wall. The taut line of the string passes through the empty frame of the picture plane on the table. The second man marks the intersection of this line with the picture plane by using a repositionable crosshair, or a string with a bead. By closing the hinged panel back to the frame, the intersection will be marked with a point on the surface of the drawing that it holds.

The mechanical, physical and embodied nature of this process has led American architect and architectural theorist Stan Allen to suggest that 'every operation in the diagram could be carried out by a blind man'. Although the instructor needs to be sighted, the man performing the repositioning of the bead on the frame could indeed be blind, as this drawing technique is primarily tactile.



In another drawing showing the same technique by Salomon de Caus, a simpler geometric object – a cube – is being drawn. The gradual, slow collection of points on the picture plane constitutes the correct perspective rendering of the cube from a specific point of view. This point of view is clearly not the one held by the instructor, and obviously not the one by the helper or the 'blind' man. The single 'eye' constructing the drawing on the picture plane is the hook, the eyelet on the wall, marked with the letter H, and the taut string represents the visual ray tracing the object it is looking at. The woodcuts portray not only a drawing technique but an 'act of looking' embodied in an inanimate object.



This technique foregrounds the perspectival or Cartesian understanding of visual space which since the Renaissance dominates most representation apparatuses.

But what about the other eye?



As we have seen the door in Given has two peepholes, so my redrawing of the act of looking attempts to understand how a simplistic monocular understanding of vision is complicated by taking into consideration the forgotten other eye.



My aim was to portray, in an inanimate object, the act of looking through Given's peepholes.

The addition of the other eye makes this act of looking binocular, and the picture-making spatial.



So instead of a single string hanging from an eyelet on the wall, we have two tubes, which I call binoculars, that hold a complex web of strings.

Each tube of the binoculars collects nine strings, which are kept taut by weights on both ends. The strings represent visual or light rays, but are also equivalent to the process of 'drawing' a line between two points.

The weights keeping the strings taut were constructed from tubular steel sections: white for the right eye and black for the left.

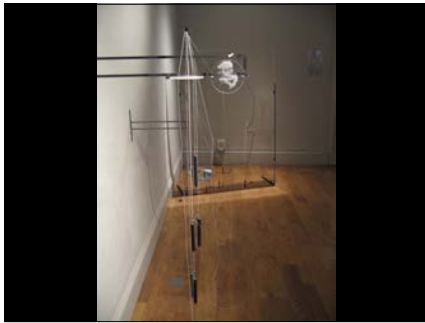


A matrix of carefully drilled pairs of holes on the perspex sheet at the back defines the position of each of the intersections in space.



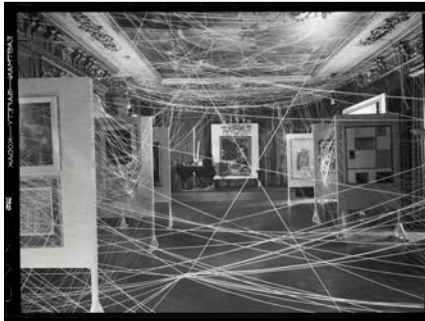


And here are the weights and their reflections on the perspex from the back.



Installing the piece involves drawing the lines of the visual rays in space, a meticulous process that links all the elements of my assemblage.

Although demonstrating vision, the construction of The Act of Looking derives from a primarily tactile process of weaving the strings.



In this respect, The Act of Looking resembles another work by Duchamp, his design for the 'First Papers of Surrealism' exhibition, New York, 1942 (or as John Vick calls it His Twine, in accordance with the original title given in the exhibition catalogue). For this exhibition Duchamp wove a three-dimensional web of twine throughout the space of the gallery. I argue that Duchamp's design also references the perspectivists' portrayal of the visual ray as a string, 'drawing' a line between the viewer and the observed object. Similarly to my Act of Looking, Duchamp was seeking to portray the visitors' attentive gaze. 'Drawn' in space, His Twine solidified and exposed the additive, collective act of looking at fine art by the visitors, in the form of a complex web of strings.

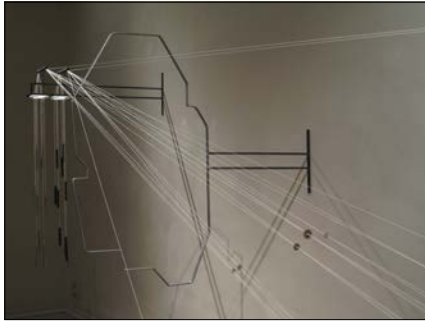


The difference is that in the act of looking I was seeking the precision of the attentive look that delineates an outline that we find in Durer.

Here the drawing is however deep as the look goes all the way and touches the object. The triangulation between the two eyes and the point registers an intersection.

The process of defining the intersections was similar to the drawing technique in Dürer's woodcut; it also involved two operators: Vercruyse and me.





It is a slow spatial weaving, a three-dimensional spider's web aimed at catching a volumetric trace of the desirous gaze.

Dürer's single string, representing one visual ray weighted at the eyelet on the wall, intersects with the picture plane.

In The Act of Looking the register on the picture plane is absent and like in stereoscopy the points forming the image blossom in space.

Pairs of strings 'emanating' from the binoculars, intersect and their intersection defines a point, a binocular glimpse of the view beyond the breached wall in Given.



I selected ten points to be 'seen'— however, each tube collects nine strings. This is because two of the selected points are seen by one eye only.



Here is a map of the 10 selected points. In green the left leg is seen by the left eye only and in red the lock of blonde hair is seen by the right eye only.



of course these points are



Specially designed, etched nickel silver discs slot into the intersections to act as markers.



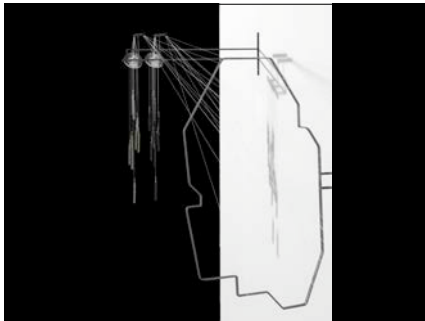
Here is one in detail.



Devoid of any pictorial information, this collection of points floats in space designating a constellation. As with an asterism, where figures of deities are projected on the formations of the stars in astronomy and astrology, the nickel silver discs, like stars, tether the imaginary view of Given's interior, and the absent nude, in suspension.

I saw the Act of Looking is a bridge between Duchamp's two major works, Given and the Large Glass and some of the design decisions derived from this.

A translation of Given in the language of the Large Glass which also explains the Large Glass's subject matter.



Duchamp's Bride is rendered in two dimensions in the Large Glass, and cast in three dimensions in Given. But where is the Bride in The Act of Looking?

Although coded as a constellation of points in space, the central allegorical motif in both Given and the Large Glass, the Bride, is seemingly absent.

Her absence, the missing Bride in The Act of Looking, laments what I see as a lost, or perhaps repressed, dimension in the visual: the lost 'other' eye.

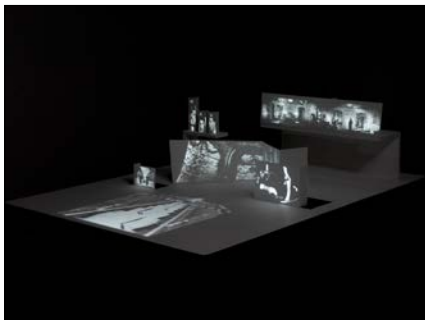
which could also be the locus of an either forgotten, or not yet discovered fourth dimension.



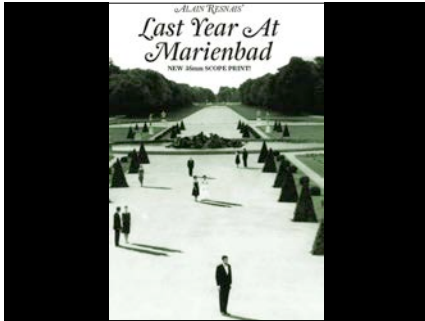
The second drawing that I want to discuss relates to research into the notion of time in architectural representation.

It was developed for 'Speculative Models', a two-person show at London Gallery West in 2009, where it was shown next to the Act of Looking.

This was my first dive into the world of film, using the moving image as a drawing technique, but also questioning the architecture of the cinema and the large screen.



Déjà vu: Restaging Resnais's Last Year at Marienbad (2009) is drawing/model/film that performs an analysis of Alain Resnais's enigmatic film



Last Year at Marienbad (1961). The original film was based on French novelist Alain Robbe-Grillet's screenplay and takes place in a labyrinthine Baroque hotel,



where X, the male protagonist, meets A, the female protagonist, and confronts her with descriptions of their romantic involvement a year ago, of which she has no recollection. The unfolding love affair happens under the gaze of another mysterious protagonist M.

A riddle of seduction, the narrative of the film flips between present and past, memory and imagination, and has been described as a love story, abstract thriller or philosophical puzzle.



Although it received mixed reviews, the film was winner of the Golden Lion award at the 1961 Venice Film Festival.

But why did I choose this specific film?

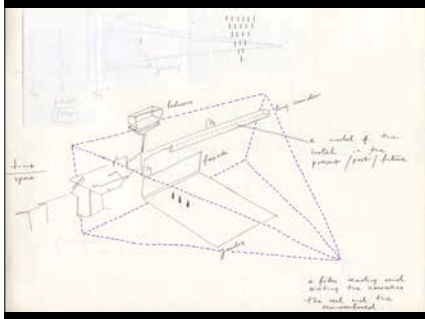


I was **seduced** by its story of seduction

and its portrayal of remembrance and oblivion in architecture, and interested in how a building can become the locus of a repressed memory or the cradle of a false recollection.

Furthermore, I was drawn by the manner in which Resnais films architecture, how his camera's desirous gaze caresses its ornate surfaces and treats it like another protagonist, whose intentions are ambivalent.

Furthermore, Resnais's film is notoriously enigmatic, addressing the audience as a riddle.



Captivated by the unresolved puzzle of the film's mise en scène, I decided to re-stage it with the aim to portray and unravel its temporal and spatial organisation of clues.



So, Déjà vu consists of an abstract paper model of the fictional Baroque hotel, and a digital reworking of selected scenes specifically designed to be projected on the model.

In an attempt to break the flatness of the single screen and the linear delivery of the plot, Déjà vu 'redraws' the film in light, time but also space.



The three-dimensional arrangement of the screens relates to selected scenes of different durations that I digitally isolated.

the garden,  
the theatre, mise en abyme  
the game of Nim ,  
the endless corridors,  
the enigma of the bedroom  
as well as close up scenes for each protagonist. (M)

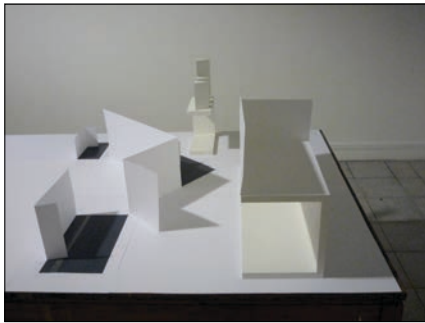
The looped scenes become metaphorical hotel 'rooms' that play themselves, appearing and disappearing in sequence.



The base of the model is an old Bartlett Library table.  
To make the model I laid the table with sheets of paper and with careful incisions I

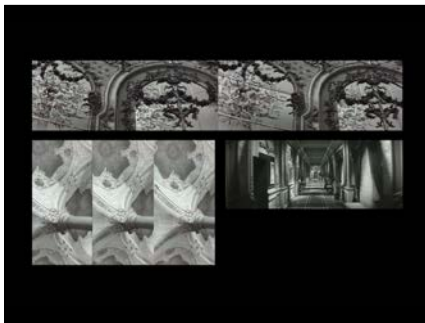


cut rectangular shapes and folded them out to form, structurally robust, but delicate paper screens that flicker with slight air movements. A series of simple geometric shape wooden blocks painted white helped to raise the paper screens on a second level, while others acted as vertical elements, as pawns on this cinematic game board.



The paper substrate explores the hinge between the plan and the section, how through incision and rotation the planar mark making creates a vertical surface for projection.

It's crisp simplicity – folded paper and white painted blocks of wood – reflects the contrast between the austere Modernism in the elliptical storyline of Alain Robbe-Grillet's screenplay,



and the camera's love affair with the Baroque embellishments of the fictional hotel's skin

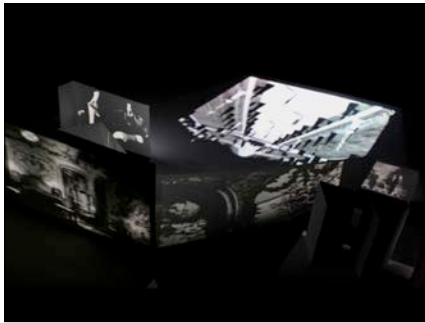


here the Amalienberg where some of the scenes were shot.



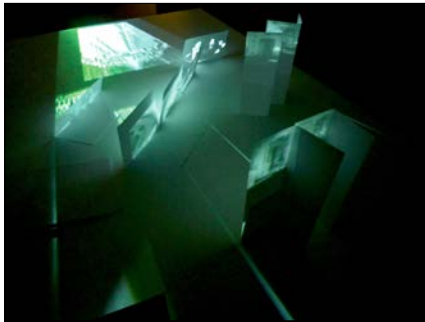
A cinema screen is always perceived as a large window, a vertical picture plane capturing fictions of other worlds but pinning the viewer in a single viewing position.

Placed on a table in the middle of a gallery, the model, dressed with the luminous imagery of the film, allows the viewer to circulate around and behind it and occupy this expansion of the picture plane at an intimate level.

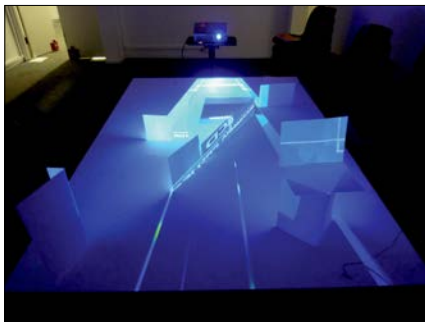


The film is not only fragmented but can also be seen from the back (I specifically chose the paper for its back projection quality).

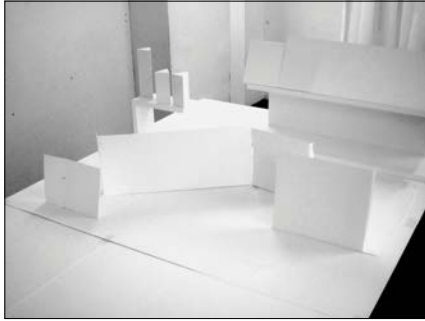
The table creates a sense of familiarity. By encountering the fragmented action on its surface, the viewer merges the visual appreciation of the moving image with her tactile memory of handling things on tables: on library tables, on drawing tables, on dinner tables, or on tables where board games are played.



I was very interested in the hand made element in the process of developing the piece.



Although using digital projection, the composition was developed through trial and error,



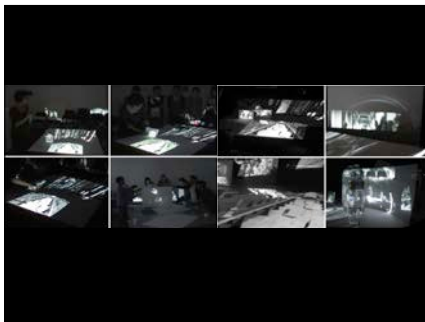
cutting, folding and moving pieces of paper while adjusting the projection digitally but in real time.



I was also invested in the idea of entering the space created by the projection as a body



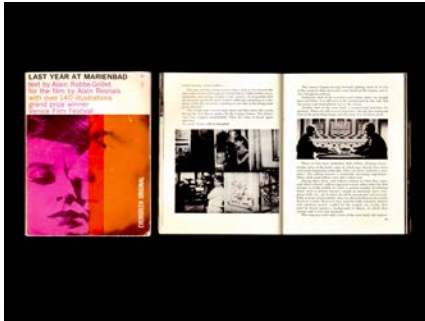
and sculpting within this a drawing of light.



This idea of occupying the pyramid of the projection and the 'tableness' of the model I also explored later in drawing workshops, where I offered the setting of the piece for intuitive re-drawing to others.

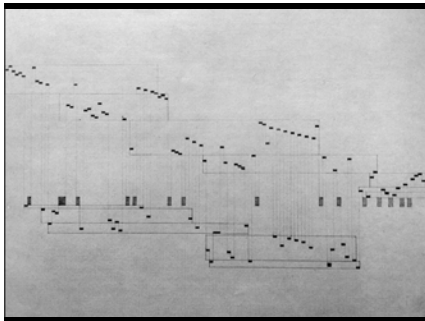
refracting bottles  
spilling out





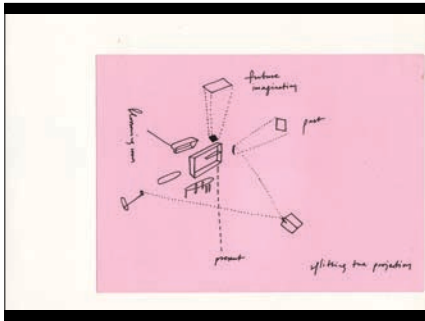
Resnais's film is a faithful adaptation of Robbe-Grillet's exceptionally precise screenplay. As one of the main advocates of the nouveau roman, Robbe-Grillet's writing style is methodical and geometric, focusing on often compulsive and repetitive descriptions of objects and spaces.

Repetitions combined with the fractured timeline and the enigmatic plot in the film produce an effect equivalent to a collage or a cubist painting. The screenplay's lack of chronological indications led the script supervisor Sylvette Baudrot to draw an elaborate graph



that organises the film sequences on an X and Y axis in relation to change of set but also time.

At the bottom the described the present, at the top the past (last year), and in between an intermediary area the long blocks which represent shots that had 'no precise date or were timeless'.

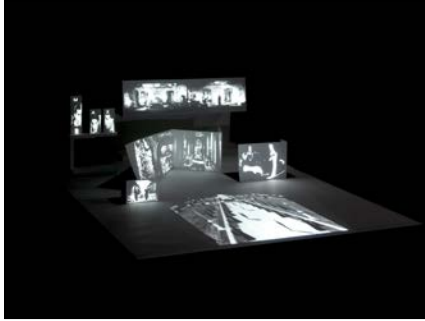


I tried to replicate this diagrammatic delineation of time in the arrangement of the folded paper screens, here in relation to focal range.

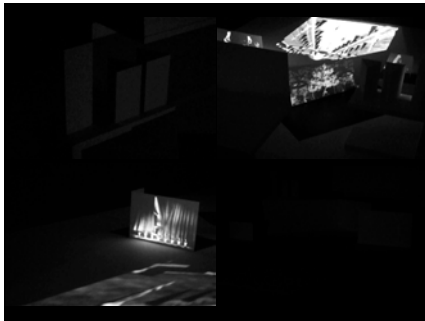


In cinema, the surface of the large projection screen obviously coincides with the sharpest focus. In *Deja vu* the projector is positioned at an angle and the projection is designed to span the whole arrangement on the table obliquely.

Coming from one projector all the rooms were designed anamorphically on a single plane.



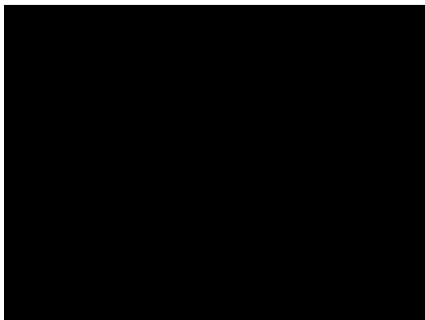
Placed in different locations within the focal range, the paper screens interrupt the projection pyramid in and out of focus. The selected scenes of 'the present' are in the middle of the table where the projection is in sharp focus (the embellished ceilings and views of lavish corridors). The past, 'last year' (the mysterious bedroom scene and 'timeless', the garden scene) appear out of focus at the back and front of the table respectively. Belonging to memory or imagination, these scenes are blurred compared to the sharpness of the present.

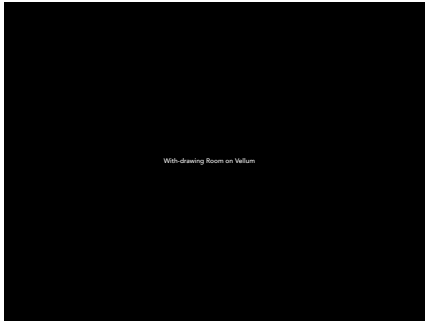


For instance, the décor of the bedroom, where key scenes of the film take place, starts as a stark interior bathed in a blinding white light, but gradually 'blossoms' into a suffocating, complex, flowery pattern. This blossoming represents erotic desire, but also the opening up and unfolding of either a repressed memory, or a newly constructed event in the imagination. By digitally reworking the image of the bedroom and creating a short animation, I was able to accentuate this blossoming of the architecture, which I see as a representation of desire in film.

Déjà vu combines model making with projection mapping as drawing tools to perform and display an analysis of Resnais's *Last Year at Marienbad*. Therefore, I use design and drawing as an analytical language. The work harnesses the communicative possibilities of architectural representation and uses it to suggest a new form of film theory. This restaging of the film uncovers the architectural significance of the themes in Resnais's film: how the plot links architecture to memory, imagination and desire; the significance of the juxtaposition of the lavish location to the minimalist narrative; and the portrayal of the labyrinthine hotel as one of the protagonists.

Finally, *Déjà vu* is a re-drawing of a film in the form of an allegorical Baroque hotel, using light on paper, where the play of black and white seeps through and temporarily stains the paper screens like ephemeral ink. By casting on its surface recorded time the drawing becomes alive, flickering in the light of a doomed love story for a short while, fading out and disappearing before being born again in a cycle.

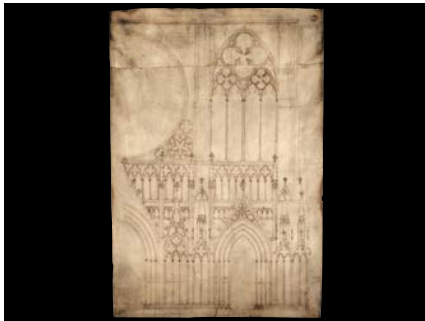




This final part is a reworking of a talk presented at Drawing Futures a conference at the Bartlett School of Architecture, UCL in November 2016.

It is based on research conducted through the making of a drawing entitled With-drawing Room on Vellum. The drawing is the start of a larger project that aims to provoke a reflection on the fast changing nature of the architectural drawing surface, physically and notionally.

I will present first the research and then talk about my drawing.

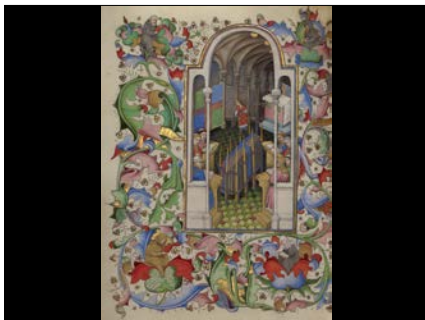


One of the earliest surviving examples of architectural working drawings, dating from 1260, depicts an elegant rendering of the façade of Strasbourg Cathedral and is drawn in fine lines on parchment.

In fact, the drawing's durability is due to this remarkably resilient surface that predates paper. But what is parchment?



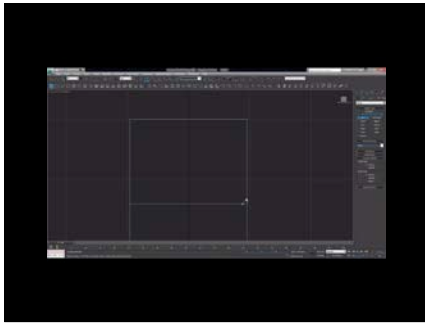
Parchment is a thin membrane made of animal hide, prepared for use as a surface for drawing and writing. Vellum is a finer quality parchment made specifically from calf, off-white, soft and semi-translucent: a painting and drawing surface that has been revered by architects and artists throughout history.



Another rich source of information about architectural practice in the middle ages is preserved in the form of 'illumination' on vellum pages bound in manuscripts.

Here, elegant architectural forms and details frame the narrative of the depicted religious scenes. Drawn laboriously by hand on animal skin in gold gilding and lapis lazuli, the past of architectural drawing could not be more visceral.

Drawings on vellum remain tethered for more than 750 years to not only inert but also organic animal matter.



In sharp contrast, lightning fast advancements in digital technology have led contemporary architectural drawing to withdraw from the skin of the world. Today the architect navigates the intricacies of design through clicks of a mouse on a luminous screen, defining with mathematical precision points and lines that she can never touch. But, where is the drawing surface and what is its matter?



Drawing on vellum might appear antiquated, but in the Middle Ages architectural designs on a membrane were a technological innovation. Its use is a paradox: it constitutes the first materialization of architectural representation as we know it today, as well as a significant step away from matter.



Before the Renaissance, architectural drawings, as they are known today, were rare, if not non-existent. Architectural knowledge was embedded in the traditions of making and building. It was a collaborative process transmitted orally and the control of the form of a building did not belong to a single individual but was spread up the hierarchical ladder of the guild.



Medieval drafting was often executed in situ by the master builder on a layer of plaster of Paris on the floor of the lodge's 'tracing house'. Drawing was thus a physical act where the draughtsman performs the design with his whole body, full-scale.

So before vellum the equivalent of the drawing surface was a tracing floor; a spatial feature incorporated inside the building that was being built.



The use of a standalone flat membrane turned the drawing surface into an abstract projection plane able to hold a measured image of the building in scale.



Its high cost meant that architects used it only for presentations and they scraped drawings to create clean surfaces for new designs, so vellum was used as a palimpsest.

On the other hand vellum fulfilled a need for 'transmission'. Drawings incised on floors and models lack portability but drawings on parchment, rolled or assembled in folios could travel.



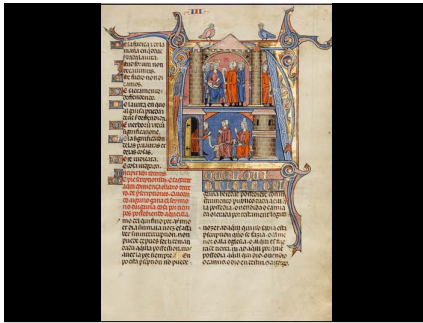
A significant example belongs to a travelling draughtsman: Villard de Honnecourt.

So vellum did only keep the drawing safe on its surface but became a repository of design 'information' in a way that is uncannily similar to digital practices in drawing today.



The emergence of masterly draftsmanship that started in the late thirteenth century 'allowed the architect to link the invisible geometric relationships of the building into a single image through pen on parchment. It coincided with the growing status of architects, who were now more in control of their designs distinguished from those who worked with hands and tools'.

Vellum therefore gave birth to not only architectural drawing, as we know it today, but also the contemporary architect.



Another medieval graphic representation of architecture on vellum can be found in illuminated manuscripts. The word illumination refers to a text that is illustrated



'lit' by the way light catches on the burnished gold and silver adorning the dazzling drawings and embellishments accompanying the text.

Illuminated manuscripts offer a unique insight into the significance of built form during the medieval era. Buildings symbolised grandeur, power, even heaven on earth.



Indeed, representations of castles





the countryside



cityscapes and interiors offer invaluable details about how architecture framed life in the Middle Ages.



Additionally, the illustrations often contain historically significant details of construction methods and drawing instruments.



But architecture played another, perhaps more unexpected role: Medieval illuminators saw knowledge as a mental edifice and used building elements as decorative motifs



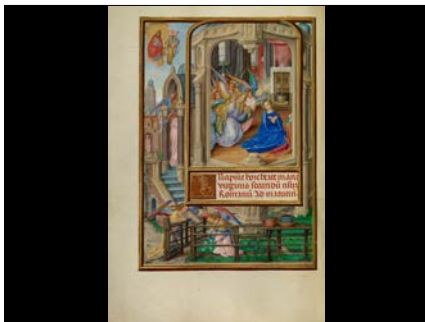
to frame and organise texts, images and charts. This architectural decorative vocabulary was so rich that turning the pages of the manuscript approximates an extraordinary architectural tour.



Pointedly, architecture was also important in organising the narrative structure in scriptures and books of hours. Open cut-outs of interior spaces allowed artists to depict different episodes in a story within a single building.

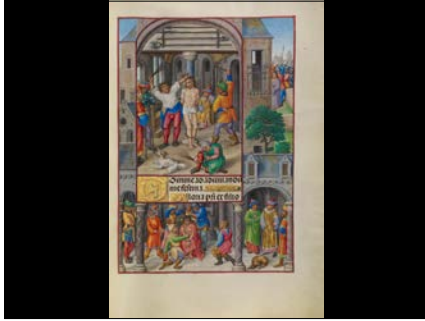


The breath-taking 'Technicolor' depiction of scenes in ground pigments on vellum sheets arranged in very expensive books



can be seen as an,

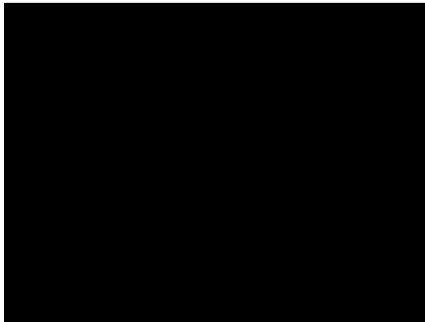




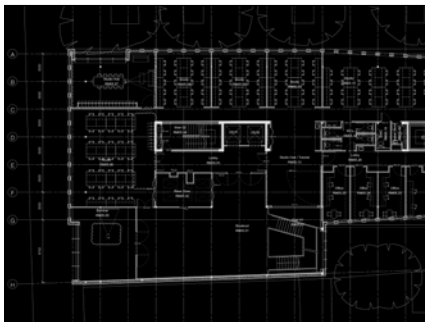
admittedly very slow,



antecedent of contemporary cinema.

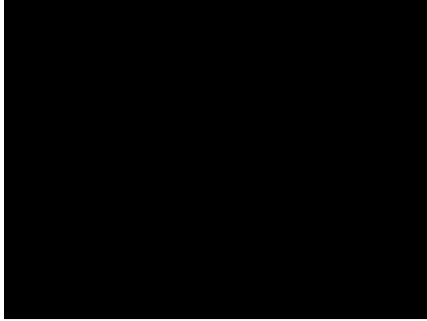


So what about architectural drawing today?



Although drawing on paper by hand is far from dead – one could say that it even enjoys a revival – it would be difficult to argue against the fact that architectural representation in practice, as well as academia, has irrevocably stepped into the digital.

\*Building Information Modelling BIM and digital drawing is becoming ubiquitous: it constitutes a new type of complex DNA defining not only new-built, but increasingly historical buildings as well.



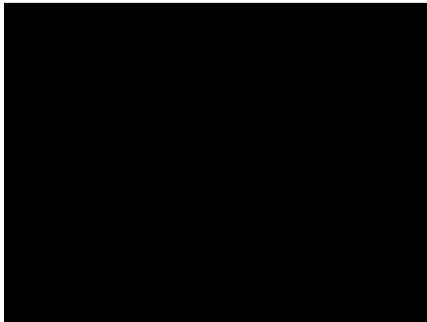
But where is the drawing surface? Caught in the whirlwind of new technological advancement has its extinction gone unnoticed?



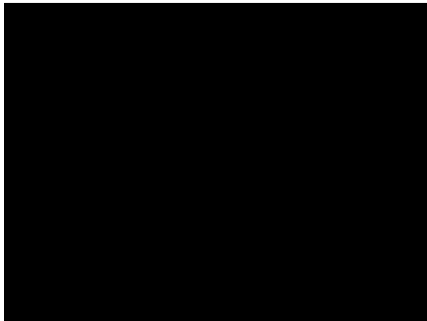
Behind the screen the tactility of the drawing surface and the infinitesimal materiality of the line and texture have all been lost.

What has been gained is a dynamic, three-dimensional digital simulacrum of a building, which, after loosing its ties to a physical membrane or sheet can come to life.

Beyond the many different types of digital drawing I am interested in the new time-based media and their promise for a new cinematic drawing.



So this research was guided by the making of a drawing, which was developed in parallel to the textual analysis.



Marrying two unlikely techniques, drafting on vellum and projection of digital cinematic drawing, which are separated by more than 750 years, my aim was to establish a fecund tension for questioning their hidden assumptions. The use of drawing as a research method opens up a series of questions that textual analysis alone cannot reach as the often-intuitive links that happen through drawing hold ideas that are yet unnameable.

Additionally, I see the act of drawing as a practice-led historical research method in itself. Emulation of medieval drawing practices in juxtaposition to digital drawing allows an embodied reflection on architectural representation. By assuming the additional identity of a draughtswoman during the Middle Ages, I question my current research in film and architecture through hybrid role-playing.

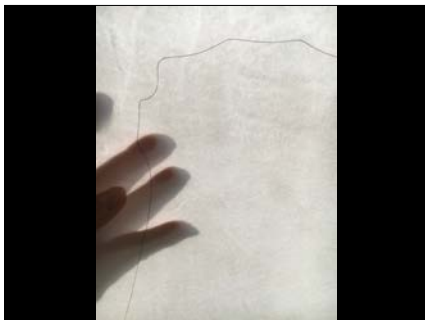


So to start the drawing

\*I ordered two pieces of vellum from the last remaining manufacturer of parchment in the UK, who uses the same traditional techniques since 1870. At first glance the pure whiteness of this membrane has very little to suggest its animal descent.



At first glance the pure whiteness of this membrane has very little to suggest its animal descent.



Held against the light however the anatomy of the animal in revealed:



spine, hip and shoulder pressure points become visible.



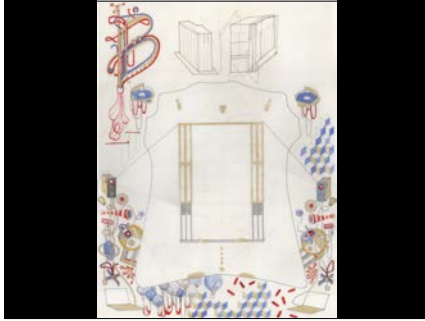
Closer inspection also reveals a network of veins.



The building that I chose to depict is the Bartlett School of Architecture at 22 Gordon Street, our home, where we returned in January 2017 after it has been refurbished. The drawing does not seek to accurately represent the physical form of the new/old building. Rather it attempts to portray the intangible identity of the institution that it houses.

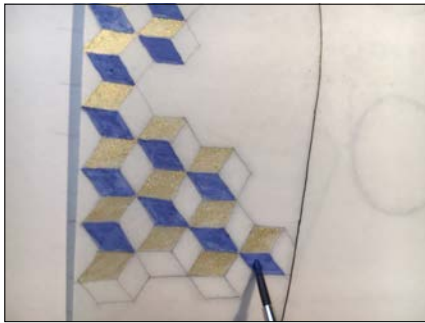


So inspired by both architectural working drawings and illuminated manuscripts on vellum



Withdrawing room on Vellum takes the form of an illuminated manuscript page, a preface, or a test, but also the design of a larger future drawing that I plan to draft on the larger, whole skin. This drawing within a drawing is a synecdoche: the part refers to the whole.

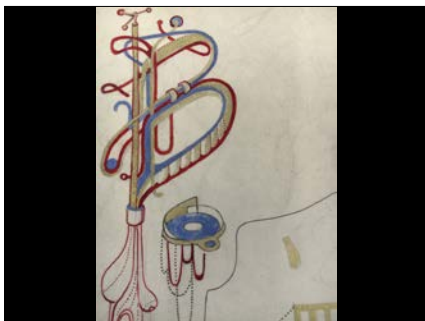
The symmetry of the body of the animal inspired a strong symmetry in the overall composition that also brings in the foreground my body.



\* To draw on the skin I used shell gold and lapis lazuli, the pigments often adorning illumination manuscripts, as well as other inks and watercolour.



\*Vellum is one of the most rewarding drawing surfaces I have used, affording a satisfying gliding of the metal nib or brush.



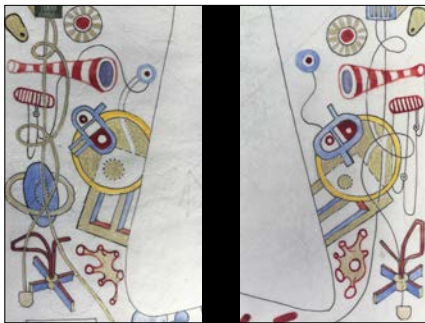
\*On the top left corner is an intricate rendition of the letter B. The general shape follows the Bartlett School of Architecture's logo,



inspired by medieval examples of decorated monograms.



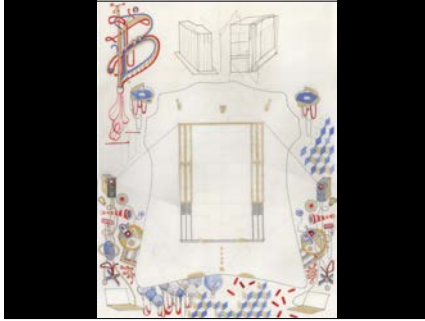
\*Flanking the skin in the centre, left and right, decipherable are two pico-projectors – throwing their projections on the front and on the back of the skin respectively. The projectors are connected with cables to two open laptops below.



\*Caught between the twisting cables peculiar geometric architectural ornaments blossom. This part of my drawing touches upon the proliferation of motifs that constitute 'a Bartlett drawing', a trademark visual language that fails to seduce very few. I see this potent drawing idiom as part of the identity of the Bartlett upon which both staff and students feed through osmosis.



\*The illusionistic cubic motif represents both a tile floor pattern often found in illumination and a reference to the world of the digital pixels and the illusion of space they offer.



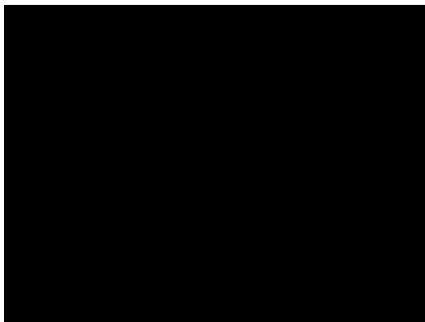
\*Finally, the central part of the composition

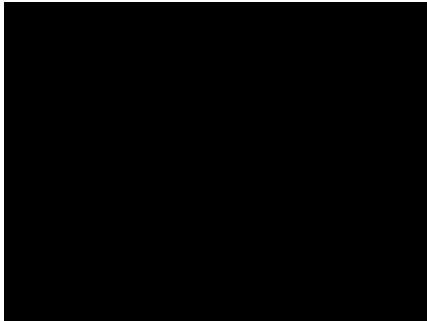


hosts a short animation drawn by Brook Lin, who I commissioned to contribute to the piece. It shows a fictional cinematic rendition of 22 Gordon Street, where the façade of the new building drawn in shell gold opens up to reveal a colourful imaginary interior. It rotates and withdraws from the flat plane into alternative versions reminiscent of the shades and forms found in illuminated manuscripts.

The arrangement requires real time matching of the projection with the vellum, introducing a dialogue between the hand-drawn piece and the digital insertion. The two become a pair, and depend on each other for the completion of the composition.

One could say that the true essence of architectural representation is never tethered on a surface, instead residing in the imagination or in the finished building itself. By bringing together vellum – as the forgotten, visceral past – and digital projection – as the uncertain evanescent future – of architectural drawing surface, With-drawing Room on Vellum aims to probe and challenge its disappearing.





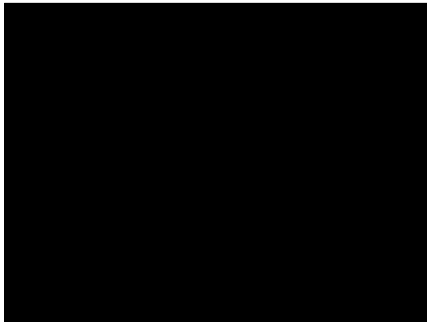
\*

In April 2016 the majority of MPs voted to continue to print Acts of Parliament on vellum, a tradition that goes back to the drafting of the Magna Carta, as there were concerns about the longevity of archival paper and long-term security of digital technology.

As we have seen, architectural drawing on vellum, a portable flat membrane, was an innovation in the Middle Ages and today the use of a drawing surface is slowly declining, withdrawing from matter.

Does this persistent vanishing of the architectural drawing surface signify that this was a blip in the history of architectural representation? Not drawn on vellum, will the architectural drawings that we draw today survive for the next 750 years. and if so. where will they lie?

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So in the three projects I discussed I have tried to define the limitations of the veiled matrix of architectural representation.

The three drawings search for and foreground some of the drawing's unconscious assumptions: the other eye, the lost surface and time.

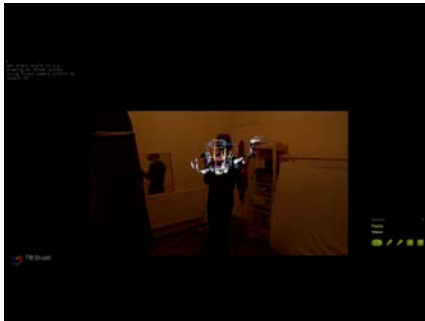
I looked at disciplines and methods beyond current architectural practice: in fine art, filmmaking and the drawing techniques of the past.

By using drawing and mostly analogue hand made drawing, as a method

I entered the space of representation as a body and assimilated the drawing practices of an artist and a film maker,  
who can be placed either in the middle,  
or at the periphery of the modernist canon,  
depending on how you want to look at it,  
and a medieval draughtswoman at a time, just before Cartesian space had taken control.

But what about the future of architectural drawing?





In lieu of a conclusion I want to end with this short fragment of one of my student's drawing in the Vive a VR system, where he draws directly in stereoscopic deep space and in real time.

Are we now able to use two eyes, enter the space of representation in draw directly in time?  
And how will this affect the way we design, built architecture but also the structure of our thinking? and intellectual space?

I believe that as technologies develop in even faster speeds it is perhaps even more important today than ever before,  
to reverse engineer  
to engage with the speculative dimension of projection, visibility, surface and time  
and try to understand representation in an excruciatingly slow manner, through the body and perhaps manually, by hand.

