


BUILDING MATERIAL: SIGNIFICANCE AND IMPACT ON ARCHITECTURE

It is not just the structural importance and constructional behaviour, but also the visual impact along with the historical value of certain materials that form the essence of the built environment



Building materials form an integral part of the field of architecture. The site selected as well as the nature of the surroundings, determine the building type, and choice of building material.

The type and form of structure is determined by the type of material used. The concept of 'building materials' glorifies the endurance and visual aspects of design. Not only does it provide meaning but also enhances the aesthetic quality of a building—*venustas*(beauty) and *firmitas*(structure). This piece takes a look at the reasons that make building material(s) an important aspect of architecture. Building materials help to:

- Establish a relationship between visual quality and structural stability
- Select the appropriate technique of construction
- Provide character and visual appeal to the structure
- Decipher the time and era of construction of a building
- Trace the evolution of the art of construction
- Mix aesthetic elements with practicality



Fig. 1: Atlas Building, University of Wageningen

- Highlight the theme and concept of design of the building project
- Determine the appropriate site for a project based on availability of material and suitability to the design
- Determine the budget of building projects
- Establish a relationship between quantity and quality

Structural Importance

Building material signifies structural existence. It demonstrates the presence of aesthetic sense in a design, and hence, defines the practicability of the structure. The use of building material(s) while designing a structure is symbolic of its existence in the field of architectural visualization. It helps establish a relationship between the visual quality and structural stability in architecture. The building material selected by an architect

generalizes the type of architecture practised in the construction. The concept of architectural symbolism is not isolated merely to signify the changing trends in the field of architecture. Rather, it is defined irrespective of any instinct and control.

Constructional Behaviour

Architecture focusses on the techniques of construction, which are in turn, based on the design concept or theme. The execution involves adoption of different kinds of masonry styles signifying various types of architecture, based on the



Fig. 2: Coba-Coba Gonzo (Futuristic Pavilion)

kind of construction technique(s). The building materials used have also played a role in the naming of certain monuments of the past. There was a time when complete structures were built of a single building element. Today, things have developed to such an extent that different elements are used in different nooks and corners of the same structure.

Visual Impact

The building material affects the vision of a structure, as it deals with the appearance-related qualities of the structure. It also impacts the durability of the structure. Hence, the character of the architecture is determined by the quality–quantity relationship of the building material used. It also influences the theories of simplicity and complexity in the context of architectural design. It has encouraged innovation too. Naturally, building materials have been an important part of architectural



Fig. 3: Taj Mahal

symbolism. They have completely revolutionized the field of architecture by creating iconic structures all over the world.

Historical Value

Architectural symbolism reflects the

kind of architecture used with respect to the function of the building. It is that aspect, which literally describes a structure. It is also the aspect, which helps to conserve and preserve cultural and historic values. In a religious structural design, the kind or



Fig. 4: The Great Parthenon

type of building material used depicts the kind of architecture. For example, the building material used in mosques is characteristic of Islamic architecture, which is distinct from that of temples, which transport us to the majestic era of their creation. The kind of architecture, the form of art and the customs of a period or civilization are glorified by:

- i) the kind of material used as the basic element
- ii) the availability of the building material, in the period when the structure was built
- iii) the dressing or technique in which the building material has been used

As far as sacred places and their relation with architecture are concerned, building materials are responsible for the presence of religious spots on the world map. The kinds of symbols used on these structures show the time of erection and provide information about the period in which they were built and



Fig. 5: Typical Churches

the kings who got them built. Hence, building materials also act as time logs and help us learn how art in construction evolved.

Be it sacred places or any structure of religious importance, building materials contribute greatly to the retention of the true aesthetics of the

theme and function of the structure. They preserve the customs and traditions without tampering with the philosophy of the design. Not only do building materials instill a sense of function and utility, they provide aesthetic pleasure without losing focus of the practicality. This blend has gifted people with amazing experiences and mystic features in design.

Architectural Building Elements

The elements of a building structure are typically based on the kind of material used in its construction. Each and every division of space in a design takes into account the main theme or concept of the structure. Depending upon the building material(s), each element of the building is related to the other in terms of the concepts of colour, dressing and outlook. The materials used for an element also, quite often, contribute to its terminology. These materials bring out the theme and concept of the design



Fig. 6: Sacred Place



Fig. 7: Historic Fire Station, Tacluda

(of the elements of construction) of the building project.

Site and Site Selection

It is important for an architect to be well informed about the site details before undertaking a building project. He has to integrate the design of the building with its surroundings, in an aesthetic manner. The architectural designing of a space is greatly influenced by the availability of materials and the type of materials used in construction. Therefore, it becomes an important aspect of site selection too. Building materials selected according to their availability, in accordance with the site, also impact the design.

Cost Management of Building Projects

The total expenditure incurred while constructing a structure is, to a large

extent, determined by the materials used. An architect selects the material type as per the budget of the building project. The techniques of construction used can greatly impact the cost of construction. Based on the type of architecture, a suitable type or style of masonry is adopted, which is also appropriate for the type of building material used.

Therefore, it is up to the architect to manage the cost of the building project, as per the requirement of the client. Therefore, it is not wrong to say that building materials influence the budget and cost of a building project.

Interrelationship between Quantity and Quality

Building materials establish a relationship between quantity and quality. The choice of materials affects the quality of the elements, as well as the

quantitative aspects, depending upon the type of design. The material used establishes a relationship between the endurance of a structure as well as the technical and structural aspects of the design of the built environment.

The beauty of architecture can be enhanced by repeated effective executions of these interrelationships. It is possible to obtain astonishing outputs by taking advantage of these very interrelationships.

References

1. <http://www.topboxdesign.com/atlas-building-at-university-of-wageningen-by-rafael-vinoly-architects-netherlands/>
2. <http://cobagonzo.blogspot.in/2011/10/temporary-pavillion-structures-2.html>
3. <http://www.townandcountrygazette.com/community-directory/churches/>
4. <http://www.rgbstock.com/bigphoto/mSmxVec/historic+fire+station>
5. <http://english495multigenre.blogspot.in/2010/03/sacred-places-outline-for-presentation.html> ■

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