

PLANNING CONCEPTS AND ARCHITECTURAL FEATURES OF BRITISH COLONIAL RAILWAY ADMINISTRATIVE BUILDINGS IN LAHORE

A. Khan^{1}, S. Arif¹, M.S. Khan², M. Mushtaq³ and A. Anwar¹*

¹Department of Architectural Engineering and Design, UET, Lahore, Pakistan

²Department of Geological Engineering, UET, Lahore, Pakistan

³Department of Mathematics, UET, Lahore, Pakistan

Abstract

This paper identifies the railway administrative buildings built in Lahore during British Colonial Period. It explores the planning concepts and architectural features of the buildings at individual level and compares them together for critical architectural analysis. The paper concludes that the major thrusts behind the railway administrative buildings were related to climatic considerations, building structure and overall statement of the buildings. The study would be useful for the professional working on the conservation of railway administrative buildings of British India particularly, and British Colonial architecture, in general.

Keywords: Railway Headquarter, Railway Architecture, Administrative Buildings, Office Buildings and Architectural Analysis.

1. Introduction

Lahore remained a focal point for railway activities during the colonial period. It started working with the name of Punjab Railway Company in 1862 and all administrative set up was housed in the building of Lahore Railway Station. In 1886, the 'Scinde', Punjab and Delhi Railways were purchased by the secretary of state for India and transferred to the state management, and the North Western State Railway was formed. The name of the railway was later changed to North Western Railways. Being an important railway junction connecting Peshawar, Amritsar, Delhi, Multan, Karachi and Calcutta, Lahore was declared as Headquarter of North-Western Railways (NWR) in January 1886 after an amalgam of Sind, Punjab and Delhi Railway (SPDR) [1]. The railway network started to progress day by day and during the first decade of twentieth century, the railway workshops were expanded at large scale and turned out as largest workshops in India. In addition to Lahore Division, the railway workshops were declared as an independent Division. These two Divisions are still continuing in Lahore. However, due to vast activities of railway in Lahore, a large number of buildings were planned and constructed for administrative use. The major administrative buildings constructed during the last quarter of the nineteenth century were the 'Central Offices' presently known as Pakistan Railway Headquarter. These offices were situated at Empress Road which was supposed to link Government House, Railway Central Office and Railway Station. The buildings of the central offices such as Finney, Bagley, Walton and Hight blocks were constructed during different times which finally defined the whole arrangement as railway administrative complex. The blocks were named after North Western Railways' General Managers (Operations) such as Col. G.O.F Bagley from 1892 to 1897 and Sir Stephen Finney (K.T.C.I.E) from 1899-1907, Col. C. Walton from 1924-1932, J.C. Hight from 1932-1936 [2]. The other administrative buildings include office building of the Divisional Superintendent Lahore near Workshops at Mughalpora built in 1910 and Office of the Divisional Superintendent Lahore near Railway Station built in 1924.

The Finney Wing building was planned during the year 1890 (Fig. 1). Its key features include rectangular plan with 1:3.9 ratio, verandah on all sides with total length of 950 feet resting on round arches supported by single and double piers, one central corridor of 354 feet feeding various offices on its both sides. The longer axes of this building were placed before South West and North East directions. The width of verandah, corridor and offices was maintained as 11, 25 and 10 feet, respectively. Walls were constructed with English brick masonry laid in mud and lime mortars as per structural requirement of the building i.e. all critical areas were constructed with lime or cement sand mortar and rest with mud mortar. The masonry was left exposed from external side whereas lime plaster layer was made on internal side. The buildings namely Bagley Wing (1897) and Walton Block (1926) were constructed in similar fashion (Fig. 2) as observed in Finney Wing except few variations. However, Hight Block constructed during 1934 with various changes such as reduction in circulation area and ceiling height. The verandah was constructed without arches. The exterior scheme of this building was based on the principles of modern architecture rather than the British traditions of constructing administrative buildings in India. The elevations of Finney Wing, Bagley Wing, Hight Block and D.S. Office Workshops are shown in Figures 3, 4, 5 and 6 respectively.

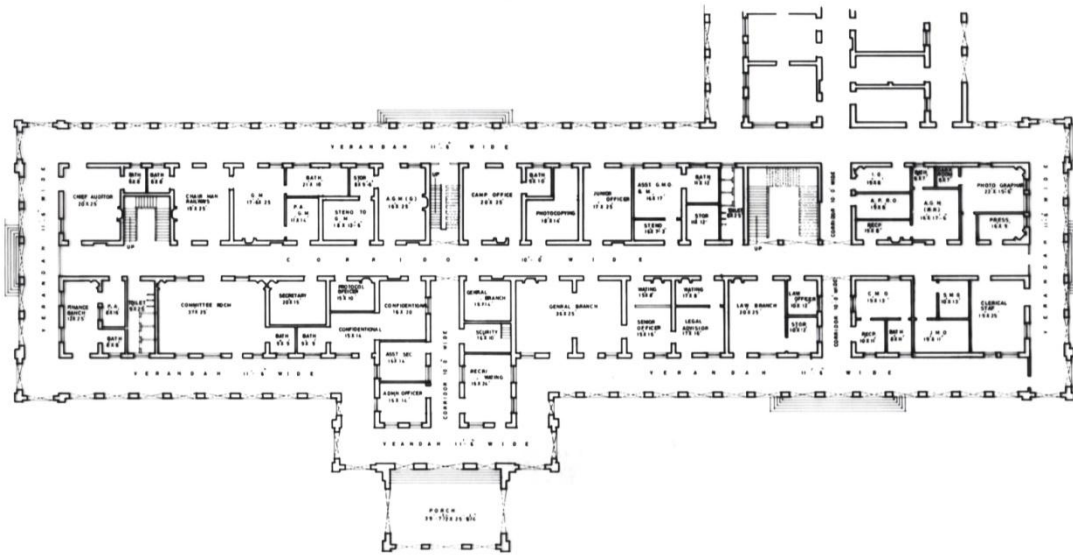


Figure 1: Ground Floor Plan of Finny Wing (1890)

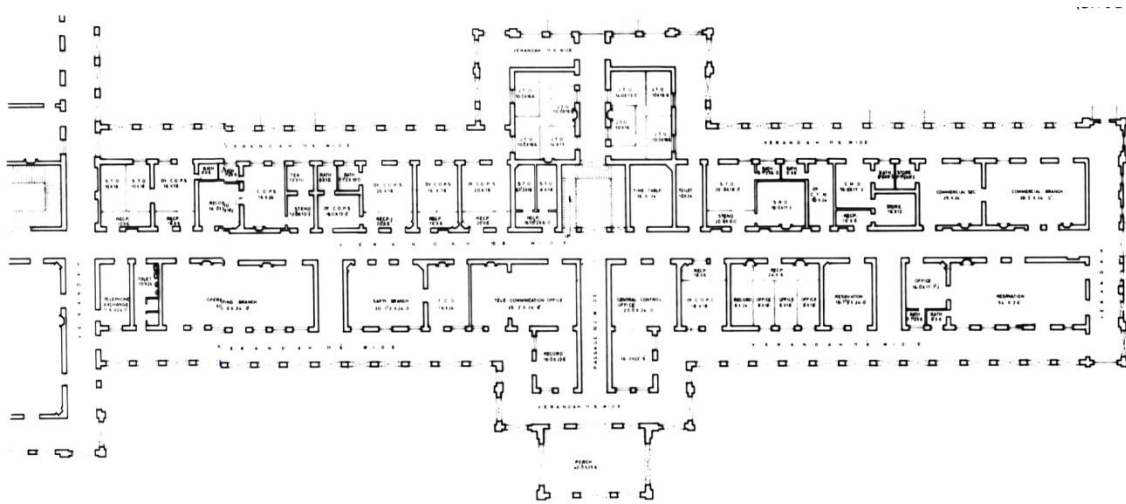


Figure 2: Ground Floor Plan Bagley Wing (1897)



Figure 3: Front Elevation of Finny Wing (1890)

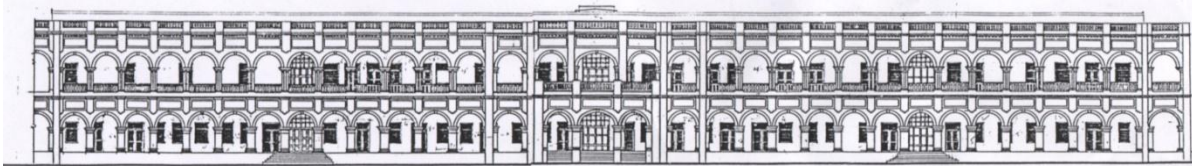


Figure 4: Front Elevation of Bagley Wing (1897)

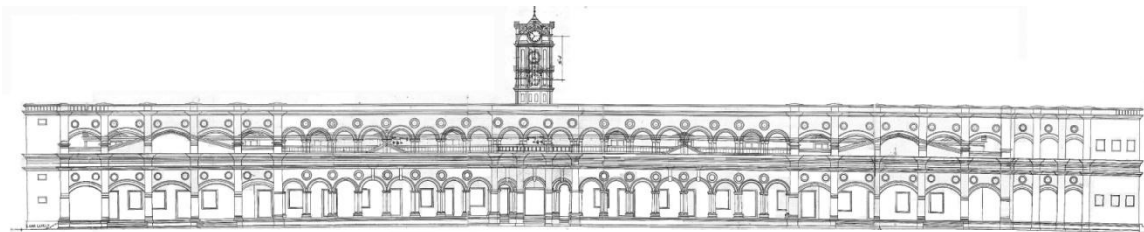


Figure 5: Front Elevation of the Office of the Divisional Superintendent Workshops
Lahore (1910)



Figure 6: Front South-West Elevation of Hight Block (1934)

2. Comparative Analysis

The most significant planning and architectural features of each building are listed in Table 1 where it can be observed that in many areas the buildings were similar with each other in terms of planning, architecture features and overall statement. The comparative analysis in Table 1 declares that the plan form, provision of verandah, central corridor, thick external wall, English

bonding, high wall ventilator, round arch, pier, fire place and porch were those elements which can be termed as representatives of railway administrative buildings.

Table 1: Comparative Analysis of Railway Buildings on various Planning and Architectural Features

Planning and Architectural Features		BUILDINGS					
		Finney Block	Bagely Block	Walton Block	Hight Block	DS Lahore	DS Wkps
		1890	1897	1926	1934	1924	1910
Plan Form	Rectangle	●	●	●	●	●	●
	Others	○	○	○	○	○	○
Ceiling Height	20 Feet	●	●	○	○	●	●
	17 Feet	○	○	●	○	○	○
	13 Feet	○	○	○	●	○	○
Wall Thickness	18" Thick External Wall	●	●	●	●	●	●
	13.5" Thick External Wall	○	○	○	○	○	○
	9" Thick Internal Wall	●	●	●	●	●	●
Exposed Brick Masonry		●	●	●	●	●	●
English Bond		●	●	●	●	●	●
Moulded Bricks		●	●	●	○	●	○
Clock Tower		○	○	○	○	○	●
Verandah		●	●	●	●	●	●
Double Loaded Central Corridor		●	●	●	●	○	●
Round Arches		●	●	●	●	●	●
Key Stone		●	●	●	●	●	●
Cornices		●	●	●	●	●	●
Pier		●	●	●	●	●	●
Jack Arch		●	●	●	●	●	●
Steel + Wooden Stairs		●	●	○	○	○	○
High Wall Ventilators		●	●	●	●	●	●
Circular Ventilators		○	○	○	○	○	●
Fire Place in each Room		●	●	●	●	●	●
Porch		●	●	●	●	●	●
Tiffin Room		●	●	●	●	○	●

The quantitative analysis as shown in Figure 7 for one floor basis in buildings of various periods reveals that 30-35 % space of total covered area was left for circulation in the buildings of earlier period in the form of verandah and corridor whereas the circulation area in buildings of later period was between 24-28%. This proves more inclination towards natural means for achieving light, ventilation and indoor thermal conditions in the buildings of earlier period. On the other side the buildings of later period were planned giving emphasis to artificial means of ventilation and light. The provision of electricity was accomplished in Lahore during the year 1910 which brought many changes in planning of buildings afterwards. The railway administrative buildings built after 1910 had low ceiling height and less circulation area resulting reduction in verandah and corridor width. According to analysis in Figure 7 the circulation space remained between 24-28% in the buildings of later period [3]. At this stage the external scheme of the building also had undergone to various changes resulting simple façade without arches and piers accepting more simplicity (Figs. 3, 4, 5 and 6).

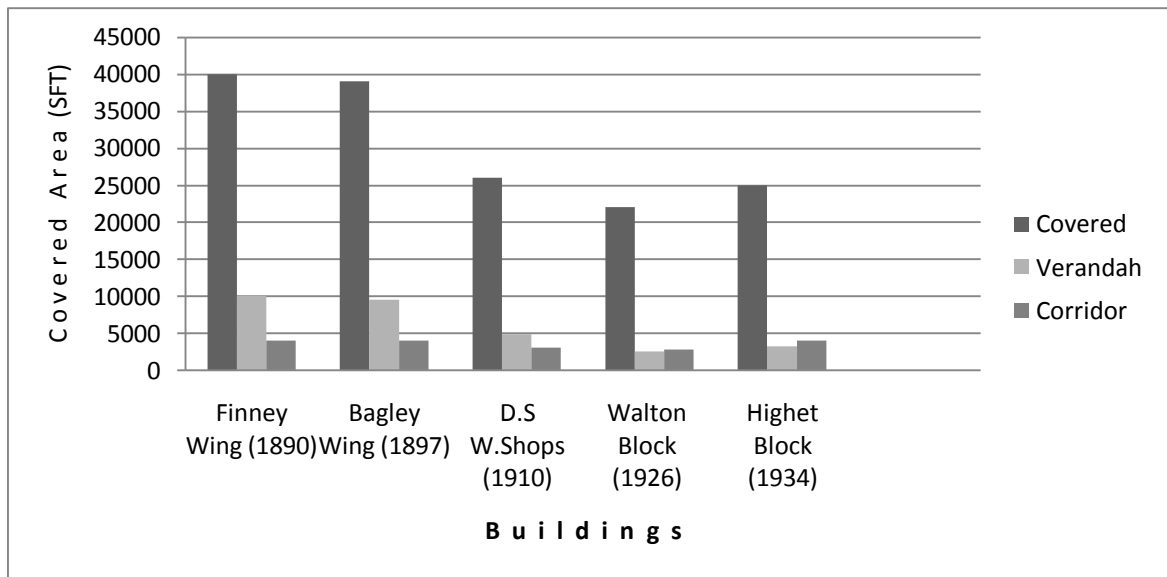


Figure 7: Quantitative Comparison of Covered Area and Circulation Area (Verandah and Corridor)

3. Results and Discussions

3.1 Climatic Considerations

The British suffered high mortality rate in plain areas of India including Lahore on account of their adaptability with hot climate [4]. Therefore, they were conscious about climate of Lahore and every possible effort was made in planning of the buildings where indoor thermal conditions were optimized. The better orientation of buildings was one of the techniques to minimize the problems [5]. It is found from the comparison in Table 1 that in all cases the ‘rectangular plan form’ was observed which was useful to place the longer sides of the buildings before North and South as it was feasible with the climate of Lahore. Similarly, the provision of verandah to southern side of the building was another way to save the building from direct solar radiation. Although in various studies the ‘verandah’ was linked with climate of the plain in India but its provision on all sides of the railway buildings in Lahore clearly indicates its role to strengthen

the overall appearance (aesthetic) of the buildings [6]. The verandah was augmented with piers and round arches above them. The relationship of verandah with building on account of aesthetics was so important that its removal from buildings means the collapse of whole composition making the building not more than a box.

Double loaded central corridor was another permanent planning feature in all buildings except the Divisional Superintendent's office. The practice of providing central corridor was deeply rooted in colonial architecture for buildings of official use. It was marked by the consulting architects of Government of India as "where the climate is dry, the central corridor presents such for advantages of convenience and economy that successful use of it is a thing to be taken note of" [7]. Besides climatic advantages, the central corridor was more convenient in terms of safety and security. These were kept clear and even the sittings of peons were recessed in wall. The whole arrangement was useful to keep an eye on movement of any person in the corridor. The British were more conscious in security matters in buildings particularly after the war of independence in 1857 [8]. However, the corridors of high ceiling height were dominating on human scale rather establishing a relationship with that.

High Roof, High Wall ventilators were purely concerned with climatic aspect. As 20 feet was useful way to decrease surface –volume ratio which has been proved in various studies as simple way to control indoor thermal condition during summer in climate like Lahore. It was an accepted principle for the British buildings in plain areas of the India that these will be built with high ceiling height [9]. A car porch usually 40 feet by 30 feet and 24 feet high was mandatory in all buildings. It was meant for dual purposes such as arrival and departure point for the colonial officer and also to act as central axis of the building to break the monotony of long facades. The scale of the porch was important and it was harmonized with the status of the officer.

3.2 Building Structures

The comparative analysis reveals that the buildings were roofed with Jack Arched which was common mode of roofing in the buildings. In fact this roof was extensively in practice all over the India due its various advantages related to economy in cost, climate and fast construction. The Jack Arched Roof was more feasible because it provided liberty to the designers to create spaces for various functions. It can be observed through plans of buildings and physical survey that span limit under Jack Arch was 4-6 feet. This module can be repeated to any length without causing hurdle for spaces of various functions. On the other side the width of room was dependent on the length of Rolled Steel Joist which was 22 -25 feet long [10].

3.3 Overall Statement of Buildings

In case of exposed brick masonry in administrative buildings, it has been observed that walls were constructed with English bricks of 9 x 4.5 x 3 inches with English bond where relationship between length, width and breadth of brick was fully utilized creating a pleasing exterior. Contrary to this in many buildings of railway where Indian bricks were used the plaster layer was provided to conceal the bricks. The overall statement of the building was dominated by the round arches, piers, exposed brick work, and massive walls, and it all placed the building in Renaissance Architecture. The buildings in later period were built following the concepts of modern architecture [11].

Conclusions

The introduction of Railway administrative buildings in Lahore during British Colonial Railway Period (1862-1947) was a great contribution in the architecture of Lahore by the British, as no such administrative complex existed before in the city. Therefore, these buildings can be regarded as the leading buildings among the stock of administrative buildings of Lahore. The buildings of earlier period were more important in terms of various planning strategies to meet the climatic requirements of Europeans in Lahore. This resulted large verandah, corridor and high ceiling roof which continued for a long time and became prominent feature of the buildings. Building structure (Jack Arched Roofs) was also one of the important areas which provided stability and made the planning British colonial spaces possible. Being repetition of standardized details and elements the overall statement of railway buildings was linked with other British administrative buildings in India and England which defined the ownership. On the basis of architectural and historical importance, it is recommended that the representative buildings of British period in Lahore ought to be conserved.

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