

THE RETHORIC OF SPACE REPRESENTATION: FROM DRAWING HERITAGE TO VISUAL COMPUTING

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ARTIFICIAL ARCHITECTURE

DRAWING HERITAGE

DREAMSCAPE

VISUAL COMPUTING

VISUAL RHETORIC

Digital technology connects people in digital space focusing the attention on images, which create and introduce you into artificial spaces. The development of digital technology offers the possibility of living immersive experiences in suitable activities to improve real skills in digital 'room'. That means the possibility of exploring otherwise impossible space, opening to new applications of visual arts. Digital reality explores imaginary worlds through senses, first of all the sight. Hybrid reality becomes actual through visual images. Because of that the imaging requires first of all the management of visual space. Perspective makes believable the space visualization, and the drawing tradition be-

comes the main reference to the design of suitable space, as well in the rhetoric of impossible world.

The architectural drawing enhances the perspective by light and shadow, more than color. Besides the unreal architecture, the graphic art shows interesting representations of abstract mathematical spaces, referred to the concepts of Not Euclidean Geometry.

Some considerations open a further research comparing the drawing tradition with last trends in contemporary imagery, starting with Utopia's imaginary architecture. Today images confirm the role of the perspective, thus the relationship between the eye and the room.

INTRODUCTION

The technology conditions the possibility of visualizing things in the digital space. It helps direct communication between people, and between men and things. It creates new connection spaces, introducing impossible worlds, which are suitable thanks to suitable images. The *Metaverse* promises to be a parallel universe of hybrid realities. Digital simulation makes it possible living immersive experiences in a new dimension of blended realities. Therefore, the digital representation goes towards new dimensions, affecting professional training as well other opportunities in connecting people, performing arts and digital therapy¹. *Visual Computing* has a decisive role. It allows experiential spaces that are different from physical spaces.

The *Metaverse* presents itself as a hybrid relationship world. It overcomes the dichotomy between digital reality and the concreteness of the physical world in a possible utopia. Digital reality can create hybrid spaces parallel to physical reality. They take shape through 'suitable' images, because the digital space may be credible form also in unreal configuration.

We wonder how the multimedia universe will be in the close future, and how it may 'change' our relation space. We only know that it requires artificial images creating new space of relationship between different worlds. While Artificial Intelligence demonstrates its skill in gathering images to build suitable scenes, we search for reference in the drawing heritage, which offers several examples of unreal architecture, both in Utopia representation and in hybridization of building and image (architectural perspective). In fact, the representation of space through plane projection and real scale perspective can simulate architecture (photorealistic render) or create illusory effects (*Quadratura*). Drawing heritage fixes the rules of imaging and the reference is valid as well for digital representation and AI. 3D models of imaginary spaces appear 'actual' because the output image is a perspective projection, and room and shapes look true even

when they are impossible. AI creates visual spaces gathering images in a suitable perspective. Therefore, the key to 'realistic' representation is the respect for the perspective rule that summarizes the geometry of vision from a fixed point of view. This has to be 'external' to the scene, and far enough away to avoid the marginal distortions that Leonardo already underlined. The immersive simulation reverses the paradigms of drawing in the construction of the space's image. 3D modelling changes the management of artificial space image. A projective system displays the space on the monitor's flat surface. The image does not interact with spatial concept and its construction, even orbiting model according to infinite points of view. The image is the linear perspective of a digital reality. It faces the observer, who remains out of the model, even when he can navigate it.

Immersive devices allow experiencing intermediate spaces between the digital and physical worlds. They move the observer into a different room without continuity solution². The visual relationship between individual and image changes. Therefore the images management requires new design parameters. Their definition is tied to the running development of digital tools, without any direct reference but those of drawing and visual art.

The aim of this work is to define formal canons and control parameters in digital spaces, from the analogical experience of drawing and the suggestions of artistic avant-gardes. They combined the complexity of the imaginary space with the immediacy of the Drawing's 2D concept.

Meaningful, even if not exhaustive, references are the unbuilt architecture and Escher's impossible spaces. Imaginary architecture created spaces that live through images. Illusory and utopian ideas come to life from joining representation codes with drawing rhetoric that shows innovative solutions in the image layout.

Preliminary considerations about the representation of unreal spaces in architecture follow the comparison of the space-eye relationship in analogic and digital imaging. The

perspective rule is the starting point for defining the control parameters for space representation. It refers the image's composition to the observer. Comparing possible variants and their effects on the perceptive connotation of immersive images, may help understanding the space's characters and constraints in the new digital reality.

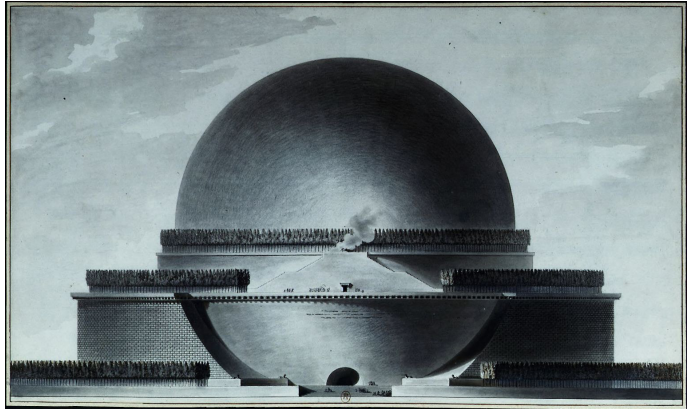
THE DIGITAL SPACE BETWEEN ARCHITECTURE AND IMAGINE

The Architecture heritage shows different ways to merge reality and imagination through visual images capable of distorting the visual perception in hybrid spaces. The first exemple is the fake choir in Santa Maria presso San Satiro (1482), the Milanese church where Bramante simulated a central room (Buratti et al., 2022). The wooden perspective visualizes a greek cross plan in a Tau plan basilica. A double perspective creates an immersive experience of a space that is different from the very architecture.

After that, the *Quadratura* enlarge the room in painted space³. The perspective representation is correct in its geometry but only sometimes coherent with the architecture (Rossi, 2017). Anyway, the projective choice demonstrates an architecture-perspective project focused on images' ambiguity. That confirms that their importance goes far beyond the realistic representation, simulating different architecture in respect of the built room. The modern simulations were born from the relationship between reality and perspective, anticipating virtual images' contemporary role. Utopian architecture lives in drawing, assigning a favoured role to perspective.

Significant examples are the majestic utopian architecture of Boullée and Ledoux (Kaufmann, 1966) with its impressive out-of-scales (Figure 1) and Piranesi's *Imaginary Prisons*, where the correct perspective gives a natural appearance to uncommon architecture or spaces⁴.

Fig. 1 Étienne-Louis Boullée, 1784, *Newton's Cénotaphe*. Retrieved December, 21, 2022 from <https://commons.wikimedia.org/wiki/File:Étienne-Louis_Boullée_Memorial_Newton>.



The contrast of lights and shadows enhances the perspective emphasis that stresses the buildings' dimensions (Figure 2). Perspective and light are the two primary rhetorical tool, also in the suggestions of the historical avant-gardes, in which the 'perspective rendering' is the only project document. The massive dimension of futuristic buildings does not contravene the 'terrestrial' rule of the force of gravity or the architectural composition rule.

The same happens with Historical Avant-Gard. Italian Futurist architects (Godoli, 1983) and German Expressionists, such as Fritz Höger and Eric Mendelsohn (Borsi & Koenig, 1967; Bucciarelli, 1991 exalt the myth of modernity in imposing buildings perspectives.

Along time, the representation adapted the style and its graphic techniques to contemporary taste without modifying the perspectival relationship between man and image.

Close points of view stress the perspective, but it still follows the Alberti's concept: the picture is a frame between the observer and the scene facing him. The observer's involvement remains limited and he faces the pictures, which represent rather than simulating, as in Piranesi's 'shots' and in the 'backlighting' rendering of Expressionism architecture.

Futurist air painting relativized the point of view with the vertical rotation of the optical axis enhancing the observer's flight movement. The rational perspective adds new

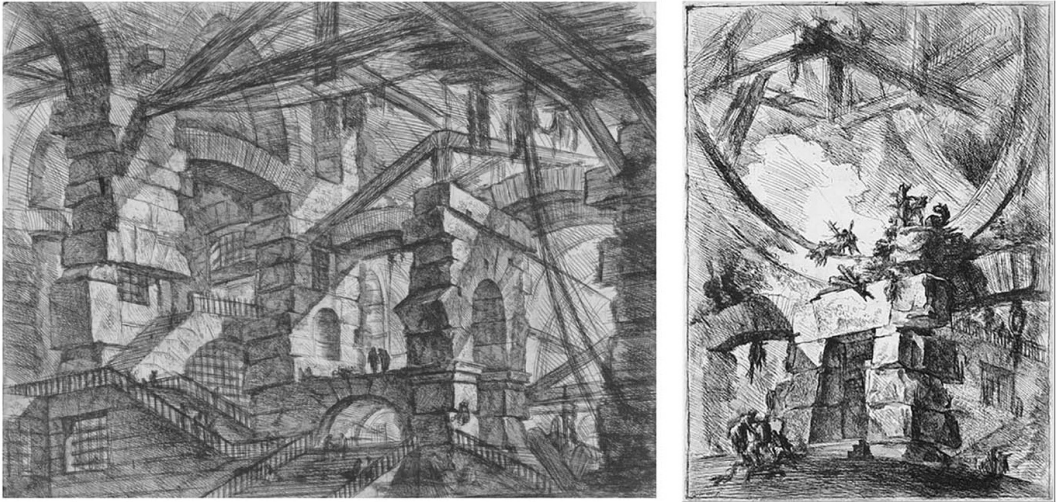


Fig. 2 G.B. Piranesi, 1749, *The Prisons: A perspective of colonnades with zig-zag staircases, The Giant Wheel*. Retrieved December, 21, 2022 from <<https://openartimages.com/search/giovanni-battista-piranesi>>.

potential to representation, but the exaltation of movement does not change the nature of the representation and its graphic description. The observer stays 'outside' the image.

Other interesting suggestions in space and architecture representation refers to Non-Euclidean Geometries.

The related formal research offers other models to immersive tools of augmented reality in the configuration of hybrid space (Ferrero et al., 2009). Gravity conditions architecture also in imaginary projects, while mathematicians can imagine spaces with other rules. Arts visualize their abstract concepts, which inspired even the architecture, forcing the complex shapes of contemporary geometries into the Euclidean space. The sculpture Attilio Pierelli experimented with spaces that are different from the canonical one (Joray et al., 1983). The digital sphere can simulate Pierelli's Euclidean interpretation of the tesseract. The sculptor's mock-up (Figure 3) demonstrates a simple reduction in three-dimensional space. The second shaped the hypercube in the sculptural architecture of a church, in which the geometric reference takes on a solid charge of rhetorical figures. Both have reworked abstract concepts into visible form, using analogical representation techniques.

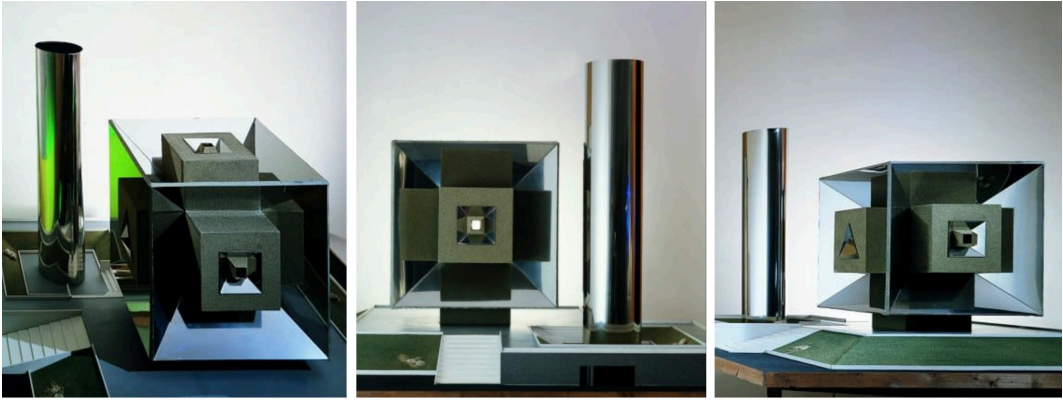


Fig. 3 Attilio Pierelli, 1983, proposal for a church inspired by the geometry of hyperspaces, sculpture in stainless steel and concrete, the cube is 60x60x60 cm. Retrieved December, 21, 2022 from <https://www.attiliopierelli.it/ita/chiesa_iperspaziale#&gid=1&pid=2>.

Escher's graphic research about the visual space applies both Non-Euclidean and perspective suggestions. He deals with curved spaces and interconnected surfaces in two-dimensional images, playing with the projective relationships between reality and image. The two-dimensional space representation derives from unusual and skilful applications of linear perspective, combined with multiple simultaneous points of view. Pictures visualize spaces that are improbable in the Euclidean dimension but not impossible in a digital simulation (Figure 4).

In virtual space, can you build unreal spaces like those of M.C. Escher's prints? Spaces that are not directly attributable to our physical world, such as those inspired by the Penrose tribar, Up and Down or Print Gallery (Locher, 1992)?

Video games hint to a positive answer in the sudden move from one place to another. Otherwise the digital modelling of immersive impossible or non-Euclidean spaces is more complex than their drawing.

Escher's impossible images demonstrate that a drawing may hide visual tricks, while 3D surrounding models do not. The space of architecture is, by definition, a 3D space. Digital space is not, but modelling tools are, because they help just this. Contemporary architecture pursued different models, fitting formal concepts mediated by Mathematics into the 3D space.

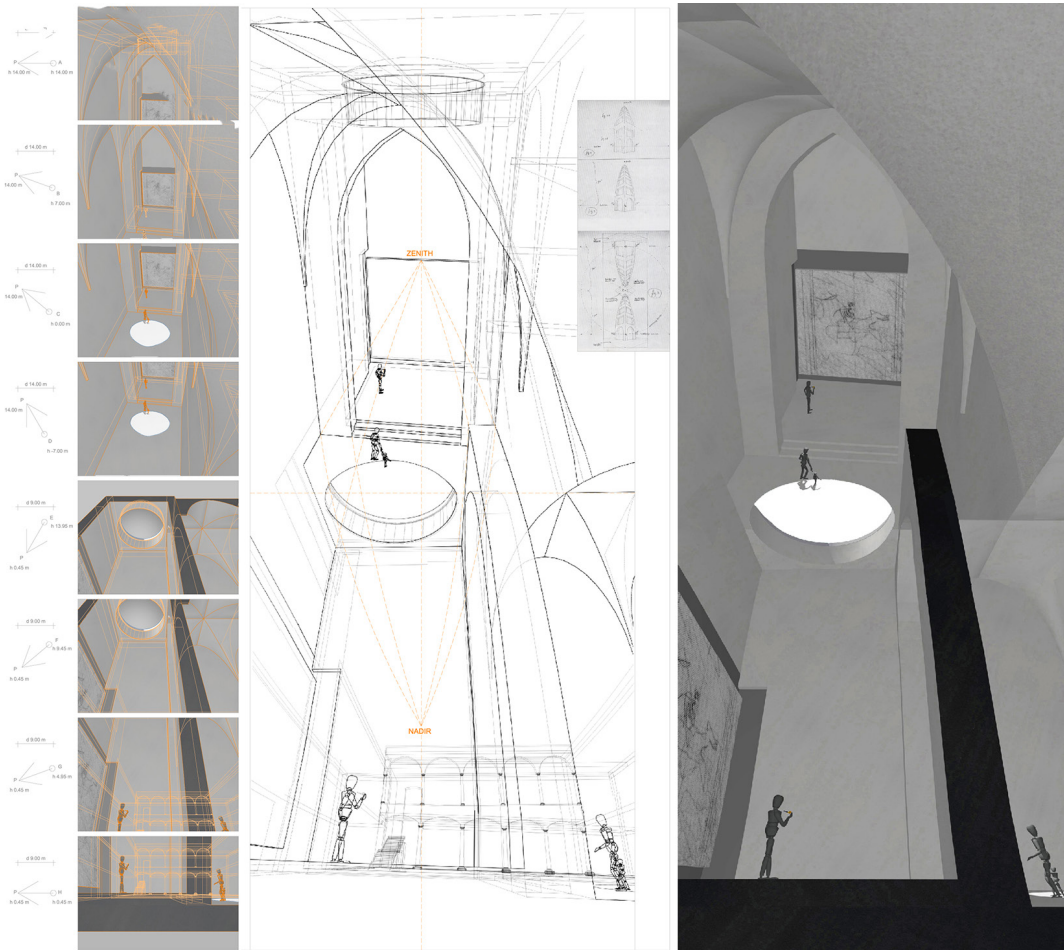


Fig. 4 Mauro Lazzarotto, a.a. 2002-03, *Palazzo Abatellis perspective inspired by Escher's print 'Up and down'*. University of Parma, School of Architecture.

Before being illusion, linear perspective has been the first step to a mathematical representation of space. It is not surprising that it gained a primary role in design as well in architecture rhetoric. However, only a few authors could overcome the limit of the canonical pattern by experimenting with immersive solutions such as Bramante's virtual space of Santa Maria near San Satiro in Milan.

Before digital representation made available simulation techniques, Bramante applied the perspective as a tool, controlling the visual space in a virtual reality. In

his masterpieces, a double perspective projection simulated the immersive fruition of a space different from the detectable one (Buratti et al., 2022). Along the nave, it is difficult to distinguish the 'measurable architecture' from the simulation. This dynamic fruition of virtual and space anticipates the concept of 'phygital', coined about the double component of augmented reality. The virtual image makes itself real in the immaterial room of the conceptual building.

Bramante's perspective device is not a simple deception but a virtual simulation that materializes an immersive experience around the visitor. It is something more than a solid perspective, and suggests the effectiveness of digital experimentation with 'different' spaces.

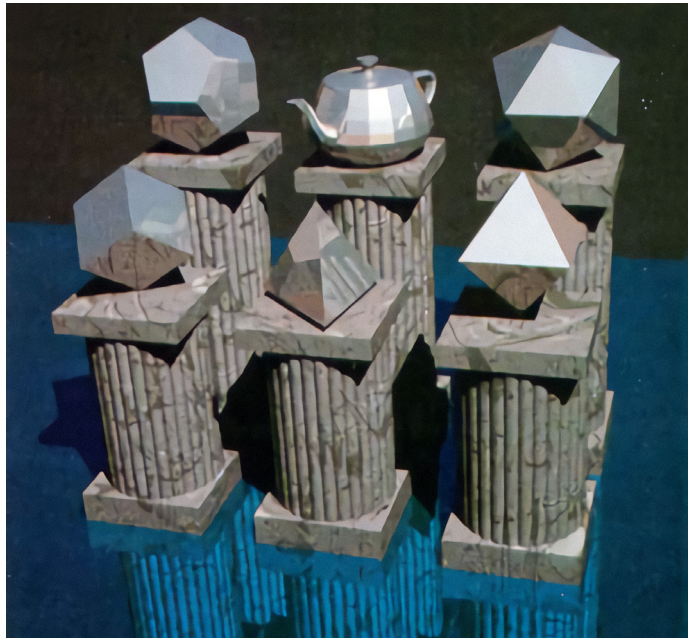
The digital simulation requires framing the spatial representation in several projective solutions, as Escher sometimes did. From there, it is possible to reconstruct the geometry representing it in the digital universe. Here it is possible connecting unstable situations with sudden passages, and to conceal any inconsistencies.

NEW LANGUAGES OF VISUAL SPACE, FROM COMPUTATIONAL SIMULATION TO SENSORY EXPERIENCE

Up here the imaging heritage. Further suggestion came from the survey of imaging trends in late digital art.

By drawing, artists and designers sketch out their ideas in visual scenarios. Then they refine and develop through digital manipulation techniques, modelling, rendering and animation. All applications the Euclidean space. Despite that, they create spaces going over the realistic, lifelike illusion of rendering because of their recognizability as 'imagination'. They do not search for imitation but they follow human creativity. Because of that they are more captivating than AI products.

Fig. 5 Arvo, J. & Kirk, D., 1987, *The Six Platonic Solids CGI*. Retrieved December, 20, 2022 from <https://thereaderwiki.com/en/Utah_Teapot>. Journals cover. The image humorously adds the Utah teapot to the five standard Platonic solids.



Digital renderings have long served architects, interior designers and others to help visualize spaces before their construction begins. Over the past few years, the increased performance of computer components, coupled with the exploration of new software and mathematics, has allowed the establishment of new language formulas and design methods. In this case, two new modes of expression, independent of each other but with many common features at their base, have come into being: artificial architecture and dreamscapes.

Artificial architecture is a bold new emerging direction in computer-aided design that is concerned with developing computational methodologies and algorithms that create natural-looking forms. It allows meaningful solutions to architectural design problems to be generated, and the computer is seen as a collaborative entity in the design process, rather than merely an assisting tool. Disciplines as diverse as computer science, artificial intelligence, architecture, and computer graphics intersect in this area (Sandhana, 2022).

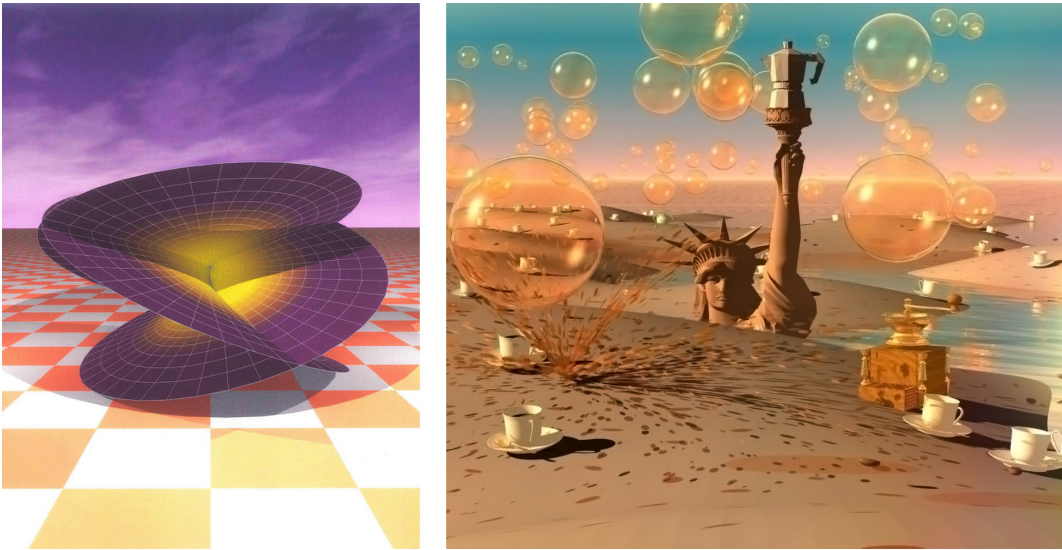


Fig. 6 Regge, T. *Viola del Pensiero Debole*, 2001; *Coffee Liberty*, 2002, CGI. Retrieved December, 20, 2022 from <http://www.facendoaltro.it/2019/04/14/tullio_regge/>.

In the beginning, CAD software was used to better visualize design concepts in the designer's mind. Since their inception, punctuated by such notable personalities as those of William Fetter⁵ and Martin Newell⁶, they have been automating an increasing number of repetitive tasks and have been used as assisted tools (Figure 5).

It is no coincidence that this potential was immediately investigated by mathematicians and physicists; Tullio Regge⁷ himself, with his 'bricolarte', expresses his passion for the world of numbers by entering the design discipline using it as an interface (Figure 6).

These are the stages in which CAD, while performing complicated calculations, merely visualizes, stores and modifies designs or processes in the designer's mind. To date, the machine can replace the more abstract preparatory stage normally assigned to drawing. It defines the structure, which specifies elements such as possible configurations, types of elements to be used, and the modularity of the overall design. Arturo Tedeschi⁸ investigates how currently the use of these digital technologies blurs the boundary between disciplines and emphasizes the



Fig. 7 Tedeschi, A. *AI Visual Merchandising, AI Architecture*, 2022, Midjourney. Retrieved December, 20, 2022 from <<https://www.arturotedeschi.com/aiarchitecturemidjourney>>.

semantic and emotional values of objects through their morphology. He adds a level of complexity beyond human manual skill through the use of digital processes such as *Algorithms-Aided Design* (AAD), artificial intelligence and virtual reality (Figure 7).

In the realisation of the two previous images, Tedeschi employed *Midjourney*, one of the most innovative *Deep Learning* platforms at the moment: by means of a textual command input, descriptive of the scene to be visualised, the artificial intelligence recodes the text to export it in different versions through images. From these it is then possible to create further variants and modifications. Many visual artists exploit similar experiments to sketch out their initial idea. It is a tool for outlining an initial form of a personal vision that will then be translated into a finished work using their main creation methods.

Artificial architecture creates completely new structures by simulating complex iteration phenomena or by using generative processes. Scripting languages are innovatively integrated into CAD software, allowing algorithms to actively participate. Algorithms become collaborators in

the design process and use genetic systems, formal grammars and mathematical models to design unpredictable and unique structures. Artificial Architecture thus refers to the design and construction of structures, buildings and other physical spaces created with artificial materials and techniques. This can include anything from skyscrapers and office buildings to houses, bridges and even entire cities. The constant is the reference to Cartesian space.

Dreamscape, on the other hand, is the term used to describe imaginary landscapes and settings that explore the imperceptible dimension of dreams. These dreamscapes can consist of a variety of elements, including people, animals, buildings, and natural landscapes. They often reflect the creator's subconscious thoughts, feelings, and desires. In general, the relationship with drawing is one of mutual support and interdependence, as drawing is often used as a tool to create and represent the crucial first steps of creation, the act of externalizing the idea. Ultimately it supports the goal of dreamscape creation, which is to create an immersive and imaginative environment that captures the viewer's attention and transports him or her to a different world. This end can be achieved through a variety of techniques and approaches, depending on the specific goals and needs of the project, as well as the personal style and vision of the artist or designer.

DREAMSCAPES: POSSIBLE, IMPOSSIBLE OR UNREAL SPACES

Dreamscapes and *Artificial Architecture* intersect in the use of virtual or augmented reality, which allows people to experience and interact with digital environments looking like real physical spaces. This technology is often used in game engines, but it has also been used for other purposes as well, such as creating immersive simulations or allowing people to explore and experience virtual worlds. They

are used in art, film, corporate image and other forms of media to create immersive and visually interesting environments for the viewer or player to explore.

A new generation of digital artists is trending with dreamscapes that cannot, or will not, be built in the physical world. An aesthetic vanguard that explores the infinite ways of conceptualizing and expressing utopian oases and dystopian scenarios. Some artists may use more realistic styles, using detailed lines and lighting to create a sense of depth and verisimilitude. Others may use more stylized or abstract approaches, using simplified shapes and aberrated perspectives. The work combines several disciplines: 3D, of course, as well as architecture, design, still-life, and landscape.

Observing the evolving phenomenon on social media channels, Elli Stuhler presented emerging authors in *Dreamscapes & Artificial Architecture* (Levy, 2022) at a time when spatial modeling and visualization software “has the potential to be immensely liberating”. The curator states that:

we have never before had such capacity to render the world as we would like it to be [...] Modeling software is not industry-specific; you don't have to be an architect to design a building, or an interior designer to render a space. (Levy, 2022)

According to Deyan Sudjic, director emeritus of the Design Museum in London:

today if you walk into an architectural firm or one where video games are designed, you don't see much difference. Pen and paper have disappeared from the designer's work, and visualization technologies have, so to speak, taken power out of his hands: the realism of renderings has greatly increased the interaction with the client, who previously could not spatially understand the plan of a building while now he can have more say. These software programs give realistic shape to any vision: the Art Nouveau period comes to mind,



Fig. 8 Six N. Five, *Cycles*, 2022, CGI animation on screen, W1 Curates, London. Photo of the gallery. Retrieved December, 20, 2022 from <<https://www.w1curates.com/current-and-upcoming-events/six-n-five>>.

an explosion of possibilities. But also the visionary work of Superstudio, which was already going in this direction in the 1960s. (Modigliani, 2021)

On the occasion of the Milan 2022 *Triennale* with the generic theme *Unknown Unknowns*, comes one more hit: the Czech Republic pavilion curated by Studio Okolo of Prague. In the installation, some *dreamscapes* are printed on large panels, backlit in order to not lose the relationship with their conception in digital light. It is told how the new movement has become prominent on the web not only because of the recent pandemic era, but also because of the uncertainty of war and its impact on daily life and global security. Crisis, as is recurrent in history, leads to new interpretations of the world we live in in order to escape from it, ideas that become places to find shelter and plan possible future solutions.

A review of artists with different goals thus emerges. Fame has led Ezequiel Pini's *Six N. Five studio*, an award-winning Argentine designer and digital artist based in Barcelona, to collaborate with names such as *Apple*, *Burberry*, *Cartier*, *Cassina*, *Facebook*, *Microsoft*, *Nike*, and *Samsung*. The latest work commissioned from the studio in 2022 was for the *W1 Curates gallery* in London, titled *Cycles* (Figure 8) to approach the passage of time as a visual poetic metaphor.



Fig. 9 Reisinger, A. & Hades, A. & RAC, *Arcadia* (2021). CGI. Single frame from the opera. Single frame from the opera. Retrieved December, 20, 2022 <from <https://vimeo.com/639528236>>.

In addition to the interesting dynamic façade as an attraction from the outside, the immersive interior space consists of perimeter walls of 63 linear meters covered entirely with high-definition LED panels that allow the actual boundaries of the architecture to be transcended.

A perceptual breakthrough that surely harks back to the illusion of pictorial *trompe-l'oeil*. The words used by the gallery as a description quote:

the scenic architecture plays with the perception of depth and the extension of the physical world to an infinite and untouchable reality, while setting the stage for multiple situations occurring simultaneously. Natural lights emphasize a timeline that tints a static environment as character elements evolve and interact with the space in a performance that becomes inherently chaotic in time. (www.w1curates.com/current-and-upcoming-events/six)

Widening the field of research, not from a spatial point of view but of the interconnectedness of the arts, is Andrés Reisinger. Of Argentine origin as well, and based in Barcelona, he has found a novel way to conquer design territories, moving from the digital to the real world. With the 2021 narrative short film *Arcadia* (Figure 9), the result of an interdisciplinary collaboration between artist Andrés Reisinger, musician RAC and poet Arch Hades, a journey

through our collective existential crisis of the 21st century is undertaken. Hades' narrative voice takes us through the five chapters, each of which pays homage to a particular philosopher, while also referencing dozens of poets, artists, authors and thinkers who have shaped contemporary human psychology and culture.

Central becomes the definition of simulacrum, which is investigated repeatedly highlighting the fine line between fiction, simulation and reality. Christie's auction house introduces the work to the public with a fitting explanation:

Arcadia explores the anguish of our modern loneliness, alienation, status anxiety, and depression [...] all brought on by our pervasive consumerist phantasmagoria of a culture. It urges us to overcome this nihilism by refining our individuality in solitude and nature, before adopting a mood of rebellion and questioning that seeks to bring about change in society, while on an individual level encourages us to bring meaning to our struggle by embracing passion, self-ownership, beauty, and art. (aorist.art/program/collaborations/christies-arcadia)

Once we enter the ethereal world of these visions we meet other recurring protagonists on the *dreamscapes* scene-Joe Mortell, Visual Citizens, Alexis Christodoulou, and Hugo Fournier to name a few, associated with dreams of disarming clarity due to the quality and lucidity of the production process (Figure 10). Dreams in high resolution and usable outside the subconscious, conveniently from any digital device. They transport viewers into worlds that blend different artistic movements and design history through time. Worlds that often include references to famous figures, blurring the lines between what is visionary and what is trendy. This freedom of representation is particularly useful for advertising purposes, as it allows people to virtually browse and experience products in unique and unconventional places. They invite people to reconsider the emotional role of design and reflect on how the built environment affects the psyche (Stone, 2021)



Fig. 10 Fournier, H. *Desert Pit*, 2022, CGI. Retrieved December, 20, 2022 from <<https://www.instagram.com/p/CNe-ZCaMUcx/?hl=it>>. Visual Citizens, *Digital Cover*, 2022, CGI, Elle Decoration NL. Retrieved December, 20, 2022 from <<https://www.instagram.com/p/CNe-ZCaMUcx/?hl=it>>.

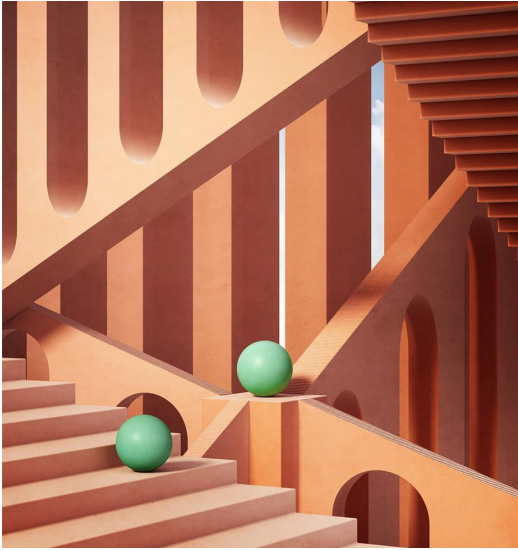
The influence of past culture through direct references is particularly pronounced among Italian artists: Enrico Capanni, Massimo Colonna, Riccardo Fornoni, Stefano Giacomello, and Notoo Studio gain international fame with hybrid projects between historical research and set design (Figure 11).

As Adam Štech suggests:

The historical context of the projects is expressed in many examples of visionary and imaginative work from the past, visions of neoclassical architects, surrealist painters, and contemporary digital artists reveal a chronicle of research into the unknown and the dream. (Štech, 2022)

From this incipient spring projects with references to artists such as Escher and De Chirico, to avant-gardes such as *Superstudio* and *Archizoom*, and to local landscapes such as that of the Scala dei Turchi in the province of Agrigento.

Using two-dimensional representation, it is London-based architect Charlotte Taylor who coordinates many of the collaborations with artists from around the world. Illus-



tration for her is a way of testing ideas, exploring colors and shapes, imagining spaces that other professionals can then help shape into digital reality (Figure 12). As she states:

my work is a sum of many outputs. Be it architecture, photography or illustration, all of these mediums play a part in each other's process. (<https://www.des->

Fig. 11 Capanni, E. *Up is Down II*, 2021. Retrieved December, 20, 2022 from <<https://www.instagram.com/p/CNe-ZCaMUcx/>. b>; Notoo Studio, *Inside Art*, 2018, CGI. Retrieved December, 20, 2022 from <<https://www.notoostudio.com/it/works/inside-art/>. c>; Fornoni, R. & Taylor, C. *Villa Saraceni at Scala dei Turchi*, 2020, CGI. Retrieved December, 20, 2022 from <<https://www.archilovers.com/projects/271533/villa-saraceni-alla-scala-dei-turchi.html>>; Colonna, M. *Digital advertising*, 2021, CGI, Antonio Lupi Design. Retrieved December, 20, 2022 from <<https://www.archdaily.com/982382/let-the-light-in-the-lightness-of-translucent-baths-and-sinks>>.

ignandlive.pub/interviews/scaling-it-back-to-reality-with-charlotte-taylor)

CONCLUSIONS

The cases cited above demonstrate that there are different approaches to creating a dreamscape environment. The specific techniques and methods used depend on the medium and objectives. Some common techniques that can be used to create visualizations include:

- combination of real-world elements with fictional or imaginary elements can create a sense of familiarity and grounding within the dreamscape while allowing for the introduction of more fantastic or surreal elements;
- use of distorted or exaggerated perspectives can create a sense of disorientation and facilitate the introduction of illusionistic effects;
- play of light and color, the use of unusual or exaggerated color schemes and lighting effects can help create an atmosphere untethered from reality;
- use of rhetorical figures such as symbolism and metaphor, the inclusion of symbolic or metaphorical elements can help convey deeper meanings or themes within the work;
- experimentation with forms: distorting or abstracting the shapes of objects and environments can create a sense of unreality and help to alienate the viewer.

Ultimately, paraphrasing André Reisinger, to create an ideal world it is enough to visually delineate an imaginary space, because beyond a tendency creating dreamscapes is a necessity.

NOTES

1 Digital Therapy opens to new interesting applications with the experience of dystopian spaces in mental disease care.



Fig. 12 Taylor, C. *Fictive Pool*, 2018. and C. *Sottsass Composition II*, 2018. Digital paintings. Retrieved December, 20, 2022 from <<https://www.ignant.com/2018/06/18/charlotte-taylors-architecturally-inspired-paintings/>>.

2 About that it is interesting the parody of the film *Everything everywhere all at once* by Daniel Kwan and Daniel Scheinert (2022).

3 A wide research focused on Architectural Perspective verified the role of real scale images in interior space configuration (Valenti, 2017)

4 The second edition of 1761 collects 16 engravings between 1745 and 1760. The engravings depict interiors with robust structures with a complex and imposing space, full of stairs and lifting machines; they present recurring characteristics, such as the light coming from the right and the lack of recognition of the main elements of the perspective system, in particular, the horizon and the landline.

5 In 1964 William A. Fetter, art director of the *Boeing Company* in Seattle, Washington, oversaw the development of a computer program that enabled him to create the first three-dimensional images of the human body through computer graphics. Using this program, Fetter and his team produced the first computer model of a human figure for use in studying the design of aircraft cockpits. It was called the *First Man* or *Boeing Man*.

6 In 1975 Martin Newell, a computer graphics researcher at the University of Utah, created the *Utah Teapot* or *Newell Teapot*, a mathematical model of a common teapot with a rather simple shape that became a standard reference object and something of an icon in the computer graphics community.

7 Tulio Eugenio Regge was an Italian theoretical physicist. He also tried his hand as a designer in the 1970s, achieving great success with the Detecma armchair, produced by the *Gufram company*.

8 Arturo Tedeschi is an Italian architect, computational designer and researcher. He is the founder of *A>T studio*, which promotes a new kind of algorithm-based design.

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