DLA THESIS

Prof. Petar Arsić, Arch.

GENERAL THESES ON SPACE

SOME CONTRIBUTIONS FOR THE FUTURE SCIENCE OF SPACE

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CONTENTS

ABSTRACT

This paper reviews arguments in favor of forming an integral (today non-existent) *Science of Architectural Space*. Numerous theoreticians of space have thought about and written about this possibility and need. The paper is organized around four theoretical themes and the result of their treatment is summarized in *eight theses*.

The four themes that are reviewed in this paper are:

_Man and space,
_Principle of polarity and the theory of space,
_Totality and synthesis, and
_Nature and technics.

People have always *thought* about space. People have always developed and arranged space according to their needs.
Space is the constant theme in philosophical and theoretical systems. Integrally defined space, understood comprehensively, complexly, and universally, is the subject matter of research by numerous and different sciences, theories, and disciplines.

We encounter the idea to form an integral *Science of Architectural Space* 1 with numerous theoreticians of space and philosophers. It is possible to define the *Science of Space* in a number of ways – as the science about man from the aspect of space, as spatial anthropology, as the science about space from the aspect of universal human needs, etc. Possible objectives and tasks of the *Science of Space* would be to contribute to the clarification of general issues concerning the relationship between man and space, a better understanding of relations between man and living ambiance, understanding of complex relationships between man and city, man and architecture, etc.

The main subject matter of interest of and research within the *Science of Space*, instead of space being observed isolated, will be the *binomial* (inseparable pair) of *man/space.* Man and space are in a relationship of interdependence, indivisibility, and inseparability. Man as an individual and as a member of a community cannot reach a quality level of satisfaction of his needs outside the real, designed living space adapted to human needs.

Everyday life as the field in which people live and communicate, is increasingly becoming the research theme of the theory of space. In that everyday existence man is often forced to confront centers of power, city services, urban development institutions, as well as professionals who create, develop, arrange and design space.
To this everyday reality one should add the widespread ideology of globalism. Its negative ideas and objectives are

_to ignore specific regional and local spatial values,
_to negate cultural and historical heritage,
_to subordinate all the specific qualities exclusively to the imperative of efficiency,
_to create artificial needs instead of stimulating authentic ones,
_to reduce man to a consumer, etc.

Struggle for scientific truth, against all ideologies, particularly the struggle against modern ideology of globalism, is the joint obligation of theory and science and of the theory of space and space practice (design, construction) as well. Therefore, one of the tasks of the disciplines related to the development of space is precisely identification, preservation, protection, and recognition of regional and local cultural and spatial values, as well as their implementation in the programs of development of cities and architecture.

We believe that a qualitatively new and possible way of anthropological research of the relationship between man and space, presupposes introduction of philosophical and anthropological knowledge into the very foundations of the *Science of Space*. Space and spatial organization should be subjected to man and his real needs.

One of the fundamental principles in analyzing the relation between man and space, as well as development of spatial conception, is certainly the *principle of polarity*. It expresses one of the most general patterns of all complex phenomena in the world. According to this principle, contradictory aspects of phenomena, processes, and relations always stand essentially and directly one opposite to another. Precisely that antagonism makes their integrality possible. It explains the essence of their authenticity the best. It is also an assessment of their comprehensiveness, integrality and quality of „products“ of the theory of space and of spatial practice.

Numerous philosophers and theoreticians (A. Lefebvre, M. Heidegger, C. Norberg-Schulz, as well as many from former Yugoslavia) have dealt with issue of polarity in space. They also tried to overcome those antagonisms in order to achieve *synthesis* in spatial and social environment, in their interdependence and indivisibility.

Proposals how to achieve dynamic - balanced urban situation are different. We would single out the proposals of Lefebvre, who contemplates about the idea of constituting a new anthropology, which is on the way to be established. It would proceed from the deliberation about *urban*, i.e. from housing, and would draw on the idea of metaphilosophy, presenting it to us as the thought liberated from tutorship of power, authority, and ideology - noninstitutionalized thought that takes into account the concepts developed by the entire philosophy.

We often encounter categories of *totality* and *synthesis* in the studies and theoretical texts about city, architecture, and space. Examples are numerous, but ways of interpreting totality and synthesis, their uses, and understanding differ very much.

Oppositions work everywhere - in nature, human society, and thinking. Dialectical analysis includes synthesis and vice versa. Totality implies exactly that unity of dialectical analysis and synthesis, understood as an indivisible whole.

The *Science of Space* is going to face numerous oppositions in space accumulated through history. Its subject matter of research will be the theory of space and spatial practice. Its starting point will be the knowledge about numerous complexities and oppositions that imbue human nature, city as the most complex phenomenon, and their relationship as one of the most complex syntheses.

Man’s relations with nature as well as man’s standpoints and attitude towards nature have always been the subject matter of deliberation and research. Understanding and explanation of man’s attitude towards the natural environment can be grouped around two fundamental and mutually opposing viewpoints. According to one, nature is external, alien, and incomprehensible to man, and man is doomed to eternal and unequal struggle with it. According to the other, man is a part of nature, he is in harmony with it, his aspiration is to adapt to it, and his ultimate goal is to, by his departure, again become one with it.

Two criteria are known for evaluating the relationship between man and his environment. First criterion is *humanistic ideal*, the idea of unity of natural and humane aspects.
Second criterion is *ideal of domination over nature*. It is guided by the criterion of efficiency as the highest principle in the attitude of man towards the environment. In such relationship with the environment, man behaves as a warrior, conqueror, and destroyer. Power appears as the highest principle of life, and technics takes over full supremacy over nature, and then over man himself.

Technics has accompanied man from the very beginning of civilization. It is eternal, inevitable, and primeval phenomenon in human history. Since there is no human society without technics, it follows that technics appears as a universal means (tool) by which man adapts nature to his needs. Technics can also be understood as a tool to achieve certain goals.

Today, technics and technology are in the center of human attention and they have infiltrated all the segments of human life. We are witnessing different, even opposing approaches to the notion of technics. We are also witnessing heterogeneous and opposing views about importance and values of technics to the present and future civilizations.
In our view, the essence of technics should be sought in simultaneous observation of man and nature, i.e. human creations as expressions of man's creative activity, and technics as the mediator between man and nature. Technics thus becomes the means to humanize the living ambiance and to adapt it to the natural environment.
Such a complex relationship of polarity implies full interdependence between man and nature, man and built environment and finally between technics and culture in general.

The unavoidable issue of the theory of space and the future *Science of Space* also is and will be the issue of the place, role, and importance of technics in the research of the relationships between man and the natural environment. Technics and technology must serve as means for making space more humane (for man and his needs). Technics and technology should be promoters of creative potentials of architecture.

It is anticipated that designed spaces for man of present and future times will be based on high technology, and will be interactive and stimulating for working and living. At the same time it will be the space with a high degree of possibilities for control and regulation, all the way to the personalization of living and working spaces and creation of personal (changeable, adaptable, and controllable) comfort by man himself.

Spaces of the future will at the same have highest quality of essential natural characteristics – plenty of light, fresh air, silence...

The conclusion of this paper consists of *eight theses:*

THESIS _1
The primary research subject matter of the *Science of Space* will be the theoretical pair MAN/SPACE.

THESIS _2
Man and space are INTERDEPENDENT and INSEPARABLE.

THESIS _3
Spatial conceptions, spatial organizations and designed SPACE AS A WHOLE, must be subjected to MAN and his real NEEDS.

THESIS_4
THE PRINCIPLE OF POLARITY will be one of the basic principles of the future *Science of Space*.

THESIS _5
Housing as TOTALITY and organized space as the synthesis of natural conditions and human needs will be one of the main topics of the future *Science of Space*.

THESIS _6

Creative SYNTHESIS of TRADITION and INNOVATION is a successful unity that brings new quality of space as a living ambiance for man.

THESIS_7

The role of TECHNICS and TECHNOLOGY in the organization and design of space is huge, but they are only the MEANS for implementation of spatial goals and spatial conceptions.

THESIS _8

SPACES OF THE FUTURE will be flexible, changeable, and adaptable to needs of man and future lifestyles, with the possibilities to stimulate cultural diversity.

At the same time, they will have high performances of elementary natural characteristics – plenty of light, pure air, silence and nice views...

Key words

Man, space, theories of space, spatial conceptions, everyday life, human needs, lifestyles, principle of polarity, totality and synthesis, nature and technics.

FOUR RESEARCH THEMES

- MAN and SPACE
- PRINCIPLE OF POLARITY and THE THEORY OF SPACE
- TOTALITY and SYNTHESIS
- NATURE and TECHNICS

1_INTRODUCTION

People have always been *thinking* about space.
People have always *designed* space according to their needs.

Space is the constant theme in philosophical and theoretical systems. Interest of philosophy in the issues and problems of space has changed through history, but certain continuity in thinking about space undoubtedly exists.
The philosophical concept of space as *homogeneous and uniformly distributed substance* is well known.
The concepts of space as the *category of mind,* as the subjective form and as the condition of sensory perception are also well known.
The concept of space as *one of the basic forms of manifestation of matter* is well known as well.

All these different ways of understanding space are going to be very important in establishing the classification and typology of space conceptions, within the comprehensive research works of the (future) *Science of Space*.

Space is complex and multilayered. There are numerous definitions of space:

_Space is the surrounding reality, with universal qualities and meaning,
_Space has concrete aspects and forms of everyday manifestation (manifestation in everyday life),
_Space is the condition and the field of creative undertakings,
_Space is the theme and the subject of imagination,
_Space is also defined as the subject of design, artifact - real and virtual,
_Space is also defined as the object of concretization of creative ideas,
_Space is a factor of realization of intentions of a subject (individual, group, social community),
_Space and its design are the objective of organized social undertaking,
_Space is the place, but also the means for satisfaction of individual and common needs,
_Space is the environment in which numerous aspirations of an individual and community are fulfilled.

Integrally defined space, understood comprehensively, complexly and universally, is the subject of different scientific and theoretical research.

Space can be analyzed from the aspect of philosophy, scientific disciplines and theories, the arts, politics and, particularly, from the theory of space and the future *Science of Architectural Space* 1.

In addition to the above common themes of philosophy and the theory of space, it would be useful to coordinate the work within the future *Science of Space* with the knowledge and achievements of anthropological disciplines.

We encounter the idea to form a coherent *Science of Space* with numerous philosophers and theoreticians of space. It is possible to define the *Science of Space* in a number of ways, e.g. as:

_Science about man from the aspect of space;
_Spatial anthropology;
_Science about space from the aspect of universal human needs.

Possible objectives and tasks of the *Science of Space* would be to contribute to:

_The clarification or better understanding of general issues of the complex relationships between man and space;
_The clarification or better understanding of relationships between man and the living ambiance;
_The clarification or better understanding of the complex relationships between man and city, man and architecture;
_The clarification or better understanding of relationships between people in space, and comprehension of social relations in the environment.

Therefore, we deem that (the primary) research subject of *Science of Space*, instead of space being observed isolated (designed, built, organized), will be the *binomial* (inseparable pair) *man / space.*

THESIS _1
The primary subject matter of research of the *Science of Space* will be the theoretical pair MAN/SPACE.

Man and space are in a relation of interdependence, indivisibility, and inseparability. This precious coherence can be lost if the spatial aspect is taken away from the complex of living and social conditions.

Man, as an individual and as a member of the community, cannot satisfy his needs outside real, designed and adapted living space.

Research tasks of the future *Science of Space* will to a large extent be organized around common themes of the “conceptions of the world” (philosophy) and the conceptions of space (architecture).
There are numerous and complex analogies between philosophy and architecture. We understand architecture as the theory and practice of designing, developing and humanizing space. In this paper, we will analyze analogies between the conception of the world and the conception of the living space, on four possible themes, which are also dealt with by many theoreticians of space, city, and architecture.

Instead of concluding the introductory deliberations, we will raise several questions about the future *Science of Space*:

_Can the *Science of Space*, this new emerging science, become sufficiently wide and comprehensive field of research, capable of encompassing all the complexity of urban life of the current and future civilizations?
_Can this complex scientific field investigate and explain numerous aspects of the life of an individual and community within the living space?
_Can the *Science of Space* comprehend urban reality as the synthesis of impacts of three influential fields - physical, mental and social?
_Can this comprehensive science integrate all the spatial aspects and modalities of life of an individual and community**,** and consider their relationships and mutual impacts?

2_MAN AND SPACE

Conception of space and Conception of the world

Many philosophers have dealt with the issues of "spatiality of existence" and spatiality of being. The central theme of those research works is the idea about the indivisibility of being and space 2.

Many theoreticians of space and architecture have also dealt with the relationship between space and existence. Important contributions to the theoretical knowledge were given by C. Norberg-Schulz 3, H. Lefebvre 4, B. Zevi 5, N. Pevsner 6, P. Eisenman 7, S. Giedion 8, R. Venturi 9, S. Holl 10, P. Zumthor 11, J. Pallasmaa 12, B. Tschumi 13, and many from former Yugoslavia.

We will mention some of the fundamental standpoints of philosophers:

Nietzsche's standpoint *"Where there is space there is also the existence"* is well known. Maybe it was Heidegger who got closest to the essence of the relationship between man and space in his phenomenological study about building, dwelling and thinking pointing out the fundamental standpoint *"Das dasein ist raumlich" (Being is spatial)* 14.
This symbiosis and interdependence of existence and space is certainly, and it will be in future as well, one of the fundamental starting positions of the theory and the *Science of Space*.

THESIS _2
Man and space are INTERDEPENDENT and INSEPARABLE.

Existence, man, user, and everyday life

The last decades of the 20th century were characterized by the strengthening of a local community and numerous forms of participation of users in space. If we add to this

_Implementation of ecology in the spatial disciplines,
_Implementation of the strategy of sustainable development in all the areas of life, and
_Implementation of energy efficiency in all the areas of everyday life,

it is clear that the theory and the *Science of Space* are faced with new research tasks.

Everyday life as the field in which an individual exists, functions, and communicates, is increasingly becoming a research subject of the theory of space. In that everyday existence, man is most often forced to confront and struggle with city services, urban development institutions, with centers of power, as well as with professionals in the area of creation and development of space.

To this urban culturological reality one should add current widespread impacts of the strategy (and ideologies) of globalism, the main ideas and objectives of which are:

_Annulling of specific regional and local, both general and spatial values, although it is known that they are huge cultural treasure,

_Negation of the cultural and historical heritage (non-material, material, and spatial heritage), although it is known that this is huge cultural treasure,
_Subordination of (all) the specific features and characteristics to the “philosophy” of growing efficiency,
_Standardization, typification, and expansion of artificially created needs for people, and
_Finally, destruction of authentic personality of an individual (one of the highest values of the mankind), reducing man to a consumer.

The struggle for the scientific truth, against all the ideologies, particularly the struggle against the modern ideology of globalism, is the joint obligation of the theory and science and, therefore, of the theory of space as well.
Therefore, one of the tasks of disciplines related to the development of space is precisely identification, preservation, protection, and recognition of all the regional and local cultural and spatial values, as well as their implementation in all the programs of development of cities and architecture.

Due to all above, it is important to form a sufficiently wide and comprehensive *Science of Space*, or maybe better formulated as *Science about man and space,* or *Science about man from the aspect of space* 15.

In conclusion, it is possible to raise a few questions:

_*Is the Science of Space*, which is currently being created, ready to take on such complex tasks it is faced with?
_Is the standpoint of theoreticians that precisely in the field of everyday life urbanism is becoming the social action through which people can change their world, acceptable (through public debates, democratic procedures, various forms of participation, community action, etc.)?

Program, prospects

We deem that a qualitatively new and possible way of anthropological research of the relationship between man and space presupposes introduction of the knowledge from the areas of philosophy and anthropology into the actual foundations of the *Science of Space*. The order of things should be such that space and spatial organization are subjected to man and his real needs.
With such a starting point many risks would be eliminated, but also certain simplifications in the treatment of space would be overcomed. They can be identified in the work of professionals, urban planners, architects, in educational institutions, but also with city authorities and politicians. We are mentioning some of them:

_The threat from unilateral idealization of space,
_Risks of numerous exaggerations of the importance of certain spatial aspects (form, design, functionality, artistic effects, economic effects...),
_Risks of space as a whole fetish - lifeless, finished, dehumanized whole enclosed in it,
_Risks of deprivation man’s living environment of the component of changeability and development (urban development plans as finished compositions, spatial solutions as „good or nice“ pictures, projects as visual presentations, spatial solutions without a reserve for future development, etc.).

THESIS _3
Spatial conceptions, spatial organizations and designed SPACE AS A WHOLE, must be subjected to MAN and his real NEEDS.

3_PRINCIPLE OF POLARITY AND THE THEORY OF SPACE

Principle of polarity

Since ancient times the thought about space and spatial practice has reflected and materialized complex and opposing relationships and processes in the social environment.

One of the fundamental principles in analyzing the continuity of development in this area is certainly the *principle of polarity*. It expresses one of the most general laws of all complex phenomena in the world. According to that principle, opposing aspects of phenomena, processes, and relationships, always stand essentially and directly one opposite to another. Precisely that antagonism makes it possible for them to be integral and, therefore, actually in the best way explains the essence of their authenticity and uniqueness.

Like many other fundamental standpoints of the theory of space, the principle of polarity is established in the modern theories of space by being taken over from philosophy. It is the unavoidable criterion in assessment of comprehensiveness and integrality, and even of the quality of „products“ of theory of space and of spatial practice.
Overcoming of the existing unilaterality into new *polar syntheses* is always an outstanding creative effort. No polar synthesis from the past can be an absolutely valid model for the present and the future. Every new situation (historical, social), exactly due to the polarity of general and individual, has a new, unrepeatable, and authentic essence.

Pairs of opposites in the Theory of space

In numerous theoretical works, which he dedicated to the analysis of space and urban phenomena, Lefebvre implicitly develops a specific dialectical theory of space 16. In his works, Lefebvre also analyzes the relationships between polar pairs, which he specifies without the intention to scientifically systematize problems:

_Private and public,
_High and low,
_Open and closed,
_Symmetrical and unsymmetrical,
_The developed and what has remained to be developed,
_City and countryside,
_City and nature („the second nature“),
_Nature and culture,
_The natural environment and the created environment (natural *landschaft* and cultural *landschaft*),
_Nature and civilization,
_The spontaneous (freedom, creativity) and the planned (defined, organized, developed and built),
_Natural and artificial...

The author analyzes specified pairs of opposites within deliberations about the levels and dimensions of urban phenomenon, which includes the aspect of spatiality. Theoretical explanation of the above pairs of opposites is characterized by certain terminological and conceptual heterogeneity, or incoherence. It can be understood as the attempt of the author to elementarily systematize the complexity and comprehensiveness of the *urban*, as the civilizational phenomenon, in variety of categories.

THESIS_4
THE PRINCIPLE OF POLARITY will be one of the basic principles of the future *Science of Space*.

Idea of Metaphilosophy

Contemplating about city and the *urban* (as the comprehensive *totality*) Lefebvre formulates the notion of the *urban* as:

_The field of very complex tensions,
_Virtuality, one possible-impossible that constantly seeks its fulfillment,
_Presence-absence constantly renewed and constantly with the quest for renewal.

Thinking about spatial relations with man, as well as about space and city, Lefebvre also draws on pairs of opposites and, therefore, he also speaks about:

_Dialectic of centrality, the relationship between the center and periphery,
_Order and disorder, in general and in space,
_Relationship between real and possible, in general and in space,
_Relations: subject/object in the area of spatial relations and spatial impacts,
_Determinism and freedom in spatial context,
_Structure and function in spatial relations,
_Form and content in spatial relations 17.

In the comment on polar pairs he specifies, Lefebvre gives a series of important questions without answers and here we are quoting them:

_Can the above notions, explained by scientific knowledge, be separated from their entire philosophical treatment?
_Philosopher and philosophy cannot do anything alone; but what can we do without them?
_Should not the urban phenomenon be investigated starting from the entire philosophy, but taking into account all the scientific knowledge?
_Can we observe the urban phenomenon (the phenomenon of *urban*) and its process of development as a whole, as well as the fulfillment (self-realization) of man in such complex conditions, his success or failure in the urban society that is being announced?

As a possible means to resolve accumulated conflicts in space and society, Lefebvre proposes *"metaphilosophy",* presenting it to us as:

_The thought liberated from tutorship of power, authority, and ideology,
_Noninstitutionalized thought,
_The thought that takes into account the concepts developed by the entire philosophy, from Plato to Hegel 18.

Idea of new (spatial) Anthropology

Lefebvre contemplates about the idea of a new (spatial, rem. of P.A.) *anthropology,* which is "about to be established" 19. It would start from the deliberation about the *urban*, i.e. from housing. The author develops the discussion precisely around the

dialectical pairs, with particular emphasis on dichotomies (oppositions) that characterize every individual (being). He correctly reminds us that a human being has (alternately, even simultaneously) the need

_for safety and for adventure,
_for socializing and for solitude,
_for pleasure and for displeasure,
_for balance and imbalance,
_to discover and to create,
_to work and to play,
_to speak and to be quiet,
_to remember, and to forget...

In such a way Lefebvre explains the essential connection between man and space, as well as the dialectical determination of that, in our view fundamental, polar pair (man and space, rem. of P.A.).
On the other side of the essential relations of indivisibility of man and space and their interdependence there is the modern city as *totality* of social and urban relations, states, and processes.

Idea of *urban* as Totality

Contemporary city includes totality of all the aspects of life, or in other words the *urban,* as Lefebvre defines it theoretically.
The *urban* is a phenomenon, itself also composed of oppositions and dichotomies 20.
About the *urban*, Lefebvre states that it is:

_form and gathering place,
_emptiness and fullness,
_super-object and non-object,
_supra-consciousness and totality of consciousnesse's.

The *urban* is connected, on the one hand, with the logic of the form, and on the other, with the dialectic of content (with differences and oppositions of the content).

City and its contradictions

C. Alexander and S. Chermayeff also deal with the essential oppositions of city and urbanism in both their joint and individual theoretical works 21.
The topics that are contemplated are:

_Collective and individual,
_Public and private,
_Common and personal – in city and housing.

To us particularly important are the standpoints that deal with "antinomies of urbanism". The authors most often explain the duality of

_Public and private,

_Planned and spontaneous,
_States and processes,
_High and low,
_Changeable and (relatively) unchangeable,
_The center and periphery 22.

The authors underline the characteristics of those aspects of articulation of city that have direct impact on private sphere (on the user, individual, family). They also particularly point to the necessity to achieve integrity of those spaces and places in which it is possible to realize a more subtle and more humane measure of a direct experience 23.

In a series of theoretical and critical articles formed as the study *Prostor vrijeme* (trans. *Space Time)* (24) Prelog (M. Prelog) deals with problems of urbanism, urbanization, and space. The author at several places applies the principle of polarity and makes analyses of urban problems using the dialectical method.
Prelog develops his theoretical theses around polar pairs:

_Quality and quantity,
_The spontaneous and the planned,
_Theory and practice,
_Private and public,
_Optimism and pessimism,
_Alienation and de-alienation.

The majority of the above polar pairs, judging by their scope and generality, are acceptable as the theoretical base of the future *Science of Space.*

According to the opinion of Milenković (B. Milenković 25), *Prognoza za stambenu sredinu* the fundamental polar pairs on the most general level of analysis and of designing space and attitude of man towards space are:

_Grouping (assembly) and movement,
_separation and inclusion,
_Units and sets,
_Individual and collective,
_Typical and atypical 26.

The above polar pairs are acceptable as the theoretical base of the future *Science of Space*. We see their special importance in the relation between the theory of space and spatial (planning, designing, constructional) practice.

4_TOTALITY AND SYNTHESIS

From synthesis towards totality

It is known that contradictions work everywhere, consequently, in

_Nature,

_Human society, and
_Thinking.

The view that dialectic (dialectical analysis) incorporates *synthesis* and vice versa is familiar to us, and thus we can analyze

_Dialectical synthesis,
_Polar synthesis, as well as
_Historical synthesis,

or further on, focused on the cultural sphere, on spatial relations, states and processes, we get to the possible

_Synthesis of the natural and that created by human activity (in the domain of space),
_Synthesis of the spiritual and the material (in the domain of space),
_Synthesis of the contemplative and the utilitarian (in the domain of space),
_Synthesis of the idea and practice (in the domain of space),
_Synthesis of creative imagination and need for continuity (in the domain of space).

Totality and its full recognition imply exactly that unity of *dialectical analysis and synthesis*, understood in their entirety and indivisibility. In its researches, the *Science of Space* will also be faced with numerous oppositions accumulated in space through history.
Consequently, we are considering the theory and practice of space, the starting point of which is the knowledge about numerous complexities and oppositions, which characterize

_Human nature,
_City as the most complex known phenomenon, and
_Their relationship as one of the most complex phenomenon.

About the concept of Totality

We often encounter the category of *totality* in studies and theoretical texts about city, architecture, and space. Examples are numerous, but ways of interpreting *totality,* its use, and understanding very much differ. The term and notion of *totality* in science literature often vary or are replaced by other terms and, thus we encounter the notions or syntagms of

_Homogeneity of space,
_Comprehensiveness of space,
_Coherence of space,
_Integrality of space,
_Spatial integration,
_Reintegration of space, etc.

Almost all authors analyzing complex issues of the theory of space point to the need of defining *totality.*

Total or *totality* thus appears as:
_theoretical and scientific goal (which is to be achieved),

then *totality* is often understood as

_base and framework of scientific analysis, or
_theoretical platform for deliberation about the spatial phenomena.

The issue of *totality*, its place in the theory and practice of space, in the future *Science of Space*, is particularly important. We deem that the issue of *totality* is certainly one of the fundamental issues of the theory and practice of architecture and space. And also, very important task of the future *Science of Space* is and will be to determine place, role, and importance of *totality* for complex relationships between man and space.

Totality and Structural analysis

Numerous works of C. Norberg-Schulz are dedicated to the theory of architecture and space 27. Those works are very important in analysis of spatial *totality*. His theoretical deliberations to a large extent draw on the contributions of modern psychology and philosophy, particularly on the studies of Piaget (J. Piaget) and fundamental ontology of Heidegger (M. Heidegger).

The goal to which Norberg-Schulz aspires is actually establishing of an *integral theory of architecture* and, therefore, at many places he writes about *totality* as one of the key categories. The theory of architecture, according to him, cannot be complete without deliberation about "characteristic totalities" 28, which appear in the analysis when combining different polar opposites and semantic relations, important for explanation of information, message, and meaning of the actual work.
As a totality, architectural work concretizes the relation-system of different polar opposites. Totality is characterized by connectible poles of different types, but not as a desire for abstract purity. Successful architectural work of high quality is often also designated as *organic*, and that is, according to Norberg-Schulz, simply because architecture is concretized as the nature itself.

The task of the theory of architecture, according to him, is to point to relevant dimensions of comparison, while empirical research treats individual concrete cases. Analyses and comparisons show that an architectural work can be explained by means of specific, clearly defined, and mutually interconnected poles-objects. Among them he differentiates those more important and less important to *totality*. He systematizes them as "primary and secondary poles". Thus the author comes to the issue of summarizing analytical-partial conclusions and to the definition of *architectural quality* 29.

Totality and System

Architectural *totality*, according to Schulz, is determined by its essential aspects, while the first measure of architectural quality is precisely the connection of different aspects. Author correctly concludes that work in which unconnected aspects dominate does not have an internal coherence.

Schulz properly links the issue of the relationship between totality and the summary of previous analyses of certain aspects of the examined problem. This is close to the relationship of totality-synthesis, but it is not it as yet. What is missing? The thing missing is actually mutual coherency and determination, polar indivisibility as the necessary interactive characteristic of this relationship.
Author defines *architectural quality* by introducing the notions of relationships, dependence of parts to the whole, articulation, and coordination. Thereby he simplifies totality to the level of structure, or even system.

His deliberations about the structure of levels and dimensions of space, as well as his remarks about structuralization and destructuralization within totality, about which he writes are the theoretical contributions within the framework of structural analysis. Thereby his understanding of *totality* is significantly (internally) limited 30.

About integral and comprehensive

Bruno Zevi, eminent Italian theoretician and historian of architecture, who for a long time studied spatial conceptions, remained skeptical about the issue of totality: “Even if no one finds a method to, in an adequate way, express the total spatial conception, owing to partial attempts and discussions, we will learn to better understand the space” 31.

Analyzing the *integrality of conditions* that determine architecture, among which he stresses

_Social,
_Intellectual,
_Technical, and
_Esthetic ones,

author points to the complexity of the impact of civilization which, as a whole, creates architecture. Integrality of relations of influential factors is the fertile ground from which architecture emerges. Buildings, in his view, emerge as the result of “the coexistence of all the factors of the civilization that realized them” 32.

In his early works, Zevi favored the interior space and, in it, he looks for essential determinants of architecture. This is only one side of the spatial phenomenon, and not space in total or synthesis of man and space.
In later works he developed and enriched his standpoints. What is new and important, it is the perception of history (of architecture and city) as the unique process of development of *forms* and their improvements. Also of importance is his complexity in analysis of spatial problems and relations.

Although Zevi himself never tended to a philosophical level of spatial issues, as opposed to some other authors (Noberg-Schulz, Lefebvre), it should be pointed out that some of his standpoints, conclusions, suggestions, and deliberations certainly paved the way for a new theory of space, “the science, which is still searching for itself”.

Among numerous *definitions of* architecture, different by the criteria, approach, by the attitude towards the social context, by the values they imply, we are quoting the definition of the Italian theoretician La Regina (F. La Regina):

“The concept of architecture covers heterogeneous phenomena and aspects of reality that surrounds us:

_The notion of designed and constructed space in time,
_The meaning of events that lead from human needs and raw materials to the formally unique synthesis,
_Changing of social into the form of collective self-knowledge which is the reflection of anthropological ambiance,
_The type of functional organization that has its own place in urban structure, etc...” 33.

The above quotes, although without direct mention of the category of *totality*, quite well deal with a comprehensive and coherent approach to the relation between man and space. They also deal with development of historical process of humanization of spatial living conditions.

Writing about the continuity in development of forms and about the continuity in development of architecture, La Regina points out the necessity to establish a relationship “with the heritage of own disciplinary traditions”.
This relationship, in his view, is the essential model of diachrony and synchrony. The quality is achieved when new does not subvert and does not reproduce the old, but exceeds it, absorbing its essential elements, developing it creatively, whereby strictly following that same communicational code 34.
Such a view about the history (of architecture) as a continuous process of development and improvement of forms is quite familiar to us and acceptable. It is also important that the author places complex spatial issues into the relationship of mutual determination with the entirety of real conditions.

Urban **as Totality**

When we talk about spatial phenomena, specifically about their relations with man and society, if the goal of the research is the entirety, complexity and development of relationships, then we talk about *totality* - architectural, urban and spatial. For understanding of *totality,* the works of Lefebvre are very important.
They are entirely dedicated to the *urban*, as the most important phenomenon of the present time. Fundamental ideas about the *urban* were most concisely defined by the author himself: “Urbanization, or urban society, is the end and the meaning of industrialization and industrial society; *urban* is *totality* that cannot be covered by individual sciences” 35.

In his studies, Lefebvre gives a detailed analysis of the *urban* as the *totality/totalizing*. First of all, we should point out the comprehensiveness of his analysis. The *urban* is analyzed comprehensively, from

_Spatial,
_Economic,
_Political,
_Sociological,
_Anthropological and, finally from the
_Philosophical aspect.

The urban is, according to Lefebvre, the subject of research of theory and everyday practice; it has its logic of form and dialectic of content; the *urban* appears and manifests it on three levels: as form, as content, and as structure. The *urban* includes past, present, and future. It is topicality and possibility. Urban phenomenon is presented as the entire reality (total one) and implies social practice as a whole 36.

Totality and Housing

The theory of space imposes, as one of the primary tasks, to determine and define the *field* of research and development. How does Lefebvre define this field of research?

_The field of research should be sufficiently wide, comprehensive, universal-concrete field of development.
_It is also the field of mutual impacts, activities and expressions of the individual and the community.
_The field of research also implies all the essential attributes of the built environment – form, content and structure.
_It also penetrates the main areas of life - physical, mental and social 37.

Consequently, bearing in mind all of the above, that universal–concrete field of research may only be and is *housing*.
In our view, that is integrally understood housing.

Housing could be:

_Theoretical field of research, but also
_Everyday practice, as well as
_A universal way of expression, specific features and affinities of an individual, and
_The framework and platform for satisfaction of real human needs.

Thus defined and designed *housing* calls for (as a precondition) the overcoming of the separate treatment of housing and working environments. The present-day understanding of housing and working environments as two separate poles can be synthesized into an integral *everyday living environment*.
That would finally bring about the possibility for *housing as totality* to become the universal-concrete means for integration of a singular with the whole (of an individual with the community).

THESIS _5
Housing as TOTALITY and organized space as the synthesis of natural conditions and human needs will be one of the main topics of the future *Science of Space.*

Disintegration, integration, synthesis

The issue of synthesis in the theory and the *Science of Space* is extremely complex. There are numerous cases of theoretical approaches by which the problem of synthesis has been resolved by its negation.
With many theoreticians of space, as one of general characteristics of modern life we encounter essential standpoints about the existence of: "disunity", "discord", "disintegration", "rift", "split", "incoherence", "fragmentation"..., etc.
Thus the following is stressed

_*Disharmony* between theory and practice (architecture, space),
_*Disharmony* between arts and technics (artistic and technical in architecture),
_*Disharmony* between rational and irrational (in space, city, architecture),
_*Disharmony* between feelings and mind.

In the entire above, fundamental reasons of (internal) disintegration of architecture are sought and found.
In our view, confusions occur around the key issues of understanding of the world and man.
Translated to the level of architecture and space, disagreements and theoretical discrepancies can be located around the main dilemmas related to space and the relationships between man and space.

Totality and Synthesis

When we talk about *synthesis*, one thing needs to be clarified: What *synthesis* are we talking about? What does synthesis mean after all in relations man-space?
Information database of the *Science of Space* will include the principles and analogies of the concept of world and concept of space (philosophy and architecture understood as the theory and practice of space).
One of the essential issues will certainly be the issue of the relationship between *totality-synthesis*. Here we imply the concept and understanding of coherence, entirety, comprehensiveness, and unity of the relations of man and space. This is exactly manifested in the unity of *totality and synthesis*.

Observed in domain of spatial relations and phenomena, we can follow the link between totality and synthesis on the level of socially accepted *spatial standard* - as the highest level of developed *form* 38.

Thus, in a complex and developmental understanding of the concept of form, we come to its essential attributes, as an expression of the *synthesized totality*. Those essential attributes of spatial, architectural or urban form are

_Concrete (universal-concrete),
_Historical, changing
_Open, flexible,
_Developing,
_Created, improved, and adapted by functional and practical human activity.

Comprehensiveness and integrality (*totality*) are the fundamental principles that support spatial analysis.
Synthesis of tradition and creation of new is a successful unity that yields new quality of space as a living ambiance in total**.** It is one of the most complex syntheses that human creative spirit is capable of making.
Every epoch in its own way yields such synthesis. Progress in development, as well as the cultural climax of an epoch, can be evaluated specifically by the readiness for such epochal syntheses.

THESIS _6
Creative SYNTHESIS of TRADITION and INNOVATION is a successful unity that brings new quality of space as a living ambiance for man.

***Urban* and possible solution**

Lefebvre's concept of the *urban* is totality (architectural, urban, spatial), which cannot be analyzed or encompassed by partial sciences. The future *Science of Space,* which is being constituted, will form the necessary *corpus scientarium,* which will be sufficiently wide and comprehensive scientific platform capable of complex analyses and creative synthesis.

Urban possesses the logic of form and dialectics of content, and it is manifested as the form, content, and structure; it penetrates all the main aspects of life - physical, mental, and social. U*rban* incorporates past, present, and future 39.

Let us conclude with a question:
Isn't the path towards the constitution of the future *Science of Space* in the *dialogue* and *synthesis* of philosophical thinking, which is spontaneously developed by artists, critics and scientists, and those criticism developed by philosophers?

5_NATURE AND TECHNICS

Man, nature, technics

Two and a half millennia had to pass for the thinking and working man, starting from the ancient ideal of harmony with the natural environment, to arrive at the same „contemplative place" – same point from which he started.

After

_Ancient times and the Middle Ages, after the
_Renaissance and baroque, after the
_Industrial revolution and *Modern Movement* of the 20th century, after
_Utopian concepts, hi-tech and intelligent architecture, after
_Sustainable development and energy efficiency,

the most precious values to man and his needs in space are recognized again – light, clean air, silence, and nice views.

As far back as the 4th century B.C., Aristotle established the important and unbreakable link between *man, nature,* and *architecture*. He understood architecture as the synthesis of all arts. He defined the fundamental standpoint that *man is surrounded by nature and architecture*; and also that *architecture* supplements *nature*.
The relevance of these Aristotle's ideas has not disappeared in any civilizational epoch, in any historical, philosophical period or period style - from the time when they were formulated until the present day.

The importance of those standpoints can be evaluated in two ways:

- Firstly, natural factors and natural impacts are of outstanding importance to man's space and human needs;
- Secondly, the living environment, which surrounds man, has two complex aspects:

(1) Everything that has been created and that is being created by nature, and
(2) Everything that is being created by the working man;
Between these two complex aspects there is unbreakable link, symbiosis, and interaction.

Relationship between men and (natural, living, working, housing) Environment

Let us try to derive conclusions from these Aristotle's standpoints and to find a deeper meaning, which may be relevant to our work. The future *Science of Space,* as we already mentioned, methodologically and programmatically, should be organized around analogies of the conception of the world and the conception of space.

Man's relations with nature, as well as man's standpoints and attitude towards nature, have always been the subject matter of deliberation and research. Understanding and explanation of man's attitude towards the natural environment can be grouped around *two* fundamental and mutually opposing viewpoints:

_According to one, nature is external, alien and incomprehensible to man, and man is destined to eternal and unequal struggle with it,
_According to the other, man is a part of nature, he is in harmony with it, it is man's aspiration to adapt to it, and his ultimate goal is to again, by his departure, become one with it.
The above two opposite standpoints, in the European philosophical tradition, have their generalized theoretical form, in two extremes:

_On the one hand, there is *dualistic thinking* according to which man and nature, subject and object, spirit and substance are opposed. This tendency, conceived by sophists, with Descartes and his dualism entered the modern epoch and lasts until today.

_On the other hand, there is *monistic thinking,* which also dates back to the beginning of ancient Greek philosophy. Its essence is the idea of *logos*, i.e. simultaneous coherence of being, spirit, and speech.

Two criteria for valuation of the relationship between man and his environment are known:

_The first criterion is the ancient *humanistic ideal*, the idea of *unity of natural and humane* aspects. At its core is Aristotle's standpoint that happiness for people is the activity that follows from the nature of man. Activity or creative endeavor can develop human nature to the highest level. The above standpoint represents the beginning of the humanistic tradition. This humanistic tradition lasts continuously from the ancient times, through the early Christianity and Renaissance, to the Enlightenment and onwards to our time.
_The second criterion is the *ideal of domination over nature*. Contrary to the ancient humanistic ideal, the civil Society defines a completely opposite criterion for valuation of the relationship between man and the surrounding nature. The *principle of domination* and power over nature has been established. The *criterion of efficiency has been established* as the highest principle in the attitude of man towards the environment. Thereby the complex relationship between man and the environment is reduced to the scheme goal-means.
The essence of that link is the relation subject-object, the relationship of domination and subordination, activity of one and passivity of the other side. Man, in that relationship with the environment, places himself as a warrior, conqueror, and destroyer. *Power* appears as highest principle of life, and *technics* takes over full supremacy over nature, and then over man as well.

The history of development of spatial aspects of human civilization (which will also be studied and explained by the *Science of Space*) can be followed in a multitude of varieties. These varieties are in continuous alternation of extreme attitudes of man towards nature and space.
And again, all of these varieties can be grouped into two opposing extremes:

- One extreme is in man's historical struggle with forces of nature and forces in space, in an attempt to firstly put environment under control, to overpower it, and then to conquer it, subordinate and, in extreme attempts consume, devastate and destroy it – in compliance with the corresponding system of values.
- The other extreme is (in line with the opposite system of values) that man adapts the living environment to his needs and cultivates it. In such way man can learn to live with nature in friendship, accord, and harmony.

Role and importance of Technics

In order to define the attitude of man towards technics and nature, we should recall that the naturalistic-ontological and anthropological-humanistic definition of *practice* (human activity, *praxis*) is accompanied by *two* most essential *criteria* for assessment of interaction between man and his environment:

- *Technical criterion*, which defines the degree of human control over the natural environment, and
- *Humanistic criterion*, which deals with the degree of satisfaction of human needs and creative abilities.

History teaches us that, in practice as well as in theory, one of these two specified criteria has almost always dominated. Never in the course of history of civilization, not even at the time of the ancient Greece, nor at the time of the Italian Renaissance, full harmony and simultaneity of both criteria has been reached. *Synthesis* of the two criteria remains the goal to which one should aspire.

The issue of *technics* in historical and philosophical deliberations is of a recent date. Research of its essence, meaning, and importance to man and civilization appeared in the 19th century, owing to technical discoveries and industrial development. This issue soon established itself as an unavoidable (philosophical and theoretical) issue 40.

The theory distinguishes two notions:

_The notion of *technics in general* and
_The notion of *modern technics*.

Technics in general accompanies man from the very beginning of civilization. It is eternal, inevitable, and basic phenomenon in human history. Since there is no human society without technics, we can conclude that technics appears as universal means (tool) by which man adapts nature to his needs. Technics can also be understood as a tool to attain certain goals.
Modern technics or nowadays increasingly *technology* is, according to the modern views, quite an exceptional phenomenon in the entire development of human civilization. It is deemed that it even means a "qualitative change" in the very core (essence, being) of technics. Its singularity and epochal significance is fully manifested in the partnership with science and industry. The last decades of the 20th century and the beginning of the 21st century brought to the mankind the full rule of technics (the so-called technological predominance). That is why the present time is rightfully called *technical age* or increasingly *technological era* 41.
Today, technics and technology are in the center of human attention and they have imbued all segments of human life.
However, although the issue of technics and its meaning and value to mankind has become one of the central issues of the present time, our understanding and explanation of technics is not satisfactory and it is incomplete.
We are witnesses to different, even opposing approaches to the notion of technics. We are also witnesses to diverse and opposing views about the importance and values of technics to the present and future civilization.
Thus the views about technics are divided between two extremes:

- On one hand, there is the unreserved *support to technics* and its achievements. There is also the uncritical acceptance of all of its achievements. There is as well the perception of technics as man's ally and the means that will finally liberate us from dependence on organic nature as the source of energy. It will also enable salvation of man from the misery of physical labor and establish lasting happiness on earth;
- The other extreme is the standpoint that technics is the bitterest *enemy of civilization*, that it is the force that is destroying human race and the natural environment in its entirety. Such negative attitude goes all the way to the standpoint that technics completely threatens man's survival on earth.

Intertwining of these two dominant standpoints of the modern epoch characterizes the theoretical systems of numerous philosophers. It is not to see even parallel and simultaneous existence of these opposite perceptions in the works of the same author (e.g. Marx, Heidegger, etc.). This only confirms to us all the complexity of the categories of *modern technics* and *technology*, which are, in their essence, contradictory themselves.

THESIS_7
The role of TECHNICS and TECHNOLOGY in the organization and design of space is huge, but they are only the MEANS for implementation of spatial goals and spatial conceptions.

Extremes and synthesis

Let us now go back to Aristotle's message:

Man is *surrounded by nature and architecture - architecture supplements nature.* In our view the essence of this message should be understood in the context of previous deliberations, in coherent and simultaneous observation of

_People and nature,
_Human creations as the expression of man's *practice* (creative activity), and
_Technics as the mediator between man and nature, as the *means* to humanize the living ambiance and to adapt it to the natural environment.

This complex relationship, according to the presented deliberations, implies *polarity and full interdependence* between

_Man and nature,
_Man and the built environment, and finally, between
_Technics and culture as a whole.

The future *Science of Space* should integrally observe, analyze, and explain numerous aspects of

_Spatial organizations and
_Spatial interpretations of human needs.

When we talk about the relation of the *built environment* (architecture, materialized living space) with the *natural environment*, in contemporary architectural practice, it is possible to differentiate two opposite tendencies:

_*The first* tendency starts from the harmony between architecture and the environment, from "organic" attitude of city and architecture towards the natural environment. Many theoretical works, even important ones have been written about *organic movement*, *organic space* and *organic architecture*. Schools and trends of organic style in construction of buildings have been explained, from traditional, popular, regional, vernacular, rural, local, to modern and universal ones. However, it is deemed that the *meaning* of *"organic"* (in architecture) has not been completely clarified yet.
_*The second* tendency deals with "elementary volumetric forms" and has the meaning of "arrogant negligence of nature" (*Le Corbusier*) 42.

The above two tendencies got their representatives in two (maybe) most prominent figures of modern architecture of the 20th century: Wright (F. Lloyd Wright) and Le Corbusier (P. Jeanneret - Le Corbusier).

Topics of many important congresses, conferences and thematic exhibitions, as well as of numerous theoretical works that treat the theme of house or city, in the course of the past decades, were formulated precisely around the idea and investigation of possible relations between

_Natural and the created,
_Nature and creative endeavor,
_Surrounding environment and architecture.

Thus philosophical limits of utopia were investigated, but also the threats from proposals based on different extreme ideas were assessed. They can be systematized in three groups:

_Different concepts of imitation of nature,

_Concepts of creating „artificial nature“, or even
_Concepts of „anti-nature“, and possible consequences of their impact.

Important ideas from the last decades of the 20th century can be recognized in the tendency, which was termed *New Formativeness*. It is the attempt to synthesize two dominant tendencies in the architecture of the 20th century – organic and functionalistic.
Significant for the discussion about the role of technics are also the proposals, which we could classify as the *negative utopia.* The negative utopia qualitatively exceeds the positive utopia, particularly the Japanese one, and its fundamental standpoint is in the rejection of the omnipotent technology.

It is deemed that exactly the appearance of the *negative utopia* marked the moment of dispelling of a long-time widespread *myth*; the myth of a new controlled artificial nature - for a new man, the man of tomorrow.

Return to the natural

An important issue of the theory of space and the future *Science of Space* is also and will be the issue of the *place, role, and importance of technics* in the research of the relationship between man and the natural environment.
Design and materialization of space, development of city and architecture, have their internal patterns of development and rules of consolidation and, therefore, they should not be used as demonstrators of possibilities offered to them by the technical and technological progress.

Actually, it should be the opposite:
Technics and technology must serve as demonstrators of conceptions for humanizing of space (for man and his needs). Technics and technology should be promoters of creative potentials of architecture. Technics is and should remain the *means* for realization of architectural goals.

As the most generally adopted philosophical standpoint, we should stress: technics is the universal means of human self-realization.

An important characteristic of some theoretical and practical experiments in the course of the 1980’s was also the obsession with the concept of creating

_Artificial nature,
_Synthetic or new nature, all the way to
_Imitation and simulation of natural conditions.

The focus of scientific, theoretical, and practical research, by the end of the 20th century, moved towards:

_Ecological balance,
_Sustainable development,
_Energy efficiency.

At the same time, theories of space and urban practice shifted the focus towards the achievements of sophisticated technics and technology established

_In the concept of intelligent self-regulating spatial systems, as well as towards
_The obligation to preserve and improve (for future generations) everything valuable and of high quality that we have inherited from the previous generations.

Possible future

It is envisaged that designed and stimulating ambiances for people of present and future times will be based on:

- High technology, and will be
- Interactive and stimulating spaces for working (living), with
- A high degree of possibilities to control and regulate, all the way to the
- Personalization of living and working spaces and creation of personal (changeable, adaptable, and controlled) comfort – by man.

Spaces of the future will, at the same time, be ambiances having top performances concerning the quality of elementary natural characteristics – abundance of light, pure air, silence...

THESIS _8
SPACES OF THE FUTURE will be flexible, changeable, and adaptable to needs of man and future lifestyles, with the possibilities to stimulate cultural diversity.
At the same time, they will have high performances of elementary natural characteristics – plenty of light, pure air, silence and nice views...

In the end another question poses itself:

Does it mean that, after 25 centuries, „Aristotle's *circle*" is being closed after all and that man has already attained the unreachable ancient ideal:
To finally learn to live in harmony with

_The surrounding nature and
_His own nature?

6_OVERVIEW_EIGHT THESES

Conclusion on this work is summed up in 8 thesis. Here we will argue for them using the examples from architectural history, tradition and my own design and building practice.

THESIS _1
The primary subject matter of research of the *Science of Space* will be the theoretical pair MAN/SPACE.

Argument_illustration:

Chosen example is the archaeological site Lepenski Vir, located along the banks of river Danube, today on the territory of Serbia.

Reconstruction of the site, results and conclusions of the research done by scientists have shown that it is not possible to understand the spatial forms, structure of both the settlement and housing units, as well as the organisation of the living environment of inhabitants without simultaneous observation of man and space.

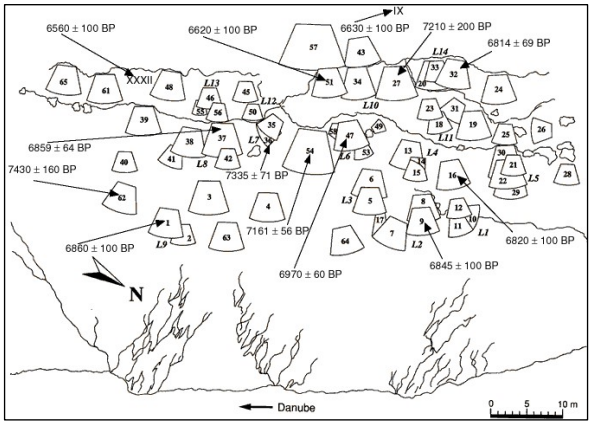


Image 1_Lepenski vir, Serbia_site plan of the complex

Image 2_ Lepenski vir, Serbia _housing units

THESIS _2

Man and space are INTERDEPENDENT and INSEPARABLE.

Argument_illustration:

Chosen example is the archaeological site Lepenski Vir, located along the banks of river Danube, today on the territory of Serbia.

The choice of site for the formation of habitat, relationship to the local climate impacts, safety aspects according to changes in water level of the Danube, rational relationship to the landscape, the use of natural materials from the surroundings, food resources from the surroundings, the use of water for underfloor heating and cooling - all this shows the symbiotic relationships between people and their habitat. Also, according to archaeological traces and scientific research, it is clear that this is a symbiosis of man and the community with the space and characteristics of immediate surroundings. The community disappeared or abandoned this area when the conditions for harmony between people and their living environment changed.

Image 3_ Lepenski vir, Serbia_Habitat

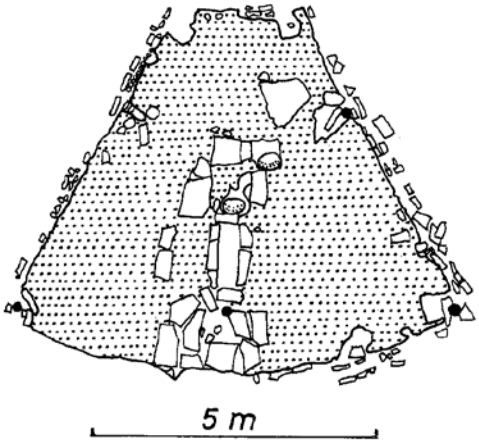


Image 4_ Lepenski vir, Serbia_Housing units 1, plan

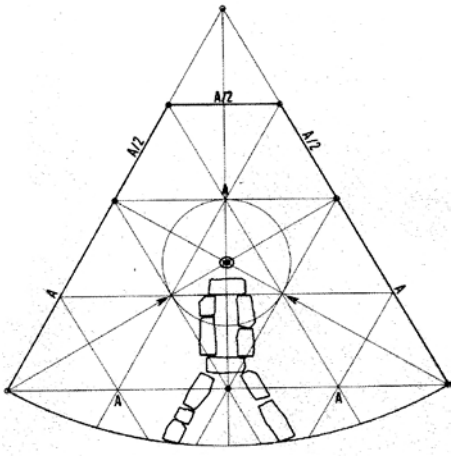


Image 5_ Lepenski vir, Serbia_ Housing units 2, plan

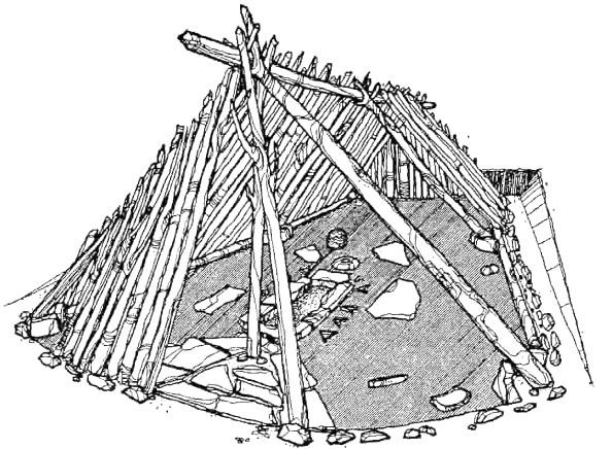


Image 6_ Lepenski vir, Serbia_Housing units 3, view

THESIS _3

Spatial conceptions, spatial organizations, developed SPACE AS A WHOLE, must be subjected to MAN and his real NEEDS.

Argument_illustration:

Chosen example is the reconstructed traditional village-ethno museum Sirogojno, Serbia. The original forms from 18th and 19th century were collected and systematised according to principles of organisation of a traditional village - on the basis of studies and scientific research.

Selection of the site for a traditional rural village and it's organisation is a result of the need for protection from possible enemy (to survive), selection of a fertile ground for the cultivation of plants and animals (to feed, develop, progress), as well as resistance to natural disasters (wind, snow, frost , streams, floods, fire, etc.).

Technological organisation of living and working spaces of both the house and groups of houses, is subordinate to daily as well as developmental needs of an individual, the family and the community of families. Food preparation and nutrition, production and use of everyday tools, raising children, making clothes, as well as the general functional and spatial organisation of the house and open spaces are the result of the rationalisation of movement, performance of daily duties, as well as the dynamism of family development, generational differences, seasonal work cycles et al.

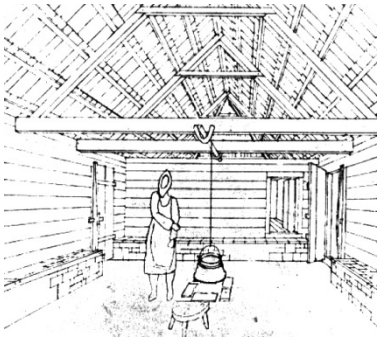
Organisation of the settlement, as well as design and materialisation of traditional architecture are subordinated to rationality, energy saving, protection of the annual climate extremes, as well as the simplicity and ease of the construction process.

Image 7 a_ Sirogojno, Serbia_Panorama of the complex

Image 7 b_ Sirogojno, Serbia_Panorama of the complex

Image 8_ Sirogojno, Serbia_Space of whole settlement

Image 9_ Sirogojno, Serbia_ View of the house



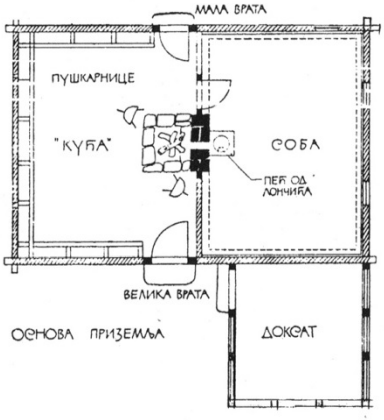


Image 10_ Sirogojno, Serbia_ Housing units

Image 11_ Sirogojno, Serbia_Interior, objects used

THESIS _4

THE PRINCIPLE OF POLARITY will be one of the basic principles of the future *Science of Space*.

Argument_illustration:

Selected example 1

is the reconstructed traditional village, ethno museum Sirogojno, Serbia. The diversity of opposites: Whole (village) - unit (buildings), individual - collective, shared - private, form - structure, spontaneous - planned, state - process (current situation and development of family and community) ... In traditional community, these conflicting needs and demands were harmonised by development of traditional folk architecture in an optimal, dynamic and evolutionary way.

The opposite demands were harmonised for centuries, adapted to family and community (family associations) life, experiences were passed on from generation to generation, and the concept of the house was developed and brought to the level of spatial standard - to a shape known as the gem of folk architecture.

That standard represents a synthesis of function, materialisation, simplicity, rationality and beauty.

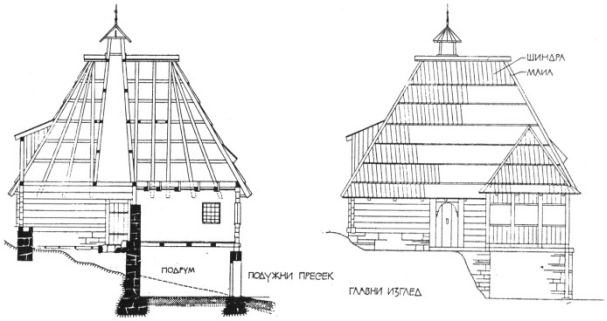


Image 12_ Sirogojno, Serbia_Detail of structure and roof

Image 13_ Sirogojno, Serbia_ Interior

Image 14_ Sirogojno, Serbia_Buildings as part of the settlement

Selected example 2

is a Sports and Business complex Millennium, Vršac, Serbia. Author P.Arsić.

The project and built complex represent a synthesis of harmonising different and even conflicting demands and needs. Substantial sloping of terrain which is often a problem was here used for the proper segregation of circulation (visitors-spectators) and participants (athletes, performers of various spectacles, exhibitors at trade shows). Quality views of the famous hill and the fortress, as well as the traditional village on the slope, were preserved. This was achieved by well-thought micro location of the sports hall but also of the business tower (its height, position, shape and dimensions).

The relationship between different functions (sport, hospitality, shopping, business) is defined by designing a two-storey open public space, and comfort, easy access and safety are achieved.

The attitude of respect towards a sensitive context (green, views, cascading of terrain, surrounding housing tissue, street matrix) was expressed by minimizing large volume halls, partially burring them into the ground, as well as their shapes. This also results in positive effects on energy efficiency with savings both in cold and warm period of the year.

The general composition of the complex provokes a dialogue between high and low, vertical and horizontal, round and sharp - with an inclination for optimal visual synthesis.

Image 15_ Centre Millennium, Vršac, Serbia_complex 1

Image 17_ Centre Millennium, Vršac, Serbia_open public spaces

Image 16_ Centre Millennium, Vršac, Serbia_complex 2

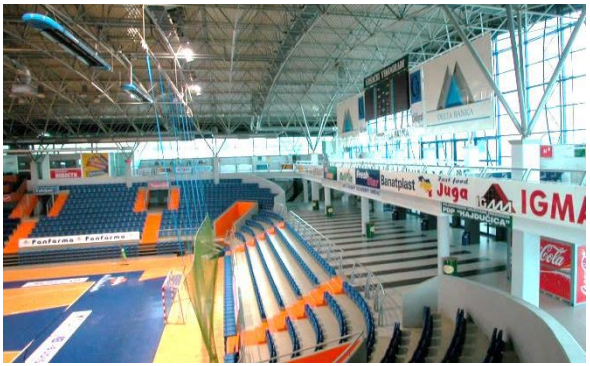


Image 18_ Centre Millennium, Vršac, Serbia_Interior

Image 19_ Centre Millennium, Vršac, Serbia_ Detail 1

Image 20_ Centre Millennium, Vršac, Serbia_Detail 2

THESIS _5

Housing as TOTALITY and organized space as the synthesis of natural conditions and human needs will be one of the main topics of the future *Science of Space*.

Argument_illustration:

Chosen example is the Housing-tourist-recreational complex AZER, Baku Azerbaijan. Authors P. Arsić and D. Arsić.

The concept for Azer complex was inspired by the important and distinctive features of Azerbaijan. These are the important natural phenomena of the country - the fire that constantly burns at the sources of natural gas in the mountains, small natural volcanoes in which the mud is always boiling, mountain ranges whose peaks are eternally snow white and rich underwater fauna of organic forms.

Also respected were the characteristics of micro climate, both in terms of protection from the impacts of sunshine, wind and sea waves, and in terms of using the variable winds for ventilation of buildings and public spaces and achieving the comfort of outdoor space.

Image 21_ Complex AZER, Baku, Azerbaijan_site plan

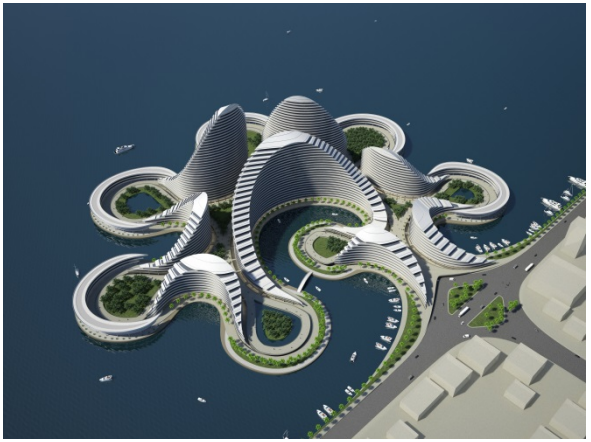


Image 22_ Complex AZER, Baku, Azerbaijan_panorama 1

Image 23_ Complex AZER, Baku, Azerbaijan_panorama 2

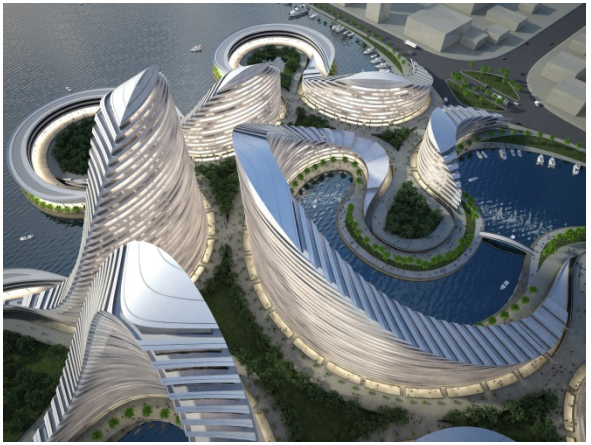


Image 24_ Complex AZER, Baku, Azerbaijan_panorama 3

Image 25_ Complex AZER, Baku, Azerbaijan_space 1

Image 26_ Complex AZER, Baku, Azerbaijan_space 2

Image 27 a_ Complex AZER, Baku, Azerbaijan_ elevation 1

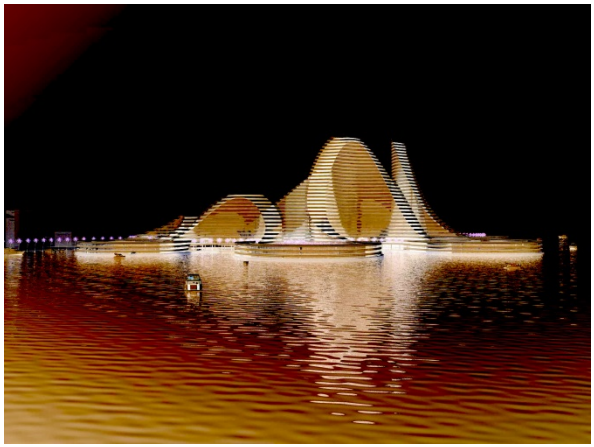


Image 27 b_ Complex AZER, Baku, Azerbaijan_ elevation 2

THESIS _6

Creative SYNTHESIS of TRADITION and INNOVATION is a successful unity that brings new quality of space as the living ambiance for man.

Argument_illustration:

Chosen example is the Ethno Village Šipčanik, Montenegro. Authors P.Arsić and T. Vrbnik-Brkić

The concept of multifunctional ethno-village - Synthesis of three parts was formed: The lower one with dynamic programs (around the lower square, central facilities, with additional housing, Wine house, Wellness centre, sports-recreational zone, clock tower, square with a fountain), the upper one with calmer programs (around the upper square, housing, church, reading

room ...) and the third one - the connecting, on the hillside with binding programs (wine museum, workshops, products of traditional crafts, souvenirs, clothing, musical instruments, old glass packaging materials, glasses. ..).

Scenario and "dramatisation" of communication and content were established in the complex of integral housing, according to the natural and designed character of terrain, desired genius loci and relief, tradition and cultural, material and immaterial heritage.

The project is based on the principles of traditional architecture, the synthesis of natural conditions and community needs in particular programs.

Architectural tradition is understood as an inspiration for creative improvement, as an incentive towards achieving the quality of traditional master builder, both in terms of the delicate relationship with the context, the craft of forming open spaces and architectural morphology of the village, and in terms of proportions, dimensions and balance of distribution of architectural forms in the landscape.

Creative interpretation of tradition in our proposal is focused towards the use of compositional expression which is close to the spirit of the spatial organisation and traditional materialisation of this region.

We looked up to the style of folk master builders, as well as known and accepted traditional architectural rules, as models for choosing the location of housing, the principles of formation and development of housing settlements, its form and materialisation.

Image 28_ Ethno village, Šipčanik, Montenegro_site plan

Image 30_ Ethno village, Šipčanik, Montenegro_panorama 2

Image 29_ Ethno village, Šipčanik, Montenegro_panorama 1

Image 31_ Ethno village, Šipčanik, Montenegro_elevation 1

Image 32_ Ethno village, Šipčanik, Montenegro_elevation 2

THESIS_7

The role of TECHNICS and TECHNOLOGY in the organization and design of space is huge, but they are only the MEANS for implementation of spatial goals and spatial conceptions.

Argument_illustration:

Chosen example is the Sports and business complex Millennium, Vršac, Serbia. Author P.A. The complex is a group form and is comprised of several connected objects of large volumes. Appropriate structural systems were applied (steel and concrete, as well as the space frames). Also applied were the most modern services and equipment, as well as building materials, from that time.

Technic and technology are here, as always in the function of spatial concepts, spatial organisation, as well as the materialisation of architectural forms. Technic is, as always, a means for realisation of the goals set by creative ideas, spatial concepts and requirements of spatial organisations.

Image 33_ Sports and business complex Millennium, Vršac, Serbia _Panorama of complex

Image 34_ Sports and business complex Millennium, Vršac, Serbia _Roof construction

Image 35_ Sports and business complex Millennium, Vršac, Serbia _Construction period

Image 36_ Sports and business complex Millennium, Vršac, Serbia _ Interior of large hall

Image 37_ Sports and business complex Millennium, Vršac, Serbia _Complex

THESIS _8

SPACES OF THE FUTURE will be flexible, changeable, and adaptable to needs of man and future lifestyles, with the possibilities to stimulate cultural diversity.

At the same time, they will have high performances of elementary natural characteristics – plenty of light, pure air, silence and nice views...

Argument_illustration:

Chosen example is the Office building (State administration of real estate, UZN), Podgorica, Montenegro. Authors P.Arsić and T. Vrbnik-Brkić. Skeletal reinforced concrete structure, the system of columns and slabs were used. Raised floors and suspended ceilings were used to accommodate the services. Double glass facade ("double skin") was used on transparent surfaces and ventilated facade with stone cladding on solid surfaces. Full flexibility of spatial organisation was achieved, with the possibility of simple and easy changes in both size and layout of office spaces and workstations. Design concept of the facade gives energy efficiency, high comfort for users, the ability to control and regulate the environmental conditions at the level of a workstation (temperature, light, view, sound insulation ...).
We hope that this complex, with a clear response to the influences of its context (noise, sun, wind, but also views, green), as well as the attitude towards the desired variable-controlled adaptable interior work environment, will be at least a small contribution to defining the working space worthy of man - today and in the future.

Image 38_ UZN, Podgorica, Montenegro_ Model 1

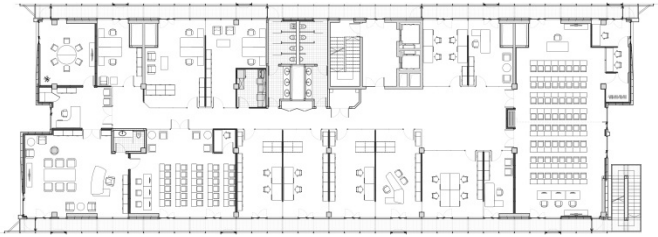


Image 39_ UZN, Podgorica, Montenegro_ typical floor plan

Image 40_ UZN, Podgorica, Montenegro_ Double facade

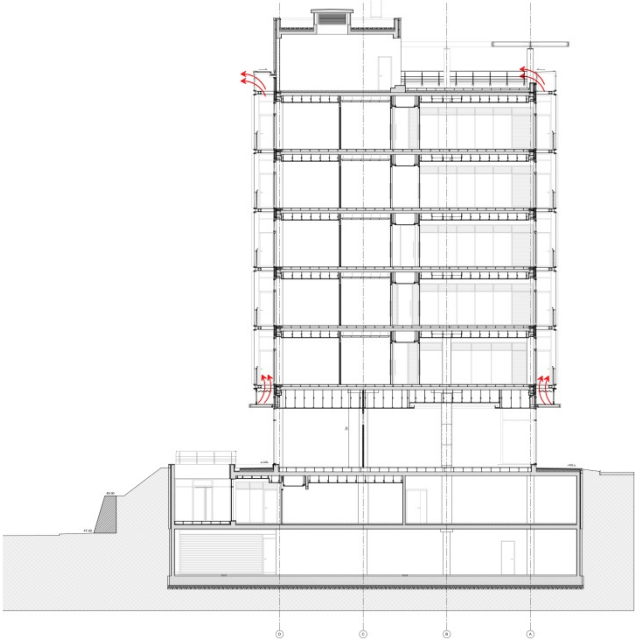


Image 41_ UZN, Podgorica, Montenegro_ Section

Image 42_ UZN, Podgorica, Montenegro_ Model 2

Image 43_ UZN, Podgorica, Montenegro_ Construction

Image 45_ UZN, Podgorica, Montenegro_ Model 2

Image 44_ UZN, Podgorica, Montenegro_ Model 2

7_NOTES

1 From now on we will refer to this future science as "Science of Space".

2 referring to philosophy of Martin Heidegger, Immanuel Kant, Edmund Husserl, Max Scheler, Nicolai Hartmann, Ludwig Wittgenstein, Maurice Merleau-Ponty, Jean-Paul Sartre, etc.

3 referring to ideas of C. Norberg-Schulz. See bibliography fields for C. Norberg-Schulz

4 referring to philosophy of Henry Lefebvre. See bibliography fields for Henry Lefebvre

5 referring to ideas and works of Italian architect Bruno Zevi. See bibliography fields for Bruno Zevi

6 referring to ideas of Nikolaus Pevsner. See bibliography fields for Nikolaus Pevsner

7 referring to ideas and works of American architect Peter Eisenman, presented is his books and writings. See bibliography fields for Peter Eisenman

8 referring to ideas of Sigfried Giedion. See bibliography fields for Sigfried Giedion

9 referring to ideas of American architect Robert Venturi. See bibliography fields for Robert Venturi

10 referring to ideas and works of American architect Steven Hall. See bibliography fields for Steven Hall

11 referring to ideas and works of Peter Zumhtor.See bibliography fields for Peter Zumhtor

12 referring to ideas of Juhani Pallasmaa. See bibliography fields for Juhani Pallasmaa

13 referring to ideas and works of Bernard Tschumi.See bibliography fields for Bernard Tschumi

14 referring to philosophy of M. Heidegger: (Heidegger, Bauen Wohnen Denken, 1954), (Heidegger, Building Dwelling Thinking), (Sharr, 2007)

15 (Friedman, 1971), (Lefebvre, The Urban Revolution, 2003) (Lefebvre, La révolution urbaine, 1970)

16 (Elden, 2004)

17 (Lefebvre, The Production of Space, 1991)

18 Metaphilosophy, in: (Lefebvre, Métaphilosophie, 1965), (Elden, 2004), (Lefebvre, The Urban Revolution, 2003)

19 Ibid.

20 Urban Form, in (Lefebvre, The Urban Revolution, 2003)

21 (Alexander & Chermayeff, Community and Privacy: Towards a New Architecture of Humanism, 1963, pp. 12-15), (Alexander, A New Theory of Urban Design, 1987, pp. 126-127)

22 Ibid.

23 Ibid.

24 (Prelog, 1991)

25 (Milenković, 1977, p. 21)

26 Ibid.

27 (Norberg-Shulz, Existence, Space and Architecture, 1971), (Norberg-Shulz, Genius Loci Towards a Phenomenology of Architecture, 1980), (Norberg-Shulz, Intentions in Architecture, 1965)

28 (Norberg-Shulz, Meaning in Western Architecture, 1974), (Norberg-Shulz, Existence, Space and Architecture, 1971)

29 Ibid.

30 (Norberg-Shulz, Intentions in Architecture, 1965), (Van Nes, 2008)

31 (Zevi , Gendel, & Barry, Architecture as Space: How to Look at Architecture, 1957) (Arnold, Altan Ergut, & Turan Ozkaya, 2006)

32 (Zevi , Gendel, & Barry, Architecture as Space: How to Look at Architecture, 1957), (Zevi, The Modern Language of Architecture, 1978), (Cirillo, 1996)

33 (La Regina, 1976)

34 Ibid.

35 (Lefebvre, La révolution urbaine, 1970), (Lefebvre, The Production of Space, 1991) (Lefebvre, State, Space, World: Selected Essays, 2009)

36 (Lefebvre, The Production of Space, 1991)

37 (Lefebvre, La révolution urbaine, 1970)

38 (Milenković, 1977, p. 45)

39 (Lefebvre, The Production of Space, 1991), (Elden, 2004)

40 (Kidd, 2012), (Baudrillard, 1994), (Franssen, Lokhorst, & Van de Poel, Winter 2013 edition), (Habermas, 1970)

41 (Mumford, 2010, p. 24)

42 (Lloyd Wright, 1908), (Corbusier, 2007)

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