

„Modern paradigm of formaking“

Professor Surab Kiknadze, Architect Tamar Tabatadze

Annotation

Nowadays, the understanding of basics of fractal structure is deeply intervened in many fields, including formation of external appearance of architectural-construction facilities as well as their internal structure of organization. Together with recognition of the importance of role of unconscious, from empirical theory to general vector – all well maneuvered study programs should serve to help transition from science to practice. The same should have to be a base principle of Fractal Architectural propedeutics

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“Some factors acting on the conturbanizm process”

Q. Salukvadze, N. Kopaliani, T. Bidzinashvili

Annotation

The article deals of Urban Development as an irreversible process and the causes of its topicality. Brotherhood represented Calvin Bailey suggested monograph, where it was stated that for the first time in the history of the rural settlement grew faster than the city. Moreover, this increase was due to net immigration from the city to the village as a result of growth, which is complex and also discusses four interrelated factors; Decentralization of employment, Modernization of rural life, the aging of population, rural preference minicheba.es Urban Development factors is leads first stage. Urban Development the common argument is that the link between development and urbanization are weakening after the country reaches a high level of development. After that, the urban and non-urban areas in terms of the structural aspects of the playing field becomes, which leads to urban concentration can be overcome by

telecommunications, the daily movement and other technological and social change, which is a long distance interconnection and operation allows

<http://business-engineering.bpengi.com/>

GTU, Academy of Georgian Konstruction Business – Engineering - Quarterly referenced journal Business Engineering in construction, 1-2 2017, 186-189 pg.

Problem of tradition in the period of Postfunctionalism

Professor V. Davitaia; Doctoranr A. Bibilashvili

Resume

From the XX century “Functionalism” (New architecture, Modernism) universally managed world architecture and for forty years it was able to create architectural monotony in the world. It loses power and begins to find the ways to continue its existence. If in the initial period Functionalism conceptually denounced tradition, history and burned the bridges connecting to the past, it becomes more conciliatory and opens its doors to regional factors. It was revealed conceptual approach to tradition. It was principally different from the approach of the past years, when nationality was based on the simply interpreting of material cultural monuments. It was shown immaterial cultural factors, such as mentality of nation, traditions, “soul of place”, mood, legend, poetry, folk creations, decorative art, folklore, and others.

Such was the general tendency, which revealed in the different ways in each country.

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Regarding Establishing Norms for Residential House Designs

Professor N. Tevzadze, Associate Professor Q. Berekashvili

Resume

There is reviewed the issue of establishing specific norms for designing residential houses, that are interlaced with the independence of Georgia and consequently of national architecture.

The analysis and generalization of a lay-out of particular building complexes, houses and amenities in the country are presented, with the objective of revealing their characteristics and developing recommendations for perspective design.

From that perspective, at this stage, a folk type residential dwelling referred to as „Oda House“ is reviewed. All of its details are carefully analyzed, and recommendations are made for establishment of a database.

There, a methodology of working on the issue. It involves the collaboration of interested specialists by the means of scientific-technical Journal led by the department of architecture, urbanistics and design of the Georgian Technical University.

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“Greening of public consciousness”

Professor G. Salukvadze

Annotation

Reality indicates, that environmental problems cannot be solved if appropriate moral principles and traditional attitudes towards the nature are not changed, if there is not increased social responsibility of each person for activities affecting the nature, therefore actually raising public consciousness of environmental issues and relevant culture are of great importance.

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Fractal structures in urban planning

PhD in Architect T. Tabatadze

Annotation

Urban fabric of any plant is a fractal structure due to its systemic hierarchy. As a result of the "desirable" regular order and chaotic influence of different nature, real cities, agglomerations or smaller accommodation facilities are formed. Fragmentary vision and chaos theory is a modern instrument of modern research and prediction

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VOLUMETRIC ARCHITECTURAL GRAPHIC ART AS A METHOD OF ARCHITECTURAL DESIGNING.

Professor Z. Titvinidze

Annotation

The article deals with spatial thinking and the role of its main mechanism, imaginary action in the creative process of architectural designing. In order to organize architectural terminology in the Georgian language, the visualization instrument of the architectural product, “architectural graphic arts” has been differentiated as flat and volumetric constituents.

The article provides definitions of “modeling” and “models”, “maquetting” and “maquette” . It demonstrates the advantage of visualization of imaginary-spatial architectural images by means “plastic architectural modeling” over the linear architectural graphic arts.

An opinion is expressed, that plastic architectural modeling, as the integral part of architectural graphic arts represents one of the leading mandatory teaching discipline of the architectural specialty and that the attitude towards this subject should be dramatically changed in terms of increasing its role and scope.

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The syndrome of sick buildings

Academician A. Prangishvili, professor G. Salukvadze, Doctoral student L. Pirveli

Annotation

According to experts of the world health organization, a city resident spends almost 95% of his time on the premises. Therefore, the degree of ecological compatibility of the internal and external environment of the building is among the factors, that significantly affect on health.

Already about 20 years in the world there is such concept as „a syndrome of sick buildings". Scientists - hygienists have come to a conclusion long ago, that many diseases are defined by quality of living conditions.

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Regional Chart of Resettlement of Georgia

Architect V. Phrangishvili

Anotation

Regional Chart of Resettlement of Georgia – first document of the country's spatial arrangement - was developed in the Project on City Building of Georgia (Sakkalakmshensakhproekti), in 1979. For certain reasons, this scheme is not known to the Georgian society. The article covers the analysis of the main provisions presented by the co-author of the Resettlement Scheme, which can be considered as a result of the work.

Chamkhushi Tetraconch

(Geometric concepts of Architecture)

Professor G. Kipiani

Annotation

The monument is located in Tao-Oltisi region, near the well-known Bana Tetraconch, conventionally dating back to the VIII-IX Centuries. Nowadays, it is perceptible as a plan only. The researchers parallelize it with the monuments, such as Jvari Monastery in Mtskheta, which is correct, because some of its features are similar to Jvari monastery in terms of diagonal development of the space and its “pictorial” plan.

Its circumference takes large and small 32 facets i.e. 4,8,16 partitioning system of the circle. If we review the popular (Mtskheta) Jvari type temples in Georgia there is no doubt, that its original graphics – a free cross with diagonal development e.i Rosette representation, is maintained everywhere, unlike Armenian ones, which are seemingly the similar buildings, all of which without exception are strictly represented in rectangles.

There are many differences though: a primary geometric face of Chamkhushi Tetraconch is a geometric square (and not a rectangular one, the aspect ratio is 3: 4, which is evidenced by Jvari and Hripsime churches) and a cross-like plan is initially developed through exedras and then through hexagon compartments. This development is strictly diagonal, in contrast to Jvari type churches, where “swastikas” are quite noticeable. As for the dome, it is so encompassing, that it had even removed bema in front of apses. Its appearance, which is now only imaginable for us totally matches the space and its partition.

Perhaps it seems safe to say that here, for the sake of space, an architect uses the principle of compass geometry, which was so inherent for the late antique period i.e emperor Hadrian's architectural style. At the same time, the architect maintains the inner diagonal square, through dynamic rectangles, creating outer masses through typical proportional systems.

Without the thorough exploration there is little to be said about its date, though the characteristics listed above surely indicate, that it is closely related to the late antique architecture. The wide apsidal gates surrounding it on three sides should be taken into account as well.

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The comparative analysis of two historical districts in Lisbon and Tbilisi (Bairro Alto, Sololaki)

Associated Professor M. Dzidziguri

Annotation

The urban and architectural characters of two historical districts of Lisbon and Tbilisi (Bairro-Alto and Sololaki) are compared in the article in terms of their vitality, functionality and integration into a modern city. The analysis is done on the basis of characteristic of each neighborhoods history, urban planning, development, problem description and finally some conclusions are presented.

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The results of A. Pushkin street and Liberty square rehabilitation.

Associate professor M. Dzidziguri Doctoral student M. Meskhi

Annotation

Recently, in the historic districts of Tbilisi, against the background of building new houses and rehabilitation of the old ones, it became urgent to protect the identity of the old quarters and historically formed settlements.

From this point of view is discussed the street of A. Pushkin and Liberty square-built in the current century monumental group of buildings. Also there is discussed the correspondence of postmodernist development scale with environment, its (historical) eligibility or negative and positive impact on historical territory and architectural values.

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Architectural propedeutics and computer technology

Associate professor T. Chigogidze, Architect Z. Kharalashvili

Annotation

Architecture combines art, science and technology, which is accumulated in the architectural work. Until now, architectural work was a synthesis of scientific and artistic creativity, but the universal era of designing has now come, based on the general computerization. Rapid and intense occurrence of architectural science in all areas of design convinced us, that modification of the process of design and construction and accordingly – a

new understanding of the role of the architect, as well as improvement of the architecture school is necessary, considering the realities of life changes and tendencies.

Development of CAD design systems means to describe and manipulate architectural forms in two- and three-dimensional geometry using mathematical tools. But the problem consists in addressing the formalization of properties of architectural phenomenon. Today, architectural informatics does not replace the architect; it's just a powerful tool of modeling of architectural objects. New training programs should facilitate the introduction of such techniques, which contain an integrated approach and implementation of information modeling, such as a specialized information system modeling (BIM) Revit Architecture, which offers architects intuitively clear, powerful way of designing.

CAD and BIM packages not regarded only as graphics systems, they are instruments of the organization, optimization, testing and management of project work.

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Polycentrism as a Doctrine for Tbilisi land-use general Plan.

Professor G. Shaishmelashvili

Annotation

In the frame of Tbilisi urban development active discussion is going on transportation of Tbilisi from monocentric city to polycentric one.

Excess transport and high concentration of social loads in the historical center, as as the extremely negative expression of monocentric development of Tbilisi causes the imbalance between the center and the suburbs.

Current situation, actual model of monocentricity is becoming a device to destroy the cultural and natural heritage of the historical center.

Tbilisi Urban Policy priorities should be the creation of new innovative high-tech business clusters outside the Tbilisi Center, Tbilisi and Tbilisi agglomeration.

The development of such clusters, on the one hand, will significantly reduce the traffic flow in the historical center of the capital, and on the other hand, will raise the quality of life of the city's suburbs.

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Bioclimatic principles of modern architecture - American experience

Associate professor M. Javakhishvili, Assistant professor B. Tinikashvili

Annotation

The planning methodology defines bioclimatic approach as a basic criterion for house design. The place, environment and orientation determine how to provide better protection and better use of natural conditions (sun energy, wind and heat sources). To confirm the foregoing this article presents examples of foreign architecture - modern bioclimatic houses which use high technologies and are based on the ecological principles.

From Ancient times, houses were building according to the native climate and location. We present some examples of historical folk architecture models (Mesa Verde, Pueblo, Tipi, Wigwam), as well as bioclimatic living houses based on the principles of all available technologies and eco-architecture, according to practices of American Architects (F. L. Wright, Louis Kahn, L. Chelprine and others.)

The means of modern technologies strive for extensive use in every environment. The intensity of their use is determined by the natural-climate factors, as well as by the volume and spatial composition of an object. Building technologies enables the successful solvation of problems regarding the energy efficiency. While projecting, it is important to consider the foundations of bioclimatic principles for the efficiency of sun and wind installations. While projecting passive sun building, for a person's comfort, the optimal amount of heat must be estimated. The main goal of the Bioclimatic Architecture is to create an environment for people, where the natural factors will be foreseen.

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Sustainable furniture design – the way to maintain ecological sustainability

Associate professor N. Khochladze

Annotation

“Environmentally responsible design” includes sustainable design and green design. The term sustainable design for the built environment is used interchangeably with green design. However, there is a subtle difference. The green design often implies an interest in design that protects people's health and well-being while sustainable design also protects the global environment and the world's ecosystems for future generations.

Sustainable Design is the philosophy of designing physical objects, the built environment, and services to comply with the principles of social, economic, and ecological sustainability. The intention of sustainable design is to eliminate negative environmental impact completely through skillful, sensitive design. Manifestations of sustainable design require no non-renewable resources, impact the environment minimally, and connect people with the natural environment. A dynamic balance between economy and society, intended to generate long-term relationships between user and object/service and finally to be respectful and mindful of

the environmental and social differences. Sustainable Design is mostly a general reaction to global environmental crises, the rapid growth of economic activity and human population, depletion of natural resources, damage to ecosystems, and loss of biodiversity. Sustainable design is used in areas such as architecture, landscape planning, graphic design, also in interior design and furniture design. Many American designer companies are creating contemporary eco-friendly furniture: Urban woods, Vermont wood studios, EcoVet, Urban Green, Sustainable Furniture, Inc., Manchester wood, Fancher chair and etc.

“Environmentally responsible design” makes relations between man and nature harmonious, increasing humans responsibility towards nature.

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Urban-social model of disability, as one of the major opportunity for disabled people, to adapt to the urban environment

Associate professor M. Pochkhua

Annotation

The urban environment planning, oriented for disabled people is getting particular actuality at the modern stage of the urban development. The problem for the disabled people has taken an important place for a long time in the international community, particularly in the existence of America. In Georgia this full-adaptation question has especially escalated for its social –economic crisis.

In many cases, limiting a person's ability derives not from only his own resources, but from the urban environments made from existing construction standards . It damages not only individual persons, but the whole society, that losing the great resources . The aforesaid shows that the use of their modern resources specific, requires a new awareness of the urban policies, which is considered in the context of building constructions, architectural practice and city planning regulations

Our goal is to review the existing important problems in the urban areas of Tbilisi, to be possible to have more comfortable conditions to disabled people for their works and lives, which are mostly reached with the American experience, to analyze analogues with combining the recent advances in science and technical assistances.

he major actions also will be discussed in the report , which is implemented by Georgian specialists supported with American colleagues to protect human rights for the people, who have different types of disabilities.

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