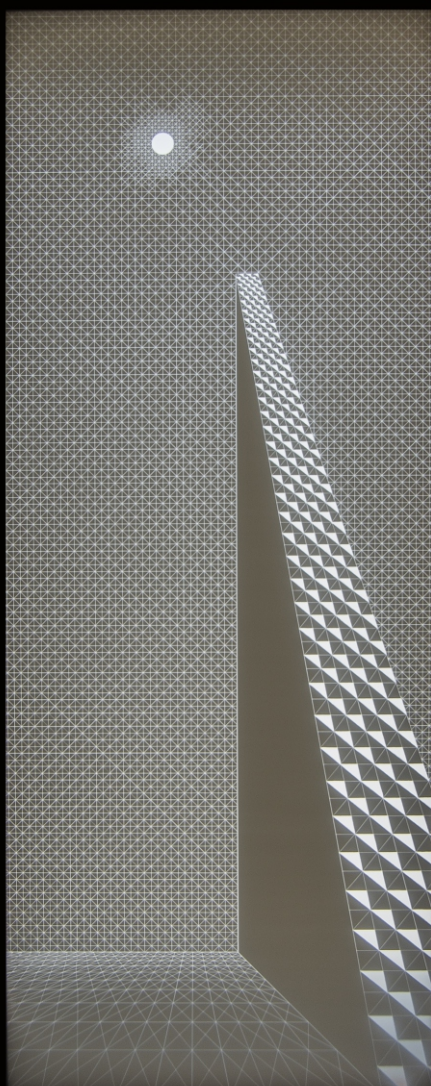


Design & concept by Krzysztof Sokolovski

# Cognitestructural interior

## Atlas



Realised by Joanna Mazuś & Krzysztof Sokolovski  
Warsaw 2022

Theme: The Big Bang theory

The interior is divided into three main parts.

The vault has been dedicated to the elements that are at the basis of all existence. There is depicted a story about the beginnings of the evolution of the universe. It concerns the times when conventional methods, determined by our common understanding of time and space, have no reason to exist. These are the times that we can reach only with the help of mathematical models, that can be verified only by the most modern research instruments, such as space telescopes or particle colliders built deep underground. But even the power of these devices is often insufficient, which is why we have to trust the human imagination and the ability to delve into the truth.

Below the vault is a section on the baryonic matter, which we can also call ordinary matter. It is all that surrounds us and that we can see or touch. Of course, some creations in our universe, such as all-devouring black holes, supernova explosions, and even ordinary stars, are better to stay away from. Although the latter at a safe distance do not threaten us, on the contrary, they give life. Therefore, this part of the decor also tells the story of biological life that absorbs solar energy, fueling its metabolism.

The third part, which is a stained glass window, illuminated by daylight, has a completely different character and meaning than the rest of the interior. This part is entitled *Metaphysical Landscape*. It concerns experiences and emotions related to feeling the beauty of this world, deep reflection on one's own and the entire universe's existence and origin. The moment of mental rest or, on the contrary, a strong excitement when, watching nature and its incredibly intricate structure, we stand amazed by its captivating beauty and succumb to blissful being. We would like to be this way forever and not wake up from this dream; our senses have been uprooted from the surrounding materiality and got a different, unique meaning. The stained glass window presents the world of idea, according to which a thorough analysis and striving to cognise even the smallest component of reality becomes a spiritual ladder. At the moment when cognition leads us to feel beauty, our spirituality arises and builds itself.

The atlas begins with nomenclature and separating the individual components of the decor marked in the photos. Then a description of individual parts and elements follows, which consists of a simplified scientific note and information on technical issues. There are materials and execution techniques described, however, due to their extensive scope, it was also done in a highly abridged form. The concept of *cognitostucture* has also been clarified, as this interior is the first complete existing object devoted to this concept.

To paraphrase the words of one of the most prominent theologians in the history of mankind, St. Augustine, *whenever there is a conflict between an established worldview and the truth concerning nature proven by credible arguments, man should subject his understanding of the world to reinterpretations and modifications*. This should be done because of the risk of discredit in the face of truth based on scientific knowledge.

Scientific advance is bringing a more and more accurate description of the world, and the laws of nature are becoming increasingly clear. All discoveries explaining the way the world works create an image of reality progressively closer to the truth and are popularised, which affects our perception of the world and thus our culture. In addition, the relationships between humans and their environment are more explicitly shown, and thus the complex dependence of people on the surrounding world. Science is also exploring the depths of the human soul. Psychology, ethology, cognitive science, neuroaesthetics, etc. trying to cognise humans, telling about the origin of their behaviour, and analysing emotions and thought processes, show that human uniqueness is becoming less and less obvious.

Reality understood in this way must cause contradictions in the sphere of spirit and matter. When materialism begins to prevail, the sphere of the spirit becomes less useful, and its specialness seems to be of secondary importance. This is not a problem characteristic only to modern times, this rift has been deepening every day since the time of Newton, or perhaps much earlier.

Human has learned to deal with it. The easiest way is to separate these two realities – to keep the fundamental issues of the spirit in the private sphere, and to subject the earthly life to the generally accepted principle of understanding the world through the prism of scientific knowledge. Nonetheless, such a dichotomisation may be considered hypocrisy. The spiritual part of a person seeks support in the culture and beliefs, and the material part, as universally accepted, serves as an official attitude. Therefore, people, who are aware of and opposed to this hypocrisy, usually choose one side. However, haven't spirituality and science been misinterpreted as two worlds completely alien to each other?

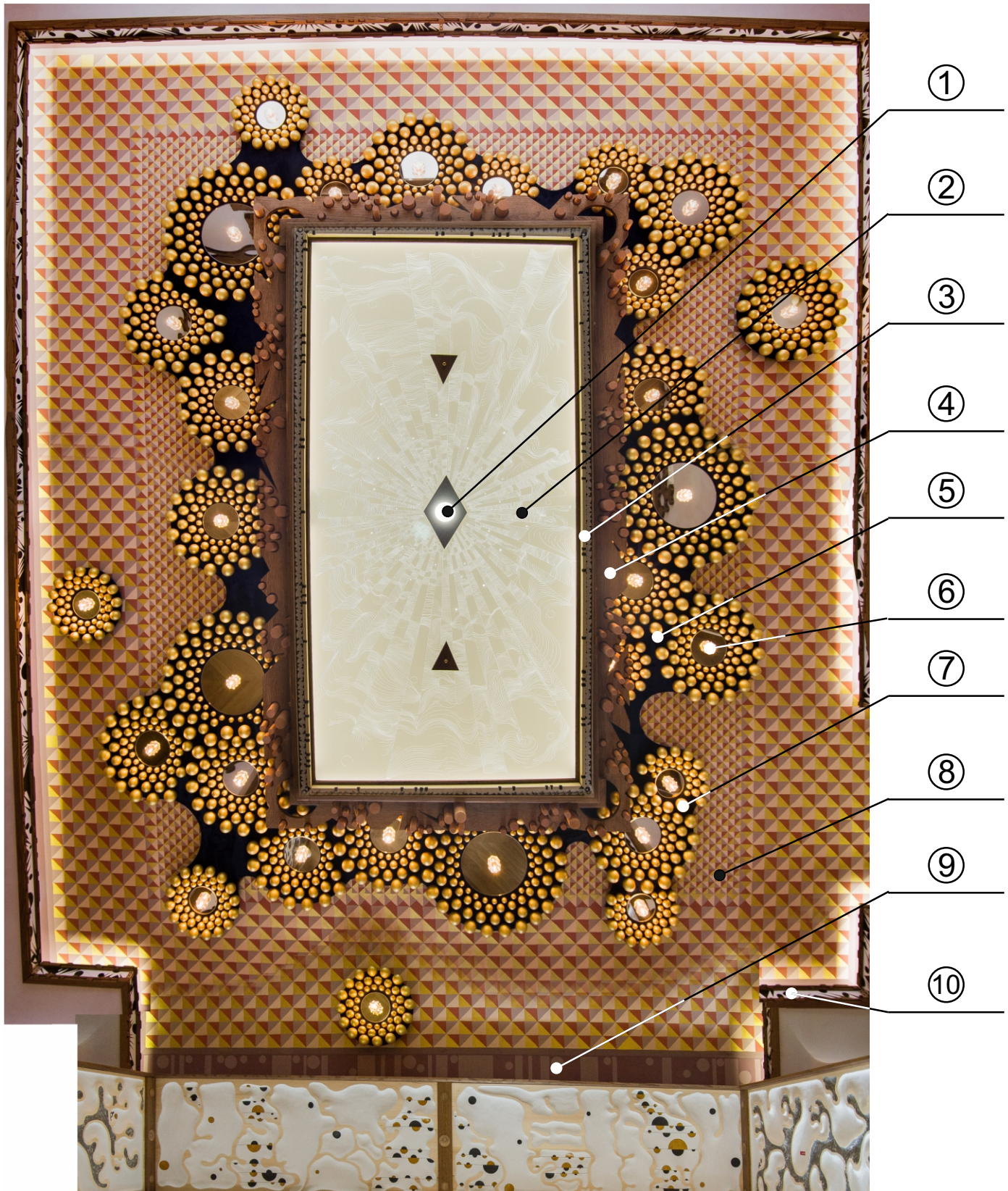
The cognitostuctural conception is a proposition to discover the presence of spiritual experiences in the process of scientific cognition of the world. The emotions that connect in the human mind, giving birth to the conglomerate called spirituality, are an integral part of humans and nature. They are a reaction to empirical reality and the base for building a metaphysical reality. Metaphysics is the most mysterious area of the human mind, and while it is futile to seek scientific evidence of the existence of metaphysical worlds, it cannot be entirely rejected. For if humans are part of nature, then their minds are too, and therefore, metaphysics as a mental sphere is natural and real as nature itself is real. The function of metaphysics is a topic for another conversation, but if it came into being in humans and is a result of evolution like humans themselves, it is an important component of the universe, for the preservation of which we are responsible.

The cognitostuctural conception enables us to reconcile scientific progress with human spirituality. Nevertheless, it is only another cultural form, which aim is to nurture the natural human tendency to spiritual experiences.

*Cognitostucture* ('cognition' + 'structure') – a conception consisting in the analysis of the process of cognition of reality and giving this process a particular meaning, primarily by focusing on the beauty of both the cognised thing itself and the cognitive process. Beauty appears here in the highest sense, as the beauty of being. The fact that something exists and how it does that is amazing and beautiful, regardless of the circumstance that a thing known in the ordinary meaning of the word can be ugly. Another element is the love of the beauty of cognition and the cognitive process itself, which is to be a path to spiritual experiences and building a balanced inner world of humans. This is to show (self-)education as a kind of prayer and a path to freedom in a temporal and metaphysical sense.

*Cognitostuctural art* is an art inspired by this way of nurturing one's own spirituality through cognition. The creative intuition remains the same, only attention is directed to the outside world, and expressing one's artistic self loses all sense.

The text for this atlas was completed the day the first images from the James Webb Space Telescope were released.



1. Initial singularity

2. Planck epoch

3. Pendulum ornament, the beginning of time

4. Cosmological inflation

5. Nucleosynthesis

6. The first atoms

7. Laws of nature

8. Three-dimensional / transparent space

9. Gravitational ornament

10. The beginning of the formation of ordinary matter, the beginning of the cosmos



10. Sharp planetary ornament

11. *Metaphysical Landscape*

12. Organic frame of the *Metaphysical Landscape*

13. Space of baryonic matter (ordinary matter)

14. Star

15. Planet and its satellites

16. Plant world



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17. Gravitational ornament

18. Droplet gravitational ornament

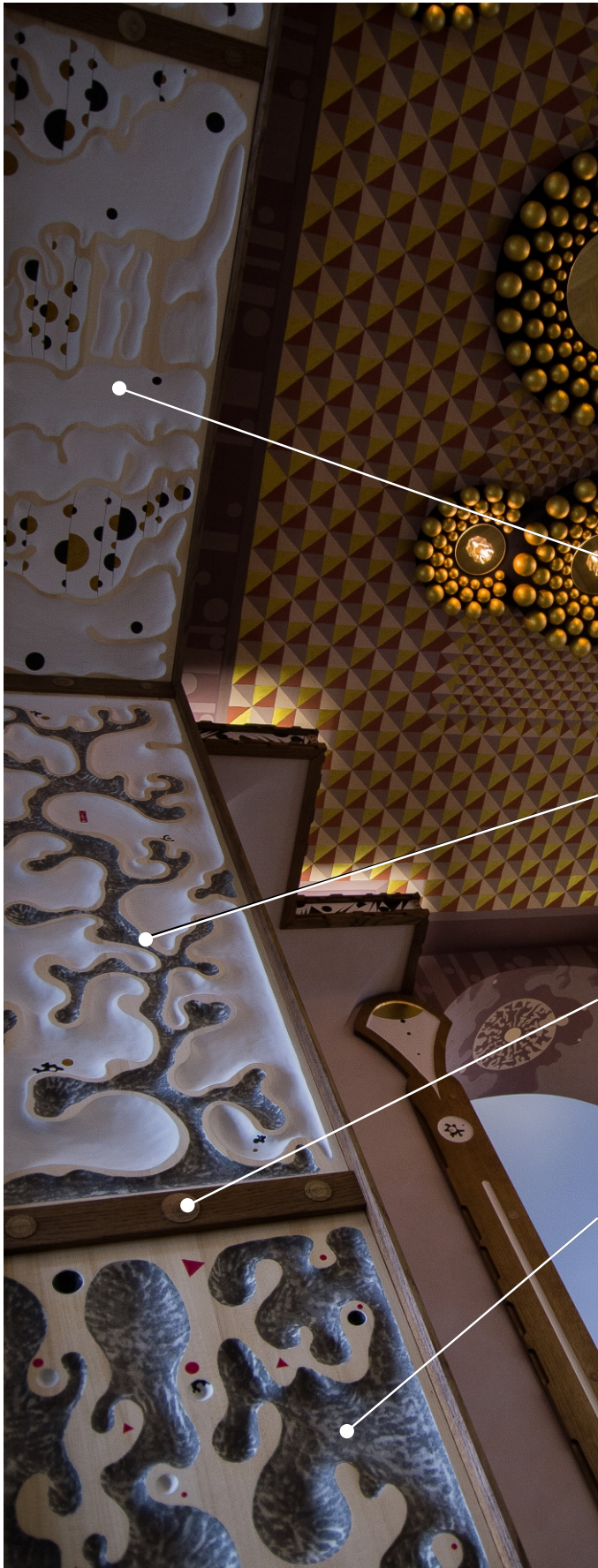
19. Transformation of inanimate matter into living matter

20. Flowing down energy needed for life

21. Protozoan

22. Fruiting plant

23. Plant infested with pests



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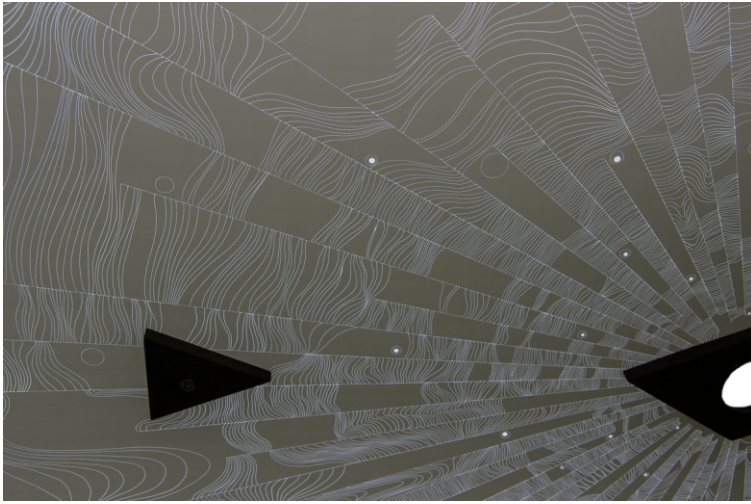
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24. Photosynthesis

25. Terrestrial flora and fauna

26. Soil flora and fauna

27. Eyes



Fragment of the glass plafond. The drawing is made by engraving in lacquer on the reverse side of the glass, which is backlighted with LED in its entirety.



A fragment of the glass plafond and the pendulum ornament. They are separated by a light alder strip with black beech inserts.



A fragment of the glass plafond, nucleosynthesis, transparent space and a sharp planetary ornament.

Currently, the leading theory of the origin of the universe is the Big Bang theory. The cosmological model underlying this theory assumes the existence of the initial singularity (1). The entire universe was concentrated in an infinitely dense and hot point that had expanded in an instant. This point, although is only a mathematical model, has a very suggestive influence on our imagination. It is also a cause for many more questions about this event. The Big Bang has taken over not only the world of science, but also popular culture, has been introduced into theological and philosophical debates, and has been quickly and easily absorbed by our understanding of the world, becoming its basis.

The decor of the cognitostructural interior is oriented around this singularity (1), which is represented by intense light shining from the central part of the glass plafond placed on the vault.

The entire plafond is covered with a manually engraved drawing representing the world in its first time unit. This period is called the Planck epoch (2). Epoch is a rather excessive name for such a short period of time because it is only  $10^{-44}$  seconds. An unimaginably short moment, also called Planck time, is the smallest unit of time that has any physical meaning; metaphorically – it is a time cell or one of its pixels. This proves that time has a leaping character. The Planck epoch is the first leap, from the singularity (1) to the end of Planck time (2). You could say that this is the moment when something already existed, but there was no time yet. Probably at the smallest scale of matter, at distances also known as Planck length, time still stands, or it is more correct to say that there is no time. Therefore, Planck time has not passed, and this moment now is the same moment as at the beginning of existence, lasts in every particle and will last as long as the universe itself. This concept was initiated by Prof. Michał Heller.

After the Planck epoch (2) time begins. The symbol of this event is the pendulum ornament (3) painted with ink on glue gesso. The movement of the pendulum symbolises the passage of time. The construction of the plafond was made of oak wood and impregnated with a mixture of wood stains and tung oil. The whole thing is fixed to a concrete screed with steel rods.

The plafond is surrounded by an oak-and-beech spatial frame symbolising the moment of cosmological inflation – the time when the entire universe was filled almost only with radiation (4).

Behind the entire plafond is a composition symbolising the epoch of nucleosynthesis (5), the time when the dominance of matter begins. The first



A fragment of the composition symbolising nucleosynthesis. Crystal light bulbs and their reflections resemble the model of the simplest atom.



A fragment of the sharp planetary ornament. The line of the transition between disordered primordial matter and the matter of which the visible universe is composed.



Polychrome relief: *Star*, glue gesso, ink, shellac, gold leaf, relief on panel, 2022.

atoms, the building blocks, begin to form, which will eventually give us the world we know. According to the latest studies of cosmic microwave background radiation, the distribution of matter at that time was not uniform. This was emphasized in the vault by the dynamic form covered with a dark velour. There are lights symbolising the simplest hydrogen atoms (6). At this point, the laws of nature crystallise. They are responsible for the order and natural behaviour of particles, which, under these laws, combine into clusters, igniting the stars, and then after their death, the scattered matter gathers, forming planets. All this is still driven by the same laws of nature (7). Their symbols are golden spheres surrounding and guiding each particle. Since the times of Byzantium, gold in painting has been a symbol of metaphysical spaces, mysterious powers that organise the universe, traditionally perceived in culture as a divine causative power.

The spheres are made of beech wood and covered with mineral gold. They are mounted on a wood-based board with velour upholstery, and bronze mirrors are placed behind the crystal light bulbs.

At the moment when the basic building blocks of matter, i.e. hydrogen and helium atoms, are formed, the universe becomes transparent, and matter and radiation are separated. There the well-known three-dimensional space extends (8), which was hand-painted using the silicate technique (stereochromy), widely appreciated and used in the conservation of wall painting.

The vault composition is closed by the gravitational ornament (9) symbolising the interaction that forms the matter known to us into objects such as stars and planets. At this point, the story about this part of the decor ends.

The second part begins with the cornice with the sharp planetary ornament (10). As has been said before, it shows the consequences of gravitational interactions ordering the cosmos. It is made of oak wood and polychrome wood-based board. The adjective 'sharp' refers to landscapes that may have existed on the first rocky planets. We are talking about young, sharp mountains, but also about the conditions that could prevail there.

At the level of the walls, we see the cosmos as a vibrating space full of dust and interstellar matter (13), which was painted with the silicate technique by applying many layers of transparent paint.



Planetary composition, glue gesso, ink, relief on panel, 2022.



A fragment of the wall base in the shape of organic forms. It is made of fir wood, covered with a mixture of wood stains and tung oil.



The radiator cover. Made of oak and beech wood, covered with a mixture of wood stains and tung oil.

Paintings depicting space objects are hung on the walls. The painting entitled *Star* (14) imitates not only the form of a star but also other phenomena related to it, such as radiation or gravity waves. The burning sun emits photons of electromagnetic radiation, which in turn is absorbed by living creatures, including plants. This life-giving event related to radiation is symbolically imaged on the border of the painting, and its repetition can be found on the reliefs of the casing of the main entrance to the interior, dedicated to plant life (24). Amber eyes symbolising photons turn into black eyes meaning the building blocks of life; the energy necessary for the metabolism of living beings is provided.

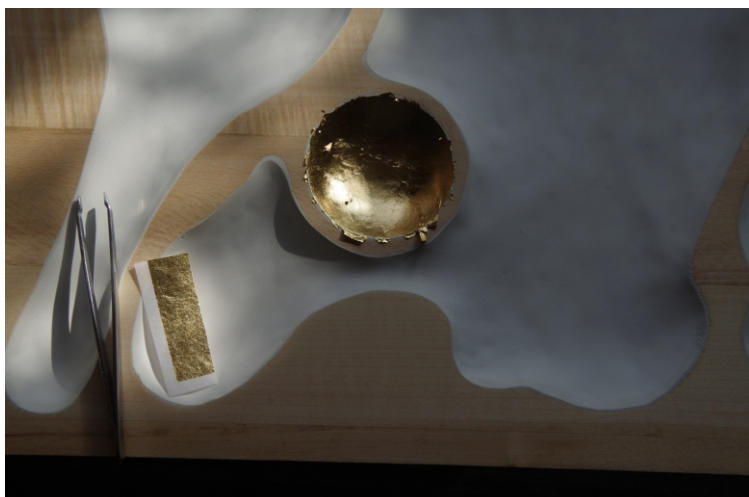
On the other side of the interior is the planetary composition (15). It depicts a planet and satellites orbiting it. On one of the satellites, there are rows of the gravitational ornament reminding of the force that binds these objects together, and on the second, the smallest one – the symbol of a hydrogen molecule. Right next to the floor, the composition is closed by a wooden, impregnated with stain and oil wall base with an organic motif (16).

The window space has been dedicated to the third component of the decor, which is the metaphysical sphere of existence. The original use of stained glass has been preserved here. The main purpose of stained glass is not the aesthetic function, although it is also exceptionally strong, but the filtering of daylight through the sieve of deep symbolism and giving it metaphysical features. The stained glass windows of Gothic cathedrals are the highest human achievement in this respect. They show how human thought can discover extraordinary things in seemingly obvious and completely familiar ones.

The stained glass window entitled *Metaphysical Landscape* (11) was made by manual engraving in Lacobel glass. During the day, it is penetrated by daylight, while after dark it is possible to backlight it electrically. The glass parts are placed in the frame (12) made of oak wood, referring in the form to organic life, observations of which can move our sensitivity to the beauty of nature, and thus enrich us spiritually. The stained-glass part is set on a wooden base, which also serves as a radiator cover. The whole thing refers to retables, i.e. altarpieces, particularly developed and brought to ideal shapes in the symbolic sense in Gothic winged altarpieces.



Vault lighting switches. Individual switches illuminate the assigned epochs of cosmic evolution. The *Bright Planck Epoch* switch has a primarily pragmatic function. It turns on a brighter, warmer version of the Planck epoch lighting.



The gilding of the hemispheres is completed. The last step is to clear the surface of the gold leaf fragments not glued to the special gilding primer and to polish it.

The interior is connected to three other rooms. Entrances to each of them were dedicated to biology and living matter.

The central entrance is surrounded by two types of gravitational ornaments – the ordinary gravitational ornament (17) and the droplet gravitational ornament (18). These are two variations of the ornament with the same meaning. These elements are made of oak wood and polychrome wood-based board. In the case of this interior and this conceptual part, they frame the organic part, emphasising the importance of the laws of nature that organise and order living matter. The laws of nature, like a frame, keep everything within their bounds. Into the droplet gravitational ornament, switches have been composed. They are used to switch the vault lighting. They were captioned because each of them illuminates the part of the vault assigned to it, symbolising a given epoch of cosmic evolution.

The left side entrance is crowned with an arch forming a small barrel vault polychromed with the silicate technique. The side walls of the passage are finished with reliefs in linden wood and enclosed by the oak frame.

The polychrome of the barrel (19) above the entrance depicts the influence of fundamental causative forces, such as gravity or radiation, on the process of organic matter formation (these forces are symbolised by small bright balls – quanta). Hence the motif of the gravitational ornament permeating with organic forms that draw their energies from the quanta of electromagnetic radiation. The motif of flowing down life-giving energy is also pictured on the entrance frame (20). Below is the motif of a protozoan (21), a single-cell creature, which feeds on a golden ball of energy.

Below the barrel are reliefs with a motif of organic forms resembling plants (22) with golden ( $23^{3/4}$  carat gold leaf) hemispheres symbolising fruits. They are places of energy accumulated by these organisms to pass it on to the next generations of their species so that they have their own initial energy reserve needed for growth and strengthening before independent living and producing offspring.

Below is a relief with a similar floral motif, but in this case, life has been infested with pests or diseases (23).



The front and back parts of the relief that is the casing of the entrances to the cognitostuctural interior. Each painting support is made in accord with the technology of panel painting. Glueing and beech traverses as well as drying of the panels were performed by specialists from the Faculty of Wood Technology of the Warsaw University of Life Sciences.



The oak sliding door is made of oak wood, pine blockboard and bronze mirrors. Wooden elements were impregnated with a mixture of wood stains and tung oil.

The main entrance casing is finished with reliefs on linden panels covered with glue gesso and polychromed with ink and shellac. The wood has been impregnated with tung oil. The upper part of the relief depicts the mentioned earlier photosynthesis motif (24). The energy coming from the star closest to us, the Sun, is absorbed by plants and used to drive the chemical processes that produce carbohydrates. They perform energy, building, transport, and food supply functions, and are even part of DNA, being a modification of some proteins.

Below is a motif dedicated to terrestrial flora and fauna (25). The red rectangular monogram *Vita* means life. The motif depicts a plant-like form surrounded by free-living, moving single-cell organisms, which feed on portions of energy. In turn, in the lower part, the soil flora and fauna are pictured (26). The main theme is the root system absorbing minerals and nutrients from the earth, such as nitrogen, potassium, phosphorus etc.

In the third passage is the sliding door with bronze mirrors on its entire surface. This part of the decor also has organic motifs, and the whole thing is made of wood, including slideways and door fittings. Mirrors visually enlarge the interior, the area of which is less than 20 square metres.

The wooden part of the decor is covered in many places with slightly lighter small circles (27) made of walnut veneer. Various kinds of geometric drawings have been laser engraved on them. They symbolise the mysteries hidden in every corner of animate nature; each observation of even the smallest fragment of nature reveals new worlds, whole ecosystems that are invisible on the macroscopic scale. Some of the engravings resemble eyes. They are mysteries looking at us, humans, who so often indifferently pass by the vast "civilizations", developing for millions of years and coping well with inventing methods that enable them to survive. Such "civilizations" are, for example, underground ant colonies.

The pragmatic function of these small circles is simple – they cover the structural elements of the decor.