The impact of the Architecture on the Climate Change in Anthropocene

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Abstract. The author focused on the philosophical and technical-analytical issues in the influence of architecture in the Anthropocene era. The text introduces to the issues of the impact on the natural environment through the activity of construction and architecture in the Anthropocene era. The first part introduces the philosophical character of the discussion on the nomenclature and the scope of the ecological character. The author indicates in the second part to the extent of the environmental impact of the tested object. The example of the analyzed architecture shows that the nature of the impact on the natural environment and climate change has been approximated. Concluded the paper refer directly to the architectural-environmental issues, orienting to the regenerative design process of architecture in respect of widely comprehended climatic changes in philosophical and theoretical dimension.

1. Introduction
The object of the article is to present the architectural work in the context of climate change in the Anthropocene era [1]. The holistic model of the state of affairs, which is the good of all beings on Earth, defines the horizon - it would seem - to make moral and ethical decisions and their subsequent consequences of events that are responsible for the condition of life [2, 3]. It pays attention to the holistically conscious, ethical, pathocentric question of the conscience of 'architecture' in the image of design creation and the place of the 'home' of a human being. The case analysis shows a paradigm shift in architectural creation, for which ecology speaks in a philosophical and practical context.

Analyzing human and architecture, what should be characterizing the model combining the aspect of Anthropocene by a critical overview and sustainable development ideas? Illustrating the resulting relationship using the analysis of examples of pro-ecological solutions in architecture and the ethical and moral standards pointing of a critical image of the future in the aftermath of climate change. [4]

The main aspect will aim what should draw attention to the ever-growing methods of eco-friendly researching the building, such as Life Cycle Analysis and Building Information Modelling, as the future of sustainable, conscious architecture regenerative design in a changing climate [5, 6].
2. Anthropocene

Anthropocene, by definition, is the term for the ecological imprint of human activity in the current geological era. The discussion on the beginning of the Anthropocene is still ongoing. The human existence on the planet, its continuous technical and technological development, has, in fact, only recently impressed a significant mark on the natural environment in the ecosphere of the entire planet. Bińczyk in the book "The age of man. Rhetoric and apathy of Anthropocene" gives several fights in the theory that shapes and places Anthropocene. This shows that the term is currently used without locating it specifically during the uprising. However, other geological eras are also defined within certain limits. For the purpose of locating Anthropocene in the geological ages, I will take the time of creation from industrial development. This is also important due to the architectural technical and technological development of architecture.

The civilization attitude in the present Anthropocene age is undoubtedly acceptable. By this dissonance, I understand the attitude of a man dignified on a path towards genocide. An eloquent analysis of this case is the state of acceptance by the society of things happening leading to the end of life on earth. An important element in defining this attitude is a sociological sketch of acceptance attitudes. Of course, awareness of the sequence of events is recognizable by individuals, and changes for the better would have to happen bottom-up. This unmistakable ecological populism has become a globalization crisis. The elites are trying to cope with climate change, and this test also takes place in the field of architecture and construction. However, as will be outlined later, there are no top-down recommendations on determining the environmental impact of an architectural object as implemented by the legislator. There are various methods, environmental impact assessments, however, they are voluntary or dictated by marketing considerations and financial benefits.

Anthropocene is now a course in understanding the area of negative human impact in a (some) geological age, but is it understandable for the elite? Is recourse to this era financially dictated? In the era of burning fossil fuels, the general dissatisfaction with climate change (hurricanes, rising oceans, extinction of species, hot weather, tsunamis, etc), this is probably a topic for constant discussions of convening international symposia, advisory and remedial groups. This sketched picture is negative because the ecological policy is developing too slowly in relation to existing irreversible climate changes. However, there is a problem for the meaning of the polemic. This is dictated by the fact of the essence of things, indicating the inability to estimate whether this is true and whether the changes made are irreversible in the context of the need for human existence in the context of the image of the planet. There is no certain evidence that our planet will heal itself or not. Is the scenario drawn up by scientists or laymen a true or incorrectly defined environmental, political and social problem? Of course, there is no doubt that extinction of species is irreversible, the generation of CO2 into the atmosphere will prevent future generations from functioning properly, etc. The overriding question is whether human consciousness in this situation is only its own ambition for the well-being of existence? Perhaps the future of a man is focused on its extinction, the planet will remain until the supernova explosion, which is a star called the Sun (or another cataclysm independent of homo sapiens).

2.1. Approach to the aesthetics of nature and the city

An approximate approach to the aesthetics of nature and the city develops ecotypes that wild-growing ideologists serve and empower to search for and protect nature in and outside urban areas, and architects allow the creation of the ecosphere as a project in itself. The emphasis should be on the characteristics of the relationship between man and nature and refer specifically to ecological ideas in philosophical terms. The relative division of man and nature comes from physical, direct contact with nature, not from spiritual experience. The longing for staying in the world of wild nature that fills human causes the emphasis on the frequent conduct of the design process, emphasizing the philosophical aspect of the project rather than the real search for natural matter in the sphere of environmental influences on the natural environment through the relationship building and environment. In the background of defining
the philosophical design basis for further considerations, it is necessary to use the interdependence of shaping consciousness in creating ecological conscience and eco philosophical attitudes that is Gaia's true need in counterargument to the Medea hypothesis of the space Earth. [7] [8] Theodore Roszak specifies that "Conscience and Consciousness, as the overlapping similarity of these two words, is instructive. From the new consciousness, we acquire ourselves as a person, perhaps we will create a new conscience whose ethical sensitivity is finely tuned to a significant good, significant evil". In the context of the covenant with nature, the ecological approach also takes on a deeper meaning when Roszak calls "the awakening of wholes larger than the sum of their parts. In the spiritual dimension, there is a contemplative and therapeutic practice" [9, 10]. This is a covenant understood by Ernest Bloch as opposites of technology. It is important to position the split between economic conscience and architectural design in (eco) philosophical structures. Aristotle referred to the determination of laws and comparisons in which: Nature does nothing in vain; [11] Nature escapes from infinity [12]; Nature always strives for the best [13]. The Platonic creative powers of Being are the idea of creating a world in which Timajos [14] wonders "...over what pattern his Builder made, or according to this pattern, which is always the same or born. If the world is beautiful and the contractor is good, it is clear that he looked at the eternal pattern. And if not, what you do not say is not good, he looked at the pattern born". In turn, Immanuel Kant described the nature of nature as a crafty creation, standing talking about it:" Nature does not make jumps", "Nature always chooses the shortest path".

2.2. Ecological Philosophy

The term, Eco-Philosophy, was introduced by the Polish scholar Henryk Skolimowski in June 1974 in a published sketch in the pages of "AA Notes" (1974, June-July, No. 38, p. 45) under the title "Ecological humanism". [15] Ultimately, the entire shape of the new ecological philosophy - ecological humanism, which the creator considered to be too narrow a name, reached the Eco-Philosophy conference organized in 1979, which ultimately resulted in the publication in 1981 of the book "Eco-philosophy. Design New Tactics for Living ". The entry to the philosophical dictionary was sealed in Poland on September 6-8, 1995 at the Sixth Congress of Polish Philosophy in Toruń, creating the section "Eco-Philosophy and philosophy of life". The aim of eco-philosophy has been to focus on human values, all nature and life, a spiritually living wisdom that has the right knowledge in contrast to modern language-oriented philosophy, dedicated to dry facts, objective abstraction, spiritual deadness and only fragmentary analysis of collected information. The ultimate message of eco-philosophy is that humanity can "change every element of our social, individual, spiritual, ecological and political life, but affecting them all at once, not separately." [16, p.61] Eco-philosophy is in this way, a constant dialogue with the ever-changing universe. By rejecting many pearls of wisdom leading to "ruin" over the millennia, the shape of the world was consequently negatively transformed on the plane of the entire natural environment and beings living in it. Skolimowski postulates to create a new holistic philosophical vision that will give a new sense of humanity. It necessarily complicates the tree of life by giving and defining the relationship: cosmology <> philosophy <> value <> action. Henryk Skolimowski sketches a human being as a spatial entity and coined the motto of twentieth-century architecture: "Do less, using more resources". Eco-philosophy undermines the knowledge and aspiration of the architect in the context of drawing the main attention to the geometric and physical space, not having regard to the aspect of human space: social, mental, cultural and spiritual. [16, p.154] Ultimately, the architectural space is characterized by a physical desire to define the function of our culture that satisfies a multitude of human needs. The pillar of aspiration of philosophy is to sketch a temporal culture, as the one whose activity systematically destroys quality.

Skolimowski admits in one of the interviews that the problems created by him were not created in a vacuum. [15] A similar way of thinking in relation to Skolimowski's philosophical ecology was created in the head of Thomas Berry, author of "The Dream of the Earth" and Murray Bookchin, author of "Ecology of Freedom". For a vision of the ecology of environmental philosophy, it is proper to quote the figure of John Muir. Muir has become a precursor of environmental philosophy, giving rise to the
assumptions of deep ecology. The term deep ecology appeared in the article "The Shallow and the Deep, Long-Range Ecology Movement: A Summary" on the pages of the journal Inquiry in Oslo, 1973. Deep Ecology Arne Naessen "resigns from anthropocentrism, homocentrism towards biocentric equality". [3, pp. 96-99] Unrelated to the mainstream of ecological philosophy, but aptly (according to the author) M. Heidegger formulated it, saying: "The house has its side (Seite) sunny and northern side; it is oriented on the division of "space", and within it a "device" according to its tool character". [17]

Thus, it indicates the level of negation of contemporary architecture that provides only physical shelter in relation to the real quality of life in true architecture recognizing the spiritual and transcendental dimension of humanity. This indicates the future and evolution for architectural inquiries about the shape and meaning of the sanctity of life in the new architectural base where the unity: architecture - environment - personality should be the motto: "Shape your own holistic nature so that your buildings have a similar character; so that you can contribute to the integrity of the environment." (Figure 1.)

![Figure 1](image)

**Figure 1.** Shaping architecture referring to various types of ideas. From left: (A) Maison Saint Cyr (1901-1903) arch. Gustave Strauven (Art nouveau) Brussels, Belgium; B) Elizabetes iela 10b (1903) arch. Mikhail Eisenstein (Secesja - Jūgendstila) Riga, Latvia; C) Atomium (1958) arch. André Waterkeyn (iron crystal model, enlarged 165 billion times) Brussels, Belgium; D) Unité d'habitation Berlin (1958) Le Corbusier (functionalism - physical shelter in relation to the real quality of life) Berlin, Germany

Reality induces all human civilization processes to understand the functioning of phenomena that govern in the environment, nature and nature in order to maintain human unity with "nature", finding the basis of the humanistic idea of sustainable development at the level of conscious interdisciplinary cooperation. Regenerative Design is a concept whose essence determines the way of action for the consumption of matter taken from the environment, which needs to be compensated, compensated, restored, renewed by means of energy or materials, but also the creation of sustainable systems that integrate the needs of society in symbiosis with nature. In this context, all the activities of the architectural design process using the full spectrum of Life Cycle Assessment (LCA) analyzes make it possible to estimate the environmental impact of architectural objects.
3. Life Cycle Assessment issues
The global economy and its globalization, which have an appreciable impact on the natural environment, have determined the ecological method of Life Cycle Analysis (LCA) necessary for the Life Cycle Assessment (LCA). Due to the risks resulting from the improper routine approach to the project and the design process of buildings, it is necessary to be able to estimate the scale of impact on ecosystems. Therefore, the full assessment takes into account the impact of the building on the environment, as well as the consumption of individual environmental resources. Thus assimilating the method for analyzing a single-family home, it is possible to determine the magnitude of environmental impact in the entire spectrum of activity and impact (from cradle to cradle, from cradle to grave) of the architectural object under examination by means of data hierarchy. Optimization of solutions in the initial design process affects the architecture (construction, function and form) of a single-family home by selecting technical and technological solutions in use, operation of the facility and materials in the building structure, striving for a closed circulation of matter. Formulating final applications takes time due to the collection and correct use of information on building materials in order to determine their impact on the environment.

The full life cycle of a product (home, product, service, process) carries various problems. They start already at the time of selection of materials and technical and technological solutions. It often happens that producers do not have environmental product declarations and the available information is incomplete. Another problem is the complexity of the method of analysis because the multilevel research aspect of the building does not allow looking at the full spectrum of environmental impact and the future user in a short time, which is important for the design process. The research scope, which was defined for a single-family house, seems to pose another difficulty in building investors' awareness in terms of broadly understood ecology (socio-sociological and cultural). An architect designing a house should shape it according to the wishes of his client, meeting all his expectations. The arguments for ecological aspects in shaping a home are, among others, philosophical signs. This is due to the feeling that "For our house is our corner of the world. As has often been said, it is our first universe, a real cosmos in every sense of the word. If we look at it intimately, the humblest dwelling has beauty". [18, p.4] The importance of a home for which a future user pays a certain sum of money is extremely important in terms of affiliation. Tischner wrote: "The house is closest to the man. Thus, the act of building a house is, on the one hand, an attempt to become independent, but on the other - the first violence to nature. Man separated himself from the rest of nature, using his resources. He set the limits. Many researchers see the beginning of culture here when the natural landscape has changed into an anthropogenic landscape". [19, p.57] All these aspects lead to the combination of home use in time and space with the ecosystem in its lifecycle, but also after its demolition. Demolition understood as the dematerialization of buildings. The architecture assuming the dematerialization of structures leads (according to the author) to the loss of historical and cultural matter. It should be mentioned here the words of Yi-Fu Tuan, about exotic peoples and cultures, "...Europeans /.../ they have made their discoveries so charming that they have presented these civilizations as not subject to destruction and the action of time. The belief that exotic peoples have no history, colors the way of thinking even today's ethnographers. The lack of written sources, ruins showing the next phases of the past, encourages such thinking". [20, p.157] However, it has a significant resonance in the understanding and awareness of the public about the changing climate, but also as a Greenwashing syndrome. However, the author partly disagrees with the presented arguments, because the historical identity does not affect the level of cultures enclosed within their borders and the one-track experiences of the world and themselves in the world. It generates and shapes this commitment, thinking and acting in new, hitherto non-existent ways that influence the perception of the world.

Determining the philosophical elements is rational from the point of view of the impact on the environment and should be aware of the investor. However, as has been repeatedly mentioned - the house is a personal customization of the user and it proves that it is complicated in the analysis. It is
possible to calculate its impact, but does it allow you to influence the investor's decisions when he often chooses a directory house for execution by spending hard-earned money or taking a loan for "all his life"? Is it then rational from the point of view of the Life Cycle Analysis and its impact on the architecture of the image of your "beautiful" home? Man (investor) will probably succumb to and create a "beautiful" building in terms of environmental factors using the full Life Cycle Analysis method. Therefore, taking into account a different point of view, working together in society, we should sometimes make compromises. The cultural image we leave behind gives a clear message. One cannot forget the fact that architecture is an eye-catching legacy and a direct indicator of the level of society. "Sociology is quite keen on the subject of the house, describing its social meanings and functions. A basic social group lives in the home - family, the home is a place of socialization, a center of norms, values, customs and even aesthetic preferences. It is an important place for shaping and, above all, communicating and consolidating culture. "Philosophy about the surrounding world, to which the author made an allusion, about a man who" can feel in the world "familiar", like an "officer" adapted to his "functions" that it may have the impression of wielding this world, controlling its powers, and even the nature that rests on its basis. "A world that has been given to us by God and which is a place, sensu stricto" a holy place ", so it is worth asking yourself, "What becomes the scene of human drama without sacred places? It becomes the land of arbitrariness. Here is a place where everything is allowed. "God is dead - everything is free." Man even the earth threatens destruction. Destroying the land, he does not feel guilty, he is convinced that he destroys the land of exile. "Reflections on the essence of the human home identity, being in the world, is the essence for metaphysical considerations, important in the definition of ethical definition - the cycle of life - ecological house in the broad sense of eco-philosophy shaped for centuries, but also in the minds of not only philosophers, but also architects, engineers, producers and, above all, investors. In the "last words", Peter Ward calls for "getting to work", "Now only now /.../ It's time to wrap up the sleeve, /.../ encourage researchers and get down to work. Like one husband."

The ennoblement of a fact-based life cycle analysis method in diagnosing single-family homes contributes to solving ecological problems - it controls the influence of the building being examined on the ecosystem. LCA indicates the complexity of work and problems in running by the architect of the Project Process using the (mentioned) method in the Integrated Design Team. The Project Process, which covers its scope. The analysis is carried out in a completely different way (than the traditional one assuming meeting the legal and investor requirements). The discussed method seeks to resolve all the premises about the materials used, or technical and technological aspects in the project, implementation, especially considering the impact of the building on the ecosystem.

3.1. Author's research of the life cycle assessment with using EPD of a single-family detached house
The detached single-family house was subjected to Life Cycle Analysis and Assessment for the construction materials used in its structure, in terms of their impact on the natural environment. The study consisted of preparing the calculator by the author in Microsoft Excel and entering data from the Environmental Product Declaration - EPD (Environmental Product Declaration). Environmental Declarations of the Product contain in their formula a specific suitability of the product, thus the results show the sum for possible repairs, i.e. the exchange of materials resulting from the Reference Life - RSL (Reference Service Life). As a result, the impact of building materials was calculated, with an area of 160m2 (energy demand at 57.674 kWh/m2) on the environment in the full assumed life cycle (100 years). Therefore, the impact of building materials on the natural environment in the entire building structure in terms of relevant information, parameters with the assumption of the time-space of functioning has been estimated: GWP (Global Warming Potential), PENRT (Total use of non-renewable primary energy resources), PERT (Total use of renewable primary energy resources), FW (Use of net fresh water), NHWD (Non-waste disposed), Hazardous waste disposed (HWD), RWD (Radioactive waste disposed), Materials for reuse - CRU (Components for re-use), (Materials for recycling), MER (Materials for energy recovery).
At the same time, the sum of the energy demand equivalent was indicated in the assumed time interval. The test results are presented below. However, it is necessary to take into account the probable calculation error resulting from the conceptual / simplified character of the analyses. (Figure. 2) The environmental impact of materials and the associated CO2 emissions were also compared - Global Warming Potential (GWP) and consumption: total use of non-renewable primary energy (PENRT), and the total use of renewable primary energy (PERT), i.e. PENRT + PERT, between materials used in the structure and use of the building (over a 100-year period). (Figure 3)

Figure 2. The sum of calculations for the Life Cycle Analysis of the construction materials used in the structure of the building and the sum of the equivalent of the energy demand in the assumed time period of 100 years. Source: Author, calculations analysis perform by using EPD and prepared calculator in Microsoft Excel.

Figure 3. Ratio between PENRT + PERT and GWP of predicates: used building materials in the structure of the building and use of the building (time: 100 years). Source: Author, calculations analysis perform by using EPD and prepared calculator in Microsoft Excel.

The presented analyzes - graphs (comparing the percentage share of individual elements) show how essential element is the energy necessary for the proper use of the building. It also follows that shaping the building is an important stage in the process of designing the architectural form. Therefore, it leads the design process to impose an important aspect in the Life Cycle Analysis, which is shaping the form of the building. It focuses on assigning, for all elements forming the object, the amount of embedded energy. It is responsible for the highest equivalent of environmental impact throughout the entire life cycle. As a consequence, the appropriate selection of elements with a low ecological ratio also affects the aesthetics of the house.
Additionally, in comparison, the environmental equivalent of elements in the structure of various solutions for: walls and roofs, directly affecting the aesthetics (color, texture, shape, etc.) of the building was calculated using the Life Cycle Analysis method. Elements of external structures: 1) External walls, and 2) Roof:

1) External walls:
The analysis of the material structure of external walls presented above shows that the greatest impact takes place when deriving the energy needed to produce a given material or product. It is concluded from the presented material that the most ineffective energetic is: a wall in the construction of a timber frame covered with thin-layer plaster, the total result of PENRT PERT - PENRT (Total use of non-renewable primary energy resources), PERT (Total use of primary) is 192 641.02 MJ. The reason for the high energy intensity is probably due to the mechanical treatment of wood. In turn, the most energy-efficient is: three-layer wall, whose total PENRT PERT result - PENRT (Total use of non-renewable primary energy resources) - PERT (the total use of renewable primary energy) is 78 266.99MJ., double-layer wall, whose total PENRT PERT result is 79,857.06MJ, wall covered with titanium-zinc sheet, whose total PENRT PERT result is 87 024,28MJ, a wall covered with aluminum composite panels, including their replacement after 70 years (RSL), whose total PENRT PERT result is 186,813,27MJ, wall covered with siding, taking into account the exchange after 50 years and refreshing with varnish, every 10 years, the total PENRT PERT result is 276,335.92MJ. In terms of the global warming potential - GWP (Global Warming Potential), the most effective structure is: a wall in the construction of a timber frame covered with thin-layer plaster, the total GWP of which is -16 804.4 kgCO₂ -Eq. It is a fact of using wood that has regenerative capabilities. In turn, the most in terms of the global warming potential - GWP (Global Warming Potential) is affected by: double-layer wall whose total GWP result is 11 429.06 kg CO₂-Eq., three-layer wall, whose total GWP result is 11 351.78 kg CO₂ -Eq., wall covered with siding, including the exchange after 50 years and refreshing with varnish, every 10 years, the total GWP result is 10,857.00 kgCO₂-Eq., a wall covered with aluminum composite panels, including their replacement after 70 years (RSL), whose total GWP result is 10 769.41 kg CO₂ -Eq., wall covered with titanium-zinc sheet whose total GWP result is 7 235.00 kgCO₂-Eq.

2) Roof:
The analysis of the structure of the roof material presented above shows that the greatest impact takes place when drawing the energy needed to produce a given material, i.e. PENRT PERT - PENRT (Total use of non-renewable primary energy resources), PERT (Total use of renewable primary). It is also recognized that: flat roof and inverted roof due to their material structure significantly affect the environment. The direct impact on the environment in these two examples depends on: GWP (Global Warming Potential) FW (Use of net fresh water) - using damp insulation (EPD for the PVC Waterproofing Sheet was used in the calculations). The presented material shows that the most non-ecological is: roof (140m²) inverted (green) extensive PENRT PERT 556 588.4 MJ, GWP 39 937.21 kg CO₂-Eq., FW 3 178 010 018.00m³. Next: roof (140 m²) flat: PENRT PERT 271 588.72 MJ, GWP 37 616.91 kg CO₂-Eq., FW 3 178 009 974.00 m³, roof (140 sq m) covered with ceramic tiles: PENRT PERT 126 132.41 MJ, GWP 3,665.34 kg CO₂-Eq., FW 22.22 m³, roof (with an area of 140m²) covered with cement tiles: PENRT PERT 63 380.27 MJ, GWP 2 220.24 kg CO₂-Eq., FW 2 599.51 m³, roof (with an area of 140m2) covered with titanium-zinc tiles: PENRT PERT 28 907.5 MJ, GWP -2 355.91 kg CO₂-Eq., FW 12.65 m³.

In addition, there are also relevant examples from the workshops conducted at Escuela de Arquitectura, Universidad de Las Palmas de Gran Canaria in Spain (implementation of the individual curriculum carried out on 01-08.12.2016 and 09-16.11.2017 under the Erasmus Plus program), which due to the location (climate), as well as the low nature of energy consumption (the subject at ULPGC aimed at the project zero energy single family home omitting air conditioning - HVAC) indicate other results of environmental impact and energy consumption of building materials used in the building
structure. The research conducted by students using the Environmental Products Declaration, i.e. EPD (Environmental Product Declaration), determined for the designed external wall: the amount of embedded energy and the potential impact on global warming for the building in the climate of the subtropical area of the Canary Islands. The result for primary energy (PERT + PENRT) was at the level of 526.14 MJ/m², in turn for the global warming potential (GWP) equal to 53.23 kgCO₂/m². Confronting the above results with the climatic conditions of the temperate zone, the result of calculations for external walls carried out in Budapest are at: 809.40 MJ/m² and 94.00 kg CO₂/m².

It directly illustrates that the impact on the environment in different climate zones will differ from each other. The result allows drawing a general conclusion that this method is characterized by the ecological impact of an architectural object on the environment and gives the possibility to verify by LCA the materials used. The results show the possibilities of selecting materials by a designer having in mind their environmental impact. It was indicated how the Life Cycle Analysis method can influence the selection of materials and then the architecture of the designed building. It should also be noted that the presented results are general and it is difficult to say whether it is correct due to the small EPD database. However, they show the essence of things in the study of architectural structures in terms of environmental impact.

The life cycle analysis of the building indicates the formation of an architectural object in terms of: materials used in the structure of the building and the pursuit of energy efficiency - affecting the shape of the building. As it was shown with the help of analyzes, the most important element affecting the ecosystem is the functioning of the building. Minimizing this element is the most affecting the shape and aesthetics of a single-family home. The materials used affect the aesthetics of the building, i.e. the use and substitution of materials with other - minimally affecting the environment - also affects: color, texture, etc. - the aesthetic reception of the house. However, materials affect the shape of the building through their physical properties, i.e. technical capabilities. This aspect is also important in house formation. It affects the shape and its aesthetics. It should be emphasized that it is not possible to ignore the fact of overlapping structure-function-form relations, striving for a harmonious development of a single-family house, where the summary of their relations and integration is a holistic view of the life cycle of the designed building. (Figure 4)

Figure 4. Vienna, Steirereck, PPAG architects project, 2014. Dematerialization (visual) of the building (in this case the restaurant) through the use of appropriate materials and solutions. The implementation shows (according to the author) the aesthetic character of introducing appropriate materials imitating by ecological character the modern "disappearing" - dematerializing - character of the form of the building in the park. Ecological character is preserved by a metal (probably aluminum) façade "creating a sense of visual closeness" and a green roof with a herb garden. However, considering the calculation examples above, it should be assumed that: aluminum (RSL own calculations = 70 years: 167kg/MJ, which gives 9.4kgCO₂ and is seen in Table 1. The amount of energy embedded in the material. The table shows the average results: Aluminum (sheet) 199.0MJ/kg,
537300MJ/m³, steel 32.0MJ/kg, 251200MJ/m³) and green roof (own calculations: 1993.92MJ/m²) consume a specific amount of energy in production, which is why they are not the most ecological of solutions in the spectrum of interaction on the natural environment.

4. Conclusions
The subject matter of the work concerns to the issues in the field of ecological philosophy, sustainable development and analysis of the shaping of architecture. It should be pointed out that the use of the Life Cycle Analysis (LCA) method in all stages of the design process will have a significant impact on the architecture (structure, function and form), reducing the negative impact on the environment. In the breakdown of the basic issues constituting the foundation of architecture, the influence of Analysis and Life Cycle Assessment on structure, function and form are determined. The presented issues undertaken in this work are worth continuing, due to the twofold technical-technological and ecological philosophical dimension. Furthermore, the image based on the philosophical dimension shows that the use of the Life Cycle Analysis and Assessments methods allows the minimization of architectural activity on the natural environment and the indication that the Anthropocene epoch may be an epoch-friendly to all ecosystems on Earth.

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