

**María Isabel
Fernández-Naranjo**

Magister en Habilitante en Arquitectura,
Estudiante de doctorado.
Docente externa, Escuela Técnica Superior
de Arquitectura de Sevilla, Departamento
Proyectos Arquitectónicos
Universidad de Sevilla, Sevilla, España
<https://orcid.org/0000-0001-8297-8640>
mfernandez15@us.es

Isabel Cuerda

Arquitecta.
Estudiante de Máster. Asistente Honoraria,
Escuela Técnica Superior de Arquitectura de
Sevilla,
Departamento Proyectos Arquitectónicos,
Universidad de Sevilla, Sevilla, España
<https://orcid.org/0009-0002-4501-947X>
isacuedel@gmail.com

Tomás García-García

Doctor en Arquitectura,
Profesor Contratado Doctor,
Escuela Técnica Superior de Arquitectura
de Sevilla, Departamento Proyectos
Arquitectónicos
Universidad de Sevilla, Sevilla, España
<https://orcid.org/0000-0003-4575-7683>
tgarcia@us.es

MICROGRAPHS OF INTANGIBLE SPACE. TRIPTYCHS, PAINTINGS AND GLASS-GRAPHS OF HABITABLE ARCHITECTURES

MICROGRAFÍAS DEL ESPACIO INTANGIBLE. TRÍPTICOS, PINTURAS Y VIDRIO-GRAFÍAS DE ARQUITECTURAS DEL HABITAR

MICROGRAFIAS DO ESPAÇO INTANGÍVEL. TRÍPTICOS, PINTURAS E VIDROGRAFIAS DE ARQUITETURAS DO HABITAR



Figure 0. Hans Hollein inhabiting his mobile office (Mobiles Büro), under the gaze of the ORF team, 1969. Source: Authors' composition, 2022.

The article is framed in the development of the Doctoral thesis: Tears of architecture. Graphic records of intangible space, from the Doctorate in Architecture program at the University of Sevilla.

RESUMEN

El Jardín de las Delicias (1490-1500) es un tríptico formado por tres paneles frontales sobre el paraíso y el infierno que precisan del espectador para ser abatidos, cerrados y obtener una nueva visión: la Creación del mundo. En esta obra, El Bosco representa pequeños coágulos de aire que hablan de arquitecturas encapsuladas y lugares introspectivos, donde las leyes parecen haber desaparecido. Este ensayo pone de manifiesto la existencia de estos diminutos espacios insertos en el ámbito arquitectónico; trípticos que, en lugar de ser pintados, han adquirido una tercera dimensión para formar parte de obras como Casa Ugalde de Coderch (1953), Casa-museo Soane (1820) y Casa Vicens de Gaudí (1885). Una inmersión arquitectónica en tres proyectos de habitar que nos permite la creación de catálogos con micrografías de "lágrimas de arquitectura": burbujas atrapadas en la masa vitral que nos muestran cartografías de un espacio intangible y desconocido. Micrografías del espacio intangible nos sugiere cambiar la escala y sumergir al habitante en un micromundo en busca de nuevas expresiones que permitan concebir una arquitectura más gráfica y creativa.

Palabras clave: aire, vitrales, pintura al óleo, cartografías, escalas

ABSTRACT

The Garden of Earthly Delights (1490-1500) is a triptych with three panels depicting paradise and hell. These panels require the viewer to fold and close them to obtain a new perspective: the creation of the world. In this work, Bosch portrays small air pockets that suggest encapsulated architectures and introspective spaces, where conventional laws seem to have vanished. This essay highlights these tiny spaces inserted in the architectural environment. Triptychs, instead of being painted, have acquired a third dimension to form part of works such as Coderch's Casa Ugalde (1953), Soane's Casa-Museo (1820), and Gaudí's Casa Vicens (1885). It is an architectural immersion in three living projects that enables us to compile catalogs of micrographs showcasing "architectural droplets": bubbles trapped within the stained-glass mass, revealing cartographies of an intangible and undiscovered space. Micrographs of intangible space suggest a change in scale, immersing the inhabitant in a micro-world searching for new expressions that enable them to conceive a more vivid and creative form of architecture.

Keywords: air, stained-glass windows, oil painting, cartographies, scales

RESUMO

O Jardim das Delícias Terrenas (1490-1500) é um tríptico composto por três painéis frontais sobre o paraíso e o inferno que exigem que o espectador os feche para obter uma nova visão: a Criação do mundo. Nesta obra, Bosch retrata pequenos aglomerados de ar que falam de arquiteturas encapsuladas e de lugares introspectivos onde as leis parecem ter desaparecido. Este ensaio destaca a existência destes pequenos espaços inseridos no ambiente arquitetônico; trípticos que, em vez de serem pintados, adquiriram uma terceira dimensão para fazer parte de obras como a Casa Ugalde de Coderch (1953), a Casa-museu Soane (1820) e a Casa Vicens de Gaudí (1885). Uma imersão arquitetônica em três projetos de habitação que nos permite criar catálogos com micrografias de "lágrimas de arquitetura": bolhas presas na massa do vitral que nos mostram cartografias de um espaço intangível e desconhecido. Micrografias do espaço intangível sugere a mudança de escala e a imersão do habitante em um micromundo em busca de novas expressões que permitam conceber uma arquitetura mais gráfica e criativa.

Palavras-chave: ar, vitrais, pintura a óleo, cartografias, escalas

INTRODUCTION

A new dimension in the Garden of Earthly Delights, Hieronymus Bosch, 1490-1500

It is surprising to see how someone with a stable, resolute life and without any fuss so far known can produce with his hands such enigmatic and exotic creations, representations of surreal scenarios so far removed from the everyday world. Jeroen Anthoniszoon van Aken, who signed under the name of his hometown Den Bosch (Hieronymus Bosch), lived through the Dutch Renaissance of the late 15th century, a time when some progress, cultural flourishing and social transformation were beginning to condense, despite the persistence of the mentality characteristic of the late Middle Ages, where people's daily lives were profoundly influenced by religion, superstition, and the persecution of heresy (Vivancos, 2017).

In an attempt to break with dogmas and express critical thinking in an almost encrypted form, Bosch created his own artistic language, characterized by hybridizations between human and animal nature, by the presence of water as a deity who decided between life and death, and by the incessant use of allegories and symbolism. Oil paintings gave a glimpse of that "boiling world of passions" (Devitini, 1998) that, for most mortals, is retained in the subconscious.

It was in this context of exuberant imagination that the Garden of Earthly Delights (1490-1500) was born, a triptych conserved in the Prado Museum (Madrid) that deals with themes of human morality, good and evil, sin and forgiveness, which is the object of countless studies due to its representative complexity. A single visit of detailed observations was enough to recognize in the piece an exhaustive mastery of composition and games of scale under the same perspective, with pale-colored buildings formed by a mixture between geometric profiles and vegetable plantations, which could well have been a source of inspiration for Gaudí centuries later. Superpositions and juxtapositions of elements and scenarios denote the author's prior knowledge of space, how he experiences it, and how he manifests it (Figure 1).

Within this amalgam of drawn forms and architectures, certain air capsules emerge that seem to have no gravity and that contain different information inside, an unusual contribution that distinguishes it from the rest of his artistic production. They represent a type of space that has not been addressed until now: a place suspended, inserted, and, in turn, separated from the outside by a membrane that prevents its tactile manipulation. It took a work as essential and primary as humanity's destiny and life to experiment with this kind of dimension with these architectures of intangible spaces.



This study proposes to make, from a complete vision of the work, an approach to its translucent structures to analyze the graphic records that have taken place in them and their possible transfer to the architectural field. A journey to the minuscule within the global that generates new keys in understanding the space it encloses, providing new approaches and perspectives.

Figure 1. Macrography: Triptych of the Garden of Earthly Delights, Bosch, 1490-1500. Front panel. Source: Composition prepared by the Authors, 2022.

The study of the vitreous spheres

Happiness is like a crystal; it breaks right away. (Flemish proverb, 1401).

Throughout these centuries, experts in the field have established numerous conjectures about the meaning and symbology of these transparent spheres. Rarely had spaces of this type been represented in the artistic field or described in the literary field of the time; they were unique, and this increased uncertainty and imagination. Many researchers interpreted that the translucent material was glass and that it was cracked as a metaphor for fragile and ephemeral happiness. Others relate it to alchemy or with certain sexual connotations, given the scenes that took place inside.

Leaving aside symbolic interpretations and focusing on a visual and objective analysis of the space they contain, these air capsules or “transparent amniotic bags” (Belting, 2009) are still an undulating volume with an apparently venous structure that supports the element and gives it shape and skin; an architecture with membranes that establish a border and divide areas, leaving alongside the external world while harboring life inside. They are watery tears that emerge in

THEORETICAL FRAMEWORK



Figure 2. left: Approximations. Right: Back panel. Source: Composition prepared by the Authors, 2022.

Figure 3. Technical study conducted by Van Schoute and Garrido, 2001. X-rays on the triptych of the Garden of Earthly Delights. Left: Approximations. Right: Back panel. Source: Composition prepared by the Authors, 2022.

an environment on which they depend but do not establish a connection beyond the gaze.

Each teardrop presents a different context: a naked couple, sitting on this skin that surrounds them, intimately looking at one another; a group of three people standing, talking about any private topic with only half a capsule over their heads, suspended, without touching the bodies; a blue hedgehog or similar animal, with a crest of spikes that does not graze the membrane that encapsulates them, without apparent movement, protected. As for their position, these three tears are scattered in the central panel, dedicated to the earthly paradise. The other two side panels, hell, and heavenly paradise are empty of tears as if they acquired value only in a central position. The surprising thing happens on closing the triptych, when all the information is exposed in an image, a single transparent capsule that holds the entire world, with an inscription that heads it: "*For he spoke, and it came to be; he commanded, and it stood firm.*" (Psalm 33, 9. The Holy Bible, Old Testament).

At that moment of closing, the observer faces the large transparent sphere. All the inner tears are summarized and condensed into a single capsule, wanting to show the existential principle: the cosmic image. The universe is represented in miniature, a microcosm that gives a glimpse of how small the world is compared to the magnificence of the divine order (Figure 2).

Between 1980 and 1990, Professor Roger Van Schoute and Dr. Carmen Garrido conducted a technical study of the work published in

2001 (Garrido, 2016). In it, mechanical eyes, X-rays, and infrared rays were arranged to clarify some of the uncertainties accumulated over the years and capture the imperceptible details or any information of the strokes contained in the underlying surface of the piece. This same resource has been used in the architectural field; architect Beatriz Colomina shows this in her book "X-ray Architecture" (Colomina, 2021), where radiography reveals the internal part of the object of study. Both are examples of the restlessness of going beyond the surface to immerse oneself in the deepest layers of a work. In this case, the study of Van Schoute and Garrido (2016) showed the first sketches made schematically before painting, the first composition that placed the elements on stage, with certain hesitations and some subsequent alterations (Figure 3).

Transparencies and graphic records: Tears of architecture

The technical study's results were enlightening regarding the spaces in this essay: the bubbles were preconceived from the beginning without subsequent modifications. The methodology to provide them with transparency was innovative since, instead of painting them on the panel, a layer of quick-drying varnish was applied over the existing paint and, even when fresh, it was scraped to reveal what was in its background so that the bubble was wholly inserted into the medium where it was. A new methodology committed to obtaining a specific result in its transparency. They were captured as an absorption, a silence, a pause within the chaotic world where they find themselves.

Every detail had a motive, a cause. The musical notes of the pentagram create a particular currently readable melody. Every animal, fruit, building, person, and space is part of his knowledge, starting from worldly knowledge. The question then arises as to how he came to handle this type of encapsulated space, how he could have seen or lived them to get into each of these bubbles and leave them embodied in the work. These questions made neuroscientist Sophie Schwartz (2016) carry out a cerebral study to see if the information came from the dream world, remaining in mere illusion or reality, to which she concluded:

The world of dreams is an authentic simulation of the real world. The objects that populate our dreams are those of our everyday experience. Maybe they are not the same size, but the basic elements arise from our experience. (Schwartz, 2016)

It is unknown how El Bosco came to possess these architectures. However, thanks to his methodology of scraping and inserting the void into the painting, he left us the oldest known graphic record of intangible space.

This is a work that works on various scales. According to the assessment provided by the observers, the available approximation layer adds new information. The air capsules are revealed in the central panel, a hedonistic

METHODOLOGY



Figure 4. Hans Hollein inhabiting his mobile office (Mobiles Büro), under the gaze of the ORF team, 1969. Source: Composition prepared by the Authors, 2022.

scene where each bit player is shown openly and unrestrained. The motivation for finding them in architectural contexts makes us think of intimate and safe spaces where the inhabitant could explore their individuality and desires without restrictions in the form of a home. Therefore, three examples of domestic architecture were chosen where the mechanism of fixation on the small, of the magnifying glass and of the zoom allows one to discover these spaces of new natures. To search, to travel to the microworld to tell, using graphical symbols, what is found in it. Discovering the graphic microcosm that encloses the architecture becomes this essay's methodology.

RESULTS

Three triptychs and three architectural approaches

Attention changes the size of things. It gives importance to selected parts of the world (Seguí, 2012).

Hans Hollein's mobile offices are the human-scale representation of these architectural tears. Four centuries after the Garden of Earthly Delights, the Austrian architect wanted to design a mobile space that could accommodate people's movement. A small box with wheels was unfolded and turned into air wrapped in transparent plastic (Hernández, 2014). He intended to respond with architecture to society's growing mobility and changing needs, to create something constantly adapting to its environment (Elvira, 2022). Somehow, this architect made a perceptive game of scale, giving life to the tears of El Bosco. He entered them, creating an ephemeral, transparent, and encapsulated architecture, inhabiting a space where he could not be touched (Figure 4).

The methodology of the approximation and the detail enacted in the Garden of Delights continued the search for microcosms in the purely architectural field, with the idea of contributing new values to



the projects. The methodology was applied for four years (2021-2024) to several doors and windows of recognized architectures, presented as diptychs, triptychs, or polyptychs, ready to be analyzed. Immersed in an abstract world by its microscale, inaccessible, contained, uninhabitable capsules of a single cold and transparent material appeared, but at the same time, tears with enigmatic, sudden, and unusual spaces that could well be related to the architectural work where they are located, or function as a springboard for a new understanding of the space they inhabit.

In this way, the following study assembled catalogs of different works formed by micrographs of approximations, from which the graphic results of three will be presented: urban protrusions, floating cosmos, and architectural microflora. The microphotographic capture was carried out using a telescopic lens with extension, a glass meter, and a crack meter. Subsequently, these *catalogs of tears* were analyzed using a computer program that recognizes characteristics of a microimage to analyze all the physical data of said characteristics scientifically.

The first diptych is of Casa Ugalde, 1951-53, built by Coderch in Caldes d'Estrac as an urban extension of the Mediterranean. This diptych is located in the main room on the first floor, an intermediate element between the interior room and the private terrace (Montaner, 1998). This place frames the horizon line between sky and sea (Figure 5).

In this first experience, the spaces detected are shown as dynamic and floating tears, drops printed with the feeling of wanting to transport messages from one place to another. Sometimes, they seem to come out of the thickness of the glass itself and merge with outer space to

Figure 5. Macrography -
Diptych of Casa Ugalde. Source:
Preparation by the authors,
2020.

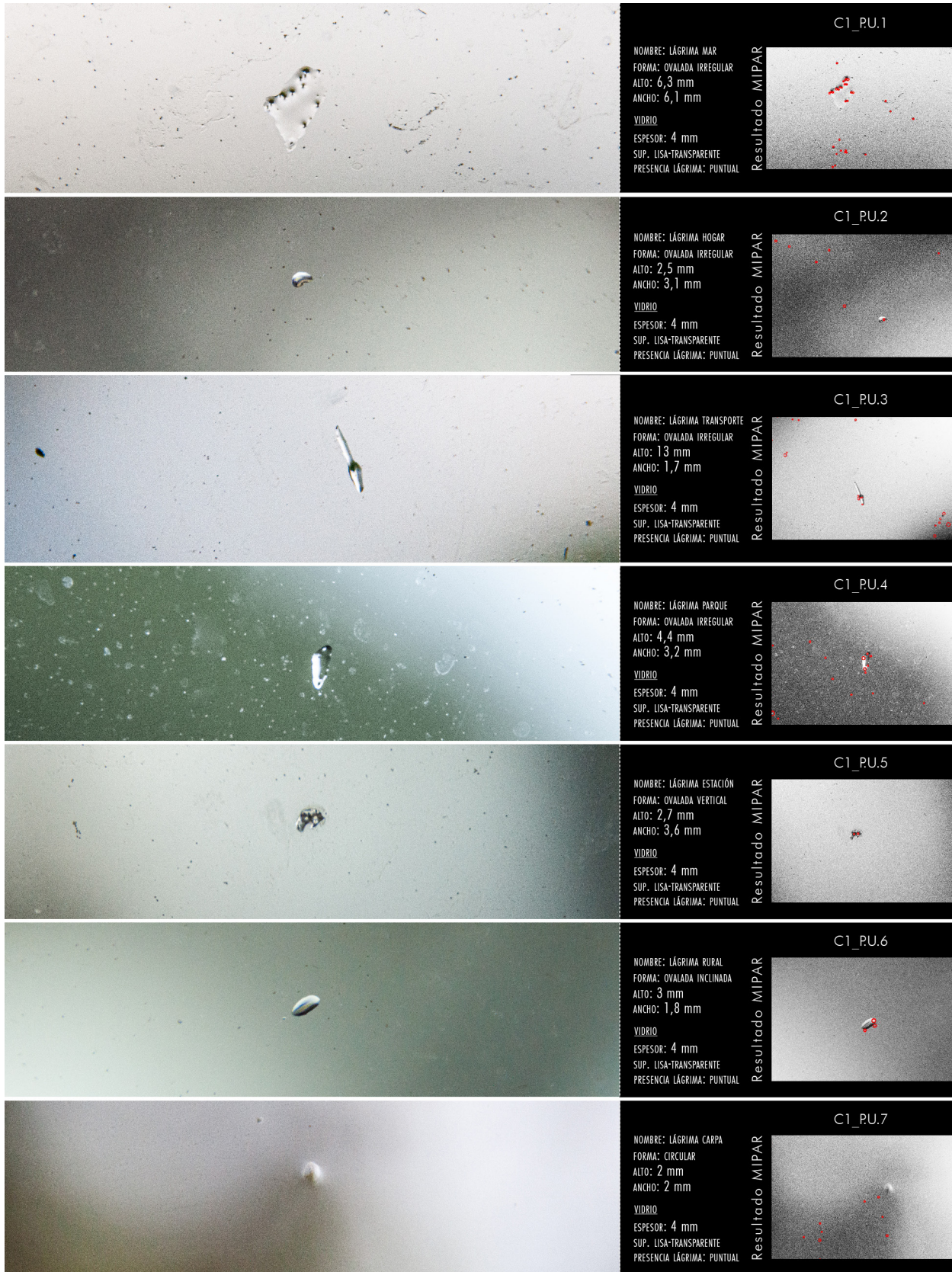
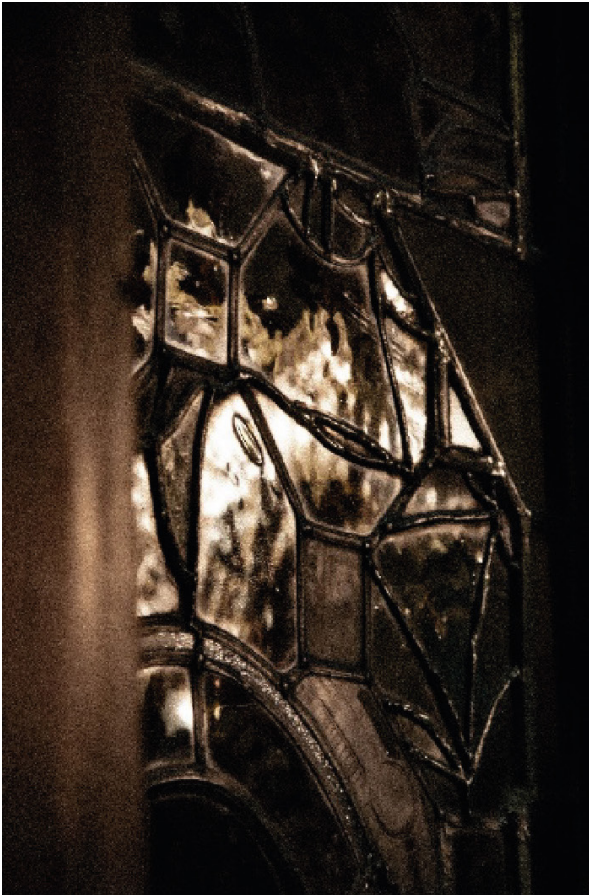


Figure 6. Aproximation: Catalog 1 - Urban protuberances. Source: Preparation by the authors, 2020.



penetrate the crust of the material world. Sometimes, the skin wrapping is transparent and lets you see through; others are opaque, as if defending itself from itself (Figure 6).

By setting fixed parameters (bright polarity, sensitivity of 0.93, and a threshold of 0.2), the program recognizes bubbles in the glass with sizes from 0.1 to 3 mm. However, the main spaces are not detected. Something about these unintelligible elements prevents the algorithm from identifying them.

The second monoptic is part of the last extension made at the John Soane Museum House in London, known as The Monk's Palace, in 1820 (Well, 2001). In that basement (Figure 7), the architect projects the space as a satire of the Gothic style that society required him to build, where the monoptic glasses come from a church in the city of Cologne in 17th-century Germany (Knox, 2009).

This time, eyes inserted in lunar textures were discovered, elements of a microscale cosmos with the character of ubiquity for observing those places where they are found. Of the three, it is the gloomiest and most challenging to capture in a catalog of glass. The point of view can make the tear directly disappear; to perceive it altogether, one must have a kind of squint that allows multifocal vision (Figure 8).

Figure 7. Macrography - Monoptic of The Monk's Palace. Source: Preparation by the authors, 2023.

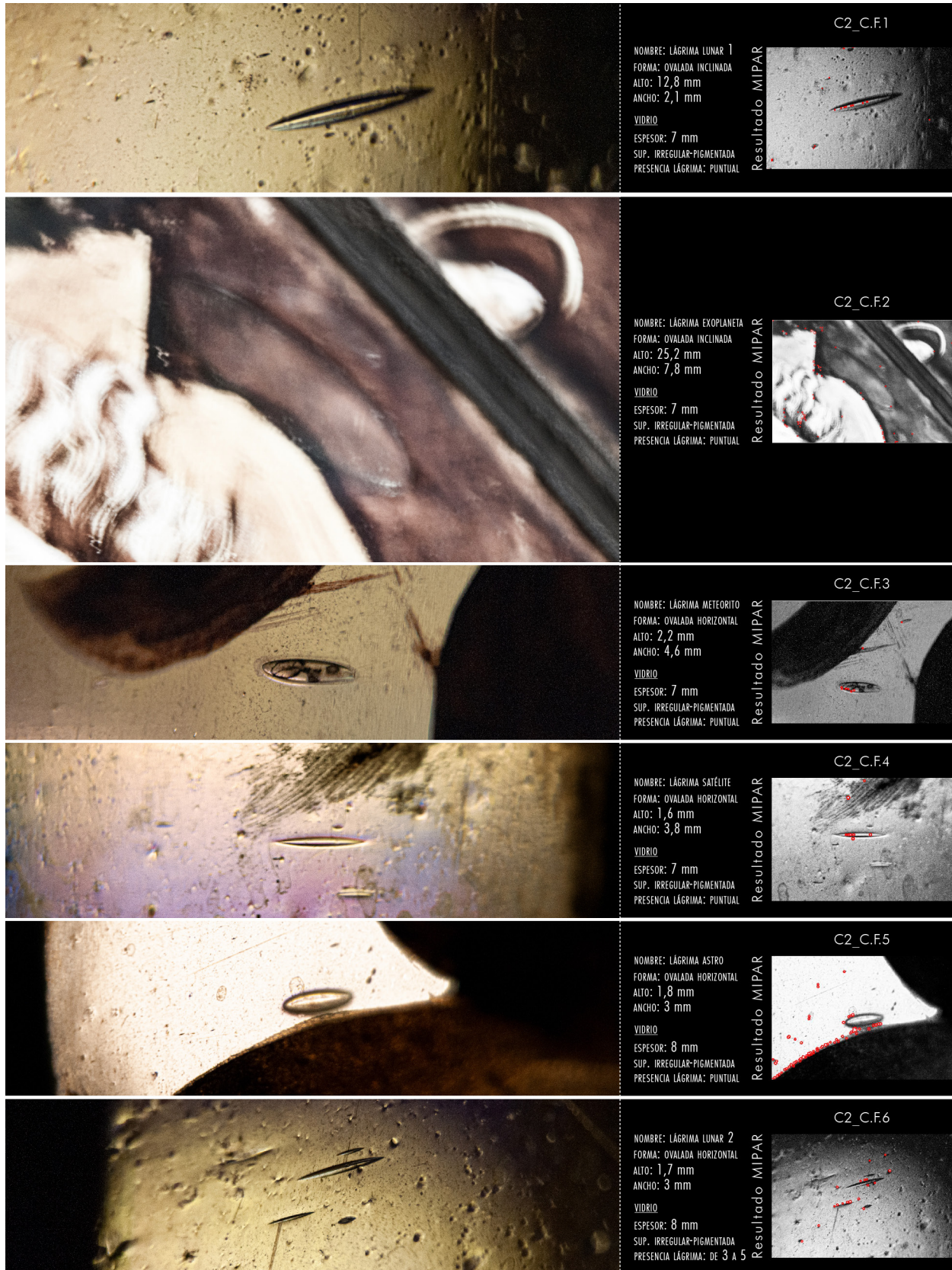


Figure 8. Approximation: Catalog 2
 - Floating Cosmos. Source: Prepared
 by the authors, 2023.



Figure 9. Macrography -
Diptych of Casa Vicens. Source:
Composition prepared by the
Authors, 2022.

Under identical starting parameters, the same pattern emerges again: standard bubbles and malformations of glass of similar sizes are recognized. The algorithm perceives some element of another nature, but it does not finish witnessing what it is. It points in or near the tear but not the tear itself; it escapes its understanding.

Finally, the diptych belonging to Casa Vicens, 1883-85, a work that was originally a single-family residence designed by Gaudí but that saw several architects change its use until it was adapted into today's museum by Elías Torres and Martínez Lapeña (Roe, 2012). There is a room that has remained intact over the years and keeps all its essence, the smoking room (Solà-Morales, 1983), where the diptych that gives rise to the third catalog is located (Figure 9).

It detects hyaline cells, corpuscles, vacuoles, mitochondria, and bubble membranes unwrapped in a viscous environment. Some seem to be suspended in any coordinate of a liquid, sometimes unfolding in plasma, and others in apparent motion. They have their position marked with the horizon line and

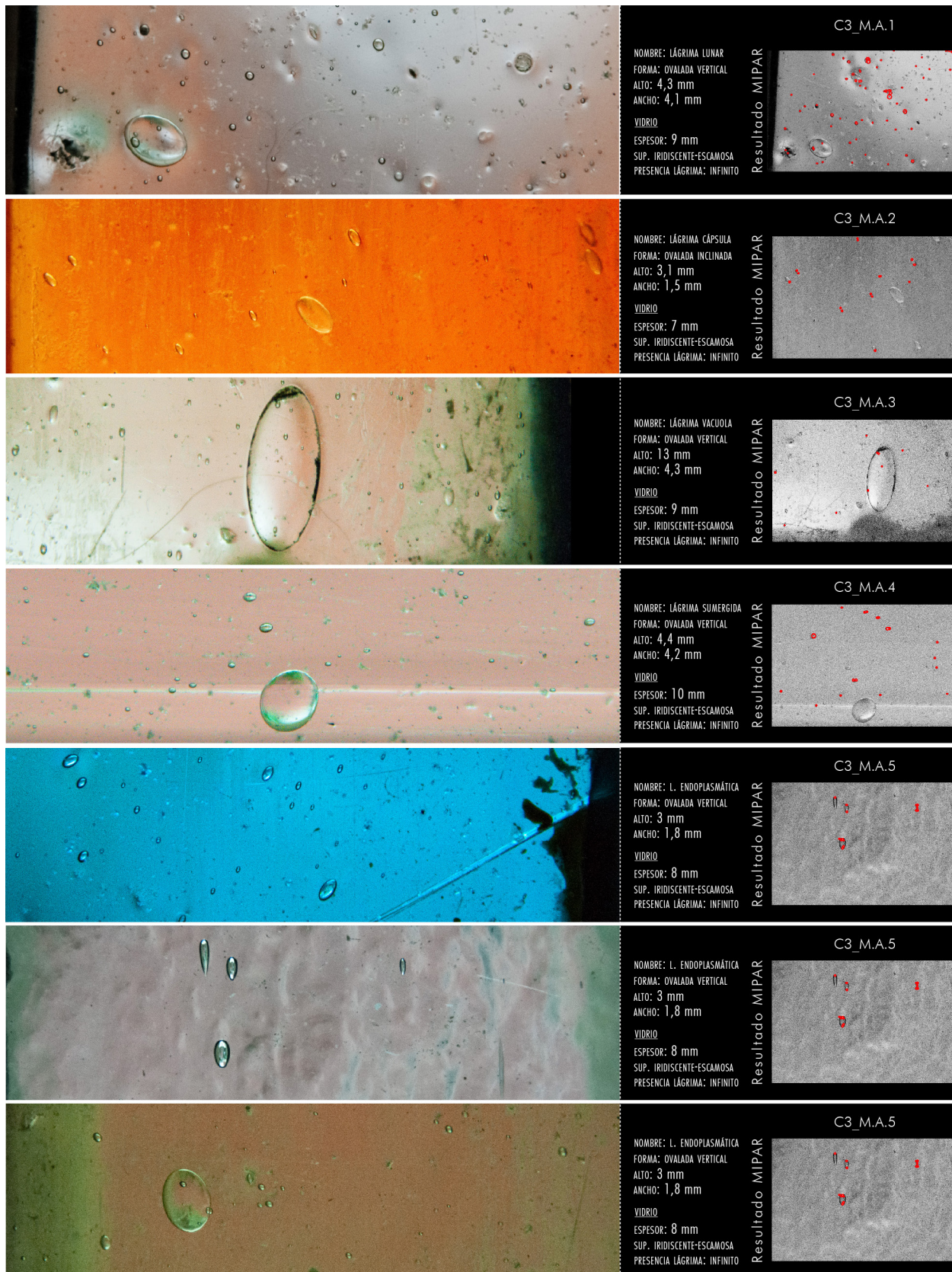


Figure 10. Approximation: Catalog
 3 - Architectural microflora. Source:
 Preparation by the authors, 2021.

seem to submerge, or they appear in a lunar environment. They transmit a biological language that carries the condition of not being touched. However, if, at some point, access was allowed, it would be easy to perceive the roughness and undulations of their surface. Its presence tending to infinity indicates that the importance is not in the quality of the glass but in its formal representation and in how it could sift the visions using color and thickness while allowing light to filter (Figure 10).

The inserted parameters should allow their recognition. However, again, the computer application tries to locate something, but the algorithm does not know what it is. By their nature, these architectural tears seem to be in a parallel reality, going almost entirely unnoticed. The tool could have provided diverse physical data such as the area, major axis, minor axis, eccentricity, angle to the horizontal, distances, etc. Instead, it has revealed the biggest clue of all: these spaces do not belong to the glass. The starting hypothesis seemed clear; the condition of transparency provided some confusion. They have found themselves there by chance, but continuing their search could lead to new discoveries, perhaps camouflaged or barely visible. It is so easy that they have not even been perceived yet. However, one thing is clear: intangible spaces belong to another nature.

A graphic microworld

You have to love space to describe it so thoroughly as to enclose a whole show in a drawn molecule (Seguí, 2012).

We are in an era where tiny gestures are valued, where great effervescent actions are not sought but rather small ones of great intensity. Moreover, architects often tend to dwarf the drawings in search of abstraction. They move with admirable ease on scales ranging from the enormous to the insignificant; the small contains values that the large cannot encompass.

In this sense, exploring architecture and space through a microscopic camera encourages the researcher to transform into small creatures of unrecognizable size, traveling to worlds that are yet to be discovered. Converting the graphs into micrographs provides additional information about the space from the moment events that are not accessible to the human eye are revealed. This was what Bosch was doing, miniaturizing. He prepared a microcosm that he placed next to the seed to continue investigating the details of the minuscule.

The control over the size of the world makes it possible to discover its telescopic condition. The possibility of making real encounters on different scales and, with this, increasing or reducing the mental spaces leads to the confrontation between the visible world, which we sometimes call real, and the magical or spirit world, which we have agreed to call intangible. The first is subjected to a single scale, and the second is free of it because it lacks a body. As in those multi-scale maps drawn by Belén Gopegui (2009), where a room

CONCLUSION

can arise from the encounter between two knees, a hand flies over, protecting a floor, or the arm of an angel unfolds to offer us shelter. (Gopegui, 2009).

The microworld is objective; it provides data, condensed matter, and information. It is a small and empirical world; its micrographs so far speak of spaces that cannot be touched, of inaccessible membranes and bubbles, but at the same time, they show tears with enigmatic, sudden, and unusual spaces, places that Hans Hollein (1969) experiences as susceptible to being inhabited.

Each tear is shown as a cartography, a representation of coagulated air, a slight essence of the project to which it belongs. Each micrograph relates data and looks from three different dimensions: an exterior one—the place to which it responds, its creation process, and its author—another of the creative elements of the teardrop—glass, painting, or any other element that gives rise to intangible space—and finally, the space itself—drawings, footprints, records, textures.

This is a kind of fiction and scale game that shows architecture within architecture (De Luelmo, 1999). The world is full of incredible places, hidden in the margins of visible space, inside the objects that surround us, ready to deliver spaces with unimaginable potential for our architectural projects. All one has to do is prepare one's senses, open one's imagination, and be patient.

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