FROM CHAOS TO ORDER

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HISTORICAL CONTEX

The need of **order** in a *pre/post war* society

Understanding **Mondrian's starting point** is crucial to see what led him from figurative paintings to his eternal research for order and harmony.

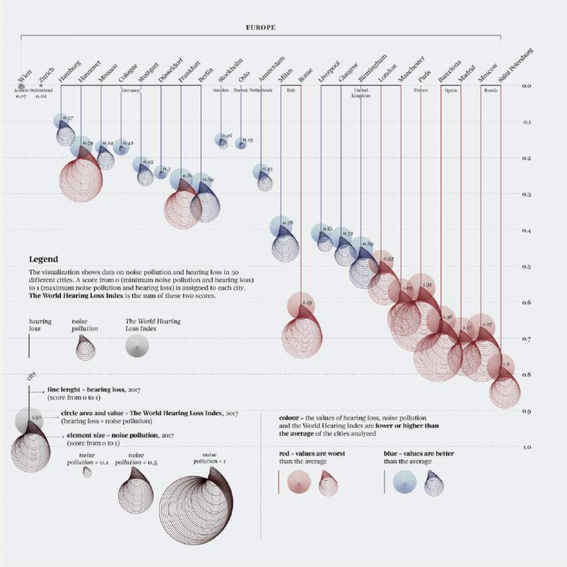
RULES OF ABSTRACTION

De Stijl: finding the true essence of things

Through precise rules their goal was to achieve unity (**Gestaltung**), which means expressing the world "suppressing arbitrary and subjective elements".

CURRENT TIMES PARALLELISM

Organizing *chaos* through **data visualization**



Today, we still try to make order out of chaos through rules: we participate to the **data-ism cult**, trusting the evidence provided by datas to frame our flee reality.

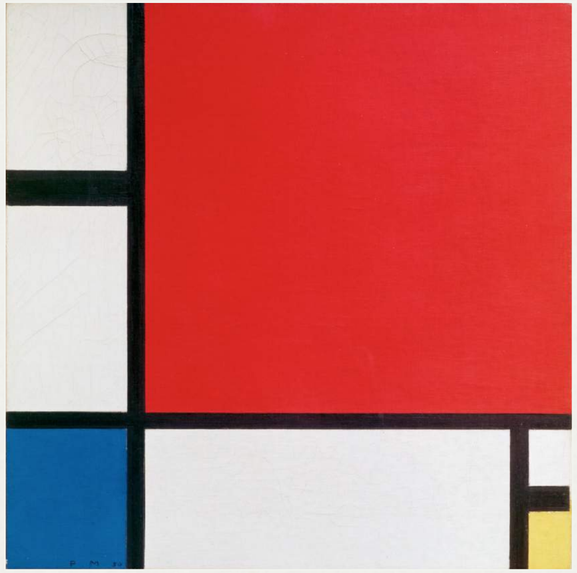
HISTORICAL CONTEX

The need of **order** in a *pre/post war* society

Still Life with Gingerpot 1
Piet Mondrian, 1911

RULES OF ABSTRACTION

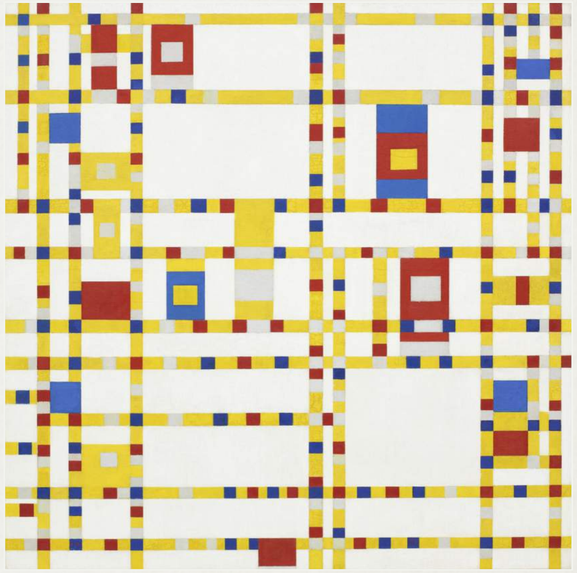
De Stijl: finding the true essence of things



Composition with Red, Blue and Yellow
Piet Mondrian, 1930

CURRENT TIMES PARALLELISM

Organizing *chaos* through **data visualization**



Broadway Boogie Woogie
Piet Mondrian, 1942-43

FROM CHAOS TO ORDER

Representing chaos

GOAL

Communicate the **unsettling and chaotic environment** similar to the one in Mondrian's life before, during and after WWI.

KEYWORDS

CHAOS | DISORIENTATION | CONFUSION

LEVEL OF INTERACTION

Immersive ● ○ ○

MONDRIAN REFERENCE

Impressionist and cubist phase

Abstracting to find the essence

GOAL

Experience and understand the process of **abstraction**, trying to find the true essence of things and balancing it in **perfect harmony**.

KEYWORDS

ABSTRACTION | HARMONY | ESSENCE

LEVEL OF INTERACTION

Reactive ● ● ○

MONDRIAN REFERENCE

Neoplasticism and De Stijl

Ordering reality

GOAL

Exploiting the abstraction process to **make sense of chaos**, referring to the current use of **data visualization**.

KEYWORDS

ORDER | DATA VISUALIZATION | RULES

LEVEL OF INTERACTION

Interactive ● ● ●

MONDRIAN REFERENCE

Last paintings inspired by cities and music

A PIET MONDRIAN EXHIBITION
FROM CHAOS TO ORDER
To celebrate Piet Mondrian's 150th birthday, Optogram has created an immersive experience ranging from the chaotic worlds of the past through a transition to the Neoplastic vision of harmony.
Opening Spring 2022

Understanding the context before entering.

ENTRANCE

Understanding the context before entering.

INFORMATIVE POSTER

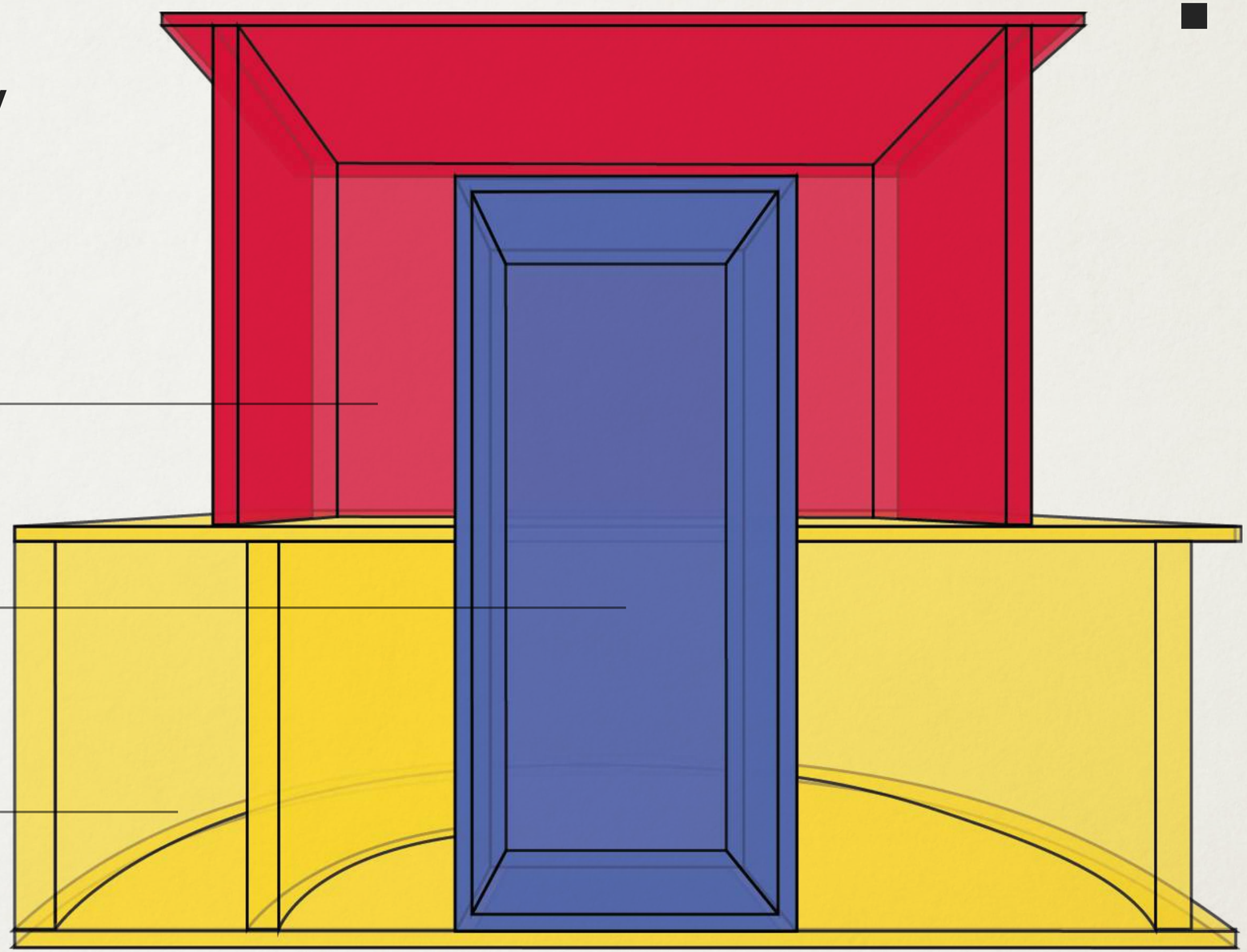
Contextual information to better understand the exhibition

MAIN ENTRANCE

Entrance to the first room

SPACE ORGANIZATION

Organizing the journey in three rooms.



ORDERING CHAOS

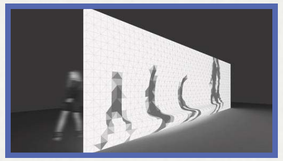
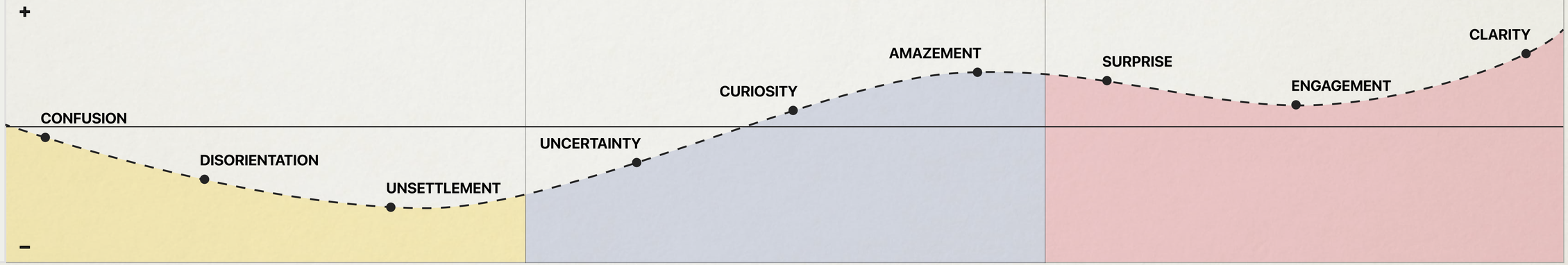
Third room

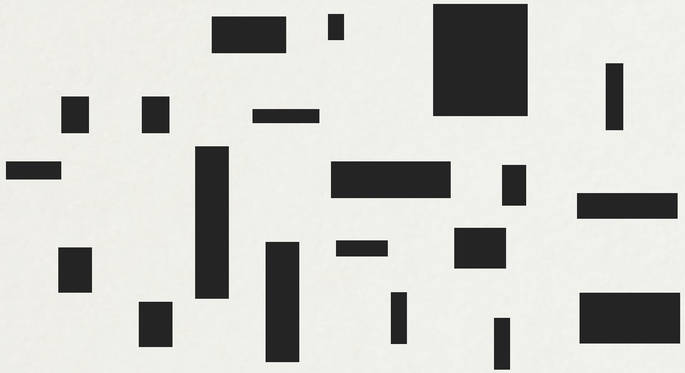
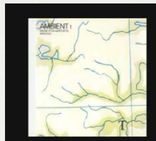
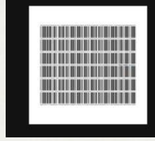
FINDING THE ESSENCE

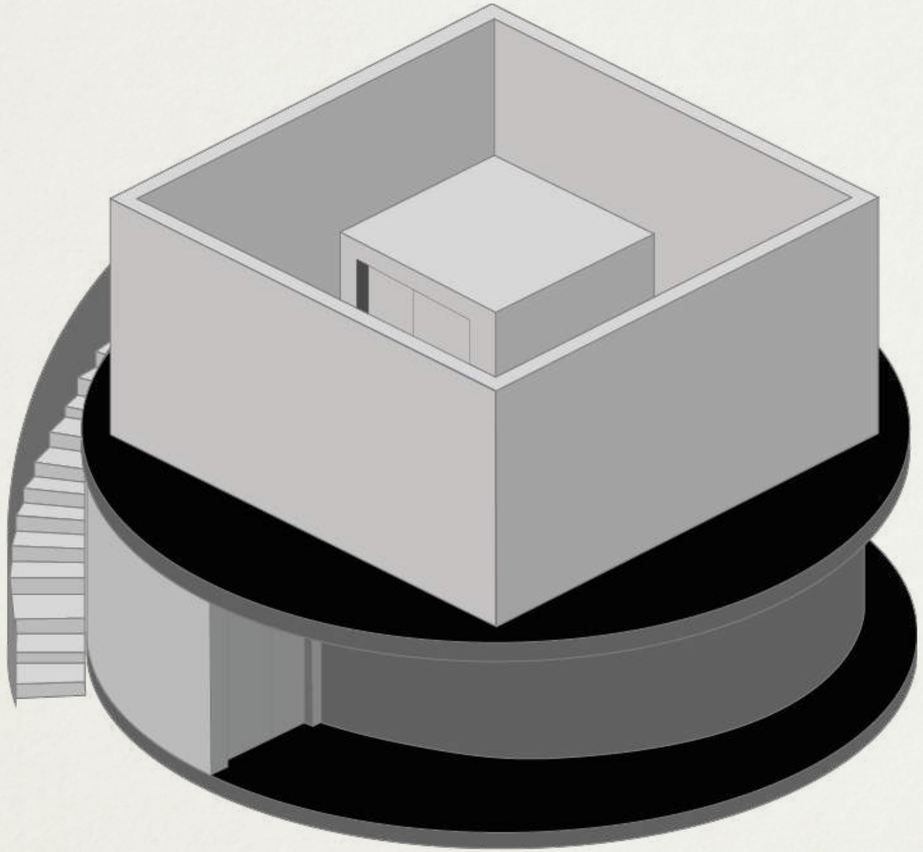
Second room (elevator)

CHAOTIC REALM

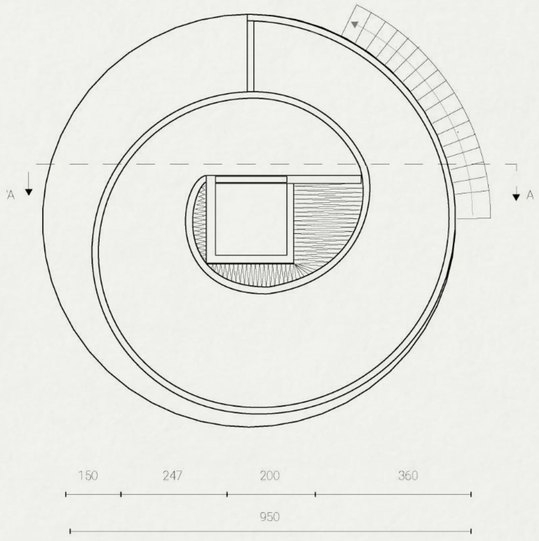
First room (spiral corridor)

	CHAOTIC REALM	TRANSITION PHASE	ORDERING CHAOS
VISUAL	• projection of videos depicting **chaos** through **current and historical events** • broken and distorted **mirrors** • **absence of color** 	• abstraction of the **users themselves** • elevator to go **from lower to higher level** 	• odering users' **personal inputs** • interactive **data visualization**
LIGHT	• dark environment • light strips on the floor 	• darker in the beginning • lighter as you go higher 	• light environment from the projections
EMOTIONS			

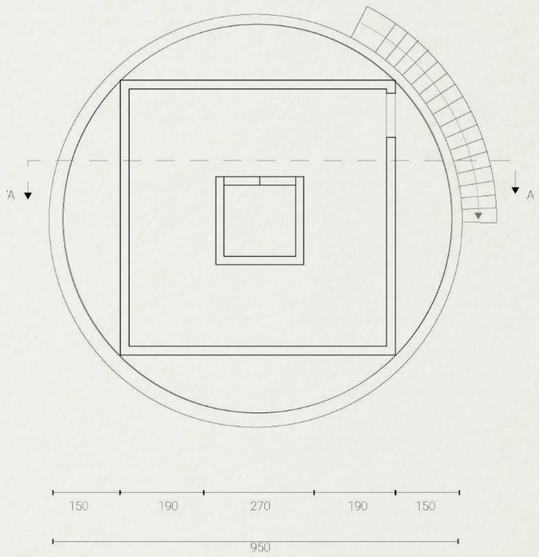
	CHAOTIC REALM	TRANSITION PHASE	ORDERING CHAOS
MUSICAL SCORE			
REFERENCES	**MUSIQUE CONCRETE** **Cinq Etudes De Bruits** Pierre Schaeffer, 2015 • Different volumes and pitches • Overlapping sounds • No recognisable melody	**AMBIENT**  **Music For Airports** Brian Eno, 1978 • Slow appearence of a calm melody • Soft and lunar sound • Subtle rythm	**SOUND ART**  **Dataplex** Ryoji Ikeda, 2006 • overlapping of noise and melody • strong rythm



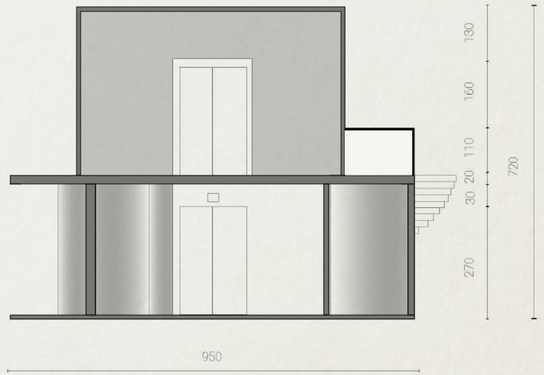
Ground floor - plan



Top floor - plan



Section AA'



MEASUREMENTS

All measurements are expressed in cm

100 200 300 400 500 cm

HARDWARE NEEDED

CHAOTIC REALM

9 PROJECTORS

Epson Pro L1070UNL

- **Type:** LCD
- **Light source:** Laser
- **Other helpful info:** interchangeable lenses, 360-degree mounting, wide lens shift

LENSES (2 TYPES)

Short-throw #1 Zoom Lens ELPLU03S

- **Value:** 0.65 - 0.78

Short Throw #2 Zoom Lens ELPLU04

- **Value**: 0.87 - 1.05

9 SPEAKERS

Meyer Sound Ashby-8C Ceiling Loudspeaker

- omnidirectional
- 13″ diameter (~33cm)
- 100° coverage
- **Freq. range:** 60 Hz – 18 kHz
- **Sensitivity:** 114 dB

1 EXTERNAL POWER SUPPLY

MPS-488HP External Power Supply

- can connect up to 16 Ashby ceiling speakers
- W: 48,3cm x H: 4,4cm x D: 36,4cm
- can be mounted onto ceiling or wall if needed

TRANSITION PHASE

1 LCD SCREEN

Samsung QM75R/ 75″

- **Type:** Edge LED BLU
- **Diagonal Size:** 75″
- **Active Display Area:** 1650.24 (W) x 928.26 (H)
- **Resolution**: 3840*2160 (4K UHD)

4 KINECTS

Microsoft Kinect XBOX ONE

1 SPEAKER

Meyer Sound Ashby-8C Ceiling Loudspeaker (as shown before)

1 EXTERNAL POWER SUPPLY

MPS-482HP External Power Supply

- connect up to 4 Ashby ceiling speakers
- W: 21,6cm x H: 4,7cm x D: 21,9cm
- can be mounted onto ceiling or wall if needed

ORDERING CHAOS

16 PROJECTORS

Epson Pro L1070UNL (as shown before)

LENS

Ultra Short-throw Lens ELPLX01S

- **Value:** 0.35

4 KINECTS

Microsoft Kinect XBOX ONE (as shown before)

2 TOUCHSCREENS

iiyama PROLITE TW1523AS-B1P

- Brightness: 450 cd/m²
- 10 touch points
- Full HD
- 15,6", 16:9

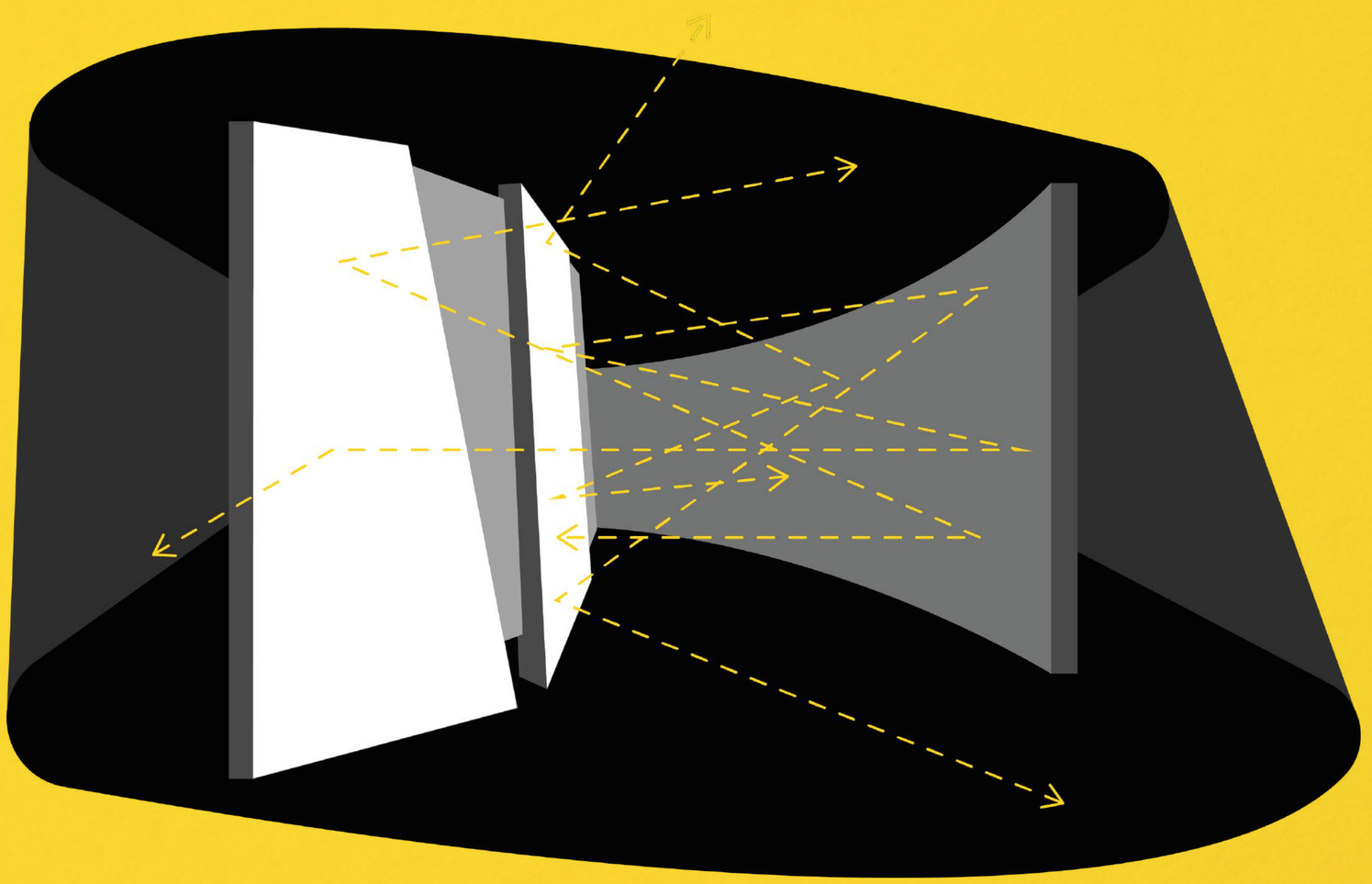
8 SPEAKERS

Meyer Sound Ashby-8C Ceiling Loudspeaker (as shown before)

1 EXTERNAL POWER SUPPLY

MPS-488HP External Power Supply (as shown before)

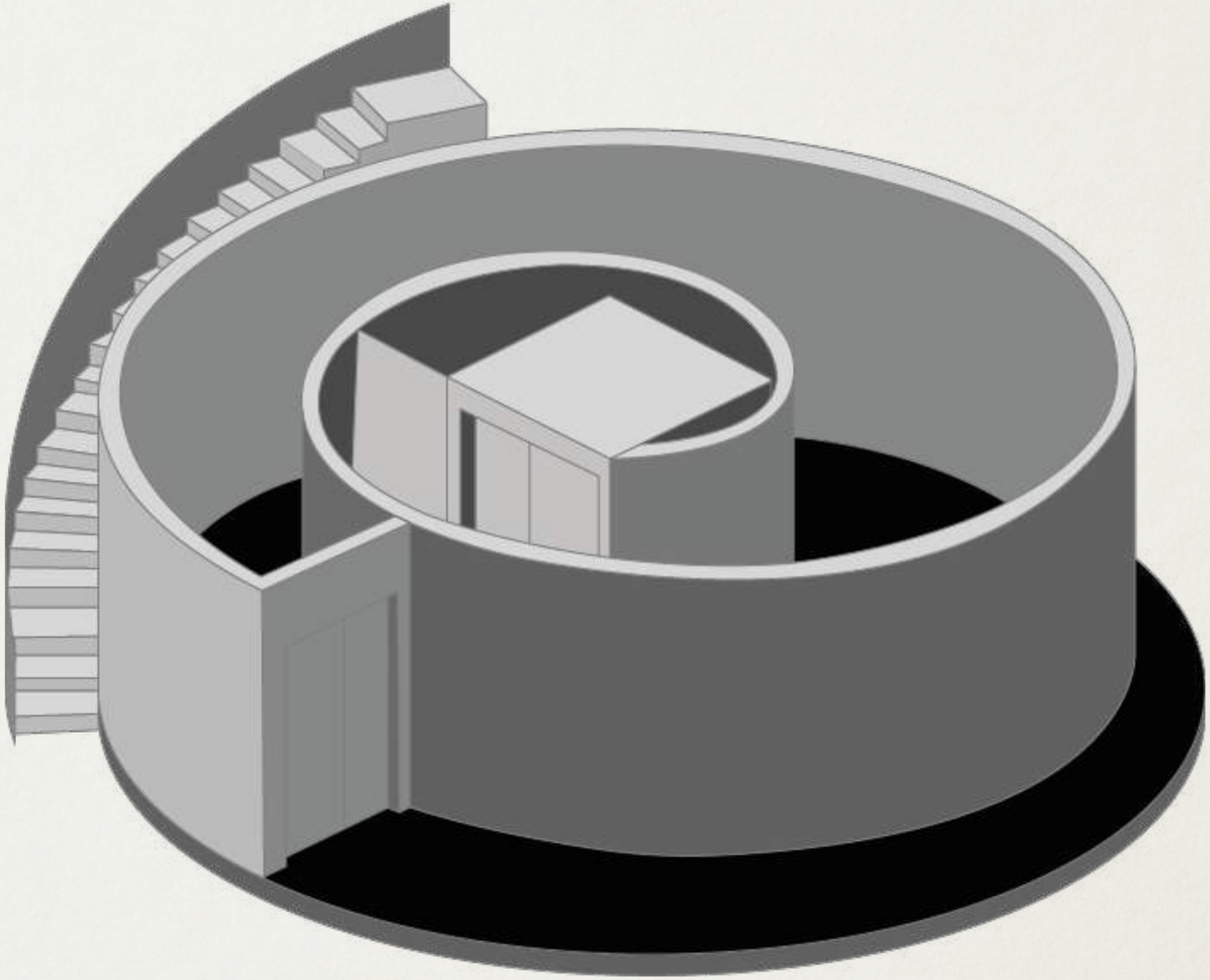
Chaotic realm: the starting point.



FIRST ROOM

Chaotic realm: the starting point.

In the first room, the visitor steps into a spiral room with a video projection on one wall, and the other wall filled with hanging mirror shards. With this, we evoke feelings of chaos, destruction, and confusion.



TYPE OF INTERACTION

Immersive environment
where the user has no control

LEVEL OF INTERACTION

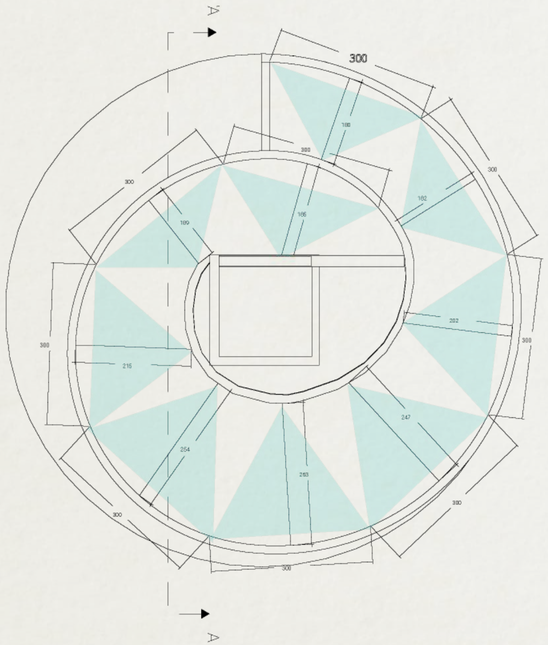
EXHIBITION ELEMENTS

- projection of videos depicting chaos through current and historical events
- broken and distorted mirrors
- absence of color

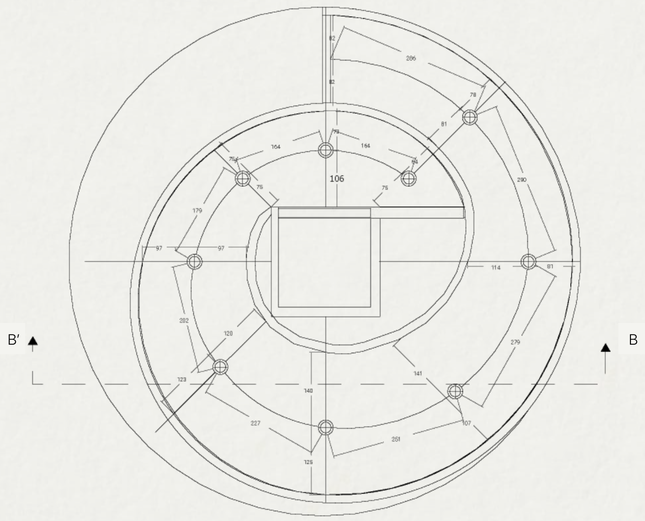
USER'S FEELINGS

- confusion
- disorientation
- unsettlment

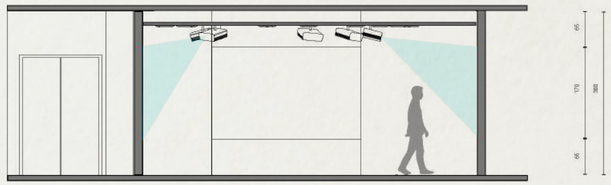
Ground Floor - set up of projectors



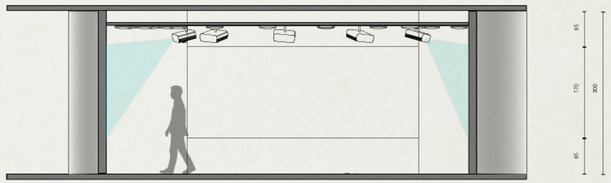
Ground Floor - setup of speakers



Section AA'



Section BB'



FIRST ROOM

We are trying to evoke feelings of chaos, destruction, and general unease. Like Mondrian experienced during his life with the world wars and trying to find his place in the art world, we are trying to connect his experiences with the chaos of today - war, natural disasters, destruction, crowding, data overload and envorinmental problems. The videos will be a mixture between carefully selected clips and videos edited through different animation techniques, in order to create an immersive yet chaotic feeling.

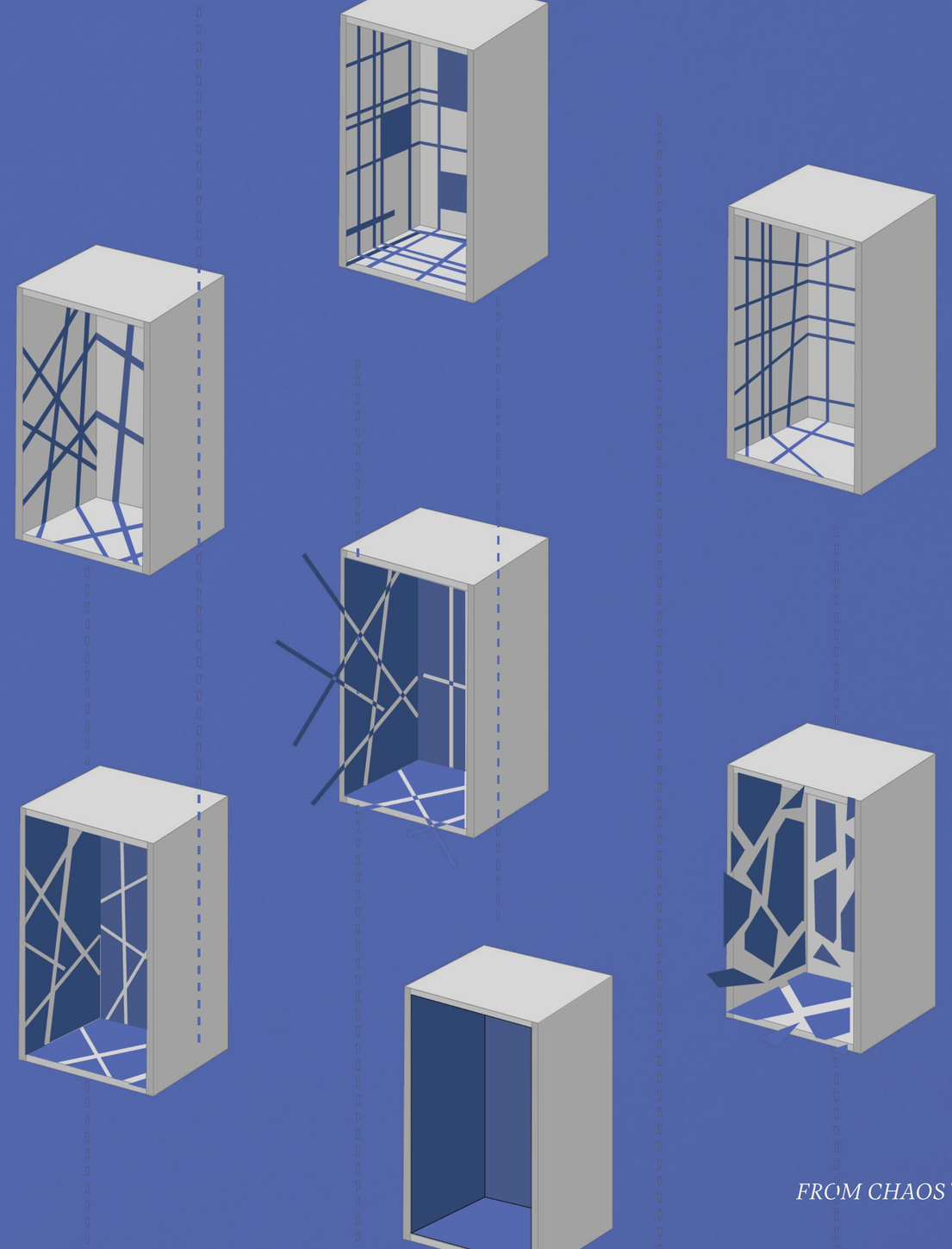
FIRST ROOM

The mirror wall reflecting the projected scenes of chaos begins as small shards, showing only fragments of the video as incomprehensible glimpses into a world of confusion and ill. The mirror serves more as refraction than reflection.

As the visitor progresses through the room, the shards grow in size, which reduces abstraction and lets them see a clearer picture of the movie installation. Finally, the mirror is a continuous inversed representation of the video.

MINNEAPOLIS
AND ARSON ROCK CITY

Transition phase: abstracting from chaos.



SECOND ROOM

Transition phase: abstrancting from chaos.

This space represents a passage between chaos and order. Here the visitor understands what is the Neoplasticism and Mondrian's abstract principles.The projections in the elevator show his style changing and morphing till the reach of perfection: his famous pattern with lines and squares.

TYPE OF INTERACTION

Reactive environment where the user has little control

LEVEL OF INTERACTION

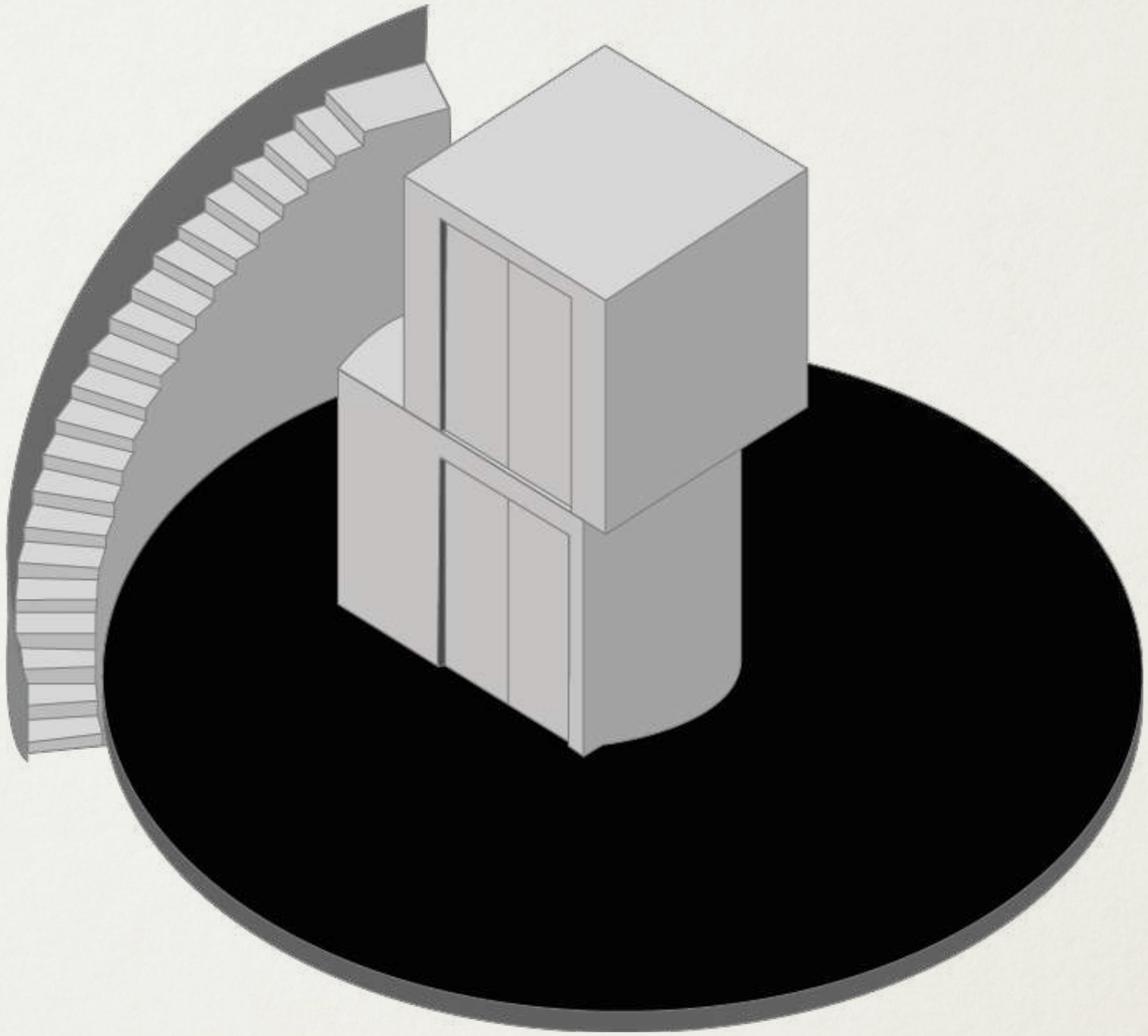
●●○

EXHIBITION ELEMENTS

- abstraction of the users themselves
- elevation from a lower level to a higher level

USER'S FEELINGS

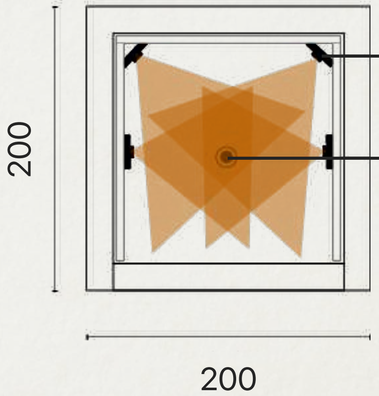
- surprise
- engagement
- clarity



SECOND ROOM

LCD SCREEN (1650CM X 928CM/16:9)

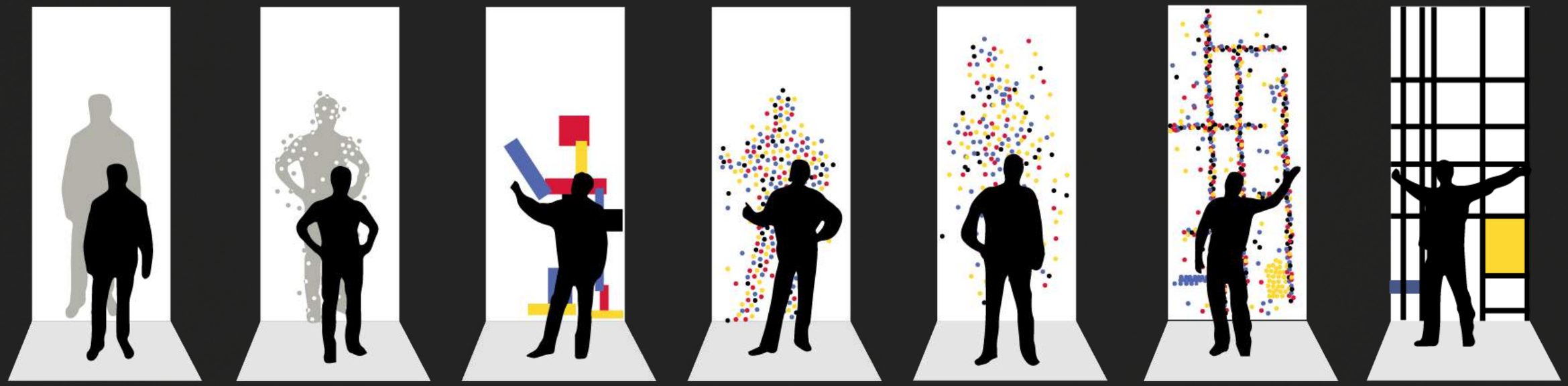
Samsung QM75R



KINECTS

SPEAKER

TIMELINE OF THE INTERACTION



Through the use of four kinects installed in the elevator the movements of the spectator will interfere with the videoinstallation wich can be watched thanks to two LCD monitors positioned one on the top of the other, facing the elevator's door.

Here the the space is reacting to the human presence: the user's shadow slowly starts to abstract itself in geometric shapes wich expolde in millions of particles. These ones start to position themselvs becaming the famous painting "Composition C (No.III) with Red, Yellow and Blue".

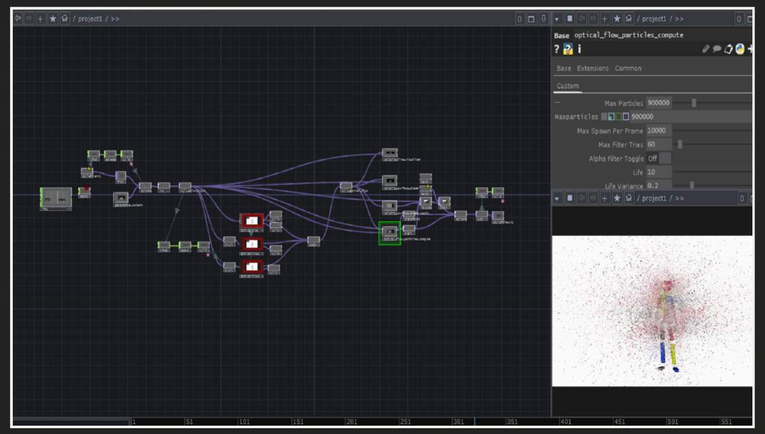
Particles

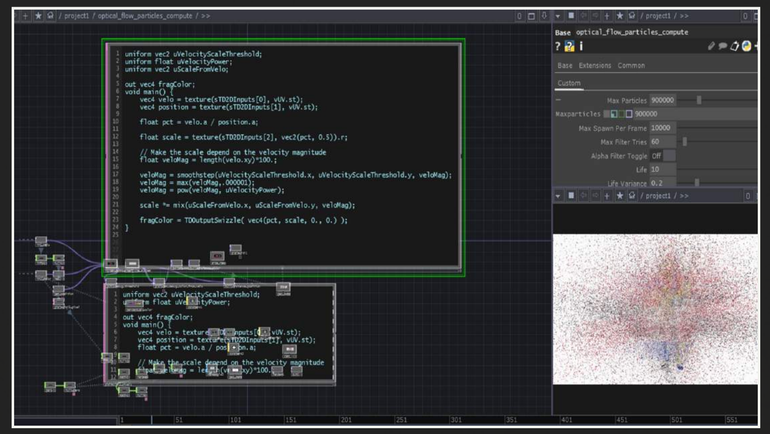
The movement of the user is extracted using kinects placed in strategic places of the elevator. The data collected is then combined to achieve a single moving image - tresholded - of the real user and his movements. The particle effect and transition is made using v. It'a GLSL calculation capable of track and put an effect to the percived movement of a video.

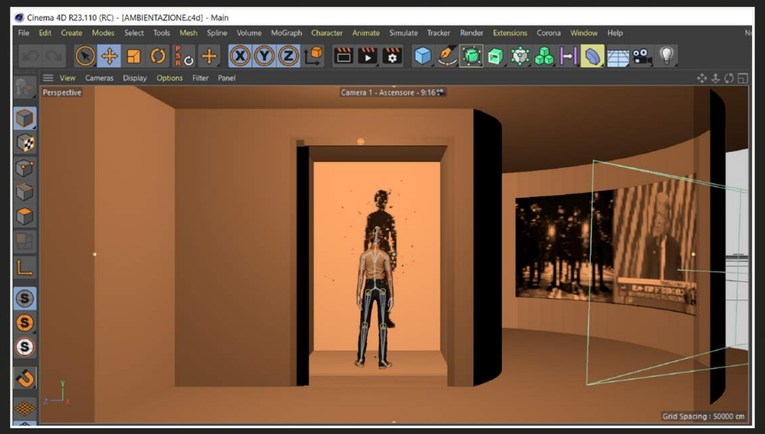
An ingestion system takes velocity out of a moving image thanks to the optical flow, thresholds it, and then limits it to a number of particles per frame. For a video of two millions pixels, we are looking for something around a maximum of 600.000 candidates to be emetting particles with a feedback system. Every pixel has is own alpha channel, so they each emit their own colors.

2 STEPS:

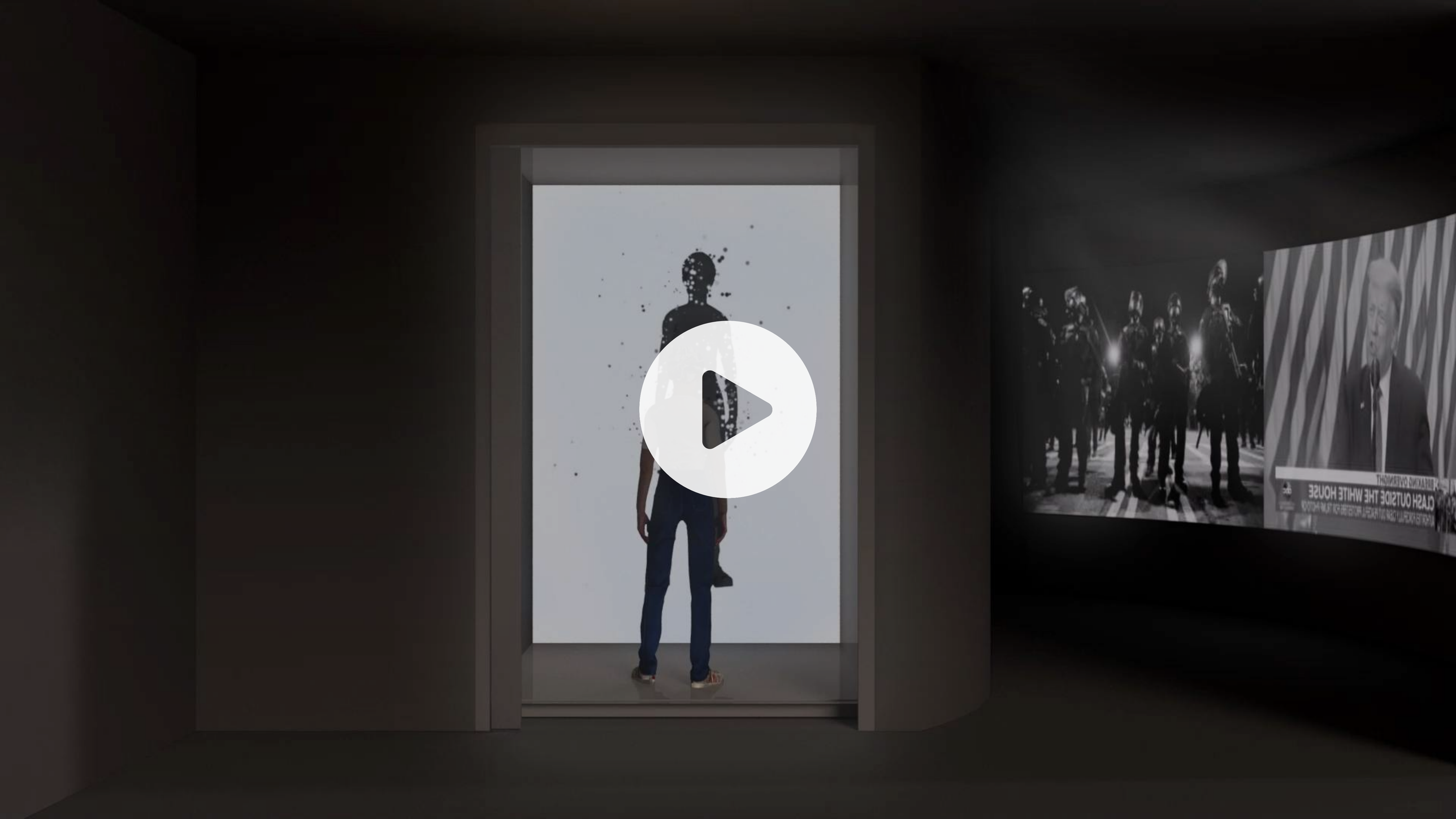
1 - filtering of velocity (which controls weight and number of particles) → **2 - calculation and particle control (atom calculation)**



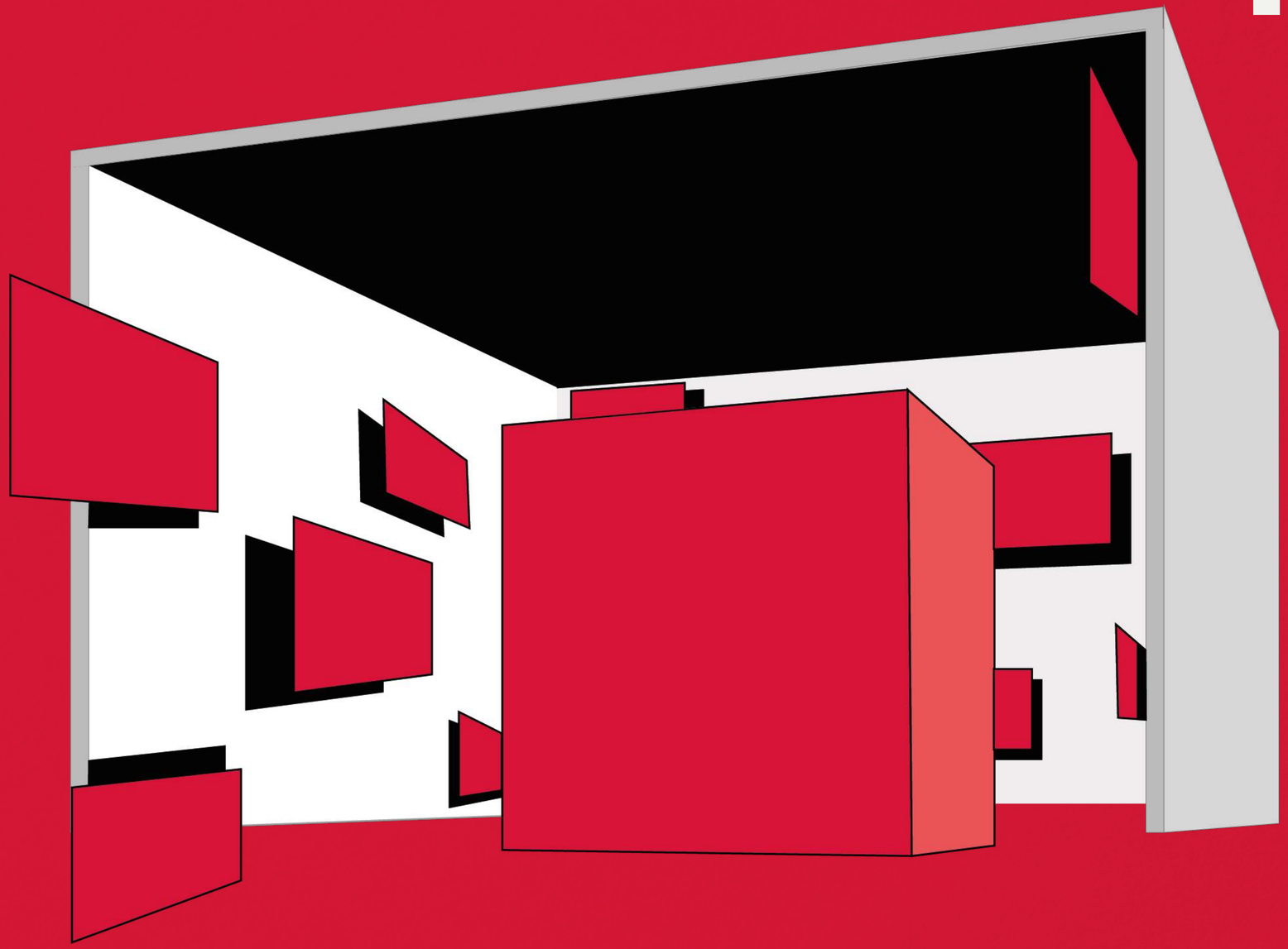




SECOND ROOM


CLASH OUTSIDE THE WHITE HOUSE

Finding **order** through data visualization.



THIRD ROOM

Finding **order** through data visualization.

This room represents how, once the state of order and harmony isreached, one can finally make sense out of the chaos. Here the visitor gets in contact with the abstract phase of Mondrian, when he develop a language to represent the essence and uses it to represent the world.

TYPE OF INTERACTION

Interactive environment where the user has total control

LEVEL OF INTERACTION

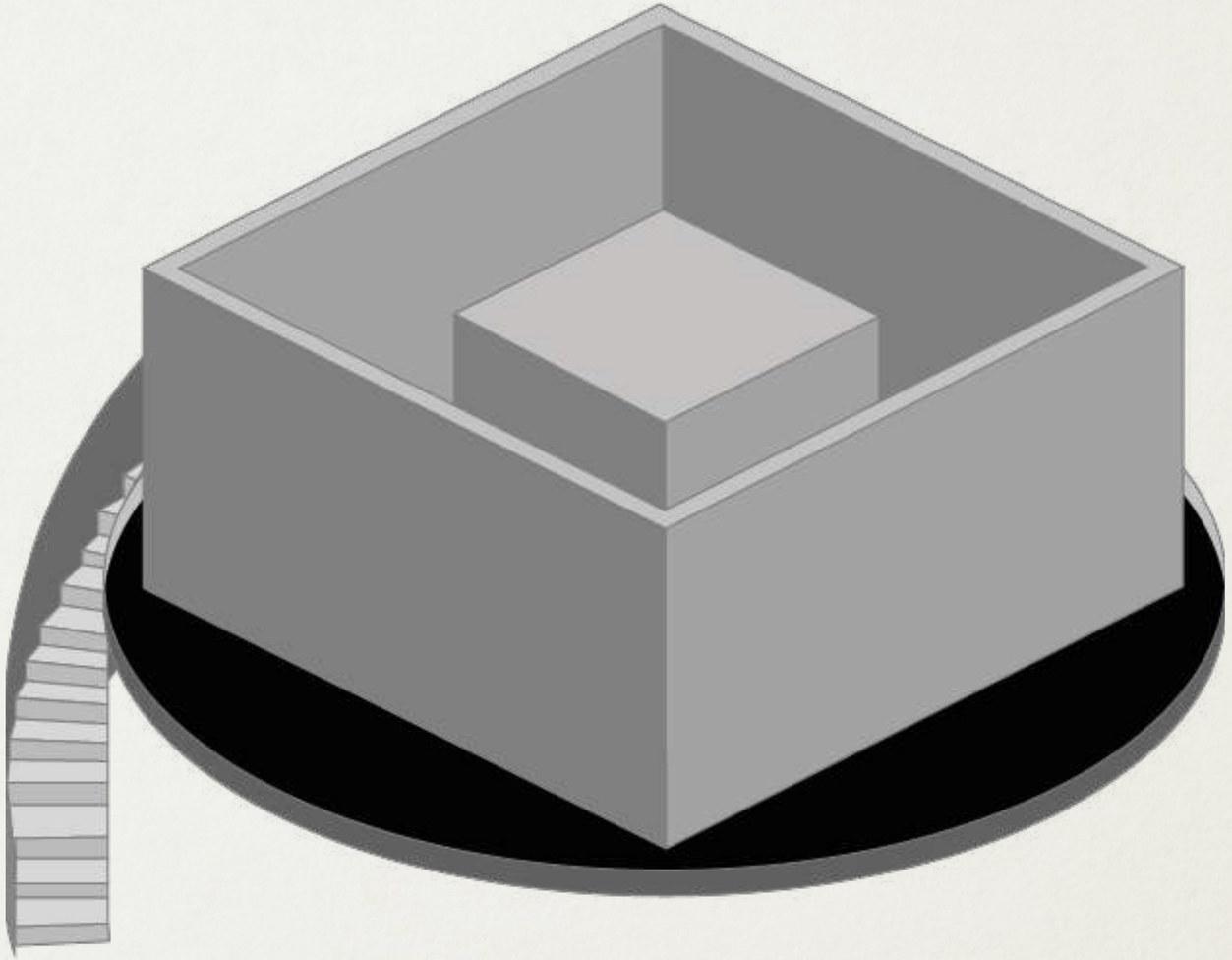
●●●

EXHIBITION ELEMENTS

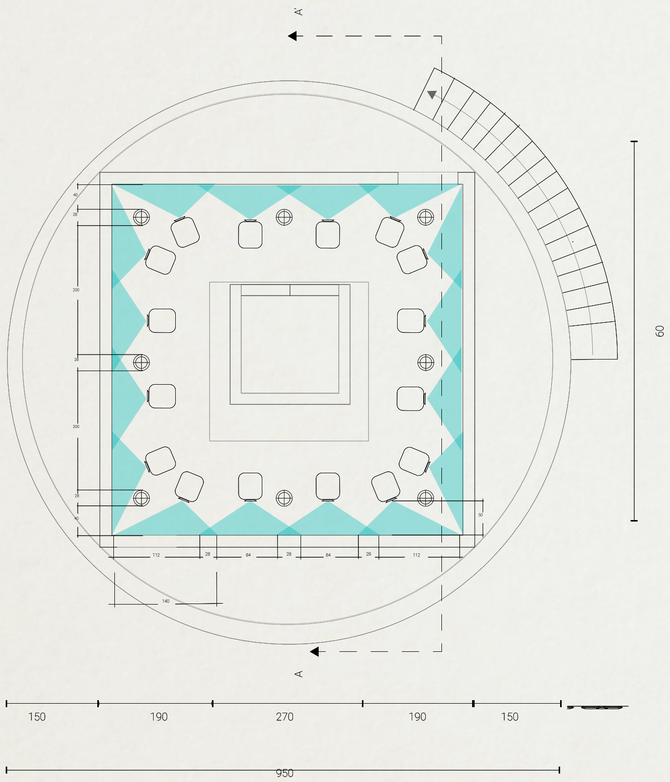
- users can actively take part to the look of the room
- interactive data visualization

USER'S FEELINGS

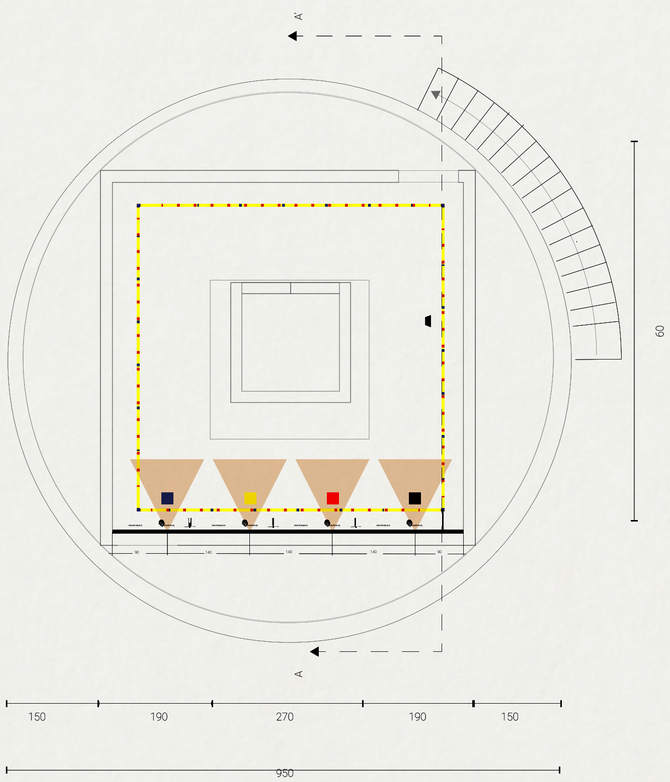
- uncertainty
- curiosity
- amazement



Top Floor - Plan



Floor - Kinect Setup



Section AA'

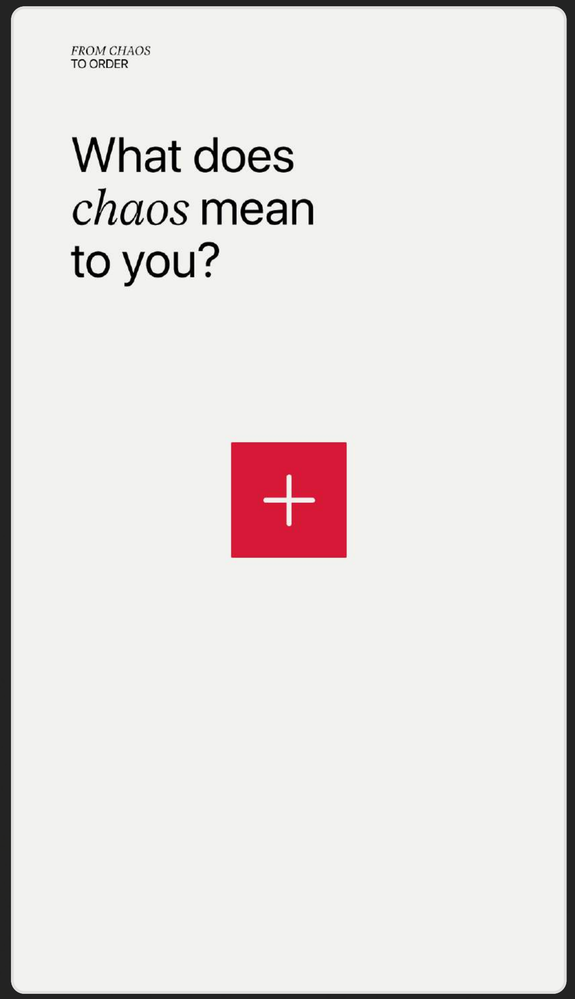
- projections (projector lense 0.3)
- movement sensor (kinect 43° vertical angle of action)
- touch screen (70x120cm/16:9/15'')

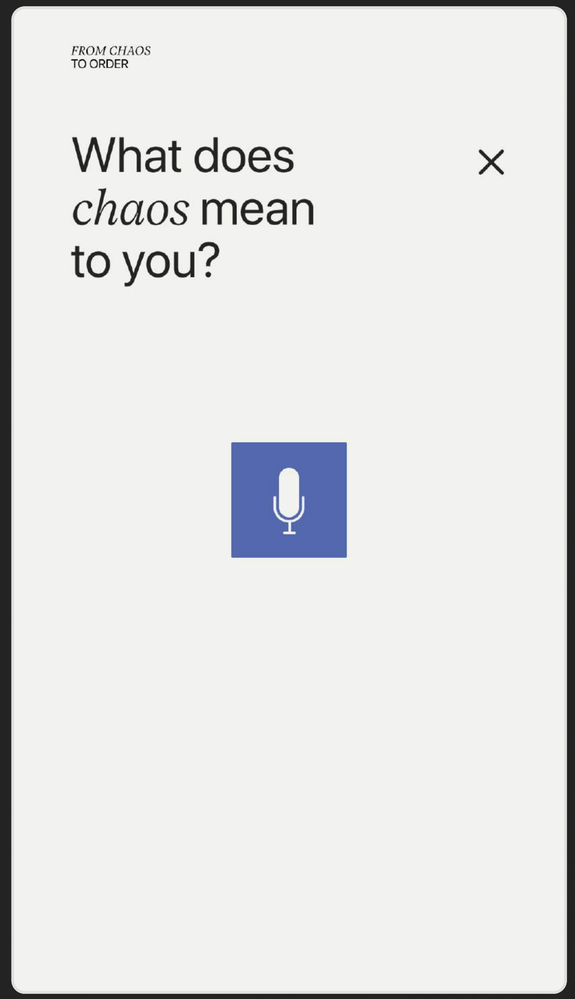
What does
chaos mean
to you?

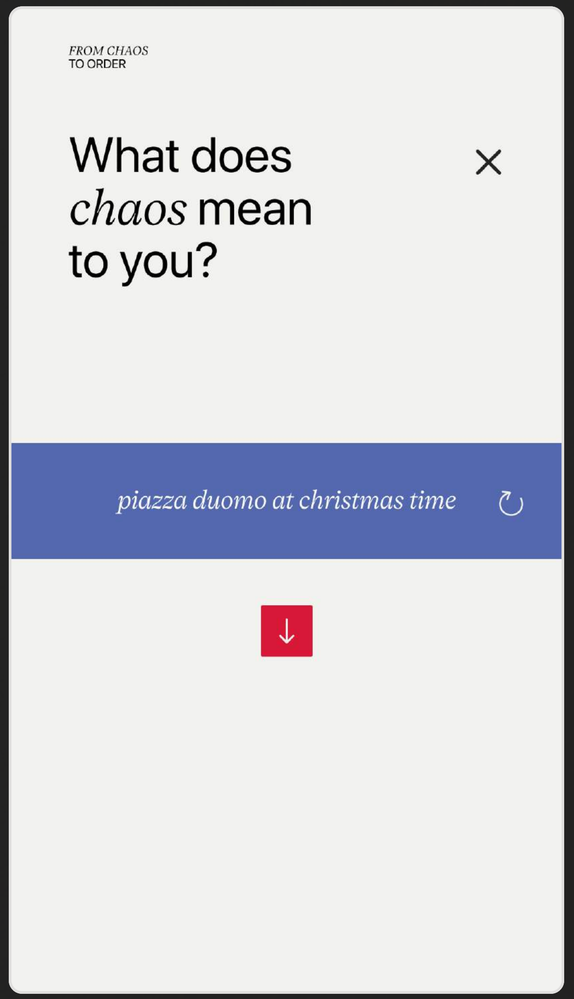
Touchscreen interaction

Through some **touchscreens** and **voice interaction**, the users can answers to what chaos means to them.

Each input will be translated in a different square and sent to the walls on the opposite side, where it will be visualize together with the previous inputs.







→ TRY OUT THE SCREEN INTERACTION

Data Visualization

Each square represents an input from visitors, and they can also read what others wrote through gestural interaction.

The blue squares contain sentences referred to the **human word** and the red ones represent chaos related to **nature**. Some squares that includes similar sentences are grouped in **clusters** so every rectangle represent a specific category.

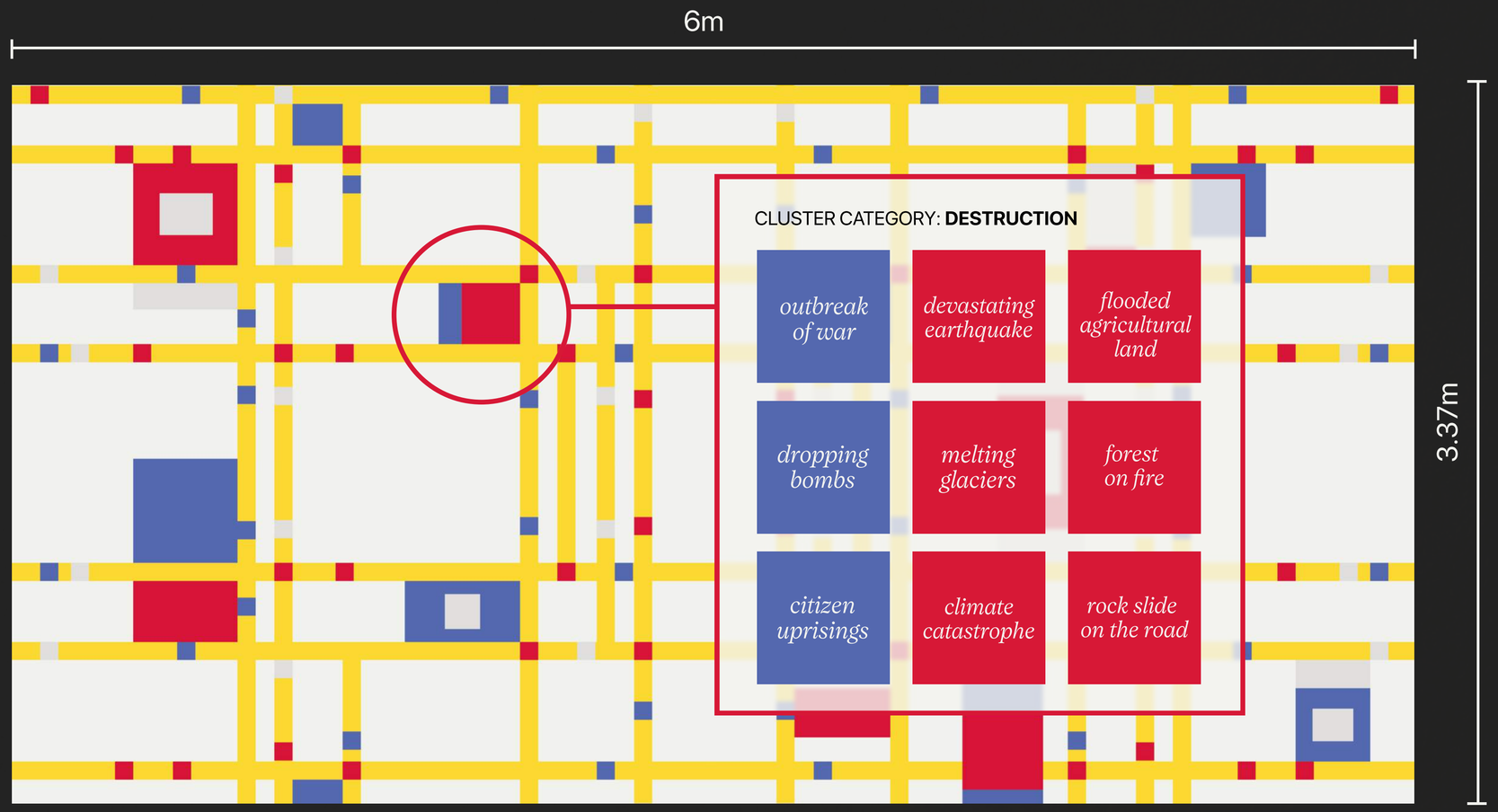
Elements

Lines

Squares

Red = Nature
Blue = Human

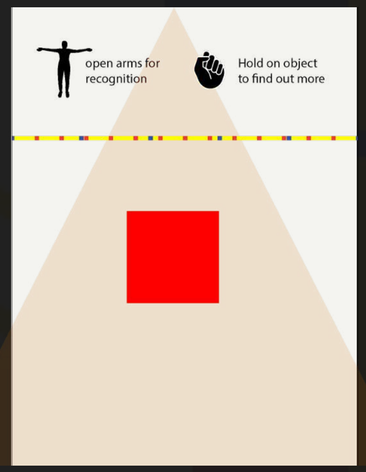
Rectangles

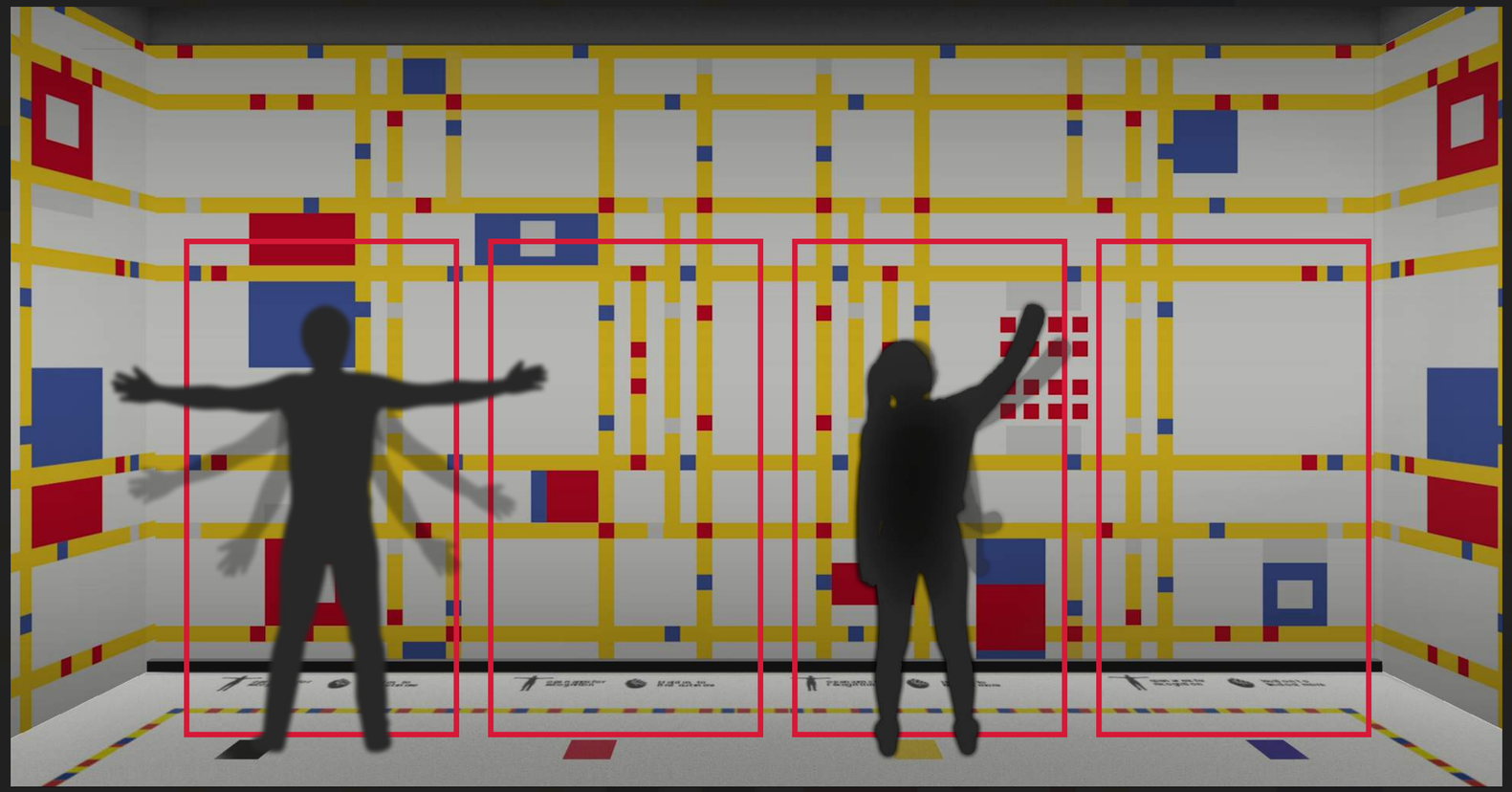


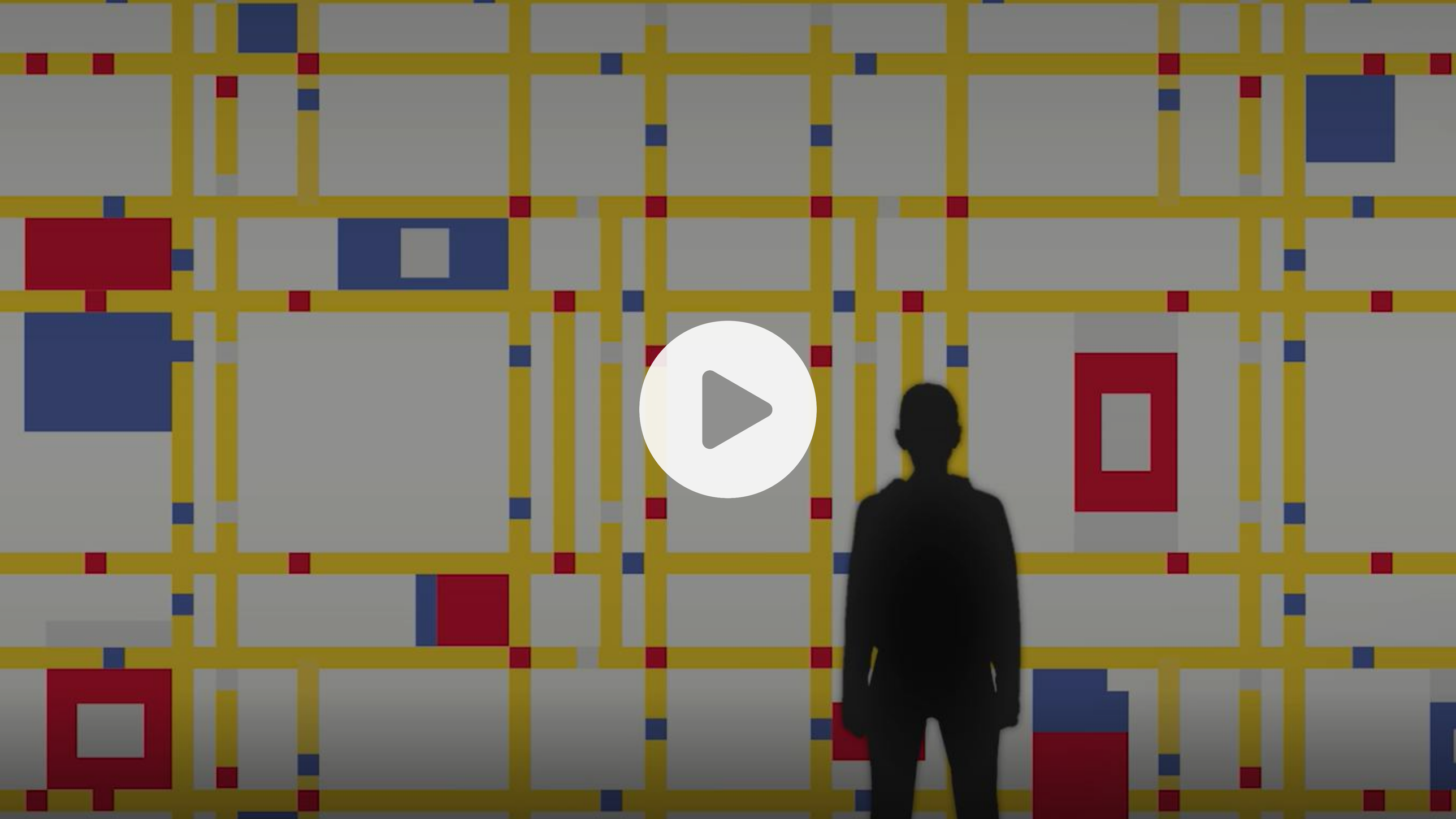
Interaction

The visitor can interact with the wall thanks to **4 kinects** positioned on one side of the room.

On the floor there are indications of **where to stand** and **how to activate the kinect**. The user opens their arms to activate it and point out what cluster wants to break up.







A PIET MONDRIAN EXHIBITION

FROM CHAOS TO ORDER

To celebrate Piet Mondrian's 150th birthday, Optogram has created an immersive experience ranging from the chaotic worlds of the past through a transition to the Neoplastic vision of harmony.

What does *chaos mean* to you?

THANK YOU