

*Meta-morphoses  
of Space: Inhabiting  
the Phygital*

# **Meta-morphoses of Space: Inhabiting the Phygital**

**Estonian Academy of Arts**

**Faculty of Architecture  
Department of Interior Architecture**

**Master's thesis**

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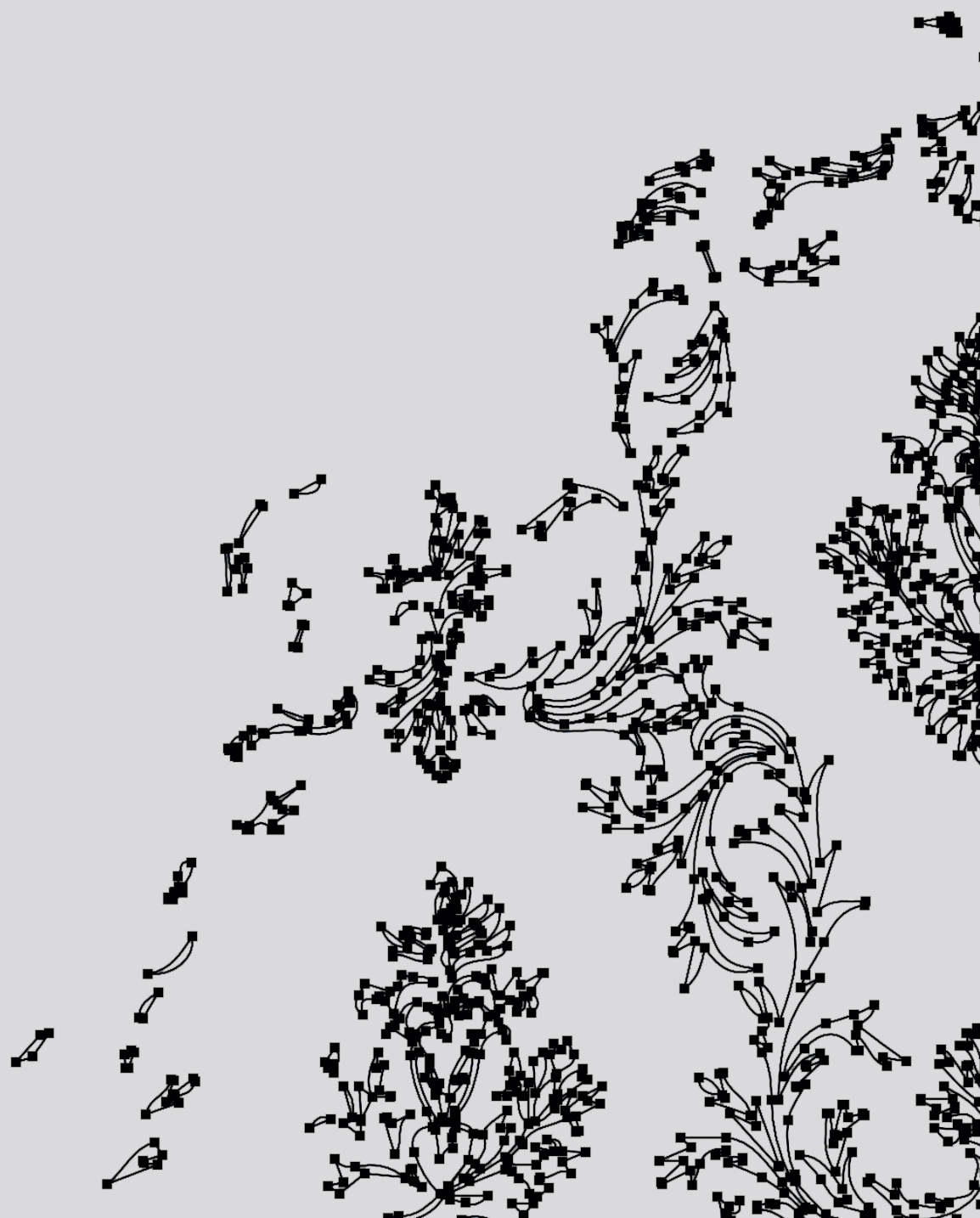
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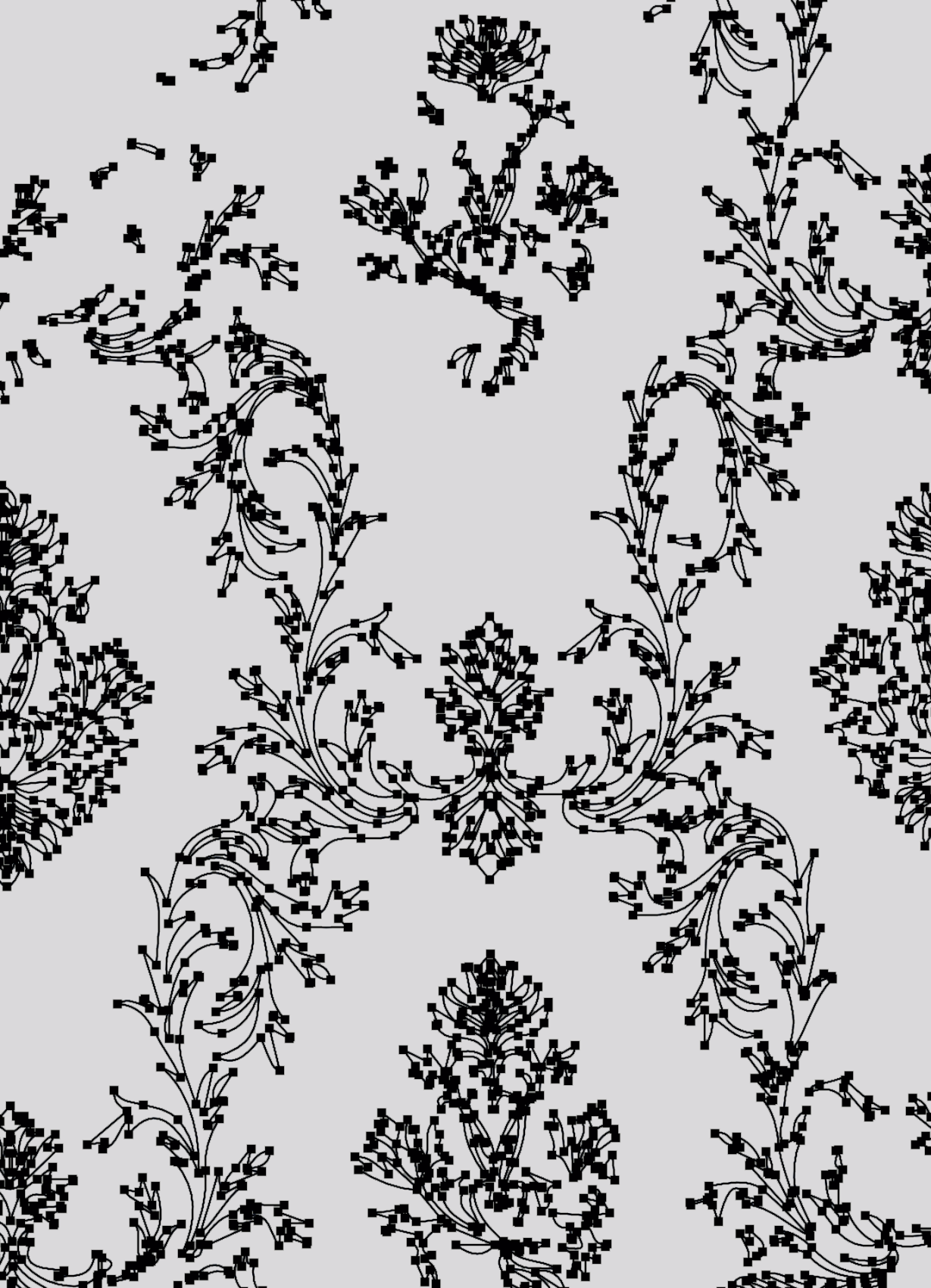
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#metaverse

#digitalspace

#virtual

#metaphors

#fashion

#AI

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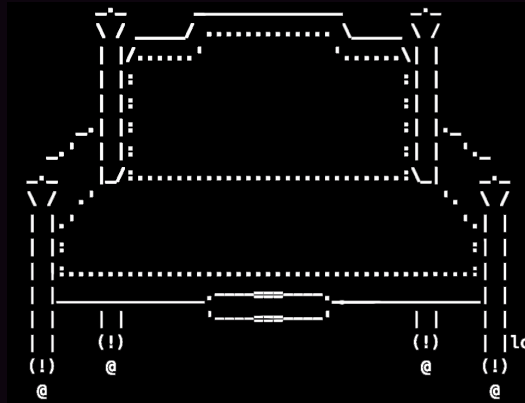
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WILL WE SOON REPLACE THE ENSEMBLE OF APARTMENT FURNITURE WITH ACTIVE AND DYNAMIC VECTORS THAT WILL THEMSELVES PROGRESSIVELY BUT RADICALLY MODIFY THE CONFIGURATION OF THE BUILDING, AND THEN OF ARCHITECTURAL MORPHOLOGY? ...AS REGARDS RECENT DEVELOPMENTS IN ADVANCED TECHNOLOGY, WE MUST POSE ONE FINAL QUESTION.HOW WILL IT END?<sup>1</sup>

Paul Virilio, 1984

<sup>1</sup> P. Virilio, *Improbable Architecture* [1984]. — Paul Virilio, *The Lost Dimension*. New York : Semiotexte, 1991, p. 80.

# Log in

In the eighties of the last century, Paul Virilio emphasised the importance of telecommunications and their transformative influence on spatial arrangements and daily habits, putting their impact alongside the domestication of fire or finding new sources of energy.<sup>2</sup> Bringing the parallel of a TV screen as of a ‘new televisual window’, Virilio sees it prevailing over such architectural elements as doors or common windows in the context of our most intimate environments, as the later would only give access to a continuum of traditional space-time, or a ‘primary day’.<sup>3</sup> A window displaces the door, symbolising supremacy of observation over literal interaction and physical access. Today, we can behold the development of even more sophisticated windows, resulting in the further reduction of real spatial experiences in order for time-saving, convenience, and, perhaps, insatiable craving for newness and infinite progress.

Fusion of digital and physical worlds, gradual integration of one dimension into another, is a hot topic nowadays. Some are brave to predict that our life in a digitally-constructed space will be as real as life in physical space at some point.<sup>4</sup> For this to happen organically, we need to have a better understanding of how to design for the *metaverse*<sup>5</sup> on its own terms. At the same time — how to design the physical spaces, having in mind the expanding parallel dimension. Digital means open doors to a whole new world with endless possibilities, while often limiting the actual conditions to the format of one object — a screen and, roughly speaking, one physical space — the one around it.

<sup>2</sup> Paul Virilio, *Improbable Architecture* (1984) ..., p. 94

<sup>3</sup> Paul Virilio, *Improbable Architecture* (1984) ..., p. 81

<sup>4</sup> M. Zuczenberg, *The Metaverse and How We'll Build It Together*. — Meta Connect 2021. Video. Available: <https://www.youtube.com/watch?v=Uvufun6xer8> (accessed 24 April 2023).

<sup>5</sup> Metaverse — 1. digitally-created spatial universe (e.g. in gaming); 2. VR/AR-based immersive spatial experience that is supposed to replace some functions from a real life (e.g. Meta's Metaverse by Marc Zuczenberg)

# Intro

My curiosity towards the topic first arose from a paradoxical nature of the mentioned earlier: acknowledging the importance of physical conditions for a human being in the unavoidable hybrid reality we are collectively moving to.

The focal point of my interest is the influence of this dual transitive process on particular spatial design projects that are seen as prominent nowadays. In the latest years, at the beginning of 2020s, I noticed digitality- and metaverse-inspired features becoming popular among interior and furniture designers, architects, and spatial artists (the examples of which can be found later in the text). Digitally-created worlds, mimicking the physical one in the first place, now inspire physically built spaces. If, by that, our living environment does not become the metaverse in a literal sense, it indeed becomes some sort of 'meta-.'

Designing the future consists of designs inspired by the future, which means inspired by the unknown and leads to speculative design. By planning in the common spatial dimension (physical), thus considering the undeniable presence of the parallel one (digital), designers make steps towards adapting environments to a new spatial reality: a fusion of both worlds. How do we reprogram our physical habitat to fit the new hybrid reality? In other words, how to design a physical space with the constantly expanding parallel dimension in mind?

My thesis consists of a theoretical (textual) and practical (creative) part. The theoretical part is divided into three chapters in which I open up the topics of digital, physical and phyigital space. The theoretical discussion goes hand in hand with my creative project which results in a conceptual furniture piece (*Speculum Mirror*) designed with the help, assistance and nuisance of the Artificial Intelligence (that of *Chat GPT* and *Midjourney*).

First, in the *Digital* chapter, I aim to contextualize the merging points of the digital/physical transitions in space by highlighting the vital role of the metaverse. Personally engaging with several environments that emerged during the world's pandemic of COVID-19 as digital alternatives for social interaction, I am studying some of the metaverse cases closely — a nightclub, a conference on the very topic of the metaverse, and commercial spaces such as online store and a showroom. By noticing the tendencies in different spatial typologies in digital, I am posing the question: what does physical space have to learn from the digital one, both conceptually and aesthetically? In the subchapter named *Analogue*, I draw parallels

with some virtual worlds that existed before the digital, pointing out how those continue to reflect in the latter.

In the *Physical* chapter, I am articulating characteristics seen frequently in the interior designs of the latest years, which I subjectively find to be coherent with the main topic of discussion in this work. By examining these features, I speculate on the digital artifacts and tools that could lead to the given design decisions in a physical space. Some of the features discussed in the chapter are the reminiscence of the design era of the 60s—70s of the XX century, which the revolutionary changes and anticipation of the future have also provoked. The findings in this chapter are backed up by an interview with the young architect duo Eduard Eremchuk and Katya Pyatitskaya, the authors of some design references used in the text. In the last subchapter of *Physical*—entitled *Trending*, I discuss the general changes in the field of interior design and their possible connection to the new realities.

<sup>6</sup> Phygital — fusion of physical and digital

Finally, in the *Phygital*<sup>6</sup> chapter, I compose a possible version of a formula for designing in, for and the phygital. In my case, it consists of the following components that are inspired by digitality or metaverse in one way or another: (digital) aesthetics, speculative function, and innovative (digital) method while at the same time being meant for the physical space. By following the detected recipe, using keywords and selected design features discussed in the previous chapters, I designed and made a prototype of a physical object. Created in collaboration with Artificial Intelligence (AI), *Speculum Mirror* is a conceptual piece that reminds its user (becoming more of an avatar than a human) of their physical appearance. Later in the chapter, I describe the process of this experimental collaboration step by step.



# I. Digital

No doubt, designing of spaces for digital existence is an organic move shortly and for centuries ahead. Although, the expectations for such an advanced living in a hybrid realm were similar already decades ago.<sup>7</sup> The ice started to break in the pandemic years, with people being pushed to actively dive into such concepts to survive in a social sense.

Architects and designers have also been actively conceptualizing new terms of existing in a spatial format of digital *virtuality*.<sup>8</sup> The professionals in the field, such as, for example, London's design studio *Space Popular*, began researching the topic already a while ago.<sup>9</sup> Currently, we are at the time when the first curated marketplaces, made exclusively for luxury digital spaces and design objects for the metaverse, are launching.<sup>10</sup>

Still, incorporating *inhabitable*<sup>11</sup> spatial experiences into the digital realm is something that has been done intuitively by now. While a language may exist (for instance, in gaming), its best-suitable format is not yet fully explored and adapted for equivalently substituting real-life experiences. Moreover, foreseeing a popular question, I concur that today, most of the potential inhabitants of the metaverse are not ready to effectively 'live there', or use it for daily tasks. Several causes are generally connected to the newness (lack of familiarity, insufficient UX, generation gap, etc.), while the central issue is believed to be technological — a lack of appropriate hardware.<sup>12</sup> That said, humanity is still beginning to discover a notion of functional spatiality inside the digital realm. Nevertheless, the medium has a huge unexplored potential, which makes it an engaging and promising area for architects and spatial designers. In the following sub-chapters, I am pointing out some discoveries by analyzing the cases of digital spatial interpretation for a nightclub, conference, and commercial spaces I have visited 'in (digital) person'.

<sup>7</sup> S.Holtzman, *Digital Mosaics: The Aesthetics of Cyberspace*. New York: Simon & Schuster, 1998, p. 18

<sup>8</sup> Virtual – 1. purely potential, non-existent / 2. digitally-created virtual (e.g. Virtual Reality, or VR)

<sup>9</sup> In 2018, *10 Propositions for Virtual Architecture* by Lara Lesmes & Fredrik Hellberg (*Space Popular*) was published as a part of a catalogue for an exhibition *Value in the Virtual* at ArkDes, Sweden's national centre for architecture and design. Available: <http://www.spacepopular.com/virtual/2018-10-propositions-for-virtual-architecture> (accessed 5 January 2023).

<sup>10</sup> *Monde Singulier* (Singular World from French) – one of the first curated marketplaces exclusively for digital spatial and design objects, featuring most popular creators in the field. <https://www.monde-singulier.com> (accessed 5 January 2023)

<sup>11</sup> To inhabit – 1. to live or dwell in (domestic-related) / 2. to exist or to be situated within

<sup>12</sup> A.Reisinger, ..., *Dezeen Club's inaugural metaverse meetup, 2021*. Video-recording. Available: <https://www.youtube.com/watch?v=aet05pL.egg> (accessed 5 January 2023).



# Cases

## Entertainment ▾

Digital space is a familiar medium for such experiences as a discotheque. In 2019, in my Bachelor's thesis, I contemplated nightclubs as physical places for escapism.<sup>13</sup> As a parallel, the Internet and digital spaces (video games, online chats, social media, etc.) are also used as a medium to neglect the actual reality; even more it can be the VR.<sup>14</sup> Furthermore, long before COVID-19, the practice of broadcasting DJs playing was widely known thanks to the *Boiler Room*<sup>15</sup> event series, but that covered just one part of the nightclub's experience — the music. In my work before the world's pandemics, I have emphasized the importance of nightclubs as physical spatial experiences. Even though these environments are mainly constructed by ephemeral elements (such as light, sound, steam, etc.), their presence as designated spots for gathering together is significant for socializing. Among other social spaces, nightclubs had to dig further into the digital realm to provide this critical metaverse interaction feature.<sup>16</sup> The first thing to mention is that there are several kinds of attempts to create spatiality in digital. There are digitally-created universes mostly mimicking the structure of the physical world, where you are usually represented as an avatar. The second type is more appropriate to the screens and the actual user in front of it. The following case is an example of the second format.

*It replicates all of the good (and bad) bits of a night out, from queuing and dealing with bouncers to hanging out in the toilets with friends, grabbing a drink at the bar, and dancing on the main floor alongside other friends playing the game from all around the world.*<sup>17</sup>

*Club Qu*, or *Club Quarantäne*, was created as a digital party and community platform 'focused on creating a space for a collective, memorable experience, ...'.<sup>18</sup> (Not to be mistaken for *Club Q* or *Club Quarantine*, emerged around the same time in Toronto and used to hold Zoom-based online parties.<sup>19</sup>) Structured as a video game, *Club Qu* allowed you to have a theoretically similar to an actual nightclub experience, as it borrowed some distinctive elements from the actual space, with each party lasting for 42 hours. For example, the 'main

<sup>13</sup> Veera Gontsugova, *A nightclub for Today: Dancing in Labyrinth & Ruins*, BA Thesis, Tallinn: EKA Department of Interior Architecture, 2019. Available at the Library of Estonian Academy of Arts.

<sup>14</sup> H.Nuriev, ..., *Deconstruct Walls in the Metaverse*. — CFS Summit 2022, Rendering the phyigital, Panel discussion. Video-recording, 2022. Available: <https://www.youtube.com/watch?v=AGcTziNRTMS> (accessed 3 January 2023).

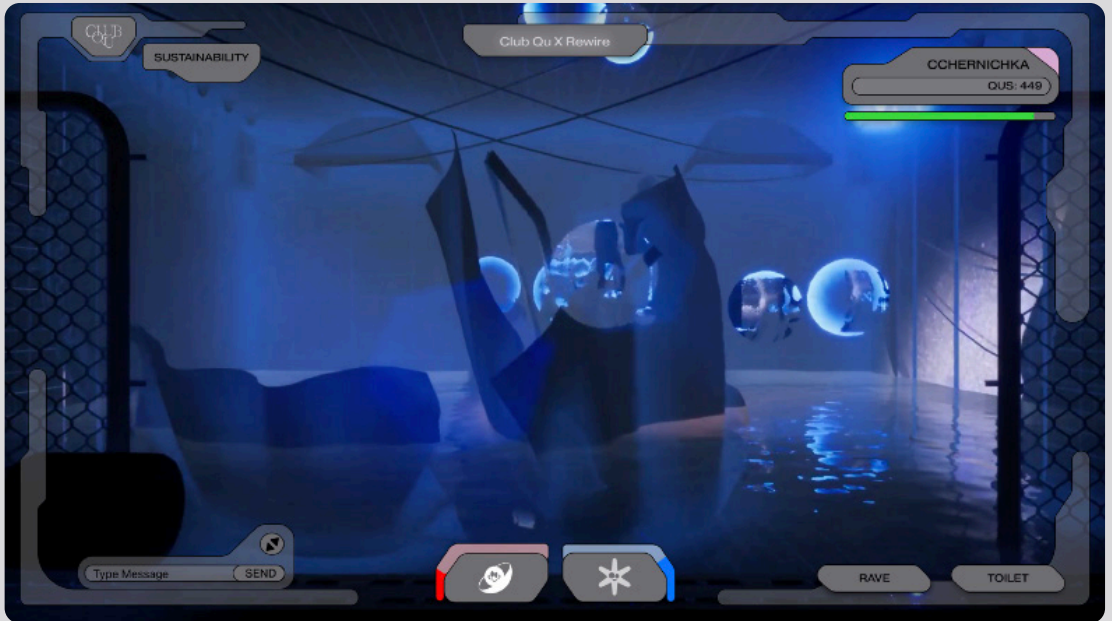
<sup>15</sup> *Boiler Room* — global online music broadcasting platform commissioning and streaming live music sessions around the world (Wikipedia: Boiler Room, [https://en.wikipedia.org/wiki/Boiler\\_Room\\_\(music\\_broadcaster\)](https://en.wikipedia.org/wiki/Boiler_Room_(music_broadcaster)) accessed 25 April 2023)

<sup>16</sup> G. M. Cappelletti, ..., *Deconstruct Walls in the Metaverse*.

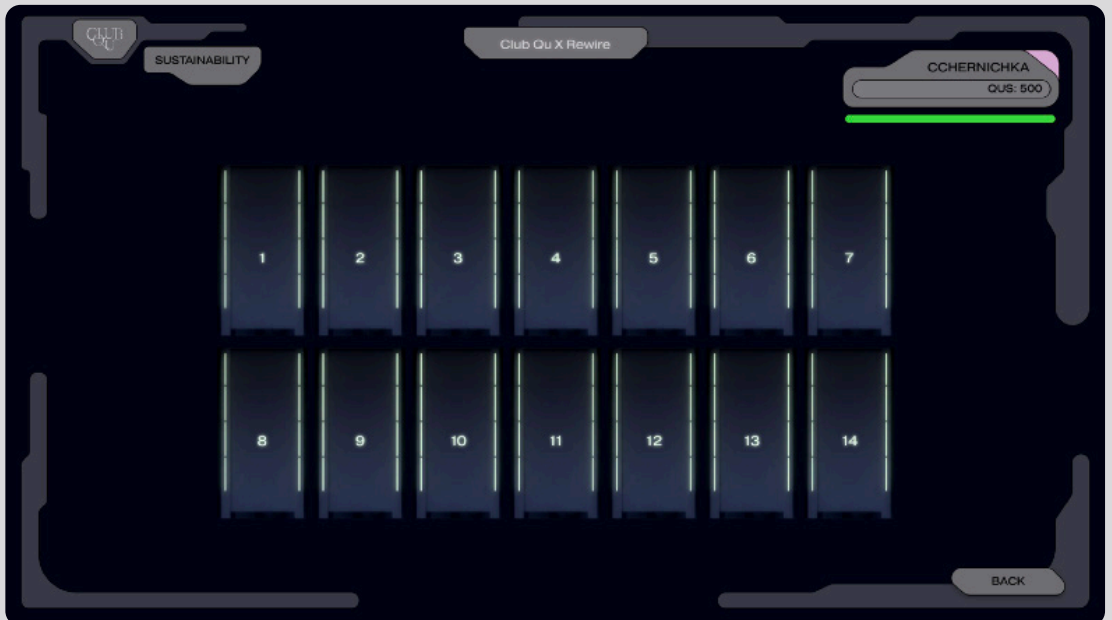
<sup>17</sup> E. Brain, *Club Qu Is the Virtual Nightclubbing Experience Changing Nightlife During the Pandemic* — HYPEBEAST, 2021, <https://hypebeast.com/2021/1/club-qu-worlds-first-virtual-digital-nightclub-gaming-platform-livevr-music-dj-clubbing> (accessed 24 April 2023)

<sup>18</sup> ungroup, *Club Quarantäne*. Design project, 2020. Available: <https://ungroup.group/projects/club-quarantaene> (accessed 26 April 2023)

<sup>19</sup> Wikipedia: *Club Quarantine*, [https://en.wikipedia.org/wiki/Club\\_Quarantine](https://en.wikipedia.org/wiki/Club_Quarantine) (accessed 26 April 2023)



1. Club Qu's Rave room (tab), 2021



2. Club Qu's Toilet room (tab), 2021

rave stage' visually resembled the LED lighting in the dark, pulsing accordingly to the live-streamed music DJ sets and interactively manipulated by guests (Image 1). Everything else in this club looked like an interface with different tabs to click on rather than a 3-dimensional physical space. In separate tabs was a bar with an option to donate to playing artists and WC cabin graphics visually reminding of a toilet room floor plan or doors with numbers on them (Image 2). Clicking on a door took you to a private chat — a reference to a 'closet' or a 'dark room' from an actual nightclub. Does it actually allow the same sense of privacy? No, but no one probably needs the same privacy in a virtual club, at least not in a spatial sense. Although the representation of this particular case is bi-dimensional, the mentioned earlier visual graphics of toilets play a symbolic role — a visual metaphor for privacy. Another feature of *Qu* that connected it to the real world is ideological — a carbon tracker showing how much carbon the digital event saved versus a hypothetical physical affair with the same attendance numbers. The data and explanation were under another tab in this virtual nightclub. Although sustainability doesn't seem to have a separate room in a standard, physical version of a nightclub, it is undeniably a big topic for both realms.

## Commerce ↘

<sup>20</sup> Skeuomorph (n) – 1. an object or a feature that copies the design of a similar object made from another material but does not usually have the practical purpose that the original does / 2. (computing) symbols or other objects on a computer screen that look or sound like a physical object in order to suggest their purpose (Online Oxford Advanced Learner's Dictionary)

An excellent example of overcoming primitive *skeuomorphism*<sup>20</sup> is online shopping websites or online stores. These operate so well that people started to determine physical stores with the prefix 'offline-' at some point. The subject had become so natural that the need to use the language of the digital to differentiate a notion in the physical world emerged. Nevertheless, since 2020, as the world began to digitalize with greater intensity, some brands have tried to create a spatial version of their shops/showrooms in a novel format. I view two cases of digital representation of virtual commercial spaces in this sub-chapter.

The first one, the *Dior* perfume and cosmetics store [Image 3](#), was created using photo-scanning of the physical store in Paris and later reproduced as a photo-based 3D visualization. A person can enter through the door, move from shelf to shelf and observe products as if they were in the actual store. On the one hand, such a virtual representation is familiar to a consumer of the physical store. During the lockdown, being unable to visit the actual one on the streets of Paris, one can move around a phantom duplicate inside their screen. The navigation of the space is realized through symbols, both contextual (entrance is by clicking on the photographed door) and graphical (arrows). On the other hand, considering that the store's product is perfumery, the whole point of its photorealism seems obscure in a virtual mode. In this case, it is not so much about the atmosphere as about the initial function of the store: you can't sense a scent through a digitally-mimicked environment — clicking on a product will still show you a product tab with an interface common for an online shop. The digital representation of a usual online store is designed to effectively fulfill its goal: to sell. These no longer have shelves, but pages with goods, ordered in a way to target users conveniently purchase products. Given that the design and strategies of *Dior's* space were technically only created during the construction of the original (physical) store and then simply duplicated in digital format, it is not surprising that one of the main functions was not given the necessary attention.

The alternative example is a showroom of a fashion clothing brand *ASA/* that set up their products at the bottom of the ocean [Image 4](#). Entering the virtual store, one finds themselves underwater, where one can move around between clothed mannequins while plastic bags with the brand's logo float by. Not that the clothing pieces benefit much from virtual water,

but in this case, virtual possibilities are used in a more exciting way to create an altered atmosphere by placing both customers and the pieces into uncommon conditions. Having no physical boundaries allows creating an extraordinary experience, stimulating the memory and wonder around such space. Creating an environment with a certain feeling that supports the presented content is a way to bring fun storytelling. This approach can aid in transforming the practice of perceiving information (for example, used for learning a topic at school).<sup>21</sup>

The navigation is more fluent and intuitive as the space reacts to the cursor's movement — no graphics or other symbols are needed. Although, plastic bags instead of flora and fauna at the bottom of the sea hint that the brand question sustainability of what they make and thinks about production's effects on water pollution. As a brand of Asian origin, where the plastic waste problem is relatively massive,<sup>22</sup> putting fashion in the context of the sensitive topic, the designers of the virtual showroom make a statement that you can experience the same time as exploring their product. Another Asian symbol in the underwater showroom is *yin-yang* — a meaningful narrative in the brand's identity. Composed of rocks, the ancient philosophical symbol means that there is duality in everything in nature.<sup>23</sup> I reckon that the meaning of this lies in the philosophical view of sacrificing something for something else — a natural choice each must make at the beginning of every initiation, like producing or shopping.

<sup>21</sup> G. M. Cappelletti, ..., *Deconstruct Walls in the Metaverse*.

<sup>22</sup> K. Buchholz, *Asia Produces Half the Plastic in the World*. — Statista, 2021, <https://www.statista.com/chart/17564/annual-per-capita-production-of-plastic-by-region/> (accessed 24 April 2023).

<sup>23</sup> Wikipedia: Yin and yang, [https://en.wikipedia.org/wiki/Yin\\_and\\_yang](https://en.wikipedia.org/wiki/Yin_and_yang) (accessed 26 April 2023)



3. The Dior Champs-Élysées virtual store, 2021



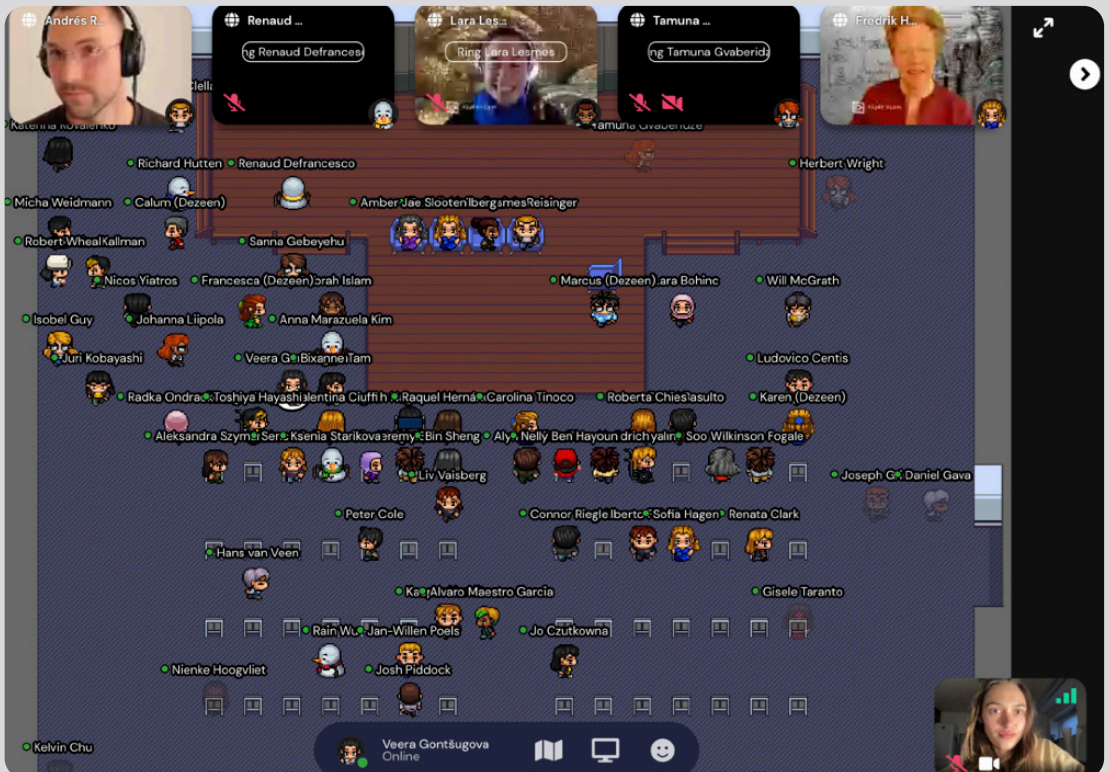
4. ASAI's virtual showroom, 2021

## Education ▾

Different from the usual zoom-conference with a simple, thus not very intuitive interface, there are options for video group calls to be held in the metaverse. One of these platforms — *Gather*, allows users to create any spatial conditions to meet for work, study, celebrations, or for fun, using avatars. The space looks like an 8-bit game with several customizable templates, from real life-based to imaginary spaces.

At the beginning of 2021, I attended the *Dezeen Club* virtual event on *Gather*,<sup>24</sup> a social evening in a virtual rooftop bar organized to discuss the metaverse's rise (Image 5). Going back to the aesthetics of the early internet's pixilated video game brings a certain familiarity to people, who might not be playing video games in their everyday lives, but most probably have encountered such graphics earlier. Besides the warmth of nostalgic visual language, such 'unwrapped' spaces are much more intuitive in navigation due to the simplicity of their bi-dimensional pictures.

<sup>24</sup> Dezeen [moderator Marcus Fairs, visiting Andrés Reisinger, Fredrik Hellberg, Lara Lesmes, Amber Jae Slooten], Dezeen Club's inaugural metaverse meetup, 2021. Video recording, 01:03:34. Available: [https://www.youtube.com/watch?v=aeto3pJ\\_egg](https://www.youtube.com/watch?v=aeto3pJ_egg) (accessed 5 January 2023).



5. View on a virtual auditorium of a Dezeen Club event on 7th April 2021

At the same time, I find such imagery more suitable for 13-inch screen laptops, which might not have a processor strong enough for 3D-rendered graphics. Thanks to symbolic objects, such as doors for entering and seatings around the table for communication, navigating was quite intuitive in this primitive game-looking environment. Initially, I needed some time to realize that I could only hear participants speaking and seeing their video if my avatar stood close enough to their avatar. Later, looking into the platform features, I discovered that there are different kinds of wall tiles to build from. One tile type is for building rooms for private conversations — they keep the sound of speaking inside the room. Another one alternately highlights the speaker's voice so that everyone in the building hears it, regardless of where they are. Some objects are interactive: you can play your favorite music through the speakers or interact with others in a board game.

The email with the invitation to the conference suggested showing up early, as there would only be as many as 100 seats in the auditorium. At the event, very few actually 'used the seats': an avatar is fine with standing as long as we all got our chairs, sitting behind the computer screens. But a chair or a seat here is used as a symbol for a participant count in an event (the capacity of one conference room is programmed for a maximum of 100 avatars). Designers who start working on designing for the metaverse are challenged to create a completely new visual language due to the shift of the meaning of such elements as doors, walls, seats, etc. — these often lose their original function in the metaverse, serving purely as visual connotations.<sup>25</sup> Although, some visual familiarity is needed to ground people participating in these virtual experiences, especially if it is fully-immersing as during VR space exploration.<sup>26</sup> Like in a physical world, you could see the stage better if you moved closer — no one seemed shy to 'stand up' and do it. Neither was anyone shy to walk directly through the stage before discovering the ghost mode option that allowed them to move through other people. After all, the stage is only divided by an image and location of it at the top of the auditorium (page) — there is no height difference in bi-dimensional, so why not just pass it through to the other side if it's closer.

As rules of physics are neglected here, so seemed to shift the rules of politeness. The excessive lack of boundaries relevant to a physical world, such as distance and gravity, but also financial, social, etc., opens a significant dispute among designers, devel-

<sup>25</sup> H. Nuriev, ..., *Deconstruct Walls in the Metaverse*.

<sup>26</sup> J. Spiers-Ware, ..., *Deconstruct Walls in the Metaverse*.



opers of spaces, and critics. Although the great potential is seen for the architectural and design exploration in the metaverse, some find such limitless possibilities to be outraging. While some explain mirroring the physical spaces as an ode to the familiarity of the human need to be sheltered,<sup>27</sup> others assume that the area of vast opportunities is not yet quite an organic field for spatial designers, who mainly use it to solve particular problems in a very constrained space.<sup>28</sup> The full potential of such technological reality would be achieved when it will not just replicate an existing kind of physical space in a digital medium but add a layer that allows a physical reality to be more engaging. Alternatively, such an entirely virtual world would be free from the constraints of physical architectural limitations.<sup>29</sup>

<sup>27</sup> B. Censori, ..., *Deconstruct Walls in the Metaverse*.

<sup>28</sup> Harry Nuriev, ..., *Deconstruct Walls in the Metaverse*.

<sup>29</sup> Siobhan Keem, ..., *Deconstruct Walls in the Metaverse*.

*What's most interesting about the potential of virtual worlds isn't how well they can imitate physical reality. [...] What's new in the virtual is exactly what isn't shared with the real. [...] Exploring the unique qualities of virtual worlds is a departure point.*<sup>30</sup>

(Steven Holtzman, 1998)

<sup>30</sup> S. Holtzman, *Digital Mosaics: The Aesthetics of Cyberspace*, p. 153

## Analogue ▾

*Translation is the main mechanism of consciousness. The expression of some essence by means of another language is the basis for revealing the nature of this essence.*<sup>31</sup>

<sup>31</sup> Ю. М. Лотман, *Внутри мыслящих миров: Человек — текст — семиосфера — история [Inside the thinking 31 worlds. Man — text — semiosphere — history]*. Москва: Языки русской культуры, 1996, p. 169

Perceiving the digital realm and Internet spatially isn't a new concept. Although the media through which we interact with these daily is still mostly bi-dimensional, the vision of spatiality of the world behind the screen has always been present. The term 'space' carries a specific connotation when discussing online phenomena. Early investigations of the Internet recognized that users often use spatial analogies to describe their time spent online. In her influential book *Life Online* (1998), Annette Markham observed that her participants frequently referred to digital interactions as 'creating significant spaces'. From the beginning of discussions about the Internet, spatial metaphors became prevalent in everyday conversations, whether referring to web 'sites' or 'visits' to pages.<sup>32</sup>

<sup>32</sup> *Metaphors of Internet: Ways of Being in the Age of Ubiquity*. Eds A. N. Markham, K. Tiidenberg. New York: Peter Lang Inc., International Academic Publishers, 2020, p. 216

To better understand the connecting points between physical and digital spatial worlds, I find it helpful to examine some meanings of virtual in a broader sense — as something only appearing to be but not existing. In other words, to study some virtual forms of space that are not digitally created. By using virtually-created space with a long history as a model, I can draw parallels with digital worlds. Such seeming forms can be, for instance, a textual representation, a drawing or a painting, a mirrored image, or a scenography for theatre and cinema.

The utilization of linear perspective in Renaissance paintings introduced the notion of virtuality by allowing for the projection of three dimensions onto a two-dimensional surface. Incorporating a grid of perspectival coordinates with a Z-axis enabled the paintings to seamlessly fit onto the physical dome. Despite the flat canvas creating a barrier that prevented any physical interaction with the painted objects, such paintings appeared to be more lifelike and realistic than the 'iconic' and two-dimensional art of pre-Renaissance times. The Cartesian grid, well recognized by both computer gamers and users of 3D software as the foundation for the faux spatial worlds, relies on variations of Renaissance perspective. Same as the computer games, the setup of 3D programs implies two primary viewpoints: first-person users (perspective) and third-person overhead points of view (top).<sup>33</sup>

Juri Lotman, in his writings on the semiotics of space, suggests the term *language of modeling*, talking about the description of any spatial conditions in texts.<sup>34</sup> He notes that there are several ways to meet spatial context in text. First, an abstract topological space is modeled entirely by a language (such as an ethical space, mythological space, etc.) and does not represent any spatial forms in a literal sense. Still, such a concept is constructed on understanding a physical space model in mathematics as a collection of related objects. Although, Lotman emphasizes that the *language of modeling* is essential in literary writings since those have a dual nature: while pretending to be a reality, the literary text reminds us that it is created by someone and therefore is fiction.<sup>35</sup> In these, spatial context serves almost a utilitarian function and is based on reconstructing a model of the natural world — the construction of the 'universe' in literary writing is as essential as its plot and characters. However, it can seem to be background information to some. For instance, he compares Dante's texts with architectural structures, in which every detail is

<sup>33</sup> M.R. Heim, *The Paradox of Virtuality*. — *The Oxford Handbook of Virtuality*, Ed. Mark Grimshaw. Oxford: University Press (Oxford Handbooks), 2014, p.122

<sup>34</sup> Ю. М. Лотман, К проблеме пространственной семиотики [Towards the problem of spatial semiotics]. — Ю. М. Лотман, *Об искусстве*. Санкт-Петербург: Искусство — СПб, 1998, p. 443

<sup>35</sup> Ю. М. Лотман, Текст в тексте [Text in a text]. — Ю. М. Лотман, *Об искусстве*. Санкт-Петербург: Искусство — СПб, 1998, p. 434

<sup>36</sup> Ю. М. Лотман, *Внутри мыслящих миров...*, p. 249

<sup>37</sup> Ю. М. Лотман, *Внутри мыслящих миров...*, p. 176 *Metaphors of Internet: Ways of Being in the Age of Ubiquity* 38

<sup>38</sup> *Metaphors of Internet: Ways of Being in the Age of Ubiquity*. Eds A. N. Markham, ..., p. 5

<sup>39</sup> S. Holtzman, *Digital Mosaics: The Aesthetics of Cyberspace*, p. 15

<sup>40</sup> *Examples of internet metaphors are desktop with folders, trashbin, cloud, world wide web.*

<sup>41</sup> S. Keem, ..., *Deconstruct Walls in the Metaverse.*

subject to decryption.<sup>36</sup> In this particular example, the vertical axis 'top-bottom' is a scale between goodness as heaven (top) and evil as hell (bottom), which gives the overview of how the human body and the law of physics in 'the real' world are the base for meaningful interpretations of space in the text, both literal and metaphorical.<sup>37</sup>

Referring to the digital domain, *digital space* is an entity of everything digital-related, everything that exists behind a computer screen — a cyberspace that has also been called '*an Other place, a developed place, where information and people lived, separate from physical — or what some at the time called IRL (In Real Life) or meatspace.*'<sup>38</sup> The term was first introduced by the science fiction author William Gibson in his 1984 novel *Neuromancer*.<sup>39</sup> Eight years later, in 1992, Neal Stephenson, an author of speculative fiction, coined the term metaverse, referring specifically to a three-dimensional world with avatars representing people. Similarly to the literary text, the metaverse tries to pretend to be a physical world by coping its rules and concepts, often without questioning its relevance in the digital context. Its parts, such as objects, structures, and methods, are often symbolic and created to navigate through the constructed space with what we are familiar with. During the creation of an early language for operating in cyberspace, the vocabulary was based on so-called internet metaphors,<sup>40</sup> substitutional names to help people understand how to interact with computers. As with metaphors of the internet, spatial digital worlds should probably be (at least at first) constructed with similar logic in mind: so that by mimicking the physical environment, users get used to navigating in this new unexplored medium.<sup>41</sup>

## *II. Physical*

In the first part of the thesis, I shortly reviewed the field still considered a future of inhabitable space — quite a few involved professionals agree that we are at the beginning of constructing and inhabiting the metaverse. The second part of my research questions how this enthusiasm toward the future is reflected in tangible environments that people already inhabit today. The *Physical* chapter examines the noticeable influence of the growing interest in digital spatial experiences on the aesthetics of physically built environments. While some designers explore the new means of limitless existing in the parallel world, others navigate through both simultaneously. Therefore, a new wave of interior and object design hints at the excitement about the possibilities of life in several parallel realities. Both designers and clients fantasize about an advanced technological future, resulting in the simulation of digital in real life.



6. Bazaar sofa by Superstudio, Italy, 1968

Similarly, in the 60s-70s of the last century, the Space Age design aesthetics was a collective reaction of creatives to advances in technology. Triggered by dramatic progress in Space exploration and nuclear power, imaginative futuristic-looking designs were based on anticipation of newness and, therefore, rejection of tradition. Another closest visual reference can be the Radical Design dated at the same period. Emerged in Italy during the late 1960s and early 1970s, the movement is considered to be one of the most significant avant-garde movements in the history of design.<sup>42</sup>

Envisioning the world in sleek, streamlined shapes, metallic materials, and bold colors, interior and furniture projects often reminded scenography from SciFi movies. The last had also marked a moment in history. Set design is an act of simulating real-life environments, often exaggeratedly: unable to serve a practical utilization, some ideas are realized in temporal settings and stay on the side of artistic vision. Scenes from iconic cinematographic pieces such as *2001: A Space Odyssey* (Image 7) and *THX 1138*, or TV series *Space: 1999*, are still used as references by architects and designers of our times.<sup>43</sup> Architectural, interior, and object designs inspired by such hyperreal environments are the closest example of the 'copy of a copy' phenomena that can be tracked in the emergence of the new interior design wave discussed in this paper.

<sup>42</sup> Radical Design, Exhibition in Vitra Schaudepot, Germany, 2016. Available: <https://www.design-museum.de/en/42/exhibitions/detailpages/radical-design.html> (accessed 7 May 2023)

<sup>43</sup> *Doing an internship in an architectural office BUREAU in 2020, I was a part of the team working on interior concept inspired by aesthetics of Space Age, using the scenes of the mentioned movies as references.*



7. Space Station 5 from 2001: A Space Odyssey, 1968 (movie set)



8. Altana Palazzo Pucci by Gae Aulenti, Florence, 1971



9. Chiara floor lamp by Mario Bellini, 1989 inside the apartment by MAEWKHOO & Gunn Adireksarn, 2022



10. Giò Ponti's Casa Lo Scarabeo Sotto la Foglia by Nanda Vigo, Malo, Italy, 1965-68

# Features

In the following subchapters, I study design features most frequently noticed in topic-related interior design cases. The cases chosen for the study are united by 1) similar aesthetical and conceptual design features and 2) recent completion within the latest years (2019-2023). By undergoing in-depth research of each element, I want to connotate the impact of the digital age and thriving metaverse exploration on certain tendencies in designs of physically-built environments. The analysis is backed by an interview with the authors of some of these projects — Eduard Eremchuk & Katya Pyatiskaya, architects duo and founders of *EdxxKat* design studio. The designers' works and citations from the interview are used as references in the texts. The full interview is attached at the end of the work (see Attachment 1).

???

- Where did it all start (few insights about your creative journey)?
- What was first for you, an idea for digital or an idea for physical space?
- How would you name / characterize your design style?
- What has influenced your design style the most?
- How did your approach to design change during the pandemic years?
- What is the main difference for you between designing for Metaverse/renderers (for existing exclusively in digital) and designing for an actual space?
- What are the lessons you have learned by/through designing in/for digital that you would take to a physical world?
- Who is your client? How many projects have you done for clients, which are conceptual?
- Why do you use so much of chrome/metallic surfaces in your designs? Where does this feature come from for you?
- Is there a particular reason why you use these hyperreal prints in your designs?

## HD IRL (high-defenition-in-real-life) ↘

If, in the times of the Space Age, sleek glossy surfaces were mainly inspired by the fantasy of spacecraft interiors, the popularity of this feature today can be influenced by the new ways of interacting with the world. A strive for 'instagrammability', or a picture-perfect outcome, has turned many designers' work upside down. Nowadays, creating a space, among all the practical features, one has to envision how the built project will look photographed for posting on social media.<sup>43</sup> Replying to one of my questions during the interview, Eduard Eremchuk has supported this point, referring to his past interest in photography: '*...our approach to interiors is largely photographic, and I often perceive the interior through frames*'.<sup>44</sup>

A secure way to obtain a specific photographic look during the design process is to make a realistic visualization, a 3D render. The closer a finished project to its pre-modeled rendered image, the more successful outcome it has to be. By making the visual resemblance to a rendered image a goal for a final product and seeking primarily visual satisfaction from the project's later representation (on photos for social media, etc.), designers start to pursue the look of a rendered image itself. Consequently, a digitally-generated image, a tool that is supposed to make it easier to visualize yet to be-built environment, becomes an aesthetical reference per se. This results in applying the qualities of a rendered image to an interior project while neglecting some of the properties that are primarily accountable only to the physical world. The choice of glossy and smooth materials allows for the creation of perfect light-shadow play and reflections — features of the unattainable uncanny valley<sup>45</sup> of a render. Sleekness in such projects is achieved through the denial of textures. Constant interaction with flat screens exaggerates the effect: as the importance of tactile experiences fades, people unconsciously opt for the same total flatness the digital technology provides.

<sup>43</sup> B.Colomina, M.Wigley, *Are We Human? Notes on an Archaeology of Design*. Zürich: Lars Müller Publishers GmbH, 2021 [2016], p. 260

<sup>44</sup> E. Eremchuk, K. Pyatitskaya, *Interview by the author*, 6 April 2023. Author's translation from Russian. Available in Attachment 1 of this thesis.

<sup>45</sup> Uncanny valley — used to refer to the unpleasant feeling that some have when they see robots, or pictures of a human being created by a computer, that appear very similar to a living human (Cambridge Online English Dictionary)



*'At some point, we realized that we wanted to create the effect that you find yourself in an unreal computer space, blurring the line between something familiar and unreal', — says Eduard about his and Katya's practice.*<sup>46</sup>

<sup>46</sup> E. Eremchuk, K. Pyatitskaya, Interview.

At the same time, the simplicity of applying the same material to different objects in 3D software results in the homogeneity of color and materials on a rendered image. The programmed group of nodes doesn't differentiate between a straight wall or a piece of irregularly shaped furniture. It can apply textures correctly to objects with just one click, without needing elaborate building systems or detailed drawings. Similarly, designers appear to choose matching materials and patterns for construction elements, furnishings, and decorations.



ii. Resin bathroom design by Sabine Marcelis, Utrecht, Netherlands, 2023



12. Ophthalmologist's office for Optika Pye by Aleksey Galkin, St.Petersburg, 2020



13. Resin bathroom by Sabine Marcelis, Utrecht, 2020



14. Avgust store by crosbystudio, St. Petersburg, 2020



15. BRUTAL BURRITO by BURR Studio, Madrid, 2022

## Grayscale ▾

Other unifying elements of these interiors are metallic surfaces. Besides having reflective qualities that create a flawless, sleek look, the material has several different connotations to the digital realm. One of them is based on a color scheme of these. The prevailing (if not the only one) color of the metal used in the selected works is grey — either aluminum, chrome, steel, or an imitation of the named. If the aspects of shininess and reflectiveness are taken out, the neutral hue remains. Although the rules of colors are rather physical and work in the actual world similarly, grey has particular utilitarian functions in software interfaces. Grey is considered a background color that makes it easier for other colors to pop out.<sup>47</sup> In the digital realm, it is often used as a background color in many software programs, including drawing and modeling ones used to create space. Generally, interfaces were meant to be so-called ‘transparent windows’ to the world of information that allow a viewer to concentrate on images and text.<sup>48</sup> Macintosh’s infamous windowed interface was an attempt to create transparency enabling its users to look through it. Looking back to some past versions of Apple’s MacBook’s OS interface design, the fill of the tabs (windows) used to have a brushed aluminum texture and later changed to a smoother gradient of greys that still resembled a metallic surface (Image 16). Although Apple changed the default design for a solid grey fill later in the days, the infamous background color remained.

White-and-grey checkered grid, usually shown as a graphics background, also signifies ‘transparency’ in a digital imagery world (e.g., Adobe Photoshop transparency grid, the same as .png format transparency-interdigitating background Image 49). Besides highlighting other colors, greyscale is vital to calm the user’s sight. Considering long hours in front of the screen with all the colorful changing media that can be exhaustive for one’s eye, grey serves as a monochrome tranquilizer. If to take the grayscale palette and eliminate white and black, often taken for other essential functions (text, blank space), there are not many suitable choices left for the named.

An alternative reason can be hidden in the spatial part of the technology or electronic devices that,

<sup>47</sup> Adobe Creative Clouds Guide, Colors that go well with gray, <https://www.adobe.com/creativecloud/design/hub/guides/colors-that-go-well-with-gray> (accessed 10 January 2023)

<sup>48</sup> J.D.Bolter, D.Gromala, *Windows and Mirrors: Interaction Design, Digital Art, and the Myth of Transparency*. London: The MIT Press, 2003, p.26

for most people, has become an inalienable part of existence in the contemporary world. Digital assets come into our environments as ‘smart objects.’ Besides software with its interfaces, which exist in digital space, there are physical artifacts that adapt the technology for everyday use. The paradox is that the more technology we get into our habitat, the more invisible these electronic devices must be. If before there used to be a specific space for a table with a computer, nowadays technology is becoming more transparent in our environment as devices are getting wireless, portable, and thinner.<sup>49</sup> They lose a designated place and become a universal interior part. Various boxes and shapes the spatial part of technology hides in serve an aesthetic function, becoming a part of our daily landscapes. Their appearance can or can not be inspired by digitality, but these are among the influencers for further physical interpretation in popular culture. Apple devices, especially Macbooks (Images 17–24), have returned the chic to aluminum appliance castings. Social media and Pinterest are full of shots of Macbooks in different environments, where devices serve almost a decorative function for pictured interiors.

The counterargument can be that smart devices aren't all made of a specific material or in a particular color. Although, same as chrome was believed to give a futuristic vibe in designs of the late 60s, connotating the metal details of spaceships and technology in general, the case with electronic devices can also be more associative here. *'It seems to me that each era has its own material. Now it is metal, as it is the material that is associated with something futuristic'*, — comments the architect duo.<sup>50</sup>

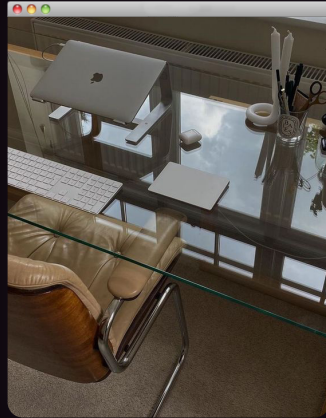
<sup>49</sup> B. Berek (SomePlace Studio), *Between Worlds*, Lecture, Open Lecture Series by Estonian Academy of Arts Faculty of Architecture, 2022. Video-recording. Available: <https://www.avatudioengud.ee/2022/10/25/bika-rebek/> (accessed 25 April 2023)

<sup>50</sup> B. Berek (SomePlace Studio), *Between E. Eremchuk, K. Pyatitskaya*, Interview.



16. Desktop with applications in Mac OS 10.x





## Hyper-everything ↘

Today, computers got powerful enough to render high resolutions of a photograph-like image within minutes. The rendered images have achieved such a high level of representing life-like scenarios that it's sometimes difficult to tell them apart from a camera shot. More than that, thanks to the artificial intelligence, computers learned to generate such images with minimal human help.

'*My cartoon world*' — this is how Anthony Authié, a self-proclaimed 'trans-designer' and founder of *Zyva Studios*, comments on the built architectural project of his design on Instagram (Image 25).

An opinion with a relatable message on current trends in the fashion design world was presented by several sources this year, theorizing the rapid popularity of Mischief's *Big Red Boots*, which recently took over social media and the internet. Being called '*cartoon boots for a cool 3D world*' by the creators, '*the big red boots are really not shaped like feet, but extremely shaped like boots.*' (Images 26,31) They sold out minutes after the launch.<sup>51</sup>

Such designs blur the line between reality and representations of reality. They bring simulacra of real-life objects into the physical world. Playing with the concept of hyperreality, the copies of the copies lead to the loss of the the very original.<sup>52</sup> Mimicking the appearance of digital renders in a fashion design world supports the idea that the boundaries between the metaverse and reality dissolve globally.

*If technology has gotten really good at representing reality, rather than implicating it like a cartoon, why can't we bring implications of reality to life in a world in which nothing seems real?*<sup>53</sup>

More and more fashion brands are adopting a 'cartoonish' style for their clothing and accessories, creating designs that seem better suited for digital avatars than humans. Besides the mentioned red boots, Prada offers handbags and loafers with an inflated-looking design that seems more like toys than practical items (Image 33), while Balenciaga's oversized boots give the impression of being created using computer-aided design software like Rhinoceros 3D (Image 28). Loewe's Spring/Summer 2023 collection features garments that mimic flat, pixelated renderings of clothes, almost as if they were taken straight out of Minecraft, while the footwear

<sup>51</sup> C. Holtermann, 'They're Big, They're Red, But Are They Boots?' — The New York Times. Online Magazine, Available: <https://www.nytimes.com/2023/02/09/style/mischief-big-red-boots.html> (accessed 26 March 2023)

<sup>52</sup> J. Baudrillard, *Simulations*. US: Semiotext(e), 1983, p. 2

<sup>53</sup> thealgorithm. TikTok video, 030128. Available: <https://vm.tiktok.com/ZMYBwXa8C/> (accessed 27 April 2023)



zyvastudio 🍄🍄 My cartoon world 🍄🍄 stay tuned for the next episod 🤪🤪

View all 17 comments

flowercheyeld Wait. Is any of this physical or is this all digitally based. I don't say real or fake because art and talent is always real



zyvastudio @flowercheyeld all of these spaces are real architecture projects :)



25. Project by Zyva Studio, Paris, 2022

looks like it was made for Minnie Mouse (Image 35). In their Fall/ Winter 2023 collection, Loewe continues with the trend: 'Devoid of the creasing and movement that one would expect from a pair of, say, draped pants, Loewe's latest appears too smooth, too static — real but somehow unreal, as if Anderson [the brand's creative director] instructed an AI generator spit out its best imitation of a pink tube dress or enlisted a baker to create a cake disguised as a cropped shirt (Image 32).'<sup>54</sup>

<sup>54</sup> A. Pauly, Falling Into Fashion's Uncanny Valley: the Cartoonification of Fashion & the Hyperreal, Explained. — Highsnobiety, 2023, <https://www.highsnobiety.com/p/fashion-cartoonification-hyperreality/> (accessed 8 April 2023)





26. Big Red Boots by Mschf on Wisdom Kaye, 2023



28. XXL Boots by Balenciaga, worn by Kanye West, 2022



29. Papa Smurf, a character from The Smurfs, 1981



27. Boots, a character from Dora the Explorer, 2000–2019



30. Astro Boy, a character from Astro Boy, 1963–...



31. Big Red Boots by Mschf, 2023



32. Runway Look 38 by LOEWE FW23, 2022



34. Runway Look 34 by LOEWE SS23, 2022



33. 'Puffy Loafers' by Prada, 2023



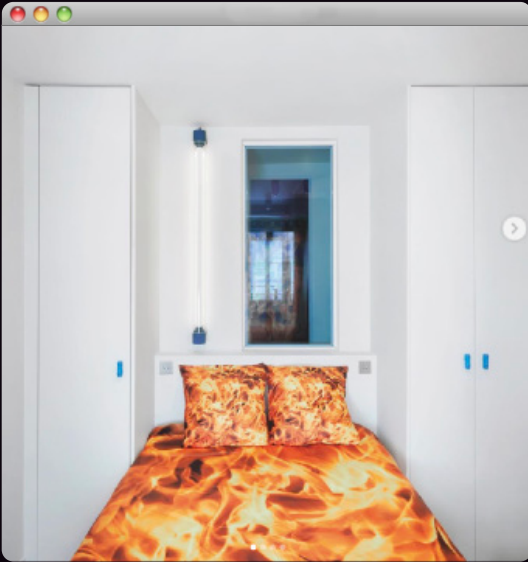
35. 'Minnie's Shoe' by LOEWE FW 2023, 2022

'Puffication' did not just happen in fashion design. Inflated-looking Alien chair, designed by studio edxxkat, can only confirm the assumption of its hyperrealistic basis by its printed textile variation. If ornaments were mainly displaced by minimalism for many recent years, then today, floral prints can co-exist within an interior with a minimal color palette and simplistic forms. Photographic prints can also be justified as digital-inspired, both technically and conceptually. The simplicity of using any picture in an image-texture node is just one explanation. Not is it just easy to imagine, but nowadays, it is also easy to print — would it be textile, paper, or any other surface. Photo wallpaper with printed natural landscapes might seem like a throwback to 00s interiors. Although nothing is novel in photo-wallpaper and prints/patterns of nature used in interior design, today's core hints at hyperreality. The texture (the print) of such material simulates something from the real world, showing it without a noticeable stylization and presenting it as the truth. Scaled to its natural size, such photographed image tries to simulate reality.

<sup>55</sup> E. Eremchuk, K. Pyatitskaya, Interview.

<sup>56</sup> *Analog virtuality (self-intented term) — virtuality that is not created or represented in digital terms (e.g. text, mirrored image, painting), an oppositeion of digital virtuality*

Moreover, as an example of *analog virtuality*,<sup>56</sup> a printed image represents a bi-dimensional simulation trying to become 3-dimensional by being perceived in space, making one more step towards becoming the truth. By introducing a simulation of reality to a built environment, a designer creates a feeling of dissociation of contexts. A person who experiences this is well aware that he is being fooled. They will not try to enter the wall that simulates a field. But at the same time, nowadays, we get so used to being fooled (by imagery in cinema, AR/VR, social media, etc.) that such replaced environment has become natural. Realistic prints in today's interior play a role of a primitive and even sarcastic simulacrum that reminds us of how eager we are to live in a constructed virtual reality.



36. Anthony Authié's apartment by Zyva Studio, Paris, 2023



37. Alien chair at Nonthing Fancy by EdxxKat, St. Petersburg, 2022



38. 1-800-GET PINK chair by Joyce Lin, 2021



39. BRUTAL BURRITO by BURR Studio, Madrid, 2022

## Icons ↘

Generations of computers are changing at the same speed as generations of creators inspired by their aesthetics. While some are influenced by the progress achieved nowadays, some are getting nostalgic for the times when digital aesthetics was mainly determined by the limitations of technology. At the beginning of computers, their powers were praised for allowing scientists and artists to create visual structures and patterns for what a human brain just wasn't enough. Such visuals were unimaginable without the machine. At the same time, these still had minimal representation options.<sup>57</sup>

Over time, such constrained imagery was refined as the core of digital aesthetics. Naturally, some have obtained a symbolic meaning and are used to visually connote the presence of digitality in designs. For instance, a pixelated image can be a visual mean of expressing belonging to the digital.<sup>58</sup> A pixel is a basic unit of a digital image, often represented by a small square or dot of color. Each pixel contains a specific color value arranged in a grid to form an image. It is a fundamental element of digital photos and graphics and is used to represent colors, shapes, and other visual elements in the digital realm. In a way, pixels are the building blocks of the digital world, as they are used to create all kinds of digital content — without pixels, digital images would not exist, and the digital world would be very different.

Nowadays, pixelated media serves as an obvious sign of digitality, but deep down might be caused by the overall sentimental longing and affection for digital media from the past, early days of the Internet and social media. Digital nostalgia can be triggered by various factors, including personal memories, cultural references, and the aesthetics of older digital media. Besides bringing a sense of belonging and social connection, the psychological comfort of nostalgia can be exceptionally comforting during times of stress or uncertainty by allowing individuals to re-experience pleasant memories from their past.

Mass adoption of such new revolutionary technologies as blockchain and Artificial Intelligence (AI) raises many open questions that make people miss the simplicity of the early days of the Internet. Not mentioning that the Internet is a relatively new technology itself. With each year, fewer generations have an experience of living without smart devices, meaning people who lived through Internet's adoption and the early stages are soon extinct.

<sup>57</sup> S.Holtzman, *Digital Mosaics: The Aesthetics of Cyberspace*, p. 151

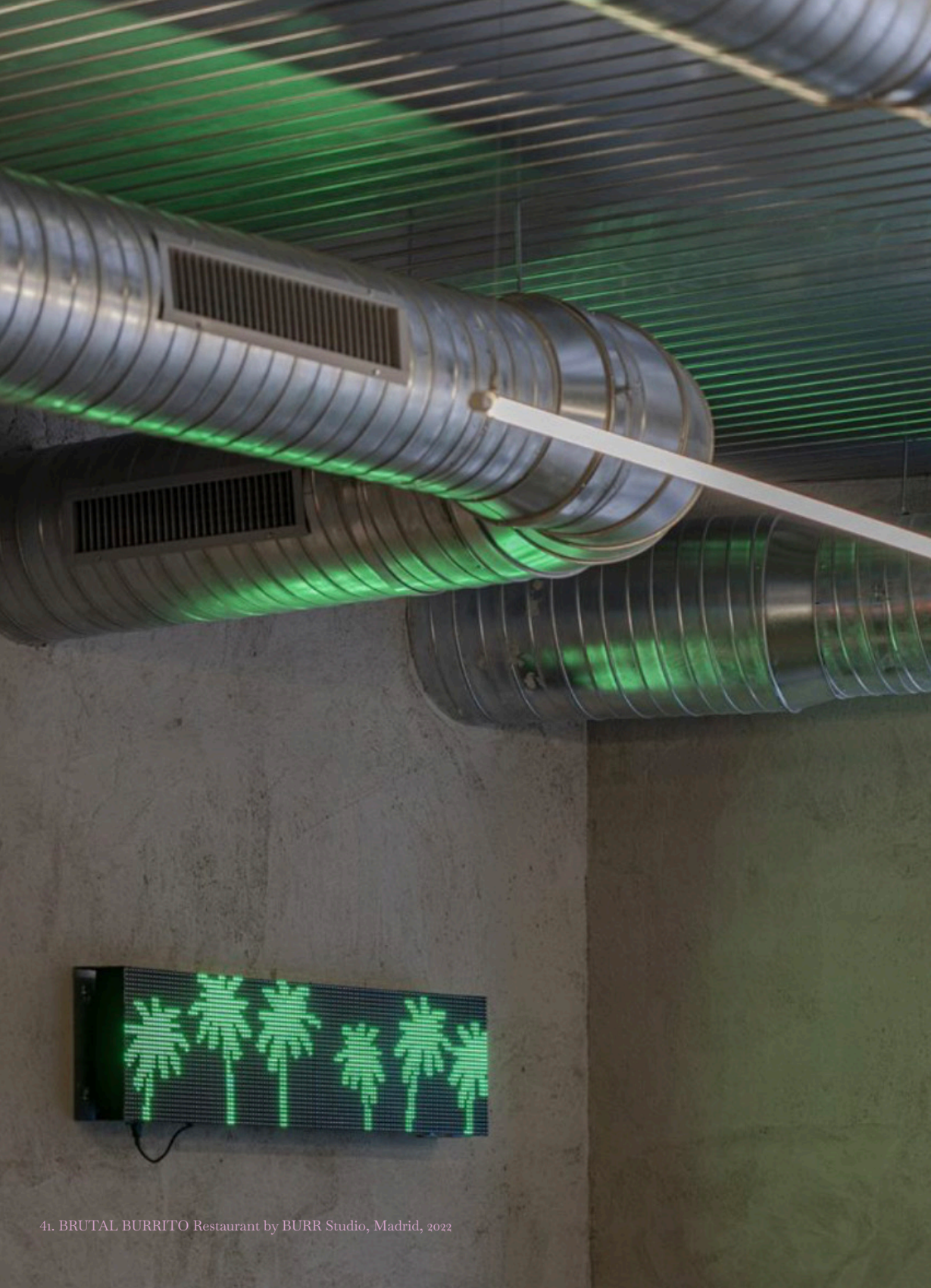
<sup>58</sup> S.Holtzman, *Digital Mosaics: The Aesthetics of Cyberspace*, p. 153

While the pixel is originally a digital pattern, the grid image has been associated with futurism in architecture and design for a while. Such references as its use in Superstudio's *Continuous Monument* (1969) and the iconic bedroom film set of *2001: A Space Odyssey* (1969) fixated the image of a grid with futuristic concepts during the Space Age era. The use of the grid in architecture and urban planning has become a hallmark of a future-oriented design.

In technology, grids are prevalent in designing user interfaces, especially in software applications and websites. Grids provide a framework for organizing information and content in an easy way to navigate. Back to the software's working fields and backgrounds, the grid is a tool for measuring digital space.



40. SFERA Beauty co-working by EdxxKat, Moscow, 2020



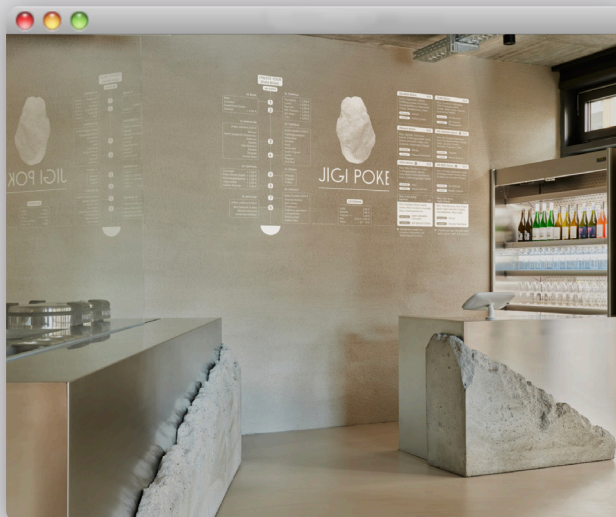




## The medium is the message ▾

Yet another straightforward reference is using digital means, such as screens and projections, to present the graphics or media. In this case, a simple explanation would be that the medium here is the message.<sup>59</sup> Further, in the *Trending* subchapter, I discuss the necessity for a constant change as a part of the concept for the whole aesthetical direction of design in the digital age. This principle can also be followed through specific approaches. On the one hand, screens and projections in interiors are used with their direct purpose to allow information to be easily adaptable: for example, to bring changes to a restaurant's menu is much more sustainable by using digital format than re-printing on paper or re-drawing on a board.

On the other hand, these technologies can be used as decorative elements in space that add to design aesthetics. In this case, they replace framed photos or paintings on the wall with potentially moving or, again, easily replaceable images. Designers try to get creative with using these formats in interiors. More frequently used in museums and expositions for interactivity, some approaches are slowly being introduced into more inhabitable spaces. Incorporating LED screens into furniture pieces or even architectural elements makes them, in fact, a chameleon building material with high visual adaptation. The same goes for projections — these bring an additional virtual layer that can be switched off anytime.



43. Rosenthalerbg restaurant by VAUST Studio, Berlin, 2021

<sup>59</sup> M. McLuhan, *Understanding Media: The Extensions of Man*. Cambridge: The MIT Press, 1994, p.7

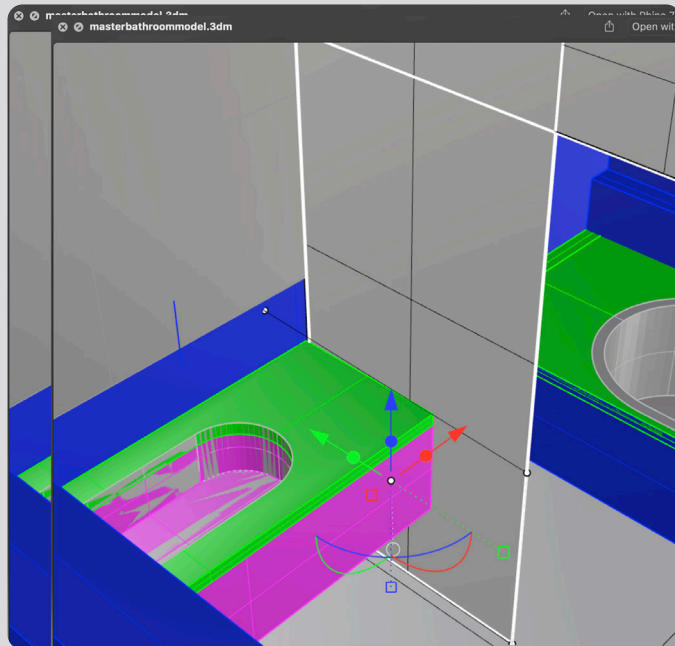


## Highlighted ▾

In contrast to greyscale metallic surfaces, bright solid colors occupy an irreplaceable position in the recently hyped interior projects. Besides fitting the theory of cartoons' hyperreal world, several possible interpretations are relevant to me.

Foremost, the used colors are usually bright and vivid, associating with the color scheme of the RGB mode. RGB and CMYK are different color modes used in digital and print media. RGB is used for digital displays, such as computer monitors, TVs, and mobile devices, while CMYK is used for printing, such as brochures, magazines, and other printed materials. Because of the differences in how RGB and CMYK color systems operate, colors that look vibrant and bright in RGB mode may appear dull or muddy in CMYK mode.

Primary chromakey background colors, such as bright green and blue, are among the first colors the designers used in designs. Chromakey background, also known as a greenscreen or bluescreen, is a backdrop typically used in film, television, and photography to create special effects. The background is usually a bright solid color (often green or blue). It is used as a visual cue to help special effects software differentiate between the foreground and background of a scene. Most importantly,



45. Layers displayed in different vivid colors in Rhinoceros 3D

between a background and human skin, that supposedly doesn't contain the given colors. In post-production, editors can use tools to 'key out' the chromakey background and replace it with a different image or footage. This technique allows filmmakers and photographers to place their subjects in any setting or environment without the need for elaborate physical sets or expensive location shoots and create complex visual effects that would be impossible to achieve in reality.

Another less obvious source of inspiration is how 3D modeling programs display different layers or groups of objects. To simplify the modeling process, components of the model are typically separated into different layers based on specific criteria, with each layer marked by a unique color to aid in distinguishing them within the modeling space (Image 45). Most programs have a default color palette to suggest which colors to use.



47. Anthony Authié's apartment by Zyva Studio, Paris, 2023



46. Harry Nuriev's apartment by crosbystudios, New York, 2020



48. Mirage Cinema by Da Bureau, St Petersburg, 2022





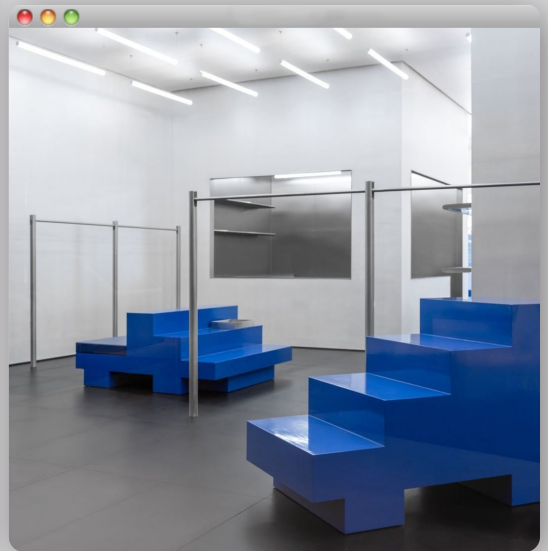
50. A-COLD-WALL\* store by Samuel Ross, Shanghai, 2022



51. Nothing Fancy Cafe by EdixxKat, St. Petersburg, 2022



52. Anthony Authie's apartment by Zyva Studio, Paris, 2023



53. Biblee Studio by Studio Yuda, Shenzhen, 2022

"PEOPLE DRESS IN DARK, GOTHIC, FLORAL OR CONSERVATIVE STYLES, BUT THEY ALL LIVE IN THE SAME INTERIORS. WHY SHOULD WE USE THE SAME WARDROBE FOR BALENCIAGA CLOTHING AS FOR A RICK OWENS ENSEMBLE? OUR HOMES SHOULD ALSO BE AN EXTENSION OF OUR PERSONALITY."

<sup>60</sup> H. Nuriev, Harry Nuriev: meeting with the most disruptive designer of his generation. Interview by Thibaut Wychowanok. — Numero Magazine, 2022, <https://www.numero.com/en/art/harry-nuriev-colors-design-crosby-studios> (accessed 10 February 2023)

# Trending

In this paper, I refer to the main topic of my research as a new direction/wave in interior design. In fact, I prefer to call it a bunch of current trends. The term often has a negative connotation, especially in the architectural design world, as something trendy is perceived as superficial, temporal, and unsustainable. As a trend's superficiality tends to be based on its aesthetical nature, this reminds me of a never-ending question concerning the meaning of ornament and decoration in the named field. Archeologists, though, refer to ancient ornaments (designed for aesthetics) as a pivotal media of communication that allowed early species to network, which was crucial for evolving into the next generation of humans.<sup>61</sup> Considering that this research articulates the connotations of digitality in current designs, I do not intend to criticize the trend reference. Alternatively, to justify it, I need to mark that the references to digitality don't have to be based purely on the final products of design but also on the process of designing. The design represents the era during which it emerges: it adopts the overall organization and the rules of its time. The whole rhythm, methods, and theory on how to design spaces also shift organically and correspondently to when it's dated.

Whether we, professionals, like it or not, but as it has happened with fashion back in the day, interior design became so mainstream that you can find interior decoration pieces (often, designer knock-offs) in popular fast fashion brand stores. The vaster crowd getting interested in popular design, and a vaster level of diversity is needed so that everyone can self-express their sense of style, as many interested in fashion do it through styling wearable clothing.

*People dress in dark, gothic, floral or conservative styles, but they all live in the same interiors. Why should we use the same wardrobe for Balenciaga clothing as for a Rick Owens ensemble? Our homes should also be an extension of our personality.<sup>62</sup>*

<sup>61</sup> B.Colomina, M.Wigley, *Are We Human? Notes on an Archaeology of Design*, p. 65

<sup>62</sup> H. Nuriev, Harry Nuriev: meeting with the most disruptive designer of his generation. Interview by Thibaut Wychowank — Numero Magazine, 2022, <https://www.numero.com/en/art/harry-nuriev-colors-design-crosby-studios> (accessed 10 February 2023)

*As 5. of 10 Propositions for Virtual Architecture by Studio Popular claims, space decoration in a virtual environment will be as simple as changing clothes in real life, leading to high demand for objects in virtual*



<sup>63</sup> L. Lesmes, F. Hellberg (Space Popular), 10 Propositions for Virtual Architecture. Published as a part of a catalogue for an exhibition Value in the Virtual at ArkDes, Sweden's national centre for architecture and design. Available: <http://www.spacepopular.com/virtual/2018--10-propositions-for-virtual-architecture> (accessed 5 January 2023).

<sup>64</sup> G. M. Cappelletti, ..., Deconstruct Walls in the Metaverse.

marketplaces.<sup>63</sup> This makes perfect sense, as digital settings are often destined to change a narrative to keep users entertained.<sup>64</sup> Such perspective is also of sustainable thinking, as these changes wouldn't need the same resources as alterations in a physically built environment would. But suppose that the rules of both worlds start to intertwine and affect each other. In that case, I can clearly see how even more significant growth in the popularity of interior design can be caused by the possibilities offered by similar patterns in digital in the first place.

Talking about the metaverse, we consider limitless possibilities of an ever-changing environment and also, essentially, a playground. If physical space is designed to be metaverse-like (even if half-unconsciously), then in the same (half-unconscious) way, it will have to be regularly re-thought, re-organized, re-played to fit in the pace of the digital era. At the same time, if this same era is also about sustainability and conscious use of resources, then the design is here to reflect on this, too. This is a place where digital tools aid by giving an opportunity to envision, represent or even replace some of the information that now has to be ever-changing. Virtual reality allows creators to experience the designed environment before its construction and aids carpenters in efficiently building this environment. It is naive not to expect the outcome to always be something we have used to. Alternatively, it will be experimented with more often, and the coming trends may adopt deeper connotations to all this integral process as the whole system evolves further. That said, the system has compensation and mutual balancing. In the end, if this era is all about rapid change and constant play, a design must also represent it by bringing essentially novel ideas and approaches, while playfully testing them. In this sense, why wouldn't 'trend' be suitable for referring to current design features and characteristics? Ultimately, if a trend becomes precious and well-representative of its time, it grows into a style associated with the era.

*We always looked and wondered why fashion has so much avant-garde, there is always something new — why is it not like that in [spatial] design? Of course, we understand that design is a more durable story than fashion, but getting inspired and learning a few things from it is possible. — Eduard, on what they consider the biggest influence for their designs.*<sup>65</sup>

<sup>65</sup> E. Eremchuk, K. Pyatitskaya, Interview.

# III. Phygital

To answer the research questions, I devised a formula that would allow creating the digitality- and metaverse-inspired interior spaces or objects. My recipe was evolving, starting from the digital aesthetics chosen to rework existing forms, followed by speculative functions inspired by present and futuristic utopian concepts. Adding an innovative method of design/making as the last component finally made the formula complete. While composing it, I made a few design prototypes that did not become the final result of the thesis but may be regarded as process tests (see Attachment 2).

## **(DIGITAL) AESTHETICS (SPECULATIVE) FUNCTIONALITY INNOVATIVE (DIGITAL) METHOD**

A combination of the given components, inspired by digitality in one way or another, is applied to create a physical object. I followed the formula for the final project to design a conceptual piece. The entire process is executed using novel technologies. The conceptualization and design part is done in collaboration with Artificial Intelligence (AI), while 3D modeling and printing are involved in the construction stage.

The detailed collaboration process is documented on the following pages and partly in the attachments of this written work. The transparency I attempted aims to display the roles in this collaborative process, neglecting the questions of copyright and the originality of the work. Some digital visual creators don't label their work as made in collaboration with AI, stating that they never had previously credited the tools they use. But since different bots are encoded with particular aesthetical visions, a trained eye can yet differentiate an image made using AI from a rendered 3D model constructed 'by hand'.

Such collaboration shows how AI can be used as a time-saving tool for designers to test or illustrate their ideas comparably quickly. Despite the common fear of 'replacing creatives and taking their jobs,' the tool can be a source of inspiration and ideas if used consciously. Eventually, it's still rare that AI-generated designs reach the physical realm. If to speak precisely about the AI architecture and spatial structures,

<sup>66</sup> Sille Pihlak, Author's notes of the MA thesis  
midterm review, Tallinn, March 2023

generated at high speed in enormous quantities, such images are the new generation of unbuilt projects, following 'digital architecture' and 'paper architecture.'<sup>66</sup>

# Collective artificial intelligence

## STEP I. Idea sourcing

Looking for a suitable idea (**SPECULATIVE FUNCTIONALITY**) for a buildable project in collaboration with OpenAI chat bot GPT-3, then picking one of the suggested concepts

**Veera:** Suggest a novel concept for a physical world's spatial object (a furniture or an interior decoration piece) that is inspired by digital space, Metaverse, VR/AR

**GPT-3:** One novel concept for a physical world's spatial object inspired by the metaverse and virtual reality (VR)/augmented reality (AR) could be a 'Metaverse Mirror.'

The Metaverse **Mirror would be a traditional wall-mounted mirror with an innovative twist. The mirror's surface would be made of a high-resolution display screen that could show a user's reflection, as well as a range of digital content.** The mirror could be connected to the user's VR/AR headset, enabling them to see themselves reflected in the virtual world and interact with the digital environment in real-time.

For example, a user could step in front of the Metaverse Mirror and put on their VR/AR headset. The mirror's display screen would then show the user's reflection in the physical world, but also overlay digital content onto the mirror's surface. The user could interact with the digital content, such as moving around virtual objects, selecting different environments, or customizing their avatar's appearance, all while seeing themselves reflected in the mirror.

The Metaverse Mirror could also be used for practical purposes, such as trying on clothes virtually or previewing furniture in a digital environment before purchasing it for the physical world. It could also **serve as a unique and interactive piece of interior design that blurs the lines between the physical and digital worlds.** Overall, the Metaverse Mirror would offer a new way of experiencing the Metaverse and VR/AR technologies in the physical world, **providing a bridge between the two realms** and enabling users to interact with the digital world in a more immersive and tangible way.

## STEP II. Idea adaptation

Initially, the chatbot GPT offered me the concept of a Metaverse mirror, where you could, for example, see the reflection of your avatar while wearing VR glasses. In this step, I adapted the idea to my preference, taking the suggestion from chatbot GPT-3 as a base (in the previous step, the text in bold identifies what's taken from the concept suggested by AI). Leaving the initial concept of a mirror, I altered the idea for a prototype to be buildable within my resources and rethought the vision to be more relevant to my practice.

A mirror has always had a solid conceptual meaning. Mirrors have a history of being used in occult and witchcraft rituals as a portal and a communication tool with the world of the dead. A door to a parallel dimension, a window to another place and time, a medium for communication — it has been a magical entity in many fairytales and fantasy stories (think *Alice Through the Looking-glass*, *Snow White and the Seven Dwarfs*, *The Snow Queen*, etc.) It is often framed in vignettes or baguettes, making a reflection piece into a dynamic hyper-realistic painting. Michel Foucault regarded mirrors as heterotopias, spaces that project a parallel dimension but at the same time are physically present.<sup>67</sup> A mirror has been actively used as a metaphor until now — for example, interfaces are seen as mirrors.<sup>68</sup>

Although, if before mirrors were magical, today, mirrors are smart. Looking at and presenting ourselves through a smart device's camera, the screen has become a new mirror. All the metaphors suitable for a mirror can now evenly apply to a screen of a smart device. This physical object serves as both a connective and separative piece between humans and technology. Assume that the screens of all the devices we use daily are mirrors — we stare at ourselves for many hours every day. But if a regular mirror can only reflect what is present in the physical world, screens reproduce the constructed identity, a new reflection of self.

The article that got me thinking about the speculative functionality of my Mirror is about social media augmented reality (AR) face filters, also known as masks. Since 2015, AR filters have become a thing in Snapchat. Visual effects, altered environments, and edited face features are widely available in real-time. Gradually evolving, filters are now available in almost any photo or video-related app — even in such work- and education-driven ones as Zoom.

Usually, an avatar is a digitally created personified character. Still, given the most common technological possibilities that allow us to change our visual

<sup>67</sup> M. Foucault, *Of Other Spaces: Utopias and Heterotopias* [Des Espace Autres, 1967] Translated from French by Jay Miskowicz — *Architecture /Mouvement/ Continuité*, October, 1984, p. 3

<sup>68</sup> J.D. Bolter, D.Gromala, *Windows and Mirrors: Interaction Design, Digital Art, and the Myth of Transparency*. London: The MIT Press, 2003, p. 26

identity online, in photos, videos, and in real time, we can also become an avatar. Even if do not consciously create an avatar, most people develop it through their social media appearance. Such avatars are improved versions of ourselves, while their identities and appearances are dynamic on the Internet.

New generation filters are created with the AI-based technology called Generative Adversarial Networks (GAN), which not only adds a layer of information to a face but also regenerates every pixel of it to create a new image. In recent months, such filters have become extremely popular among young people on the social media TikTok (e.g., the infamous *Bold Glamour*).<sup>69</sup>

Researchers who study this phenomenon believe that if people spend enough time using such filters, they can develop a predictive model of themselves that the brain thinks they look like. It creates a dissonance with reality and negatively affects the psyche, developing body dysmorphia, especially in young people. It is also stated that before filters, people brought photos of celebrities to the plastic surgeon's office, and now they bring filtered pictures of themselves.<sup>70</sup>

Coming back to the project, my Mirror is a speculative object that opens a discussion on this topic:

*Speculum Mirror (Image 55) is a traditional wall-mounted mirror with an innovative conceptual twist. Such a mirror is aimed to remind a user, consumed by virtual reality, how they look in the physical world. The mirror's surface is made of a high-resolution display screen that shows the user's reflection and a range of digital content for communication with the user. It serves as a unique and interactive interior design piece that blurs the line between the physical and digital worlds, providing a bridge between the two realms. Today, such an object might be providing food for thought, but who knows how soon we hang one in our houses for its original purpose.*

<sup>69</sup> K. Lal, AI machine learning TikTok filters are causing errors in our brains — Dazed Beauty, Dazed Digital, April 2023. Available: <https://www.dazeddigital.com/beauty/article/59735/1/ai-machine-learning-tiktok-filters-gan-technology-bold-glamour> (accessed 9 May 2023)

<sup>70</sup> K. Lal, AI machine learning TikTok filters are causing errors in our brains ...

### STEP III. Form/look identification

Looking for a suitable form/look (**DIGITAL AESTHETICS**) for the *Speculum Mirror* in collaboration with Midjourney 5 (--v 5). See the detailed process in [Attachment 3](#).

Test	Prompts
1-6	Only a textual prompt is given to AI, describing object's conceptual and material sides, prompts are updated for every next test, text in bold refers to the changes made in relation to a previous prompt, parametr -- 2:3 refers to the output image ratio
7-14	A textual description is given to AI in combination with a visual input chosen by designer, images under the text are the input images inserted via the link in the beginning of prompts
15	Only two visual inputs are given to AI, no text prompt besides the version parameter
16	Two visual inputs as well as textual prompt are given to AI, exaggerating the description on a physical object's qualities
17-18	Incorporation of the prompt's weight or significance ::2, as well as lowering the level of stylization --s 50 (default is 100, the parameter influences how strongly Midjourney's default aesthetic style is applied) into the textual description
19	The designer's photoshop edit of the most-aesthetically favourable output images is given to Ai, long with the textual prompt
20-21	The image input it changed to the previous one (the most succesful up to the designer's visual taste) along with a previously updated textual prompt
22-23	One or several picked output images is given to AI, along with the unchanged textual prompt
24-25	Only two visual inputs are given to AI, both are AI-generated, picked to designer's visual taste, no text besides the alteration of stylization level
26	The most succesful one of all output image variations, according to the designer's visual taste, is given to AI, along with a minimal textual prompt asking to exclude an irrelevant object -- no flower

### **STEP IV. Making of 3D-model**

Modeling of a *Speculum Mirror* in 3D software, based on the best output image or combination of these (Image 54)

### **STEP V. Editing of 3D-model**

Shaping the initial (raw) 3D-model according to the designer's preferences, appropriating it for the construction structure (Image 67 in Attachment 2)

### **STEP VI. 3D-printing**

Adapting the model for 3D printing, choosing a suitable material, printing the frame of a mirror and other necessary details on a 3D-printer

### **STEP VII. Manual finishing and construction**

Manually appropriating, giving the frame its final look by polishing, dyeing, etc. Sourcing the needed materials to build the overall structure for the project (electronics, mirror, etc.), making all necessary measurements, making a drawing if needed.



54. Two shapes chosen for the further work in 3D software with

	Designer's role	AI's role
STEP I	<p>giving a direction for an object's idea</p> <hr/> <p>picking the most intriguing and realistically buildable idea</p>	generating of several ideas based on the given direction
STEP II	adapting the picked idea so that the project is still relatable to the initial concept but is physically buildable within the resources	providing a base textual description of the idea for adaptation by the designer
STEP III	<p>searching for a form by giving a direction in textual prompts and visual references</p> <hr/> <p>curation, picking the suitable final option/s that go into work</p>	generating of many various visual variations
STEP IV	creating a 3D model based on the suitable visual option/s	(possible to use an AI-based online service such as Kaedim that builds a 3D model based on an image)
STEP V	editing the raw 3D in a modeling software, designing the final look of the object	
STEP VI	preparing the 3D model for printing, choosing the suitable material, setting up the printing of the model	
STEP VII	studying the construction, making measurements and a drawing, sourcing the materials, manually finishing the 3D-printed parts, constructing the object	







# Log out

*We designate spaces for placing our technical devices. We design intelligent houses operated from them. We don't want to be separated from our devices because technology has become our safe space, a second home. We strive to create functional environments to exist inside the technological universe. We are inspired by technology — we want to imitate it. We use technology to re-design ourselves. We like ourselves better as avatars. We use technology to help us create. We have reached a point of no return. We must learn to collaborate.*

During writing this paper, I had to speculate on many ideas but would often find confirmations from other thinkers in the field. The amount of material available on virtuality, digitality, the metaverse, the Internet, etc., is extensive — the studies are so rich in their variety that I could only touch a tiny part of it.

For most of this research, I viewed space as object-oriented to narrow the focus. However, it is essential to remember that architecture is deeply rooted in human needs and desires. The complexity of the topic is amplified as soon as a user is involved. Human behavioral, sensory, and cognitive patterns open new doors for exploring space. The example with the *Speculum Mirror* showcased that research turned in another direction within the same theme as soon as an ontological question was there.

We live during a dramatic time for all design spheres, but especially it is for spatial design, with the parallel spatial reality evolving digitally. Coming back to the question posed by Paul Virilio in 1984 (quoted at the beginning of the thesis, p.1)... The architecture morphology is constantly changing with every new technological advance being incorporated into designing inhabitable spaces — that stresses the very meaning of 'inhabitable.' With the latest developments in materials, robotics, and smart systems, it is conceivable that buildings incorporate flexible and reconfigurable elements that adapt to the needs of their occupants. These elements alter the layout and functionality of spaces. As for how it will all end, it isn't easy to provide a definitive answer. The future is shaped by a multitude of factors, including societal changes, environmental concerns, and economic considerations. The evolution of architecture and design will likely continue to be driven by combining these factors in addition to using technological advancements.

While the last shape how spaces are designed and utilized, the fundamental principles of functionality, aesthetics,

and human experience will likely remain central to architectural design. The future of architecture will be a dynamic interplay between innovative technologies and the fundamental principles of creating spaces that enhance human life. For instance, the environment in which the metaverse or other digital media is experienced remains part of the scene. Therefore, adjustments must be made in the physical world. Would it trigger people want to leave their physical spaces as white (or, perhaps, grey) canvases to balance the saturated, ever-changing digital world, or would it be the striving to unite two into one holistic universe? The answers to these kinds of questions will be known as soon as we approach the next level of this hybrid era.

That said, there is still a long way to figure out how to co-exist in two spaces simultaneously while staying comfortable. Nevertheless, creators are the first to reflect on possible alterations in advance. As a result of it, we can observe how the fantasy of a new order already influences the spatial conditions people inhabit today.

# *Thumbnail*

Influenced by the adoption of the newest technologies and anticipation of the futuristic vision of the meta-world, creatives opt to imitate the digital space when designing (physical) interiors. Such design projects blur the boundaries between the digital world and the one we inhabit. The thesis aims to inspect the main points of the intersection of the two, and how the digital affects the space in the physical world.

The body of the thesis is divided into three parts. In the *Digital* chapter, I engage with three different typologies of virtual spaces: commercial, educational and recreational. By observing and analyzing how these spaces are constructed, I learned what features can inspire physical designs. The digital spatial worlds are not yet conveniently inhabitable or fully explored. Thus, they present a massive potential for architects and spatial designers by providing a field to test ideas and create spatial scenarios unbuildable in real life.

In the *Physical* part, I derive the most frequent visual features that are common in the representatives of the tendency I articulated in the first paragraph. Such features are sleekness, hyperrealistic shapes and prints, metal surfaces, digital patterns, bright solid colors, as well as use of screens and projections in interior projects. The design projects are chosen based on their similar appearance and the fact of completion in the latest years (2019—2023). Studying each of these elements closely, I suggest the possible causes of such design decisions that are initially rooted in the digital. For more substantial reference, I interview the authors of some of the projects, architect duo Eduard Eremchuk and Katya Pyatitskaya.

As an outcome, a variation of a formula for designing in the phyigital (fusion of physical and digital) is created in the chapter of the same name. Based on the analysis of the cases, both in the *Digital* and *Physical* chapters, my formula is a combination of the following components: **(DIGITAL) AESTHETICS**, **(SPECULATIVE) FUNCTIONALITY**, and **INNOVATIVE (DIGITAL) METHOD**.

The formula is tested by creating the final project — the *Speculum Mirror*, a physical object that is supposed to remind its user how he looks in the physical realm. The **INNOVATIVE METHOD** is a collaboration with Artificial intelligence (AI) for conceptualization and designing parts of the project. For the means of transparency, the entire process is documented. The decisions on the **AESTHETICS** for the piece are based on the findings made during the research part — the keywords from the analyses are used as input prompts for the Midjourney bot while searching for a form for the Mirror. The **FUNCTIONALITY** is speculative and is inspired by people's physical involvement in the digital realm by the constant use of AR face filters on social media, that, according to the latest news on the Internet, causes body dysmorphia<sup>71</sup>.

<sup>71</sup> K. Lal, AI machine learning TikTok filters are causing errors in our brains ...



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## **Author's notes**

Sille Pihlak, Author's notes of the MA thesis midterm review, Tallinn, March 2023

## **Image credits**

1. Club Qu's Rave room. Screenshot by the author, 2021
2. Club Qu's Toilet room. Screenshot by the author, 2021
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- 60—62. Beauty Club by EdxxKat, Moscow, 2021. Photography by Mikhail Loskutov. Source: EdxxKat, <https://www.instagram.com/p/CrQOBvynEA/>

63. Shaded Ottoman by the author, 2022.  
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Photography by the author.
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67. The Speculum Mirror (in progress)  
in a shaded view in Rhinoceros 3D, 2023.  
Screenshot by the author.



57. Bliss (originally, Bucolic Green Hills)

The infamous photo is a default computer wallpaper of Microsoft's Windows XP. Virtually unedited photo is taken by Charles O'Rear in California's Wine Country, January 1996. Bought by Microsoft in 2000. — Wikipedia: Bliss (image)



## Attachment 1. Interview with Eduard Eremchuk and Katya Pyatitskaya

Author's translation from Russian [6 Apr 2023 at 13:31:21]:

Where did it all start (few insights about your creative journey)?

Eduard Eremchuk (1994, Rostov-on-Don) - *After graduating from the Southern Federal University in Architecture, immediately began own practice, making projects for friends. After a year and a half of practice, I decided to do an internship at Bureau Betak in New York. At the same time, worked on the projects in Rostov-on-Don, Moscow, Shanghai and Milan.*

*I went through a lot of creative media: graffiti, street art, art photography and then photography of architecture, so by the way, our approach to interiors is largely photographic and I often perceive the interior through frames. This is what we use every day in our practice. We think about it from the very beginning, in the renders and then on the photo.*

Katya Pyatitskaya (1992, Moscow) - *Graduated from the Moscow Architecture Institute with a degree in Architecture. Received Master's degree in Milan, under the guidance of Patricia Urquiola, worked with brands such as Herman Miller, Agape, Michel Kors. After graduating, worked at the Massimiliano Locatelli studio in Milan, designing furniture and interior projects, and at the same time founded the Laroque st company for the production of handmade carpets.*

*All childhood passed in a super gray sad place, a village. As a child, my only useful entertainment was art school, I loved to paint. I even wanted to be an artist. I remember as I always looked into other people's windows. I liked to look at the life of a person, the interior, the environment, objects - how they live, what objects surround them, what colors, what kind of light. This mesmerized me. And I always needed to express myself in some way, to invent something by painting, drawing, poetry. Initially, I did not even think that I would become an architect — it seemed to me too much. Then I realized that I can do more than I think. In the end, it all came together into a single story. I can say there were no other options for me.*

What was first for you, an idea for digital or an idea for physical space?

*An idea for real space. At that time, to be honest, digital art was not developed in such a way, and all these cool pictures of futuristic interiors only appeared later. The first interior project was Likeshop. With a pink dressing room. There weren't even 3D visualizations on this project, it was just a collage and most of the work was to understand how to make a project, what materials are available, etc.*

How would you name / characterize your design style?

*Somehow, we never connected ourselves with any style, well, we understood that we wanted to do something relevant, modern, and in general, a transformation takes place from year to year. At first we used only metal and bright colors, then we became interested in wood, marble and many other materials. All this greatly affects the final concept of the project. We are in search of our exclusive language. The main task for us as a whole is to impress, surprise and make a person feel in our space like in no other. And for us this is more important than a style.*



58.5g. Pop-up in collaboration with Spasibo Sberbank by Eduard Eremchuk, Moscow, 2021

What has influenced your design style the most?

*Fashion, art. In general, we always looked and wondered why there is so much avant-garde in fashion, there is always something new and why it is not like that in design. Of course, we understand that design is a more durable story than fashion, but it is definitely possible to get inspired and learn a few things from it.*

How have your approach to design changed during the pandemic years?

*This is generally the beginning of our experiment with furniture, before that we did not think about it as a separate direction. In seclusion, in fact, many ideas were born. The intensity of the rhythm of life in the city in the usual mode takes a lot of energy, when you can invest these forces into something more useful — into ideas, etc. And most importantly, usually a person does not spend so much time at home, probably in his entire life, but here at one moment the whole world found himself in the same situation and as if many saw their housing, their habitat in a completely different light.*

Who is your client? How many projects have you done for clients, which are conceptual?

*We mainly make designs for commercial projects. Showroom, bars, restaurants, beauty salons, etc. There are also image projects, collaborations. We rarely work on residential projects.*

What is the main difference for you between designing for Metaverse/renders (for existing exclusively in digital) and designing for an actual space?

*The answer is most likely obvious — there is more freedom in the metaverse. When you design a real space, you think about how a person will use this space, there are a lot of questions on ergonomics, a lot of questions in general about the perception of space, convenience, etc., plus you always have certain limitations. In renderings, you can try to create your ideal universe and try any of the craziest ideas. We rather went from the opposite, making the first projects and faced*



*with a lot of difficulties, we always tried to achieve such an ideal look as on renders and this is a super challenging. Perhaps that is why many, looking at the photos of our interiors, say that they look like renderings. At some point, we realized that we wanted to create the effect that you find yourself in an unreal 'computer space', blurring the line between something familiar and unreal.*

What are the lessons you have learned by/through designing in/for digital that you would take to a physical world?

*That now technology actually allows you to implement various complex things. For example, as we made a reception desk in a project (Image 61): we just took a 3D model and printed it on a 3D-printer, it turned out one to one. We perceive digital as an additional tool for creating living interior projects. Plus, sometimes it seems to me that you can quickly test in digital and see your ideas. Less need to imagine, you do in 3D and bring to life a very similar story.*

Why do you use so much of chrome/metallic surfaces in your designs? Where does this feature come from for you?

*It seems to me that each era has its own material.. Now it is metal, as it is the material that is associated with something futuristic. We are personally interested in this material because of its reflective abilities, because of its seemingly neutral but at the same time futuristic vibe.*

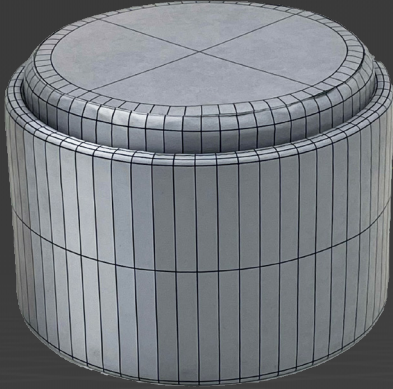
Is there a particular reason why you use these hyperreal prints in your designs?

*This is such a homage to the old Soviet wallpaper. This story seems poetic. Because it is such a 'window' to another reality.*

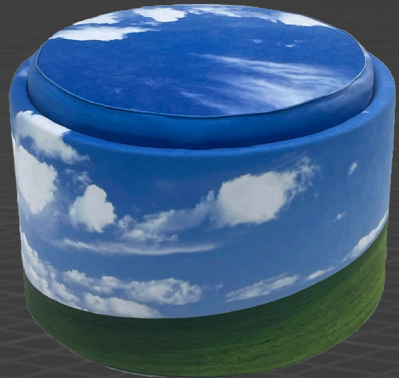


60–62. Beauty Club by EdcxKat, Moscow, 2021

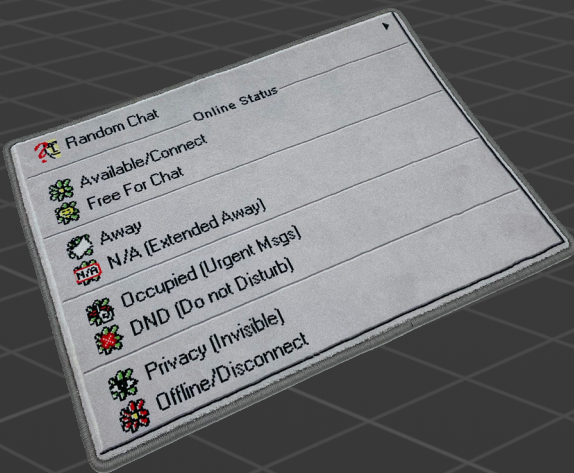




63. Shaded Ottoman (physical object), 2022



64. Bliss Ottoman (physical object), 2022



65. ISeekYou Doormat (physical object), 2022

## Attachment 2. Earlier prototypes

*Shaded & Bliss Ottoman* (Images 63, 64), 2022

Twin forms with different patterns are aimed to point at phenomena of digital multiplication, which in any 3D software is an extremely fast and easy one-click task. Moving from no-pattern-grid (as ‘Shaded’ view in 3D) to Bliss pattern (Images 57), featuring default computer wallpaper of Microsoft's Windows XP, is another click away — the texture applied. On the contrary, creating two identical shapes manually is not an easy labour, requiring time and great precision. For the ‘textures’, two different fabrics designs were customly made and applied to the pieces by hand.

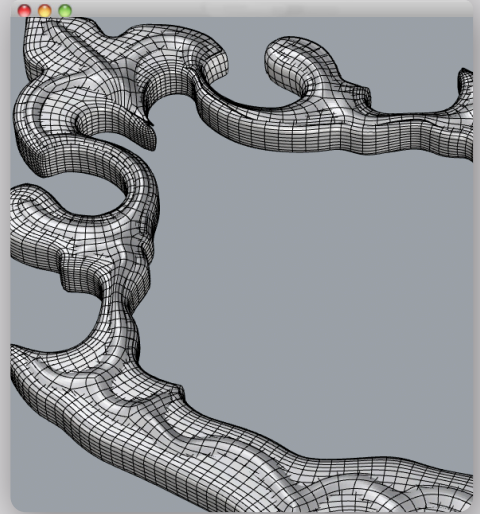
*ISeekYou Doormat* (Image 65), 2022

Graphics of a digital tab from early version of ICQ (Image 66), an instant-messaging application from early 2000’s, are printed on a doormat-sized carpet. The tab, opening at entering the program, asks you to choose your online status. Poetically synchronised with the action of entering space by using a door, with a welcoming doormat as your first tab.

Visually, both pieces, referring to early web eathetics, are connotations to the ‘digital nostalgia’, and are backed by post-internet art principles.



66. ICQ interface



67. The Speculum Mirror (in progress) in a shaded view in Rhinoceros 3D

## Attachment 3. The detailed process of STEP III. Form/look identification

