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Students of Architecture facing the 21st Century Challenges

Abstract: The paper aims at outlining a current state of architecture in general and specifically in Georgia. It emphasizes the problem of the architecture schools raising young architects with the academic target of responding to the modern challenges of urban designing. The paper concerns the highly individualistic expressions reflected globally in the modern architecture of the world's developed countries with the technically and aesthetically innovative forms. We will discuss the concept of *smart cities*, which involves informative and communicative technologies providing the improved quality of urban services.

While outlining the issues of modern architecture, it is very important to discuss how modern architecture is trying to cope with the growing problems, such as deficit of resources, growing population and grappling with politics. Moreover, we will overview the currently dominant problem of ownership of public spaces with the example of Tbilisi, the capital city of Georgia, that leads to chaotic urban development with the impact of poor housing conditions and hindering the protection of cultural heritage.

Above all, it should not be overlooked, how modern educational system struggles to prepare qualified architects in our country, including the problem of the deficit of technological and financial resources, which are crucial in the field of architecture.

Keywords: architecture, urban designing, technological and financial resources

Architecture is the social art, that takes an important place in the democratic society. Despite the fact that majority of buildings are built by corporate and authoritative units, linked to the vast and expensive developer process, the architecture still remains a public product.

Architecture differs from other fields of art, namely the cinema, painting and literature in the sense that we select each of the fields to enjoy, but in contrast, architectural work is our residing area as well, that renders extra sense of responsibility to this scope of occupation.

As a commonly acknowledged fact, initially the substantial value of architectural constructions was their function, but gradually, the building process enlarged in the scope of functions so that it has started to influence the formation of living environment.

In this regard, the esthetic value has become particularly important to secure the residential comfort. People of different ethnic and ideological origins started to show cultural and historical identity in the scope of architecture that resulted in flourishing Egyptian, Greek, Roman and Gothic individual architectural styles, extending with the later periods of Renaissance, Baroco, Classicism, Modernism and post-modernism. The modern 21st century architecture reflects no dominant style of proceeding historical periods.

On this point, Architecture has acquired strictly individual tones of appreciation and attraction. There has appeared the frequently used term *zeitgeist*, that relates to 18-19 century German concept meaning „The sole of Epoch” and thus, denoting the distinct features of the historical period.

Different attitudes appear in discussing 21st century architecture, as for some people buildings are *zeitgeist*, but for others architecture does not have its past, only involving its present and future. In this regard, an architect forgets the historical tradition and launches a definitely new process of building. In contrast to this extreme effort, there is an opposite group of architects that focus on the original stems from which derives new wave of interpretation and thinking.

In this regard, I think, that 21st century is a n epoch of freedom. Despite the fact that today we face a huge list of social problems as a kind of hinder to the developing process, we live in an progressive period of architecture.

21st century renders liberalism to architecture that has eradicated dogmatic thinking and thus prompts originality and individualism, that entails in flourishing liberal public attitudes.

Art and Architecture both reflect the social standing that means that individualism has become a substantial value. The more authentic the work is, the better public attention it gets, that feeds the recent attitudes of modern architects, who do not get limited with the definite rules and dominant trends. As a result, there may simultaneously appear three extremely different buildings, ranging from an accantric hi-tech style, retrospective esthetics and the utmost originality.

Thus, 21st century is based on much more creative and original decisions rather than following the definite rules. There has appeared a new attitude to the architectural design with the emphasis on its attractional stlye that replaces the necessity of rendering some strict function to it.

Thomas Heatherwick, an English designer and the founder of Londen-based Heatherwick Studio, introduced a building with the definite function to provide sheltered public space. The architectural design responds to transforming public space into volumetric one. The building shows a great number of steps, as the pillar of design, that sets a public bridge in its original thinking. The inspiration of the project is Chand Baori Step well in Rajasthan, that is considered to be among the biggest in the world, arranged in perfect symmetry with its 3,500 narrow steps, descending to the well 20 meters deep, that provided the surrounding areas with a dependable water source for centuries before modern water delivery systems were introduced.

On this point, Heatherwick Studio maintained the authenticity in their design project keeping in line with the Chand Baori Step well history.



Chand Baori Step, Rajasthan

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Vessel, Hudson Yards, New York.

Another example is Bjark Ingels Group Lego House, that represents a kind of game of architectural design in which Lego model makes for an Architectural scale.



Lego House, Denmark

Despite the vast scope of free cognitive thinking, modern architecture faces a wide range of problems in 21st century. The worldwide scarcity of natural resources, climate change, increasing demography make the new challenges for urbanists and designers.

One of the leading challenges for architecture is its becoming compact, practical and flexible. There have appeared a range of concepts including “Clever City”, that represents a social product of IT engineering and architecture. “Clever City” means a well-planned city, where urban services reach to the highest level and technological and engineering innovations lead to the new systems of compact and secure public spaces and residential areas.

Currently, there exist many innovative ideas including the concept of resilient architecture that concerns ecological stability of cities. Cities suffer ecological catastrophes, but due to the evolution it becomes resistant to the future natural catastrophes.

For instance, after the Hurricane Sandy in NY Bjark Ingels Group received the demand for a project that concerned building flood protection barriers in Manhattan. At first sight barrier construction is a piece of simple work, though it relates to providing security on the expenses of public comfort, as it fosters closure of open spaces to the ocean. To respond to the great challenge, the group of architects worked out the project that encouraged building furnishes terraces providing for the protection barriers and public attraction at the same time. The Manhattan flood protection barriers project is an instance of “flexible” element of city.



Manhattan project

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Bjark Ingels group worked out another important project for the perspective of future protection from the results of climate changes and natural catastrophes. So called “floating cities” represent artificial ecosystem that have appeared as the result of collaboration between architects and engineering scientists. According the concept, “floating cities” are to be built on the idea of stable city that will run on the basis of self-production, receiving energy from the sun, wind, ocean flows and waves. The cognitive thinking of the project of self-production city also involves garbage recycling and storage of rainwater in special containers for further water purification. Such projects create the new basis of thinking and inspiration for the future generation.



“Floating City”

Modern Architecture reflects the distinct features of not only the current ecological problems, but also, social-economic and political developments. In this regard, Tbilisi, the capital city of Georgia, stands for a good example. The chaotic process of building evidently leads to the insecure living conditions.



Kostava Street, Tbilisi



Panorama Tbilisi

Tbilisi is an authentic city in the sense of architectural esthetics. We encounter Asian and European architectural styles. Sololaki is a distinct residential area where gentrification process is underway. As a result of renovating the district, many old buildings are destroyed. The residential area also suffers inadequate protection under the status of cultural heritage.



We can also point out some other projects that foster rebuilding the old houses that is well illustrated by the emergence of “Pabrika” (factory) in Ninoshvili Street. The building of *Pabrika* maintains the soviet exterior style and renovation has rendered a new colourful tone to the sheltered public space.



To respond to the vast architectural challenges, the country needs to renovate its educational system, as the scope of the studies of architecture is insufficient in the sense of scarcity of interdisciplinary academic relations. Architecture is not mathematics with its strictly guiding rules, but it is a work of art that takes a vast creative thinking. Educational system should set a basis for the new projects.

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