

Research Article**Clock tower structures in India – operational challenges of vintage monuments****Dr. Vasantha Kumari C**Associate Professor, Dept of History, Government First Grade College for Women,
Chamarajapete, Bengaluru, Karnataka.**Corresponding Author: Dr. Vasantha Kumari C.****Abstract**

This paper examines the operational challenges of vintage clock tower structures across India and focuses on operational and conservation challenges. Most of the clock towers in Indian cities were built during the mid 19th century, during colonial administration as a mark of honour to the British heads of Indian government. It soon gained popularity as an urban landscape supplement. Several Princely kings and Nawabs built grand clock towers in blended Gothic Style commemorating the British colonial architectural style. After independence these vintage clock tower structures were neglected because the clocks inside the tower structures became antique and ineffectual. Several of the clock towers reflected structural decay, decomposition and repairing the clocks faced several operational challenges. Gradually retaining the cosmetic components of clock towers became a very big challenge for the urban administration. Most of the clocks have a century old working mechanism and they are beyond usual repairs while towers started reflecting several structural cracks and fractures. The urban authorities in big metro cities recognising the challenges of maintaining vintage clocks shifted to choosing modern GPS enabled dust proof alternatives to ensure automatic time correction. But several state governments recognising the heritage significance of these structures are focusing on restoring them. But it is very challenging to restore the aesthetic value of the clock tower amidst present day urban pollution; A specific mechanism to restore them is sought through private and public collaboration.

Keywords: Clock towers, architectural value, restoration, operational challenges.**Introduction**

Clock tower structures represented an era following Industrial revolution in Europe which witnessed a strong emphasis on enhancing urban utilities and city lifestyles. Most of the clock towers were designed at impressive heights, accommodating European bell mechanisms with chime sounds serving the city as a vital indicator of point in time. Clock towers were excellent examples of Gothic architectural revival. These clock towers were designed in diverse architectural styles encompassing Indo - Gothic and Victorian - Gothic designs. They were situated at the heart of the city near town halls. As redesigning of the cities became the priority of the local elite and the public authorities, clock towers became part of urban model. Besides this, a clock tower acted as a time manager informing the public about the prioritization of formatting time and reflected time discipline in daily schedule. This was a western time keeping tradition brought to India by the colonial rulers. The architectural style of these clock towers varied depending on their sponsoring patrons, the period of construction, and the technology

used. Post Industrial revolution was a crucial period when wrist watches and clocks were beyond the means of common people and public relied on clock towers for time alert.

In princely state of Mysore, a clock tower was commissioned in the name of Viceroy Lord Dufferin near Devarajendra market premises. He visited Mysore on the invitation by the king Chamarajendra Wodeyar X in 1886. It is thus called as **Dufferin Clock Tower**. The silver jubilee clock tower was built in 1927 to commemorate the silver jubilee rule of KRW IV it is popularly called as **Dodda Gadiyara** while Dufferin clock is called as **Chikka Gadiyara**. This entire structure is 75 foot high safety nets have been installed to prevent any debris from falling on pedestrians. The meticulous restoration efforts aimed to bring forth a sparklingly new appearance further enhancing the attraction and glory of the historic landmark.

Industrial revolution and after math developments

Clock towers predominantly constructed under the influence of western and colonial ideals in the wake of the industrial revolution. During mid 19th and late 19th Centuries following Industrial revolution there were significant advancements in science and technology leading to the creation of public facilities such as public parks, public libraries, Zoos, botanical gardens, and museums, club houses and archival offices. This era witnessed a strong emphasis on enhancing urban utilities and living City life was spreading. The redesigning of the cities became the priority of the governments. These urban designs interventions aimed to enhance the image of the city marking a significant period of progress and transformations. Several historical buildings were restored with rehabilitated and renewed amenities. Several new designs cropped up making the cities more attractive to public viewing.

Clock towers as an emerging concept of urban landscaping-

Clock towers were a new concept. These clock towers let everyone conveniently stay informed about the time. They were designed at impressive heights accommodating bell mechanisms within with their chime sounds serving the city as a vital indicator of time. This was a western time keeping tradition brought to India by the colonial rulers. Northbrook clock tower came up in 1868 followed by **Rajabai clock tower** in Mumbai in 1878 **Husainabad** clock tower in Lucknow city in 1881 and **Secundarabad** clock tower came up in 1897.

The architectural style of these clock towers

The architectural style of these clock towers varied depending on their patron, the period of construction, and the technology used. Clock towers were excellent examples of gothic architectural revival with large canopies, pointed arches, protrusion, elevated projections and vaulted ribs. Several public buildings started to insert clock towers into their campus exteriors, and it signified the growing importance of time and discipline. It also reflected British patronized industrial expansion in colonial India. Hand watches were very rare, and people had to depend on clock towers. It worked as a perfect time management mentor. These towers were designed in diverse architectural styles encompassing Indo- Gothic and Victorian - Gothic designs making the structure reflect a mixed architecture style. They were situated at the heart of the city or near the town halls or near the central markets or near public circles where large number of people crossed over. Clock towers to celebrate certain occasions like visit of Queen Victoria's visit to India, Governor General's visit, Prince's Visit to India, Silver Jubilee celebrations of the crown etc.

Challenges of Conservation of clock towers

1. **Challenges of restoration-** But retaining the cosmetic components of clock towers including the clock's face, clock dial mechanism, clock hands and other decorative additional elements along with retaining the clock's internal mechanism is a very big challenge.
2. **Search for Modern alternatives** – Several big metro cities are recognising the challenges of maintaining vintage clocks and are choosing modern GPS enabled, dust

proof alternatives to ensure automatic time correction. At present the heritage clock towers are being used for positioning mechanical clocks and for completely transforming the exteriors with automated clocks. The chime bells are also being replaced with mechanical chimes.

3. **Challenges of retaining the original components-** Most of the clock towers have a century old working mechanism and they are beyond usual repair. They were made by companies such as Cooke and Kelvey Hamilton JW Benson and James Mc Cabe and were imported from London and New York. Retaining the original components is a very difficult and complex process.
4. **Rising demand for vintage clock restorers** - there is a surge in demand for vintage clock repairers and restorers. Restoration of heritage and vintage clocks is not a very easy job, as there are very few expert people in India who take up such assignments.
5. **Repair work challenges** – the challenge of repairing the clock tower has yielded very few positive results. Finding it very difficult to relating the clocks repaired in time, several states have gone for complete transformation of the clock towers. Several clock towers have undergone complete transformation losing all vintage and colonial architecture paving way for modern looks. Majority of them have become desolate and obsolete.
6. **Attending structural repairs-** Overtime several of the clock towers have developed cracks in the dome area, or fractures inside the canopy, exteriors of the towers have deteriorated due to urban pollution and vehicular contamination. In several states , public filed petitions and regressively demanded the local urban authorities to make appropriate repair and restoration works before the clock towers completely leaned or totally broke down. The practical restoration was very complex because of the shortage of clock tower restoration experts. In addition to this, the restoration work needs regular maintenance. Mechanically ending with repairs and re installation measures will serve no purpose. These vintage clock tower structures need regular maintenance and monitoring.
7. **Challenges of retaining the vintage designs** - Sometimes restoration experts observe that original building elements are missing or sometimes they are damaged beyond repair. They strive to apply traditional materials and techniques but find it very difficult to bring originality. Ensuing compatibility with existing style is very hard.
8. **Need for authentic information-** While effecting restoration, the expert restorers find it very difficult to match the original construction materials of clocks and detailing of clock towers. Besides, the understanding the European techniques used for clock's working and elevated structural aesthetics involved in tower construction is a very great challenge. Restoring these micro details needs specific knowledge in balancing of authenticity with the practical structure details.
9. **Understanding the impact of climatic corrosion-** Several clock towers are in dilapidated condition because of the climate transformation which is leading to the aggravation of fractures and structural leakages . The air and fungus pollution is accelerating the corrosion of clock tower structures leading to gradual weakening their exteriors. The primary chemicals like sulphur di oxide , nitrogen and carbon di oxide are ruining the walls of these clock structures. As a result of vehicle fumes and emissions from nearby industries severe damage is caused to stone exteriors leading to corrosion and surface weakening. The restoration of such towers is enigmatic.
10. **Addressing public admiration issues** – The restoration of clock towers across India has drawn the attention of the art researchers and history readers. It is very challenging to restore vintage towers without disturbing the unique aesthetic and colonial

architectural value of the original structure. Drawing universal respect and admiration for conservation activities from ethical perspectives is very hard to achieve.

Thus, restoring tangible historical links of the colonial era thereby fostering cultural identity and uniqueness is thus very challenging issue. Collaborative endeavours and cooperation from all stake holders will support in enriching the built heritage environments for future.

Conclusion:

Thus, conservation of heritage towers is a demanding task. The authorities need to focus on specific conservation mechanism to avert any damages to aesthetic value of heritage clock towers. As these clock tower structures represent diverse architectural styles and colonial memories, the restoration becomes more challenging. Governments are seeking the support from stake holders in the restoration of the historical legacy of clock towers along with collaborative conservation attempts from private conservation agencies through Corporate Social Responsibility is sought. Restoring the clock towers to balance the heritage, archaeological and architectural values need specific conservation mechanism.

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