THE ARCHITECTURE OF THE VIRTUAL NOT-PLACE
REFLECTIONS ON DESIGN IN THE METAVERSE

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METAVERSE
VIRTUAL PLACE
VIRTUAL ARCHITECTURE
SKEUOMORPHS

The development of new technologies in the context of the 'Metaverse' necessitates an in-depth reflection on the perception of space in the design of virtual environments. This article examines the importance of the concept of 'presence' and refers to Marc Augé's work on the distinction between 'places' and 'not-places'. It updates the same concept to virtual worlds and the design of architecture in the Metaverse. The absence of design control results in transit experiences that are more akin to virtual 'not-places', which in turn leads to a loss of a sense of community among users. Consequently, it is imperative for architecture in the metaverse to address these issues, commencing with a critique of the concept of aesthetic and functional 'skeuomorphism'. The design and modelling of architectural environments within the metaverse, conceived as virtual spaces, plays a pivotal role. The objective of this article is to stimulate reflections on the formulation of graphic codes to be used in the future design of virtual environments.

The 2021 *Facebook Connect* conference refocused attention on virtual environments, presenting plans for further development of the so-called 'Metaverse' Artificial Intelligence, 3D Digital Twins, Augmented Reality, Virtual Reality, Edge Computing, Blockchain, and Cryptocurrencies appear to be the pillars that will support the future of the digital world. Mark Zuckerberg, in his rebranding of *Facebook* to Meta, symbolized by the infinity emblem, indicates a dimension that will transcend a limit identifiable in the physicality of the real world, where the simulation of reality will appear increasingly plausible. This is a new dimension not only in terms of space and time but also experience. This multisensory universe with mobile boundaries, capable of covering every sector of life, from work to commerce and entertainment, will present opportunities as well as risks and issues, similar to those that emerged with the advent of Web 1.0, that is, the traditional web. The Metaverse is an evolution of the web that moves from 2D graphics to 3D graphics, from being viewed on a computer screen to how the user is inside a dynamic web where physical reality will attempt to merge with the digital one. It should not be forgotten that the virtual world imagined by Zuckerberg does not really exist yet, according to market analysis it will come to light in no less than five years and probably within ten. Currently, it is in the development phase, and the implemented functions are under analysis and experimentation. Matthew Ball, author of the book *Metaverse: What It Means, Who Will Control It, and Why It Is Revolutionizing Our Lives*, argues that the Metaverse is:

> A network of maximally scalable and interoperable real-time rendered 3D virtual worlds, that can be experienced synchronously and persistently by an effectively unlimited number of users with an individual sense of presence within them, and that ensure data continuity relating to identity, history, rights, objects, communications, and payments. (Ball, 2022)

In 1992, the concept of the Metaverse was introduced to the world for the first time by writer Neal Stephenson in his science fiction novel *Snow Crash* in a world not dissimilar to the one we live in today where humans interact with each other in a 3D virtual space, an evolution of the classic internet. The realization of such an online community became a reality for many people in 2003 with the introduction of *Second Life*, considered the true first application of the Metaverse concept. In this virtual world, there is no story to complete or objectives to achieve; players instead have the freedom to create their own content, interact with other users through their digital avatars, and explore the entire world that *Second Life* offers, as well as participate in the various activities that other users develop and propose. Since then, video games have expanded their presence on the Internet, creating various online communities similar to the original concept of the Metaverse where people can meet and exchange information, but also goods that correspond to real monetary values related to different economic systems. With the advent of cryptocurrencies and blockchain, these transactions have become easier and more secure, decentralizing ownership and information and thus paving the way for true expressions of metaverses online. Over the years, online video games have continuously improved, offering players more engaging graphical experiences and creating games where players are free to explore the world by interacting with various elements within it. Some of these scenarios even allow players to contribute to the construction of the world itself by providing them with building modules to assemble and create almost anything they desire, with some of these constructions being functional parts of the experience for everyone's enjoyment, as in the case of *Minecraft*. One of the most modern games that closely approaches the concept of the Metaverse is *Fortnite*, developed by Epic Games, among the most successful *Free-to-Play* multiplayer games to date. Essentially, the main game mode of *Fortnite* is the Battle Royale, but Epic Games has expanded its ecosystem with many other activities and

Fig. 1 *Decentraland Metaverse*. The user experience appears anonymous from a graphical standpoint, the architecture of the volumes lacks recognizable elements, and the places are used only as spaces for temporary transit.

features. In 2011, Ernest Cline published *Ready Player One*, a novel, which was adapted into a film by Stephen Spielberg in 2018, where one is immersed in a dystopian reality, similar to *Snow Crash* The reader is immersed in a world where humans play a virtual reality game based on the Metaverse called *OASIS*, where the main goal is to escape the chaos present on Earth. Over the last decade, due to its ever-growing popularity, it is common to find the concept of the Metaverse in pop culture, just think of films like *The Matrix* or the *Fifteen Million Merits* episode of *Black Mirror,* where citizens ride a stationary bike to earn credits to later participate in a talent show, through their personal avatars.

To date, the true Metaverse does not yet exist, because the interconnection between various virtual worlds is not yet possible. There are multiple virtual 'islands' across various sectors ranging from gaming to virtual galleries, but not within a 'unified universe'; the term is commonly used to refer to platforms where immersive experiences can be had in three-dimensional virtual environments. According to an

Fig. 2 *The Sandbox Metaverse*. The 'transitivity', or the ability to move or transition between virtual experiences, conversely, generates a sense of 'not-presence'.

analysis by the new Observatory on Augmented Reality and Metaverse at the School of Management of Politecnico of Milan, the Metaverse consists of 212 virtual worlds and only 54% are freely accessible by anyone, equipped with 3D graphics, with interoperability components that would allow the use of digital assets in a cross-platform and persistent manner, meaning they continue to exist independently of whether a person is present or not. Platforms such as *Decentraland* (Figure 1), *The Sandbox* (Figure 2), *Spatial*, and the Italian *The Nemesis* fall into this category. The 27% are *Open World*, that is, they are open, persistent, modular, and immersive virtual spaces that gather projects from every area of interest, lending themselves to both business use and social purposes, but without elements capable of supporting interoperability. Examples include *Second Life*, *Horizon Worlds*, and *Roblox*. The 16% belong to the Focused World category, meaning virtual worlds whose projects are focused on a particular area of interest (gaming, commerce, training, work collaboration), like *Fortnite* and Microsoft Mesh. There are also Showrooming

Fig. 3 *House of M*. The inclusion of columns, arches, or other decorative details that evoke architectural functions or styles to create a sense of realism and familiarity for the user limits the creative possibilities of a virtual place and innovation in interaction.

Worlds (3% of the total), like Musee Dezentral, virtual showcases intended for displaying, for example, artworks by artists and collectors, without the possibility of user creation and without an internal economy. The key that allows us to experience a true Metaverse is nothing but our ability to be actively involved in its creation while participating in the experience. The most compelling sensation for those approaching today's virtual places is precisely the ability to experience not just being inside them but within a digital experience. However, let's consider the concept of 'presence' in an explorable virtual place. The concept of 'being present' could completely change the current view of the Web. The correspondence between the real and the virtual could be a point where virtual and perceptive experiences meet and overlap in some way. This thought demands a sociological reflection on what is or is not 'a place' and how relationships between individuals are formed. Marc Augè, in his 1992 essay *Not-Places: Introduction to an Anthropology of Supermodernity*, theorizes the distinction between places and non-places. The former concerns a relational, identity-based, historical space, i.e., a space where relationships are solicited and are an integral part of the environment, subjects recognize themselves within it, and it is defined as identity-based and historical because the subjects have a common history or refer to it. The term not-place has opposite characteristics, often used to describe spaces

that lack a strong emotional or social connection, temporary transit spaces not tied to a community or significant relationships. Augè's analysis represents a way to understand social and cultural changes in contemporary society through the study of impersonal and standardized spaces that characterize modern life. The virtual space of the future Metaverse will be characterized by multiple explorable places, which if not adequately designed risk becoming virtual not-places. An online community lacks one of the basic characteristics that define the concept, namely being spatially proximate, that is, being in contact in the same place, so as to experience the same reality and create shared values and meanings. The main issue is that these concepts are perceived without a sense of belonging, as in reality, but only as spaces of temporary transit. The 'transitivity' or the ability to move or transition between infinite virtual experiences, could generate, on the contrary, a sense of 'non-presence'. As more human activities are transferred to 3D environments, the more these will become actual places of design within which the user-avatar can relate to others, buy intangible goods through cryptocurrencies, or hold a conference with special virtual reality headsets. It is therefore essential that in the development of Metaverse platforms, aspects related to the perception of space must be considered, since the users will always be human.

The concept of architecture within the Metaverse is a compelling idea that merges virtual reality, augmented reality, and three-dimensional architectural design to create interactive and immersive virtual environments that can be explored online by multiple users. These spaces can be designed from scratch or simulate existing real places.

Research on architectural design has included its development in cyberspace since the 1990s. Virtual architecture has been influenced by post-capitalism and globalization, with significant advances in automation, from information technology to the fourth industrial revolution. The virtual world can be considered as an extension of our real world that includes not only a physical aspect but also cultural and social interaction,

Fig. 4 Zaha Hadid Architects (2022), *Liberland*, The community features hyper-realistic neighborhoods where virtual urban planning 'enables a process of discovery'.

Fig. 5 OMA, Morphosis, UNStudio, MAD, Sou Fujimoto, & Zaha Hadid Architects (2023), *Metrotopia Metaverse* Venice, in conjunction with the 2023 Architecture Biennale, features both a physical and virtual exhibition. The virtual spaces have been designed by:

aesthetic and psychological issues. These characteristics, generally, are not included in the training of those who actually design and build virtual worlds, namely game designers, programmers, and users, and the consequence of this lack of knowledge is reflected in virtual places and architectures. The main goal is to create an immersive place where users can explore, interact, and actively participate in the design and modification of virtual environments. However, it is important to address some considerations regarding native virtual architectural design within the Metaverse. This last represents a revolution in the approach to modeling spaces, involving de-

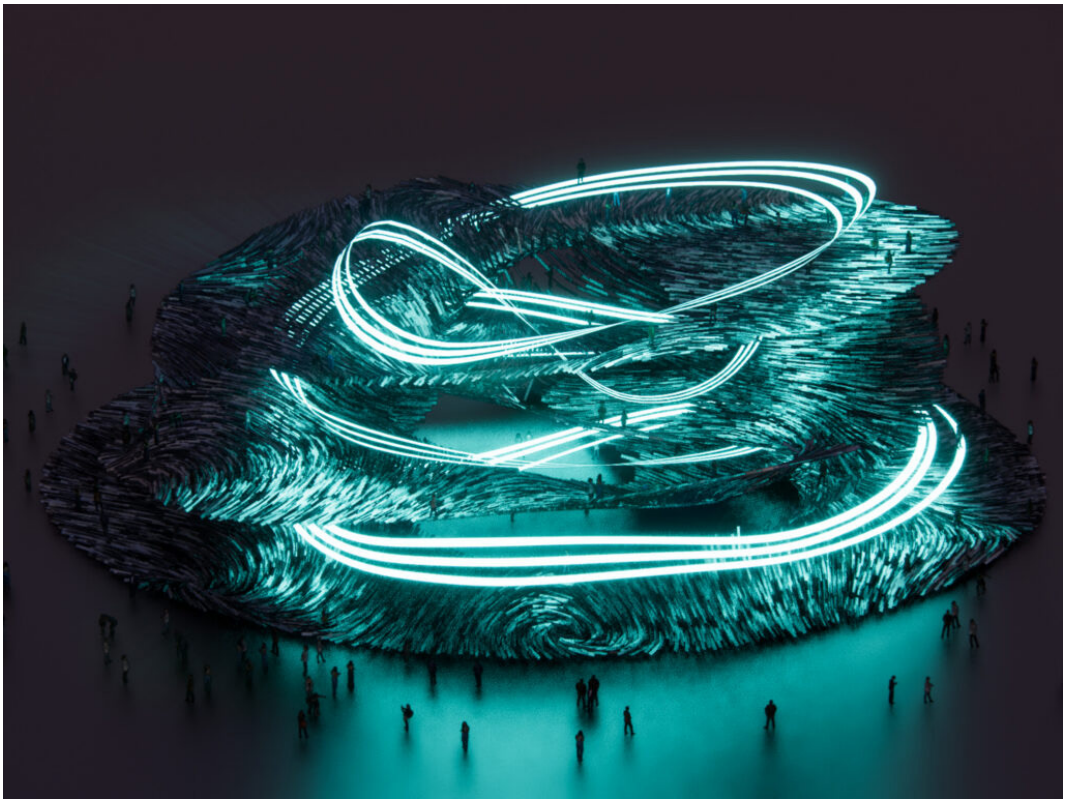

Fig. 6 Lava Architects (2023), *The First Metaverse Architecture*, Biennale, The virtual pavilion is designed on multiple levels that are interconnected by a single seamless surface, like the path on an infinite curve.

signing, visualizing, and manipulating buildings, landscapes, and environments in an immersive digital context. In this sense, the concept of skeuomorphism is introduced, referring to the use of design elements that recall or imitate the features of real buildings or environments. A common example might be the inclusion of stairs, columns, arches, or other decorative details that recall architectural functions or styles to create a sense of realism and familiarity for the user (Avatar). These elements are often used for aesthetic, functional purposes, or to help users better understand and more easily navigate a virtual environment, but it should be noted that the use of skeuomorphs in Virtual Reality and Augmented Reality contexts can also be controversial. On one hand, they can make the experience more accessible, but on the other, they can limit the creative and innovative possibilities in virtual interaction.

CONCLUSIONS

The architecture of the Metaverse does not necessarily have to be characterized by virtual elements that mimic real ones. In the virtual place, space is without natural boundaries, gravity disappears, and materiality is not constrained by the construction elements typical of reality. This new frontier offers a broad spectrum of opportunities and challenges for architects and designers. Designing architecture in the Metaverse is a challenging task even for experienced architects, as the skills of software developers, conceptual artists, 3D modelers, game designers, or sometimes even the users themselves are not sufficient because they lack a technical background in architectural composition, which could easily lead them to lose themselves in the dynamics of the digital not-place, anonymous, where everything is possible and potentially enormous. This is even more necessary when the design of the Metaverse involves the reproduction of historical environments and their contemporary architectures, which most often follows controversial philological approaches and methods.

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