Northbrook Clock Tower and Ripon Hall: History and Architecture of Ghanta-Ghar Multan, Pakistan

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Abstract

Ghanta-Ghar has been considered a marked distinction of British Architecture indicating a symbolic centrality of imperial administration and reflecting the cultural, religious and political acumen of the imperial mind in the town planning of an administrative center. This symbolic erection has been used as means of expressing wealth, power, manifestation of authority and influence of empire. Multan as an important and central point of Southern Punjab came under the British empire in the mid of 19th century. The British erected urban and religious establishments to exhibit their power, authority, wealth and control. Multan has been a rich region with a strong legacy of architectural heritage from the oldest hindu times to the time of British’s Muslim predecessors. However, British contributed significantly to that heritage. Northbrook Tower and Ripon Hall (Ghanta-Ghar Multan) is one of the major Imperial administrative establishments in Multan constructed with a blend of the English and Indian (synthesis of Indian and Mughal) architecture between 1884 to 1888 CE. According to Francoise Dasques, the clock tower was built using Anglo Indian, Indo Saracenic and Greeko-Roman patterns. The purpose of this paper is analyze the structure, style and approach of the Ghanta-Ghar establishment, along with exploring the tradition of clock towers in India by the British and amalgamation of native & European built environment. Hence the paper highlights the elements and features used in architectural scheme
of the building and explains the nature of its structure with a contribution-assessment of use and compatibility of native/indigenous and foreign techniques and materials. The paper explains the advent of British in Multan and its construction in the area very briefly while it explains the history, construction of Northbrook Clock tower and Ripon Hall, its construction style, structural pattern, and decorative material in detail. The study analyses the elements of the building separately comparing with other colonial and Mughal structures. Drawings, photos of the building and terminologies has been used in the paper to make the study easier and understandable.

**Key words:** British Architecture, South Asia, Pakistan, Multan, Northbrook Clock Tower and Ripon Hall, Ghanta-Ghar.

**Introduction**

The British introduced a new style of architecture in South Asia and the parts now constituting in Pakistani with a blend of indigenous architectural designs, styles, structures, and meaning. This architecture can be found elevated on the railway stations, military cantonments, educational institutions, courts’ establishment, churches, bridges, and museums. In the British colonial era, especially of the representative buildings, designed in the Indo-European style, consisting of a mixture of European and Indo-Islamic components.¹ So in the today’s Pakistan region, the British constructed a large number of buildings in the main cities such as Lahore, Faisalabad, Rawalpindi, Karachi, Abbottabad and Multan etc.

Multan remained center of civilization during the Hindu and Buddhist empires.² It became border post during Sultanate period against the Mongols and played important role during Mughal period.³ by 1557.⁴ Later on it came under control of Afghans in 1752 AD⁵ and Sikhs in 1818 AD.⁶ During these regimes, the short intervals of independence of Multan can also be observed.
In 1849, Multan came under the control of the English and emerged as an important cantonment city. For the purpose of administration, a commissioner was appointed at Multan. Secular and religious buildings were erected for the English and Anglo-Indian officials. Multan holds a number of Anglo-Indian buildings and monuments which were built by the order of Public Works Department or by the order of related British institutions when the city of Multan became a central place for the British administration in South Punjab. Under Punjab works Department, Greco-Roman architectural order (Tuscan, Doric, Ionic and the Corinthian) was promoted with iron, metallic beams and girders on European standards. Some of the designs were conceived through Indo-Saracenic style based on Indo-Mughal architectural synthesis. Vans Agnew and Alexander Anderson’s monument (1848), and St Mary’s cathedral 1848-1858 were the 1st constructions in Multan by the English. Later on the British constructed Northbrook Clock Tower and Ripon Hall, Cantt. Railway station building, cathedral of Holy Redeemer, buildings of irrigation department, Bungalow for the officers of irrigation department, Multan Garrison Mess MGM, Methodist Christ Church, Women Mission Hospital, Sacred Heart School and St. Mary’s Convent Girls School, etc. According to him, colonial architecture would not be recognized properly till now and therefore remains mainly undescribed. According to the writer this architecture is aligned with global constructive modernity commanded by Greco Roman patterns and this Indian architecture has link with Greeko-Roman architecture. The western classicism mingled with Indian style and now its glimpse is existed in it. According to him, modern Indian architecture flourished in royal states of India initially such as the building of clock tower Multan. British constructed Clock Towers also at the various cities of South Asia it’s the construction of Clock Tower Multan began in 1884 AD, for the administrative offices of Multan. Neo English classical and Victorian era Gothic styles wee synthesized with Muslim architectural tradition of India. After the independence in 1947, its name was changed and it was named ‘Jinnah Hall’ and it was used for office meetings and the cultural programs, later with the increase in city population, the buildings became insufficient for
offices, so the offices were shifted here from to newly constructed buildings.

The paper discusses the style of construction of Ghanta Ghar or Northbrook clock tower as well as its history and public usage. Drawings and explanation of different parts of the structure describe the relation of the structure of the clock tower to the built environment of other areas and periods. For the report of planning and expenditure of the clock tower is used. The clock tower with complex façade, bulbous domes, other architectural elements and comparatively analysis with other structures and domes enable us to distinguish and recognize the various architectural styles and identify its symbolic impact on the common masses.

**Location and Details of Northbrook Clock Tower Multan**

Ghanta-Ghar/Clock Tower is located at the coordinate 30.1987676 North and 71.467866 East. As the British took control of Multan in 1849 after the fall of Sikh Empire, a number of official buildings had been destroyed. Therefore, to cater the official needs it was decided to construct a grand municipal office building over the ruins of mansion (Haveli) of Ahmed Khan Sadozai, destroyed during the siege of Multan, outside Lohari Gate. Lieutenant Governor of Punjab, Ameriston Acheson laid its foundation in 1884 AD. (Figure i) After the completion of this building, offices of Multan Municipality were shifted to this building. Ghanta-Ghar/Clock Tower is situated in the central Multan to the West of old fortress and North-West of the walled-city at the place where a number of street coverage. It was built from 1884 to 1888 in Indo Saracenic style. The Ripon Hall represents protruding avant-corps element of tower that is independent from the main structure of Hall.
The Hall and the building was named Ripon building and Ripon Hall, later on, clock tower was named Northbrook Tower on the name of the viceroy of India Northbrook. The building was meant for offices of municipal committee, sub registrar, honorary magistrate and judicature. First floor had large hall in which university exams were used to be conducted, later on lectures too were delivered at different occasions. Ripon Hall named after Lord Ripon who remained viceroy of India from 1880-1884. Clock Tower is central feature on the building’s south façade. The clock Tower was originally dubbed Northbrook tower in honor of 1st Earl of Northbrook, the British viceroy of India from 1872-1876.
By the introduction of Local Self Government in 1882, the government in their wisdom and sight authorized new committee (vide proclamation dated 7th April 1883) to appoint a paid secretary for the Municipal Office and also a paid engineer to look after the large public works such as the Clock Tower, the paving for lanes, the building of the police Chaukis. The new secretary who held the certificate of an Assistant Engineer of the Roorke College joined his post and immediately after joining took up the duties of both secretary and engineer.

According to the report about the collected income, the total income under all heads during 1883-84 was Rs.102142 as compare to and it decreased 101524 I 1882-83 with an increase of Rs.618. The budget for the year 1884-85 which was prepared in November last showed a balance of Rs.2500 on the 1st April 1884. It was planned to sell Galamandi, Kotwali sites and Khaleri Khoh to meet the budget of Rs.25000, to be spent on Clock Tower, instead of public works and education.
In the budget 1883-84, Rs.3300 was given to committee for public works department to enable the committee to carry on the necessary repairs to roads, to build police Chaukis, to prepare new pavements and to construct drains. Still there were Rs.10000 surplus in the budget of 1883-84 out of the ordinary income to be spent on the Clock Tower, for the completion of which special arrangements were being made to raising funds. The design for this work was undertaken during the time of previous committee on their applying for a design for a clock tower and an engineer from the Punjab Government. The Punjab Government in their letter No. 537 dated 4th February 1880 had directed the committee to obtain a design and working plans and to employ an engineer of their own nomination to construct the building. Advertisement was therefore given in different papers calling for a design and working plans for a clock tower. Out of many designs sent Lieutenant Kunhardt’s plan was approved and reward of Rs. 1250 was given to him. Then the committee appointed an engineer in October to look after the project and other public works which were in hand. The foundation of this work was commenced in October 1884 and by the end of the official year the plinth was near completion. The total amount paid for the work during the year was Rs.8500 including the item of bricks valued at Rs.5250. Later on after the year 1883-84, this work continued and expenditures were sanction each official year and it was completed in 1888. But no document is available to assess the total cost of the building. The plan of the building can be seen below under figure (iii).
Figure (iii): Detailed Drawing/Plan of ground Floor of Clock Tower/Ripon Hall Multan: U shaped rectangular building

(The building is of almost rectangular shape, it is east to West 137'5" & north to south is almost 110' long. The number of rooms in this floor is more than the upper part of the U-shaped building and the number of rooms at both wings is different on both of the floors. Most of the rooms are of rectangular shape except the front rooms which are of almost square shape, the thickness of the room walls is equal in all whereas span of the corridor is changing after each some feet. Tower’s side length is varies. The drawing shows the complex structure of the building of that time which represents the revival of Gothic architectural style)

Source: Department of Archaeology, Govt. of Punjab

Ripon Hall and Northbrook tower nowadays Ghanta-Ghar, Multan is symmetrical building affected by the Mughal style of architecture. As a representative of Anglo-Indian architecture in Multan, The Ripon building presents a protruding Avant corpse treated a tower which appears like a per se structure, independent almost from main body. Northbrook Tower's vertical scansion is contributing to the relevant urban position of the building.
Ripon Hall separates itself from old Muslim buildings which are placed at the mound of the fort. The building in size and material treatment is unique as it boasts a lobby in the middle of the lined structure to the South and East and West, designed in the usual manner of the British. This rectangular building consists of two stories.\(^{34}\) (Figure ii) The architectural plan of the Northbrook building is symmetrical with front façade facing South. The building is decorated with cut and dressed brick work, styles of pointed arches, domes, cupolas, columns, doors, ventilators, windows, floors and ceilings add beauty and elegance to the whole structure. The structure is in the form of almost quadrangle whereas construction is of U-Shape, built in red bricks in lime mortar with specially moulded bricks forming the moldings, small cornices, projections and other decorative features. Wooden relics, iron joists (railway track iron guarders) in ceiling to support red kiln clay tiles to make the roof complete and strengthen. Its façade is consisting of four equal arcades to the either side of the front door, main minaret while a heavy pier as well as cupola is dividing the each four arches into twin arches to the either side. (Figure ii, vii) The arch openings providing a cool and airy interior as no parts are enclosed. Architectural character retains much of solidity and strength. The building has been constructed to provide light, shade and airy condition.\(^{35}\)

The building designed in two stories is symmetrical plan\(^{36}\) with a corridor all around the building. The entrance to the block has been provided at the middle of the building from the South. The corridor around the two stories of entire building is vertical on the top of each other. The multifoil semicircular arches are supported by rectangular piers made of kiln bricks in the ground and 1\(^{st}\) floor whereas the semicircular multifoil arches of both of the floors were made of readymade stone. The central porch acting as the main entrance together with a staircase block recessing inward divides the whole building into two halves equally. The porch has semi-circular arches on the three open sides with ‘L’ shaped wings on either side. A clock displaying in all the four directions was fixed over the side of the staircase headroom upon which a parapet decorated with projected balconies like Jhrokas were built. Each of
these balconies protruding out to the four sides of the façade were supported by stone brackets. As the semicircular arches of the verandah is supported by the piers whereas the free ends of the corridors of the two ‘L’ shaped wings were made as closed rooms. (Figure ii, iii, vii)
Figure (iv). Drawing/Plan of the ground floor of the Ripon Hall/ Northbrook tower/clock tower Multan

(Drawing shows the corridor all around the rooms of the U shaped building, two lines of the rooms at each wing whereas more rooms are existed at the outer side of the wing. Before widening the road which was in front of the façade of the Northbrook building, there were two gates on east and west sides near corner turrets that opened into the courtyard in front the façade)

Source: Department of Archaeology, Govt. of Punjab

Main Turret of Northbrook Clock Tower Multan

The façade of the Ripon Hall building owns three turrets and two octagonal buttresses topped by the cupolas to the either side of the middle main turret. The middle main turret holds clock at all the four sides. The whole of the Ripon Hall building has five turrets, one at each corner whereas one main at the middle of the façade, all the turrets have bulbous domes (onion domes) with overhanging eaves beneath the bulbous domes and the flowering pattern have been constructed at the upper end and along the overhanging eaves and along the downward circulation of bulbous dome, whereas same type of following pattern have been constructed beneath the pointed (cone) structure. (Figure iv, vii)

Three minarets have been constructed at the center of the façade of the North Brook building, one at the middle and the two on each corner of the façade. The main minaret is comparatively higher than other two and represent a more complex structure. The middle minaret can be divided into four portions from the ground to the finale height. As this building has been constructed raising outside towards the South like huge buttress of the building, hence two portions of the tower have been attached to the main building while other two portions have been constructed above the roof level like flying buttresses. Whereas third portion can be divided into further two portions in which 2nd one possesses the clock, which is covered by overhanging semicircular eave from the above side to protect the clock from rain and sunshine. As the main/middle minaret is of quadrilateral shape till the third portion,
the 1st portion which is at the ground floor and holds main door of the building, has two small octagonal towers at each front corner of the 1st portion of the minaret and front door. These small octagonal turrets have somehow complex structure with bulbous dome, finial, overhanging eaves (projecting cornice) below the bulbous cupolas and these have been attached to the eastern and western front corners of the façade’s door. There have been constructed quadrilateral eave above the 1st portion of the turret with decorative pattern of parapet above the eave whereas the eave has been supported by brackets. (Figure v) The ground floor portion of the main/middle minaret have main door of the whole building; this door is of rectangular shape with pointed arch surrounded by rectangular panel. Eastern and Western sides of this ground floor portion have pointed rectangular arch doors as four opening and the fourth one is to the Northern side which is rectangular like the Southern main entrance. This square plan is supporting the whole minaret as the base of the minaret and rectangular arch doors made the inside airy and illuminated as ventilators and illuminators.40(Figure v, vii)
The 1st floor or 2nd level of minaret possesses openings to each side of quadrilateral tower whereas twin rectangular openings with multifoil arch and a pier in between them on the front have been made, whereas, these twin openings have been surrounded by main rectangular arch which is multifoil round from the above side. Rectangular arch which is multifoil round from the above side, as the minaret is quadrangle and has rectangular openings to all four sides with round arch whereas twin openings of the front side/southern side is Romanesque architectural style. There is a characteristic feature of the Romanesque architecture is the pairing of two arched windows and on the other side arched openings which is separated by a pillar or colonette and usually it is set within a larger arch. Such pair of windows are common in Italy and also seen in Germany. Germany displays a variety of arcades and openings including rose and wheel windows. The mentioned clock tower has series of arcades supported on piers. Such type of row arches occurs in the interior of the churches which separates nave from the aisles. (Figure vii)

The third level of tower has clocks at each side surrounded by multifoil arch which is surrounded by upper as well as right and left sides whereas this raised arch has been supported by engaged or applied columns. This level is balconied because each side has a wooden balcony under the clock supported by brackets and arch window opening has been constructed to each balcony and this arch window opening possesses rectangular panels around the openings. On southern side is a principal façade whereas each balcony is same in width and length. The mentioned level has been shaded by Chhajja/Chhatri or overhanging eave and the Chajja has been supported by the brackets. This characteristic is found in Indo-Saracenic architectural style of the Mughal period. The Chhajjas or Chattris which has been used at various places are from the style of Rajputs And can be found in Albert Hall Museum Jaipur, also. (Figure:v, vii)

The forth level of main/middle turret holds a cupola/bulbous dome with lotus decoration around the drum or base of the bulbous dome and circular decorative pattern around the upper side of cupola and
beneath the finial. This complex structured cupola has been supported by cluster of eight pentagonal columns and multifoil arch is existed between upper ends of each columns as decorative pattern. On the other side, the cluster of columns have been shaded by a Chhajja which is supported by brackets, above the Chhajja or Chattri of forth level of turret beneath the lotus pattern of cupola, smooth-edged cornice has been made. Above the Chhajja or Chattri of third level of turret, a symmetrical cornice and decorative pattern/dentils presents a complex expression of style of architecture and exceptional splendor which carried to the highest degree of perfection. Each corner of mentioned Chhajja/Chattri or overhanging eave have supported a small, decorated cupola and its small overhanging eave. Such type of chattris have been used in Indian architecture, the word chattri means canopy or umbrella. The chattris usually refers to memorial built over the site of a grave of an important person. Such type of chattris have been used in Taj Mahal of Agra and Hamayun’s tomb. The two levels of this turret are adjacent to the main building whereas two levels are flying above the roof level like the flying buttresses in Gothic buildings. (Figure v)
Façade of the Ripon Hall/Clock Tower building

The façade of the building stands facing south which owns eight rectangular openings and makes gallery from East to West line to the either side of the chief turret. Four similar openings to each direction of the main minaret on façade are placed that converts the façade of the building into symmetrical shape. To the Eastern and Western gallery of the main minaret, four window type full openings has been made to the each course and between the four openings of the corridor, hexagonal buttresses type cupola has been attached and two openings to the each direction of the cupola. The buttress has been constructed in the gothic architecture, to support and strengthening the walls in amalgamation Indo-Saracenic architecture.

As entrance has been provided at the middle of the façade from the North side corridors as well as succession of arcades lying on
either side of the clock tower with multifoil arches which have been supported by vertical piers in the ground floor as well as in the 1st floor, gabbled columns and piers are supporting the multifoil arch of the 1st floor. These multifoil arches remind the sophistication of Islamic architecture. The arcade of the façade has been supported by the piers, as each side of the façade has four multifoil arch openings whereas hexagonal buttress which is topped by a cupola is playing role of divider between the four openings, two to each side. Each pier holds decorative pattern around the base and impost of the pier whereas rectangular strip of the impost is supporting the multifoil arch. The pointed hexagonal side of the buttress has blind windows with multifoil arch at each floor. The main four openings of each side of the façade have been erected vertically in rectangular shape. (Figure vii)

The arcades of the façade has been supported by the piers. The piers of both the floors (ground and 1st floor) erecting vertically are made up of the red kiln bricks. The pier which have been contiguous to the hexagonal buttress/engaged columns of the cupola is more think than others. As the cupola own three levels so each level has blind arch at each side whereas Chattris/Chajja has been constructed above the last blind arche. This Chajja/Chattri has been supported by brackets. The decorative pattern is developed around the drum/base of the onion dome/cupola. (Figure vii)

On the above end lotus decoration is structured below the finial. On the buttress of the cupola, all the blind windows have small cornice around and below their bottom. A cornice is playing role of division between two stories, ground floor and 1st floor. On the other hand, opening of the first floor which can be considered the opening of the upper gallery are rectangular and multifoil arch on the upper end of the rectangular openings. In the first-floor openings, multifoil arches have been supported by piers whereas in the 2nd floor gabbled buttresses/engaged columns or jamb columns have been attached to the piers, supporting the multifoil arch with decorative patterns and the patterns concerned to the Indo-Saracenic style. The floral pattern on the jamb columns resembles Islamic architectural style. The ground and 1st floor rooms and
corridor’s roof are supported by wooden trusses and iron rafters. A parapet with floral pattern/arch pattern and a symbol of cross below the bottom of arch pattern and near the cornice are important architectural features which has been adopted. (Figure v, vii)

A staircase at the center of façade, made up of wooden slabs, divides the building into two halves. Wooden Barriers have been made along the staircase to the roof and whole the staircase is supported by steel guarders. Whole the staircase is made in one high square room whereas there is a porch roof over the stairs supported by wooden beams, the main tower entrance and the door of staircase are facing each other. The opposite entrance of the main minaret or main entrance is huge and of the rectangular shape.
On the 1st floor there is a large hall room on the East corner of the façade gallery which is now owned by the tourism department and with it a small attach room to the West. A room of similar length and width is also found on the West corner, which has various offices. Six doors have been installed on the East side of this large corner hall whereas six openings in the external Eastern gallery have been made to the opposite side of each hall door. Similar hall exists to the West corner of the façade of Ripon Hall building.

There are three rooms to the either side of the main turret so eight doors of the six rooms opens to the North side in the gallery which are opposite to the opening of the gallery. This opposite opening system makes the ventilation and natural light available. So the façade is consist of eight equal arcades skillfully constructed, providing a cool and airy interior and no part is enclosed.\textsuperscript{58}
Corner turrets of the façade of Northbrook Clock Tower building

An octagonal turret with a top of onion dome/cupola is running at each corner of the façade all through the two floors, the third or upper part of the turret is above the roof level. A spiral staircase is provided within the turret. As every turret owns three floors/parts and each part has rectangular blind and open windows around its
each side vertically, floral arch type pattern can be found at the above part of the window. A small cornice type eave separates the ground and 1st floor of the turrets. Both the floor has rectangular blind windows. The third or last level of this corner minarets are topped with domed projecting balconies and with domed pavilions which reminds Indo-Saracenic architectural style. Cluster of eight small piers are supporting the cupola as well as the rounded Chajja. This cluster and their eight multifoil arch independent openings made this level balconied, each column owns multifoil arch at lower and top end and multifoil arch has been built between each two columns. Cupola and Chajja has been supported by cluster of decorative piers, whereas cupola hold decorative pattern around the lower or drum and lotus decoration at the top end under the finial of cupola, such type of cluster of columns have been constructed at the minarets of Royal Mosque, Lahore Islamia College Peshawar and Wazir Khan mosque, Lahore.
Architectural Scheme of the rest of the Building

Northbrook Tower is U-Shaped almost quadrangle symmetrical building and Indo-Saracenic details has been included in it. Eastern and Western sides of the Northbrook building owe rectangular multifoil openings opposite to the door of the corner hall at each side on both the floors. The openings of the lower floor have been engrailed with iron bars and after each two openings, a rectangular buttress,\(^6^3\) topped by rectangular cupola and overhanging eaves have been attached with the middle of wall of openings for support and strength of the building. Similar buttresses have been used in Gothic architecture in churches as flying buttresses. The rectangular framed arch openings which are opposite of the Hall domes and outer side of the corridor/bay have been engrailed with iron bars whereas these airy condition for the corridor and corner hall at both of the floors. Vertically erected rectangular piers with decorated pattern on the impost are supporting the 1\(^{st}\) floor and upper piers whereas piers with engaged columns are providing support to the roof of the first floor and decorated parapet. (Figure xvii) A parapet with a series of raised pointed arch design with a cross at the lower end of raised arches surrounding the whole roof of the building.
The building holds octagonal buttresses with cupolas at North East and North West corner which is tradition in Indo-Saracenic architecture. The building holds heavy walls, almost 2.5 feet thick which has been made up of red kiln bricks whereas the walls which are attached to the cupolas and turrets/minarets are more thick and heavy than other walls. The heaviness and thickness of walls exhibit durability and strength of the British rule at India and reminds us Mughal period buildings, hence displays impression/imprints of Indo-Saracenic architecture. (Figure vii & xvii)

The Northbrook structure as symmetrical and almost quadrangle building has been surrounded by exterior passageway/verandah with large multifoil rectangular framed openings supported by decorated thick piers that converted this whole building into complex structure and amalgamation of Indo Saracenic, Hindu and rival of Gothic architecture/Victorian architecture. Entering the main entrance, while crossing the staircase room, it can be entered into the courtyard, the courtyard exists in the middle of the building as the building is U-Shaped. On the the both wings, there
are close corridors to travel from East to West and no openings on the Northern wall except rectangular windows in which rectangular panels have been placed vertically with glass cross. Such type of windows have been fabricating into the Gothic and Victorian structures in the subcontinent.65

Walls, Floor, Doors and Windows of Northbrook Clock Tower Building
Wall is solid body which is erected vertically, supports the floors and separates or enclose the spaces of the building. The clock tower /Northbrook building has no boundary wall in present condition. The walls are constructed from Kiln bricks which gives strong impression of solidness and strength. The verandah of the building lefts a glorious look. The walls divide the whole area into sections.

Initially the floor of clock tower /Northbrook tower was made up of tile brick but it has been replaced with marble. In Northbrook tower and Ripon Hall, Gothic styled doubled paneled doors are existed of varying sizes depending on their uses with the respect of that place where they have been fixed. Wooden panel doors, wooden panel with the wire gaze are existed in the building. The wooden panel doors are made entirely of wood and when closed they make it impossible to see through it. Most of the same type of wooden panel doors have been used in this building. These have been used in all the small and hall rooms. On the other side, windows also are fixed in the building, as windows serve two kinds of functions, illumination and ventilation. Other secondary function of windows are outside view and outside sound, aware of outside surrounding. In the corner turrets and the middle turret, vertically rectangular windows with wooden pans and square windows with glass to the northern sides of the building wings. On the other hand, blind windows are also fixed for decorative and functional purpose. The window in the turrets owns arched and multifoil work. Windows on the turrets have single panes whereas wings gallery walls have tetra glass panes, and all the windows opens inward direction and provide full ventilation when opens. While for the ventilation of the Hall rooms of 1st floor displays have been constructed in the ceiling to work as the windows. Construction of display in the ceiling is specific example of British architecture. (Figure xvii)

Ceiling, Piers, Domes/Cupolas and arches of Northbrook Clock Tower

Ceiling is upper surface of the rooms which rested on the walls and provides shelter from rain, and storm from the upper side.
Ceiling in Northbrook Tower and Ripon Hall is made up of steel rafters, wooden trusses, and kiln tiles. Wooden trusses and iron rafters are functioning as supporting material of ceiling while kiln tiles make the ceiling flat and shady. In most of the British buildings, this type of ceiling material have been used in India. Two displays (ventilators) in the ceiling of 1st floor have been constructed. Piers are used in the buildings instead of columns. Piers are commonly used to bear the load of arches and beams on which the upper part of the ceiling and walls rests. In Northbrook Clock Tower or Ripon Hall building, the whole façade is enhanced by the piers with different structural forms and thickness.

In the ancient times the domes/cupolas for many reasons were considered an important historical part and a permanent civic symbol of city of Rome. Later on, these cupolas/bulbous domes were adopted in the Islamic architecture. The cupola is an exterior element of architecture that bears the resemblance to the hollow upper half of the sphere. Domes and Chattris are the central concentration of the Clock Tower building Multan. Many varying sizes cupolas/small domes have been constructed to symmetrical balance of the roof. These complex cupolas have been decorated with inverted lotus flower/decoration and finished with the finial.

Indo Saracenic arches have been constructed in the building and these arches take up space, beautifies and bears the load. Different kinds of arches have been used with the purpose to share the load, exhibit the aesthetic beauty as well as to show the authority’s sophisticated architectural intelligence. In the whole building of clock tower Multan, two styles have been structured, one multifoil pointed arch which are amalgamation of Gothic architecture and the 2nd one is multifoil circular arch which is derived from Islamic architecture. (Figure xvii) All the arches have been supported with rectangular and multisided piers and columns, which give elegance to the building. The main arches are as the succession of arcades at the ground and 1st floor around the whole
structure of the building which provide the corridor to the building also. (Figure vii)\textsuperscript{81}

\textbf{Conclusion}

British Architecture has been developed to fulfill the basic needs of individual and social lodging. However, it represents the symbolic authority, power, prestige, grandeur, and aesthetics of the Empire. The British established a great architectural structures and legacy after capturing Multan in the mid of 19\textsuperscript{th} century using Indian, Mughal, Gothic, Greeko-Roman and Victorian styles of construction. The architectural style which was used by the colonial power in Multan called Indo-Saracenic, Gothic and Anglo Indian. Indo-Saracenic and Anglo-Indian style was in fact amalgamation of Greeco Roman, Gothic, Indian and Mughals. So assimilation of vernacular/native skills designed into Indo-Saracenic architecture. Northbrook clock tower and Ripon Hall which was constructed in 1884-1888 is a continuity of those styles of architecture which reflects the architectural techniques, culture, power, influence and political stability of colonial power. Unlike Mughal architecture, iron was used in British architecture. Construction of minaret of clock tower, window turrets, trefoil arch, piers, bulbous cupolas with overhanging eaves, buttress, U-shape rectangular style, skylights/displays, verandah all around the U-shape rectangular structure, paneled doors, multifoil work and flat ceiling made up of steel rafters made the built structure of clock tower building unique. Due to the extreme climatic condition of the area thick walls, overhanging eaves and verandah around the whole structure have been constructed. The building also represents the revival of Gothic architectural style. Vertical scansion of the building shows urban position of the built structure. The building would be a center of arts and culture after its restoration and re-opening as estimated Anglo Indian heritage of Multan. The restoration and re-opening of the building –as a center for the arts and a cultural center- would help estimate as it should be the Anglo-Indian heritage of Multan and promote its coherent corpus, while guaranteeing the preservation of the buildings. The British architecture especially Ghanta Ghar provided centrality to
the British Administration in the Urban culture. Its designs and elegance was an attempt to establish British aesthetical and economic financial superiority and control over the public mind. Still an attempt seems to be made to bridge the Imperial mind and colonized mind through the amalgamation of the Indo-Saracenic structure in the Built structure. What is More important is that this legacy still forms the center of the city life.
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6. Henry Perincep, *Origin of the Sikh Power in the Punjab and Political Life of Ranjit Singh*. Lahore, 1897. p. 45.

7. Karam Elahi Badar. *Tareekh e Multan*. Imtezaj Publications Lahore. 1978. Pp. 211-215. (See Ashiq Muhammad Durani. *Tareekh e Multan*. P. 294.

8. Abida Kausar & Humaira Arif. *Socio Economic development in Colonial District Multan (1849-1901)*. JRSP, Vol. 51. January-June 2014. P. 263.

9. In the non-regulation provinces, the official was given considerable discretion in the conduct of administration. The defining element of the non-regulation provinces was the union of all powers, executive, magistrate and collector, subject to the appellate and supervision jurisdiction in all branches of work.

10. Ibid. Francoise Dasques. January-June 2015. pp. 8-9.

11. Ibid. Francoise Dasques. January-June 2015. pp. 8-10.

12. https://defence.pk/pdf/threads/beautiful-churches-in-pakistan. (Francoise Dasques. On Multan’s Built Environment: Indian and Anglo Indian architecture in Multan 1857-1947. Journal of Historical studies vol. 1. January-June 2015. P. 10)

13. Khalil Ahmed. *Multan-Daim Abad.*(*Multan. Tareekh. Addab. SaqafataurTasawuf*), Fiction house Lahore. 2014. P. 569: Date of construction was also mentioned by the Francoise Dasques which is 1884 to 1888. (See, Francoise Dasques, *On Multan Built Environment: Indian and Anglo-Indian Architecture in Multan (1857-1947)*. Journal of Historical Studies vol. 1. No. 1. January-June 2015. pp. 9-10)
Kaneiz Fatima. *An Analytical Architectural memo on British Colonial Railway Station of Chaklala Cantt. Rawalpindi*. Ancient Punjab – Volume 7, 2019. P. 83.

The Cathedral of the Holy Redeemer, an imposing church corresponding to the 1940's visions of this architectural program, stands as the other pole of local Christianity. (Francoise Dasques. *On Multan’s Built Environment: Indian and Anglo-Indian architecture in Multan 1857-1947*. Journal of Historical studies vol 1. January-June 2015. P. 10)

It was observed about the British period buildings for the irrigation department. The buildings have been constructed like the bungalows of the British period.

Nawab Bahawalpur who was Turk accent, constructed this building on Turkish architecture and by making clay bricks from Chenab River. It was constructed in 1880. An English resident allotted 7.63 acres for this purpose. It is located in Multan cantonment under the control of Pak army. It is also known as Service Club, Multan. This amazing masterpiece contains 13 domes of different size. Those domes were made up by mud (GACHEE MITI) of Chenab River. This is also a truth that except few buildings of Turkey, all walls consist of 9 & 11 domes. There is no other building having so many numbers of domes of different sizes but geometrically same. This thing shows the beauty of good architected piece. British officers have been using this building as a club; they had constructed a big floor of wood in the main hall. With the passage of time the building was reconstructed by the Pakistan government and its interior is according to the Mughal theme. (https://nation.com.pk/29-Dec-2014/multan-garrison-mess)

Christ Church was constructed by the Deputy Commissioner of Multan to facilitate the Judges, high ranked Officials and Christians of locality, since the British troops take over the city. The British administration appointed C. D. Rocky in 1850 and then the authority of appointment transferred to Church itself. (Fatima Ali & Asamt Naz. *The Role of Christian Missionaries in Social and Educational Modernization of Multan*. Journal of Historical Studies Vol 3 No. II, July- December 2017. p. 63)

In 1899, for the building of hospitals, the cantonment magistrate granted free land in Multan. In the same year, the Church Missionary Society started construction of hospital for women. This was one of the strings of Church Missionary Society frontier hospitals on the
western fringe of British India. . (Fatima Ali & Asamt Naz. The Role of Christian Missionaries in Social and Educational Modernization of Multan. Journal of Historical Studies Vol 3 No. II, July-December 2017. p. 64)

20 Ibid. Fatima Ali and Asmat Naz. July-December 2017. Pp. 60-7
21 Ibid. Francoise Dasques. January-June 2015. pp. 10-11.
22 Malik Ghulam Muhammad SDO Archaeology, interview by Abdul Basit PhD scholar of History. Structural description of Clock Tower Multan Multan, (January, 2020)
23 https://www.maps.ie/coordinates.html : ( https://www.latlong.net)
24 (https://www.orientalarchitecture.com/sid/1389/pakistan/multan/ghanta-ghar-clock-tower
25 Khalil AhmedP. 569.
26 Noor Ahmed Khan. Fareedi. SarZameen-e-Multan. Farukh Book Sellers and stationers.
27 Date of construction was also mentioned by the Francoise Dasques which is 1884 to 1888. (See, Francoise Dasques, Pp. 9-10)
28 Malik Ghulam Muhammad SDO Archaeology, interview by Abdul Basit PhD scholar of History. Structural description of Clock Tower Multan, (January Monday, 2020)
29 Ibid. Francoise Dasques. January-June 2015. Pp. 10-11.
30 TerithNath. Multan Guide Book. Govt College, Lahore.
31 Ibid. Oriental architecture.
32 Gangadhar Jha. S N Mishra. Development and Functioning of Urban local self-government and Rural local self-government in India. Indian institute of public administration. P.61. (See also Weinstein, B, ‘Liberalism, Local Government reform, and political education in Great Britain and British India, 1880-1886’, Historical Journal, vol. 61, no. 1, 2018, pp. 181-203.
33 Report on the Municipality of Multan, constituted under Local self-government scheme for 1883-1884. Tribune Press. 1884. (W. E. Harris, President Municipal Committee Mooltan), and E, O, Brien (Deputy Commissioner Mooltan). Report on the Municipality of Multan, constituted under local self government scheme for 1883-84. Municipality Report, Multan: Tribute Press, 1884).
34 Ibid. Malik Ghulam Muhammad SDO Archaeology. (January Monday, 2020).
35 Ibid. Malik Ghulam Muhammad SDO Archaeology. (Interview) January Monday, 2020.
Northbrok tower owns a symmetrical plan as such buildings has been usually constructed in India by the British. (Ibid. Date of construction was also mentioned by the Françoise Dasques which is 1884 to 1888. (See, Françoise Dasques. pp. 9-10)

Jeypore Vikrama Deo College of Science and Technology owns almost similar structure, double story, main minaret entrance, corridor around the building, clock tower, multifoil arches and ‘L; shape wings etc. (See the paper, Vishwandha Kumar. Salient Architectural features of Selected Colonial Built Heritage in Vishakhapatnam, Andhra Pradesh India. International Journal of Engineering Research and Development. Volume 4, Issue 2. October 2004. Pp. 24-36)

The word façade (from the Latin facies “face” or “aspect”) is the main front of a building, marking the boundary between its interior and exterior. It may be regarded as “calling card” of the building or the image by which it is commonly identified and remembered (Marco Bossagli. Understanding architecture. I. B. Tauris. London. New York. 2005. P.98)

Malik Ghulam Muhammad SDO Archaeology, interview by Abdul Basit PhD scholar of History. Structural description of Clock Tower Multan, (January Monday, 2020). (See also, Shahbaz Mirza, Senior Civil Engineer Walled City Multan Project, interview by Abdul Basit PhD scholar of History. Architectural description of Clock Tower Multan (January 2020).

Chhatis has been mentioned by Françoise Dasques as an element of Mughal architecture. (Ibid. See, Franques Dasques. pp. 9-10)

(See about overhanging eaves or Chajja or Chattri. S.Sundari. Indo-Saracenic architecture. Parama Research. Volume 9, Issue 7, 2019. P.15)

Ibid. Mr Ghulam Muhammad SDO archaeology and Shahbaz Mirza, Senior Civil Engineer Walled City Multan. January 2020.

‘Opening of the new Albert Hall, at Jaipur, India’, engraving in The Illustrated London News, London, 24 November 1888. (Albert Hall, Jaipur, Rajasthan, India)

The ‘Albert Hall’ (Jaipur Museum) designed by Jacob, Hoosein in 1881 has Chajja which is almost similar to the Clock tower Multan.
(https://www.researchgate.net/publication/231896075_The_Jaipur_Exhibition_of_1883)

49 Ibid. Mr Ghulam Muhammad SDO archaeology and Shahbaz Mirza, Senior Civil Engineer Walled City Multan. January 2020.

50 S. Sundari. *Indo Saracenic Architecture*. Paramana Research Journal. Volume 8. Issue 7. 2010.

51 Ibid. Mr Ghulam Muhammad SDO archaeology and Shahbaz Mirza, Senior Civil Engineer Walled City Multan. January 2020.

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53 See. Edouard Corroyer. *Gothic architecture*. New York, Macmillan and Co. 1893. Pp. 80-110. (See also, Maria A. Nikoulinakou. Andrew J. New Research in Early Gothic Flying Buttresses. Massachusetts Institute of Technology)

54 In the beginning, cupolas were used in 8th century in Islamic architecture, these cupolas are usually bulbous or pointed and have been using in Islamic architecture. These cupolas often topped minarets as well as built over the central space of the structure or on the corners of the mosques and have also been used in the domestic buildings in the Middle East and India. In the form of onion dome, it spread in Russia and gained great popularity. The Moors brought this design to Spain and it also spread in Vienna where it can be seen the Baroque structures. In Australia and Bavaria cupolas were constructed on the churches (see, Britannica. The Editors of the Encyclopedia “Cupola” Encyclopedia of Britannica. 19 June 2018)(http://www.Britanica.com/technology/cupola)(also see, Santiago Huerta. Oval domes: History. Geometry. Mechanics. Nexus Network Journal. October 2007)

55 Such facades and entrances have been constructing usually during British period at different places in which more than one openings making it gallery type way to the each way of the main minaret. ( See, Wishwanadha Kumar. Wazeer M. *Salient architectural features of selected colonial built heritage in Vishakapatnam Andhra Pradesh India*. International journal of engineering research and development. Volume 4. Issue 2. October 2012)

56 Ibid. Interview of Shehbaz Mirza, Senior Civil Engineer Walled City Multan.

57 Engaged or attached columns: An engaged, attached, or embedded column is one that is built into a wall and protrudes only partially from it; this type of column came to serve a decorative rather than structural purpose in the Roman pilaster. Engaged columns are actually buttresses, which means that they help to support or reinforce the wall. Thus, they are load-bearing features, which both support the weight of the ceiling and also stabilize the outward thrust of pressure on the wall itself. Engaged columns can be found
in many styles of architecture, but they are particularly common in a few. The ancient Greeks occasionally utilized engaged columns, but due to their obsession with perfect symmetry from every angle. The ancient Romans, however, weren't as concerned with perfect symmetry. They were the first to make wide use of the engaged column in freestanding stone structures. (See, https://www.britannica.com/technology/column-architecture)

Ibid. Mr Ghulam Muhammad SDO archaeology and Shahbaz Mirza, Senior Civil Engineer Walled City Multan, January 2020.

Kamil Khan Mumtaz discussed on the bulbous domes/cupolas which have been using in Islamic architecture such as Badshahi Mosque, Wazir Khan Mosque, Islamia College Peshawar. (https://www.travel-culture.com/pakistan/architecture-of-pakistan.shtml)

Piers and cupolas have been discussed by Percy Brown in his book, Indian Architecture: The Islamic period, he said that different kinds of piers were constructed to support the cupolas or domes in Mughal architecture whereas such type of bulbous domes has been used in the clock tower Multan but on these cupolas, Gothic architectural touch can be noted. (see, Percy Brown. Indian Architecture: The Islamic period. Taraporevala sons Bombay. 1942. Pp. 120-1234.)

(Kamil Khan Mumtaz discussed the towers/turrets, balconies and domed pavilions of Indo Saracenic architecture, similar type of structures have been erected in Clock tower Multan’s minarets. (Kamil Khan Mumtaz. Architecture in Pakistan. Butterworth architecture in North America. 1985. Pp.123-124.)}

Ibid. Percy Brown. pp. 120-124. (see Also, Ibid. Kamil Khan Mumtaz. 1985.pp.123-124.)

Imrana Seemi. Zakirullah Jan. Islamia College Peshawar: History and Architecture. Ancient Pakistan. Vol. xxv.2014.

Buttress are components of old buildings mostly act with pressure, and all thrust forces are made neutralized by pressure forces and conducted to the ground. so when a force is applied to a structure in different directions irrespective of its balance, the equilibrium of the structure is lost, resulting in cracks and displacements. Therefore, buttress was used as a strengthening structure. (See, NargesKarini. Reza A. Typology and development in Buttresses from the beginning to the Historical era in Iranian architecture. Volum 13, No. 40. Sep, October 2016) Roman period had buttresses to take the thrust of the vaults, although, owing to the monolithic concrete of which they were made, this thrust was greatly lessened after the concrete had set, so that the buttresses served more to sustain the thrust of the brick centering and the of the green, unset concrete, during the constructive process, than to take care of the thrust of the finished vault. The Byzantine builders used the buttress extensively, not only in itself, but in its principle, working though other parts of the structure.(see Frank Mills Lescher. Sources of influences on Gothic architecture.(Thesis) university of Illinois. 1911. P.67)
Wall of Islamia College Peshawar has been constructed by kiln bricks like Clock tower Multan. As the walls of Islamia college Peshawar are functioning, the similar function has been taken from these walls. (See, Imrana Seemi and Zakirullah Jan. The Islamia College Peshawar: History and Architecture. Ancient Pakistan. Vol. xxv, 2014)

Window originated in response to the need for light in the interior of the building and to ventilate them. (Marco Bossagli. Understanding architecture. I. B. Tauris. London. New York. 2005. P.102)

Vladimir Matus. Design for Northern Climate: Cold climate Planning and Environmental Design. Van Nostrand Reinhold Company. New York. 1998.

The pier is also known as pillar, is a vertical structural element whose section is usually square, rectangular, polygonal, or composite. (Marco Bossagli. Understanding architecture. I. B. Tauris. London. New York. 2005. P.86

The dome or cupola can be considered a complex vaulted roof. The fulcrum of the building, the dome is the extrados type when the surface id possessed to view; it can also be concealed by a prism-shaped structure called the lantern, topped by roof. (Marco Bossagli. Understanding architecture. I. B. Tauris. London. New York. 2005. P.96)

Dome or cupola is also a classical form of architecture that have been gracing the architectural history in the whole world.

(See the domes/cupola of Islamic architecture of Islamia College Peshawar which are the best example of Indo Saracenic architecture like the Clock Tower Multan (Imrana Seemi. Zakirullah. The Islamic College Peshawar: History and architecture. Ancient Pakistan. vol xxv. 2014)