TO SIMULATE
THE PRESENTATION
OF SIMULATIONS

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EXPERIMENTS ON THE DIFFERENCIATIONS BETWEEN THE SIMULATED AND PHYSICAL INSTALMENT

This is a documentation of my Master Thesis
Simulating the Presentation of the Simulated.

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Program

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It was five years ago when I started to work on design and renderings for large-scale pub-lic sculptures and installations. And as a phenomenon common to the industry of public art, many of the designs never managed to win any competitions and remained in hard drives—in the virtual. This is also common among other fields that require high budgets for projects to be realised. And to me, this experience changed my understanding of how design and art projects take form. The renderings I made that show how things would look and fit in certain environments in the future trapped me deeper into the virtual space. At times, I would keep illustrating and rendering my   designs knowing they would never be built. The job kept pushing me to analyse the shape and forms of natural and artificial structures in further details. As I develop these skills, they inevitably dominate the way I see things. Moreover, the scale of things starts to mean less to me. After all, size doesn't trans-fer well to the virtual, where sizes are just numbers. It started to make less and less sense for me to impress people by designing magnificent objects, especially when they were nowhere near impressive when they were not overlaid on photos of real environments. Ironically, as I mocked myself for losing all hope in making the real, the truth is, my will to push things to reality had only grown under the pressure from non-existent budgets. This might explain on a psychological level how my thesis project takes the form of paralleled existence. I have directed the project to extend into both planes, one into reality and the other keeps mutating in the virtual.

Through the installation titled "Runway Descend"—the major component of my thesis Sim-ulating the Presentation of the Simulated—whose existence is at once virtual and physi-cal, I intend to reposition the existential form of artworks during its creative process from conception to actualisation. Specifically, I reflect on how the process of rendering alters the physicality and dimension of artwork. In the contemporary context where all means of art-making are widely accepted, including virtual works which are yet simply and commonly considered as a new creative techniques/media. Most virtual works are presented as op-posed to physical works, either simulating real-life experience as much realistic as possible, or relying on the fantastic technical achievement of the virtual medium to create things that cannot be actualised in reality. However, I would like to suggest that there is a more subtle relationship between the virtual technology and the virtual property of creative conception that lies in the inherent process of simulation. In many cases, simulation on the plane of creative consciousness is mutually derivative and parallel to the physical creation, although perhaps only one of them is manifested in concrete form.

Link to the written part of my thesis. It encludes further explainations on this project and its concept.

Video Installation Plan

The video installation **Runway Descend** consists of two major sections, one part being the three monitors located in front of the two camping chairs on one side of the exhibition space. The monitors show a recording of two people's conversations. The other part is the video projection onto the opposing wall at the back side of the chairs. Two looping verticle videos are played via the projector as visual representations of the two important scenes(simulation models) mentioned in the dialogue from the video played through the monitors. The chairs are positioned corresponding to the position of the hidden chairs and characters in the video. Underneath the two seats is the audio of the dialogue played through the speakers, creating a first-person experience.

1   2   3

SIMULATION GAPS
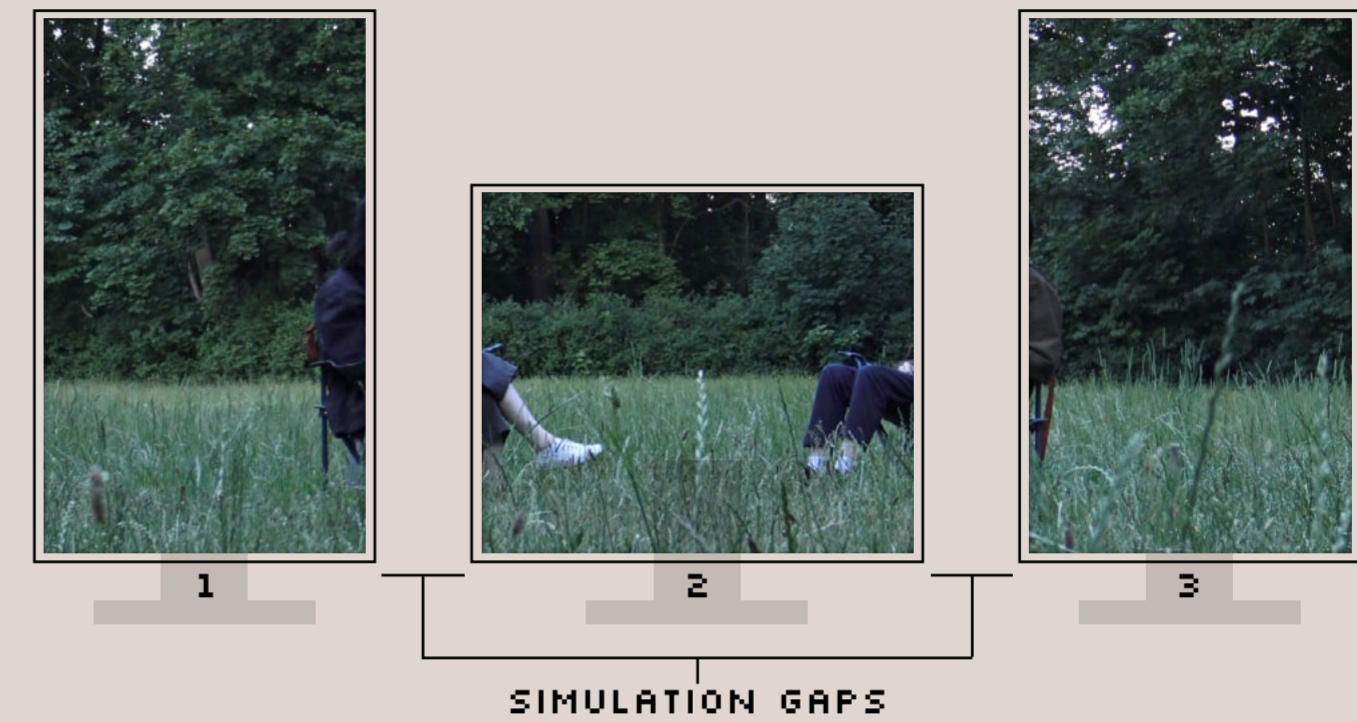
3 Monitors and 2 gaps

The first section of the installation consists of three Verticle Monitors placed side by side to present single footage. The two physical gaps between the monitors correspond to the gaps in the shown video loops.

The triple monitor setup was operated via a Touchdesigner program. Through the program, one source video was split into three parts excluding the major section of the two people talking in this scene. Neither of the two was actually talking in the original footage. And dialogue audio was produced later and played simultaneously using this program as well. Each side of the dialogue is played through two separate speakers located symmetrically under each one of the chairs.

Vertical Projection

Parralel
Virtual space

Projector
and a stand

Camping Chair

Verticle Monitors
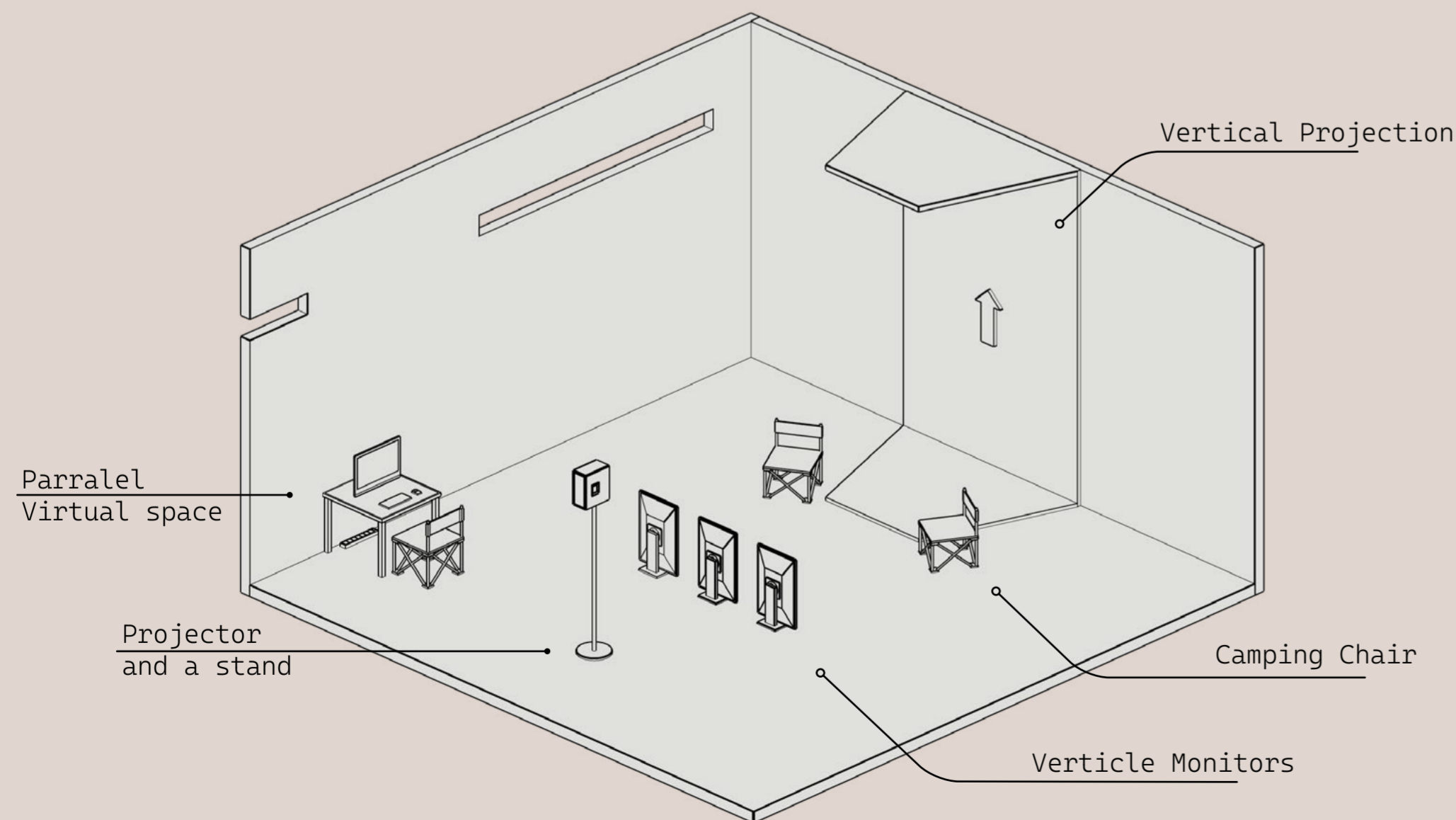
A screenshot of the Touchdesigner program made for sound video playback

Initial simulation

An hypothetical setup in simple 'White box'

What does it mean to simulate, to overshoot a reality that exists in the next seconds or minutes? The intuitive minor concerns of possibilities in the unforeseen future construct fragments of personal hypothetical worlds piled up in a messy junkyard of those soon-to-become memories. And if in the process of planning an art installation, all ideas and plans are fundamentally constructed on such processes of simulations, how come we not treat such simulations just as or possibly more serious as structurally complete works?
Through a series of continuous experiments and the making of installations, I try to explore the fundamental nature and value of simulations in parallel to and compare with their physical counterparts. Before landing on more complex plans, I wanted to clarify the fundamental structure of my video installation.

The looping 'Belts'

The second major part of the installation is the video loops played through the projector. The idea is to make a repetitive scenery mentioned in the dialogue, in which the objects mentioned repeatedly show up over and over through a seamless loop. For now, the two loops are a looping forest runway and a never-ending airfield runway.
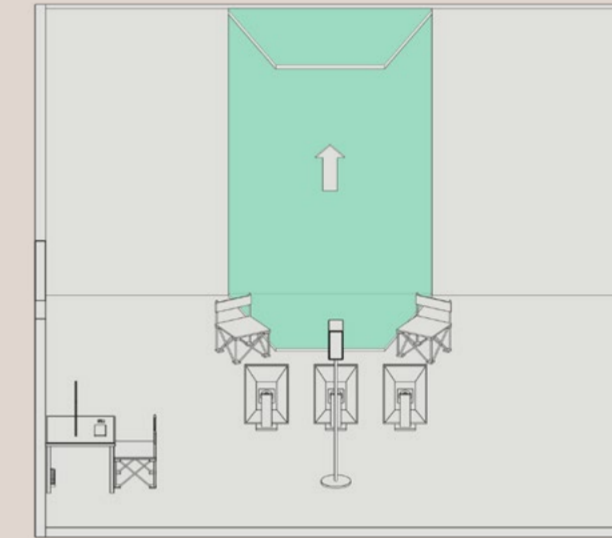
Dialogue Concept

"Hot water cools when exposed to cold embient" is a concept, and does not refer specifically to a glass of water that actually cools. This concept does not carry a precise temporal nature, such a physical law connects many of our perceptions and memories of reality but is not the reality itself. It is an abstract cognitive vehicle of reality. Concepts like this are building blocks of our simulations.
Simulations are results of abstract understanding and not necessarily limited by the linearity of time. This project does not suggest the non-linearity of time, but introduces an ideal scenario to articulate what it means to put the virtual in parallel to reality. In the case of the aforementioned open-world game experience, and the case of posters that exemplifies the contrary in terms of temporality, I try to show the parallel and relatively independent relationship between simulation and physical materialisation under the conventional understanding of time, that is, linear perception, and the constant interchange and the infinitely detailed interplay between real and virtual sequences under different scales of observation. Inevitably, if the concept of this project is to be conveyed through a work that is presented in real life, it is nevertheless through a linear medium. The audio part of this project consists of recordings of several conversations I wrote. Through the temporal fragmentation of the dialogues and the spatial dispersion of the things mentioned in them, I try to resist and break the inertia of temporal perception that hinders the communication of ideas, which may contribute to the wavering of the viewer's inertial understanding of the virtual and the real.

STILL FRAME FROM ORIGINAL FOOTAGE

8

Runways - Vertical Projection Loops: https://youtu.be/ItlTGMmX2cI
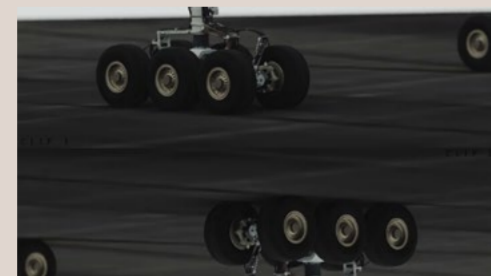
Linear Dialogue and Fragmented Events

*The dialogue below is an excerpt from the voice-over in the first iteration (exhibition) of the project "Runway Descend".

#Airfield#

○ A: I never got off the plane today.

● B: It's not funny. How did you get here then? Teleportation?

○ A: I lost track. Perhaps I'm still in my dream, dreaming of us having this conversation. All I remembered before this is myself on a plane. It was gliding fast on the runway. But I wasn't aware or care whether it was a landing or take off.

● B: I'd say it's more like you were dreaming about this somewhere.

○ A: I don't remember where I came from or where I went, but I'm convinced it's true. Just like seeing a censored article posted on Wechat, I can see people I know sharing it on Wechat moment and I could also see the article's name. Over time, the words that were once visible behind its name tag don't matter that much to me anymore. Since it takes a great effort and courage to write and post things like this, I rather believe it is righteous and real.

● B: So, if I dreamt of scrolling through my friends' Wechat moments, reading articles that I once couldn't see the content of, did that bring my dream closer to reality?
The illusions and deceptions in the dream world stay real in my mind when I wake up.

○ A: So tell me, before and after such a dream, where did you take off and where will you land?
You could say I was dreaming of flying in a plane.

● B: Then you can also say that I dreamed of a sincere land.

STILL FRAME FROM ORIGINAL FOOTAGE

Section of the woods start from 01:50:   https://youtu.be/ItlTGMmX2cI?t=110
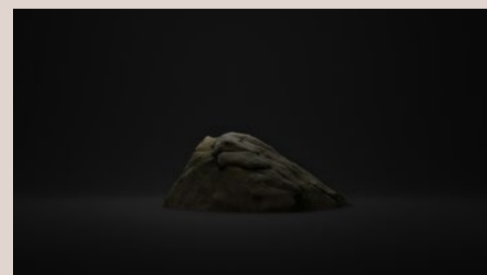

#Forest#

○ A: Running machines have this rubber belt rolling in a loop, right, the one you step on? So, think of this, now you have a chance to turn the nature's soil into a running machine. It's like running on a road from nature, only that you will be repetitively seeing the same nature including the rocks, fallen leaves, and trees.

● B: So why don't I take a walk in the woods? It's not like it rains every day. I can bring my favourite outdoor set and find a prominent place to show off my gear. A treadmill is a device used to force one's legs to swing at a steady frequency.

○ A: That's more like it! Think about it, doesn't nature and fiddling with your legs come in one set?

● B: No, that's not right! What about if I walk to the market to buy food? What about running downstairs when the house is on fire? How does any of those have anything to do with the woods?

○ A: Now, don't think about people rattling their legs, but rather everything else is rattling their legs in comparison. In other words, moving at a relatively even pace. Feel something?

● B: Yeah, I think I'm getting some out of this. Then what?

○ A: The key is in the loop repetition. If you look closely, you can find a joint in the treadmill's track, which makes a long piece of track connected at the beginning and end to form a loop. This inconspicuous joint is the basis for the regular structure of the landscape. While such boredom cannot kill the will to explore, it can make the person of the moment rethink and question the relationship between chaos and the unforeseen unknown. Another less extreme situation is to trot around the small park's circular track of one kilometre per lap, and within one more kilometre, one will see the landscape again with little deviation from expectations.

● B: But each cycle a different person shows up, unless you pick a very strange event to go to the park, in which case the park may not have anyone.

○ A: It seems you still care about what other people are doing. In that case or treadmill is closer to the structure I want to introduce.

● B: In the woods, in the mud, expecting a passenger in the covered toy plane

○ A: On the runway, the tarmac is very windy, standing against the wind, the branches and leaves of dead trees are blown away.

A Presentation of the simulated

In this project, I see the simulation and ideas to be structurally complete and they are the core of the installation project. The physical exhibition serves as a physical presence of its prior simulations. I planned to present it in its physical form and at the same time make a new and interactive simulation of the installation referencing an exhibition space I had access. Meanwhile, take my chances to explore the relationship between the simulated and its physical alternatives. In this project, I was lucky to be offered a room and keep using it for a long time to test and reconfigure the installments. As you might have noticed the desktop setup shown in the prior illustration. Due to the connectivity limitation of my laptop. What was placed on the desk was just my laptop. I use the laptop to run a virtual twin of the physical room it's placed within. In the interactive virtual exhibition, viewers could explore the room including the very laptop used for the simulation.
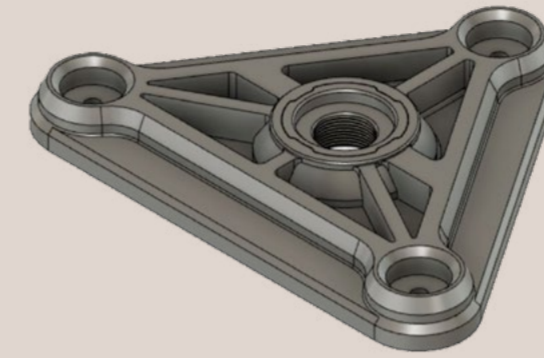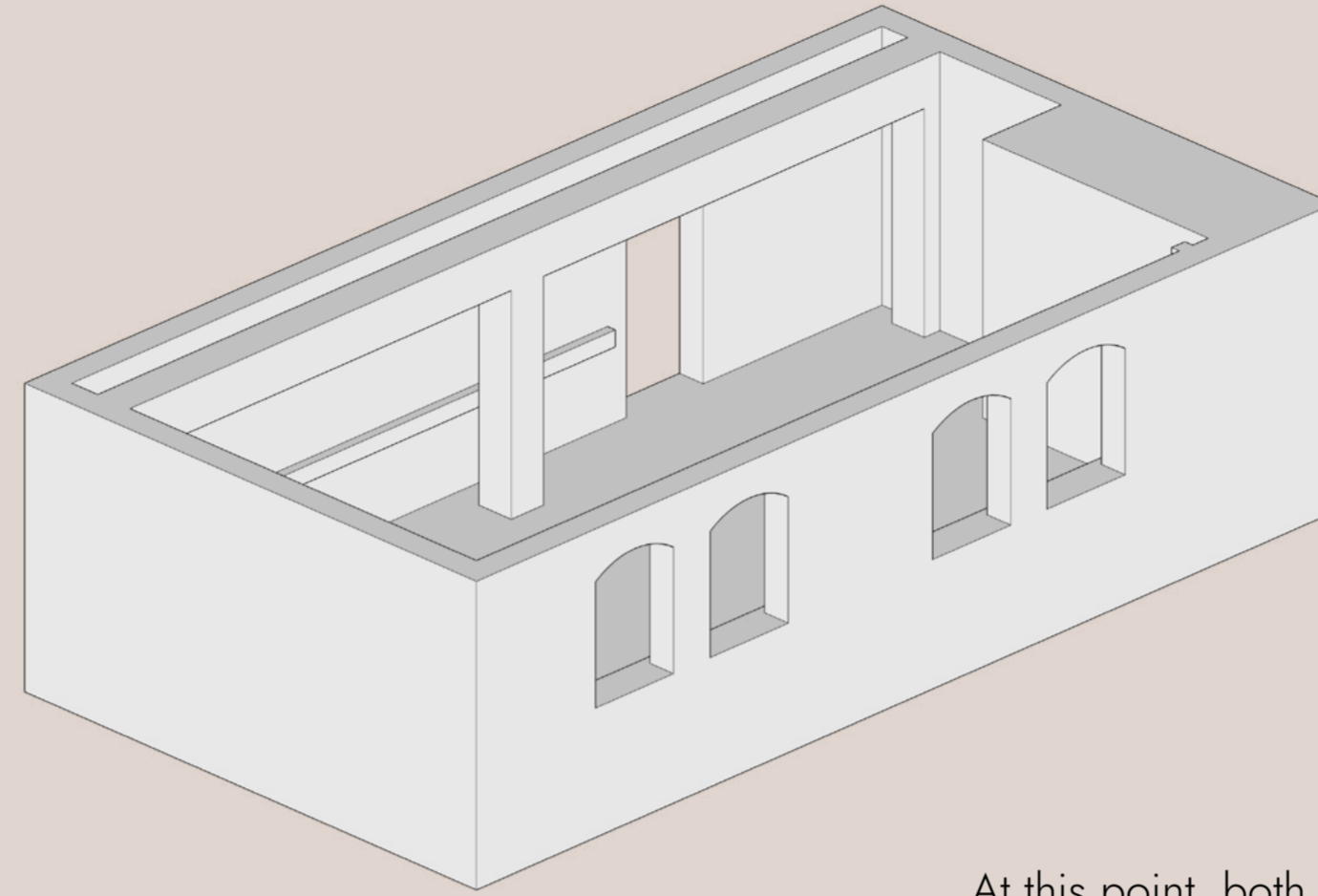

—— An adapter I designed and printed to secure a projector vertically onto the end of a tripod.

This physical setup was later copied into the interactive simulation as its virtual double

A Simulation of the presentation

A virtual recreation of the room I got to use for physical installation and exhibition. The model was made based on onsite measurements of the space. A model generated through photogrammetry was used as a reference for finding possible errors.

At this point, both the physical presentation and the new interactive simulation had started.

Before the completion of the interactive simulation, I made an in-between version in Blender to temporarily show the project to others and use it as a backup in case the later migration of the installation to an interactive environment won't succeed. On the other hand, I did not yet decide to show the new simulation inside the room as well and was not certain about what other equipment I have access to, including the monitors and projectors. However, I already had the two chairs I used for making the dialogue footage. In the following renders, many parts are different from the ones I used in the physical presentation. It was a similar scenario during the earlier stage of building the interactive version.
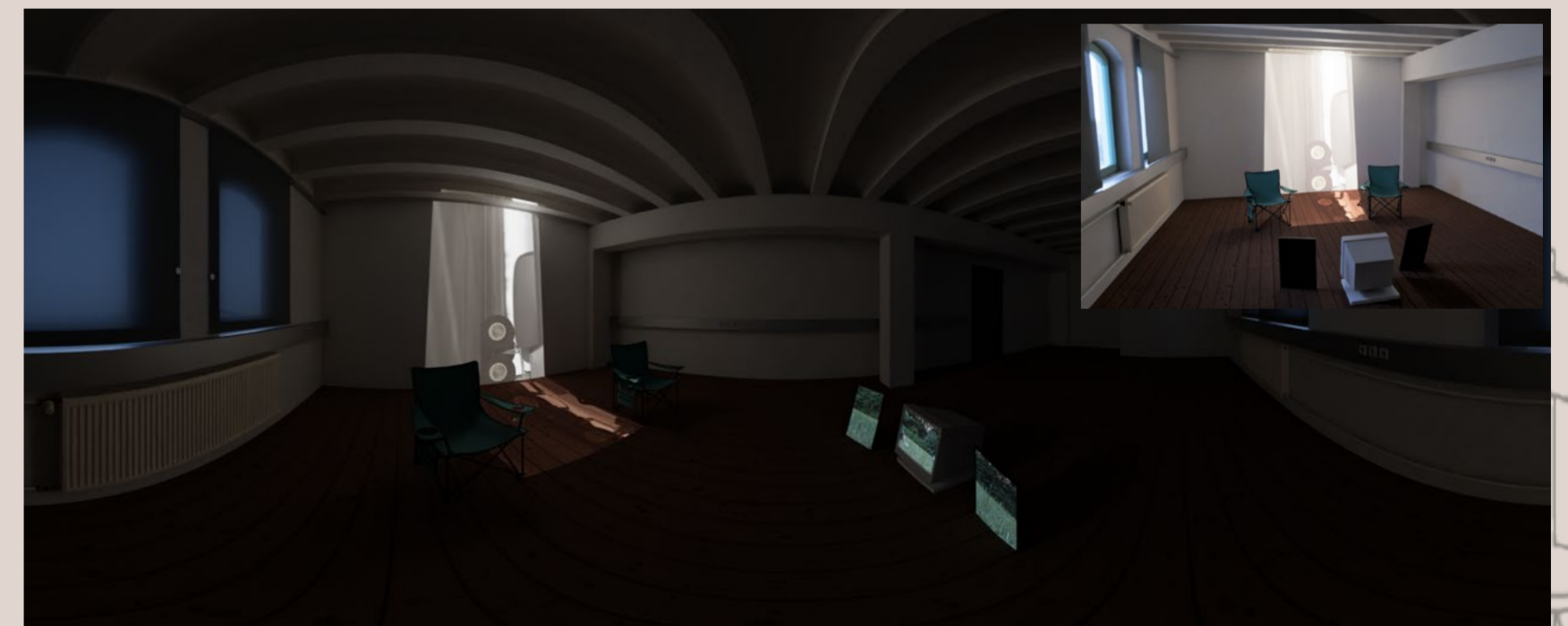
Renders of the setup copied into a space that is a virtual dubble of a physical space.

Outdoor Extension

During the physical presentation, the interactive simulation was limited to indoors only it wasn't an option to walk out of the room and explore. After the presentation, further improvements to the system were implied and the outdoor experience was added.
Going outside the room, the model made and used for the runway animation lies in the snow. Documentation videos of the physical exhibition are displayed on a TV outside the room in the simulated space. One of the four is near the entrance.

A link to short video documentation of both the physical presentation and a demonstration of the first interactive simulation.

https://youtu.be/rm7lQ6My8Mw

Documentation

Landing Gear