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THE SPACE BETWEEN THE SCREEN AND ARCHITECTURE

El espacio entre la pantalla y la Arquitectura

O espaço entre a tela e a arquitetura



Figure 0 From the movie Ready Player One. Source: Spielberg (2016) and mixed reality experience. inside the Virtual Reality Center of Brest, France. Source: Author's elaboration.

RESUMEN

El artículo que sigue se refiere a la relación histórica y contemporánea que han desarrollado el cine y el espacio urbano-arquitectónico. Su objetivo es mostrar la influencia recíproca entre la realidad objetiva y la realidad virtual proyectadas en las películas de ciencia ficción *Blade Runner*, del director Ridley Scott (1982), y *Ready player one*, de Steven Spielberg (2011), con respecto a la percepción actual del espacio arquitectónico. La idea de establecer la relación entre estas películas es destacar la prospectiva llevada a cabo por sus directores en torno a la interacción usuario-arquitectura y tecnología. Se citan, como antecedentes, algunas de las obras literarias y cinematográficas que abordan el tema de las ciudades posmodernas y las ciudades del futuro, ya sea desde una visión utópica o desde la perspectiva de una distopía. Metodológicamente, se realizó una revisión crítica de ambas cintas a partir de un esquema de análisis sobre la concepción de la arquitectura a través de su escenografía o puesta en escena (Zavala, 2003), así como de la similitud con la forma en que actualmente transitamos a través del espacio arquitectónico con el uso de tecnología de realidad mixta. De esta manera, los resultados exponen cómo la realidad mixta (física y virtual) impacta la percepción y el comportamiento de los usuarios dentro de los espacios físicos. La conclusión expresa la ineludible presencia de la realidad mixta en espacios tan complejos como son los del cine y los de la arquitectura.

Palabras clave: percepción, espacio, cine, realidad virtual, arquitectura.

ABSTRACT

This article presents the historical and contemporary relationship that cinema and urban-architectural space have developed. Its purpose is to show the reciprocal influence between objective and virtual reality projected in science fiction films like *Blade Runner*, by director Ridley Scott (1982), and *Ready Player One*, by Steven Spielberg (2011), regarding the current perception of architectural space. The idea behind establishing the relationship between these films is highlighting the prospective used by their directors around user-architecture interaction and technology. Some of the literary and cinematographic works that address the topic of postmodern cities and the cities of the future are cited as background, either from a Utopian vision or from the perspective of a dystopia. Methodologically, a critical review of both films was carried out based on an analysis layout on the conception of architecture through its scenography or staging (Zavala, 2003), as well as the similarity with the way in which we currently travel through the architectural space with the use of mixed reality technology. In this way, the results show how mixed reality (physical and virtual) influences the perception and behavior of users within physical spaces. The conclusion expresses the inescapable presence of mixed reality in spaces as complex as those of cinema and architecture.

Keywords: perception, space, cinema, virtual reality, architecture.

RESUMO

O artigo apresenta a relação histórica e contemporânea que o cinema e o espaço urbano-arquitetônico têm mantido. O objetivo deste artigo é mostrar a influência recíproca entre a realidade objetiva e a realidade virtual projetada nos filmes de ficção científica *Blade Runner*, do diretor Ridley Scott (1982), e *Ready player one*, de Steven Spielberg (2011), no que diz respeito à percepção atual do espaço arquitetônico. A ideia de estabelecer a relação entre estes filmes é destacar a perspectiva adotada por seus diretores em torno da interação usuário-arquitetura e tecnologia. Algumas das obras literárias e cinematográficas que abordam a temática das cidades pós-modernas e das cidades do futuro são citadas como pano de fundo, seja a partir de uma visão utópica ou de uma perspectiva distópica. Metodologicamente, procedeu-se a uma revisão crítica de ambos os filmes a partir de um esquema de análise da concepção de arquitetura por meio de sua cenografia ou encenação (Zavala, 2003), bem como da semelhança com a forma como atualmente percorremos o espaço arquitetônico mediante tecnologias de realidade mista. Desta forma, os resultados mostram como a realidade mista (física e virtual) impacta a percepção e o comportamento dos usuários dentro dos espaços físicos. A conclusão expressa a presença inevitável da realidade mista em espaços tão complexos como os do cinema e da arquitetura.

Palavras-chave: percepção, espaço, cinema, realidade virtual, arquitetura.

INTRODUCTION

The progress made in IT applied to representation, development, and expression within architecture and cinema projects has provided an approach to the 3D complexity of films and virtual architectural objects. The relationship between current architecture, virtual reality, and cinema is evident in films like *Blade Runner*, by Ridley Scott (1982), and *Ready Player One*, by Steven Spielberg (2018), which are the object of study in this research. The result of the architectural ideas with the application of virtual reality technology in films has generated a space that is perceived daily through smart devices, such as smartphones, computers, tablets, and virtual reality (VR) glasses. The phenomenon there is between a screen and the architectural space, also called mixed architectural space (Palomo, 2021), is conceived, in short, as the simultaneous perception of the physical space and real-time interaction with virtual objects.

The perception of the current mixed architectural space in the process of knowledge and recognition of the space, is defined by the stimuli received visually, acoustically, and kinesthetically, and is conditioned by the prior knowledge of the physical space, the cultural recognition of the spaces of transition, the freedom of movement allowed, and the interaction with the added virtual 3D elements (Palomo, 2021).

To address what the architecture-cinema relationship defines, this study compared, within the two films reviewed, virtual scenarios against real ones. The cinematographic analysis method proposed by Lauro Zavala (2003), who determined that it is possible to make studies using cinema as a category of analysis, in this case from the staging, i.e. through the scenarios, was used for this.

The observations made were based on a setup that allowed abstracting the perception of physical and mixed space. The detailed revision of the staging focused on seeking the mixed architectural space, to show the impact of technology on architecture, and onscreen. The results show the importance of a transition in architectural and urban work towards the conception of virtual and mixed spaces.

Literature, cinema, and architecture have historically shown how they have mutually impacted one another, creating virtual scenarios that lead to imagine alternative and different realities from the physical ones. The films analyzed, show the presence of technology in architecture, the stimulation with virtual devices, even the need of living in virtual reality. In this way, the revision of *Blade Runner* and *Ready Player One* propose evidencing the social and cultural repercussions of new technologies on the transformation processes of the dynamics of social relationships.

Perception of the physical and mixed space

Human beings, from their physical and cultural state, have had to understand space in different ways over time, to live in and interact with it. Boundaries have had to be created and, at the same time, other worlds, generous with the visual and imagination components, have also been created. This coexistence with the world has also forced

its perception, defined as the cognitive process whereby an animal or a human captures information from outside (Royal Academy of the Spanish Language [RAE], 2019), through sensorial systems. The senses send data to the brain to convert it into images or ideas of what has been perceived. This is a process of awareness of being in the world, or of the body in the world. The architectural space is related to the limitations built elements impose, and its spatial definition is given by the four conventional dimensions: height, width, length, and time; dimensions analyzed by Calduch (2001) and coined by Bruno Zevi (1969). For Alberto Álvarez-Vallejo (2016), perception is a simple, historic, yet not innate, mental operation. Perceptual operations are developed considering the cognitive level of the people: they can be sensorial (at a level of the organs of the senses); sensitive (that promote pleasure as substantial); or theoretical (where artistic valuations of the ideal aficionados are made: artists, architects, urbanists, etc.) (Álvarez-Vallejo, 2016, p. 2).

Virtual space is that which differs from tangible space in at least one fundamental aspect: the digital interaction with the objects that inhabit it in time and physical space. Virtual space is not governed by the Laws of Physics of the physical space (Rodríguez, 2004), that is to say, by the four physical dimensions. The digital interactive setting adapts to a spatial circumstance through specialized virtual reality software, whereby real or imaginary scenarios are represented, modeled by the so-called Virtual Reality Modeling Language technology.

The merging of the elements that the real space and virtual elements form, produces mixed architectural spaces. The perception within a mixed architectural space implies a new user experience. Perception within a mixed architectural space as a complex concept is a response to a historic moment, so it could be seen as a paradox of perception and the process of signifying. The conception of architectural space changes and evolves as, although it is understood within a tangible physical dimension, the concept is extended to a virtual dimension. The use of mixed reality in the architectural space modifies the visual and kinesthetic perception of the user, especially in terms of recognizing and allowing movement.

The effect of using virtual reality (**Figure 1**) in the perception of the architectural space, in the process of getting to know and recognizing the space, is defined by the stimuli received visually, acoustically, and kinesthetically, and is conditioned by the prior knowledge of the physical space, the cultural recognition of transition spaces (spaces for movement) and the permissiveness of movement, that is to say, the thresholds between the public and the private to transit within the architectural space (**Figure 2**). For this reason, the interpretation of the physical and virtual space (mixed architectural space) is related to the prior knowledge and experience about the physical space, the virtual space, and the recognition of the added virtual 3D elements. The interpretation of that simulated can generate an authentic experience, that combines the perception of the immediate stimuli of both realities in a given space (Palomo, 2021).

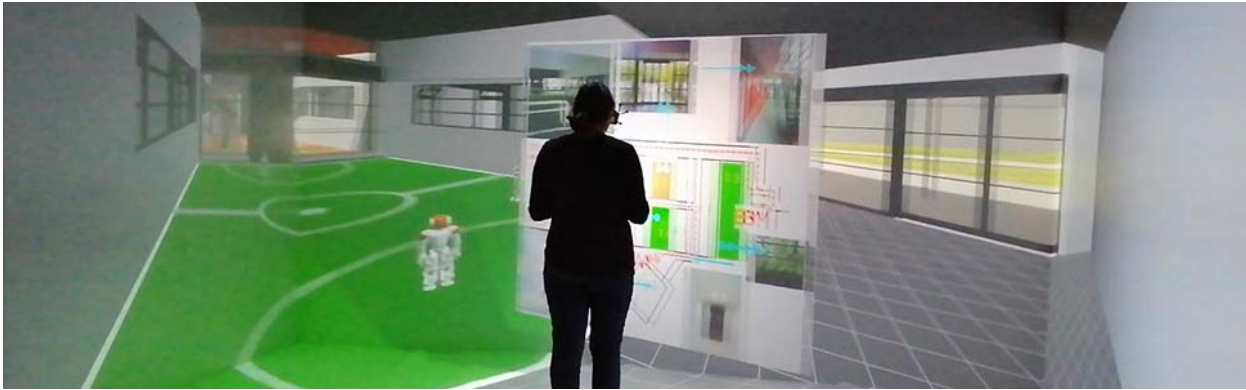


Figura 1 Virtual reality experience within the CAVE in the Virtual Reality Center in Brest, France. Source: Preparation by the author.

Figura 2 Experience with mixed reality. Source: Visualizing the future with Windows Mixed Reality (2016).

¹ According to the RAE, dystopia is a fictitious representation of a future society with negative features caused by human alienation. A dystopia or anti-utopia is a fictitious society, that is undesired in itself (Wikipedia. <https://dle.rae.es/distop%C3%ADa>).

Futuristic cinema in Architecture (1900-2020)

The perception of the city of the future has been a topic developed alongside social changes and technological progress. It has close ties with literature, that seems to anticipate the way to move through it, from the visible to the virtual ones. From Jules Verne's *Paris in the 20th Century* (1863) to Ernest Cline's *Ready Player One* (2011), literature has portrayed scenarios of the future world with positive or negative forecasts in the social, economic, and architectural settings. Literature, from the 19th century onwards, presents the general concern of inhabitants regarding the future of contemporary cities, many of them built in the industrial era, and currently inserted within a technological, stock exchange-based, and hyperrealism era (López-Rangel, 2006, p. 8).

In the 19th century, the influence of historic moments, and the change in the perception of space, allowed writers like Charles Dickens, Gustave Flaubert, and Victor Hugo to describe the cities of their time through their narratives. By the 20th century, the perception and description of postmodern and futuristic cities are seen in the novels of Jules Verne (*Paris in the 20th Century*), John Dos Passos (*Manhattan Transfer*), and Alfred Döblin (*Berlin Alexanderplatz*). Later, authors appeared who describe future cities as a dystopia¹, such as Aldous Huxley (*A Brave New World*), George Orwell (*1984*), and Ray Bradbury (*Fahrenheit 451*).

With the invention of cinema, literature was transformed, through



Figura 3 Cinema+Literature
timeline. Source: Preparation by
the author.

its adaptations, into a collection of images and productions of the realities foreseen for the future worlds, becoming a reference of the configuration of space and cities. The visual manifestation in cinema has portrayed and provided images with different perceptions about physical and virtual spaces. The perception of technology and its diverse impacts on society is addressed in films like *Metropolis* (Fritz Lang), *The Matrix* (Lana and Lilly Wachowski), *Minority Report* (Steven Spielberg), *Inception* (Christopher Nolan), and *Tomorrowland* (Brad Bird).

Among the directors of science fiction² movies, that have turned literary works into cinematographic ones, using the topics related to postmodern or future cities, it is possible to mention: William Cameron Menzies, with *Things to Come* (1936); Francois Truffaut, with *Fahrenheit 451* (1966); Michael Radford with *1984* (1984); Stanley Kubrick, with *The Clockwork Orange* (1971); Steven Spielberg, with *Ready Player One* (2011); Ridley Scott, with *Blade Runner* (1982), and *Blade Runner 2049* (2017), adaptations of Phillip K. Dick's novel *Do Androids Dream of Electric Sheep?*; Christopher Nolan with *Inception* (2010), a work of art in itself; and Joseph Kosinski with *Tron: Legacy* (2010) (**Figure 3**).

Science fiction of the future architectural-urban space, on one hand, found a new dimension: that of seeing reality using the eyes, but without actually experiencing it, allowing the spectator to be submerged into moving environments and images, thus fulfilling certain fantasies.

Said visualization gained strength when some architects were influenced by technological progress and the implementation of technology in architecture. The visualization of the technological progress converted the reality of a utopian or dystopian forecast of the spatial configuration of indoor and urban space, into images. Architects with futuristic tendencies made graphical proposals and manifestos of the future city. Here arises the cases of Bruno Taut's *Gläserne Kette* (crystal chain) (Calatrava, 2001); Kutritov's *The Flying City and Beyond* (Khan-Magomedov, 2011) (1928); Anton Lavinsky's *City on Springs* (Prokopljevic, 2020), proposed in 1921; but also those of Le Corbusier, with the outlining of *Cité Radieuse*, in 1933, in Marseilles (Blasco, 2013); Lucio Costa and Óscar Niemeyer, with the design of Brasilia in 1956 (Chaparro, 2013); the city planning of Kevin Lynch, from 1960 (Lynch, 1998); Antonio Sant'Elia and *The city of the future*, in 1914 (Barona, 2009), which had a great impact on Archigram (1964), in *The plug-in city, capsule homes, The walking city*; and Paolo Soleri, with his ecological city model of 1970 (Franco, 2013), to be built in space (Arcología "Arcosanti")

In this context, Peter Cook explains the relationship between architecture and science fiction in the publication *Archigram 4*, in 1964. There, he outlines the need to renew the profession of the architect, and the capacity to produce an architectural image in science fiction. Kiyonori Kikutake can be mentioned as an architect who was greatly influenced by the vision of Archigram, whose design based on megastructures was taken on by Douglas Trumbull for the film *Silent Running* (1972). The ideology of Archigram marked a transition in the

2 Science fiction is a literary genre characterized by a narrative that proposes a hypothesis about the future and/or unknown universes, starting from current knowledge (scientific, technological, ethnological, etc.). (Bassa & Freixas, 1993)

ways of visualizing architecture produced in science fiction cinema in the 1970s. Science fiction films like *Star Wars* (1977), and *Battlestar Galactica* (1978), showed megastructures with technological solutions for their operation. Cinema became the space where architects could build works with a futuristic vision of the space and the city. In the 2000s, futuristic cinema showed the dark public space, with high-rise buildings, giving superstructures a starring role. In the physical world, architects Jean Nouvel, with his Cartier Foundation (1984), Louvre Abu Dhabi (2017), and Qatar National Museum (2019), and Rem Koolhaas, with the Seattle Central Library (2002), and the China Central TV Station (2004), did the same, with buildings with superimposed textures, formed by extraordinary structures.

Architects and film directors work with similar design lines. Both research, create environments, and configure the space, though only in the physical space is the experience of transition more relevant and affected by time. However, in cinema, the experience is manipulated by the planes on which the objects appear³. In the 1970-1980 period, a radical change took place in the perception of space and time with the incorporation of IT and person-computer interaction, which has continued up until the present day, when the possibility of being immersed into a reality that is simultaneous to the physical reality and the mixed reality (MR), has been added.

Architects have sought to see the future made in their constructions. Thus, architecture and science fiction are closely tied. On one hand, the concept of architecture has evolved, and architects have found other fields of development and practice such as entertainment (video games and virtual environments), advertisement, movies, and the design of mixed reality spaces. The digital era has allowed setting up virtual spaces, which leads to modeling them in specialized programs. The quality in the visualization of the architectural object in a virtual setting has improved the production of digital tools, which is why designers can make more sophisticated buildings, that before only science fiction could muster in the cinema. The concept of current architecture depends on visual and construction technology, which allows the architect to make the work and, at the same time, provide greater permeability to generate exchange and appropriations of two simultaneous realities, the physical one and the virtual one.

It is important to remember that spatial relationships are subjected to constant transformation (Harvey, 2001). The constant change of technology and its application to the space and its configuration, have the same goal of transforming the space and the user relationship with it.

A critical revision of the two aforementioned films, *Blade Runner* and *Ready Player One*, was made from these perspectives. The analysis of the conception of architecture through its scenography or staging (Zavala, 2003), focused on what the current transit is like through architectural space using mixed reality technology.

METHODOLOGY

³ Some texts that show the relationship between the conception of space in the cinema and in architecture are: *The Architecture of Image: Existential Space in Cinema* (2001), by Juhani Pallasmaa; *Designing dreams: Modern Architecture in the Movies* (2000), by Donald Albrecht; and *The Wrong House: The Architecture of Alfred Hitchcock* (2007), by Steven Jacobs.

The Architecture in *Blade Runner*

From the day of its release, the influence of *Blade Runner* (1982) on cinema and the perception of the future in urban scenography has been undeniable (Sammon, 2017). Speculation of a possible future, where technology works as a second skin attached to the architecture, represents a paradigm to conceptualize the future mutation of the architectural object (**Figures 4 and 5**).

The architecture of the cinematographic masterpiece, *Blade Runner*, was made based on the paintings of Edward Hopper and the work of Moebius. According to Portella (2019), Ridley Scott said that the influence for the film's stage design came from the paintings of Edward Hopper, which show the future vision of Hong Kong and New York, and the industrial landscapes of Tyneside and Teeside. The most important reference for the director, in the conception of the film's scenarios, was the French magazine, *Metal Hurlant*, and the work of Moebius, as well as *The Long Tomorrow*, by Jean Geraud (1975), projected in the drawings of Syd Mead⁴ (Sammon, 2017) (**Figure 6**).

The idea, within this film, of creating layers upon layers in the architecture, generates a vision of an ever more overloaded city, that can be understood as a reflection of reality, as architecture, without a doubt, suffers or is transformed with the overlapping of styles and trends in successive periods. The response to socio-technological change, at the beginning of the 1960s, allowed diversifying the architectural design proposals⁵. The film shows the influence of technology on the physical plane, but not on the virtual one. However, it leaves the door open to the future mutation and loss of the physical appreciation of architecture as a result of technological intervention. The urban landscape in *Blade Runner* glimpses the loss of the perception of the set-up vacuum. From this approach, it signals the accumulation of construction and technological elements attached to the facades.

Blade Runner was born in a postmodern architecture setting. In the 1980s, postmodernism recovered the shapes of history as a binding instrument to traditional memory. Architecture in this movie is eclectic and iconographic, with classical columns and lit-up signs. The city becomes an ordinary attraction and can be understood from the philosophy of Venturi (1972), in the sense of perceiving the city as a window display, that is to say, the adverts as graphical signs of the urban landscape.

This perception is reflected in a landscape where Greek and Roman columns are mixed, as a reminder of the perfect city or the paradise lost. According to Fernández (2014), the urban context is surrounded by a sad setting, and the architecture is the focal point. In the setting of *Blade Runner*, the oppression and frustration are felt through the constant noise of horns, screams, gases, and ads in a city defined by a chaotic and decadent urban planning, of ghettos with specific economic activities. In the architectural eclecticism, two buildings are included: Ennis House (1924) by Frank Lloyd Wright, and the stores of the Bradbury building (1893) by George H. Wyman, located in the city of Los Angeles. The director included both buildings in the script, and by avoiding more futuristic constructions, he managed to avoid the film's premature aging.

4 Mead was a car designer and was hired to design futuristic vehicles. However, he was involved in many other aspects of the film (Sammon, 2017).

5 Archigram was a catalyst that architects used to have a vision of architecture merged with technology. Richard Rogers, Michael Hopkins, and Nicholas Grimshaw created High Tech. The proposal of Archigram became the result of questioning architectural conventions. In physical reality, the High Tech movement showed that technology could be tangible, and design included it in the new buildings.



Figura 4. The city as a window display in *Blade Runner*. Source: Scott (1982).



Figura 5. The city of SHINJUKU as a window display (2021). Source: *Brindamos por viajar* (<https://www.brindamosporviajar.com/>)

Figura 6. The city in the film *Blade Runner*. Source: Scott (1982).





Figura 7 The “stacks” of *Ready Player One*. Source: Spielberg (2016).

Figura 8 The city of Kowloon. Source: Mead (2017).

Figura 9 Housing in the Western United States (2021). Source: Díez (2021).



The Architecture of Ready Player One. The Metaverse

The concept of "Metaverse" has been used since it came to light in the science fiction novel, *Snow Crash*, written by Neal Stephenson in 1992. The novel handles the concept of *Metaverse* as cyberspace around new technologies, and the mass scale interaction of different users with different identities from those of the physical world. Stephenson (2000) designed a logical extension of the current IT networks, showing their social and cultural impact. Later, the film *Ready Player One* (2016), based on the best-seller by Ernest Cline (2011), used the *Metaverse* concept to present an alternate reality to the physical one.

Cline's work (2011) tells the story of Wade Watts, a teenager who lives in dystopian 2045. In the script, there is a society whose behavior is uninterested and indifferent to the social, political, and economic aspects. The character of James Halliday, who then becomes a magnate, creates a virtual reality mass-multiplayer online (MMO) video game, which he calls OASIS, where almost the entire population is immersed. The video game becomes an escape from reality. The film presents a nostalgic society, where the main character, Wade, a teenager immersed in cyberspace, goes through a virtual territory, trying to get the game's easter egg (Lahoz, 2019).

Three real-world spaces can be distinguished in the film: the stacks, where Wade lives; the resistance; and the offices of IOI, as well as differentiated spaces that define the social distinctions between the powerful and the impoverished class. The scenarios reflect a dystopian future from the eyes of the lead, where the inhabitants seek an easy escape and not a solution in the real world. The physical spaces show the attitude of society, as it has abandoned the idea of living in the real world. The characters in the film do not believe there is any sense in fighting for a world they have already given up on when they have a more attractive option, in every sense of the word.

The towers (the stacks) are where Wade lives with his aunt (Figure 7). The buildings express the social decadence of the inhabitants, a dystopian vision of the future of coexistence in a society. The haphazardly stacked modules, held up by a metal structure, appear as buildings throughout a suburb, showing the disinterest in the urban image and disregard for reality. These are inhabitable scaffoldings. There is a combination of disinterest in the physical space, and the use of state-of-the-art technology. It can be said that the buildings are a kind of shantytown, a spatial setup with no privacy. The space of cordial coexistence is a dynamic one: a virtual space.

The production designer of *Ready Player One*, Adam Stockhausen, recognizes that he was inspired in the walled city of Kowloon, in Hong Kong (Desowitz, 2018). The city of Columbus, Ohio, appears in an aerial view as an overpopulated block, similar to that of Kowloon (Figure 8), or the housing in the western United States (Figure 9). The clip-on architecture, which can be seen in the towers, has a very clear reference, similar to the architecture of Peter Cook and the Plug-in-City (1964) design of *Archigram*. The virtual space architecture in *Ready Player One* is called OASIS, or *Ontologically Anthropocentric Sensory Immersive Simulation*. It is a solution to society's survival, the opportunity to live two different realities, where the daily concerns disappear and everything is possible. This can be seen in the layout of the space and the possibilities to be wherever you want.

In the book and film *Ready Player One*, the *Metaverse* is a virtual space where the users have fun and can see and express themselves as they wish. The *Metaverse* is a future vision of the virtual space, it is a growing and evolving information hub, that contains everything there is online nowadays⁶.

⁶ In the reality we live in, the companies *Epic Games* and *Sony* saw the possibility of creating a *Metaverse*. Both companies outlined a collaboration and invested considerable amounts in what they call a business between creativity and technology, heading towards building a broader and more accessible digital ecosystem for consumers and creators of virtual content (Todo lo que sabemos, 2020).

Virtual reality as technology in the IT area has opened up a series of real-time possibilities. The idea of the *metaverse* is a project with wide-ranging opportunities in the fields of communication, architecture, medicine, entertainment, and research. In the virtual world, as shown in *Ready Player One*, it is possible to do or be whatever one wants.

The technological limits are overcome using the ideas that generate solutions through experimentation. The approach of creating virtual⁷ worlds or cities, that are alternatives to physical reality, has the following principles: Persistence (of what is created or bought while the *Metaverse* persists); mass-scale (so that 1 to 100 people can interact simultaneously); accessibility and interoperability (from any device and place, jumping from one platform or virtual world to another); and the virtual economy with a social impact (the money generated in this world exists).

The current reality shows that, perhaps, cities will not experience further physical interventions, but rather they will be built virtually. The physical space will be visited at the same time as the virtual worlds.

RESULTS

The aforementioned films, whose subject matters are linked to the impact of technology on the perception of the urban and architectural space, reveal the reciprocal impact there is between objective reality and virtual reality, especially in terms of the alienation of appreciation of architecture and the simultaneous coexistence with virtual reality. They also show the transition towards the virtual which, in the first film, takes place in a more market-based tone and through the prioritization of technological objects over architecture. In the second, a frank transition takes place towards a non-physical reality, that enables life experiences, where the physical space is not the star.

As has been seen, this article particularly focuses on the future perception of architecture and its interaction with mixed reality technology. In this way, it must be stated that the relationship lived during the perception process of the architectural space is related to different aspects, two of which stand out: The use of the space, that is to say, what it was designed for (moving, being, cooking, and so on); and the use dynamic that a user establishes in it. The use of technology in the transition of the space has generated a detachment phenomenon in the perception of architectural and urban space (Palomo, 2021). In this framework, the relationship established in these films highlights the forecast made by the directors on the issue of user-architecture and technology interaction as, on one hand, in *Blade Runner*, a cloudy perception of architecture is seen (closer to reality, without a doubt, where the market-technique and technology are more important than the building) and, on the other, in *Ready Player One*, where a complete detachment from the physical space is shown, as well as a move towards the use of the virtual space that ultimately becomes the primary world, where the perception of physical space is abandoned.

In *Blade Runner* (1982), six aspects that are currently experienced can be identified. First, overpopulated cities where, for the user who moves around on foot, the immediate context is formed by stores or informal shops that impede the complete perception of the urban space. Second, is the use of technology as a second skin of old or new buildings. Third, architecture appears in the background in the transition from one place to another, because the space is no longer essential. Fourth, even when visual perception is what completes the sensation that a space transmits, these stimuli are focused on artifacts that show images outside reality. Fifth, only the spaces set aside for leisure or resting activities are presented as lacking technology, also being privileged

⁷ Some examples are the video games *Minecraft* y *Fortnite*.

spaces for the population with high purchasing power -another condition similar to reality. Sixth, new technologies denote coldness.

Meanwhile, in *Ready Player One* (2011) another dynamic that is similar to the modern world is acknowledged: The need to live a different reality, a virtual one, given the social, political, economic, and accessibility circumstances (the users connected to the network can interact with everyone online). In this way, the possibility of being in other spaces appears, using devices that allow seeing them and moving through them, even when the person is miles away.

The reciprocal influence between objective reality and virtual reality projected in the science-fiction films, *Blade Runner* and *Ready Player One*, falls on the perception of the built architectural space, and the design of future spaces.

The use of technology within the architectural space has been given by the dynamic and the performing of different daily, social, educational, and recreational activities. Nowadays, technology applied to different production processes within the architectural space, including art, architecture, and cinematography, is a driver in the optimization of processes for the creation and construction of spaces.

In the era of transition from the physical to the virtual, it is important to layout the immersion in different realities. On one hand, is the reality known as physical and tangible, one of daily knowledge; and on the other, the reality built from immersion in virtual reality, that allows taking the experience of a physical space to the strengthening of the space with virtual elements. In other words, technology applied to the physical space is another reality that can be experienced.

The passing from a vision where the concept of the real architectural space is predominant, to a complex vision of the mixed architectural space is an ongoing process that is being experienced right now in history. Mixed reality allows the user to understand both the virtual world and the primary one. The user is only connected to the physical space through elements of the setting that define the knowledge of the space, such as light, real objects, the auditory stimuli, and the built elements that form the interior vacuums to transit.

Perception within a mixed architectural space implies an innovative experience. The conception of architectural space changes and evolves, and the concept is extended to a virtual dimension.

The use of virtual and mixed reality, with its resulting advantages and disadvantages, is inevitable. The transition that takes place from the architectural space to a vision of the mixed architectural space is an event that, without a doubt, will be seen during upcoming years. For this reason, the architecture of the future must be conceived by designing a mixed architectural space (Palomo, 2021), where physical and virtual reality are found together and in real-time. This leads to considering the practice of architecture in a contemporary and complex way. Virtual reality technology has become a given construction born from a social aspect, but that, at the same time, is the ideal terrain to debate about the similarities and differences between the perception of real space and the virtual created space. It is the field of a dichotomy that will generate new epistemology in this regard. In this sense, mixed reality will be a factor in the future variations of the kinesthetic and visual perception of the architectural space; a factor that will have an impact in terms of the recognition and permissiveness of movement and its limits⁷. All that is left is to await the arrival of mixed reality as an imminent event that will change the daily use of architectural spaces, and life in general.

CONCLUSION

⁷ This will soon happen, in specific circumstances where the real world is integrated to the digital elements that will change its experience during the transition between the two spaces mentioned. That is to say, amid a hybrid territory.

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