

TIMELESS HERITAGE

Ch. Vidyasagar Rao
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MESSAGE

The University of Mumbai is one of the oldest and most prestigious universities in the country. Today it has emerged as one of the largest universities having more than 700 colleges affiliated to it and more than 650000 students pursuing higher education. During the last 157 years since its establishment, the University has successfully maintained a fine balance between affordability, accessibility and excellence. The University has rightly been recognized as a 'University with Potential for Excellence'. As Chancellor of the University, I am pleased to note that the University has forged alliances with various national and international universities during the last few years.

The Rajabai Tower, which houses the Library of the University, is not just an architectural marvel; it has come to symbolize the University's tradition of excellence and cosmopolitan character.

I am pleased to know that the Rajabai Tower, standing proudly since 1878, has been restored to its pristine glory. While congratulating the University, the Indian Heritage Society and the Tata Consultancy Services for their coordinated work on the restoration project, I wish and hope that the University will continue to contribute to society through the pursuit of education, learning, and research at the highest international levels of excellence.


(Ch. Vidyasagar Rao)

MESSAGE FROM THE CEO

The restoration of an iconic Mumbai landmark like the Rajabai Tower, located within the University campus, is a matter of great pride for all of us at Tata Consultancy Services. It has been a privilege for Tata Consultancy Services to play a part in this effort to restore the Rajabai Tower to its original grandeur and glory and extend our support to this initiative.

The Rajabai Tower, with its combination of Hindu, Saracenic and Gothic architectural styles, represents the multi-cultural and cosmopolitan city that is Mumbai today - the building not only has a strong historical significance, but lends a sense of shared identity for its citizens. In partnership with the Indian Heritage Society and conservation architects, Somaya & Kalappa Consultants, the team has worked tirelessly on this challenging project to ensure that no detail was left to chance and that all elements of the original Tower and Library were retained – from sourcing the right Burma teak to restoring the original Minton tiles.

Alongside restoration, another objective was to convert the conventional library into a digital-led, technology-enabled learning centre of excellence which also continues to house a collection of rare books as well.

We thank the University of Mumbai for this opportunity and are extremely proud of the efforts by all stakeholders in restoring this iconic Mumbai landmark to its rightful glory.

N Chandrasekaran,
CEO and Managing Director
Tata Consultancy Services



MESSAGE FROM THE VICE-CHANCELLOR

The Rajabai Clock Tower of the University of Mumbai has, ever since its completion in November 1878, loomed proud over the skyline of the city of Mumbai. Designed by the renowned British architect Sir Gilbert Scott in the Neo-Gothic style, the tower was constructed out of a donation given by Sir Premchand Roychand in 1864.

For over 136 years the Rajabai Tower has borne witness to the academic progress of the University of Mumbai, one of the three earliest modern Indian Universities established in the year 1857. From that time when the University did not have its own administrative building or teaching campus to today, the University has come a very long way with over a million square feet of constructed space to serve its over 7,00,000 students enrolled annually. Today, it is one of the premier universities in India and also enjoys an excellent international reputation. In 2001, the University was accredited with the coveted 5 Star status by the National Assessment and Accreditation Council (NAAC) and re-accredited with an 'A' grade in 2012. The University Grants Commission (UGC) has also accorded the University with the 'University with Potential for Excellence' status with its 59 Postgraduate Departments & Centres and 744 affiliated colleges.

Listed as a Grade I heritage structure, the Rajabai Tower has received the Urban Heritage Award in 1989. The Library's stained glass windows, the finest in the city, were restored between 1997-99 and have earned the Library the 'UNESCO Asia-Pacific Honorable Mention' in 2001.

The Rajabai Tower, a proud symbol of the University of Mumbai, has been painstakingly restored to its full glory in 2015 in time for its 137th Anniversary. The restoration work on the tower and the library was undertaken in association with the Indian Heritage Society with generous funding from Tata Consultancy Services.

I dedicate the restored tower and library to future generations of students and research scholars of the University of Mumbai. I also thank all partners who worked tirelessly on this project and restored this magnificent symbol of not just the University of Mumbai, but the city of Mumbai itself, to its former resplendent glory.

Rajan Welukar



INDIAN HERITAGE SOCIETY, MUMBAI

RESTORATION OF RAJABAI CLOCK TOWER & LIBRARY, MUMBAI

As the clock that keeps time for Mumbai rang the hour of 8 pm and the last notes of the Indian National Anthem faded into total silence on the night of 25th February 1995, the audience seated in front of The University of Mumbai awakened to a new project. The need to repair and restore these magnificent heritage structures to their former glory, and to hold them in trust for future generations of students, scholars, citizens of India and international visitors.

That evening, the Chancellor of the British Exchequer, who was the Chief Guest at *Wah Mumbai!* (a son-et-lumière produced by the Indian Heritage Society) spontaneously offered financial assistance on behalf of British Industry in India to restore the broken and damaged beautiful stained glass of the two buildings. To carry forward this effort—at a monumental scale, the Indian Heritage Society (IHS) began to raise funds that would preserve this institution from its plinth...to its panes, so the sunlight would stream through the stained glass windows of The University of Mumbai, once again.

The University of Bombay, as it was first known, is one of India’s oldest universities, along with the Universities of Calcutta and Madras. This hallowed seat of learning was born in 1857, during the First War for Indian Independence, when the country was still under British rule. Its legendary roll call of students includes fathers of the Indian independence movement: Balagangadhar Tilak, Mahatma Gandhi, Dadabhai Nowroji and Dr B. R. Ambedkar; the makers of modern India: Pherozeshah Mehta and Dr Homi Bhabha; social reformers and educationists; Dhondo Keshav Karve and Ramkrishna Gopal Bhandarkar and most significantly, Cornelia Sorabji the first woman to graduate from The University of Mumbai in 1883.

Though inspired by The University of London, The University of Bombay was and continues to be inextricably linked with the history of Bombay and India in terms of its architecture, ethos, scholarship and has played a pivotal role as a nation builder. By 1996, just after the city reverted to its original name Mumbai, the university was quick to echo this change and was renamed The University of Mumbai. History is housed not just in the library, the halls, corridors and stones of this magnificent building but also in the tomes that bear testimony to the contributions of its former students to independence, the constitution of India, the humanities, medicine, life sciences, social reform and space exploration.

In 1995, The University of Mumbai became the perfect site to celebrate the centenary of the Confederation of Indian Industry, (CII), (Western Region). This prestigious industry body invited the IHS to present a unique programme to create awareness for the preservation and restoration of Mumbai. The IHS is a Non-Government Organisation (NGO), with members who share a passion for the past. The aim is to bring awareness and assist in carrying forward natural, cultural and architectural heritage.

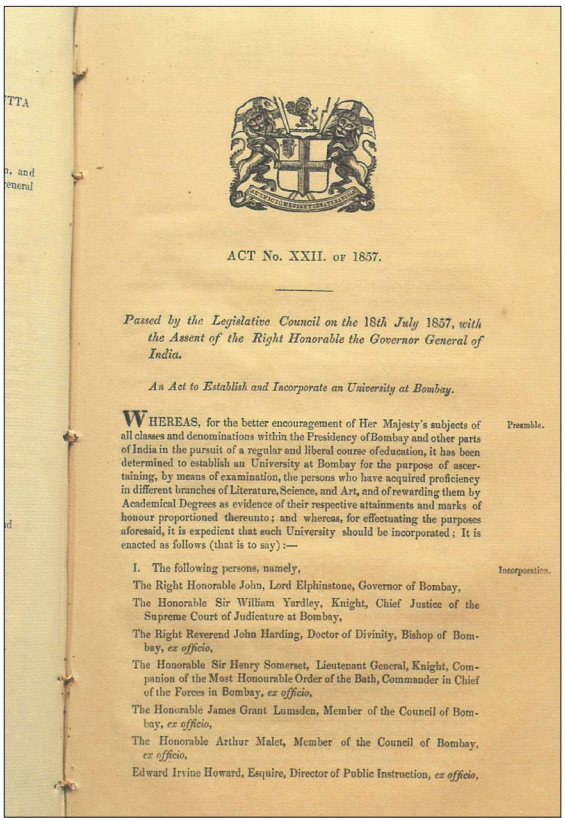
Overleaf The magnificent Clock Tower, rising up behind a canopy of trees.

This became the aegis for *Wah Mumbai!*. On the nights when *Wah Mumbai!* went live over the illuminated Rajabai Clock Tower and The University of Mumbai building, the story of the city echoed over the Mumbai sky, shows were houseful with people seated along Karmavir Bhaurao Patil Marg and the Oval Maidan.

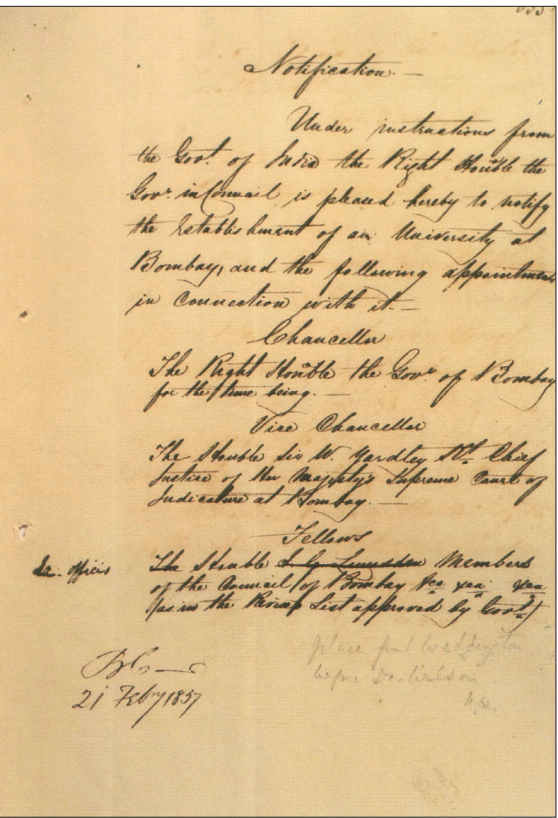
The Rajabai Clock Tower, once the tallest structure in the city with its four clock faces looking onto the cardinal directions, featured in the son-et-lumière as a narrative device to tell the story of seven swampy islands that were thrown up by a volcanic eruption a 100 million years ago, which have turned into the commercial metropolis and first city of India.

Re-acquainting citizens of Mumbai with its makers and monuments, the son-et-lumière conveyed the story of the islands that passed as dowry between two European powers and the spectacular engineering feats which turned the ‘seven sisters of the sea’ into one contiguous landmass that became India’s largest port and industrial base in the 19th century. The narrative arc connected the story of how Mumbai Fort was raised to make way for a globally-connected city that continues to create fortunes, attract talent and build new monuments in its wake.

The IHS had the expertise to organise this show as it had successfully organised several heritage awareness events in the city. The ‘Urban Heritage Awards’ programme was introduced in 1989 to create consciousness among Mumbai’s citizens about the diversity and richness of city’s architectural heritage. Today, over 50 heritage buildings and gardens proudly display the distinguishing white marble plaque awarded by the IHS. The annual “Banganga Festival” was initiated in 1992 by the IHS, in an effort to use Hindustani classical music to save a treasured heritage site, the Banganga Tank, which was built in 1127 AD.



Above (left) Preamble of the Act for setting up the University of Bombay, 1857. (right) A notification for setting up the University of Bombay, 1857.



The University of Mumbai had received two separate awards from the IHS for the Convocation Hall and another for the Rajabai Clock Tower. Thus it was natural for the IHS to coordinate a project to repair and restore these two structures and to seek necessary financial support and guide the efforts in phases.

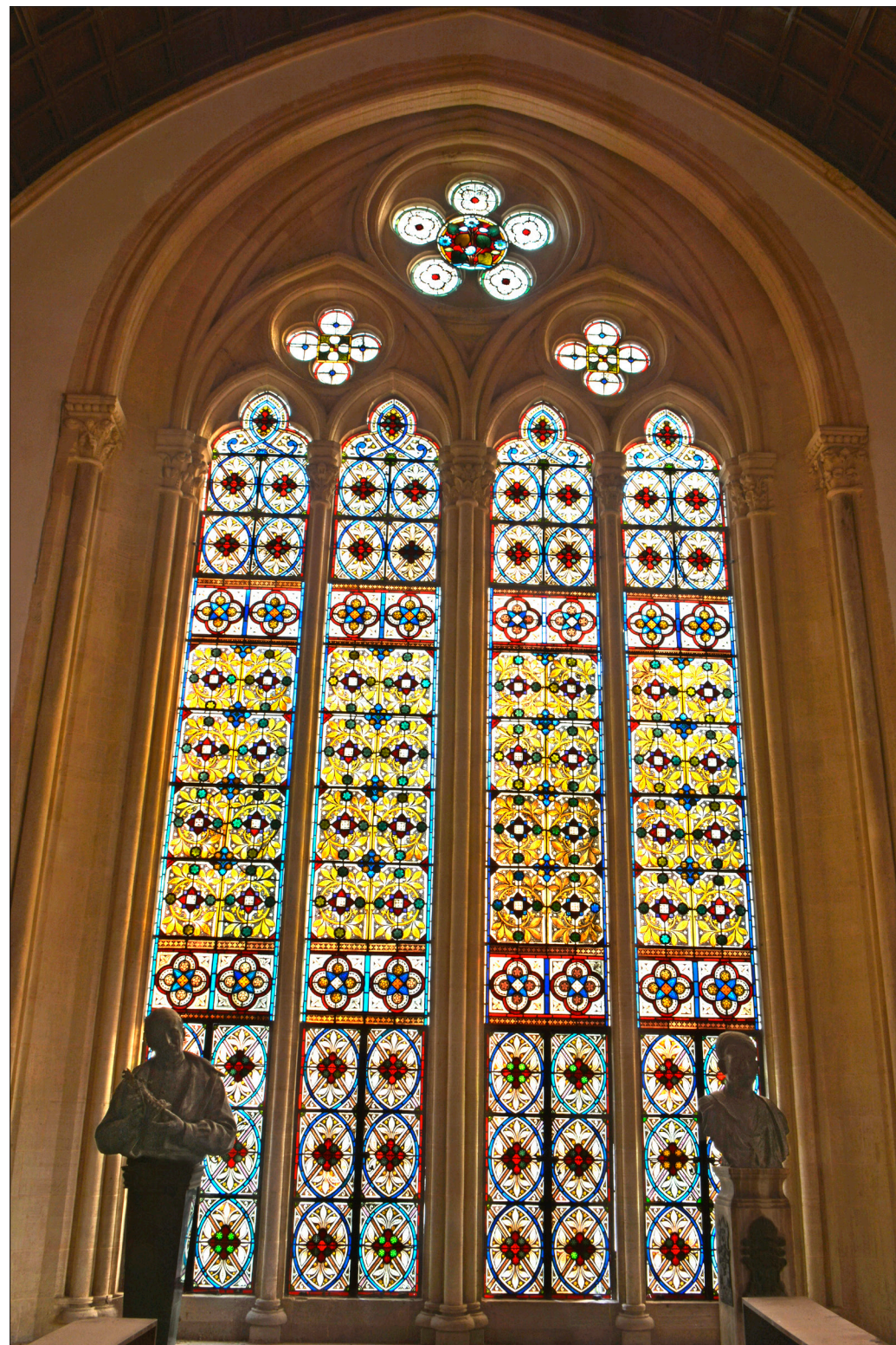
For the first phase of the restoration project, an expert from the University of York (UK) guided and trained local students from the Sir J. J. School of Architecture to carry out the intricate work on the stained glass.

Support for the second phase- restoration of the Convocation Hall- came from the Late Pandit Bhimsen Joshi. Though he was schooled in the Khayal tradition of Hindustani classical music, Panditji confessed he was full of awe for this magnificent structure and graciously agreed to perform in “these hallowed premises” on the 20th of April 1997. Fortunately, with further support from several donors, the Hall was brought back to its former glory in time to celebrate 150 years of The University of Mumbai in 2007. Befitting the event and the occasion of The University of Mumbai’s sesquicentennial celebrations in 2007, UNESCO gave an Award of Distinction for the restoration of the Convocation Hall.

The IHS continued seeking support, as the members considered the Rajabai Clock Tower and the Library buildings extremely important in the history of the city. The very site of the buildings in south Mumbai, between the Secretariat and the High Court, displays the respect for The University of Mumbai and Library as seats of learning. The surrounding gardens endow the site with quietude and verdancy, which in turn inspire respect, study and research.

BOMBAY FORT

These magnificent monuments that have replaced the razed ramparts, moat and walls of Bombay Fort were built during a



Above The vast and magnificently restored stained glass in the Library.



Left The Rajabai Clock Tower, seen shrouded in scaffolding was completed in 1878.

planned rehabilitation of Mumbai in 1862. This was after the Indian War of Independence in 1857 when the British Crown took charge of the islands from the East India Company. Bombay Fort was thought to be too congested, unhealthy and constricting. It was time for the city to be born...this time as a modern metropolis with ports, centres of industry and commerce and hallowed institutions of learning.

Well known architects were commissioned to design public buildings in the now redundant moat. Sir Gilbert Scott was entrusted with the designing of The University of Mumbai’s Convocation Hall, Rajabai Clock Tower and Library.

These buildings, like all others in the world bear witness to eras and the aspirations of the people who inhabited the land. Architecture became the physical manifestation of culture, and these buildings encompass Hindu, Saracenic and of course neo-gothic styles. Icons that we hold in trust for future generations.

The construction of the buildings for the University was funded by munificent donations from two eminent traders in the city. The Convocation Hall by Sir Jamshetji Jeejibhoy and Rajabai Clock Tower with its adjacent Library, by Premchand Roychand.

The IHS approached Tata Consultancy Services (TCS) because of their interest in conservation and support of heritage efforts such as the Elephanta Festival and Mumbai Sanskriti. They readily agreed to support all expenditure for the repairs and restoration project. There are no words to express our most sincere gratitude to TCS. The University of Mumbai appointed the reputed architectural consultancy practice of Somaya & Kalappa and restoration started in 2012.

Reflecting a bond based on shared beliefs, philanthropy and expertise, today this institution of learning has been conserved for coming generations of students, scholars and citizens. The clock in the Rajabai Tower will continue to tell the time for the city, and the Library will remain the repository of knowledge – our timeless heritage.

Anita Garware,
Chairperson



UNIVERSITY OF MUMBAI

A HISTORICAL PERSPECTIVE

The restoration of the Rajabai Tower and Library is a proud moment for the University of Mumbai, a premier educational institution in the country. These heritage structures are very significant for the global metropolis of Mumbai, which is home to many such icons. While documenting the major milestones in the history of the University of Mumbai, one cannot but trace the historical antecedents of the Rajabai Tower and other architectural monuments as they stand today.

Established in 1857 while India was still under British rule, the University of Bombay, as it was then called, is one of the three oldest Universities in India, along with the Universities of Calcutta and Madras. These Universities were established on the recommendations of the Wood's Despatch of 1854. The University of Bombay, like the University of London, was an affiliating University conducting examinations and awarding degrees, while the actual teaching was entrusted to the colleges. Various existing colleges, such as Wilson College (1832), Grant Medical College (1845), Elphinstone College (1835), Sir J.J. School of Art (1857) and St Xavier's College (1869) that were established soon after made a sterling contribution to the cause of higher education. The students who graduated from the University through these colleges and the subsequent ones that came up, not only excelled in diverse fields like Arts, Science, Fine Arts, Law, Medicine and Engineering, but also became leading luminaries in India's national movement and were, in the real sense, the harbingers of social change. This system of functioning as an affiliating university continued until the Indian Universities Act of 1904 recommended that Indian Universities should undertake teaching as well. This resulted in setting up different departments within the University, starting with the Department of Sociology in 1919, headed by Professor Patrick Geddes, the famous Scottish town planner and ecologist, the Department of Economics in 1921, and others that followed. In the early twentieth century, a number of new colleges and institutes also got affiliated to the University.

After India's independence in 1947, the University continued to play an important role in nation-building activities. As a result of the partition of the country and the formation of other Universities in the region, by 1950 the jurisdiction of the University was considerably reduced. Nevertheless, with the massive increase in the number of affiliated colleges and the ever-increasing demand for higher education, student numbers grew exponentially. The University Act of 1953 soon made Bombay University a federal University. Just a few years thereafter, in 1957, the University reached another memorable milestone in its development: the celebration of its centenary year. Later, with the passing of the Maharashtra Universities Act of 1974, the Konkan districts of Thane, Raigad, Ratnagiri and Sindhudurg were added to its jurisdiction. Subsequently, the Maharashtra Universities Act of 1994 brought far-reaching changes in the structure and functioning of the University. In 1996, just a year after the city of Bombay was renamed 'Mumbai', the name of the University was changed from University of Bombay to University of Mumbai.



Left: The exterior facade of the building depicts 24 'dressed' statues that represent different castes of Western India.

Over the decades, the alumni of the University earned a name for themselves, nationally and internationally. Some of the University's illustrious alumni included luminaries like Mahatma Gandhi, Justice Mahadev Govind Ranade, Gopal Krishna Gokhale, Gopal Ganesh Agarkar, Dadabhai Nowroji, Lokmanya Bal Gangadhar Tilak, Sir Pherozeshah Mehta, Sardar Vallabhbhai Patel, Justice M.C. Chagla, Dr B.R. Ambedkar, C.D. Deshmukh, Dr Vikram Sarabhai and Dr Homi Bhabha. Five of the University's alumni, Mahamahopadhyay P.V. Kane, Dhondo Keshav Karve, M. Visvesvaraya, Dr B.R. Ambedkar and Morarji Desai received India's highest civilian honour, the 'Bharat Ratna'. It is also pertinent to note that Mahadev Govind Ranade, eminent jurist and economist, Ramkrishna Gopal Bhandarkar, renowned orientalist, and other well-known figures like Bal Mangesh Wagle and Waman Abaji Modak, were all the first graduates of this University. The University started admitting women students after 1883 and Cornelia Sorabji was the first woman graduate of the University.

Alongside these achievements of the University, was the progress made with respect to infrastructure. In the initial period, the University was located in the Town Hall, which also housed the Bombay Branch of the Royal Asiatic Society. The first Convocation of the University of Bombay was held in 1862 at the Town Hall. In the early Victorian era, Bombay gained importance as an industrial and commercial city and with this, there was an increasing demand for higher education and corresponding infrastructure. The funding for constructing buildings for the University was largely provided by the generous donations of Indian philanthropists, who were leading figures in the trade and business world of the city. For instance, in 1863, Sir Cowasji Jehangir, a Parsi businessman, offered a donation of Rs 1,00,000 to the University. This led to the construction of the magnificent Convocation Hall, known as the Sir Cowasji Jehangir Hall of the University of Mumbai.

A year later, in 1864, Premchund Roychund, a Jain businessman and stockbroker, who had acquired wealth during the cotton boom in the city – a consequence of the American Civil War – decided to offer a princely sum to the University for building a Library. In his letter dated 27 August 1864, addressed to H.L. Anderson, the Chief Secretary, Bombay Government, Roychund wrote, “Sir, I have the honour to request that the Government will have the goodness to communicate to the University of Bombay my desire to offer most respectfully to that learned body the sum of Rs. (2,00,000) two lakhs, towards the creation of a University Library, which may be an ornament to the city, and by becoming a storehouse of the learned works not only to the past, but of many generations to come, may be a means of promoting the high ends of the University. I understand that there will be sufficient room for the building in the ground allotted to the University after providing a site for the University Hall.”

Some months later in the same year, Roychund made an additional offer of an equivalent amount. He wrote to Anderson, “Sir, I have the honour to request that Government will do me the favour to offer to the University of Bombay, in the name of my good mother Rajabai, two lakhs of rupees for the erection of a Tower to contain a large clock and a set of joy-bells. If there be no architectural objections, I should like the tower to be in connection with the University Library.”

Very much in keeping with the donor’s request, this Tower was erected and it was decided to name it ‘The Rajabai Tower’ as a mark of respect to Premchund Roychund’s mother. The celebrated British architect and foremost practitioner of Gothic revival in Britain, Sir George Gilbert Scott, was entrusted with the work of designing the two buildings, namely, the Convocation Hall, and the Rajabai Clock Tower and Library. Although Scott had never visited India, he worked meticulously on the plan, taking into consideration the Indian climatic conditions and the requirements of the University. Scott designed the buildings in the neo-Gothic architectural style and wrote, “In designing the Library I have had much less to guide me than in the Hall. I have, therefore, acted very much upon my own supposition of what might be necessary....The Tower I have so placed that its lower storey becomes the portico under which carriages may draw up at the entrance of the Library. I have endeavoured to give the Tower a look differing, so far as may be, from that of a church tower. We have many instances of great towers used for wholly secular purposes in the old cities of Belgium and, without adopting any existing tower as a type, I have endeavoured to give to this the same feeling and sentiment which prevails among ancient towers of this class. I have made it very lofty that it may be conspicuous throughout the city.” The structure thus created became an elegant masterpiece of secular architecture, so designed that the sea breeze would keep the interiors cool, while the arcade verandahs would ward off the city’s torrential monsoon rains. Although Scott was not present in India, the task of executing his design to perfection was carried out by his team, consisting of Lt. Col. J.A. Fuller, Superintending Engineer, Rao Bahadur Muckoond Ramchunder, Assistant Engineer, and Nagoo Sayaji, the Contractor. The work was supervised by Messrs Paris and Molecey, assistant architects to the Bombay Government. Interestingly Scott’s other architectural masterpieces include the Albert Memorial, the Midland Grand Hotel at St Pancras Station, as well as the Foreign and Commonwealth Office in London.



Above An example of one of the many gargoyles that represent the decorative stone carvings on the building.

The foundation stone of these University structures was laid on 29 December 1868. The work on the Convocation Hall was completed in November 1874, and the construction of the Library building and the Tower was completed four years later, in November 1878. The opening ceremony of the University buildings was held on 27 February 1880 with great pomp and celebration, and the event was stylishly called ‘conversazione at the Bombay University.’ During this period, many other public buildings in the neo-Gothic style were built in the city; outstanding amongst these were the Victoria Terminus, the High Court and the Bombay Municipal Corporation. Consequently, Bombay attained the coveted status of being the second city of the British Empire.

For more than a century, the University had only one campus – its premises at Fort. A major landmark in the history of the University was the establishment of another campus at Kalina in 1969, aptly named the Vidyanagari campus, spanning 243 acres of land acquired from the Government of Maharashtra in Santacruz (East). Gradually, the postgraduate Departments were shifted to the spacious environs of the Vidyanagari campus. Today, the University has 57 postgraduate Departments and Centres, as well as 729 affiliated colleges, and has over 7,00,000 students enrolled for undergraduate and postgraduate programmes, and research. The Vidyanagari campus has many new institutes offering state-of-the-art facilities, such as the Jawaharlal Nehru Library, the Garware Institute of Career Education and Development, the Alkesh Dinesh Mody Institute for Finance and Mangement, the UGC Academic Staff College, the Institute of Distance and Open Learning, the Academy of Theatre Arts, the Lok Kala Academy, the Centre for Extra Mural Studies, the Rajiv Gandhi Centre for Contemporary Studies, the Indian Council of Social Science Research (Western Regional Centre), the Western Regional Instrumentation Centre and several others. In recent years, many new centres with sophisticated facilities have been added like the new Lecture Complex, the Cultural Centre Building, the Shankarrao Chavan Teachers’ Training Academy, the Sports Complex, the Nano



Science and Nano Technology Centre, and the Centre for Excellence in Basic Sciences. The buildings presently under construction include the Department of Computer Science (IT Park), the School of Languages, the Rajiv Gandhi Centre for Contemporary Studies, the Green Technology Building, two new student hostels, the Jamnalal Bajaj Institute of Management Studies, and the International Convention Centre. The University also has a Sub-Centre at Ratnagiri and a Sub-Campus at Thane. A Sub-Centre at Kalyan will commence its activities from the next academic year. The scheme of Community Colleges has also been newly introduced, and the first four Community Colleges have been launched. Through this scheme, the University aims to bridge the gap between Industry and Academia.

While initiating the development of new infrastructure, the University has also taken steps to preserve its iconic heritage buildings which are the pride of the city of Mumbai. In 1989, the Rajabai Clock Tower and Convocation Hall received the Urban Heritage Award from the Bombay Chapter of the Indian Heritage Society. During the years 1997-99, under the Vice-Chancellorship of Dr (Mrs) Snehalata Deshmukh, restoration work was carried out for the first time in the Rajabai Clock Tower and Library, listed as a Grade I heritage structure in the city, particularly on its stained glass windows. The University of Mumbai financed the local materials, labour and craftsmen's salaries, while the glass, lead, kiln and British experts' requirements were met by the British Council Division, Mumbai, in collaboration with the Department of Trade and Industry, U.K. The architect, Vikas Dilawari, and a team of Indian and British experts executed this project. The restoration project of the Library Building was awarded the UNESCO Asia-Pacific Heritage Awards Honourable Mention in 2001. The restoration of the Convocation Hall was completed in 2006 with funding from the Government of Maharashtra, Jamsetji Tata Trust, and the Mumbai Metropolitan Region Heritage Conservation Society. The work was carried out by Abha Narain Lambah, conservation architect, and her team. The UNESCO's Asia-Pacific Heritage Unit gave an Award of Distinction for the restoration of the Convocation Hall in 2007. Major restoration work of the Rajabai Clock Tower and the Library has now been taken up by the University in 2012-14 with Brinda Somaya as the Chief Architect, and her team from Somaya & Kalappa Consultants. The University of Mumbai, under the leadership of Dr Rajan Welukar, Honourable Vice-Chancellor, has taken this initiative in collaboration with the Indian Heritage Society, with generous financial support from Tata Consultancy Services.

Above A side view of the building showing a slice of the magnificent staircase, and the arches with circular windows.

Looking back, at the contributions that the University of Mumbai has made over the years, one can rightfully be proud of its consistent growth path, both in terms of academic achievements as well as its imposing buildings and infrastructure. Apart from having the rare distinction of being first accredited by NAAC in 2001 with a 5 star status and re-accredited with an 'A' Grade in 2012, some of its affiliated Colleges have received recognition as 'College with Potential for Excellence'; three Colleges have received the 'College of Excellence' status by the University Grants Commission (UGC) while a good number of other Colleges have been accredited with an 'A' Grade. A landmark in the history of the University was the celebration of its 150th or sesquicentennial year in 2007 with many academic events, international conferences, and cultural programmes. The President of India and the Prime Minister of India as well as several dignitaries visited this historic institution during the year. The University has also been accorded the 'University with Potential for Excellence' status by the UGC with 14 Centres, including the 'Centre for Green Technology', being identified as core centres carrying out interdisciplinary research. The excellent work done by many Departments of the University has been acknowledged and facilitated through the 'Special Assistance Programme' of the UGC and the 'Fund for Improvement of Infrastructure in Science and Technology' (FIST) programme of the Department of Science and Technology (DST), Government of India. Many college principals, faculty, and professors of the University have received national and international awards, and some colleges, institutions, and postgraduate departments have made their University proud by being granted autonomous status.

The spectacular achievements of the University and its monumental heritage structures have attracted several dignitaries, including Michelle Obama, First Lady of the U.S.A, who paid a special visit to the historic Rajabai Tower and Library in 2010, as well as the Prime Minister of Australia who visited the University in 2014.

The University's imposing Rajabai Tower still stands tall among its neighbouring structures and reminds each passer-by that here is an institution that stands apart from the rest as a key provider of higher education, with its unique blend of the magnificence of the pre-independence era and the global competencies required for the future.

- Naresh Chandra, Pro-Vice-Chancellor, University of Mumbai
- Manjiri Kamat, Professor, Department of History, University of Mumbai
- Vispi Balaporia, Former Dean, Faculty of Arts, University of Mumbai

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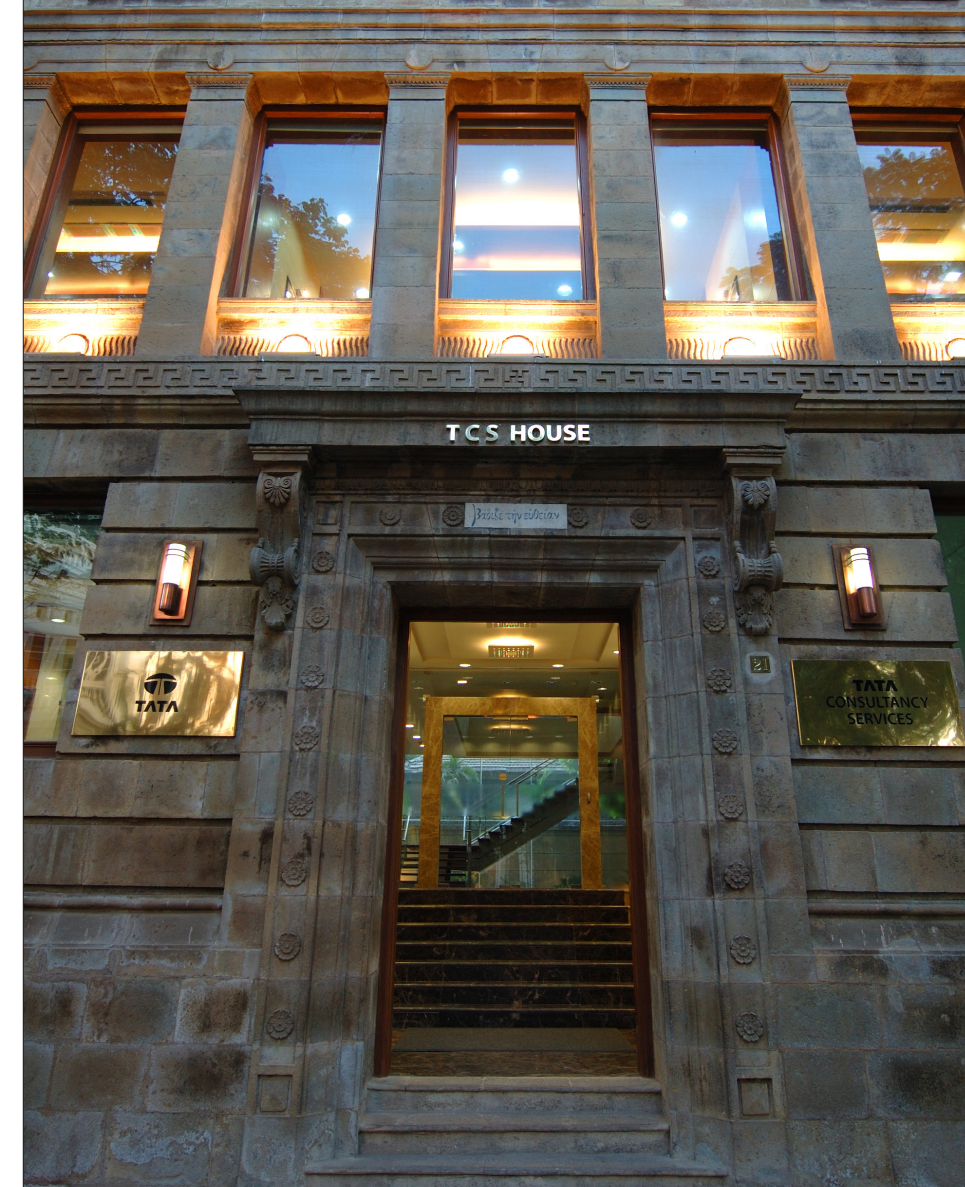
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TATA CONSULTANCY SERVICES

At Tata Consultancy Services, we believe in creating “Impact through Empowerment”. This is the basic tenet of our Corporate Social Responsibility mission where, through empowerment we seek to have a real, positive impact on the lives of people in the communities we work and live in. It is our strong belief that by enabling the communities, we are empowering people to take the lead in their own lives and play a proactive role in improving their well-being and that of their families.

To provide focus for a company present in 46 countries and employing in excess of 3,19,000 professionals, the organisation has sought to empower communities using three channels – education, health and the environment. But more than cheque-book philanthropy, the key to our sustained success has been the active involvement of our employees – TCSers across the globe have enthusiastically and energetically taken up various causes within their local communities and collectively volunteered almost 1,00,000 hours last year making a difference in each of those communities.

Our values in turn also drive our commitment to the communities in which we operate as well as the wider society. We are helping governments at the local and central levels use technology to become more efficient, responsive and accessible to their citizenry with our e-governance solutions. We continue to invest in the community around us, deploying technology on a pro bono basis to address societal challenges such as illiteracy. We have also leveraged our expertise in IT to develop systems for not for profit organisations to facilitate the empowerment of communities. All with the help of TCSers, who have become active participants of this movement.



Above This Grade II Heritage building located in the Fort precinct of Mumbai, is the global headquarters of Tata Consultancy Services.

In line with our strategic objective to be a responsible corporate citizen, our constant endeavour is to reduce the impact from our operations on the environment. TCS' vision is to decouple business growth and ecological footprint from its operations to address the environment bottom-line. The green approach is embedded in our internal processes and services offerings. We strongly support the theme of Low Carbon Growth, and we intend to make it the inherent principle in our growth trajectory as well.

TCS therefore collaborated with Mumbai University for the restoration of the iconic Rajabai Clock Tower and Library building in coordination with the Indian Heritage Society, Mumbai. The project includes the restoration of the library, located at the base of tower. The objective is to make the conventional library into a hi-tech one which houses a collection of rare books and the make-over plan of the structure has strengthened the structure while repairing the damaged parts, removed the biological growth and upgraded the existing services.

The intrinsic value of returning to the soil and the people is beyond measurement. While TCS continues to build its organisational capabilities and make investments to take the company to greater heights, its goals can be attained only if each of us continues to collaborate for the benefit of the community.

Left The ground floor reception area of the global headquarters of Tata Consultancy Services, is the gateway to a modern interior with state of the art technology.

SOMAYA & KALAPPA CONSULTANTS

INTRODUCTION

Gracing the Mumbai skyline for the past 136 years, the Rajabai clock tower stands tall in the skyline of the Mumbai University Fort campus. This stretch of Neo Gothic structures stands face to face with a row of Art Deco apartment buildings, separated by a vast expanse of green commonly known as the Oval Maidan. The combination of these architectural styles in such close proximity to each other, remains unique to the city of Mumbai.

A preservation and restoration project of this majestic Grade I heritage building has been underway and has included architectural, structural, services and interior works. Work has also been put into place to ensure the longevity of the building for future generations.

CULTURAL SIGNIFICANCE

The construction of this Neo Gothic building, designed by the reputed English architect Sir Gilbert Scott began in 1869. The library building was completed in 1874, and the intricately designed clock tower in 1878. The materials used to build the tower included four different stones – Malad and Grey Green Basalt for the masonry work that was commonly used at the time of construction, and Porbundar and Red Dharangdhara stone for the architectural detailing.

At an imposing height of 87m, it remains an important feature of the complex. It was the highest vertical edifice in the city at the time. The historic library building has been designed with bilateral symmetry and contains verandahs, arcades and louvered windows that filter direct and ambient lighting into secondary spaces. Large rosewood doors and partitions grace the entrance lobby, where carving details are the best of its kind. High ceilings reinforce the grandeur and monumentality of the internal spaces. An example is the reading area, which is adorned with a magnificent wood-panelled arched ceiling. Large stained glass windows with geometric patterns and Minton tile flooring emphasize the decorative style. Intricately carved projected verandahs, with capitals showing the heads of literary figures such as Shakespeare and Homer, carvings of kings and queens, all convert the building into a structure that represents the history of academia and governance.



Above This ornamental figurehead is one of many examples, of a portrayal of royalty that is depicted in various parts of the building.

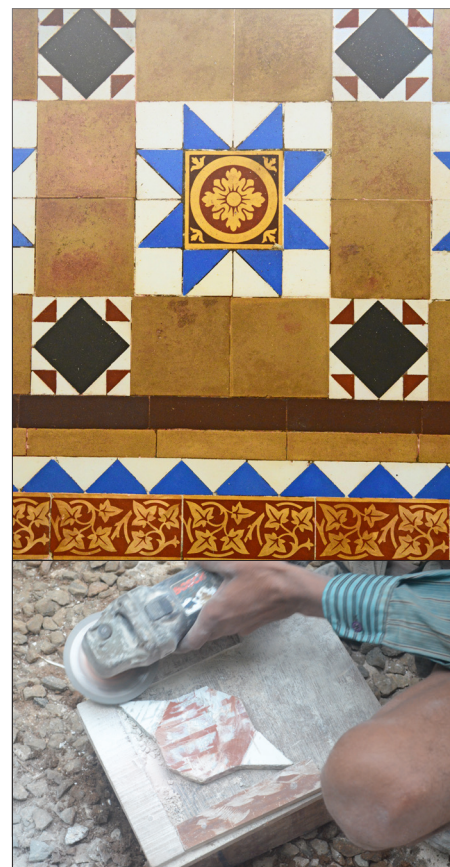
CONDITIONAL ASSESSMENT

All buildings are subjected to external forces, natural or man-made, which cause them to deteriorate over a period of time. Prior to the commencement of the physical restoration of the structure, an intense documentation and conditional mapping was carried out for both buildings. To take the time and effort to visually observe, record and analyse the buildings, and collect the data, is crucial in the initial stage of the restoration process. Visual defects comprised of structural and non-structural cracks, and stains and efflorescence on the stone façade. Several monsoons over the decades, led to water seepage. Biological growth on the outer surface was also evident. There were several broken and missing architectural elements and details, damaged doors, window panels and flooring. Peeling plaster, exposed wiring and broken fixtures and fittings were observed and documented. For a detailed structural analysis of the buildings, non-destructive tests were carried out, to identify the level of deterioration of the structural components. This included an endoscopic investigation on the joints of the wooden truss members, tests for loss of sections, and the extent of corrosion.

In addition, a chemical analysis and a weldability test for steel sections, tensile and compressive strength of the structural wooden sections were implemented. Electrosonic damp detection and moisture meter tests were conducted, as well as petrography tests for different stones and a plumb test for the tower itself. Being an integral part of the heritage building that functions as a university library, a building assessment was also carried out for upgrading of the structure, in accordance with current standards and codes. A fire safety proposal was prepared, where the buildings were analysed and solutions proposed, to update the current system of requirements. The challenge lay, in integrating the current requirements as seamlessly as possible, within the constraints of a heritage structure.

MUMBAI UNIVERSITY LIBRARY RESTORATION WORKS

There were several technical processes executed to restore the buildings. Restoration and revitalisation of the stone was a critical part of the process. Cleaning of the external stone façade, lime-plastering, removal of thick layers of paint that brutally covered the internal stone surfaces using water misting, and mild pH balanced surfactants, and gently cleaning of the surfaces with nylon brushes...were some of the techniques. Poulticing cleaning, including plastic repair for the Porbundar limestone details were carefully executed. Structural stitching of the stone cracks and replacement of stone where necessary was also ensured.



Left (centre) An example of Minton tile flooring, that illustrates one of several of the exquisite parquet surfaces in the building.



Above: an elaborate scaffolding structure was installed, to ensure that all elements of the building would be dealt with utmost care and also with consideration to the safety of the workers.



Structural restoration of the library roof was one of the primary works of repair for that large space. Inappropriate waterproofing, damaged joints and termite infestation had led to water ingress at the lower levels of the building. The restoration process included the repair of wooden truss, purlin members and wooden wall plates. Adequate watertight protection systems were introduced that comprised of a new layer of aluminium sheet waterproofing and lead lining to the wall plates. Effort was made to reuse materials available such as salvaging and using the lead from the library roof for the lining. The wooden vaulted ceiling was restored and re-polished. Minton tile restoration was also carried out using similar tiles salvaged from previously demolished old buildings. They were cut to the required size, and used to restore the heritage flooring. Installation of fire alarm systems, electrical re-conduiting and concealed wiring using fire retardant and low smoke type copper wiring was done to ensure adherence to National Building Code norms.

RAJABAI CLOCK TOWER RESTORATION WORKS

One of the enormous challenges of this project, was to implement sensitive restoration and repair work for the clock tower, with the clock functioning and working at a height of 87m (approximately 29 floors). The only internal access was a 600mm wide, spiral stone staircase, which made physical access to the clock and transferring of materials for restoration to the clock tower, particularly challenging. Specialist workers and restorers were appointed to carry out this taxing and technically intensive process, and extensive safety measures were taken for the same. Beautiful Burma teak windows were repaired and replaced at all levels. A small wooden workshop was also created on the level six of the clock tower, to repair and restore 6m high wooden louvers at that level. Other works on the stone at these higher levels, such as façade cleaning by water misting, cleansing of Porbundar stone details by poulticing, and repairing of wooden floor decks were carried with great precision and care.



The breathtaking views, as one reaches the various galleries through the four-foot spiral staircase of the clock tower, is a magnificent journey in itself. From the darkness of the staircase one emerges onto the galleries at different levels, to face astonishing 360 degree views of Mumbai. The clock machine level is fairytale-like, with the gears of the mechanism still functioning diligently, and the exposed weight ballasts supporting the heavy machinery looming from the ceiling. In anticipation of the clock striking every quarter of an hour, workmen ensure they are not in proximity of the gigantic chimes that resound across the cityscape at those times.

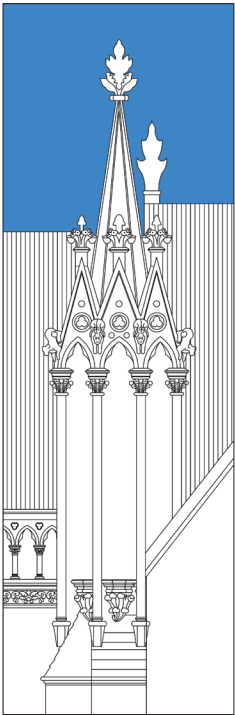
The restoration of magnificent heritage structures such as the Rajabai Clock Tower, is a responsibility we all must bear with pride in order to retain the cultural heritage and unique charm of our cities. Not to be undermined, the colossal task of reviving and bringing the structure close to its original form, has thrown a spotlight on an area of Mumbai that would have otherwise slipped into the grime and shadow of a distant memory.

Facing page (above) The repair of the magnificent and expansive wooden vaulted ceiling of the library, was a major task undertaken by the conservation firm.
(below) Doors and windows were individually dismantled, stripped down and restored.

Above The massive stone ceiling which was in a terrible state of decay, was brought back to its original condition.

Right One of the hallmark features of the the building, the staircase tower, was painstakingly restored, level by level.





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