

Socio-economic and Environmental Impact of Architecture: A study Based on Colonial Architecture

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ABSTRACT: *Architecture is generally understood to be the art and science or technique of designing and building which must demonstrate the solution of the practical problems associated with the purpose of building such as beauty and utility, and form and function. It has great history and traditional path and extension. Before analyzing the background and features of colonial architecture, it seems essential to overview the historical developments of architecture. The socio economic and environment influence of architecture are significant in the history. This paper, analyses the socio economic and environmental aspects of colonial architecture. It also reviews the influence of colonial influence of architectural developments in India*

Key Words: : *Architecture, Building, Dutch, British, Colonialism*

1. Introduction

Architecture is generally understood to be the art and science or technique of designing and building which must demonstrate the solution of the practical problems associated with the purpose of building such as beauty and utility, and form and function. It has great history and traditional path and extension. Before analyzing the background and features of colonial architecture, it seems essential to overview the historical developments of architecture. This paper, analyses the socio economic and environmental aspects of colonial architecture. It also reviews the influence of colonial influence of architectural developments in India. The first part gives an overview of the history of architecture; the second part gives an overview of colonial architecture and the third part reviews some studies dealing with the influence of architecture

Several colonial empires rose in the 15th and 16th centuries to take land holdings and influence cultures around the world. In particular, the Dutch, French, Spanish, Portuguese, and British claimed and conquered lands around the world, holding some of them for as long as 400 years. Colonial styles of architecture include Baroque, Orientalism, and Art Nouveau. The immigration of people from one area of an empire to another often caused the colonies to adopt or be rebuilt in a hybridized style of the architecture of their colonizer. Spanish and Portuguese influence is seen throughout South and Central America, British influence in North American and Caribbean architecture, and French and Dutch in both Africa and Polynesian countries.

The American colonial style in particular is one which maintains its popularity. A mixture of traditional Dutch and British designs, colonial-style homes are often brick and angular, with chimneys, low-covered porches, and symmetrical windows. In the northern US states, colonial homes include one chimney in the middle, while in southern states, colonial homes often include one at either end. The most prominent and historic American colonial architecture often includes Neo-classic elements, such as Greek-inspired columns and Romanesque domes as well. One of the finest examples of this is Thomas Jefferson's estate, Monticello, which he designed himself.

The architectural style of the British period is very Promient in Delhi and is Reprecuted by the central secretariat. Parliament house or the 'SANSAD BHAWAN' and the president house or Rashtrapati Bhawan formerly the British viceroy house the Sperdid Rajpath India gate and New Delhi combining the features of the modern English school of architecture with traditional Indian forms. The British followed various architectural styles – Gothic Imperial, Christian English renaissance and Victorian being the Ereutials. In 1911 king George v passed an order declaring that the Capital would be moved from Calcutta to Delhi. The city was planned systematically combining 20th century architecture.

2. Socio-economic and environmental impact of architecture

This section gives an overview of the social, economic and environmental impact of architecture. The British Urban Regeneration Association (BURA) reviewed best practice in urban regeneration and concluded that 'historic buildings could act as focal points around which communities would rally and revive their sense of civic pride' and that 'care should be taken not to destroy old buildings before their potential was realised'. The restoration of the early nineteenth-century St. John's Church in the London Borough of Hackney, UK, has been a good example of how the restoration of a local building has inspired the regeneration of an area. The church has been developed to incorporate a nursery school, community café, an employment project, a fitness centre, as well as its continued use as a church.

Cooper (1982) found a negative correlation between the appearance of a house and a feeling of inferiority. The findings were drawn from an analysis of 100 post-occupancy evaluation studies of resident reactions to multi-family housing design from across the English speaking world. In the study residents valued the attractiveness of their homes and environment. This was determined by a good site layout and attractive landscape, varied and interesting views from the windows of homes, provision of private open space, some degree of aesthetic complexity, some degree of uniqueness of scheme sub-units.

The Popular Housing Forum (1998) conducted a survey of 819 interviews with the general public divided between 'potential new build buyers' and 'others'. They found that new-build homes are generally regarded negatively and were associated with the bottom end of the market, as there was a strong preference for traditional housing with character of the neighbourhood. However, the appearance and safety of the neighbourhood was more important than the house itself

Cozens et al found that visible signs of decay were seen to increase criminogenic activity and reduced defensibility emphasizing the importance of keeping properties and surrounding areas well-maintained. He also found that different types of dwellings were perceived as more prone to crime. Terraced housing was identified as the most defensible form of high density development with high rise flats being the most susceptible.

In the opinion of Kim, J., Rigdon, B. (1998), the three principles of sustainable design - economy of resources, life cycle design, and humane design - provide a broad awareness of the environmental issues associated with architecture. Building and window design that utilised natural light has been found to enhance the psychological well-being and productivity of occupants. Stripped wooden flooring can heighten the noise of normal household activities and may cause unhappiness as sound travels between homes from neighbours (Edge, M. et al, 2003) than street level areas. The concept of the roof gardens has been a major success in Germany. More radical ideas have been proposed by German architect Rudolf Doernach. Many of his designs including a chapel in Bonn, Germany, suggested that plants should be incorporated within the façade as an active building material with the ability to reproduce itself (Johnston, J. and Newton, J. 2004).

Vanson and Bourne (2005) found that the aesthetic appearance of the workplace could provide an environment which is inspiring and stimulating. This is achieved through providing an environment with a combination of the familiar and unfamiliar; natural and hi-tech elements, tactile surfaces, mood-enhancing lighting and sound, standard and unusual furnishings. This all contributed to helping to create a fun working environment, generating energy and enthusiasm (Gensler, Architect of Ideas, 2005). The case study conducted by Vanson Bourne consisted of 200 middle and senior management interviews in the UK drawn at random from legal, media and financial services sectors.

According to Macmillan, S. (2003) the buildability of a building may be considerably improved by adopting a 'loose fit' approach. This is finding a balance between what building materials are used and building services for ease of installation, speed of construction, simplified maintenance and greater flexibility for future adaptations. This approach may also speed up the construction period, and therefore, reduce the rolled-up interest costs accumulated during this period. On large projects, this may represent around 25 to 30 per cent of the overall cost during the construction phase

Vanson and Bourne (2005) research demonstrated how the design of the workplace can help stimulate creativity and the ability to attract and retain the best staff, and improve organizational agility (Gensler, Architect of Ideas 2005). However, other research has showed that a balance needs to be achieved in the way the space is arranged. The challenge has been in the finding of a balance between communication and concentration, responding to the needs of the company and the individual. Vandell and Lane (1989) examined over 100 office buildings and found positive correlation between design quality and market rents, and took tentative steps towards establishing a grading system for design dividend that could be identified and to a limited extent measured in financial terms. In 2003, CABE published *Creating Excellent Buildings* CABE (2003) a step-by-step manual that considered the client's role under four procurement stages: prepare, design, construct and use. The case study of *Lewisham Children's and Young People's Centre* in

London, UK, is an example of how a design competition can deliver a great building. In all the designs, generous amounts of natural light and ventilation were incorporated to enable good energy efficiency, as well as providing a comfortable and therapeutic environment. This has improved the external feel of the building, and provided views out and aided navigation within.

3. European colonial architecture and its influence in India

With the rise of various European colonial empires from the 16th century onward through the early 20th century, the new stylistic trends of Europe were exported to or adopted by locations around the world, often evolving into new regional variations. The periods of Mannerism and the Baroque that followed the Renaissance signaled an increasing anxiety over meaning and representation.

Profound changes took place in the art and architecture of India during the colonial era. European colonists, the Portuguese, Dutch, Danish, French and the British brought with them the concepts and forms of European architecture - Neoclassical, Romanesque, Gothic and Renaissance. The initial structures were utilitarian warehouses and walled trading posts, giving way to fortified towns along the coastline. The Portuguese adapted to India the climatically appropriate Iberian galleried patio house and the Baroque churches of Goa. The St. Francis Church at Cochin, built by the Portuguese in 1510, is believed to be the first church built by the Europeans in India. The Danish influence is evident in Nagapatnam, which was laid out in squares and canals and also in Tranquebar and Serampore. The French gave a distinct urban design to their settlement in Pondicherry by applying the Cartesian grid plans and classical architectural patterns.

However, it was the British who left a lasting impact on India architecture. They saw themselves as the successors to the Mughals, as they settled down to about 200 years of rule, and used architecture as a symbol of power. The British followed various architectural styles –Gothic, Imperial, Christian, English Renaissance and Victorian being the essentials. The first British buildings under the East India Company were factories but later courts, schools, municipal halls and *dak* bungalows came up. These simple structures were built by their garrison engineers. A far deeper concern with architecture was exhibited in churches and other public buildings, though most of these were adaptations of the buildings designed by leading British architects back home in England. Under the Company, the old Indian port cities turned into fortified zones. The new English fortifications turned city walls into artillery platforms and angled them mathematically to cover all lines of fire. And since, the guiding principle behind all architectural activity in these ports was security, the fortified port cities of the Company, Kolkata, Mumbai and Chennai, were not centrally planned cities. The Company was suspicious of any central planning that involved unnecessary expense. The streets though, were fairly regularly laid out. Modest churches and hospitals catered to the European population. But the paramount consideration was defence. The governor's residence served as the symbol of authority. The port cities had Black and White towns to segregate the European and native populations.

Changes came after the victory at Plassey (1757), the English now ventured out of the fortified port cities to the countryside for the first time. Interaction between Indian and western cultures produced an architecture of great variety with elegance, especially domestic architecture. Many imposing public buildings were constructed by the East India Company engineers with the help of Indian builders. However, the inspiration was often the European architectural texts and a time lag of around 20 years before the style was introduced into India from Britain. Unlike Europe, these buildings were built mostly of brick and stuccoed with lime or *chunam*, sometimes 'facades' incised to look like stones. Some later buildings were built with stones as well. The Neoclassical style was modified to the exigencies of Indian tropical climate and landscape. This Neoclassical architecture flourished in different parts of India under the British, inspired by the Houses of Parliament in London.

In the early 19th century, classical architecture was used to celebrate an empire held to be as enduring as the Roman Empire. But after the uprising, aggressive anglicizing was given up and the Indian Raj turned to the notion of 'timeless India'. Instead of reform and change, tradition and order became the dominant motto. This was to underline the fact that only the Raj could keep the peace in a land that was divided on religious and cultural lines and lacked cohesion. The British adopted the Indo-Saracenic style. Victorian in essence, the style borrowed heavily from the Indo-Islamic style of Mughals, Afghan and Sultanate rulers. In fact it was a *potpourri* of architectural styles; a hybrid style that combined in a wonderful manner the diverse architectural elements of pre-Indo-Islamic and Mughal with Gothic arches, domes, spires, traceries and minarets.

The Indo-Saracenic style was Indian on the outside and British inside since the facade was built with an Indian touch while the interior was solely Victorian. The Chepauk Palace in Chennai, the Victoria

Memorial Hall in Kolkata, the Prince of Wales Museum in Mumbai and the Lakshmi Vilas palace in Baroda are some of the outstanding examples. But it was the architecture of New Delhi where the imperial ideology was expressed officially in most graphic ways. The architecture of New Delhi was the crowning glory of the British Raj, but ironically it was also its swansong. Robert Byron described New Delhi as 'The Rome of Hindostan'. The British built New Delhi as a systematically planned city after it was made the capital in 1911.

4. Conclusion

Architecture is an important medium to study culture, society and polity. The architectural tradition of Indian subcontinent dates back to our ancient past. The colonial era witnessed significant changes in the field of art and architecture. The Portuguese, the Dutch, the French and the British introduced the concepts and forms of European architecture. This was applied in building urban settlements, public buildings, forts, churches, memorials etc. The contributions of colonial architecture have been significant for the architectural developments in India. Hence the history of Indian architecture as well as the world architecture are closely related and influence each other. This paper analyzed important aspects related to the development of colonial architecture and its influence on Indian architecture.

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