

## Iannis Xenakis Arché-tekton

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**Abstract:** *Engineer, composer, architect, theorist, mathematician and even astronomer, in all these hypostases Iannis Xenakis seems to be an arché-tekton in the first meaning of this Greek word - the (old) one who knows the secrets of making a Construction, be it music, architectural object, structure and/or idea, living the “dream of life” in the context of the only arts that do not make mimesis, architecture and music. Without presenting in itself the projects in which he has left its mark, the paper explores “the symphony of the dream of life” as Iannis Xenakis crystallized it through the filter of architecture. The symbolic participation in this “concert” brings to light an Iannis Xenakis in a constant attempt to rewrite in modernity and avant-garde, in mathematical key, the architecture, the music and the philosophy belonging of its Greek cultural matrix, exploring the halo of meanings of the triad kosmos-polis-oikos and their re-semanticizations as he understood it in his times. The “symphony of the dream of life” as crystallized by Iannis Xenakis may reveal us that the Road is an infinitely more important goal than the finality in the journeys of architecture, music, and man on the scale of history and at the scale of a human life, as is the story of any arché-tekton, semper inter mundos, constantly questioning the boundaries of the kosmos, in any of the “real” realities or virtual realities would he and it coexist.*

Key-words: *architecture, music, Xenakis*

### 1. Introduction

After graduating from the National Technical University in Athens (1947), the Greco-“Romanian” born in 1922 in Brăila, Iannis (Giannis Klearchou) Xenakis was an engineer. A strict specialization, limited we could say, even prosaic. But it seems that Xenakis knew ancestrally what the rest of us, non-Greeks, J.W. Goethe had to remind, namely that “of all the peoples, the Greeks dreamed the dream of life best”. And the dream of life for the Greek Xenakis meant much more than a certified specialization with an engineering degree: it seems that he was one of the most important post-war composers, exploring the “white” territories of the avant-garde, architect, music theorist, author of works on mathematics, architecture and

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urbanism, astronomer and mathematician. In all these poses, he seems to be an arché-tekton, in the first sense of the word - the one who knows the secrets of creating a construction, be it music, architectural object, structure and/or idea.<sup>2</sup>

It was to be the engineer Iannis Xenakis to live his “dream of life” in the context of the only arts not making mimesis, architecture and music, explored through the filter of the science of mathematics, from the perspective of an engineer with astronomer aspirations.

## 2. Iannis Xenakis Arché-tekton

Thus, as an arché-tekton, Xenakis contributed to the crystallization of constructions in the sense of Music and Architecture, with *stabilitas* and *utilitas* governed by the obsession of discovering the relationship between *venustas* and *mathematics* (number, proportion) of the ancient Greeks. They “breathe” in a vision of beauty that springs from the consideration of the cosmos as a unity in harmony, based on number, rhythm, balance, proportion, measure, symmetry. Maybe that's why Xenakis constantly rejected the idea of musical composition based on intuition and random inspiration, seeking to control the *artium* through *techne* in a mathematical sense, an attitude assumed and recognized as such: “This is my definition of an artist, or of a man: to control”.

As an architect I understand this “obsession” of control in our guild, because control makes first of all a physical construction (architecture) to withstand, not to collapse, and a meta-physical one (music) to have sense, then both to use, either in the sense of an optimal functional response for a specific destination (architecture), or as a feeling (music), and which, at the same time, should also be beautiful, whatever we mean by Beauty. From the point of view of control, we are therefore still in the matrix of the triad *stabilitas-utilitas-venustas* enunciated by Vitruvius in *De Archittetura Libri Decem*<sup>3</sup>, a triad that exists avant la lêtre since a

<sup>2</sup> The extent to which Iannis Xenakis performed in his various professional hypostases is also reflected by the order given by the online search results in July 2022, in English, of his name associated with his professional positions: composer: 146.000, architect: 104.000, author: 67.200, music theorist: 66.200, engineer: 48.600 (his profession!), astronomer: 13.000, mathematician: 6.470.

<sup>3</sup> *De Archittetura Libri Decem* (~25 BC), the only preserved architectural treatise of classical antiquity. *Stabilitas (firmitas)* is an essential, denotative condition, referring to solidity, resistance, durability, to the tectonic expression of the “house”, a quality without which architecture can only exist either in the form of ruins or only in the virtual world. It can be beauty in itself. *Utilitas* is a condition both denotative and connotative, with reference to utility, functionality, efficiency, to the expression of the destination of the “house”, to the purpose of the structure and to the measure of its suitability for the purpose, in the interval between no destination and multiple destinations. It can be beauty

Construction that resists, uses and signifies is consciously made. Not being a musician, (although I have organic ties to music) I cannot speak pertinently either about Xenakis's compositions or about his role or place in the history of music of the 20th century. Not being an engineer or a mathematician, I cannot speak pertinently about the calculation systems underlying his musical or architectural-structural compositions (although, from an architect's perspective, I have an organic relationship with mathematics through the simplified system of structural calculations that I constantly use in architectural projects).

As an architect, I am in the difficult position of speaking of an engineer with a sum of contributions to the sphere of architecture rather than an architect per se, as Xenakis either is only mentioned as part of teams or projects in some of the more extensive and/or dedicated architectural histories of personalities such as Le Corbusier (also an architect without a degree as architect), or is not mentioned in the history of architecture, and in the Romanian school of architecture he is not remembered at all.<sup>4</sup> His biography, compositions, musical theories and contributions in the world of architecture and structural engineering are accessible to anyone on the Internet, where a simple search of the name *Iannis Xenakis*<sup>5</sup> leads to a multitude of sources, making up a complex informational universe.

In an attempt to bring a personal perspective on the “dream of life” lived by Xenakis, the interaction with the Internet gave me the idea to interactively approach his contributions as an architect, as many as they were, to the architectural phenomenon of the second half of the 20th century, initially using the results that the algorithms of the online world provides, in an attempt to discover him. This exploration crystallized for me in the form of a personal symbolic construction, which I imagined, listening in parallel to his compositions (some directly related to his architectural creations), in the form of a concert that I arrived at, by chance or not, for seeing-listening and listening-seeing a “symphony” about the “dream of life” as crystallized by Iannis Xenakis as an arché-tekton.

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in itself. *Venustas* is a relative, connotative condition, with reference to beauty, aesthetics, harmony, proportion, poetic expression, however these are understood in different cultural and temporal contexts, at the personal or group level, with or without the value of social agreement.

<sup>4</sup> This is not surprising: he was involved in all his life in only 18 architectural projects (some of which extremely important for the history of 20<sup>th</sup> century architecture), but especially as a participant, rarely recognized as a co-author. Of the 18 projects, only 11 were built, only 10 of them still have shadows on the ground and only for four of them – the projects for houses, Xenakis is recognized as sole author.

<sup>5</sup> 841.000 results appear when simply searching for the name "Iannis Xenakis" online in July 2022; for comparison, a simple online search of the name of his one-time employer, Le Corbusier, yields 15.800.000 results.

The reflection on this symbolic construction, in the light of a short adaptive statistical analysis, revealed the fact that the way they are structured and the extent of Xenakis's contributions in the 18 architectural projects to which he is linked does not correspond neither to the hierarchy of the results of the online search of his name strictly and individually associated with each of these projects<sup>6</sup>, nor to the hierarchy achieved through the prism of the importance of these projects in the history of architecture, regardless of his contribution<sup>7</sup>, nor to the order of his chronological involvement in them<sup>8</sup>.

<sup>6</sup> The order of the results of the online search in June 2022 of the name "Iannis Xenakis" associated with each of the 18 architectural projects in which he was involved and of their sites is as follows: 1) Klatzmann House, Paris: 61.000, 2) Cosmic City: 59.100, 3) Cité de la Musique, Paris: 46.500, 4) Center des Arts Le Corbusier, La Chaux-de-Fonds: 21.100, 5) Philips Pavilion, Brussels: 20.300, 6) Cité des Arts, Chiraz: 18.200, 7) Scherchen Auditorium, Gravesano: 10.800, 8) Unité d'Habitation, Marseille: 10.200, 9) Olympic Stadium, Baghdad: 7.340, 10) Chandigarh: 6.490, 11) Couvent Sainte-Marie de la Tourette, L'Arbresle: 5.030, 12) Tour Corse: 4.890, 13) Isthmia Prime Motel: 2.170, 14) Arts and Youth Centre, Firminy: 1.720, 15) Schneider Bergerie, Corsica: 1.120, 16) Unité d'Habitation, Rezé-les-Nantes: 987, 17) Reynolds House, Borrego Springs: 643 and 18) Mâche House, Amorgos: 585. See also the comparative typologies table.

<sup>7</sup> A hierarchy in the sense of the importance of the 18 architectural projects in which Iannis Xenakis was also involved, only through the prism of their significance, impact and influence in the history of 20<sup>th</sup> century architecture as found or not in significant specialized histories and treatises, would be the following: A) projects as landmarks of a major international importance: 1) Chandigarh, 2) Unité d'Habitation, Marseille, 3) Unité d'Habitation, Rezé-les-Nantes; B) projects as landmarks of moderate international importance: 4) Philips Pavilion, Brussels, 5) Couvent Sainte-Marie de la Tourette, L'Arbresle; C) projects as landmarks of national or local importance within their sites: 6) Isthmia Prime Motel, 7) Arts and Youth Centre, Firminy; D) unrealized projects and visions, but important in the theoretical evolution of the architectural phenomenon: 8) Cosmic City; E) unrealized projects and visions, with relative or reduced importance in the theoretical development of the architectural phenomenon, relevant especially in the local context: 9) Olympic Stadium, Baghdad, 10) Cité de la Musique, Paris, 11) Cité des Arts, Chiraz; F) projects of no importance other than to their beneficiaries, realized or not: 12) Mâche House, Amorgos, 13) Klatzmann House, Paris, 14) Reynolds House, Borrego Springs, 15) Tour Corse, 16) Schneider Bergerie, Corsica, 17) Center des Arts Le Corbusier, La Chaux-de-Fonds, 18) Scherchen Auditorium, Gravesano. See also the comparative typologies table.

<sup>8</sup> The chronological order of the involvement of Iannis Xenakis in the 18 architectural projects is as follows: 1) Unité d'Habitation, Marseille, 1947-1953, 2) Unité d'Habitation, Rezé-les-Nantes, 1950-1955, 3) Chandigarh, 1951-1959, 4) Couvent Sainte-Marie de la Tourette, L'Arbresle, 1953-1961, 5) Olympic Stadium, Baghdad, 1955-1965, 6) Philips Pavilion, Brussels, 1956-1958, 7) Arts and Youth Centre, Firminy, 1956-1965, 8) Scherchen Auditorium, Gravesano, 1961, 9) Cosmic City, 1963-1964, 10) Mâche House, Amorgos, 1966-1974, 11) Isthmia Prime Motel, 1969, 12) Center des Arts Le Corbusier, La Chaux-de-Fonds, 1970-1972, 13) Cité des Arts, Chiraz, 1971-1973, 14) Schneider Bergerie, Corsica, 1974-1976, 15) Cité de la Musique, Paris, 1984, 16) Reynolds House, Borrego Springs, 1984-1992, 17) Klatzmann House, Paris, 1991, 18) Tour Corse, 1996. See also the comparative typologies table.

Why? Obviously, because the result generated by the online world is an entity that updates itself according to the behavioral model of the users searching something, thus learning to behave in relation to the way we explore it as a “collective being”, but the result is impersonal, detached, lots of times also incorrect, disproportionate, false by omission. Thus, not only metaphorically, but also practically, through the way we explore (Xenakis) online and through the interpretation of our actions as a collective being by constantly updating mathematical algorithms, the Internet also becomes the “author” of a symbolic construction.

Even if he was seduced by the emergent world of computers, I don't know if Xenakis would have liked more to be known by the emotionless “mind” of a machine, and in the paradigm of control (which inspired him when he talked about himself: “This is my definition of an artist, or of a man: to control”), or by the mind full of emotions of the human beings.

The irony of fate, however, is that this does not even matter in the equation of today's virtual world, because even if he still would have been alive, Xenakis would not have been able to control anything, especially not the behaviour of people who are not “type” and for whom the ideal is not a life lived in “living machines” as Le Corbusier would have utopically wished with the pretext of his Unité concept.

Once explored the “author” Internet and the data set to help us get to know Iannis Xenakis better, faster and more completely, the idea of composing a typology different from those that can be offered by the impersonal mathematical “mind” of computers, related to the hierarchy of the nature and scale of Xenakis' involvement in the projects to which he is connected, has become extremely tender. This typology has been structured on four levels: I) major contributions and almost as sole author to large projects, II) partial contributions and as part of teams for large projects, III) involvement in projects never built, and IV) personal variations on the theme of housing.<sup>9</sup> Once visually structured, I also musically

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<sup>9</sup> Within this typology, the order in terms of the nature and the scale of Iannis Xenakis' professional involvement in the 18 architectural projects in which he was a part is as follows: I) major contributions and almost as sole author to major projects: 1) Philips Pavilion, Brussels, 1956-1958; II) partial contributions and as part of teams for large projects: 2) Couvent Sainte-Marie de la Tourette, L'Arbresle, 1953-1961, 3) Unité d'Habitation, Marseille, 1947-1953, 4) Unité d'Habitation, Rezé -les-Nantes, 1950-1955, 5) Chandigarh, 1951-1959, 6) Isthmia Prime Motel, 1969, 7) Arts and Youth Centre, Firminy, 1956-1965; III) involvement in projects never built: 8) Olympic Stadium, Baghdad, 1955-1965, 9) Scherchen auditorium, Gravesano, 1961, 10) Cosmic City, 1963-1964, 11) Center des Arts Le Corbusier, La Chaux -de-Fonds, 1970-1972, 12) Cité des Arts, Chiraz, 1971-1973, 13) Reynolds House, Borrego Springs, 1984-1992, 14) Cité de la Musique, Paris, 1984, IV) personal variations on housing: 15) Mâche House, Amorgos, 1966-1974, 16) Schneider Bergerie, Corsica, 1974-1976, 17) Klatzmann House, Paris, 1991, 18) Tour Corse, 1996. See also the comparative typologies table.

“covered” this universe, associating and exploring it through the lens of Xenakis' musical constructions. The analysis of the whole revealed the fact that this symbolic construction seems to correspond to the general structure of the classical symphony, an irony of the “dream of life”, because Xenakis was not classical at all!

This is the context in which, through the unconventional approach and without presenting the projects in which he left his mark throughout his life (because extensive information regarding them is available to anyone both in the online environment and in various dedicated works), I will try to confess what crystallizes the work of Xenakis as an arché-tekton in my consciousness as a sum of unisensory sensations and multisensory perceptions, brought together in a synesthetic sense with an unexpected effect in relation to listening-seeing and seeing-listening to the “symphony of life's dream” as crystallized by Iannis Xenakis.

I. As, in general, the first part of a symphony has a fast, vigorous tempo - *allegro*, sometimes having a slow introduction - *uvertura*, the “symphony of the dream of life” as crystallized by Iannis Xenakis opens with a concept sketch by Le Corbusier, heralding perhaps Iannis Xenakis' most important, most vigorous architectural achievement, the Philips Pavilion, designed for the 1958 Expo in Brussels.

There is silence between the columns. A first light breaks the darkness... a first chord breaks the silence... A fleeting outline, reminiscent of the shape of a stomach (for those who can make anatomical connections) dilutes on the stage... seemingly without rules and forgetting itself, a sum of careless lines that can be nothing or anything, in a fast, vigorous tempo (*allegro*), metamorphoses into a mathematical Being: the **Philips Pavilion**! Its structural spectacle and its volumetric harmony obviously exceed its destination as a topos for avant-garde multimedia manifestations for that time.

It seems like coming from another world in the photographs in which the cars of the 50s are present. Being contemporary, the cars and the architecture still seem from different eras. Like any fulminant process, it lived its “dream of life” for too short a time, because it “died” by dismantling. Was it a skeleton? Was it a Being? Was it an object? Was it a chimera? And yet it “lives”... It is no longer a being or an object, but a Virtual Electronic Poem Project, an immaterial clone made at the University of Turin... As a being that transferred its genes, it is said that it also has some “illegitimate daughters” (Warszawa Ochota railway station in Poland, Predeal railway station in Romania etc), although they only call it an archetype.

What an *allegro*... the poetics of its ruled surfaces takes me through two millennia into the past and I see the sails of the ancient triremes of the Greek colonists on their journeys to the white territories of unknown worlds... With all this rhythm, time seems frozen. Time... The philosophers of antiquity never introduced it in the

equation of life. All their philosophies, all their ideal societies being thought in his absence... Time for them existed only in relation to the past as a Golden Age.

II. If the second part in the classical symphony is usually slow (*andante, adagio*), giving the opportunity for multiple formal approaches (the variations on the same theme, the *rondo*, sometimes the *sonata*), the “symphony of the dream of life” as crystallized by Iannis Xenakis continues in exactly this meaning through the results related to his partial contributions, as part of teams for large projects: Couvent Sainte-Marie de la Tourette (L'Arbresle), the two Unité d'Habitation (Marseille, Rezé-les-Nantes), Chandigarh (India), Isthmia Prime Motel (Corinth), and Arts and Youth Center (Firminy).

The wind blows... point and counterpoint... I fly over hills and valleys and suddenly see walls and worlds behind them... a said rock, barracks, a casemate, a concrete engine? None: a monastery! **Sainte-Marie de la Tourette!** The volume is massive and yet it seems to levitate above the valley... its windows seem to be constructed Morse codes... repetition and iteration, full-empty, diffraction-reflection... It seems like a “sacred engine”... Brutalist, it seems to have the recipes of French Renaissance and the influences of Italian Renaissance architecture, the same feeling, the same logic of overlapping registers but at the antipodes.

I don't know why, it makes me think of the castles of the Loire Valley, especially at Château Chenonceaux, but at antipodes. I hear footsteps on the stone. I am alone in a awkward cell, but not in Byzantium, it's not so charming. Everything is hard, cold, grey, depressing, angular. I don't feel well, and the windows are driving me crazy, they seem to make sounds, they seem to be cannons of light, and it's not just the diffraction. I am transported in time again, two millennia ago... I am in Peloponnese, in a stone house and through a window I see a temple: repetition, iteration, full-empty, diffraction-reflection... the place gives me chills...

I know to the core that the **Unité d'Habitation in Marseille** is one of the great architectural achievements of the history of architecture and of Le Corbusier, an archetype for all the forms in which the problem of collective housing was later rethought. All architecture students from then until today are “doped” with it, but no one asks them if they actually like it. I never liked neither the utopian idea of living in a minimalist hive, guaranteeing a hypothetical standardized happiness, nor the fact that for Le Corbusier, the human being was not an individual, but a type... I wonder why Le Corbusier lived in a villa on the French Riviera and not in a Unité, if he still declared it an ideal? I think of the dictators of all the “democratic” and “people's” republics of the world... their lives are disconnected too from the ideal they prophesy for others - none of them live in blocks of flats, nearby the simple manipulated, poor people, but they all tell others how wonderful it is living like this!

I listen to Xenakis's chords in Unité... I may not resonate with the architecture and the concept of living, but I like the “music” of “his” constructive system. An irony of fate: the engineer with the qualities of an architect Iannis Xenakis together with the architect with the qualities of painter Nadir Afonso to design a garbage collection station of the Unité d'Habitation, a “robot”-guarantor of happiness with the force at right angles and small spaces. Point-counterpoint: the Unité “robot” and the organic “temple” of garbage, without which no construction could exist... an irony of fate.

From darkness to light: from this perspective the “robot” Unité seems to me a medium connecting a “world” to be hidden with a “world” to be shown on its constructed “sky” (roof): the kindergarten of the ensemble... Xenakis - anonymous co-author. With light the ensemble is visible at night, and light comes from the lamps designed by Xenakis for public lighting in relation to the ensemble.

Refined in Marseille, **the Unité** concept was also applied in Rezé-les-Nantes. More standardized, more prefabricated... I remember the closet where we keep our shoes at home... I mentally remove the doors, the sides, the back and the boxes remain... they don't need a closet... he just hides them... “shoebox”... a ingenious structural system, thought by Xenakis in collaboration with the engineer Lafaille... interesting, but I can hardly imagine a “type” man forced to be happy in a three-dimensional structural unit/cell becoming a “manbox” – a revolutionary system, versatile and economical, but perfect maybe only for Lego “people”.

A music flows in loops... again only Xenakis's chords now and then: in the controlled poetics of the site, in the realization of the facades, in the details of the installation system. Here Xenakis comes again from the darkness towards light, from the ground to the sky with the kindergarten designed on the terrace... a literal road to light, because the atypical composition of the type windows give built body to his stochastic music... electronic systems + mathematical algorithms + probability theory.

I can imagine how cool this seemed in those enthusiastic early years of the emergent computer world and how the avant-garde bohemians of the time looked imagining flying cars in the year 2000... I don't hold the Unités concept close to my heart and I would never live in something alike, but I can appreciate their structural-functional solutions and their archetype posture for many novotypes better adapted for the real life. As archetypes it seems to me that they symbolically re-write the preoccupation of the architects of the Greek antiquity for the optimization of the trilithic structure of the temples, for the standardization of the constructive elements that make them up, but the temples were not for people, be they type or not...



I remember the times when I went, for educational purposes, to the *Unité in Marseille*... I think it is a mistake that an architect, whether a brilliant one like Le Corbusier or not, is allowed to believe that he is a demiurge... Luckily he was stopped in time and was not allowed to destroy Paris with the utopia of the Voisin plan... but he got his “revenge” by bringing urban “happiness” by force to Chandigarh. But I'm not at Le Corbusier's concert, but at Xenakis' symphony... did he enjoy working on a reality brutally imposed on a cultural context that woke up too late to a *fait accompli* thought in parallel realities? Did he believe in him? Xenakis's music flows as if not human, devoid of emotions and I wonder how he went from the theoretical study of the local climate to the concept of the hyperboloid geometry of the Palace of Assembly, from acoustics and ventilation problems, to solving the window system of the Secretariat building? Did he wonder why he was doing this, why he was participating in a dream that maybe wasn't his? Or was it also his dream? Did he wonder what Corbusier's big project has to do with India and if the locals like it? When I think of Chandigarh, images of engine blocks come to my mind, I see concrete bunkers abandoned from the wars on sandy beaches, I see furnaces and feel sadness, depression... How did Xenakis feel as a “type”-employee, an anonymous within the vision and in the office of a man with a mountain of pride, who thought he was perhaps irreplaceable and perhaps a demiurge?

**Isthmia Prime Motel**... his music sounds great! A spectacular fusion between the reflex of brutalism and the metaphorical reinterpretation of the austerity of the Doric order... I feel Mediterranean air, a smell of salt, transparency, flight, I feel the state of the heritage of the ancient architecture of the area. The period is different, because we are almost two decades away from the beginnings of the “symphony”, but Xenakis is a co-author here too.

The novotype columns don't even allow silence to settle between them, and that's exactly how it should be: it's a motel, not a temple! The triangular concrete antefixes connect the present times with Greek, Etruscan, and Roman antiquity... my mind flies to the poetics of light and shadow of the ancient temples and I seem to hear the dialogue of this floating volumetry with the ancient local temples of Apollo or the temple of Poseidon. Repetition and iteration are here main “actors”, because they make of the “cell” of the room a poem of light, shadow and view... I wish I stay there a few nights in the future to have the metaphysical experience of the space... the whole building, I don't know why, makes me think of a fusion between a tuning fork and a clamerton, but not as a physical resemblance. Elegant and classic in its modernity, grid for modulated music, governed by a refined logic of aesthetics, both sound and silence metaphorical vertical cartesian fusion of stages of ancient theaters. My mind is flying in a holiday mood and it's as if I have a taste of essence of Greece in my soul, in a brutalist key that doesn't seem to take itself seriously.

The small sonata **Arts and Youth Center**. The theme seems to have given him hope, seduced him and then seems to have abandoned him. It would perhaps have been too nice for this complex to be recognized as signed by Xenakis. Here, at Firminy, it would have been close to the last of the five Unités and of Saint Pierre church signed by the same Le Corbusier. Appointed project manager, Xenakis must have felt full of hope and enthusiasm, and the seduction of the theme must have been irresistible. Even though it was designed by Xenakis, again he is considered as co-author, and the vast majority of searches, online but not only, still give Le Corbusier as the sole author. In this context I feel sorry and said for all the talented dreamers, gifted creators, professional enthusiasts and modest artists that put their energy into the service of almost dictatorial individuals with mountains of pride and egocentrism, perhaps hoping or imagining that they will ever be recognized as co-authors, but not paying attention at Brâncuși's words: "nothing can grow in the shade of big trees"... Xenakis and the light... the windows and their dance rippling in the light... that conclude the second part of the "symphony" as far as I'm concerned.

III. In the classical symphony, the third movement has a moderate pulsation, with a *menuet tempo* or a faster, shifting, exciting *scherzo tempo* (being generally its shortest movement). In a similar pulsation, the "symphony of the dream of life" as crystallized by Iannis Xenakis continues with his contributions to projects never built: the Olympic Stadium (Baghdad), the auditorium for the conductor Hermann Scherchen (Gravesano), a vision for a Cosmic City, the Center des Arts Le Corbusier (La Chaux-de-Fonds), the Cité des Arts (Chiraz), the project for the Reynolds House (Borrego Springs), and the project for the Cité de la Musique (Paris).

The wind is blowing... point and counterpoint... the **Olympic Stadium** in Baghdad, another project entrusted by Le Corbusier to Xenakis, and it has already begun to unfold. Corbusier refused his proposals, and he returned and continued with paraboloids and variations on the same theme... nothing was achieved... paraboloids, hyporboloids, conoids, the obsession with ruled surfaces over and over again. However appetizing in the middle of the 20th century, on so exhausted as a language at the end of the same century.

The wind blows... point and counterpoint... An **auditorium for the conductor Hermann Scherchen**... a *paraboloid redivivus*, already an obsession for Xenakis, and again nothing materialized.

The wind is blowing... point and counterpoint... Asked by Françoise Choay, who was working on her famous anthology *L'urbanisme, utopies et réalités* (1965),

Xenakis made a proposal for a city of the future, Cosmic City, how else than in the paradigm of verticality, control and technology, an utopian vision typical of the 60s. He resumes the paraboloid obsession and makes it a bridgehead in music, in *Polytopes... Cosmic City... Cosmo Polis* in Greek... *kosmos + polis...*

Of Greek origin, *kosmos* has the meaning of *vast space*, of the universe as a whole governed by harmony and balance, of topos in which order prevails as a condition of being, in opposition to disorder, to chaos. Plato explores (*Timaios*) the problem of the origin and functioning of the *kosmos*, trying to explain the intimate composition of matter with the help of the five regular polyhedral, the dodecahedron being attributed to the *kosmos*. In an urban key, we can think of the *kosmos* as a world of fusions of various (*megalo*)*polis-es*<sup>10</sup>, interconnecting and multiplying exponentially, having as its condition of being (to which it tends asymptotically) *ordo ab chaos*.

In the *megalo-polis/Cosmic City*, the house - *oikos* becomes our nocturnal refuge, the polis becomes a quite bizarre and quite different *topos* for everyone<sup>11</sup>: we can be both connected and unconnected to it. In the *megalopolis/Cosmic City*, our life becomes paradoxical compared to everything that, until recently, the traditional urban space meant: "immerse" in a universe multiplied in all senses, both "real" reality and virtual reality, seeming to "expand" limitlessly, we become more a number than a person, more of an individual than an individuality, more of a pixel than a human being, virtualizing our existence to feel that we "exist".

*Cosmic City... Cosmo Polis...* Of Greek origin, *polis* seems to have two meanings in the world of Greek antiquity: i) city-state (a territorial unit administered by a form of collective government, with rules of social agreement value, crystallizing an urban organism - sum of architectures, sites, circulations, etc., whose life is inspired by the involvement of the community of origin - mainly of the families that composed it, in economic dependence in relation to other regions), and ii) relatively extensive community (of blood, religious traditions and beliefs, interests, etc.). City, community... the *polis* is basically a sum of *oikos-es*

<sup>10</sup> *Megalopolis*: "big city", but also the ancient Greek city of the same name, attested in 371 BC, located near by Taygetus and Tsiberou mountains (Peloponnese), famous for its ancient theater. To top it off, its current official population is 5.748 inhabitants (according to official data in 2019), quite close to the number of inhabitants considered by Plato – 5.040, as ideal for a *polis*, a number which seems to be, approximately, the sociological threshold limit up to which the citizens of a community can know each other and relate to each other.

<sup>11</sup> Residential complex, neighborhood, virtual community, because the *megalo-* is not structured on "organs" of character, but conventionally and administratively in areas without necessarily physical, tangible identity.

with the added value of what we would call the sense of belonging to the extended group, a kind of extended family hopefully called community, a special state of attachment to the city, animated by the citizens who want and can get to know each other directly, to have a relative autonomy as a crucible generating the timeless feeling of human dignity, to decide its future because they care. All this is in opposition to the anti-polis, the threats (in present times: demographic growth, urban gigantism, consumerism, globalization, waste, climate change, the state of chaos, alienation), the denial of rule, with no other alternative than disaggregation. And everything up to the grave, the necro-polis, the place of maximum entropy growth

*Kosmos+polis.* From the perspective of the present I look in dismay at the *technotopian* romanticism with which the visionaries of the second half of the 20th century imagined the cities of the future, populated by people happy to live controlled, alienated, disciplined and pixelated into futuristic hives of metal and glass, only good for work within the paradigm of perpetual development... of what, exactly?, we naturally wonder. Of other, more futuristic hives? For who to live in? The *Modulor* as a human-type living in the mind of Le Corbusier? The New Man of failed socialist realisms? The Lego man? Can there be freedom and democracy in such *kosmos-es*? Does this show the contemporary equivalents of Asian dictatorships pixelating human-types into forests of blocks enclosed between pens to control the people more easily while obsessively explaining to them how “happy” they are, but without having any other alternative? I wonder for which people Xenakis imagined *Cosmic City* and if he included in the equation of his thinking not only his own utopian technical dreams, but also the desires and happiness of people? And if he really liked this, I sincerely wonder why he designed individual houses/homes/*oikos-es* for him and his family instead of living “ideally” in a type small apartment in a *Unité*? Onerous as a possible achievement, like any technical *topos* that brings his “happiness” by the force to (imaginary) people thought to be “tools” without identity, forced to live that “happiness” as they are told, *Cosmic City* remained only in drawings with an outdated romantic flavor... as far as I'm concerned, that's the only way this vision is wonderful, as any story...

The wind blows... point and counterpoint... **Center des Arts Le Corbusier** (La Chaux-de-Fonds)... Xenakis left Le Corbusier and yet *L'association Internationale des Amis de Le Corbusier* asked him to take on this project... the project was also abandoned. The wind blows... point and counterpoint... Seductive, but abandoned in the concept stage, was also the project for the **Cité des Arts** (Shiraz, Iran). The wind blows... point and counterpoint... Another disembodied dream was his **Karen and Roger Reynolds house** (Borrego Springs, California)... same “neumatic”

windows, same “corrugated” window recipe, same living cells and a local architect to turn it into reality, Xenakis forever remaining somewhere in the shadows of the “scene”... the house was never built anyway... The wind blows... point and counterpoint... The project for the **Cité de la Musique** (Paris), for the La Villette Park: Xenakis on the jury, Xenakis architect participating in the competition... the already predictable hyperbolic paraboloids, formally exhausted and overrated, the already predictable “wavy” units of light, Xenakis also co-author... the project was not appreciated and remained unrealized.

This third part of the Xenakis symphony made me ask again, rhetorically, the question of the finality of our art, as architects. Does a never-built project make sense? Does it make any sense to think about utopian, fantastic projects of entities and megalopolises that can only exist in the virtual world of 3D? Among the only arts that do not do mimesis, only in music one can really build anything, including the greatest utopias... and it is wonderful that it is so!

**IV.** If the last part - *finale* in the classical symphony, has a fast tempo - *allegro*, *presto*, *vivace*, being built either as a *rondo*, or as a *sonata* or as a theme with variations, the “symphony of the dream of life” as crystallized by Xenakis ends with personal variations on the theme of housing: the Mâche house (*Amorgos*), a restoration project for a house for René Schneider (Corsica), the Klatzmann House (Paris) and the Tour Corse for his family.

The sun is burning... point and counterpoint... The house of **François Bernard Mâche**, his son-in-law, was to be built on the island of Amorgos in Greece and in it I meet my dear “friends”: the poetics of light through the effect due to diffraction, white as a surreal snow in the arid landscape, the state of a nest, of *oikos*, the organic inscription in the landscape (like the rocks and the nervousness of the level curves), the pavilion concept (inspired by the traditional houses of the Greek islands), again the “neumatic” windows, again the “light cannons” and, above all, the modernist avant-garde of the whole ensemble... this time too he did not fully take care of the project.

The sun is burning... point and counterpoint... Xenakis restores the building of an old stable, a **“bergerie” for his friend René Schneider**, in Corsica... there they meet again the same friends from the house on the island of Amorgos, in enigmatic variations on the theme of the transformation of an architecture in ruins into architecture re-written in modernity... reminds me of the body of a windmill... The wind is blowing... point and counterpoint... the Parisian sky is gray... we are invited to **the house of David Klatzmann**, his son-in-law... Xenakis has the

opportunity of the “big” project of expanding the house... he does it in the architectural language so familiar to him and signs in this minor project a wonderful and perfect feeling of *Home*... paradoxically, it seems to me perhaps his finest architectural achievement, the most musical, the most evocative... in it there is neither Brutalism, nor Le Corbusier, nor paraboloids, nor the influence of any co-author ... it is he and the valuing for an *oikos* of his daughter...

The sun is burning again... point and counterpoint... an *oikos* tower can be seen on the horizon in Corsica, an *oikos* tower designed for his family... the same invariants: the poetics of light through the effect due to diffraction, white as a surreal snow in the arid landscape, the nest atmosphere and scale of the *oikos*, again the “neumatic” windows, again the “light cannons” and, above all, the re-writing of an ancient tholos in a modern *oikos*... he was not to take care of the project completely this time either...

The sun burns... point and counterpoint... *oikos*... The concept of Greek origin *oikos* (*οἶκος/oikeo/oikia*) seems to have three meanings: i) family (*oikeo/oikéō* – I live, with reference both to those related by blood, the line of descent, but also those who lived under the same roof, in the same “house”, without necessarily being related (as found in Aristotle in Politics), ii) goods (what the family owns), and iii) “house” in itself (*oikia, dwelling*), property, shelter in a more extensive understanding, protective space, assurance of existence. Thus, the basic unit of the social construct in most ancient Greek city-states, *oikos* seems to mean a full of meanings Home. If we also remember the contemporary sociological meaning of *oikos* as a relatively small group of people (family+friends and their families) who share the same interests, have the same concerns, help each other and who regularly spend time together, building what is called a “social framework”, we discover that, through the fusion of all meanings, *oikos* seems to be a social, community constant.

From the world of Greek antiquity and at least until today (as long as we are not yet a world where we all live virtually, although the pandemic involving almost total physical isolation has shown that we would be heading towards it), with a multitude of meanings, *oikos* seems to account for man's journey through life, with all the possible meanings of *Home*... are we aware that Home means different things to each of us and that of the balance of this Home - *oikos* may depend the balance of the entire social construction, just as on the balance on the parts depends the balance of the whole?

This is how the symphony of Xenakis' "dream of life" ends, both chronologically and as deep achievements: in 1996, with **Tour Corse**, his and his family *House-Home-oikos*.

In the year 2001 the "symphony of the dream of life" as crystallized by Iannis Xenakis sent *urbi et orbi* its last chords... the wind stopped blowing, the sun stopped burning, point and counterpoint exist only in memories... Despite what he wanted and/or believed - "This is my definition of an artist, or of a man: to control", Iannis Xenakis did not manage to control anything either, because, no matter what we do, we cannot stop the increase of entropy as an inexorable process in the great geo-chemical equation of the universe.

Through the "symphony of the dream of life" I participated symbolically at in the summer of 2022, as the only spectator, I tried to understand Iannis Xenakis in his *arché-tekton* nature through the lens of the only arts that do not do mimesis, Architecture and Music. In the pose of *arché-tekton* (engineer-architect) Xenakis is related to only 18 projects, of which only 11 were built, of which only 10 still have shadows on the earth, of which only four bear his signature as the only recognized author as such. Coincidentally or not, these four are houses-homes-oikos-es... for I believe that only in the four dwellings – *oikos-es*, in the chords of the last part of the symphony of his life's dream, Xenakis was totally.<sup>12</sup>

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<sup>12</sup> A final typology, both an exercise of professional sincerity and a matter of personal taste: the order of importance in which I place from a personal point of view the 18 architectural projects to which Iannis Xenakis is linked after the "concert" occasioned by his "symphony of the dream of life": 1) Mâche House, Amorgos, 2) Klatzmann House, Paris, 3) Tour Corse, 4) Schneider Bergerie, Corsica, 5) Reynolds House, Borrego Springs, 6) Isthmia Prime Motel, 7) Philips Pavilion, Brussels, 8) Couvent Sainte-Marie de la Tourette, L'Arbresle, 9) Arts and Youth Centre, Firminy, 10) Auditorium Scherchen, Gravesano, 11) Center des Arts Le Corbusier, La Chaux-de-Fonds, 12) Cité des Arts, Chiraz, 13) Cité de la Musique, Paris, 14) Olympic Stadium, Baghdad, 15) Unité d'Habitation, Rezé-les-Nantes, 16) Unité d'Habitation, Marseille, 17) Chandigarh and, not coincidentally, last but not least, 18) Cosmic City. See also the comparative typologies table

No.	The order of the results of the online search in June 2022 of the name "Iannis Xenakis" associated with each of the 18 architectural projects in which he was involved and of their sites.	The chronological order of the involvement of Iannis Xenakis in the 18 architectural projects.	A hierarchy in the sense of the importance of the 18 architectural projects in which Iannis Xenakis was involved, only through the prism of their significance, impact and influence in the history of 20th century architecture: A) projects as landmarks of a major international importance; B) projects as landmarks of moderate national/ international importance; C) projects as landmarks of national/ local importance within their sites; D) unrealized projects and visions, but important in the theoretical evolution of the architectural phenomenon; E) unrealized projects and visions, with relative or reduced importance in the theoretical development of the architectural phenomenon, relevant especially in the local context; F) projects of no importance other than to their beneficiaries, realized or not.	The order in terms of the nature and the scale of Iannis Xenakis' professional involvement in the 18 architectural projects in which he was a part: I) major contributions and almost as sole author to major projects; II) partial contributions and as part of teams for large projects; III) involvement in projects never built; IV) personal variations on housing. This is the typology that could be seen as a symbolic construction corresponding to the general structure of the classical symphony, and this was the pretext-context in which, I tried to confess what crystallizes the work of Xenakis as an <i>arché-tekton</i> in my consciousness as a sum of unisensory sensations and multisensory perceptions, brought together through the "symphony of life's dream" as crystallized by Iannis Xenakis.	Both an exercise of professional sincerity and a matter of personal taste: the order of importance in which I place from a personal-professional point of view the 18 architectural projects to which Iannis Xenakis is linked after the "concert" occasioned by his "symphony of the dream of life".
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1	<b>Klatzmann House Paris 61.000</b>	<b>Unité d'Habitatio Marseille 1947-1953</b>	<b>A) Chandigarh India 1951-1959</b>	<b>Philips Pavilion, Brussels 1956-1958</b>	<b>Mâche House Amorgos 1966-1974</b>
2	Cosmic City 59.100	Unité d'Habitatio Rezé-les-Nantes 1950-1955	A) Unité d'Habitatio, Marseille 1947-1953	II. Couvent Sainte-Marie de la Tourette, L'Arbresle 1953-1961	Klatzmann House, Paris 1991
3	Cité de la Musique, Paris 46.500	Chandigarh India 1951-1959	A) Unité d'Habitatio, Rezé-les-Nantes 1950-1955	II. Unité d'Habitatio, Marseille 1947- 1953	Tour Corse Corsica 1996
4	Centre des Arts Le Corbusier, La Chaux-de- Fonds 21.100	Couvent Sainte- Marie de la Tourette, L'Arbresle 1953-1961	B) Philips Pavilion, Brussels 1956-1958	II. Unité d'Habitatio, Rezé-les-Nantes 1950-1955	Schneider Bergerie, Corsica 1974-1976
5	Philips Pavilion, Brussels 20.300	Olympic Stadium, Bagdad 1955-1965	B) Couvent Sainte-Marie de la Tourette, L'Arbresle 1953-1961	II. Chandigarh India 1951-1959	Reynolds House, Borrego Springs 1984-1992
6	Cité des Arts, Chiraz 18.200	Philips Pavilion, Brussels 1956-1958	C) Isthmia Prime Motel. Corinth 1969	II. Isthmia Prime Motel. Corinth 1969	Isthmia Prime Motel, Corinth 1969
7	Scherchen Auditorium, Gravesano 10.800	Arts and Youth Centre, Firminy 1956-1965	C). Arts and Youth Centre, Firminy 1956-1965	II. Arts and Youth Centre, Firminy 1956-1965	Philips Pavilion, Brussels 1956-1958
8	Unité d'Habitatio, Marseille 10.200	Scherchen Auditorium, Gravesano 1961	D) Cosmic City 1963-1964	III. Olympic Stadium, Bagdad 1955-1965	Couvent Sainte- Marie de la Tourette, L'Arbresle 1953-1961
9	Olympic Stadium, Bagdad 7.340	Cosmic City 1963-1964	E) Olympic Stadium, Bagdad 1955-1965	III. Scherchen Auditorium, Gravesano 1961	Arts and Youth Centre, Firminy 1956-1965

10	Chandigarh, India 6.490	Mâche House, Amorgos 1966-1974	E) Cité de la Musique, Paris 46.500	III. Cosmic City 1963-1964	Scherchen Auditorium, Gravesano 1961
11	Couvent Sainte- Marie de la Tourette, L'Arbresle 5.030	Isthmia Prime Motel, Corinth 1969	E) Cité des Arts, Chiraz 1971-1973	III. Centre des Arts Le Corbusier, La Chaux-de- Fonds 1970-1972	Centre des Arts Le Corbusier, La Chaux-de- Fonds 1970-1972
12	Tour Corse, Corsica 4.890	Centre des Arts Le Corbusier, La Chaux-de- Fonds 1970-1972	F) Mâche House, Amorgos 1966-1974	III. Cité des Arts, Chiraz 1971-1973	Cité des Arts, Chiraz 1971-1973
13	Isthmia Prime Motel, Corinth 2.170	Cité des Arts, Chiraz 1971-1973	F) Klatzmann House, Paris 1991	III. Reynolds House, Borrego Springs 1984-1992	Cité de la Musique, Paris 1984
14	Arts and Youth Centre, Firminy 1.720	Schneider Bergerie, Corsica 1974-1976	F) Reynolds House, Borrego Springs 1984-1992	III. Cité de la Musique, Paris 1984	Olympic Stadium, Bagdad 1955-1965
15	Schneider Bergerie, Corsica 1.120	Cité de la Musique, Paris 1984	F) Tour Corse, Corsica 1996	IV. Mâche House, Amorgos 1966-1974	Unité d'Habitation, Rezé-les-Nantes 1950-1955
16	Unité d'Habitation, Rezé-les-Nantes 987	Reynolds House, Borrego Springs 1984-1992	F) Schneider Bergerie, Corsica 1974-1976	IV. Schneider Bergerie, Corsica 1974-1976	Unité d'Habitation, Marseille 1947-1953
17	Reynolds House, Borrego Springs 643	Klatzmann House, Paris 1991	F) Centre des Arts Le Corbusier, La Chaux-de- Fonds 1970-1972	IV. Klatzmann House, Paris 1991	Chandigarh India 1951-1959
18	<b>Mâche House, Amorgos 585</b>	<b>Tour Corse, Corsica 1996</b>	<b>F) Scherchen Auditorium, Gravesano 1961</b>	<b>IV. Tour Corse, Corsica 1996</b>	<b>Cosmic City 1963-1964</b>

*Comparative typologies table*

### 3. Conclusion

Iannis Xenakis didn't mark me, I didn't become a fan, his contributions in architecture seem to have only an outdate charm, and it cannot be said that, as an "architect", he has a place comparable to that of Le Corbusier or other emblematic architects in the great universal history of architecture, regardless of whether I personally like their creations and I find myself in their projects or not. But I can say that his figure as a late romantic in modernity, exploring the shores of avant-garde, seduced by the paradigm of computers in the romantic period of their development and before he could live a life saturated with them, inspired me in the sense of dreaming of the dream of life having permanent why-s to live.

In his "symphony", Xenakis "told" me that the dream of his life was lived in the permanent attempt to rewrite in modernity and avant-garde, in a mathematical key, the architecture, music and philosophy of his Greek cultural matrix, exploring the halo of meanings and significations of the triad *kosmos-polis-oikos* and their re-semantifications as he understood them in his time. In this context it was for Xenakis to explore throughout his creative activity the genesis and becoming of the built and the meaning of its resemantizations in the *archetype-type-novotype* relationship, in the idea that the Road is an infinitely more important target than the finality in the journeys of architecture, of music and man on the scale of history and on the scale of life, as is the story of the *arché-tekton*.

Through his contributions, even if modest, I think we still learn a bit of the story of the history of architecture as the story of man's becoming together with the becoming of his House-Home-*oikos*, with which he shares a common destiny: to be *semper inter mundos*, constantly questioning the borders between *polis-es* and *kosmos-es*, in any of the real or virtual realities we would experience through time.

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