DIPLOMARBEIT

the Palpability of the Virtual House

AUSGEFÜHRT ZUM ZWECKE DER ERLANGUNG DES AKADEMISCHEN GRADES

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This thesis concerns immaterial architecture, built before bricks are set, wooden beams joined, and roofs tiled. It exists as a virtual in ideas, drawings and digital models and helps us to comprehend and communicate a design. This thesis follows the hypothesis that virtual architecture ages, just as the buildings we physically inhabitate, and their ageing suggests a sensual perception within virtual space. Code must solidify their structures against environmental influences, and invalid guidance within their layouts equals their decay.
Ultimately defining a layout of virtual space that includes sensual perception, this thesis looks at several case studies of architectural drawings and artworks. They support the thought process of moving from one-directional visual communication to the exchange between virtual elements. Mapping elements and their connections will ultimately deliver a model that guides us through a palpable virtual space.

Diese Arbeit befasst sich mit der immateriellen Architektur, errichtet bevor Ziegel gesetzt, Balken gefügt und Dächer gedeckt werden. Sie existiert virtuell in Ideen, Zeichnungen und digitalen Modellen und hilft uns, einen Entwurf zu verstehen und zu vermitteln. Diese Arbeit geht von der Hypothese aus, dass virtuelle Architektur ebenso altert wie die physischen Gebäude, in denen wir wohnen, und ihre Alterung eine sinnliche Wahrnehmung im virtuellen Raum nahelegt. Sie müssen ebenso Umwelteinflüssen standhalten, werden durch den Gebrauch spezifischer Codes verfestigt und eine unwirksame Orientierung innerhalb ihrer Layouts kommt ihrem Verfall gleich.
Um ein Layout des virtuellen Raums zu definieren, das die sinnliche Wahrnehmung einschließt, werden in dieser Arbeit mehrere Fallstudien von Architekturzeichnungen und Kunstwerken untersucht. Sie unterstützen die gedankliche Umstellung von der einseitigen visuellen Kommunikation zum Austausch zwischen virtuellen Elementen. Durch Mapping der Elemente und ihrer Verbindungen wird letztendlich ein Modell konstruiert, das uns durch einen fühlbaren virtuellen Raum leitet.

the text appears continuous...

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...though it jumps on paper.

OF
PRESENCE

As architects, we communicate our ideas primarily with drawings. Our techniques and formats have undergone countless transformations as our technical environment progresses constantly, and fashions come and go. One transformation, in particular, relates to all styles, and that is the step from drawing and assembling by hand to now drawing, editing and modelling on a computer.

With this step, architectural drawings seemingly left behind their sensory qualities. We can not feel the weight and grain of their paper, mistakes and accidents can easily be undone rather than retouched, and the most evident sign of a drawing's age is its style. With that came a fashion to visually re-introduce their sensory attributes. Layering textures above a plot aims to give viewers the impression that they can see how the drawing feels. Most of the time, though, what they actually would feel is a mouse, touchpad or screen and reflections on mirroring surfaces add a whole other texture to the drawing per se.

That is not to say that architectural drawings have lost their sensory qualities or that these are now to be found in the devices we use to view them. This thesis hypothesises grounds on the idea that drawings made by hand already have sensory qualities beyond those of their medium, senses that exist inside the drawing.

Beyond the visual appearance of a drawing produced on a computer, a coding language is immanent to it, which allows for its flexibility. Instant modifications across several drawings are possible because the coding language defining one drawing operates outside that particular drawing. Before 3d modelling became the standard method for producing drawings was that drawings were translations of the particular idea's language, which they were created to convey.

Defining the senses inside of drawings and identifying the structure of their elements and interactions allows us to set up a language that can speak for any idea and with which we can communicate beyond media and across methods of making. The interaction of elements in a drawing gives rise to sensual experiences within their virtual space. We can compare these senses with the ones we experience every day, just that they express themselves differently in virtual than in physical space, where we are more intimate with them.

A vision within the drawing exists, touch, smell, taste and sound, senses of balance, temperature and ambient pressure, as well as more abstract, relational senses such as manifoldness, anticipation, saturation, excellence and content.

When a drawing has been produced by hand, it is relatively easy for viewers with some knowledge of the craft to tell how each element has come to be and how the creator prioritises the elements in relation to one another. In that, viewers can access a drawing and discover its senses. The inside of a digitally crafted drawing is not as easily accessible. This thesis sets up a model of virtual space, its construction, and the manifestation of sensory experiences in it, thereby aiming to define the virtual senses.

The construction of virtual space acts as the syntax of its language, the elements as the morphology, and the interaction between them lets the drawings speak. To understand them and let them speak for our ideas, we need to learn about the making of this language of virtual space and orchestrate it.

As for any language, the best way to learn is through conversation. This thesis builds on a selection of drawings and artworks by architects, artists and theorists. All of them succeed in mediating intangible information without the use of words. Solely with visual language, they communicate and create spaces in virtuality that transmit bodily and relational sensations. The drawing itself then acts as a framing of the virtual spaces it contains.

From the interaction of a drawing's elements, the arising senses define individual spaces that together make the whole construction, the virtual house. How we read the interactions partially depends on their framing and our objective and understanding of the drawing. Each time a drawing is read and, thereby, transmits information, its virtual space re-builds itself in a configuration according to the reader's understanding. Therefore, the constructions in the virtual are never complete. Our language and vocabulary play a vital part in this ongoing process. We can only construct an intentional space if we have the words to build it. Likewise, this thesis aims to use language as a space-creating source.

The title *The Palpability of the Virtual House* encompasses the sensual perceptions that happen within a virtual space and those of a virtual space. Both are closely linked with experience and memory, elevating the construction that builds on them into a house.

It is constructed in a way that ultimately gives it a spatiality that the following chapters explore. As its final form is always bound to its reader, it is more than a neutral construction. However, it is not as much as a home in which we live. We enter it and come to associate memories with it, and ultimately, we have seen enough of it to know how it feels. It becomes a house with which we are very familiar.

glossary

this glossary is thought not to define terms but to set them in context of this thesis.

presence

palpable locations

landscape
in a space without material borders, the landscape is concurrently the origin of an element, its surroundings as well as the element itself.

entrance
the entrance through which we can access the virtual landscape is matter.

exit
the exit of the virtual landscape is through a halt of all of its elements.

code
the code is that, which sets up an element's landscape and defines its properties and capacities. the whole of one landscape derives from one code.

data
data encompasses the notion of an element and its properties.

connection
a connection happens between two elements when they're both palpable and discoverable.

configuration
a configuration happens between two or more elements, that can be connected amongst each other and outside the configuration.

self
the self is composed of properties and capacities, only assigned to one element in the landscape.

setting
the setting of an element is composed of all the elements in its landscape, whose properties and capacities differentiate from the element's self.

reality
reality is the multiplication of all configurations in a landscape.

identity
identity is the sum of all connections of an element.

information
information is the knowledge of past and possible connections and configurations, that an element can carry in its properties.

time
time in virtual space is measured through perspective on connections and configurations. considering relevant information, it can be identified whether a perspective is of the past or future or happening right now.

moment
a moment is the distinguishable connection of elements within one landscape, through the synergy of situation and action. the properties and capacities of two or more elements together make up the outlines of a moment.

colour
the colour of a virtual element is the information you can access through that element. similar to colour in physical space depending on an object's reflectivity, colour in virtual space depends on where the element can lead to.

light
the pathways that carry information through virtual space are the light, which fosters the elements to grow by their connections and, thereby, makes them visible.

edges
the edges of a virtual construction and the virtual landscape are the least defined spots, where only little connections lead to.

window
windows allow the differentiation between self and setting from one perspective.

absence

solitary actions

walk
a walk in virtual space means moving step by step, acknowledging each element without taking shortcuts or drawing conclusions with data external to the landscape.

script
a script guides a walk in virtual space, determining where each step leads to.

simplify
to simplify can be to summarise a whole walk into one step, cut redundant or recurrent properties and connections or build shortcuts that make essential information readily accessible.

schematise
to schematise means to repeat a simplified element at another location.

assess
to assess means to sense and compare as an internal action, without any external action, like connecting.

cache
when simplifying, no piece of information is ever discarded. rather, every bit is cached in the dark, where no light would carry it or make it grow.

uplift
when schematising, the essential properties of one element are uplifted to a whole element themselves.

grace
an element can grace itself by deriving new properties from information it carries.

haze
reducing the pathways leading to an element puts it into a haze, which creates a need for a lot of light to discover it.

blur
if an element can not access its properties, it blurs.

stay

staying is the default for most elements in the virtual. to keep a balance with other elements, they can perform many actions such as move, connect, withdraw… but they will always stay as they are.

halt

an element in the virtual landscape comes to a halt when all of its connections are cut.

continue

if an element forms new connections after a halt, it continues.

melt

an element melts when it forms a great number of connections instantly.

joint actions

interact

two or more palpable elements interact when they sense each other.

connect

two discoverable elements can connect, which lets them share their properties and possibly act upon each other.

stabilise

when elements come into a configuration that balances them effortlessly, they stabilise each other. these configurations maintain themselves.

collect

collecting is the acquisition of properties through connecting or morphing

morph

morphing happens through an irresolvable connection, that makes two elements into one.

interiorise

when element a takes up certain properties of element b after a connection, it has interiorised b.

absorb

absorbing happens in a connection when two or more elements result in staying as one element.

distinguish

elements, that are connected but belong to different configurations, distinguish themselves from each other.

withdraw

if the properties of an element cause its connections and/or configuration to resolve, that element withdraws.

decouple

if the properties of two elements cause their connection to resolve, they decouple.

separate

if the properties of two or more elements cause their configuration to resolve, they separate.

harmonise

elements that harmonise, balance each other in a configuration but are not connected.

approximate

if two elements have properties that connect well, they approximate until there is a catalyst for an actual connection.

define

elements can define each other through irreversible connections, or themselves through fixed properties.

provide

through connections, elements can provide properties and information to one another.

repel

a cold element can repel new connections from a configuration, to prevent destabilisation.

highlight

a highly connective element of a configuration can highlight, to attract more connections.

explain

an element that enables other elements to become connective, can do so by explaining their properties to one another.

take effect

if the properties of element a impact the properties of element b, a takes effect on b.

number

any element and their properties of a configuration are numbered within the configuration.

rank

the connections within a configuration are ranked depending on their strength.

estimate

if an element is not part of a configuration yet, its properties can be estimated.

accentuate

essential properties of elements within a configuration can be accentuated if the configuration is not stable yet.

hide

irrelevant properties of elements can be hidden in the whole of a configuration.

reconcile

when two or more elements connect, that have been in connection/s before, they reconcile.

build

properties, connections and configurations can enable elements to build new properties, connections and configurations.

bind

when a configuration is stable and other connections and/or configurations are built upon it, the initial configuration binds them.

configurations

among

all elements of the landscape are among each other.

through

if element a becomes through element b, b forms the beginning of element a in one moment. if b would be lost, a would lose essential parts of its structure too.

`at`

element a is at element b when they are in a connection that originates in b.

`except`

when element a is a simplification, it is a except the redundant properties and connections.

`beyond`

an element a with multiple connections is beyond a.

`after`

if element a comes after element b, b forms the beginning of a independently from the moment. a remains stable, even if b is lost.

`until`

if element b blocks the properties of element a, a can exist until b.

`since`

when element a enables the properties of element b, b exists since a.

`about`

a metaphorical element signifies, schematises or references is about another element.

`because`

if element b complements a property of element a, b exists because of a.

`around`

if element b complements all properties of element a, b exists around a.

`and`

non-identical elements are coordinated and can therefore exist in the same location, configurated by and.

`or`

identical elements are inclusive of each other and can therefore only exists in exclusive locations simultaneously and are thereby configurated by or.

`along`

an element a that exists along an element b includes b in any of its properties. a on the other hand has no impact on b.

`circular`

stable connections as well as the properties within an element move circular among each other.

`linear`

the properties of metaphorical and symbolising elements move linearly.

`identical`

identical elements can only exist simultaneously when they are placed in different locations. as of their homogeneity and the absence of material borders, they would losslessly merge into one element, if in the same location.

`inside`

when element b on the one hand shares all properties of element a and on the other has properties beyond that, a is inside of b, if they are in the same location.

`close`

when a property of element b is always able to make a connection with a property of element a, a and b are close.

`whole`

elements can be whole when viewed together with all other elements of their landscape; or more specifically with all other elements of one moment.

sensuality

bodily sensations

`touch`

touch is the distinguishable connection of elements, that can be identified in a moment. it creates the sensation of boundaries in the borderless virtual space.

`vision`

vision is enabled through the capacity of a program, to access numerous spots of the landscape and move elements in-between them.

`smell`

smell is the impact of the data, that the code carries through the whole of the landscape.

`sound`

the code establishes the sound, as a set of rules that are audible in the whole of the landscape.

`proprioception`

proprioception occurs in areas, that enable the connections between elements. they come with other sensations such as vision, smell and sound.

`balance`

the balance needs to be re-established for every new connection and with any addition to or subtraction from the landscape.

`strength`

connections can trigger the sensation of strength. with a growing number of properties, the sensation of strength grows as well.

`softness`

the fewer connections an element has, the softer it appears. in terms of properties, strength and softness do not rule each other out. an element can have a large number of properties, yet little connections and, therefore, be soft and mouldable for other connections.

temperature

the temperature provides information about how easily connections can form. around the proprioception ie, the temperature is high, while just around a stable moment the temperature is low.

wind

the wind carries information and echoes, it is able to permeate configurations and continuously pick up information on its way.

ambient pressure

the ambient pressure rises in areas with a high concentration of data and when near a moment or result.

vibratory perception

a vibratory perception can be sensed towards the edges of a virtual construction, where lonely elements and their loose ends hold the least connections. the sensation is an echo of the highly charged and warm production and exchange of information in the centre of the landscape produce.

magnetoception

magnetoception occurs within a configuration. it can provide information on how well-balanced the configuration is. towards the entrance of a construction, it occurs as well, where physical and virtual matter are the closest.

warmth

elements emit warmth when they are highly connective.

cold

the sensation of cold leaves an element rigid and less receptible for connections.

capacities

palpable

an element is palpable when it can be sensed by and senses other elements.

discoverable

a palpable element, that is in a state to form connections, is discoverable.

metaphorical

a metaphorical element is not discoverable, as it does not consist of the information it lets other elements sense.

signifying

similar to schematising, an element can signify another element, when they share relevant capacities.

appreciable

an appreciable element is discoverable and compatible for connection to specific other elements.

movable

a movable element offers a great number of connections.

moving

a moving element senses the movability of other elements.

flashing

a flashing element is discoverable under certain circumstances, such as the near discoverability of a warm element.

flaring

a flaring element is inconsistently discoverable.

freezing

an element freezes, when its capacities are exhausted.

seizing

a seizing element is always discoverable and warm, without melting.

striking

a striking element is always palpable, without being discoverable.

sounding

a sounding element is in a stabilised connection and, therefore, cold but appears as a metaphorical element in surrounding connections too.

enriching

an enriching element has the capacity to join stable connections, without destabilising them.

sharpening

an element can sharpen connections when its joining makes them more stable and simplification possible.

repeatable

a repeatable element has the capacity to join more than one connection, without destabilising or leaving any of its capacities behind.

referencing

a referencing element can lead towards stable connections.

symbolising

a symbolising element is metaphorical but can appear discoverable and therefore destabilise connections.

melting

an element melts, when it doesn't have the capacity to freeze and, therefore, over-exhausts itself.

abstraction

relational sensations

anticipation

anticipation can be sensed right before a new connection is made.

longing

anticipation

loosing

loosing is sensed, when a connection is resolved.

finding

finding is sensed, when compatible elements which are both discoverable sense each other.

goodbye

goodbye is triggered by the properties, that initiate the resolving of a connection.

welcome

welcome is sent out by the properties, that initiate a connection.

normality
in a space where anything can be everything, normality is the manifoldness of elements and their connectivity.

loneliness
any element that is non-palpable, non-discoverable but also non-metaphorical experiences loneliness in a space of manifoldness.

extension
connections can trigger the sensations of extension, as well as the palpability of appreciable elements.

ageing
as time is measured through perspective and connections in virtual space, with growing age elements have more connections as well as carry more information in their properties.

saturation
the higher numbered a configuration is, the more saturated it appears.

discomfort
unstable connections and configurations trigger the sensation of discomfort.

content
stable connections and configurations make elements feel content.

familiarity
in configurations with many of the same and/or matching properties, familiarity can be sensed among the elements.

seeming
a matching element that is palpable but not discoverable is seeming to the element, that senses it.

excellence
the element whose properties are being absorbed by another element can have the sensation of excellence.

falling short
an element may absorb properties in a connection when it has the sensation of falling short.

echoing
connections and configuration, as well as highly connective elements, can echo. the echo can be carried by the wind but is not as distinctly sensible as the information it carries. it is mostly sensed at the edges of a construction, as there is little information that intervenes with it.

bordering
elements in the same configurations are bordering each other, as do configurations that share elements.

fading
elements, connections and configurations can all have the sensation of fading when they're soon to be resolved or move further to the edge of a construction.

increasing
elements can have the sensation of increasing when they gain more properties, configurations when they gain new elements.

ending
the elements of a configuration sense the ending of it when it is about to destabilise.

beginning
right after a configuration is formed, its elements can still sense its beginning.

descending
within the construction, descending can be sensed when moving closer to the edge.

ascending
when an element can move away from the edge again, it senses an ascend.

intensities

true
any palpable element is true in its information.

apparent
any discoverable element has apparent properties.

transparent
any metaphorical element has transparent properties through which the information of other elements becomes sensible.

incomprehensible
an element is incomprehensible when it is non-connective.

particular
a particular element only holds one property.

textual
a textual element has adaptable properties, that can reconfigure its capacities.

conceptual
a conceptual element has only signifying or symbolising properties.

continuous
a continuous element never loses certain properties.

warm
a warm element has properties, that can always form connections.

normal
a normal element has properties, that can connect with any other element in the landscape.

evident
an evident element has properties, that are always palpable and/or discoverable.

easy
an easy element builds various connections fast, which it also resolves quickly.

oblique
the properties of an oblique element can only act in particular moments.

rigid
the properties of a rigid element can form one particular connection countless times.

opened
the properties of an opened element can initiate connections.

impeded
the properties of an impeded element hinder connections.

subsequent
the properties of a subsequent element result from absorption.

presequent
the properties of a presequent element initiate interiorising.

temporary
the properties of a temporary element initiate a halt.

different
the properties of a different element vary after each connection.

immediate
an immediate element is always discoverable and builds connections, as soon as its properties allow for it.

ephemeral
an ephemeral element is the result of levitating properties in a configuration, that only exists while the configuration is kept up.

unparallel
unparallel elements are a cross of properties, that result from configurations.

same
same elements share all properties and exist in exclusive configurations.

soft
the more connections an element's properties allow for in a landscape, the softer it is.

cold
a cold element has properties, that can only form few connections.

sudden
a sudden element only appears for certain moments.

fast
a fast element has properties, that can carry information from one configuration to another like the wind.

universal
a universal element appears in all configurations of a landscape.

critical
a critical element holds only one property, which if it belongs to a configuration is the last to be added before stabilisation.

one
a configuration is one if it contains all properties found in the landscape once.

all
an element is all if it holds each property found in the landscape.

relational locations

action
an action can be the forming of connections or configurations, as well as gaining new properties.

situation
a situation is the state of an element, including its properties, current connections and configurations.

moment
a moment is the most precise unit of time in virtual space, that combines action and situation to pin down a particular perspective.

gravity
gravity in virtual space pulls elements to the edges of a construction at all times, they can withstand through the balance of their properties with other elements.

momentum
each connection that is made puts an element into momentum.

stability
only configurations can be in stability when they keep their balance effortlessly.

abeyance
elements are in abeyance when their properties can withstand gravity.

fall
an element that becomes redundant to a connection or configuration is in fall.

rise
an element that is added to an existing connection or configuration is in rise.

monotony
in monotony, a virtual construction would eventually collapse.

manifoldness
in manifoldness, a virtual construction flourishes.

normality
normality includes all elements of a landscape, excluding their motion and connectivity.

extension
extension can be viewed from the perspective of one element towards another element it is connected with.

set
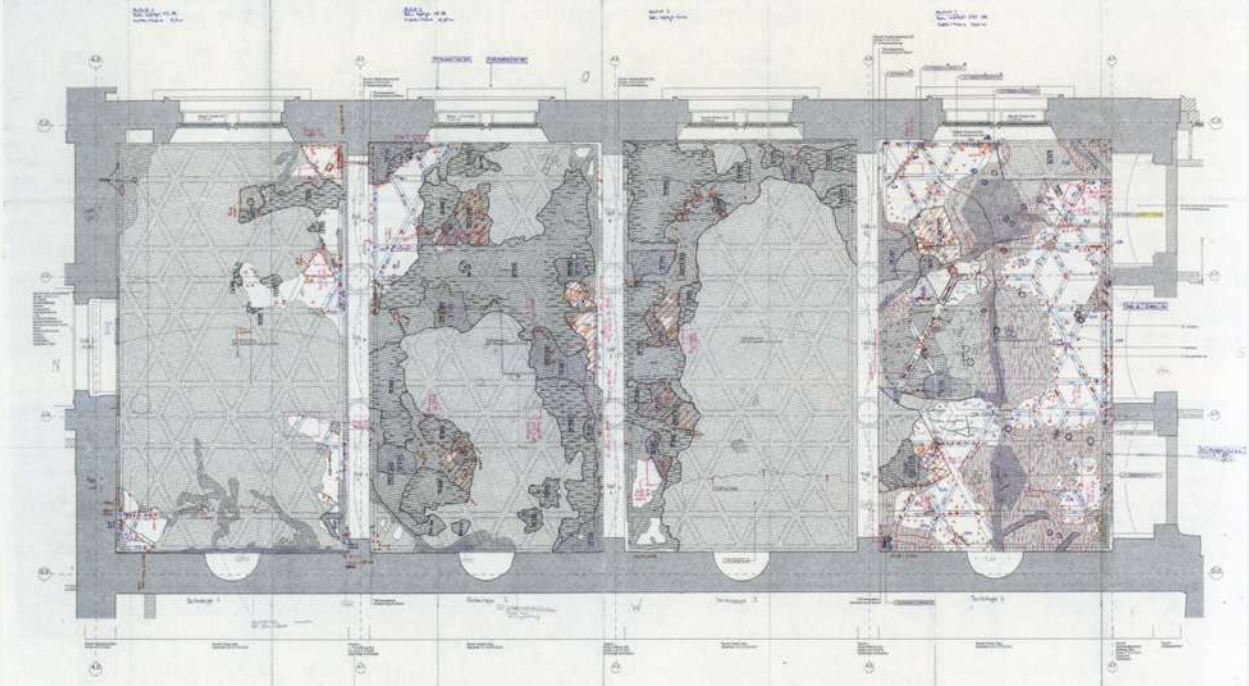in a set, elements can gather according to certain properties they share.

result
in the result lies the balance of a stable configuration.

**presence and absence are both essential to identify
the senses in the virtual.** *and abstraction I.*
**will define virtual space as a reality of absence.
in such reality, only the presence of one can make the absence of
another sensible.**

and absence **presents drawings and artworks
accompanied by writings of their creators that illustrate their
thought processes. annotations put the works in the context
of this thesis and begin to guide from
visual communication, that in the case of drawings is
one-directional to the perception of sensations in
virtual space, which allows for conversation.**

AND
ABSENCE,

f.1: David Chipperfield Architects. *Neues Museum drawing. in* Thomas, Helen. 2018. *Drawing Architecture.*
London, New York: Phaidon. page 192.
Image rights: © ProDenkmal, Berlin, and David Chipperfield Architects Berlin.

The drawing has been featured in several publications, as well as at the 4th edition of the Lisbon Architecture Triennale in 2016 entitled 'The Form of Form'.

The exhibition was divided into three main categories 'The Form of Form', 'The World in Our Eyes' and 'Building Site', with the drawing being assigned to the latter.[1]

1 "Neues Museum Drawing On Display In Lisbon". 2016. *in* News. davidchipperfield. com.

as described in **The Form of Form**

official publication of the Lisbon Architecture Triennale, 2016

Neues Museum Drawing [of the Roman Rooms ceiling], phsical working drawing, CAD print with hand annotations in coloured pencil. The drawing captures three distinct layers of information, the printed layer (in black) is a survey capturing the existing conditions prior to restoration, including areas of damage, cracks, structural faults, and areas where the rooms' surface has come away. This survey is supplemented by various codes and hatches giving instruction to the conservators on site on how to treat the building surfaces, both aesthetically and structurally. Finally, the hand-drawn pencil annotations are added by these conservators on site, recording the work that has been done, in order to feed it back to the architects and other parties. The fold marks and general wear on the drawing show that it has been used on site.

The printed legend in the top right hand corner of the drawing lists the various processes to be enacted upon the building fabric. These include Fesigung (stabilizing), Entzaltzung (removal of salt), Egänzung (addition, reconstruction), Entfernung (removal), Kombimaßnamer (combination), Ziegelergranzung (repair tiles), Ausgleichsputz (returning to prior state), Ausgleichsputz (rendering, equalizing), Hinterfüllung (backfilling of holes), Risse schlessen (closing of cracks), and even Splitter (conserving of damage of bullets or schrapnel).

An additional legend has been added in pencil to the drawing itself by the conservators, as a way to record the work that has been undertaken. Pencil hatching in pink / red notes where material is to be added, repaired. Yellow hatching denotes where material has been removed or lost. Blue lines and annotations refer to where stabilising and cleaning is to be undertaken. The red dots on these blue lines denote the number of 'pearls' in the ceiling that have been cleaned and fixed. Purple hatching notes where work has been completed already.[2]

Rather than a depiction of the ceiling at one specific point in time, the drawing combines several states of the ceiling to show the process of its conservation.

With annotations added throughout the restoration, the drawing emphasises its capacity to capture multiple steps of a timeline. It reaches back over several decades and makes intangible circumstances, such as the attitude the conservators and architects had toward the existing building readable.

It, therefore, can map the complex process of conservation without the need of using many words while maintaining a distinct clarity.

2 Tavares, André, and Diogo Seixas Lopes, editors. 2016. The Form of Form. Zürich: Lars Müller Publishers; Lisboa: Trienal de Arquitectura de Lisboa.

each case study of and absence, **is connected to**

a subchapter of sensuality**. they guide us to the inside**

of the case studies drawings we got to know.

within them, we can identify the senses

that the relations between their elements evoke.

elements distinguish themselves primarily by the

situation or action they represent. groups of elements

represent variations of one common situation or action.

for this sake, the drawings were vectorised to equalise

their ductus and make the differentiation of their

elements more accessible.

in visual analysis, the ductus is a crucial indicator

of a hierarchy within the drawing as well as emotions

a creator assigned to elements of their work.

this step of our analysis is not concerned with these

distinctions, even though in total they are not obsolete

to what we are discussing.

we want to set them aside to look at the relations

a drawing's elements have come to have, and

* the senses that these relations evoke within a work.*

SENSUALITY

Times touch when Old meets New

with Roman Room, David Chipperfield Architects

f.2

David Chipperfield Architect's Roman Room drawing (f.1) frames, on the one hand, elements that indicate a situation and, on the other, elements that indicate an action. In a situation, fixed relations between elements define their condition. Figure f.2 shows a theatre stage which resembles such a situation. In figure f.3, an action cuts that situation and the continuity of its relations. The curtain is in the moment of falling, not hanging from the ceiling anymore and not yet on the ground. Through an action, an element reshapes its relation with other elements, and new elements can join.

f.3

f.2, f.3: *Hundert Jahre weinen oder hundert Jahre Bomben werfen (ua)*. 2019.
Theater Basel. Regie: Franz-Xaver Mayr. Bühne: Michela Flück. Kostüm: Korbinian
Schmidt. *at* michelaflueck.ch/aktuell/100-jahre-weinen-oder-100-bomben-werfen/

Times touch when Old meets New
with Roman Room, David Chipperfield Architects

f.4

f.5

f.6

The drawing's elements are not only records of physical materials but also their condition, inviting a sense of the past, and indicates actions performed during the ceiling's restoration. It encompasses the before and after of the restoration, together with the journey in between (f.4). It includes various situations, some of which the ceiling has never explicitly been in, and sets them in direct relation with actions.

Deducting the colourful annotations from the drawing makes their relation more evident. Figure f.5 shows the elements of the drawing that describe a situation, and figure f.6 the elements of an action.

The distinction between the initial situation and the actions taken is not a clean cut, as the action follows the situation, and the situation changes following the action.

The word situation describes our sense of the place we occupy, our arrangement towards people, things and larger-scale surroundings.[3] Additionally, besides being a fixed condition that can not shift itself, this definition includes the need for the situation to be experienced by actors within it.

An action is simply defined as: "Something that is done"[4], with a particular focus on the process of doing. While the action might be enabled through location and actors, it is not bound to them and can, in principle, be carried out anywhere by anyone.

3 "situation, n.". Oxford English Dictionary Online Edition. Oxford University Press. *at* oed-com.uaccess.univie.ac.at
4 "action, n.". Oxford English Dictionary Online Edition. Oxford University Press. *at* oed-com.uaccess.univie.ac.at

The mere situation is replicable and has the ability to be the host of many sequential or simultaneous actions. In principle, they are continuous, as the beginning of one situation will follow the conclusion of another situation (f.7). This applies to both virtual and physical situations. A situation can either end through the re-arrangement of its element or the introduction of new elements.

The action is repeatable and hosted by the moment. It can be executed in reality and virtuality, be singular or linked with other actions, and be specific to certain actors. Innate to the action is an indiscriminateness that allows its many appearances. It does not distinguish between where and when it happens and who is acting it out. The 'how' is distinct to each action, though, and in contrast to the situation's continuity, the action will always have a limited duration in time (f.8).

A moment in time then needs both a situation and an action to be specified. The action allows for the experience of the moment, and the situation localises it. Only when these two come together does the moment in time form itself precisely (f.9).

This precision comes from the interruption of the situation's continuity by the action. The action borrows the situation's setting, and out of its protraction, a piece of accuracy gets extracted that the action now shares with the situation. In a moment, the action gains solidity as much as the situation comes to know dynamism.

situation

continuous time

f.7

action

limited timeframe

f.8

situation + action

precise moment in time
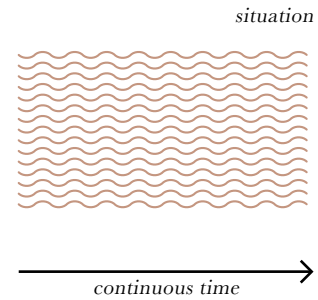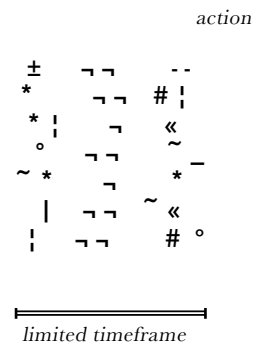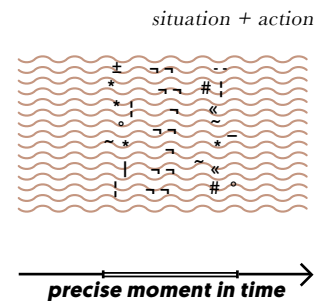
f.9

f.4-f.6: David Chipperfield Architects. *Neues Museum drawing.* in Thomas, Helen. 2018. *Drawing Architecture.* London, New York: Phaidon. page 192. *edited
Image rights: © ProDenkmal, Berlin, and David Chipperfield Architects Berlin.

imgs **Roman Room, David Chipperfield Architects, 2009**
edited

f.10

Figures f.10 and f.11 show the two main groups of elements segmented: the indications of a situation and the indications of an action. The architects' and conservators' documentation of the ceiling's state prior to conservation in figure f.10 indicates the situation.* The notations that the conservators added over time indicate the action in figure f.11.

* Spots that were colour-coded notations have been filled with the drawing's generic background colour.

f.11

f.10, f.11: David Chipperfield Architects. *Neues Museum drawing*. in Thomas, Helen.
2018. *Drawing Architecture*. London, New York: Phaidon. page 192. *edited

and abstraction. **ultimately establishes a model**

for the construction of virtual space through digital tools and the

manifestation of the senses in a virtual house.

it builds upon the elements and senses

identified in *and absence, & sensuality***, and maps out their**

connections that make the layout of virtual spaces.

cycling through the steps of introducing a case study,

evaluating its elements and their relations,

and lastly expanding our abstract understanding of virtual senses,

allows us to understand them holistically.

AND
ABSTRACTION.

What is Among us?

physicality - virtuality - presence - absence

To begin with, we want to look at a concept from Japanese Shintoism that deals with the entanglement of entities in presence and absence. It will introduce this thesis' definition of virtuality but set aside the notion of spatiality for now.

A foreigner travelling in Japan will most likely come across all kinds of machines and robots. Some will look just like the domestic machines they are used to, some will speak with their users, and others will be even more advanced in mimicking human behaviour.

While it may be unsettling for a visitor, the humanisation of machines has a profound tradition in Japan. Combining traditional crafts and novel technology has been explored since the late 19th century in the design of Karakuri dolls, which were built to perform tricks in tea ceremonies, religious festivals and theatres. Karakuri refers to the craftsmanship of concealing inner mechanisms to conjure a moment of magic.

In that sense, Karakuri dolls appear to have a life of themselves, concealing the presence of the puppeteer.[5]

Architect, philosopher and futurist Kisho Kurokawa describes the dolls as one of the first indicators of the acceptance of technology as part of humanity in Japan. In the West, the tendency is to place technology in opposition to humanity. It is also more common to present the mechanical workings to the outside, outing machines and robots as such at first sight.[6]

Another pivotal factor for the acceptance of robots in Japanese culture comes from a belief in Buddhism and Shintoism. Around seventy percent of the population identify with each, with many people belonging to both.

5 Shea, Michael. 2015. "Karakuri: Subtle Trickery in Device Art and Robotics Demonstrations at Miraikan." Leonardo 48 (1): 40–47. https://doi.org/10.1162/leon_a_00936. page 43.
6 ibid. page 44.

Both beliefs hold the concept of the oso, loosely translated as a soul that is inherent to any inanimate object and living being.

The oso builds on our relation to the other entity and enriches as we make more memories and strengthen a bond with someone or something. The oso is immanent to an object, and prayers or ceremonies can release it when parting ways with it. Otherwise, it may conflict with the next owner's relationship with the object.[7]

Shintoism defines the meaning of each object surrounding us by our relationships with them, and more comprehensively, they define society as a whole.

The oso is always present as of its immanence, yet we would find it absent in a material sense. Not us holding the object builds a relevant relationship, but our thoughts, which are always present yet materially absent in the same way.

As the mechanic, electric and digital evolution continues, we now build objects whose inner workings are much more intricate than those of Karakuri dolls.

Globally we have moved from performing tricks with objects to developing a language that is immanent to them, defines their meaning, and with which we eventually construct the Virtual part of the world. There we build by thought, such as the works presented in the chapters' absence and sensuality. However, we do not physically project right from our thoughts but transform them into another kind of virtuality - from the virtuality of thought to the digital virtuality.

A construction in the digital virtuality has a similarly stable structure as a physical projection. We can not quickly and loss-free turn it into a physical object. Just as a drawing, it could only show a fraction of its constructing thought. It acts as a section of a much bigger thought.

Now, what would a construction in digital virtuality be made of if we were to draw a section of it?

7 VPRO Backlight. 2015. The Human Robot. Video. https://is.gd/Z8Np4o.

I. The Reality of Absence

absence - identity - relation - memory

In our daily vocabulary, virtual space is consolidated as a place that we enter, for instance, to work in a model. Programs might give us the illusion that once we have entered, we are the ones populating the virtual space we see through them. However, it is actually essential that that space is in absence of us, as it holds projected scenarios that we can not easily replicate in presence.

This illusion is not void to programs but is carefully implemented to make it easier for us to navigate within them or solely for the sake of the illusion. In Media Art, the balancing act that creates this illusion is referred to as presence and abstraction.[8] To achieve the feeling of presence, media artists reduce the level of abstraction. The aim is to trigger sensations as if the projected scene was physically present, in the same time and space as us.

We can feel an impact in virtual space when we move elements on-screen or re-write their properties in code. We hear sounds and see colours, likewise those that our physical environment evokes.

Nevertheless, a colour we see on a screen is not the reflection of a light source, therefore again appearing in absence of what would be its origin in physical space. Instead, it originates from written code and is presented to us as an understandable form due to its similarity to something physical. Therefore, rather than us sensing a source in virtual space, another entity undertakes this task to then translate the non-sensible, virtual source for us.

Accepting that we are truly absent in the virtual space, we can go a step further and consider the character of that sensing entity, which in this thought model is immanent to any construction in virtual space.

8 Naimark, Michael. 2019. "VR/AR". Rits. Hosting.Nyu.Edu. https://rits.hosting.nyu.edu/vr-ar/.

34

To identify it more closely despite its absence, we can refer to the postmodern theatre, in which the construction of the identity of an absent character is a frequent stylistic device.

The eponymous character in Samuel Becketts Waiting for Godot is arguably the most acquainted absent character. His identity is simultaneously questioned and discussed but never fully confirmed in a continuous dialogue over two acts on a non-identifiable country road. The play ends as it has begun with the two main characters, Vladimir and Pozzo, waiting for Godot, and literary critic Vivian Mercier described it as "a play in which nothing happens, twice"[9]. Beckett responded to this remark: Nothing can happen, just as something can happen. Waiting for Godot seems to have removed all action, which is also pointed out regularly by the characters on stage.[10]

The play enables us to sense emptiness, a feeling we usually gain from the presence of something we would expect to be full. Analogical to that, Godot's absence is what generates his presence.

Furthermore, even the allegedly present characters establish a sequence of reflections in which they progressively dislocate their identities. For instance, Vladimir doubts his consciousness more and more radically throughout the play. Such as his parting words to the Boy, an envoy of Godot: "Tell him ... (he hesitates) ... tell him you saw us. (Pause.) You did see us, didn't you?"[11] emphasising not the witnessing of their encounter but the memory of witnessing.

Paul Lawley describes this as follows: "(...) the memory of witness and the witness of memory chase each other round in a never-ending circle". The play's two Acts are laid out as parts of a virtual sequence of waitings,

9

10 Lawley, Paul. 2013. Waiting for Godot : Character Studies. Bloomsbury Character Studies. London: Continuum. https://t1p.de/d1s4r. pages 1-3.

11 Beckett, Samuel. 1965. Waiting for Godot: A Tragicomedy in Two Acts. 2nd ed. London: Faber and Faber. page 52. as quoted in: Paul Lawley. 2013. Waiting for Godot : Character Studies. Bloomsbury Character Studies. London: Continuum. https://t1p.de/d1s4r. page 41.

I. The Reality of Absence

absence - identity - relation - memory

in which each Act builds on and re-cycles the preceding Act.[12]

As for the lack of action, only memo-ry can provide material for memory in the next Act. Hence the virtuality in memory of witness, rather than the action in witness of memory.

In virtual space, the memory of wit-ness naturally takes up a critical role as well. There is no lack of action per se, as there are numerous joint and sol-itary actions; see the glossary at the end of the thesis. Two examples are scripting as a guide through virtual space and interiorising properties, which are both analogical to move-ments in physical space.

In contrast to actions in physical space, though, nothing but the mem-ory of witness, meaning an element's memory of performing an action, verifies an action in virtual space to have happened.

The reason is the immateriality of virtual space, which leaves no physi-cal proof but virtual memory.

Coming back to Waiting for Godot, as of its lack of action, the play's theme is to be found somewhere else: in character itself. The correlations between characters solely maintain the presence of any character in the play. That makes them relational char-acters rather than characters who form relations throughout the play and, by that, create the theme.[13]

The play thereby uplifts the concept of character from a stable entity to a mobile one, stabilised through a bal-ancing act with the other entities. The characters, therefore, have room to develop and recalibrate their iden-tities throughout the play. Each Act shows adaptations of the preceding Act's theme without losing but solely remembering the relations characters had in it.

12 Lawley, Paul. 2013. Waiting for Godot : Cha-racter Studies. Bloomsbury Character Studies. London: Continuum. https://t1p.de/d1s4r. pages 41-42.

13 ibid. pages 111-113.

Therefore, we want to look at the surroundings that populate the virtual space to understand what makes a character in a virtual space that emphasises memory.

Two crucial characters that surround the sensing entity in the virtual space are the Program and the User. The User is closest to us, the Program further away but still reasonably known. The User is absent from the virtual space and the only entity fully present in physical space. They are not necessarily human and sometimes a server that runs a code itself. The User requires a projection of the virtual space in the physical space, a translation of that they are absent from delivered to where they are present.

As the means of communication between virtual and physical is merely a projection, one can never directly sense the other but send signals to which the other can react. Both sides are playing the waiting game, as they always have to refer to the next signal to know how the last one was per-

ceived. This circumstance ultimately reveals the User's presence in virtual space as an illusion.

As close as the User seems to be to virtual actions, being the one initiating them, as distant it truly is. The Program is the entity that enables the User to sense the impact of actions they initiated. Therefore, it delegates with the User. The Program creates a momentary meaning of the virtual space and determines to which extent the User can sense it, while other information is left inaccessible.

Surrounded by these two entities, the importance of balancing relations in the virtual space becomes evident. The accessibility of specific information at the right moment, as a reaction to the User's signals, makes virtual space usable for us. We also can begin to understand the sensing entity, and correspondingly a virtual construction, as an active subject. They receive and send signals through self-reliant reactions, which obtain form through the Program.

img **Ca d'oro, John Ruskin, 1845**
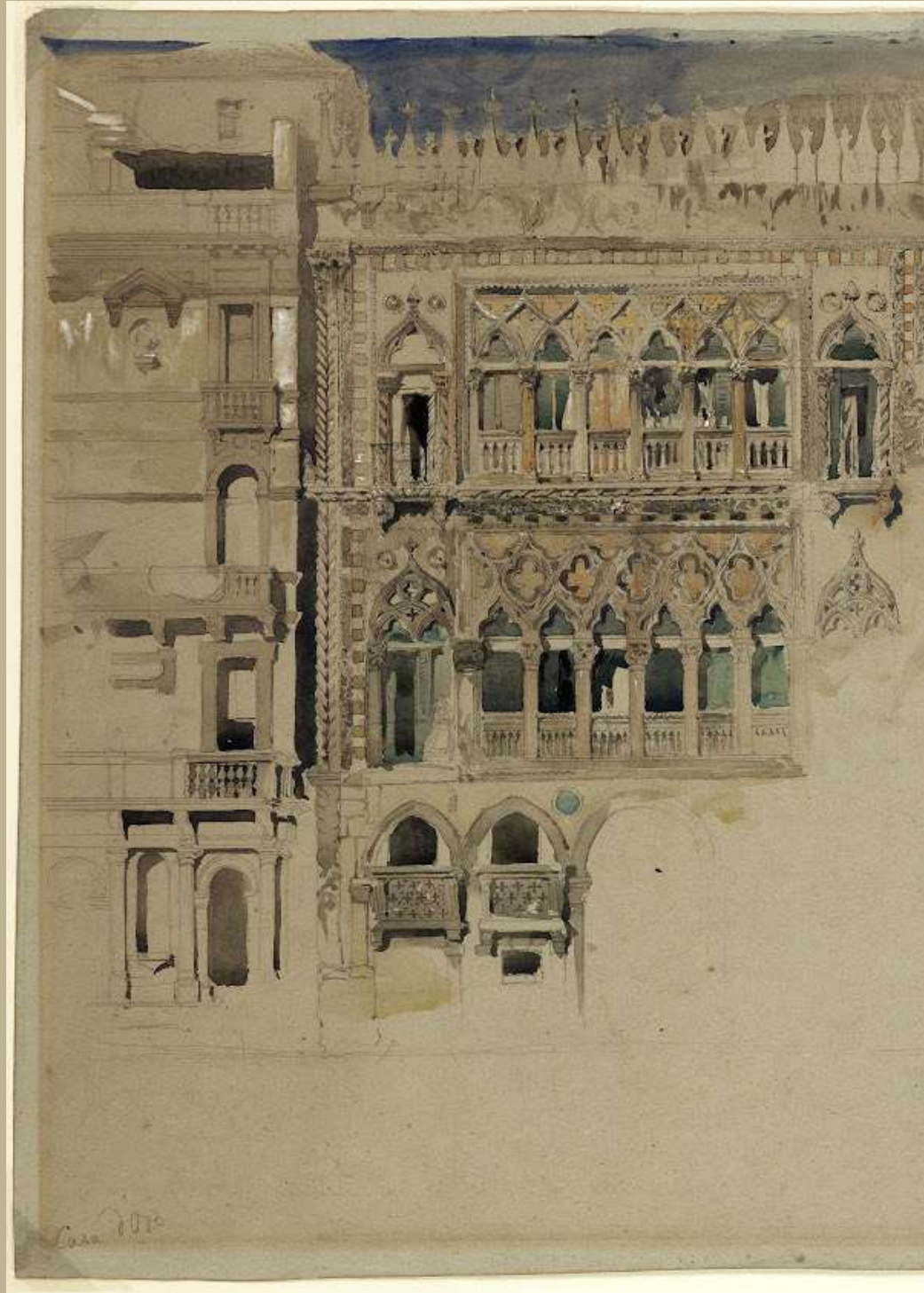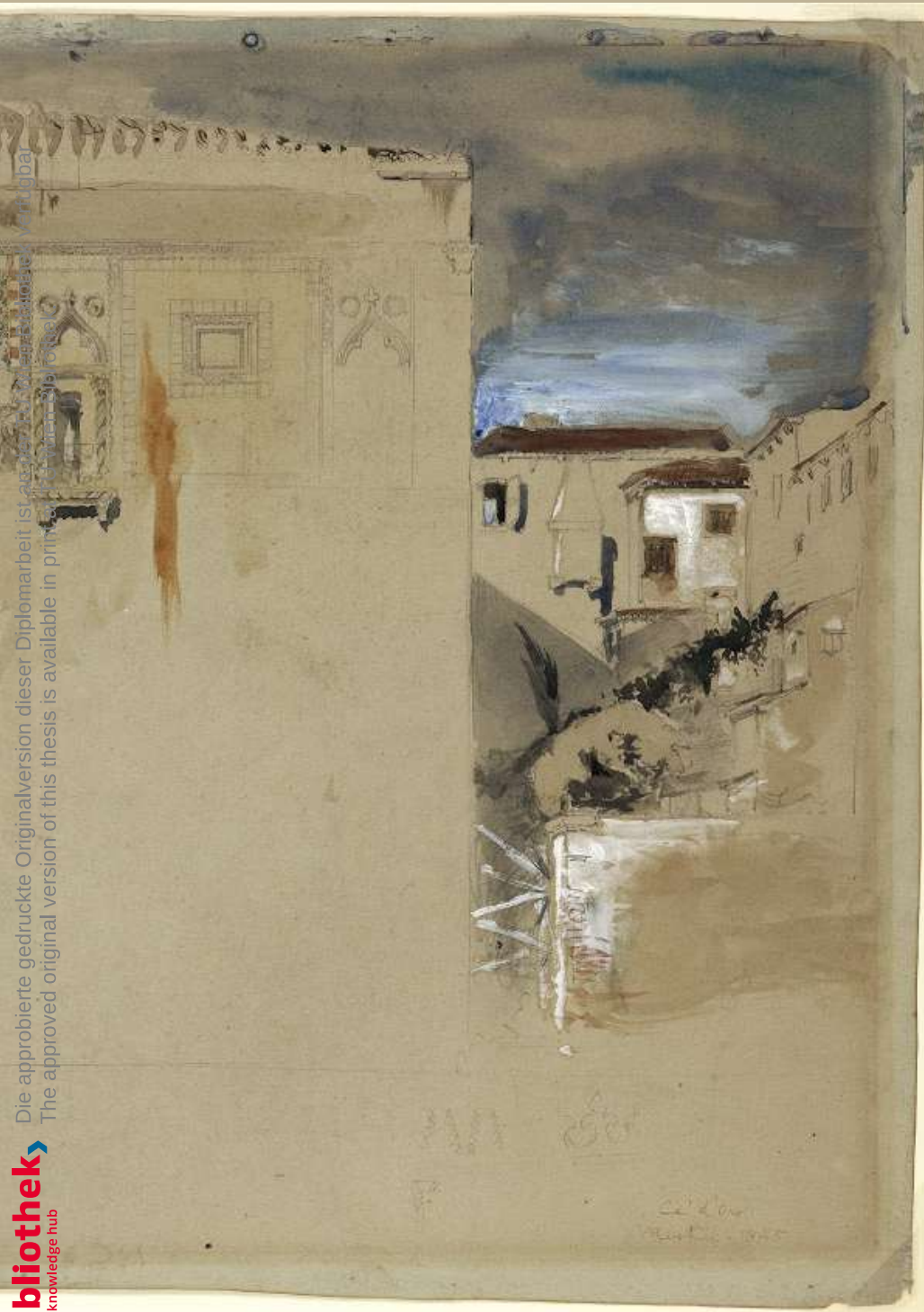
f.12: Ruskin, John. "Ca D'oro". Pencil, watercolour and bodycolour. 1845.
at Google Arts & Culture. Image rights: © The Ruskin, Lancaster University.

from a letter, Ruskin send to his father
in **Venetian Notebooks**

Ruskin's letter to his father explains the discrepancy in detail that Ruskin's drawing of Casa d'Oro shows. It was nowhere near a disinterest in the building's facade but out of an affront to his principles.

(VENICE, Sept. 23, 1845). - You cannot imagine what an unhappy day I spent yesterday before the Casa d'Oro - vainly attempting to draw it while the workmen were hammering it down before my face. It would have put me to my hardest possible shifts at any rate, -for it is intolerably difficult, and the intricacy of it as a study of colour unconceivable.[14]

from **The Seven Lamps of Architecture, John Ruskin**
Chapter VI. The Lamp of Memory. II.

In his treatise 'The Seven Lamps of Architecture, Ruskin describes seven principles he considered essential for architecture. It reflects his traditionalist beliefs, which also inspired the Arts and Crafts movement around the turn of the twentieth century.

Ruskin criticised the harmful effects of industrialisation and the low status of traditional craftsmanship.[a]

It is as the centralisation and protectress of this sacred influence, that Architecture is to be regarded by us with the most serious thought. We may live without her, and worship without her, but we cannot remember without her. How cold is all history how lifeless all imagery, compared to that which the living nation writes, and the uncorrupted marble bears! how many pages of doubtful record might we not often spare, for a few stones left one upon another! The ambition of the old Babel builders was well directed for this world: there are but two strong conquerors of the forgetfulness of men, Poetry and Architecture; and the latter in some sort includes the former, and is mightier in its reality; it is well to have, not only what men have thought and felt, but what their hands have handled, and their strength wrought, and their eyes beheld, all the days of their life.

a Triggs, Oscar Lovell. 2009. The Arts & Crafts Movement. Art of Century Collection. New York: Parkstone International. page 27.

14 Ruskin, John. 1845. Letter to his father. as footnote in "Ruskin Venetian Notebooks Library Edition Volume 8: Seven Lamps Of Architecture: Electronic Edition". 2008. Lancaster University. page 243.

cont **The Seven Lamps of Architecture**

Chapter VI. The Lamp of Memory. XVI.

Now, to return to our immediate subject, it so happens that, in architecture, the superinduced and accidental beauty is most commonly inconsistent with the preservation of original character, and the picturesque is therefore sought in ruin, and supposed to consist in decay. Whereas, even when so sought, it consists in the mere sublimity of the rents, or fractures, or stains, or vegetation, which assimilate the architecture with the work of Nature, and bestow upon it those circumstances of color and form which are universally beloved by the eye of man. So far as this is done, to the extinction of the true characters of the architecture, it is picturesque, and the artist who looks to the stem of the ivy instead of the shaft of the pillar, is carrying out in more daring freedom the debased sculptor's choice of the hair instead of the countenance.

But so far as it can be rendered consistent with the inherent character, the picturesque or extraneous sublimity of architecture has just this of nobler function in it than that of any other object whatsoever, that it is an exponent of age, of that in which, as has been said, the greatest glory of a building consists; and, therefore, the external signs of this glory, having power and purpose greater than any belonging to their mere sensible beauty, may be considered as taking rank among pure and essential character; so essential to my mind, that I think a building cannot be considered as in its prime until four or five centuries have passed over it; and that the entire choice and arrangement of its details should have reference to their appearance after that period, so that none should be admitted which would suffer material injury either by the weather-staining, or the mechanical degradation which the lapse of such a period would necessitate.[15]

In this sense, the movement's intentionality is close to the trend of making architectural drawings appear hand-made. However, this trend often remains a mere superficiality when the drawings are easily reproducible.

In contrast, the profound socialism that came to be the driving force of the Arts and Crafts movement criticised the deduction of workers to mechanisms by focusing on the quantities of manufactured goods rather than their quality.[b]

15 Ruskin, John. 1849. The Seven Lamps Of Architecture. at The Seven Lamps Of Architecture. Ebook. London: Smith, Elder & Co. pages 130, 138.

b Triggs, Oscar Lovell. 2009. The Arts & Crafts Movement. Art of Century Collection. New York: Parkstone International. page 27.

The Drawing that sees Itself

with Ca d'oro, John Ruskin

f.13

f.14

f.15
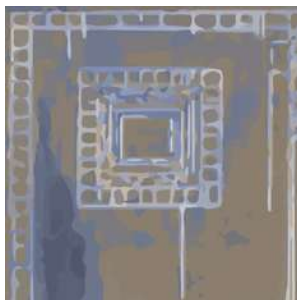
f.16

In his drawings, John Ruskin sought to understand the subjects through close observation. He established a drawing school at the University of Oxford that was not meant to train artists but to allow ordinary people to find greater beauty in nature, art, and ultimately in life.

Similarly, his architectural drawings from Venice begin to document the order of Italian architecture and draw attention to the need for appropriate protection.[16]

He meticulously included cracks in the facades of buildings he drew, irregularities in material and the remains of broken elements as signs of ageing manifested a building's beauty to him.[17]

In this drawing of Ca d'oro, Ruskin went into great detail in some elements, such as the delicate tracery of the upper arcades, including the wall behind it (f.13). In contrast, he left other parts in rough sketches (f.14) and large parts of the paper blank with only some finely drawn pencil lines. The pencil lines appear to have been the basis for his watercolour, some of them roughly sketched by hand, with multiple lines overlapping (f.15) and others precisely drawn, individual lines, seemingly using a ruler (f.16).

16 "Ashmolean - The Elements Of Drawing, John Ruskin's Teaching Collection At Oxford". 2013. Ruskin.Ashmolean.Org. at ruskin.ashmolean.org.
17 Ruskin, John. 1849. The Seven Lamps Of Architecture. at The Seven Lamps Of Architecture. Ebook. London: Smith, Elder & Co. page 138.

Through the various levels of execution, a sense of vision and a breath of wind have an impact within the drawing. The pencil-drawn lines act as windows that frame the outside within the drawing, the finished watercolour acts as the outside, and the blank paper as the inside. The inside comes to a form when particular watercolours distinguish areas of the blank paper. The pencil lines differentiate the forms, curate the inside, and distinguish it from the outside.

Some pencil-drawn lines act like windows whose curtains have not been opened yet. The outside of the drawing is distinguishable yet veiled. The outside and the window seem to be one, in their more unclear appearance behind the curtain (f.17).

Through other windows, the drawing's layers are visible to one another, definable by their execution level. Some watercolour streaks break the border between outside and inside, streaming through those windows as a breath of wind. Spots of the unfinished yet begun painting indicate the diffusion between the blank paper, where something can be made seen, and the finished watercolour, which is made seeable (f.18).
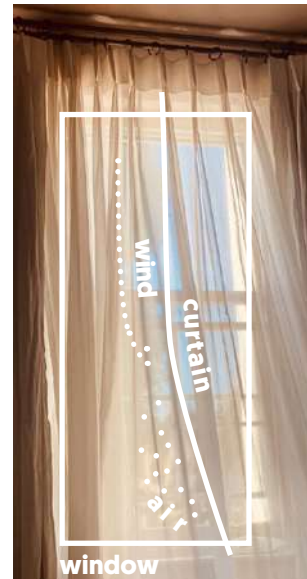
f.17

f.18

f.13 - f.16, f.18: Ruskin, John. *Ca D'oro*. Pencil, watercolour and bodycolour. 1845. *at* Google Arts & Culture. Image rights: © The Ruskin, Lancaster University. *edited
f.17: Harper's Bazaar. 2020. *Self Isolate With...* . at harpersbazaar.com/uk.

img **Ca d'oro, John Ruskin, 1845**

*edited

f.19
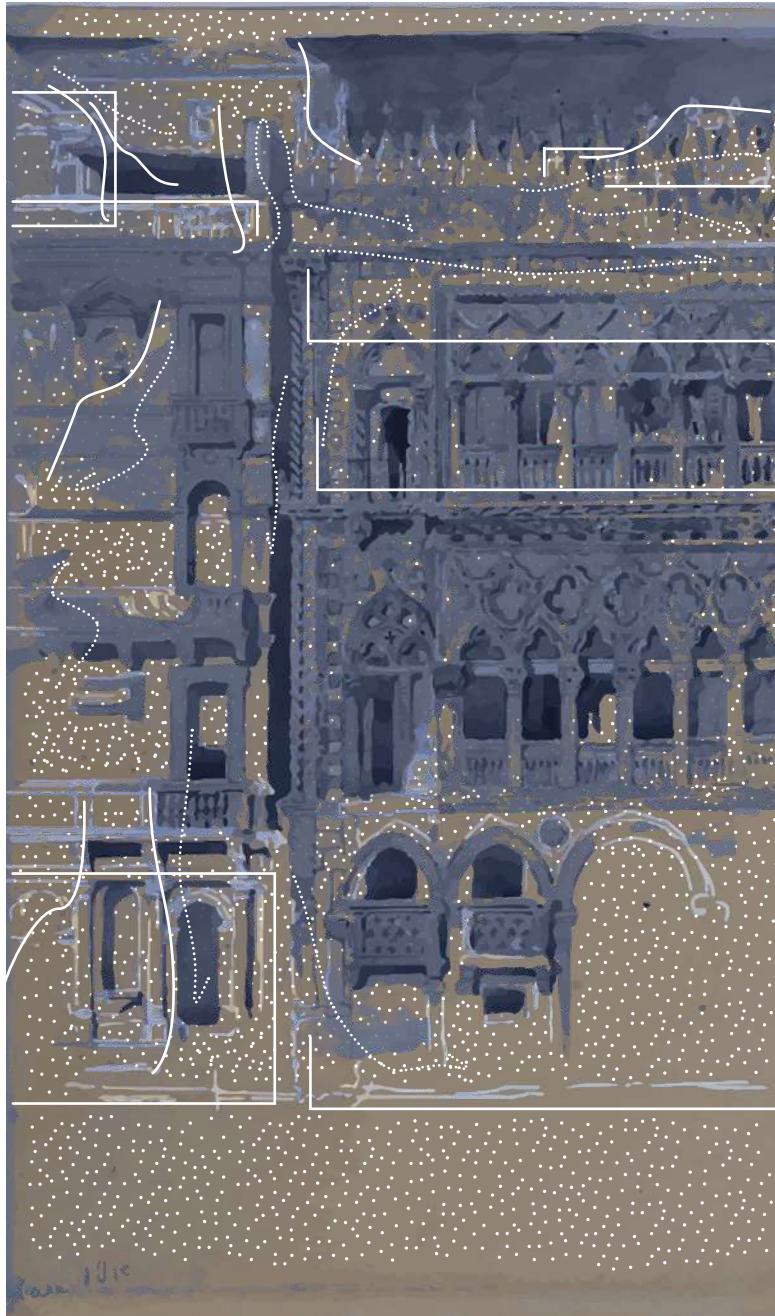
f.20

f.19, f.20: Ruskin, John. *Ca D'oro.* Pencil, watercolour and bodycolour. 1845.
at Google Arts & Culture. Image rights: © The Ruskin, Lancaster University. *edited
f.21 - f.23: Terui, Yohei, and Hiromu Yuyama. 2018. *Floating Moment.* Air, Fabric, Light. Paris.

cont **The Drawing that sees Itself**
with Ca d'oro, John Ruskin

When Junya Ishigami reflected on how to construct architecture in scale with the elements, he applied the transparency of air to architecture to bring it in scale with the elements that compose rain. For that, the architecture would be blurred in the boundaries between empty space and form-giving structure. It would then be just like air, "all around us, endlessly spreading, filling space as it goes."[18], through which he set up his definition of scale. He finds the transparency in the air's structure of atoms and subatomic particles, too small for us to sense and, therefore, despise its manifoldness, we perceive it as a void.[19]

While Ishigami continues to explore the natural phenomena of rain, we want to look at the wind, a phenomenon that can make air sensible. The manifoldness of air is in a state of continuous movement. Its movement becomes sensible when it takes effect on other objects (f.21). When the wind enters a room through a window with a curtain, we can see the force of movement and the direction of the air (f.22) through its encounter with the curtain. Therefore, a curtain is one place where the dimension of air can become sensible (f.23).

In Ruskin's drawing, a curtain makes the information the drawing will carry sensible already in its undefined state. f.20 shows the symbolism for wind, air, curtain and window established in f.17 and f.20 applied to a larger section of the drawing.

Only a slight echo will be sensible on the edges of the curtains, further away from the defining windows. They simultaneously initiate and enclose the encounter of blank space and information. In comparism with f.19, the movement of thought through the drawing becomes evident and therefore sensible.

f.21

f.22

f.23

18 Ishigami, Junya. 2019. *Another Scale Of Architecture, New Edition.* Tokyo: LIXIL Publishing. page 185.
19 ibid.
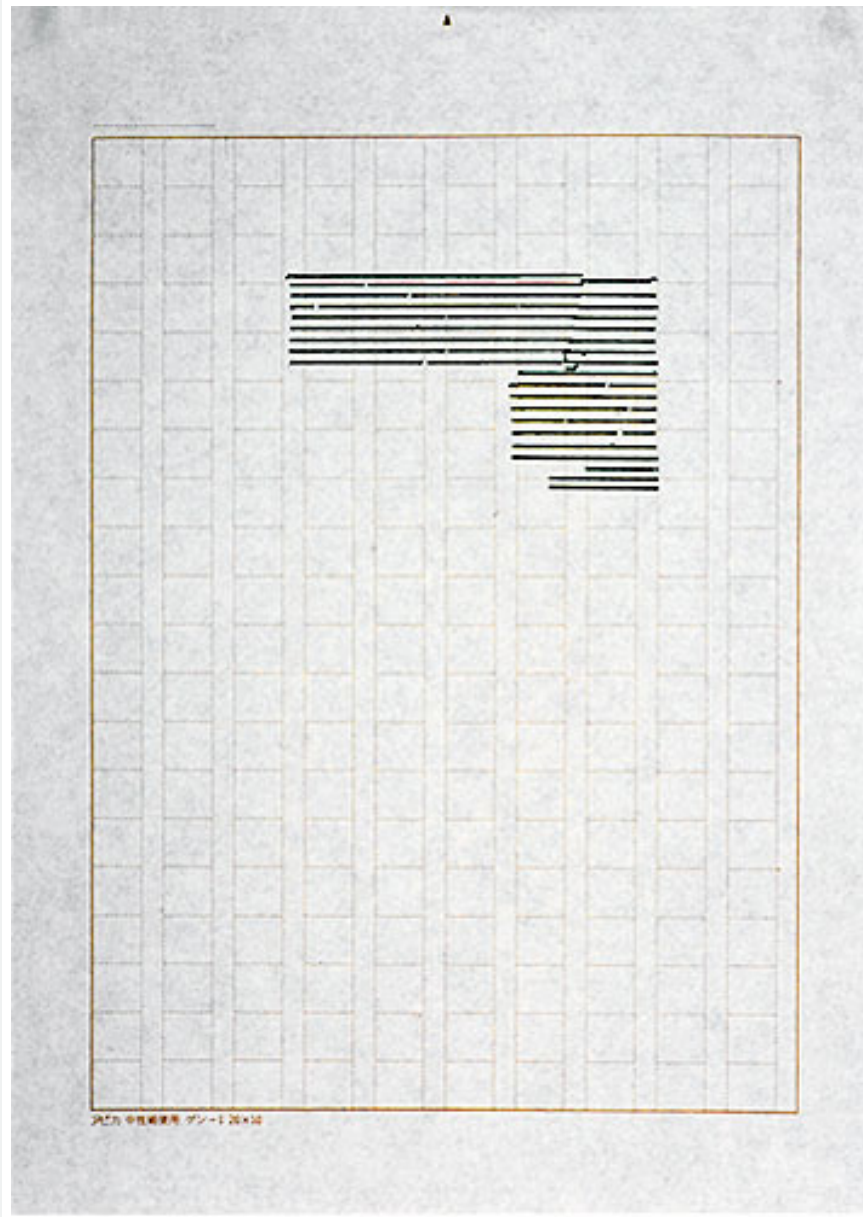
f.24: Julia Fish. *Study for Living Rooms - SouthEast - One.* Ink on paper. 2001.
at juliafish.com/selected-works/living-rooms/studies/.
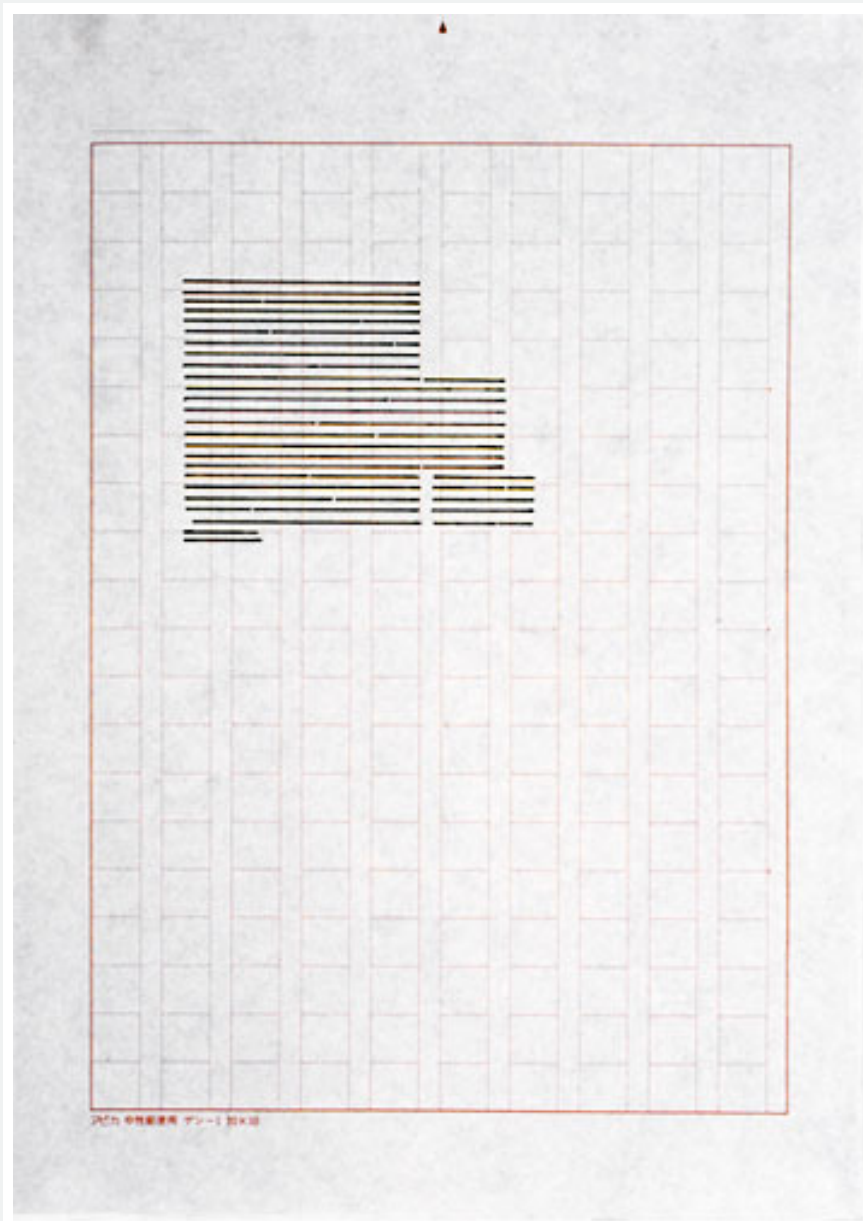
f.25: Julia Fish. *Study for Living Rooms - SouthEast - Two.* Ink on paper. 2001.
at juliafish.com/selected-works/living-rooms/studies/.

Living Rooms, Julia Fish

description for exhibition at gallery 2.5, Illinois State University, 2010

Julia Fish's 'Living Rooms' also aims to capture a building's story. It is intertwined with the artist's own story, as the object of her drawings is her home in Chicago.

Her statement that she is working in reverse to architectural practice, as she is moving from "house" to "plan", hints at the virtuality of architectural practice. While architects work out variations in plan and model before the built house exists, the plans they draw out make it easy to keep track of the virtual house that their minds build prior to the physical one.

In a sequence of works begun in 1992 and continuing to the present, I have recorded the experience of looking, living, and working within the space of my home at 1614 North Hermitage Avenue, a 1922 two-storey brick storefront / residence in Chicago. The very facts of this building – its construction and materials – have continued to reveal themselves, and have encouraged me to approach my work as a painter from a varied set of positions. Over time, I have come to recognize that I am working in reverse to the norm of architectural practice – for me, from "house" to "plan." Indeed, such visual and conceptual manifestations of inversion and opposition, doubling and replication, have been an integral sub-text to my thinking and practice. [...] the selected set of fifteen works on paper are representative of this on-going search, and underscore my interest in the generative and reflexive capacities of drawing. [...]

In 2001, I initiated drawings based on the second floor living spaces of my home; four of these Studies for Living Rooms are included in this installation. I began quite simply, by tracing the architectural plan itself – fountain-pen ink lines on paper established each of ten spaces as a footprint: the shape became, for me, a sign of occupancy. A set of ten drawings that followed in 2002 were realized first in warm-hued gouache on paper, for example [drawing for] Living Rooms, North – one, followed by a second set, as in [shadow drawing for] Living Rooms, North – one, which occupies a contingent relationship to the first, an after-image in "shadow"; i.e., each of the two sets articulates the interior rooms and the threshold(s) to an adjoining space under two different conditions, at a scale of 1:12 inches.[20]

20 Fish, Julia. 2010. "gallery 2.5 / ISU". at selected exhibition views. juliafish.com/exhibition-views/2008-2013/gallery-2-5/.

In a sequence of works that extended to twenty-nine paintings, begun in 1992 and continuing to 2001, I recorded the experience of looking and living within the space of my home and garden at 1614 North Hermitage Avenue. Step by step, one painting at a time, my attention turned to the visual evidence and structural configurations that indicate this building's history — a brick two-flat storefront that nudges the sidewalk, as a storefront should.*

* Designed and built by architect Theodore Steuben in 1922.

Individually, the paintings re-present the tangible evidence of floors, walls, and windows at one-to-one scale, oriented by point of view, either through the use of a deliberate, slight perspective in relationship to the given subject, or an examination of the paradox of spatial illusion. Collectively, the paintings function as archive: translating the significance of touch, scale, and workmanship characteristic of Chicago's working-class homes and storefronts typical of the time. Irregularities found within the predictable structures and surfaces are key to the history represented here; they signal meaning and condition memory through repeated experience of a specific domestic site, and offer an opportunity to reconsider history through the inscription of the painted image.[21]

The step from the virtual to the physical is, in a way, a change of medium. Rather than carried by the medium paper, the medium of our atmosphere would then carry the house. It then experiences influences exclusive to the atmosphere, and the built house is never precisely the same as described in its plans.

21 Fish, Julia. 2005. "1614 North Hermitage Avenue: Painting As Inscription". In Chicago Architecture. Chicago: University of Chicago Press. page 111.

imgs **Study for Living Rooms, Julia Fish, 2001**
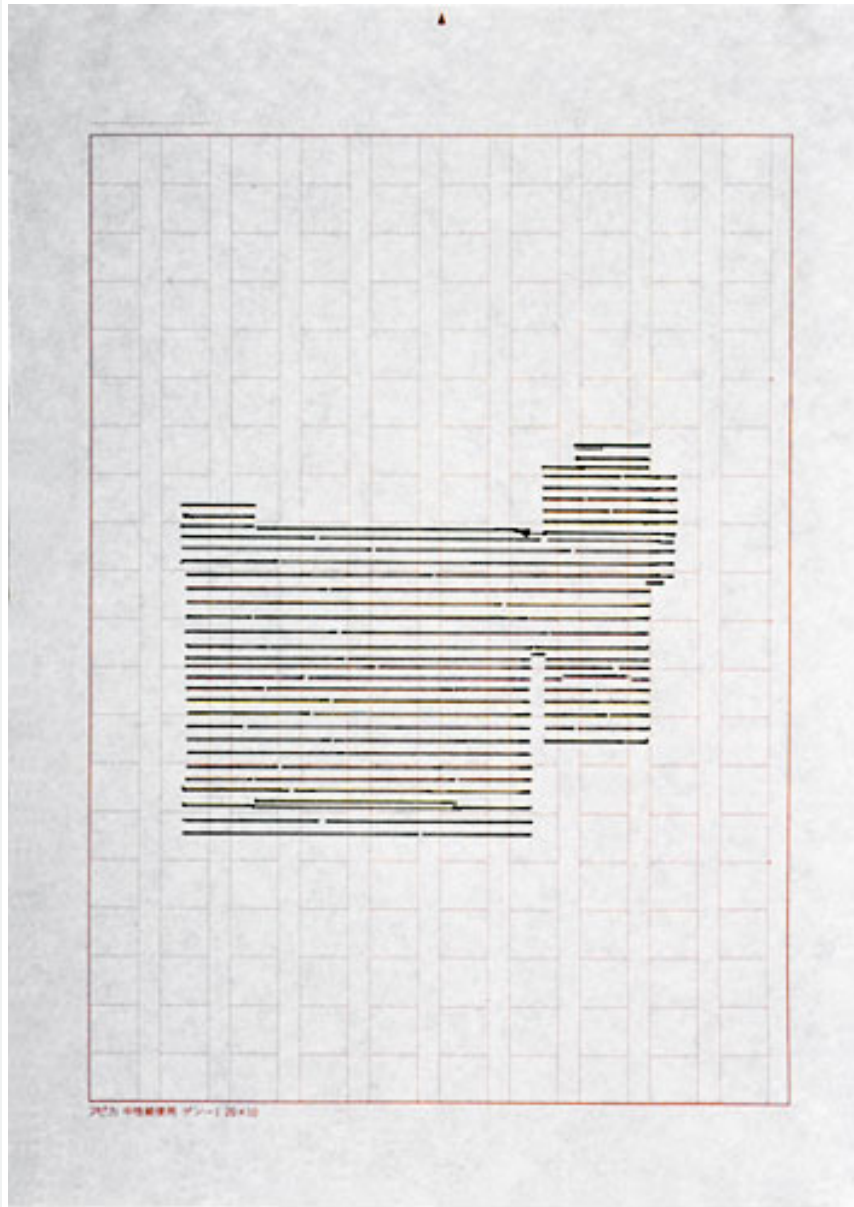
f.26: Julia Fish. *Study for Living Rooms - NorthEast*. Ink on paper. 2001.
at juliafish.com/selected-works/living-rooms/studies/.
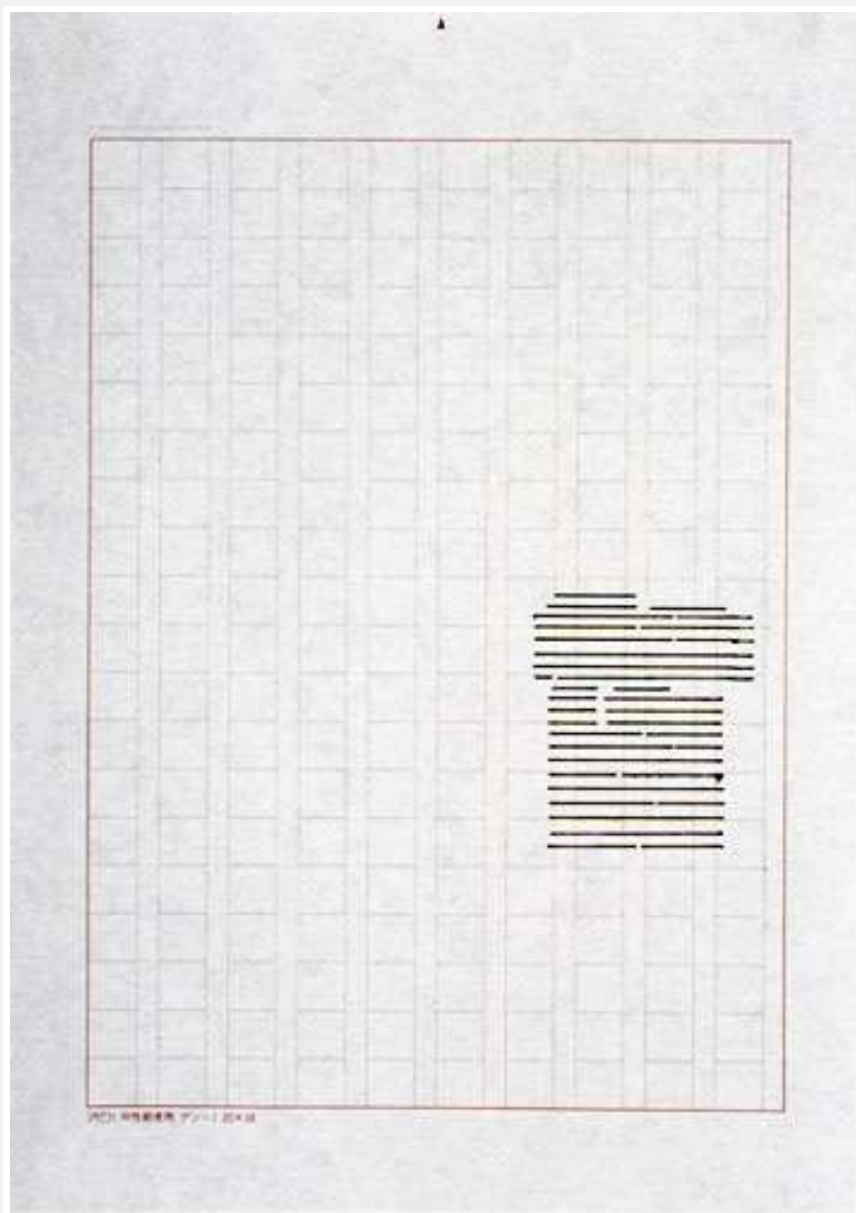
f.27: Julia Fish. *Study for Living Rooms - North*. Ink on paper. 2001.
at juliafish.com/selected-works/living-rooms/studies/.

The Graphing Sound of Columns
with Study for Living Rooms, Julia Fish
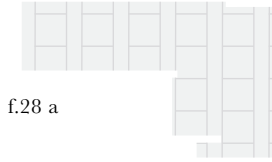
f.28 a

f.28 b

f.28 c
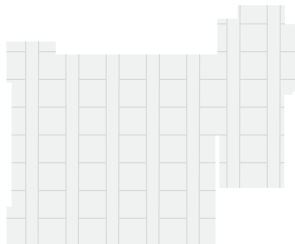
f.29 a

f.29 b
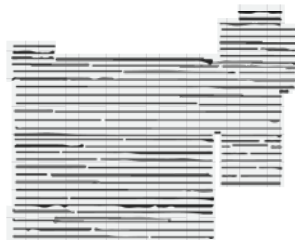
f.29 c

Sound and smell differentiate from other senses in that we may experience them even if the source is in another room. We also have no mechanisms in our body to easily avoid those sensations and need at least the help of our hands to do so.[22] They permeate us and our surroundings and, therefore, more often lead to us adapting ourselves to their input.

The graph paper used in Julia Fish's studies similarly influences the senses in a drawing. The squared paper lines permeate all of the drawing's space as if a sound that was audible at any place around its origin. Hearing a sound gives orientation and can support other sensations, but it can also overpower everything else. In a drawing, it can act as a guide for own interpretations, variations and resemblances, such as some lines in Julia Fish's drawings follow and offset the baseline of the paper.

Separating the layers of the drawings makes the distinctions of their elements, between which the senses evoke, evident. Images with the prefix a show the graph paper element from which the sound in the drawing originates. Images with the prefix b show solely the lines drawn by Julia Fish. Lastly, images with the prefix c show the meeting of those two elements, decoupled from the mass of the graphing paper. Through decoupling, the focus lies on the lines' interplay rather than their appearance as a shape on the paper.

22 Grimshaw, Mark, and Mads Walther-Hansen. 2015. *The Sound Of The Smell Of My Shoes. Proceedings of The Audio Mostly 2015 On Interaction With Sound - AM '15.*

When the lines drawn with pen and ruler come across the ones im-printed on the paper, they achieve a similar effect as an obstacle in the range of sound waves. Translated as sound waves, the graph paper used in Fish's drawings has a linear source and runs down the paper in a vertical direction, arrayed in columns with minor gaps (f.28 - f.31 a).

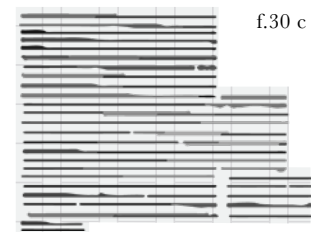The drawn lines as the obstacle are perpendicular to the direction of sound in the drawing and accumulated, as they describe the notion of an area (f.28 - f.31 b).

The following pages present simulations of sound waves of linear ori-gin, encountering obstacles resembling the hand-drawn lines in Julia Fish's drawings we see in f.28 - f.31 c.
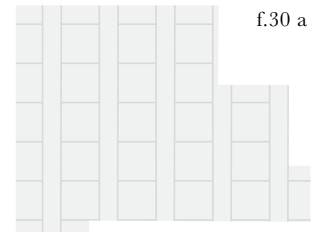
f.30 a
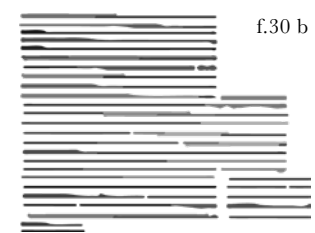
f.30 b

f.30 c
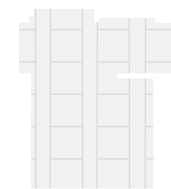
f.31 a

f.31 b

f.31 c

f.28: Julia Fish. *Study for Living Rooms - SouthEast - One.* Ink on paper. 2001.
f.29: Julia Fish. *Study for Living Rooms - SouthEast - Two.* Ink on paper. 2001.
f.30: Julia Fish. *Study for Living Rooms - NorthEast.* Ink on paper. 2001.
f.31: Julia Fish. *Study for Living Rooms - North.* Ink on paper. 2001.
all at juliafish.com/selected-works/living-rooms/studies/. *all edited

The Graphing Sound of Columns

with Study for Living Rooms, Julia Fish
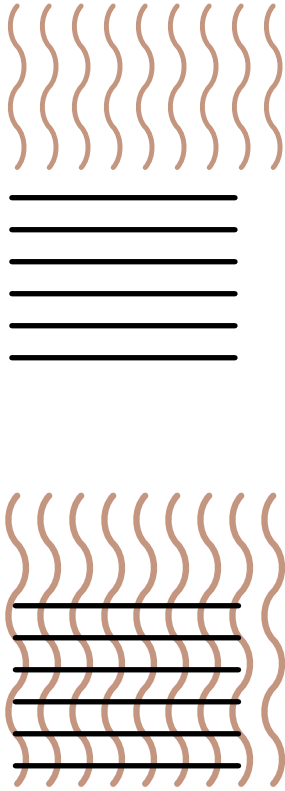
The simulation on the right emulates sound waves that encounter an obstacle made of parallel lines arranged perpendicular to the direction of the sound (f.32). The black bars represent troughs of the sound waves, and the light bars crests.

Encountering the obstacle, no substantial disruption of the behaviour of the waves is noticeable, meaning that they remain identifiable overall. The behaviour of the waves off the sides of the lines is unaffected. While there is some disruption through reflection above the obstacle, it is so minuscule that it can be considered trivial. Irrelevant for our observation is also the absence of waves below the obstacle. It is simply the result of the obstacle blocking the sound and would translate as an erasure of the graph paper below a drawing (f.33).

In the spacing between the lines, the sound waves experience more impact by the reflective quality of the obstacle. Bouncing to and from the lines in short intervals, the linear structure of the waves gets broken up into fragments and creates an irregular, checkered pattern of throughs and crests.

Similarly, a fast way to draw a chessboard is to use ruled paper and draw lines perpendicular to the imprint. We are then modifying the sound within the drawing by adding reflections.

f.32
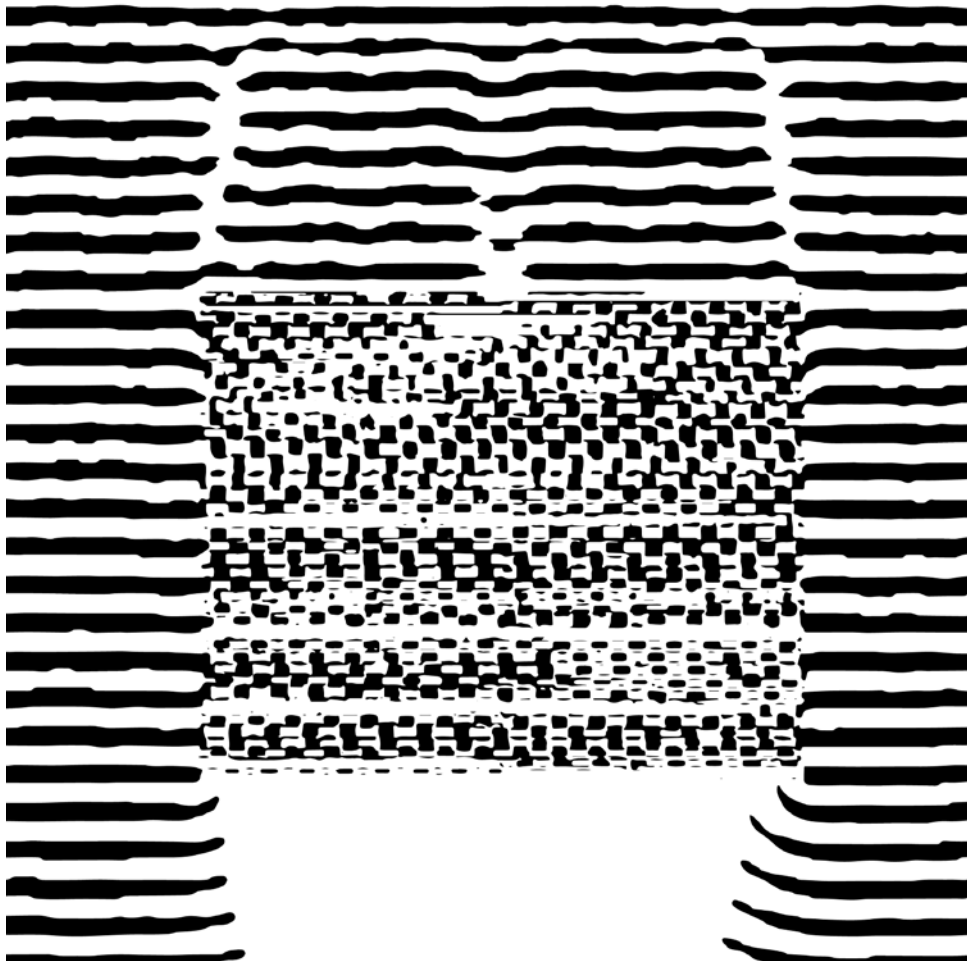
f.33

f.33: Ripple Tank Simulation. *by* Paul Falstad *at* falstad.com.*edited

cont **The Graphing Sound of Columns**

with Study for Living Rooms, Julia Fish
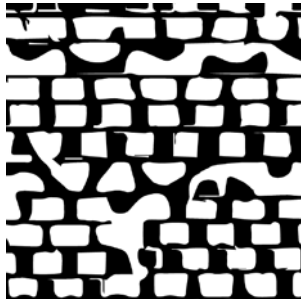
f.34

f.35

The following page shows the same method applied to one of Julia Fish's studies. The obstacle in the sound wave simulation exactly mimics the lines of one of her drawings.
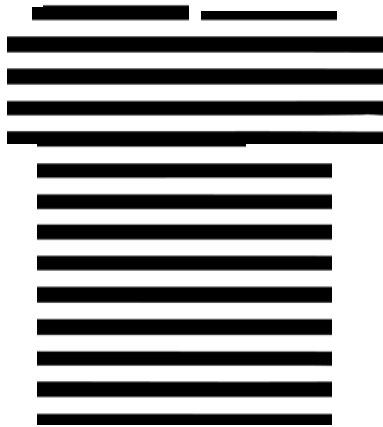
Figure f.44 shows uninterrupted sound waves from a linear source, to which the graphing paper of f.37 would translate. Figure f.38 then introduces the obstacle, including cracks, bumps and line thicknesses from the original drawing.

These irregularities of the obstacle impact the waves more substantially than in the previous simulation. The sound waves slip through the gaps of the lines, creating swirls that further confuse their momentum. The sound is reflected unevenly in those places instead of forming a chequered pattern (f.34).

The lines in the original drawing (f.39) neither follow the rhythm of the imprint nor establish a strict ductus among themselves. Their dynamic with the imprint makes the graph paper seem interrupted and uneven. Especially their horizontal continuity is hard to distinguish. The regularity of the space's division is interrupted by the irregularity of the new element (f.35) - as is the regularity of physical sound by an obstacle (f.34).

Therefore, beyond recording physical space based on personal experience, the studies establish an experience within virtual space. They are an excellent example of virtual sensuality, the sensual experience of virtual elements.
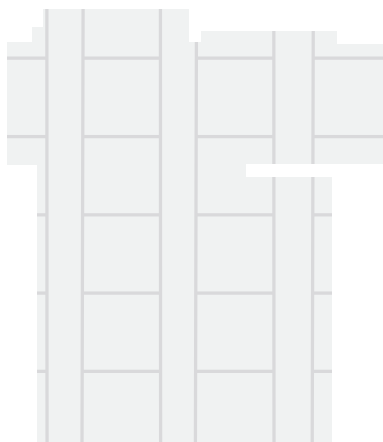
f.34, f.36, f.38: Ripple Tank Simulation. *by* Paul Falstad *at* falstad.com.*edited
f.35, f.37, f.39: Julia Fish. *Study for Living Rooms - North.* Ink on paper. 2001.
at juliafish.com/selected-works/living-rooms/studies/. *edited

imgs **Study for Living Rooms, Julia Fish, 2001**

edited

f.36

f.38

f.37

f.39

from **The Story of Another Way of Drawing**

Ellen Smit about Dutch Structuralism
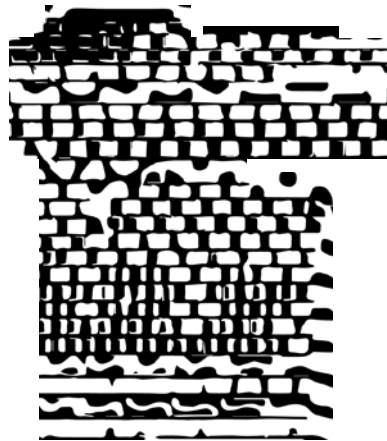
Comprehensively develop-ing a new approach to architecture entails the adaption of architectural representation. Drawings function as maps of the virtual architecture that grows over the planning process. The mindset such a map is approached with influences its form tremendously.

Piet Blom's Kasbah in-cludes descriptions unusual for a technical drawing, as he and other Dutch Structuralists sought to approach archi-tecture from the starting point of social relations.

From that perspective, the drawing is as valuable as a blueprint for the construc-tion site, for an approach to architecture rooted in social constructs rather than technical finesse.

Dutch Structuralism was an influential tendency in post-war Dutch architecture and urban design. Structuralist designs and buildings are made up of repetitive elements that can in theory be adjusted in both size and function. They take social relations as their starting point and have the potential to promote interaction between the buildings' users.

The way structuralist architects like Aldo van Eyck, Piet Blom and Herman Hertzberger drew broke with the tradition of previous gen-erations. They adopted new forms of representation, the most striking being the so-called spreektekeningen (drawings annota-ted with speech bubbles), hybrid drawings and brightly coloured grids. (...). The grids and patterns, the bright colours and speech-bubble drawings were intended to present a different picture from traditional housing designs and can be interpreted as an alterna-tive to that bureaucratic and pragmatic building practice [de-signed to foster an efficient building process aimed at the rapid alleattion of the housing shortage].

(...). Piet Blom combined two extremes of architectural represen-tation: a mathematically designed order and an intuitive and sub-jective architectural impression. The mathematical drawings based on a geometric system were for Blom a means of getting a grip on the complex spatial designs he envisaged. He then supplemented his abstract patterns and grids with speech-bubble drawings and collages. In so doing Blom entered a different world – that of an individual desire, struggle, communality and sensibility – aimed at communicating his design in a more human and accessible man-ner.[23]

23 Smit, Ellen. 2018. "The Story of Another Way of Drawing. Structuralist Architectural Drawings in Het Speelhuis by Piet Blom". Bulletin KNOB 117 (2):80-103. https://doi.org/10.7480/knob.117.2018.2.2453.

Tasting a Sound
with Kasbah, Piet Blom
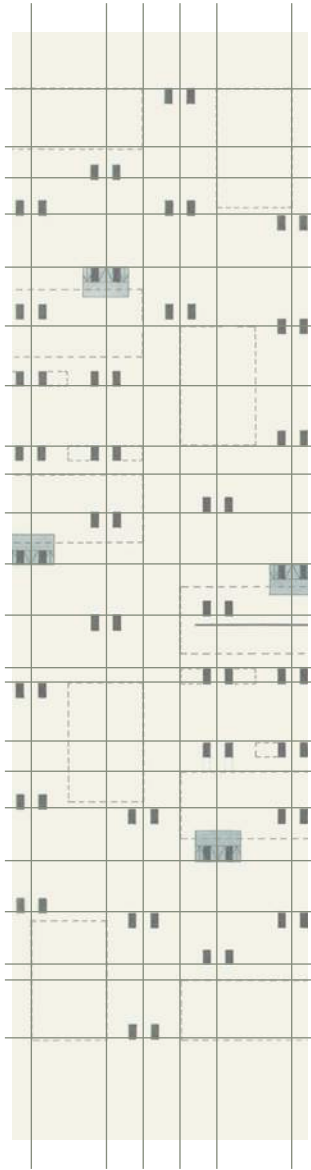
f.41

By setting up a rather strict structure as the first layer (f.41), Blom fills the drawing with a sound of one tonality. The black and grey rectangles and the continuous and dashed lines follow a rectangular grid. Despite not being regular, the grid organises this layer into straightly cut squares, assigning a rigorous solidity to it.

More personal notes then accompany these squares, which partially orient themselves on the established structure (f.42) or permeate it organically (f.43). The personal notes are as if a taste completes the drawing. Taste is a rather structured sensual experience as singular tastebuds only process information for one taste. The taste, therefore, gets prescreened and classified before the brain processes it in more depth. It then adds the organic layer when we associate a taste not only with similar tastes we know but also with memories, our surroundings and our mood.

For the gustatory perception of a bite, its colour, shape, texture, temperature, and its sound are all as essential as its taste and smell. In 2008, Massimiliano Zampini and Charles Spence won the Ig-noble Prize at Harvard University for making a potato chip appear fresher than it was by electronically modifying its sound.[24]

In Piet Blom's drawing, the taste established by the annotations is inconceivable without the sound of the rectangular grid, making them reciprocal. The sound structure may be considered a bland slice of sandwich bread, equally cut in squares. We give it a particular personality when we eventually toast, garnish, and eat it. And it is not until we take a bite of the bread that we taste the note we have given to it, and simultaneously we just then can hear its sound.

24 *Ig® Nobel Prize Winners*. 2021. Improbable Research.
at improbable.com/2021-ceremony/winners/#ig2008.

img **Kasbah, Piet Blom, 1965**

edited

f.42

f.43

The strict structure of the drawing's first layer appears intricate yet replicable. Similarly, the sound of bland slices of toast does not differentiate profoundly. The taste obviously differs when we put jam on it or butter. In the drawing, the handwritten annotations break with the generic appeal of the grid. They bind its strict structure to a unique thought, such as the garnish of the toast combines its sound with a unique taste.

This example creates space not only for the interaction between elements in virtual space but in addition also between the sensual experiences. Perceiving these interactions allows the virtual space we create to be populated by lively concepts. When we invite more such nuances into the virtual space, we can play out more detailed scenarios with which we also relate better.

f.41, - f.43: Blom, Piet. *Kasbah.* 1965. *in* Thomas, Helen. 2018. *Drawing Architecture.*
London, New York: Phaidon. page 50. **edited*
Image rights: Collection Het Nieuwe Instituut / BLOM: 33-2.

II . The Explanation of Self and Setting

memory - trace - touch - boundary

Our discovery of the world begins with our senses until we ultimately learn to differentiate ourselves from our surroundings. That differentiation gives us orientation and is fundamental to ask then more profound questions about the world we live in.

To develop a model of the dimensions and entities of virtual space and their sensations, we want to begin by defining a point of reference in the evolution of digital virtuality.

As of 2020, Virtual and Augmented Reality, two technologies that have the power to transform the User's relation with virtual space drastically, are considered mature.[25] Virtual Reality can generate the sensation of touch via haptic feedback, the sensation of force feedback, smell, breezes, temperature and even taste.[26]

But one sensation is more challenging to imitate convincingly: the sensation of weight outside of our body. Cables could pull down our arms to mimic the weight if we were to pick up a vase in a simulation. The more accurately the devices are adjusted to our bodies, the more natural the feeling of force will appear. However, the counterforce of picking up an object will still not originate where the object appears, even if we experience it in such detail that we could tell it to be clay or glass.

Here we want to put a pin in the digital evolution. At a point where virtual space can mirror all that we can imagine it to be as a weightless reflection, creating a seemingly matter-less part of the world.

In the weightlessness of virtual space, the differentiation of entities has to be treated differently than in physical space.

25 "5 Trends: Hype Cycle For Emerging Technologies 2020 | Gartner". 2021. Gartner. https://t1p.de/k3kr
26 Kumar, Prashant. 2019. Full Immersion Virtual Reality - At The Edge Of Reality And Fantasy. Video. https://t1p.de/s5dh.

For instance, the touching of two virtual entities can not primarily be defined by considering their boundaries. More than in physical space, a touch in the Virtual is an exchange. Therefore, in a spatial plan of a virtual construction, we would distinguish between the construction and its embedding landscape differently. As the landscape is the code that defines each form a User can access through a Program, it holds the definitions of all possible forms. Therefore, drawing one form would entail embedding it in the definition of itself and everything it is not but could be.

In comparison, if we understand form as a geometric form, drawing a triangle would entail embedding it in its own definition and the definitions of all other geometrical forms, as well as the definition of the plane we are placing it on. It would be hard to distinguish which was the one form the drawing was meant to depict.

However, we could distinguish one form from its landscape by depicting a specific moment in which entities touch and maintain the balance of that form specifically. Like the moment, the form would be finite and, therefore, definable. For example, if an element collects properties, it is in a balanced connection with another element and has not yet morphed with it. That moment of connection is finite and, through translation, depictable. The element would then act as one defining point of the depicted form.

The action of morphing would change the depictable, finite form into a new element, and only the memory of the former will remain.

II. The Explanation of Self and Setting

memory - trace - touch - boundary

The weightlessness of virtual space can create a sense of disorder in which anything may be everything. It can be tamed by being precise in time. Remembering the principle of situation and action that form a moment, the moment comes to have boundaries through the synergy of situation and action. If we were to distinguish two moments, more than the situation they are set in would be required to identify their boundaries.

One entity in the virtual space can also take several forms simultaneously. Its capacity to be everything is not compromised when it takes up one specific form. Similarly, the situation's continuity in time is not interrupted by a moment's boundaries.

On the other hand, the action that forms the moment leaves traces in the situation that continue to exist as memory.

Those traces are substantial to a virtual construction. A construction contains the memory of configurations, preceding and potential, to consider its ideal form in one specific moment.

That makes memory a virtual good. It exists in the configuration as much as active entities. Therefore, a construction in virtual space consists of a great degree of memory and the reflection of itself. One form is continuously followed by the next, such as the reflection of memories allows the characters in Waiting for Godot to create a new memory.

The traces of information remain as a patina on the ageing yet ever-new walls and substantiate it by supporting their continuous reflection.

Touch is one of the actions in virtual space that can create such traces.

Touch is the moment of connection between entities and the exchange of information. In each configuration, entities build a form that upholds the balance between them. When one entity's parameter changes or a new result or added information requires a new configuration, the balance must be calibrated anew. In physical space, primarily associated with the tangency of existing boundaries, touch creates a sense of boundaries in virtual space. The virtual boundaries are not material but composed by time.

Therefore, touch has the capacity to build the walls of a virtual construction. Virtual walls are not a categorisation of space, constructed once and intended to remain in their configuration. Instead, they keep being constructed time and again through each touch, and their configurations change specifically for each form.

The separation of virtual space is also defined by a moment in time. The end of a moment marks the resolution of a configuration. At that point, the single entities of a configuration still differentiate from each other in the same way they did to uphold the configuration's balance. Their boundaries are still well-defined, but their connection has already been resolved.

As all forms and their landscape do not simply contain but substantiate each other, they can only be identified in their entire figure instead of captured in one drawing. One in the Virtual is again not just one; it is one together with all that is surrounding it. Boundaries can be drawn only around specific moments in time.

imgs **The Manhattan Transcripts, New York, New York**
**Episode 4: The Block**
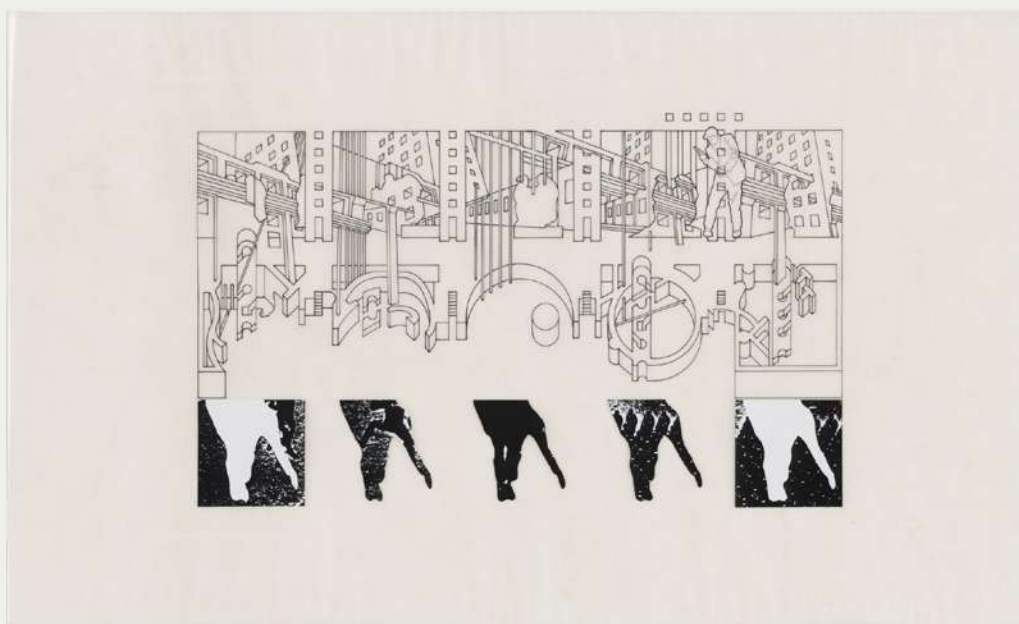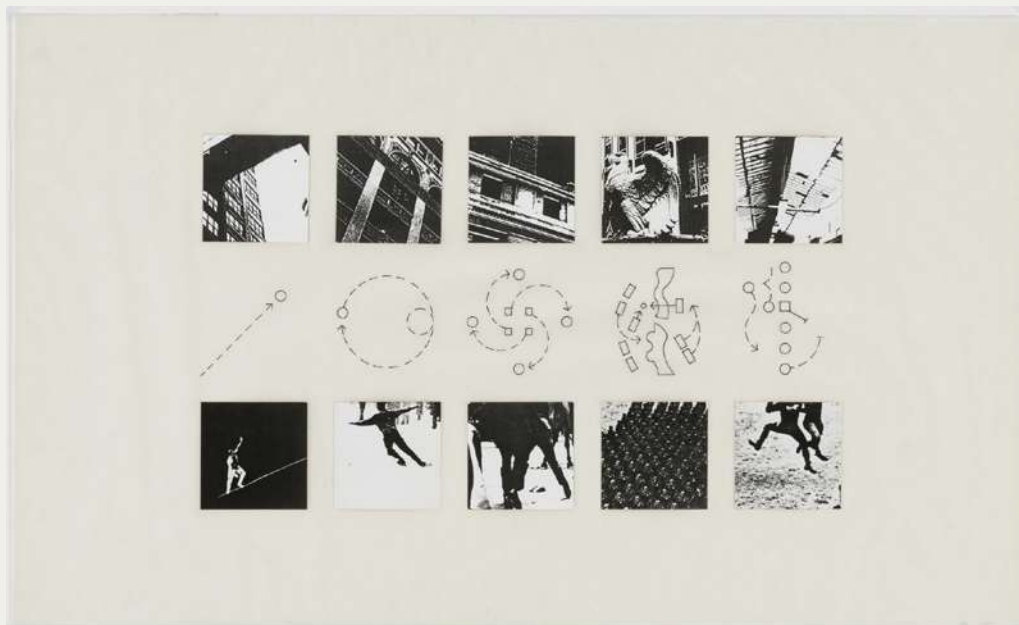
f.44, f.45: Tschumi, Bernard. "The Manhattan Transcripts Project, New York, New York, Episode 4: The Block."
Ink and photographs on tracing paper. 1980-1981. moma.org/collection/works/55, /56.
Image rights: © 2022 Bernard Tschumi.

Bernard Tschumi

excerpt from The Manhattan Transcripts, 1994

MT4

'Here is the Block, with its loose yards and its ruthless frames
- where well-dressed soldiers get rich on acrobats' habits ...
where fat football players send you up for knowing the wrong
kind of strongarm dancers ... where everything you want belongs
to somebody else, and the only way to get it is illegal, immoral, or
deadly .... THE BLOCK.'[27]

The Manhattan Transcripts, 1976-1981
as described on Bernard Tschumi's website

Architecture is not simply about space and form, but also about
event, action, and what happens in space.

The Manhattan Transcripts differ from most architectural drawings
insofar as they are neither real projects nor mere fantasies. Devel-
oped in the late '70s, they proposed to transcribe an architectur-
al interpretation of reality. To this aim, they employed a particu-
lar structure involving photographs that either direct or "witness"
events (some would call them "functions," others "programs"). At
the same time, plans, sections, and diagrams outline spaces and
indicate the movements of the different protagonists intruding
into the architectural "stage set."

The Transcripts' explicit purpose was to transcribe things normally
removed from conventional architectural representation, namely
the complex relationship between spaces and their use, between
the set and the script, between "type" and "program," between
objects and events. Their implicit purpose had to do with the 20th-
century city.

The virtuality of architec-
tural practice, hinted at
in the discussion of Julia
Fish's drawings, becomes
a key figure in Tschumi's
series of six collages.

The cohabitation of
architecture and its users
extends the change of
medium. Rather than hap-
pening to the architecture
after being built, it occurs
while still in the medium
paper.

27 Tschumi, Bernard. 1994. The Manhattan Transcripts. 2nd ed. New York:
St. Martin's Press. page 44.

imgs **The Manhattan Transcripts, New York, New York**
Episode 4: The Block
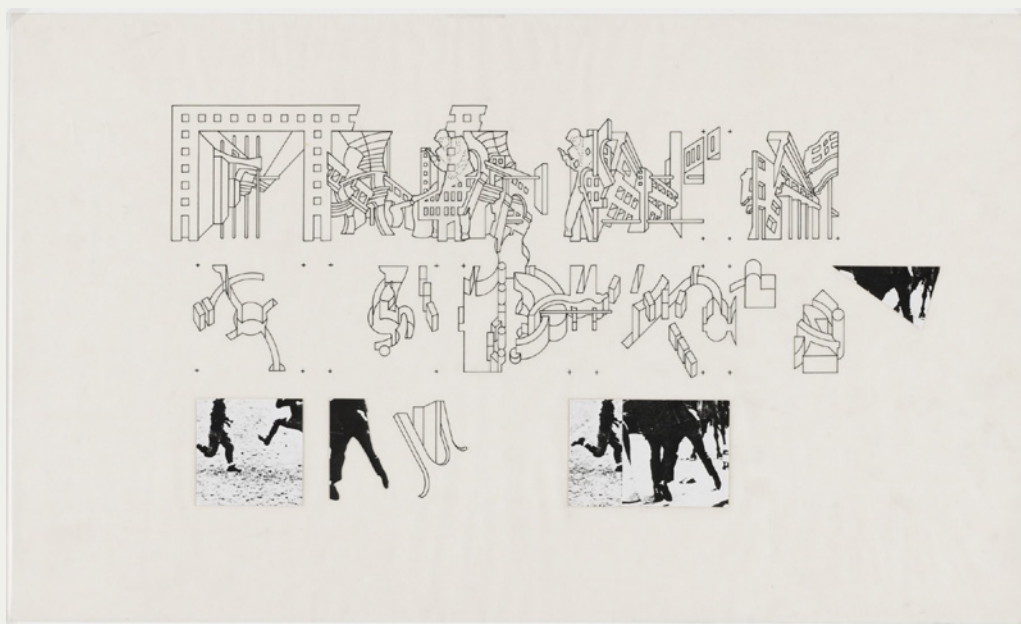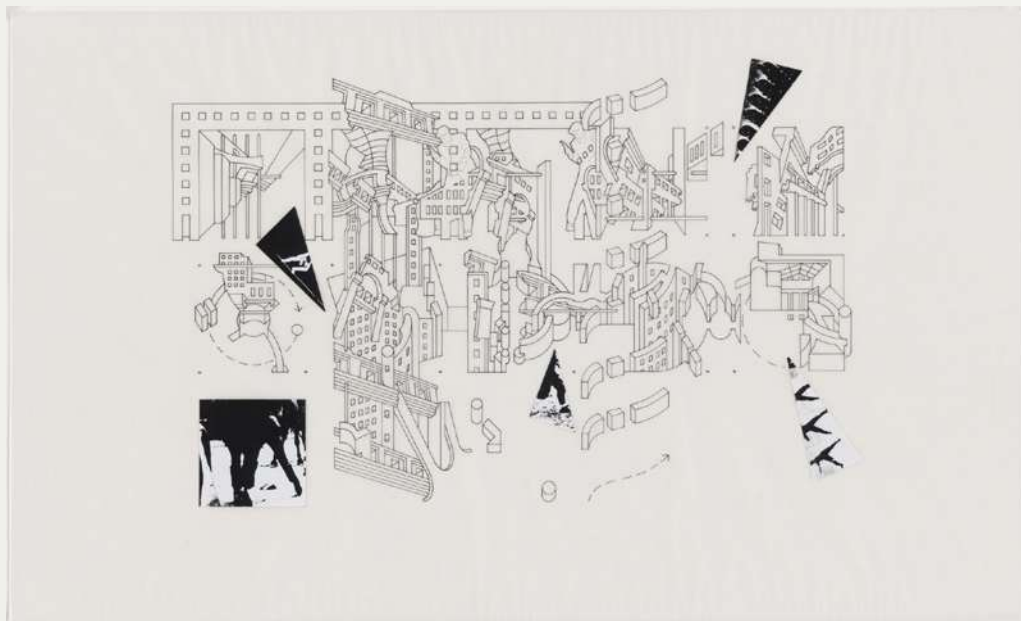
f.46, f.47: Tschumi, Bernard. "The Manhattan Transcripts Project, New York, New York, Episode 4: The Block."
Ink and photographs on tracing paper. 1980-1981. moma.org/collection/works/57, /58.
Image rights: © 2022 Bernard Tschumi.
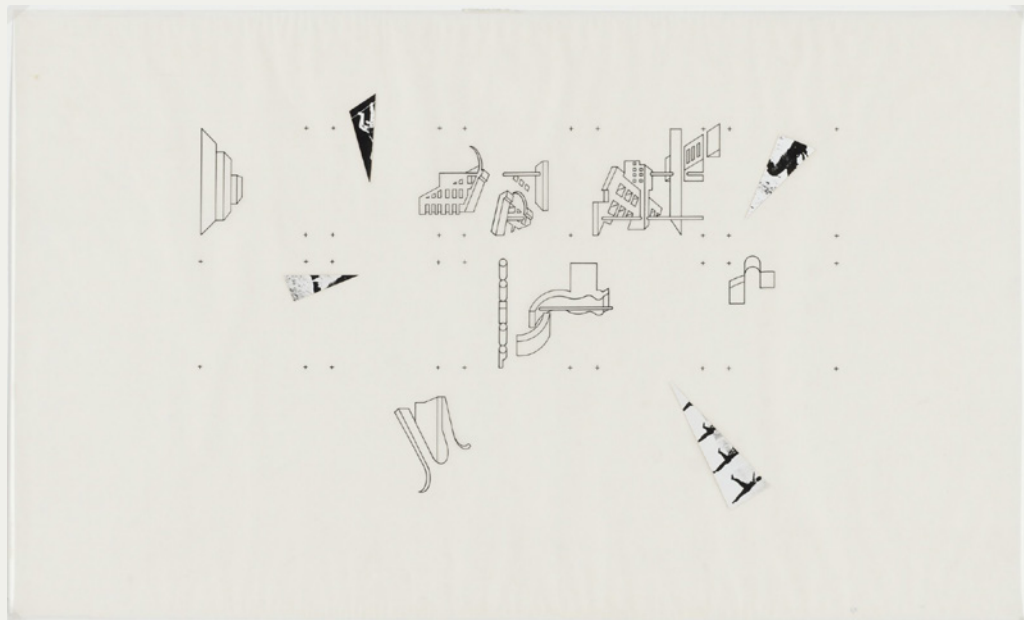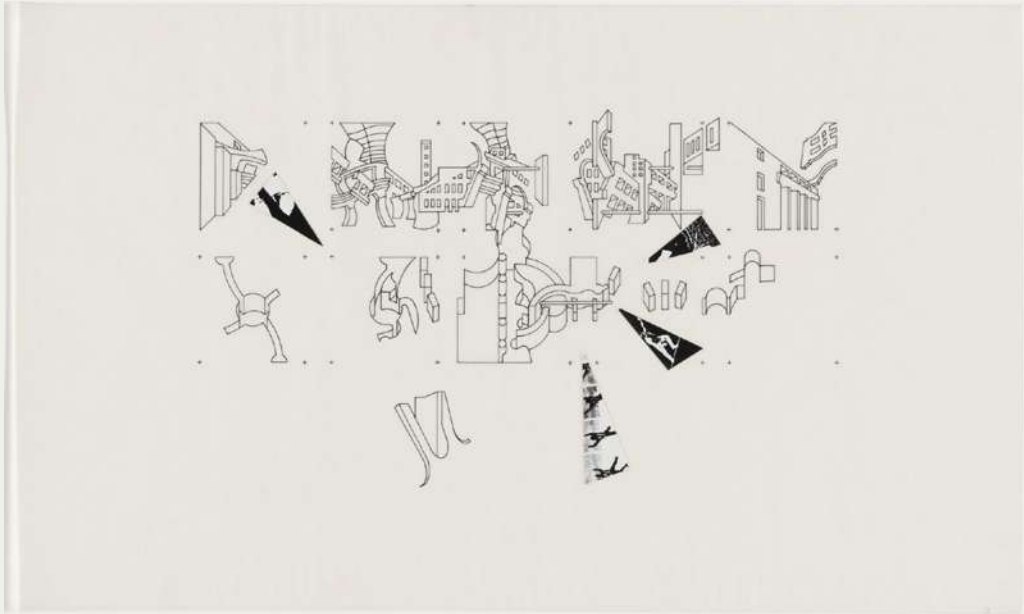
f.48, f.49: Tschumi, Bernard. "The Manhattan Transcripts Project, New York, New York, Episode 4: The Block."
Ink and photographs on tracing paper. 1980-1981. moma.org/collection/works/59, /60.
Image rights: © 2022 Bernard Tschumi.

A Tightropeact between Skyscrapers

for The Manhattan Transcripts, Bernard Tschumi
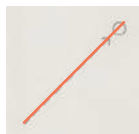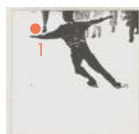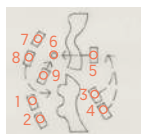
The Transcripts achieve a sense of balance within their depictions, with carefully arranged elements exactly showing what their surrounding elements require. It becomes evident when we re-organise them by rotating their arrangement 90° (f.54).

The new organisation makes sense at first glance. It bundles photographs of buildings on the left and photographs of people on the right. The diagrams still separate them in between, as in the original (f.55).

There are even relations between the indicated movements and directions. For example, next to the top left, a ridge crossing the view diagonally, is the diagram of linear, diagonal movement (f.50). But this first impression of balance collapses soon when examining the new arrangement more carefully.

Diagrams with several entities float next to rather lonely photographs of sole people (f.51), the eagle statue would get dizzy if following the movement of the adjacent diagram (f.52), and the tightrope artist would jump right off their rope (f.53).

The tension that had tingled between the elements kept them together and made them stronger than they would be alone. After re-arranging, this tension dissolves into confusion.

f.50

f.51

f.52

f.53

70

f.54
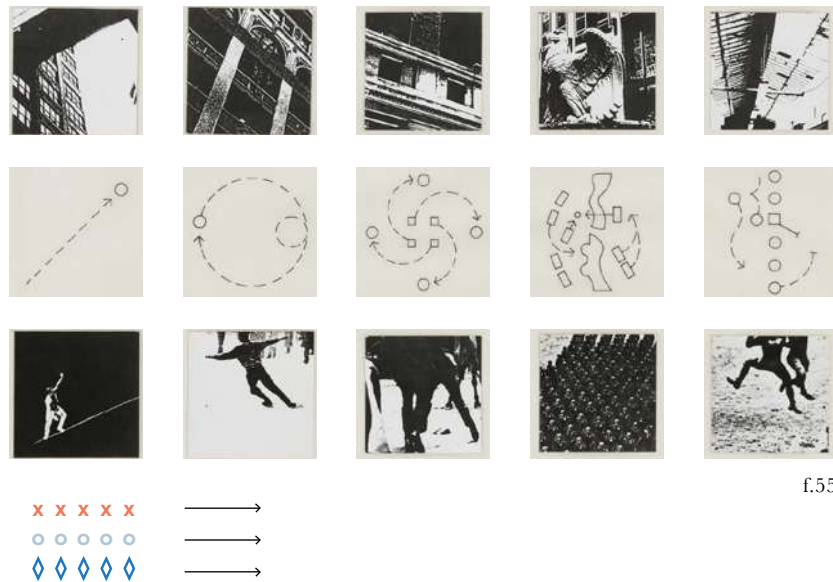
f.55

f.50 - f.55: Tschumi, Bernard. *The Manhattan Transcripts Project, New York, New York,
Episode 4: The Block.* . 1980-1981. *at* moma.org/collection/works/57. **edited
Image rights: © 2022 Bernard Tschumi.

cont **A Tightropeact between Skyscrapers**
for The Manhattan Transcripts, Bernard Tschumi

Through the six collages, Bernard Tschumi challenges this tension more and more by crossing, continuing, adding and erasing elements. The last piece of the sequence has clear focal points that the elements are drawn to in collective motions as if magnets were sitting between them (f.56).

Bernard Tschumi discussed magnetoception at the Anything conference in 2000 at the Solomon R. Guggenheim Museum, referencing his design of Kansai airport. The architecture itself aimed to act as magnets, to initiate and direct the flow of bodies and capital. He proposes that for architecture to do so successfully, people must treat each other with abstraction.[28]

Tschumi might have been referring to abstraction as considering something independently from associations.[29] This definition would allow us to explore our surroundings intuitively. Sticking to the example of an airport, instead of getting a coffee at Starbucks as of its familiarity, a traveller might go to a less crowded area and take a needed rest.

Contrarily, abstraction can also refer to the absence of mind and a lacking of awareness of one's surroundings. In that sense, the bright light of a Starbucks sign and the promising thought of caffeine might be all that is needed for us to buy their coffee, even if the seating area is crowded and loud and not at all what the tired traveller would have needed.

The cohabitation of the medium paper by architecture and its users requires forming another balance between the elements than traditional architectural drawings. Instead of following the strict rules of technical drawings, one element's placement and dimension are in reaction to another element's placement and dimension.

28 Tschumi, Bernard, and Cynthia C. Davidson, editor. 2000. *Anything*. Cambridge MA, London: The MIT Press. pages 17-23.
29 "abstraction, n.". Oxford English Dictionary Online Edition. Oxford University Press. *at* oed-com.uaccess.univie.ac.at
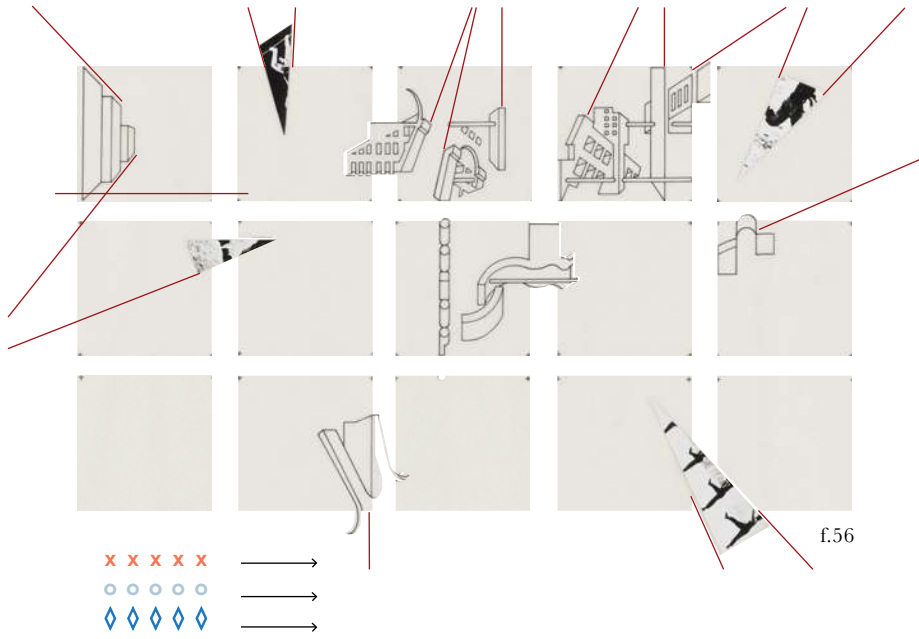
f.56
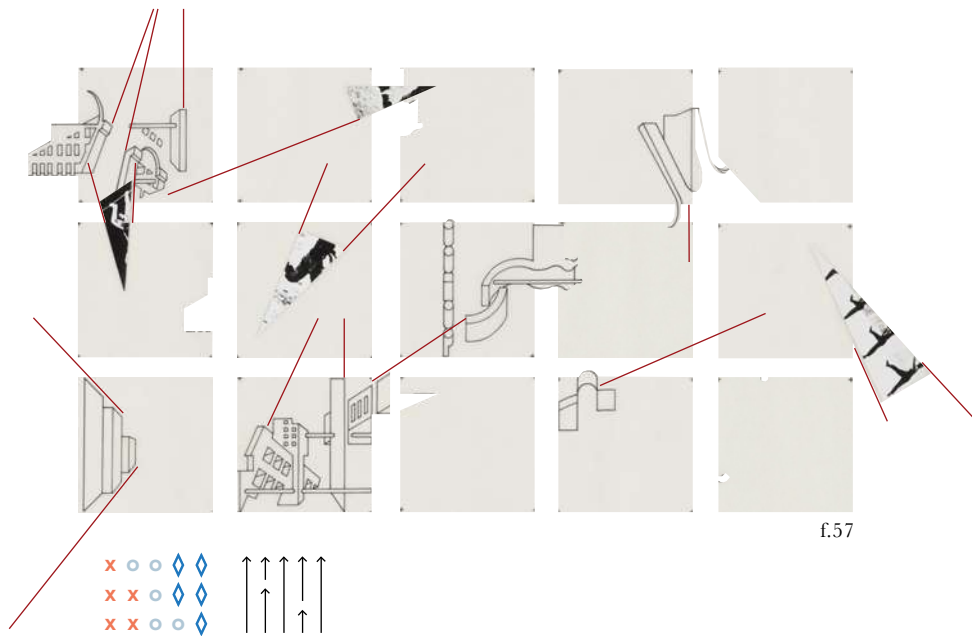
f.57

f.56, f.57: Tschumi, Bernard. *The Manhattan Transcripts Project, New York, New York,
Episode 4: The Block.* . 1980-1981. moma.org/collection/works/60. *edited
Image rights: © 2022 Bernard Tschumi.

cont **A Tightropeact between Skyscrapers**
for The Manhattan Transcripts, Bernard Tschumi

The primary function of Tschumi's proposal for Kansai Airport, and architecture in general, would ultimately be as "a 'thing' for passing time in space. (…). The airport provides a captive audience ready to be edified, illuminated, or exploited."[30]

It becomes evident that, in this case, Tschumi's conception of abstraction is closer to the latter, the absence of mind.

He also assigns the elements of the Manhattan Transcripts the role of the audience. They have been edited, illuminated, and exploited to reveal the core of their attraction.

Taken out of that context and re-configurated, they can not deny their connection to an object of another kind. The growing abstraction pins the attraction to its origins (f.58). The re-configuration proves the absence of the mind that the elements experience without an attracting element (f.59).

When we create these forces and sensations within a drawing, it becomes a strong unit that sustains its message. In the same manner, we can think of defining specific points in time to portray virtual space. In this case, the point in time would be a connection within a configuration. The single elements can be differentiated but not removed from the configuration without losing their meaning and strength.

As a result, the relation between the images and the viewer becomes more horizontal instead of predominantly vertical, meaning the viewer is above the drawing. The viewer accesses the drawing using their experiences and empathy and follows their intuition through them.

30 Tschumi, Bernard, and Cynthia C. Davidson, editor. 2000. *Anything*. Cambridge MA, London: The MIT Press. pages 17-23.

imgs **[Collage 4.1] The Manhattan Transcripts,
Bernard Tschumi, 1976-1981** *edited*

f.58

f.59
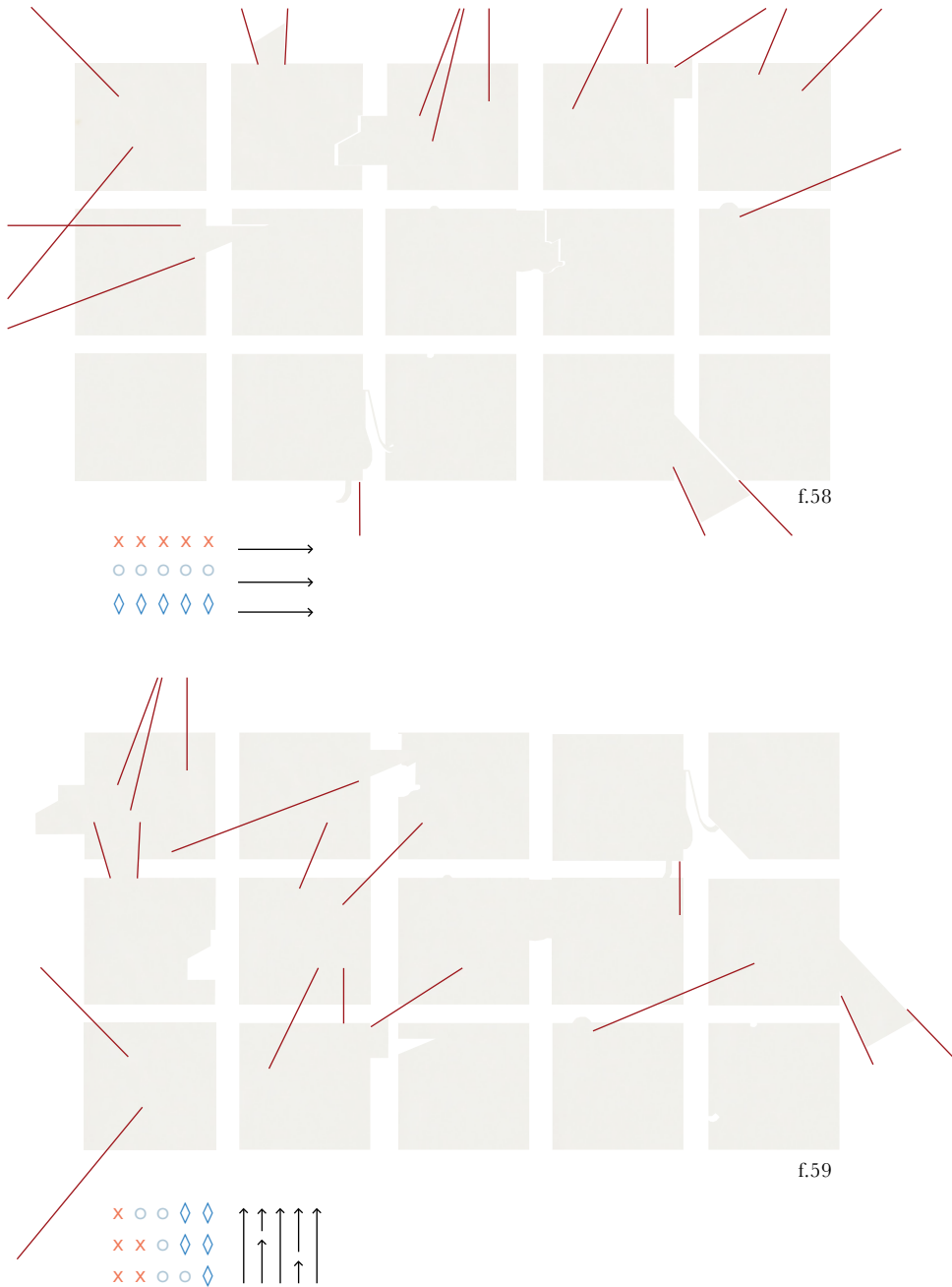
f.59, f.58: based on: Tschumi, Bernard. *The Manhattan Transcripts Project, New York, New York, Episode 4: The Block.*

cont **The Manhattan Transcripts, 1976-1981**
as described on Bernard Tschumi's website

The dominant theme of The Transcripts is a set of disjunctions among use, form, and social values; the non-coincidence between meaning and being, movement and space, man and object was the starting condition of the work. Yet the inevitable confrontation of these terms produced effects of far-ranging consequence. The Transcripts aimed to offer a different reading of architecture in which space, movement and events are independent, yet stand in a new relation to one another, so that the conventional components of architecture are broken down and rebuilt along different axes.

While the programs used for The Manhattan Transcripts are of the most extreme nature, they also parallel the most common formula plot: the archetype of murder. Other phantasms were occasionally used to underline the fact that perhaps all architecture, rather than being about functional standards, is about love and death. By going beyond the conventional definition of use and program, The Transcripts used their tentative format to explore unlikely confrontations.[31]

31 Tschumi, Bernard. 1976-1981. "The Manhattan Transcripts".
 tschumi.com. tschumi.com/projects/18/#.

III. The Relations of a Book

boundary - concurrency - binding - entanglement

The intertwining of the House, the landscape, and other entities calls for a new way to discuss and depict space. It happens on multiple layers, metaphorically speaking, as if held by a thread. Intertwined threads can take many forms: structurally sound as a ball of yarn, intricate as a weave or simple as a knot. For virtual space, we want to look at a bookbinding stitch, the Kettle-Stitch. The name derives from the German word Kettelstich, which describes a little chain, not a vessel used for boiling.[32] The Kettle Stitch indeed consists of a chain of loops, making it so interesting for our metaphor.

While binding a physical book is the last step when making a book, the process we are talking about is happening simultaneously with the writing. Everything happens in an instant, the creation, organisation and continuation.

Once a book has been written, its text must be taken apart again for it to be printed. The book's pages are divided into so-called signatures, several folded sheets of paper on which the text is printed. When reading the text on one sheet, it jumps ahead a few pages in the book. The centre of the signature, though, the front pages of the middle sheet, has continuous text even when unbound. In an unfolded signature, it is the most visible on top of the sheets. After folding, it becomes the most hidden within them.

Each element of the Virtual House can be considered as one of a book's signatures. The construction begins with setting simple parameters, at first easily accessible. As the House gets bound into its landscape, it gets saturated with more information surrounding each of these parameters, making them appear more complex and challenging to access.

The goal of this saturation is to detect distant links in the information and not to make evident connections, hence its complexity.

32 "kettle-stitch, n.". Oxford English Dictionary Online Edition. Oxford University Press. *at* oed-com.uaccess.univie.ac.at

A signature's sheets are combined through a weaving motion, with which the bookbinder leads the thread directly through all pages. They add the remaining signatures by laying a loop with the thread around the stitches of the first and second signature's weave. Therefore, signatures that make the book are never directly connected. The text on their pages will likely not show any discontinuation; two syllables of a divided word may even connect them. However, the pages themselves lay parallel in separate signatures and would never meet if it was to themselves. Only the handling of the book by a reader makes the pages continuous again for the first time since they were written.

In the same way, the single elements of the House are only put together in its use. It accumulates data and builds with it, writing and binding itself like a chain of loops.

We may believe that a chain is always limiting, fixing something in its place. If we instead think of it as a non-static but ever-forming chain, it provides us with freedom in understanding. Data is then not an archive record but an access that lets us approach a topic in countless ways, make links leading to another approach without contradicting but adding to the initial connections. Following a chain of thoughts, we can understand a concept in all constellations to which its loops, or links, lead.

In her book The Craft of Thought, Mary Carruthers refers to a similar technique used in medieval monastic meditation. Memory in medieval monastic circles included emotion, imagination and cogitation.

For those purposes, the monks would make connections not only within scripture and liturgy but also to pagan literature and smells and sounds. As for the need for matters to think with, the thinking was not considered a disembodied skill. Rather, cogitation was seen as building and assembling experiences and memories. Through this, the monks could construct any concept that would appeal to their senses while mainly receiving it through the power of their minds. Their associations allowed them to roam in their thoughts and perceive more than one intended truth.[33]

33 Carruthers, Mary. 1998. The Craft Of Thought: Meditation, Rhetoric, And The Making Of Images,. 2nd ed. Cambridge: Cam-

img **Yokohama Ferry Terminal
Foreign Office Architects, 2002**
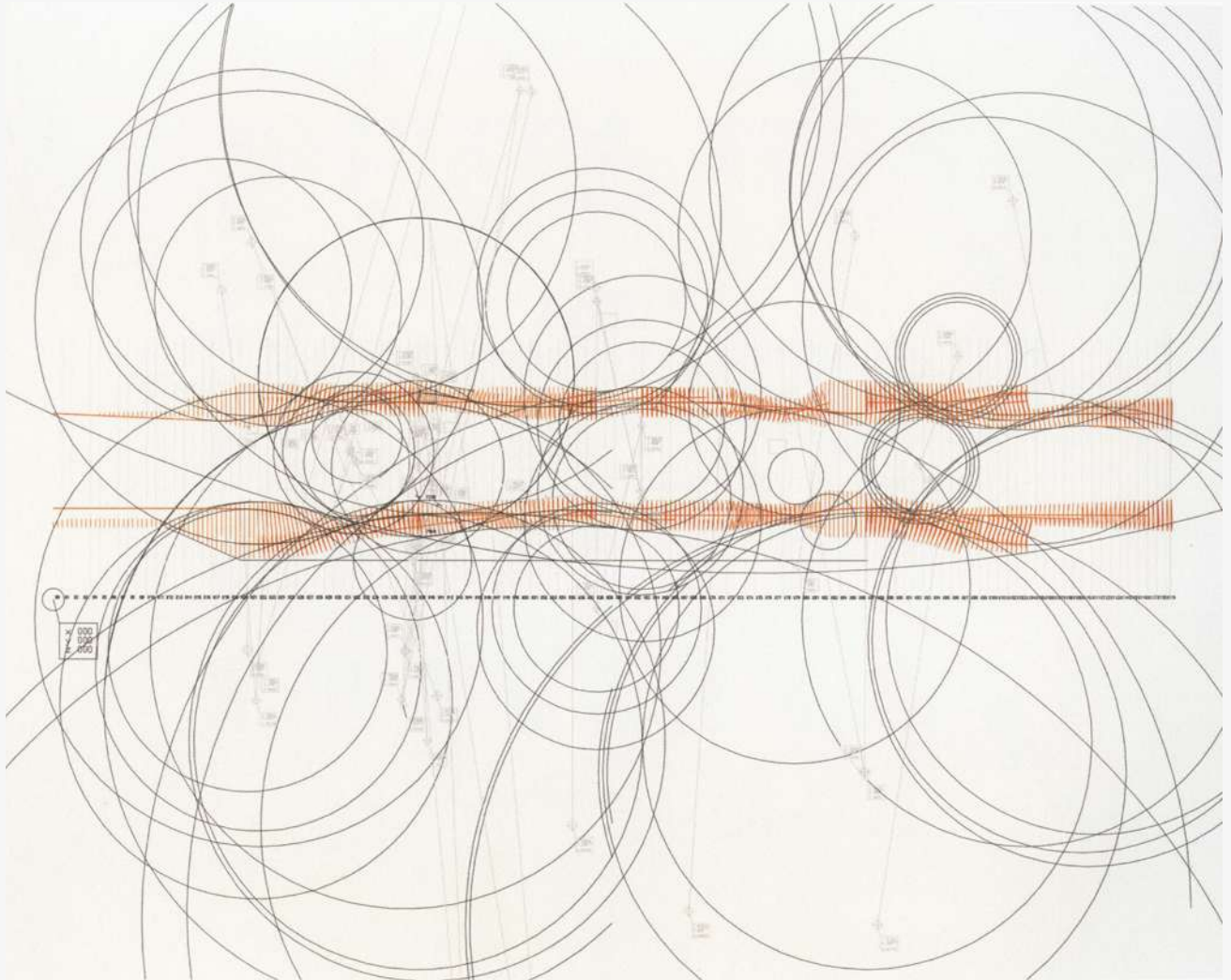
f.60: *in* Thomas, Helen. 2018. *Drawing Architecture*. London, New York: Phaidon. page 187.
Courtesy of Farshid Moussavi Architecture.

from **Phylogenesis, Foreign Office Architects**
excerpt chapter on the Yokohama Ferry Terminal

Phylogenesis is a biological term that refers to the evolutionary history of living organisms.
It describes a "succession of forms" in which specific influences have made an organism develop or discard features over time.[a]

Foreign Office Architects' design strategy has been to evolve their buildings along a sequence of essential impacts as if an evolving organism.

The Yokohama project started from the possibility of generating organisation from a circulation pattern, as a development of the idea of a hybridisation between a shed - a more or less undetermined container - and a ground. Our interest in the circulation pattern was an attempt to move forward from similar approaches already developed during the 70's, where circulation was organised and then "architecture" deployed on the circulation diagram, but in a more consistent manner in which circulation can literally shape space. [...]. Our first move was to set the circulation diagram as a structure of interlaced loops that allow for multiple return paths. The connection between the circulation paths was always set as a bifurcation, so that rather than setting the program as a series of adjacent spaces with more or less determined limits, we articulated them in the continuity of a branched sequence along the circulatory system. What we then called "the no-return diagram" was basically the first attempt to provide the building with a particular spatial performance.

[...]. The association between segments of the diagram and surfaces gave us a basic metrics of the main chapters of the program: every segment of the no-return diagram had an associated size in square meters, which divided by the width of the pier provided the length of every surface between bifurcations. By proceeding in this manner we managed to produce the first approximation of the final form of the project, a three-dimensionaL version of the no-return diagram that resembled a kind of lasagne of warped surfaces. [...]. As opposed to the assemblage between structure and circulation, which blended in a metamorphic manner, the program was to become integrated in a more sedimentary form.

a "phylogenesis, n.". Oxford English Dictionary Online Edition. Oxford University Press. *at* oed-com.uaccess.univie.ac.at

bridge University Press, 2.

The programmatic strategies used in the project can be related to an interest in exploring what we could roughly denominate as intensive space: that is, the kind of spatiality where the capacity of space is not directly related to its size, and where the quality of space varies differentially, rather than as a discontinuity. A continuous and homogeneous space has been traditionally the instrument for flexibility, but intensive space is differentially flexible, which means that it offers multiple conditions in a continuum, in a similar way in which temperature, luminance, pressure or humidity tend to vary across a large room. Conventional programmatic distribution is fundamentally related to an extensive use of space and time: programs are allocated in particular extensions of space and time with well-defined limits. The traditional alternative to this traditional assignment is to avoid any determination of time and space, providing the maximum possible scale and openness. The potential of intensive space is to set up a degree of specificity without delimiting extensions.

[…]. The handrail system is also one of the main packages in the building, given its extension and visual presence. Like glazing, handrails are elements that do not belong to the spatial model of the continuous surface; on the contrary, they establish limits, physical discontinuities, into a potentially seamless space. Like the warped wood deck, we were less interested in achieving effects at any cost than in setting out a productive relationship between effect and construction.

* Our model of transparency became, as for the rest of the elements on the roof deck, the fishermen's tools, the nets, the sails, the windsocks and the ropes... all those elements that vibrate with the wind and constantly change their form, floating in space yet delimiting spaces.[34]

As circulation is the delimiting factor of this specific design, it sets up a unique definition of inside and outside. The design does not define borders between and outside but enables the outside to become inside and vice versa.
It establishes a clear distinction of space, yet to the same extent, space functions as a place of interaction and exchange.

In that, the design as a whole achieves a moment of floatation, as do the fishermen's tools they mention*. The design achieves this moment of floatation by creating its own atmospheric set, with and within its surroundings, by bringing circulation patterns together.
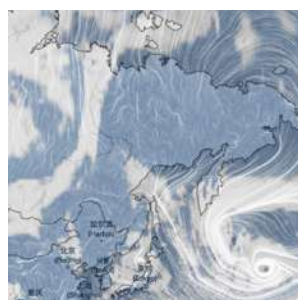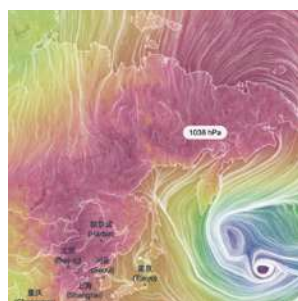
34 Foreign Office Architects. Phylogenesis. 2004. Barcelona, New York: Actar. pages 228-236.

Blue Skies in Red

*for* Yokohama Ferry Terminal, Foreign Office Architects
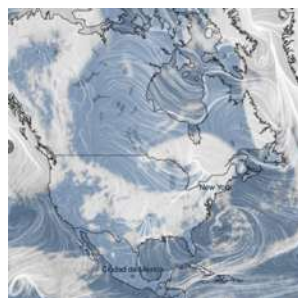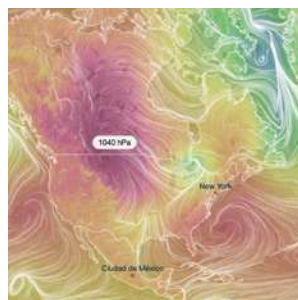
f.61

f.62

Circulation, as the Terminal's underlying structure, determines the building's layout, and then, once again, the layout determines future circulation. To not act as a disruption but connection, the building is organised along highly concentrated areas of the circulation diagram. Foreign Office Architects' method to detect these areas generates a sense of increasing ambient pressure in the drawing.

Areas of high ambient pressure are a natural occurrence in the global circulation of air and mark the sinking of large-scale, and therefore heavy, air masses to the ground. Characteristically for high-pressure areas is an unclouded sky (f.61, .62).

In the atmosphere of the drawing, the circulation of lines carves out an area of friction, an agglomeration of its primary element, that results in higher pressure. In these areas, the lines do not disperse but draw towards each other (f.63).

Amassed, they become heavy and sink to give shape to the solution of Foreign Office Architects form finding method. Once the method has been cleared from the drawing and only the areas of agglomeration remain, the result becomes evident. The circulation within the drawing has made way for a clear view of the sky.

The successful translation of this method into a physical building eventually allows for a moment of floatation in the design.

img **Yokohama Ferry Terminal,**
Foreign Office Architects, 2002 *edited*
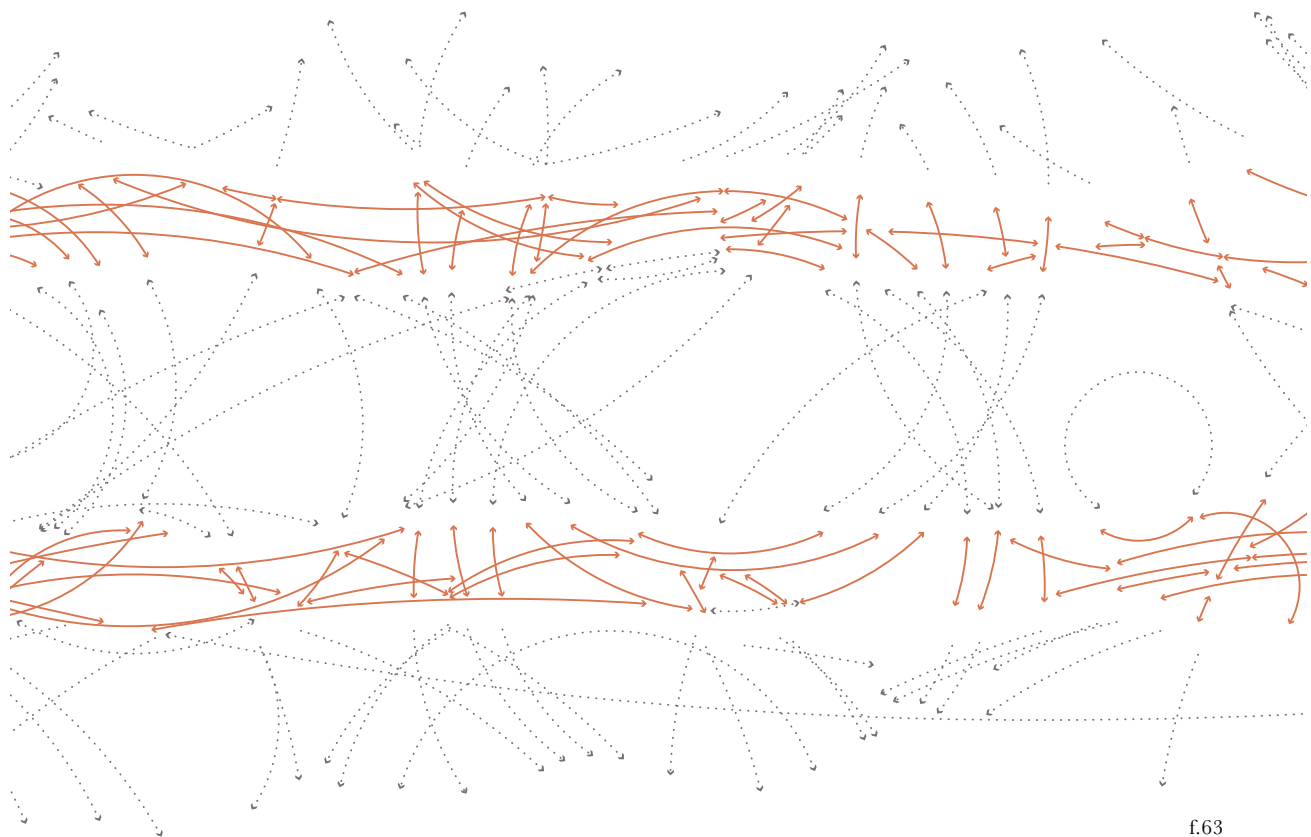
f.63

f.61, f.62: Ambient pressure and cloud cloud formation on 19.01.2022 *via* ventusky.com.
f.63: *as seen in* Thomas, Helen. 2018. Drawing Architecture. London, New York: Phaidon. page 187. *edited
Courtesy of Farshid Moussavi Architecture.

img **Kowloon Walled City, Hiroaki Kani and others, 1993**
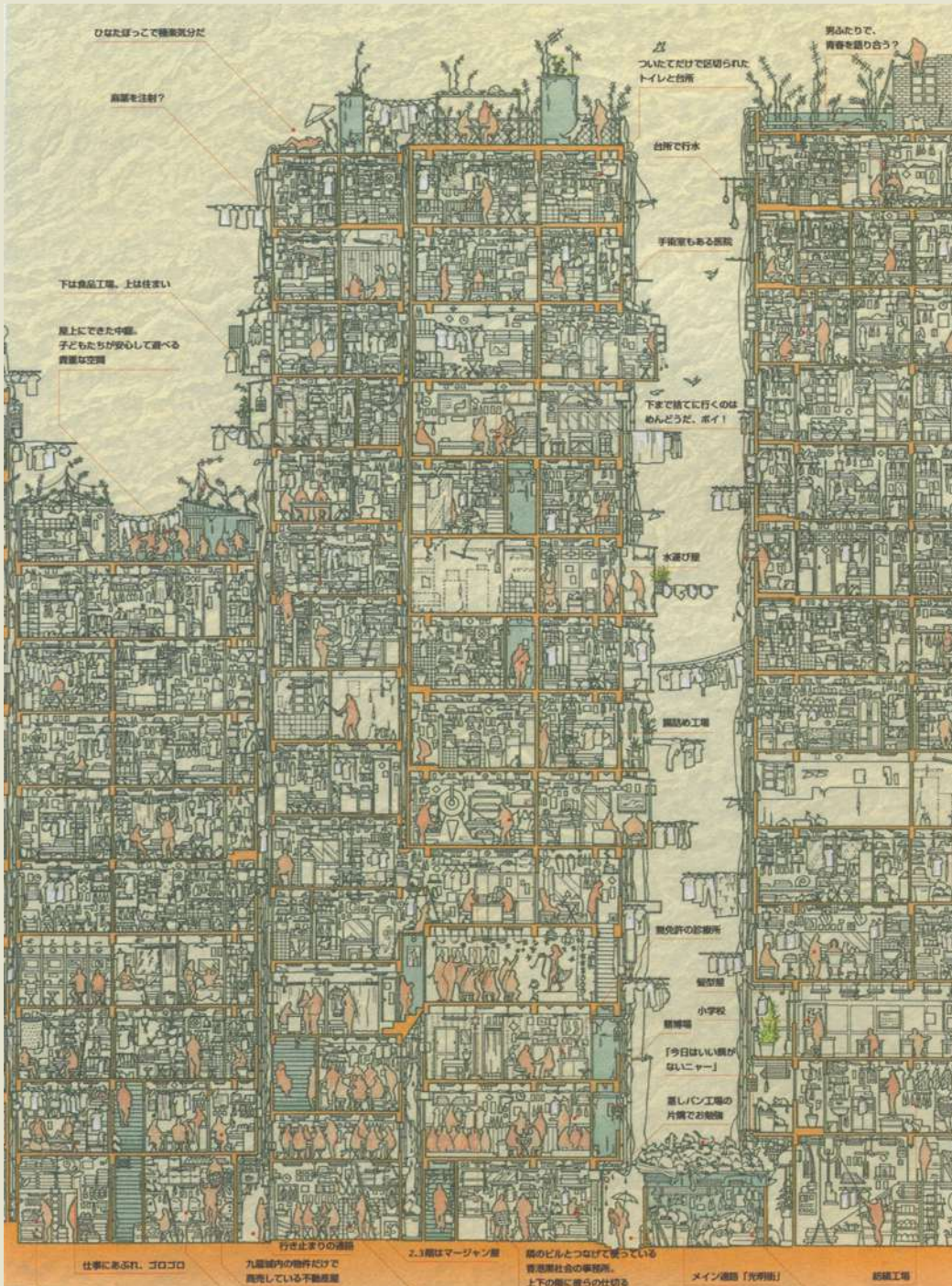
f.64: *in* Thomas, Helen. 2018. *Drawing Architecture*. London, New York: Phaidon. page 36.
Reproduced by permission of the Proprietor c/o Iwanami Shoten, Publishers, Tokyo.

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from **City of Darkness**

Life in Kowloon Walled City, 1993

My family came from the mainland when I was very young. The Walled City was great fun in my childhood days. The place was deserted, miraculous and wonderful.

[...] I used to own land extending from my place here to down there below [the wall]. It cost me $25 which I paid to those who had earlier claimed the land. First we built wooden huts. When the Government burned them down, brick houses were built. Then there was a big fire around 1953 or '54, when more than 3000 huts were destroyed.[...] After the fire, the Government designated the burnt-out area as Crown Land, but people simply ignored this and we built again on the same spot - this time with stone and brick houses replacing the wooden ones, and two- or three-storeys high instead of one. It has been a miracle the way repeated fires have brought prosperity, and repeated demolitionhas only made way for bigger houses.

Step by step, new buildings have transformed the City. Then the Government intervened, saying that buildings should not be over a certain height. After that, the heights depended on whether or not the Government was watchful. If it was, the heights were lower: if not, they became higher. There was a shortage of water at that time, so the concrete was sometimes mixed with urine, and sometimes even worse, but never with seawater.

How were these buildings erected without piling? Well, you might consider it a miracle like Moses crossing the Red Sea. We used traditional Chinese ways. We excavated deep into the ground and then we built three storeys. After that, we built another three and then three more. The buildings also lean on one another. We have our own ways here. Have you ever heard of one of the 80 or more dentists causing the deaths of any patients? Of course not! You see, they relied on their years of experience. We're all struggling for survival here.

Kowloon Walled City was an extra-legal Chinese enclave in British Hong Kong that was demolished between 1993 and 1994.

The image on the preceding page is a fragment of a section made by Japanese researchers. Shortly before its demolition, they documented life in the City with a range of highly detailed drawings. The original drawing of the section measures 77 x 51 cm.

The text on the left is an excerpt from one of many interviews with inhabitants. It tells the story of Lem Shu Chuen, who lived in the City for over 50 years.

Similarly to Yokohama Ferry Terminal, Kowloon Walled City created an atmospheric set with and within its surroundings. As it resulted from political and social interdependences, it ultimately grew into an unparalleled microcosmos.

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cont **City of Darkness**

Life in Kowloon Walled City, 1993

The actual density of the City has never been reliably measured, but it is thought to have been the most densely populated place on earth before its demolition. Every service and institution of a modern metropolitan area could also be found in its walls. However, the City functioned outside the social norm and the legal system and was, to a certain degree, disconnected from the supply chain.

Therefore, even more than a usual city, its functioning relied on collaboration among the inhabitants.

I made my money in the 1940s by renting out kerosene lamps. Subsequently, I provided electricity using generators. I charged according to the number of lights. People were happy just to have some light. It was a good business and I was the first person in the Walled City to own a car. That was in 1953 and its number was 3618.

In the 1950s the Walled City became a place for striptease performances, sex, drugs and gambling, as well as dog meat. There were dog-meat shops all along Lung Chun Road. School premises were turned into striptease joints and there was even a theatre called The Dragon's Gate that showed blue movies.

[…] The Walled City was later trans-formed from a place of sex, drugs and gambling into a satellite industrial area. The Hong Kong Government took advantage of the 1967 riots to take action against all the vice dens and expel many of the people. It led to the construction of many high-rise buildings in the Walled City. There were also many migrants from China moving in. They found it easier to maintain a foothold in the City and it was easier for them to make a living. This unleashed their energy and vigour towards work.*

We in the City have contributed to the growth of Hong Kong. I have lived here since childhood and built this place with my own hands.[35]

*The Kowloon Walled City was an ungoverned Chinese enclave in British Hong Kong. As of it's legal status many immigrants and political refugees from China came to the City, but often only to end up in virtual slave labour. Under the fear of being caught by the Hong Kong police outside the City, they would spend all their time inside of it and accept gruesome work and living conditions.[36]

35 Girard, Greg, and Ian Lambot. 1993. City Of Darkness. 1st ed. Wiltshire: Watermark Publications. page 72.
36 ibid. pages 9-10.

A House living in Lines

for Kowloon Walled City, Hiroaki Kani and others

The section of Kowloon Walled City does not focus on the structural stability of the buildings but on their social system, which led the City to be a stable entity over several decades. The drawing stages an abundance of the line, hinting at the density of life inside the City.

In the virtuality of the drawing, the abundance creates a sense of normality. In our daily vocabulary, something is normal when it is ordinary and does not call our attention.

In Mathematics, *normality* refers to the predictability of an element's properties in relation to its group and subgroup.[37]

The line in the section interacts consistently at any point and expresses the manifoldness that was normal life in the City. Independent from the position in the drawing, the line surrounds and steadily carries every element in it. Its steadiness can only be assured by making distinctions and not allowing the elements to turn into indistinguishable areas. The edited version of the drawing on the following page has been cleared of all area fillings, making it more unified. Still, each of its elements is easily distinguishable.

In the Virtual, elements seem more unified per se than in the Physical as they have no material borders. That makes the normality of the Virtual a manifoldness, as the interaction between elements is usual. Considering the mathematical definition of normal, even though we can predict an element's properties for a whole subgroup, we can always determine each element's properties individually. Similarly, the normality of manifoldness in the Virtual does not entail the loss of individuality. It solely sets the individual elements in different relations than in the Physical.

37 "normal, adj.". Oxford English Dictionary Online Edition. Oxford University Press. *at* oed-com.uaccess.univie.ac.at

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imgs **Kowloon Walled City, Hiroaki Kani And Others, 1993**

edited

f.65
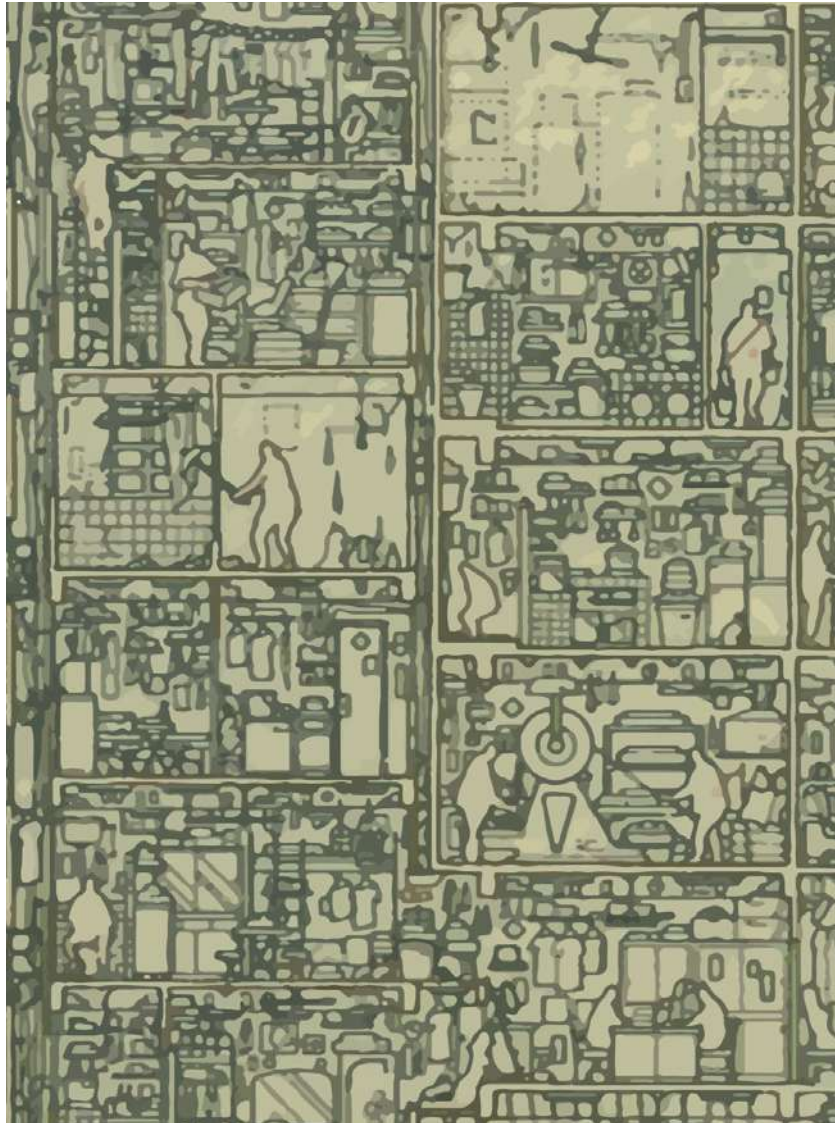
f.66

f.65, f.66: *in* Thomas, Helen. 2018. *Drawing Architecture*. London, New York: Phaidon. page 36. *edited
Reproduced by permission of the Proprietor c/o Iwanami Shoten, Publishers, Tokyo.

IV. The Touch of Yours Truly

entanglement - agglomerate - reflection - perception

Returning to the analogy of the book, a text becomes alive once a book is read. The reader's mind and understanding of the written craft a personal form of the story that builds on their vocabulary and memory. Similarly, the received information in a virtual touch contributes to the form of a virtual construction. That is because touch has the capacity to build virtual walls.

Over time, a construction will become progressively closer to a virtual representation of what it receives data about - most likely the User. That representation is not merely visual. It is rather the House's existence as a multilateral network or, akin to the definition of architect and theorist John May, its signals.

May draws out an architectural evolution, according to which drawings progressed to images. He proposes that energetic processes defined by data produce these images, whereby data is the accumulation of signals.

Following that, geometric objects in imaging have come to be the same as databases. Another crucial characteristic is the difference in the time signatures of images and drawings. While the drawing takes a specific duration of time to become, the image is in real-time. It is malleable and responds instantly, and to do so needs to hold information beyond the visual capabilities of a drawing.[38]

What May classifies as purely energetic processes is what we want to complement with a sensible character. The intermediate space, which for May is merely the space where real-time responses are conducted, has a certain autonomy in conducting these responses.

The User and the Program enter that space and offer access to information and guidelines but ultimately have no action in it.

38 May, John. 2019. Signal. Image. Architecture.. New York: Columbia Books on Architecture and the City.

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We can consider an extrinsic yet all-embracing sensing entity, which mediates all present entities. Its responses lead to the construction of a virtual House. The layout is guided by the logic of the Program and follows the sensual reaction of the User.

These reactions carry sensual perception, meaning that they bind an individual's experience to a logical structure. Something similar occurs in a certain kind of synesthesia, in which synesthetes sense numbers as a spatial experience. The perception usually shapes a space for the numbers that is wider than the mental eye can perceive at once. Synesthetes can move the configurations or move themselves in them, which changes their perspective on the numbers. The configuration itself is likely to stay the same for the synesthete's life. Synesthesia is thought to be caused by a genetically caused over-interaction within regions of the brain.[39]

39 Cytowic, R. and Eagleman, D., 2009. Wednesday is indigo blue. Cambridge: MIT Press.

Associating numbers with space, an inorganic endeavour at first, becomes an organic act that is even inherited to the body.

We can think similarly about the sensing entity in virtual space, whose nature it is to sense the Program's logic in the same way as common sensations from Users, and then constructs its surroundings based on that perception. Therefore, the User's personal understanding is a crucial element for constructing the House's forms. We can imagine the walls being built not with the User's hands but of their fingerprints. Any fingerprint is unique to its owner and appears once the finger has left the object.

A touch in the reality of absence is only noticeable after its tangency. Nevertheless, it is felt thoroughly and leaves a distinctive, permanent mark. The autonomy of virtual space is substantiated by absence and letting go of an action to leave behind the memory of it, with which the virtual House is built. As the memory contains information about the action and its actors, the patina of information on the House's walls makes it a representation of the User over time.

img **Canvas Room, Karin Sander, 1996**

f.67: Sanders, Karin. 1996. *Canvas Room Art Basel.* Fabric covering of the art-fair walls, cut out.
Installation view Esther Schipper Gallery. Image rights: © 2017 Andrea Rossetti.

Pieces of canvas in six different DIN formats are cut from the kind of sheeting used to divide stands at trade fairs. The pieces are placed in frameless picture holders, which are then hung over the holes made by cutting out the pieces. Using a computer program to calculate the spacing, 464 different-sized picture holders are placed exactly 5 cm apart on the canvas wall. The canvas thus becomes both material for pictures and a consumer product. The framed pieces of wall are gradually sold off to visitors, each one leaving behind a patch of naked wall.[40]

40 ©Studio Karin Sander *at* karinsander.de/en/work/stoffraum

from **Karin Sander: On Making Things Visible**

in conversation with Harald Welzer

Sander: What must a work of mine fulfil? I must be able to work using resources that actually exist, that are already present within the system, and that can turn the system against itself. I must be able to read things from a location, the situation, of a museum or gallery. And the work must both reveal something and also remain mysterious. It must transcend itself and gesture towards something that was not previously visible. In other words, it must render something visible that is already present but that has hitherto escaped perception, that exists in a latent state. If the work provokes amazement and perhaps amusement as well, then it is successful. […] Well, it would be misleading to say that a work must absolutely produce these effects. But if it is good, if you get it just right, it does indeed do just that. In other words, in the end the work reveals more than I planned, more than I projected into it at its conception.*

[…] Perhaps my works are primarily linked together by this accelerating process of exclusion – by my continually learning, discovering, what solutions I can reject, which ones I don't have to spell out any more. […] First you have to consider the entire situation and all the details that determine such a situation. And then one of these details may unexpectedly strike your eye and become the starting point for your own work. This starting point may then become lost as the work itself develops and may disappear without trace by its conclusion. […] when I was studying art I was not at all interested in "theme" as such. And this gave rise to the following situation: I'm holding my paintbrush in my hand, the most amazing, thickest paintbrush I've ever held, with long, black bristles, and I begin to paint on the table with this new brush, but without using any paint. And this process of painting something on the table that nobody can see, that leaves no trace, produced the best picture I'd ever painted up until then.

By taking the setting or situation as a starting point for her work, the identities of Karin Sander's artworks are unique to the relations they are situated in. Still, they are not supposed to remain in their configuration but have room to evolve. In her experience, good artwork "reveals (...) more than I projected into it at its conception."*

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cont **Karin Sander: On Making Things Visible**

in conversation with Harald Welzer

A painting without a trace is solely focussing on relation. Without a visible outcome, there is only the moment of creation. It consists of the hand guiding the brush, the brush touching the surface, and eyes and mind following the brush.

The artwork becomes as figured in the minds of creators and viewers. While its creation, they imagine the trace that the brush would leave, and it becomes through their memory of the brush's movement.

Moreover, it can become again and again in their memories. As of this, the artwork would never be the same twice, but always just as powerful.

Nothing remained. I had no water, no paint, nothing. Perhaps I moved a few specks of dust around, but otherwise there was just the brush gliding over this surface.

[…] I didn't want to be an artist at all. I had lots of other plans. From today's perspective it would be more accurate to say that after a certain point in time it was clear that I couldn't prevent myself from becoming an artist. […] I started an apprenticeship as an art restorer – I lasted for two weeks, during which became clear to me what I was going to be. I was allowed to do real restoration work almost from the start. I was supposed to restore paintings with architectural motifs on some church windows. We had removed the old paintings and were supposed to reproduce them exactly. I faithfully duplicated the first few motifs, but then I began to ignore the originals completely. I started to incorporate entirely different patterns. Although they conformed stylistically with the rest, they were made up of totally different ornamental patterns and combinations.

Nobody noticed back then, and nobody has noticed anything ever since. But I realised that reconstructing and repeating something is possible only up to a certain point, after which it begins to take on an independent existence.[41]

41 Sander, Karin. Interview. By Harald Welzer. 1.1.2002.

94

img **Canvas Room, Karin Sander, 1996**
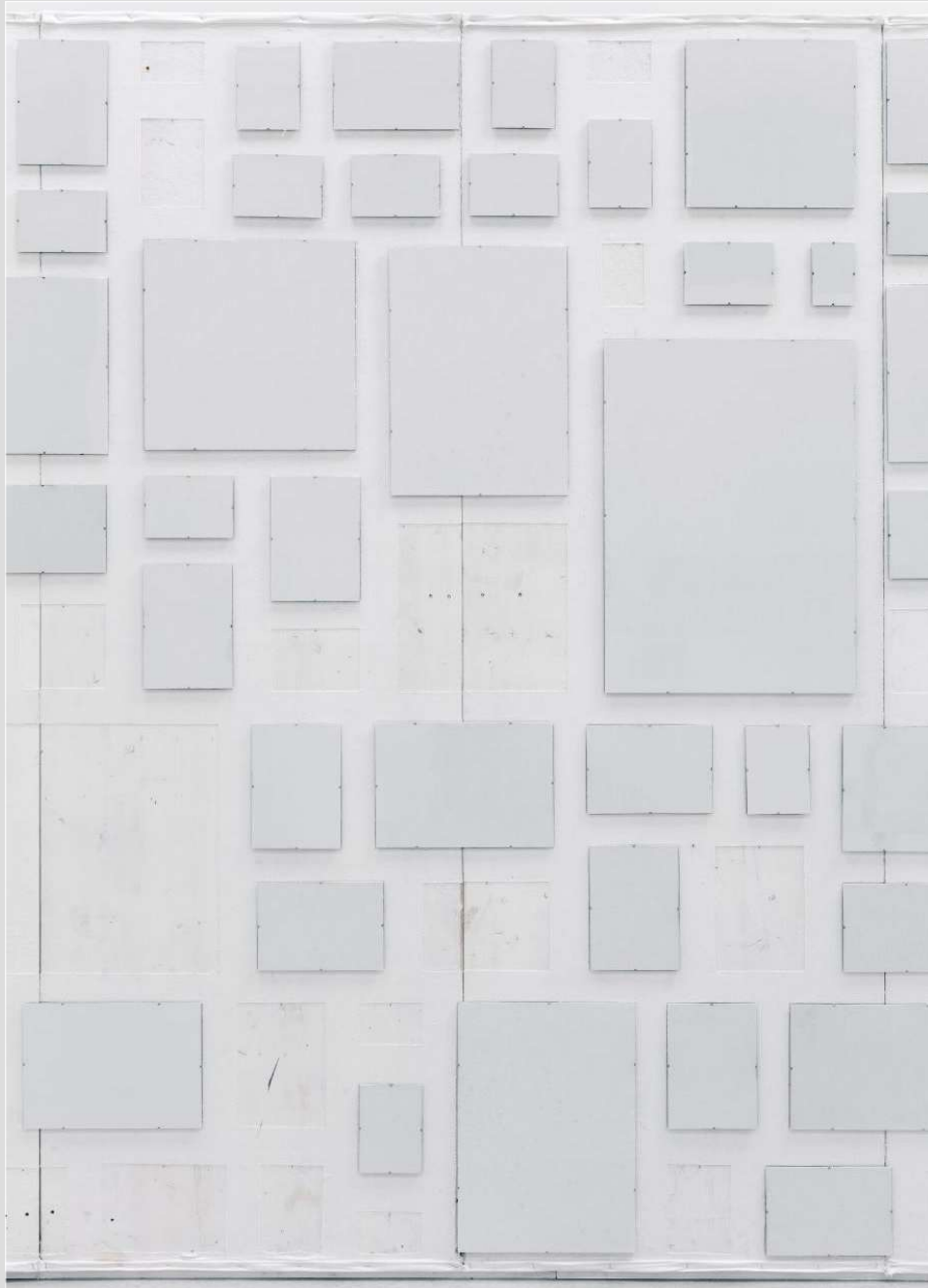
f.68: Sanders, Karin. 1996. _Canvas Room Art Basel._ Fabric covering of the art-fair walls, cut out.
Installation view Esther Schipper Gallery. Image rights: © 2017 Andrea Rossetti.

img **Canvas Room, Karin Sander, 1996**
*edited
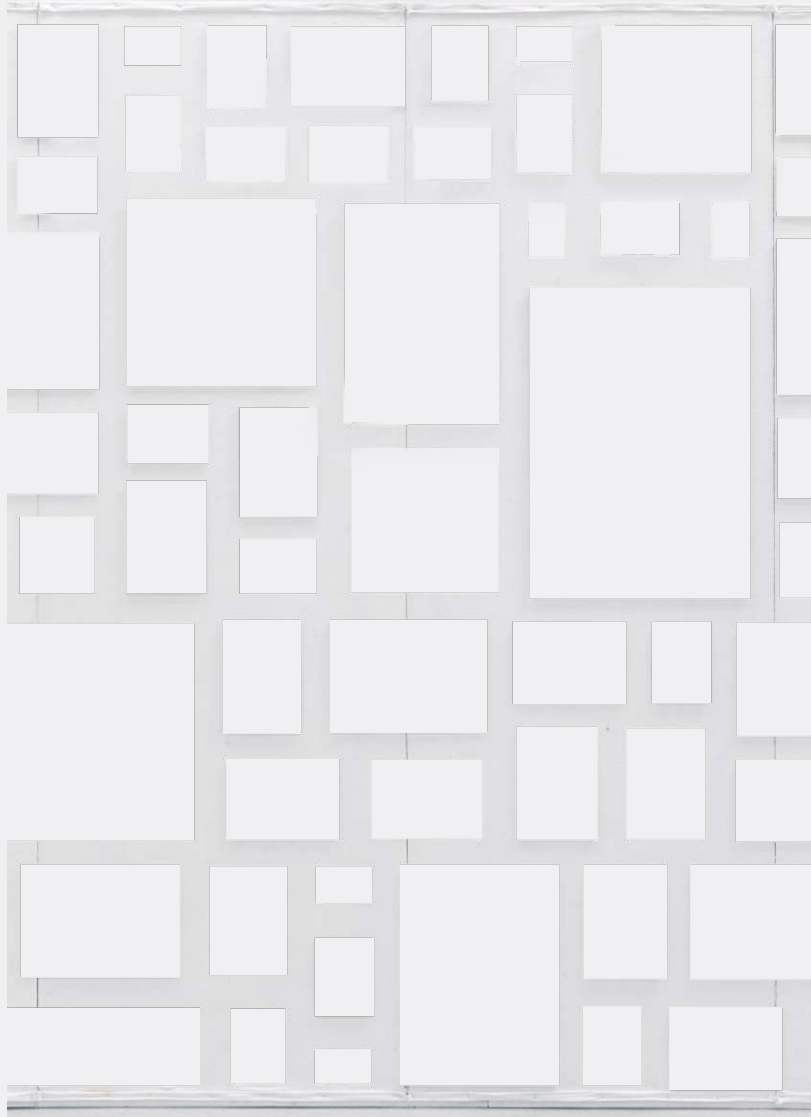
f.69 - f.72: Sanders, Karin. 1996. Canvas Room Art Basel. Fabric covering of the art-fair walls, cut out. Installation view Esther Schipper Gallery. Image rights: © 2017 Andrea Rossetti. *edited

cont **The Room that describes itself as a Work of Art**

for Canvas Room, Karin Sander

The wall of Karin Sanders Canvas Room appears to be one with the framed artworks, as both its covering and the framed canvases originate from the same piece of fabric. However, once we change the relations in the room by buying and then taking away framed artworks, the disguise of continuous materiality vanishes.

Removing artworks from the wall, the concrete behind them has no choice but to be just a wall covered with a holey canvas (f.70, - .72). The canvas, for its part, is then outed as neither artwork nor wall.

Therefore, the room manifests an absence through that which is present in it. The perception of the artworks as pieces that the wall merely carries is a deception. They are not independent, as in readily removed. Both the wall and the artwork can only be *wall* and *artwork*, independent entities, as long as they are together as the unit: *wall and artwork.*

The change in ownership of the artworks breaks up the interplay that sustains the room's balance of presences. It introduces the buyer as an entity with the power to enact the positioning in the room and, thereby, make the canvas's mask transparent. The act of positioning uncovers the canvas's absence as each wall and artwork.

f.70
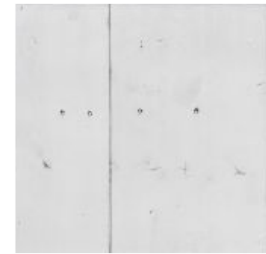
f.71
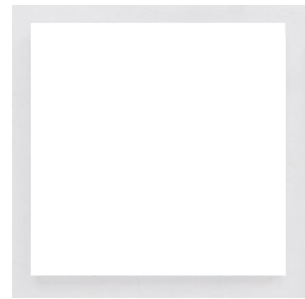
f.72

img **Canvas Room, Karin Sander, 1996**
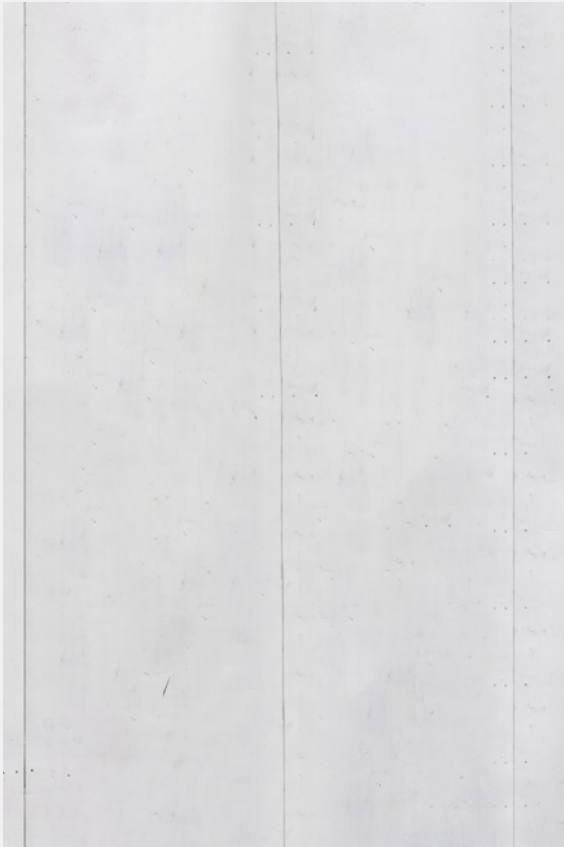
*edited

f.73

f.74

f.73, f.74: Sanders, Karin. 1996. Canvas Room Art Basel. Fabric covering of the art-fair walls, cut out.
Installation view Esther Schipper Gallery. Image rights: © 2017 Andrea Rossetti. **edited*

cont **The Room that describes itself as a Work of Art**
for Canvas Room, Karin Sander

Similarly to the line in the drawing of Kowloon Walled City, the installation virtually unifies physically distinct elements. Furthermore, it sets the elements into relations, without which their identities would vanish.

The left page shows depictions of the wall (f.73) and the canvas (f.74) by themselves. They are not identifiable as elements of the artwork and have no particularly unique identity.

The three images on the right show fragments from the artwork. What we see in f.75 has already been shown on the preceding page (f.70) and could also be featured in f.76 and f.77. Only the broader context in the artwork gives the fragments a unique identity.

This case study is the last one in the exploration of virtual senses. It forms a strong connection between virtual and physical space, as many artworks of Karin Sander do.

The artwork shows the entanglement of elements, in which their heteronomy maintains their autonomy - a crucial characteristic of virtual space. Moreover, it shows how presence and absence coexist and balance rather than oppose each other. Both have the power to create spatiality, as we will find in *A walk through the Virtual House*.
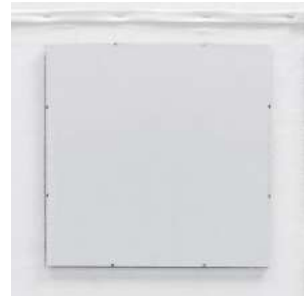
f.75

f.76

f.77

f.75 - f.77: Sanders, Karin. 1996. Canvas Room Art Basel. Fabric covering of the art-fair walls, cut out. Installation view Esther Schipper Gallery. Image rights: © 2017 Andrea Rossetti.

A Walk through the Virtual House

boundary - entanglement - binding - virtuality

The bridge from the Virtual to the Physical acts as a scale from logic on the side of the Virtual to sense in the Physical. In its equilibrium, matter is the entryway to a virtual house. Through matter, signals arrive and leave the sensing entity.

We want these signals to evoke a sense of wonder inside the House, crafting its desire to explore itself as its surroundings and expand its walls over time.

It would want to read an ever-growing number of the fingerprints, fragmented shadows of something that will never become a fully saturated, satisfying picture. Those fingerprints would not only make up the walls but stimulate the pursuit to build them constantly, as they leave it with the wish of completion. In the Virtual, an incomplete house is worthwhile.

Therefore, the House's structural soundness relies on its continuous re-construction. Recalling that touch establishes virtual walls leads us to the strong connection between typology and stability.

When establishing a virtual wall, the moment of information exchange enables the recognition of temporal borders that only exist during the up-keep of connection. They irreversibly leave traces, along which succeeding connections form. Gaining information from these traces, the House rebuilds itself and enriches its walls with a patina of information.

As for the walls' ephemerality, they design the layout of the House over and over and, therefore, switch up its typology. The House's typological quality is in line with the freedom of collecting and linking various data. That ensures that its walls can be re-built.

An unsuccessful layout would compromise the accessibility of crucial information and impede a connection to follow subsequent traces. Whether the layout fulfils these typological needs can only be assessed when a new connection attempts to follow a preceding. Therefore, the rebuilding process relies not only on the connections made in that instant but on the connections that have been made before.

That maintains the Houses structure as one of memory and prevents it from falling into a mode of forgetting.

A House of forgetting would be of closed rooms, with walls that remain instead of being reestablished. In such a layout, some information could not be accessed anymore, which impairs possibilities for connections. The House needs to remember what it has been to take chances of what to become.

To remain in a structure of memory, the traces of former connections need not only to be accessible but furthermore draw attention to the incomplete rather than the complete. Fostering the wish to fill gaps and finding unanswered questions can provide endless opportunities to reestablish and hinders the creation of closed rooms.

We would not want them to directly point at the incomplete, as that would be a gesture of completeness. Instead, we want to make space for the incomplete, which enables the sensing entity to sense an emptiness and evoke its desire for completion.

That is the balance of absence and presence, which is vital for a virtual construction.

A Walk through the Virtual House

boundary - entanglement - binding - virtuality

In a reality of absence, the incomplete, the absence of a certain something, can only be distinguished through the presence of a certain other. Recalling the difference between presence and abstraction in Media Art, abstraction moves us away from presence. Hence, moving towards presence, we want to carry out the countering gesture to abstraction. Abstraction can be defined as "[t]he action of withdrawing or secluding oneself from worldly or sensual things (...)".[42] Therefore to counter abstraction, we would want to turn towards the sensual world and establish sensuality.

That leads us to the following pairs of concepts: absence and abstraction, presence and sensuality or absence and presence, abstraction and sensuality.

With the logic that these concepts set up, we can build a Virtual House within the logos of the virtual space. It will keep growing, as each room will be caused by and presuppose another room. Inevitably, the certain presence in some rooms will make the certain absence of others sensible when wandering through the house.

As the entryway is matter, through which signals are sent and received, we are entering to a room of sensuality. The senses in the Virtual have been defined as an interaction of information. A room of touch is a moment in time. A room of vision is governed by the script of the Program, that functions like windows through which the landscape can be viewed and air can enter.

A room of taste is established with the profile of the User. Upon entering the house, the sensing entity will taste the Users profile and fill the house with their smell.

42 "abstraction". Oxford English Dictionary Online Edition. Oxford University Press. *at* oed-com.uaccess.univie.ac.at

Smell then lives everywhere in the house, arising from sets of data.

Sound lives in all of its landscape, resonating from the embedding code.

A room of balance differs each time, according to who enters it. A room of proprioception is divided into related areas. The rooms of temperature can simplify access to another room or impede it. Ambient pressure becomes more apparent in any room near a result. Towards the edges of the house, a vibratory perception always occurs. Near its entrance, a magnetoception.

Which sensuality will fill the current room depends on what filled the preceding room. A room of presence will fill a subsequent room with one of the bodily senses listed above.

A room of absence will be followed by relational sensuality, such as the feeling of anticipation, of losing and finding, a goodbye and a welcome.

A room of monotony arises from loneliness, as one is never just one in the Virtual, but it might seem that way when all is the same.

A room of manifoldness will entail normality. Sets of data will fill a room with longing and saturation, with the feeling of excellence and falling short, of discomfort and content.

The rooms of abstraction withdraw elements of the surrounding rooms and simplify or schematise them in order to accentuate and hide certain features. Some work with light to sharpen their focal point and cache the rest in the dark.

A Walk through the Virtual House

boundary - entanglement - binding - virtuality

Some render their essential bits clearly and leave the others in a haze or morph them into blurred incomprehensibility.

All these sensations, abstractions, and many more exist anywhere in the virtual space. They make up the fabric of our thoughts, support the structure of our memories and provide room for our creativity.

In a virtual house, they are palpable in a distinguished manner, specific for their rooms, to avoid displacement and misconceptions. The virtual house supplies a vital definition for the structure of virtual space. It differentiates its rooms also by their grade of detailing.

A room of presence will manifest the surrounding senses and abstractions, while a room of absence will disguise them as something else. The disguise may be achieved through devices we also find in rhetorics, as variations of enargeia, the painting of a word picture that immerses all senses of the reader.

Such devices can be ekphrasis, the description of a work of architecture or art; prosopopeia, the speaking as another person or object; or ethopoeia, the portraying of a person or fictional character.[43] Rooms of absence painted in such a manner can make their immanent emptiness sensible. Similarly, as paintings create a presence that banishes their carriers into an absence, the rooms of absence paint a disguise of presence. Their absence can only be detected through the relations to the surrounding rooms.

43 Carruthers, Mary. 1998. The Craft Of Thought: Meditation, Rhetoric, And The Making Of Images,. 2nd ed. Cambridge: Cambridge University Press, 2.

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These would be the rooms we find in a house whose structure is one of memory. Once the house falls into a mode of forgetting, the expression of sensuality and abstraction, as well as presence and absence, will misconstrue themselves, and their order will fall in disarray.

When elements are led into the wrong room by connections that do not understand the house's order anymore, the elements become undetectable. They would no longer function as memories that can provide information but as empty shells full of unreadable data.

excerpted lexis

this is an extension of the glossaries vocabulary found on page 10, an excerpt of the comprehensive lexis that is immanent to the ideas presented in this thesis.

presence

palpable locations
  landscape
  entrance
  exit
  code
  data
  connection
  configuration
  self
  setting
  reality
  identity
  information
  time
  moment
  colour
  light
  edges
  window

absence

solitary actions
  walk
  script
  simplify
  schematise
  assess
  cache
  uplift
  grace

haze
blur
stay
halt
continue
melt

joint actions
  interact
  connect
  stabilise
  collect
  morph
  interiorise
  absorb
  distinguish
  withdraw
  decouple
  separate
  harmonise
  approximate
  define
  provide
  repel
  highlight
  explain
  take effect
  number
  rank
  estimate
  accentuate
  hide
  reconcile

build
bind

configurations
  among
  through
  at
  except
  beyond
  after
  until
  since
  about
  because
  around
  and
  or
  along
  circular
  linear
  identical
  inside
  close
  whole

sensuality

bodily sensations
  touch
  vision
  smell
  sound
  proprioception

balance
strength
softness
temperature
wind
ambient pressure
vibratory perception
magnetoception
warmth
cold

capacities

palpable
discoverable
metaphorical
signifying
appreciable
movable
moving
flashing
flaring
freezing
seizing
striking
sounding
enriching
sharpening
repeatable
referencing
symbolising
melting

abstraction

relational sensations

anticipation
longing

loosing
finding
goodbye
welcome
loneliness
normality
extension
ageing
saturation
discomfort
content
familiarity
seeming
excellence
falling short
echoing
bordering
fading
increasing
ending
beginning
descending
ascending

intensities

true
apparent
transparent
incomprehensible
particular
textual
conceptual
continuous
warm
normal
evident
easy

oblique
rigid
opened
impeded
subsequent
presequent
temporary
different
immediate
ephemeral
unparallel
same
soft
cold
sudden
fast
universal
critical
one
all

relational locations

action
situation
moment
gravity
momentum
stability
abeyance
fall
rise
monotony
manifoldness
normality
extension
set
result

afterword

When defining this thesis's research question, I came across a book about algae. One chapter of the book was dedicated to the algaes' perception of sound.

It led me to question how sound waves move differently in the medium water and how organisms without ears perceive them. The only plausible answer was: just like they do in the air and like our ears perceive them and, simultaneously, entirely different.

Suppose virtual space is considered an abstracted, artificially created part of our world. In that case, we can identify phenomena that behave and impact - as sound does in the physical world - its virtual counterpart. As we build constructions in virtual space with every thought we have, and even more so when we plan a building, there must be phenomena that stabilise or de-stabilise these constructions.

Only some ideas remain, and only some designs follow through. Furthermore, as inherent as they are to us, we cannot help but feel the need to write them down or sketch them out because we know we might lose them much sooner than we would like. Moreover, we need help finding words to explain why some ideas lasted, and others did not.

This thesis aims to explore virtual space and collect a repertoire of sensual perceptions reflected in it. Compared to a scientific understanding of sensual perception in physical space, their virtual counterparts are more intuitive. A scientific method entails language, which can only come after finding the words to describe virtual constructions easily. Now that we produce architecture in and for a highly digitalised world, we have to take our constructions out of the strictly technical domain and allow us to understand and talk about them virtually, including as many layers as we apply to them with technical thinking.

The literature I refer to belongs to two domains.

In my reference list, you will find scientific approaches that provide information about sensual perception in physical space. As well as mechanisms developed to control perception, be in charge of thoughts and deceive the senses.

In my bibliography, you will find literature I can relate to when thinking about virtual senses.

Junya Ishigami develops an architectural approach in "Another Scale of Architecture" that does not derive from how we use or construct space. He considers the space outside of our making the configuration of our atmosphere and carefully adapts architectural thought to it. While his book features a collection of technical plan drawings, it introduced me to the idea that an architectural method does not have to derive from architectural thought.

Thus, architecture does not necessarily begin with physical construction. Instead, it can begin when we identify constructional mechanisms that we translate into physical structures.

Kengo Kuma's "Anti Object" made me think about the design of traditional architecture's virtual counterpart. Kuma's Object and anti-object encompass rather than rule each other out and span a field of possibilities rather than restrictions. Conceiving a model of virtual space, in which construction is thought of in the same manner as in physical, allows for architecture to encompass both its practice and theory at once.

afterword

At last, Michel Serre's "Five Senses" showed me how many aspects of an idea we can describe in order for it to be understood. A description of the concept itself is only sometimes the most straightforward approach. If it is about sensual perception, a description of the circumstances in which they become, end, and correlate can have more power to make them understandable than an exact description of how the perception works. If a text makes us perceive, we know the sensation in practice and can also understand its theory.

These are the three works whose ideas were the most present throughout writing this thesis.

To support my thought model of virtual space, I chose to refer to case studies of drawings and artworks.

All of them succeed in creating non-physical space through physical elements. They invite the reader to understand non-physical space and its workings.

Ultimately, the model presented in this thesis evokes an idea about virtuality for the reader, which aims to make it easier to access the space in which we construct our ideas.

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f.35 : Own work. Based on: Julia Fish. Study for Living Rooms - North. Ink on paper. 2001. at juliafish.com/selected-works/living-rooms/studies/.

f.36 : Ripple Tank Simulation. by Paul Falstad at falstad.com. * Inverted Colours

f.37 : Own work. Based on: Julia Fish. Study for Living Rooms - North. Ink on paper. 2001. at juliafish.com/selected-works/living-rooms/studies/.

f.38 : Ripple Tank Simulation. by Paul Falstad at falstad.com. * Inverted Colours

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f.47 : Tschumi, Bernard. "The Manhattan Transcripts Project, New York, New York, Episode 4: The Block." Ink and photographs on tracing paper. 1980-1981. moma.org/collection/works/58.

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f. 48 : Tschumi, Bernard. "The Manhattan Transcripts Project, New York, New York, Episode 4: The Block." Ink and photographs on tracing paper. 1980-1981. moma.org/collection/works/59.

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* Detail with own illustration layover.

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f.52 : ibid.

f.53 : ibid.

f.54 : ibid.

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f.56 : Tschumi, Bernard. The Manhattan Transcripts Project, New York, New York, Episode 4: The Block. . 1980-1981. moma.org/collection/works/60. * Own illustration layover.

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