

Essence of Architecture engineering and Its Abilities

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ABSTRACT: In developing societies, architecture express as an art, only a science or profession, therefore researcher attempts to analyze the relation between building technology and aesthetics by regarding to essential study on the old construction (building) and global architecture appearances. Likewise according to ability of management, creative and talents rate, knowledge of experiential-academic architects and civil engineers, conclusion are saying that architecture is a mainly joint of art, science and profession in cooperation with civil engineering. Buildings and engineering constructions can theoretically be separated, but practically less and less.

Keywords: Building Technology, Architecture, Civil Engineering, Interaction Activities.

1. INTRODUCTION

Do you think about why don't academic architects create attractive works today as past designers? Why are a few remained chequered works valuable in modern cities which were the products of experiential architects` design and make up, and have abundant or numerous eagers? Why do civil engineers focus on technical computation only and have forgotten art, talent and aesthetic? Excessive prejudice of architecture engineers who assume the art and talent to their own specialty and excessive dependence of civil engineers on computations and limiting the engineering upon computation and analyzing are the problems of developing societies. Do they know that all of architects and civil engineers will be successful if they are sympathetic and friend to each other. When a plan is introduced, others shouldn't criticize and introduce their opinion. If there are a few interesting building, they are the result of cooperation and assistance of two architecture and civil group. It shouldn't ignore that two groups are each supplement of each other and without consideration of each; other won't find its actual placement as properly.

2. METHODOLOGY

2.1 Issue Analyzing

Of basic reason for non-developing applied architecture art in urban macro level is the use of experiential architects who have no modern knowledge and have obtained successful management by their personal experience, interest and attempting. And

have performed Projects with low cost and out of architecture regulations and unfortunately they can find suitable placement in public minds. However, informative field of many young engineers is more detail and exact in much cases. But due to weak managing function and limited social relationships of numerous young and talent architect engineers who have recently entered to working field, in spite of new and unique ideas, still it's feeling the vacuum of view points of presence due to academic architecture art in building industry. Many of problems due to this idea are wrong that: sky scrapers with wide area are worth a lot for using of the knowledge and art of professional architect. However, based on opinions of urban architecture experts of the United States: "the aim of construction for architects, city making and civil engineers must be to have a city as visual, monolithic and clear where the people enjoy from walking in it." In fact all small projects but efficient of architects and city makers have readiness to convert the city to whatever which are public optimum when they consider by together, the experience that Europe and United States have obtained but we are far from it and still we insist on our wrong dispute among determination of civil engineers duties and architecture for reaching to high aims and having a city rich of admirable buildings, it's necessary to familiarize the civil engineers to art and architecture styles, architects domination on technical regulation, computation methods, high capabilities of supervision and project management. Civil engineers domination as the most basic construction administration on architecture regulation and styles is the issue which has been an important point for many countries. The study of architectural history for civil engineering students in some countries has certain traditions. Decades ago a Faculty of Engineering (That time 'General' Engineering, recently Faculty of Civil Engineering) accepted the principle - important both professionally and culturally- to introduce Architectural history lectures to engineering students. Lecturing History of Architecture starts in 1999, as an Elective subject in the autumn term for upper course students. The faculty has called upon the Department of Building Construction, expecting the enormous material being shrinked, emphasizing the structural- technical elements throughout the examination of styles. Relying on the literature of renowned professors of the Department of Architectural History and Monuments at the Faculty of Architecture a team of their department has worked out material and requirements of the subject, set up the pictures for illustration, which all was compiled into computer slides for projection. The active participation of

the students was promoted by a sample study issued by the department and with a test.

The 14 week program of the subject was as follows:

1. The architecture of Ancient Egypt
2. The architecture of Asia Minor (Mesopotamia)
3. Aegean culture, ancient Greek architecture
4. Roman architecture
5. Ancient Christian, Byzantine and Romanesque architecture
6. Gothic architecture
7. Renaissance architecture
8. Baroque architecture
9. Classicism, Romanticism
10. Eclectic and Secessionist architecture
11. Premodern architecture
12. Test
13. Modern and contemporary architecture
14. Protection of historic buildings

They raise a few theoretical questions before introducing the attitude of the students, exposing the above topics means a very delicate situation of didactics, even though examining only the architecture of the regions around the Mediterranean Sea. They can be lost in the jungle of works, creators (many of the geniuses are known by name from the Renaissance) and dates, which can only be avoided by moderation and focusing on the key issues. Therefore they mainly examine the structural plans of growing spaces and spans, the technical and material background affecting the structure–function–form relation, the knowledge and profession of the building human. Besides the history of engineering-architecture relation, which was hardly separable in the past, the question is frequently raised nowadays: how is this double and often proprietary profession judged today? That is beyond question that buildings and engineering constructions can theoretically be separated, but practically less and less. In this case there are some points to consider:

- In the early of Islamic period in Iran the cooperation of engineers and architects is performed as builders and decorators which its apex was in the Teymurids period (1).

- Mathematic rules are the same in all of the world and all knowledges, but the use of geometry is different, Ancient Iranian used philosophy, astronomy and knowledge in their works in addition to geometry.
- There are numerous brick decorations which cannot create again their designs today except with concrete (2).
- Ancient and Islamic architecture has often considered positive aspects of the architecture such as (static Principle, Logic, Technical and scientific problems of the building, human scale, using of local materials, economy and so on).
- The highest and the most important duty of the architect is recognition, comprehension and spatial incarnation of inert and active forces in load body on building and he will determine fitness and dimensions of full and empty parts, exactly.
- Obvious character of an architect is his knowledge and experiences in addition to his innovation and intelligence, Using of brick is an example of it in Islamic architecture. Brick, tile and plaster works are signs of Islamic architecture art and style (2).
- Computation and geometry were so important that only top architects and famous well diggers called engineers.
- Based on made studies in Islamic period's inscriptions and before that, architects have indicated 5 times more than engineers term.
- Architecture must be based on five principles like past periods which are: civility, self-confidence useless preventing, usage of module and static and introspection in order to be the richest reference of civilization and culture of its forming period.

Above architecture enjoy from different sciences and techniques; Structurally, mechanically demanding architectural works, aesthetic bridges, traffic and other establishments are mixed, and the townscapes born by fantasy early in the 20th century gradually become reality. At the same time – sorry to say – we build using up green areas, and have much difficulty in balancing the principle of sustainability. We often face the situation, when non-professionals know better the architecture of the past – by interest or by their trips – than engineers. Publishers make use of this interest: issue colorful, illustrated albums at stiff prices – these mostly mean holiday presents. Shall we fill this mental vacuum? There is much more. The civil engineering students, who elect the subject Architectural History for a more complex view, feel and understand it well. Even more, students ask for lecturing this subject in both semesters. At the beginning the studies covered the full spectrum of a style or a country's architecture (Egypt,

Rome, Bauhaus, etc.). These days papers summing up life–work of a famous architect (LE CORBUSIER, ALVAR AALTO, ANTONI GAUDI, etc.) are popular. It is main target to have students examined a certain building and its structure from their own surrounding. Students encouraged to study certain historic buildings or objects from the World Heritage. Apart from the university books mentioned we must provide literature which analyses the relation between building technology and aesthetics, and which do not speak the language of exclusiveness saying that architecture is only an art, is only a science or only a profession, as we are convinced that architecture is a joint of these all:

- Trying to identify architecture styles of different countries of the world and the famous architects work around the world.
- Training the students with analytic power and judgment about factors and architecture structure of our life area buildings.
- Encouraging to survey and case study of typical works of old and new worlds.

3. Procedures & Strategies

For reaching to high aim of architecture and urban design it must be mentioned that we can spend the time to small projects but interesting, creative, solid and monolithic instead of wide, high cost, time- consuming and rashly Projects. We must know that we shouldn't design or conduct a big project with an insignificant notion. We must try to mix old and new necessities and requirement, a thing that force us to apply the art architecture and engineering science. We must utilize from performed plans and experiences in the past, their strong and weakness point and it's effect-studying on people and urban face from the point of aesthetics in order to create new ideas. For having a successful city and according to optimal patterns of city-making. We must consider following points and conduct its regulations:

- We must act cautiously about landscapes which are interesting and are created by huge financial support because the best cities of the world expose to public sight more and more their parts and their own familiar divisions.
- We must identify unique specifications of our city or designing area utilizes it.
- We must try to recover past mistakes and simultaneously we reconstruct prebuilt cases with new developments.

-We must think about arised works of other countries and about famous reasons.

- We should welcome proper ideas while we preserve the creativity.
- We should consider the cooperation of architects, civil engineers and contractors for project performing in order to conduct and execute plans with high accuracy and quality because that effect will remained at least for one century.

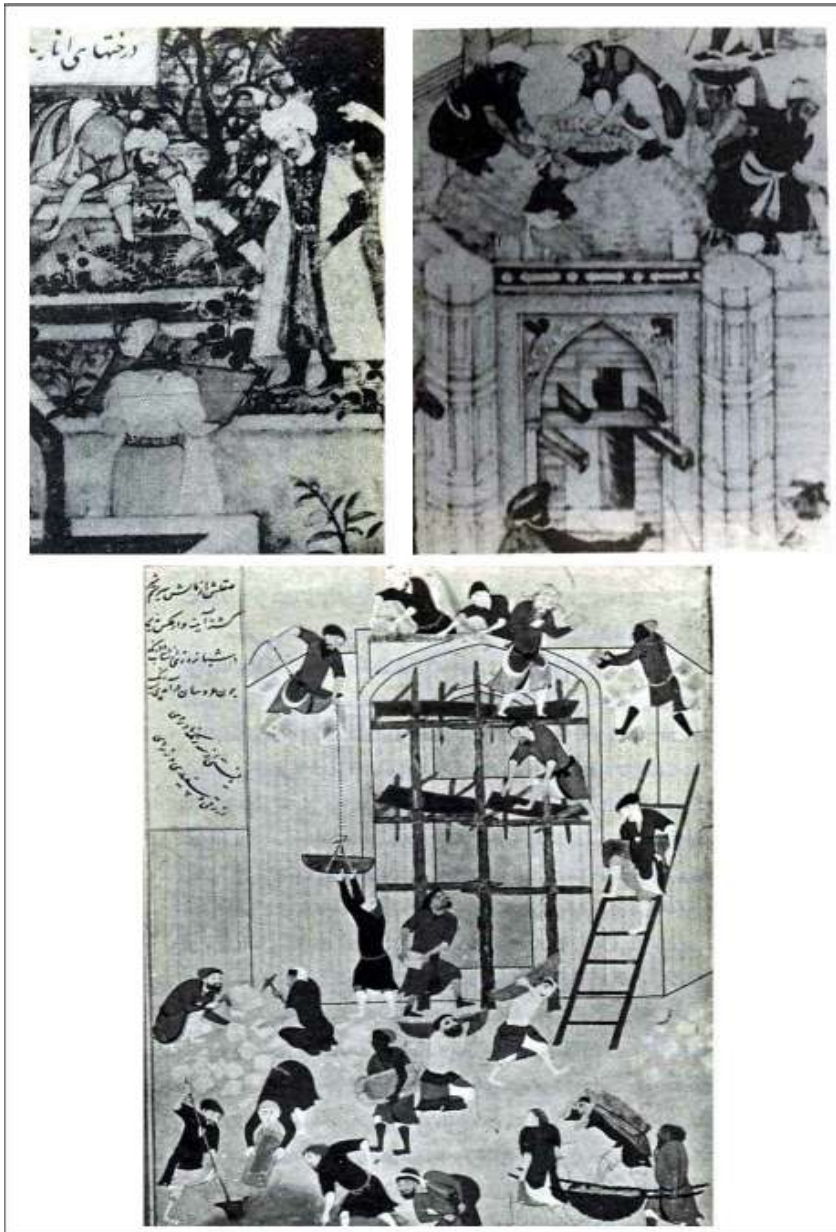


Figure 1. The Cooperation of Engineers and Architects In the early of Islamic period in Iran.

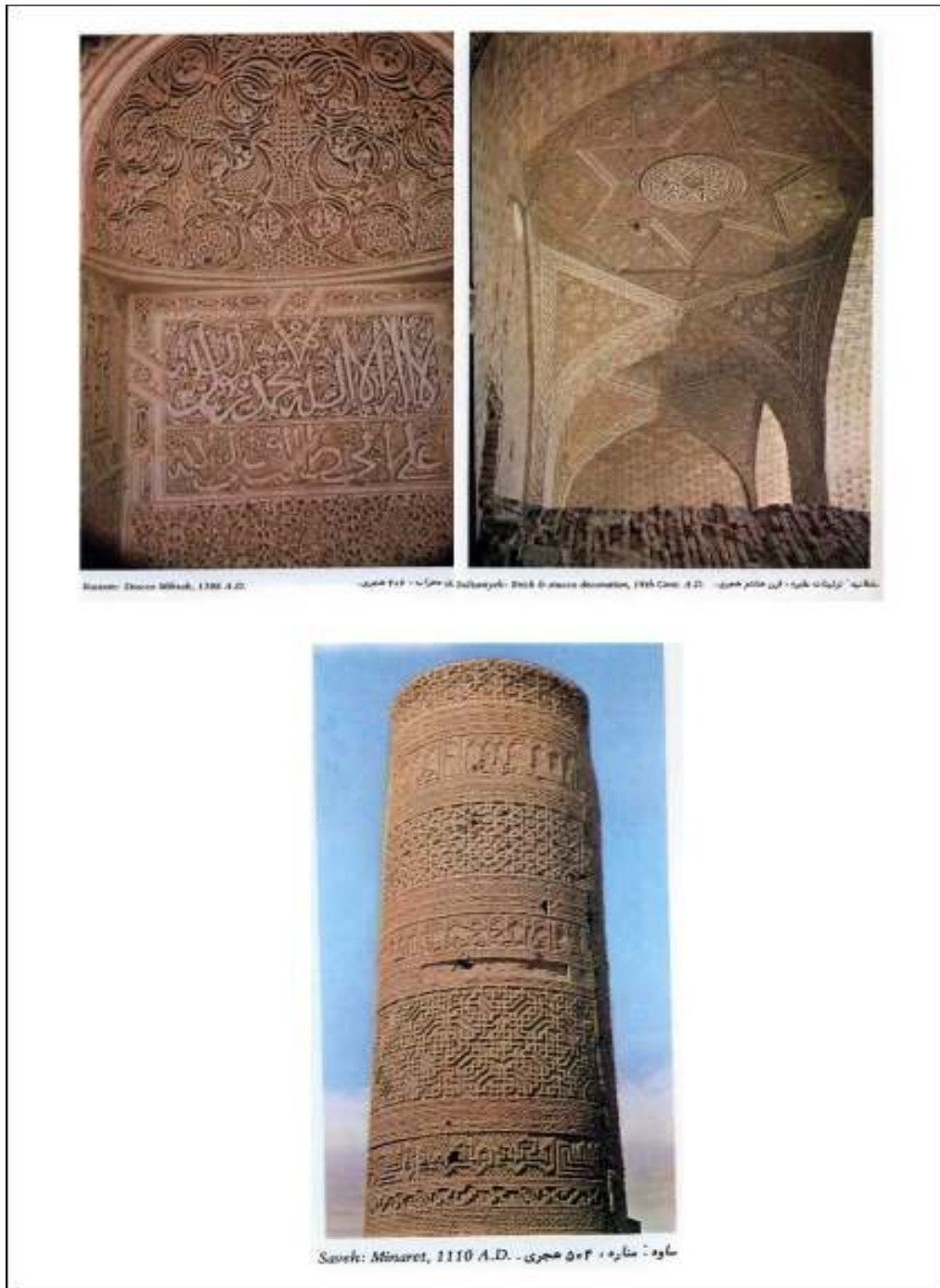


Figure 2. Numerous Brick Decorations(Signs of Islamic Architecture Art and Style)

4. CONCLUSION

The necessity for reaching to the highest aims and having a city full of admirable building is civil engineers familiaring to the art and architecture styles, architects

domination on technical, computation fields and high capabilities of supervision and management of the projects. By analyzing the relation of building technology and aesthetics along with basic studying of historical structures and architecture symbols of the world for civil managerial power, defining of functional position of experiential-academic architects and civil engineers and by regarding to new bases of architecture, can do its role effectively again as a joint of science and art. It can introduce its position as a combination of effective art that referred to science in the form of special profession called architecture engineering to the present world. We find that buildings and engineering constructions can theoretically be separated, but practically less and less. As an important point; cooperation between engineers and schedual new methods in colleges will be efficient.

5. REFERENCES

- Bergeron, H.E :2001, A Perspective on the Need to Give an Introduction to Engineering Management to All Engineering Students.” Leadership and Management in Engineering, 1(1), 26-29.
- Russell, J.S., and Stouffer, B: 2002, “Complexity and Civil Engineering: New Fundamentals for a New Century
- Tankönyv: 1967–2002, School books of teachers Department of Building-History.
- The ESD Architecture Committee Edward Crawley, Olivier de Weck, Steven :2004, THE INFLUENCE OF ARCHITECTURE IN ENGINEERING SYSTEMS”.