TATA CAPITAL

SATTVA
Delivering High Impact.

# Impact Assessment

## Infrastructure Project Report

### March, 2024


Collective Good Foundation
Samhita Initiative

TATA MEMORIAL CENTRE
टाटा स्मारक केंद्र
SERVICE RESEARCH EDUCATION

Antim Samskar Seva

# About Tata Capital

Tata Capital, one of India's leading Non-Banking Financial Companies (NBFC), operates as a subsidiary of Tata Sons Private Limited and serves as the flagship financial services entity within the Tata Group. Tata Capital, along with its subsidiaries, is actively involved in offering a diverse range of services and products within the financial services sector. The company operates across multiple business domains, including Commercial Finance, Consumer Loans, Wealth Services, and the distribution and marketing of Tata Cards.

Through its CSR initiatives, Tata Capital envisions creating shared value for the community at large, aligning with the Tata Group's core purpose. The company endeavours to enhance the lives of the community, particularly those in socially and economically underprivileged segments, by making a long-term, measurable and positive impact through projects in the areas of Education, Climate Action, Health and Skill Development.

# About the Projects

As part of the CSR strategy and in alignment with the commitment to making a long-term, measurable, and positive impact through projects, Tata Capital supported the following programs in FY22:

- Procurement of medical equipment for Tata Memorial Hospital: essential medical equipment such as laptops, immobilisation devices, and GeneXpert (XVI-16) system, was procured as a part of the ongoing assistance.
- Set up of oxygen plants: Collective Good Foundation (CGF) aided establishing two 500 LPM (litres per minute) oxygen plants at Prakash Hospital in Greater Noida and Parbhani Municipal Corporation Hospital in Maharashtra.
- Redevelopment of a crematorium: supported by Hiralal Parekh Parivar Trust to renovate a neglected crematorium into an eco-conscious space, meeting societal demands and providing a dignified setting for performing final rites.

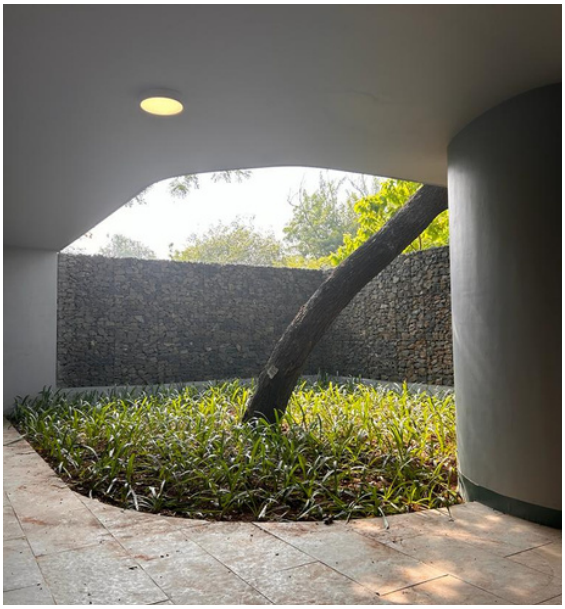
# Sampling and Methodology

Tata Capital partnered with Sattva Consulting to conduct the impact assessment of the infrastructure projects. Using a descriptive cross-sectional design, a qualitative approach was formalised for the study in which in-depth interviews were conducted with key stakeholders of these projects. The insights gathered through these interviews were then consolidated with data from existing reports and documents. Information on various aspects, such as the processes followed for installing generators and systems, distributing funding, and challenges faced, was collected by conducting key informant interviews (KIIs) with representatives from partner organisations. The Sattva team also went on the ground to visit the designated sites. Below is a list of all the stakeholders who participated in the KIIs:

| Stakeholder | Sample Size | Location | Data source | Mode of data collection |
|---|---|---|---|---|
| Medical Team : Tata Memorial Hospital | 3-4 members | Mumbai | Focus Group Discussion (FGD) | On Ground |
| Members: Hiralal Parekh Parivar Charity Trust | 2 | Mumbai | In Depth Interview | Virtual |
| Ground Staff: Mata Ramabai Ambedkar Samshan Bhumi | 1 | Mumbai | In Depth Interview | On Ground |
| Doctor, Prakash Hospital : Collective Good Foundation | 1 | Greater Noida | In Depth Interview | Virtual |
| Maintenance Team, Prakash Hospital : Collective Good Foundation | 1 | Greater Noida | In Depth Interview | On Ground |
| Procurement Team, Prakash and Parbhani Hospital: Collective Good Foundation | 1 | Parbhani & Greater Noida | In Depth Interview | Virtual |
| Total | 10 | - | | |

# Renovation of Worli crematorium - Hiralal Parekh Parivar Charity Trust (Antim Prasthan), Mumbai

The Mata Ramabai Ambedkar Samshan Bhumi is one of the few non-denominational crematoriums in Mumbai accessible to all sections of society. The initiative to redevelop and renovate a neglected crematorium into an eco-conscious space aims to provide dignity to the departed, regardless of their beliefs or societal status.
Furthermore, emphasising the necessity for diverse funeral customs required during COVID-19, the project prioritises providing access to sustainable, functional, and environmentally responsible infrastructure for mourners and visitors. It also contributes to the enhancement of Mumbai's public infrastructure.



**The Rationale Behind the Project**

The Hiralal Parekh Parivar Charity Trust launched Antim Sanskar Seva in 2008, a unique service that emphasises handling the departed with dignity. To conduct funeral ceremonies with respect, they assembled a team that included air-conditioned ambulances, hearses, and skilled personnel to assist bereaved families with the logistics of cremation. Consequently, they provided 13 years of assistance to 18,000 families from various socioeconomic backgrounds. Thus, it was determined that cremation services, often disregarded or viewed as morbid, needed to be revolutionised. The Trust aimed to transform the existing Worli crematorium into peaceful, private spaces for mourning, breaking conventional norms by garnering support for a paradigm shift in the treatment of final rites through CSR funding. An MOU with the Brihanmumbai Municipal Corporation was signed for the same.

Entry Court

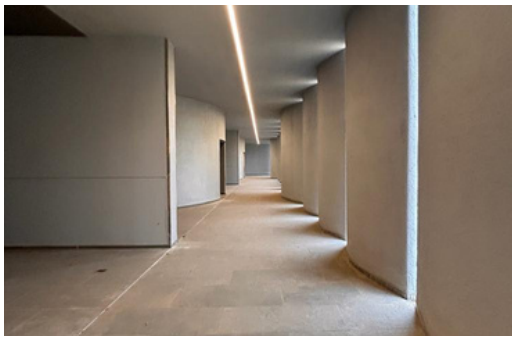
Wall of Gratitude Signage


**The redeveloped crematorium boasts an inclusive Infrastructure**

The crematorium has been designed to address COVID-19 concerns, implementing measures to segregate and avoid cross-infections. A 12,000-square-foot plaza has been created to manage large crowds during multiple cremations while maintaining social distancing. Detailed design planning was undertaken to build an **environmentally sustainable**, **emotionally sensitive**, **and aesthetically pleasing** crematorium that integrates nature and landscaping into its design.

Salient features of the infrastructure include:

- Eight pavilions, with six accommodating various cremation preferences (gas, wood furnace, and traditional open fire) while ensuring privacy despite simultaneous operations. Out of the eight pavilions, one is currently being used, five are fully equipped and ready for use, and the remaining two have their structures set up but await equipment installation (gas, wood furnace or open fire) on an as-needed basis.
- Provision of clean and hygienic washrooms for men and women - currently the plumbing and drainage work of the washrooms is in process.
- Integration of technology with live broadcast capabilities for distant observers.
- Inclusion of a prayer hall, accommodation for large gatherings, and burial grounds - currently, the structure of the prayer hall is ready, but it is being used as a storage unit.
- Marble platforms with drainage facilities to maintain cleanliness.
- Presence of waiting areas tailored to accommodate approximately 50 individuals, providing private spaces for each family during their final rituals.
- A 100-foot steel chimney for pollution control and to mitigate environmental impact.
- Provision of gas and hybrid furnaces to reduce wood consumption and air-pollution.

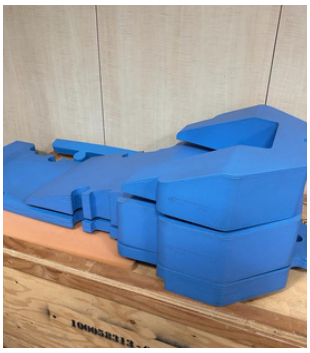
This project was primarily conceptualised by the Trust without significant assistance or backing from individuals or organisations, aside from verbal support and recognition. **During the process, the Trust overcame a few challenges which are highlighted below:**

- Difficulties regarding the construction of the domes due to their intricate design and complexities.
- Resistance from the local community due to construction-related disturbances such as noise and pollution.
- The unavailability of adjacent land, which was designated for metro work, reduced the site area from the initially planned 80,000 square feet to approximately 70,000 square feet.
- The usage of solar panels was initially considered for sustainable energy; however, the Trust encountered setbacks and losses related to theft, ultimately choosing against their installation.

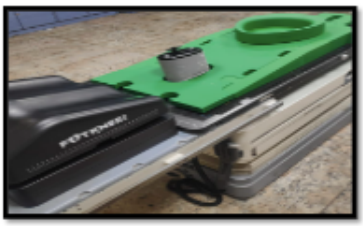
According to the engagement terms, Tata Capital successfully provided the trust with financial support, marking the completion of Tata Capital's role in this regard. The designated area for the crematorium has been maximized ruling out any expansion plans, and the crematorium is actively serving the community's needs, providing a sustainable space for the final rituals of departed loved ones.

# Tata Memorial Hospital Project Under TCFSL and TCHFL Mumbai

As part of ongoing support, Tata Capital and Tata Capital Financial Services Limited's (TCFSL) CSR efforts aided in procuring vital pieces of equipment for the Tata Memorial Hospital - The GeneXpert (XVI-16) system with a laptop and an immobilisation device. As one of the oldest cancer hospitals in the country, recording a footfall of over 3,500 patients at all Outpatient Departments (OPDs) every single day, medical equipment like these helps alleviate the burden on doctors and primary healthcare workers.



Prone Belly Board



Below Knee Rest

The GeneXpert is a widely accepted diagnostic test for Tuberculosis, while the Immobilisation device ensures precise radiotherapy targeting tumours without affecting healthy organs. The funding received from Tata Capital was directed toward two primary components: the procurement of equipment and patient treatment or research activities.

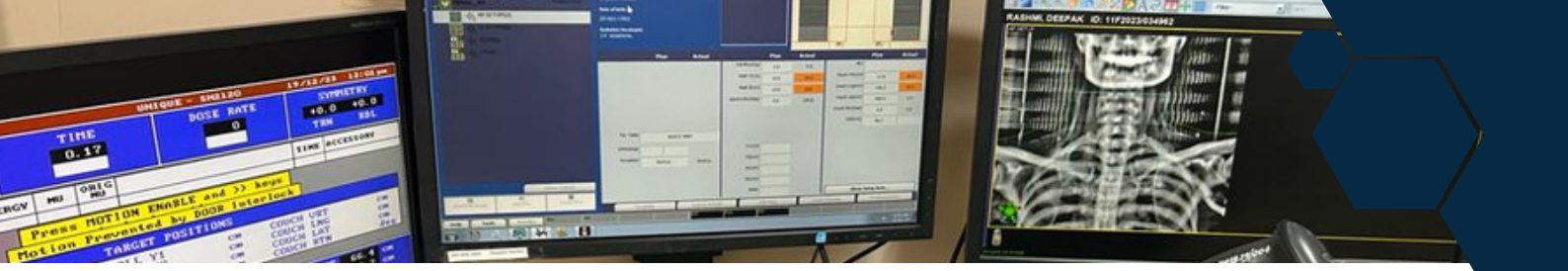
**About GeneXpert (XVI-16) and Immobilisation device**

The GeneXpert equipment is a multipurpose instrument designed for identifying diverse organisms, with a major concentration on the detection of Mycobacterium tuberculosis (TB). It can identify the existence of germs and determine their resistance to various treatments. While the GeneXpert is primarily used to detect Mycobacterium TB, its adaptability extends to the detection of other species, emphasising its broader application in diagnosing numerous illnesses.

Immobilisation devices are crucial in radiation therapy as they help place the patient in the exact position required during treatment, which might last several days or weeks. This precision is necessary for successful and focused radiation delivery during cancer treatment. The immobilisation device ensures that patients maintain their posture, allowing for accurate and precise radiation treatment delivery. The effectiveness of the immobilisation device is monitored using imaging techniques like Computed Tomography (CT) Scan and X-rays obtained during treatment.

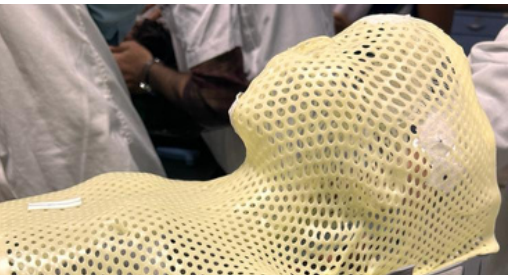

**Additional equipment support during COVID-19**

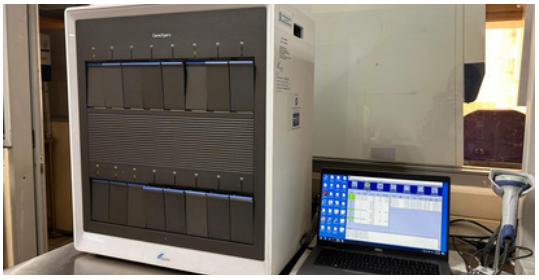
Tata Memorial Hospital also received support in acquiring Hemodynamic monitors for use in critical care units (ICUs). These monitors are crucial in measuring patients' vital signs and overall cardiovascular health, resulting in improved care and monitoring in critical medical situations. They proved extremely helpful when placed in COVID wards and ICUs throughout the pandemic, ensuring effective care delivery in critical care settings.




**Impact on treatment and patient care**

- The introduction of a 16-module GeneXpert system significantly enhanced sample handling efficiency compared to the previous four-module system. Testing of approximately 5,500 samples was facilitated within a year, and the samples are now processed on the same day, thus optimising laboratory operations. The provision of rapid detection capability for TB within 6 hours, compared to the conventional culture and sensitivity tests that take 6 weeks, significantly benefits patients by expediting diagnosis and treatment initiation.
- The Immobilisation device facility treats 7,000 patients yearly and provides specialised treatment tailored to tumour locations, such as breast, chest, abdomen, pelvic, head, neck, cervical, and prostate regions. It ensures precise radiation therapy, displaying versatility that aids in effectively treating diverse forms of cancer.
- The Hemodynamic Monitors played a crucial role in monitoring and maintaining patient health in COVID wards and ICUs throughout the pandemic, ensuring effective care delivery in critical care settings.





**Challenges related to maintenance and procurement of Immobilisation Devices**

- Immobilisation devices undergo wear and tear from constant use, necessitating regular replacement for treatment effectiveness and patient safety. Replacements are needed every three to four years to uphold optimal treatment quality, ensuring devices are replaced before becoming entirely non-functional.
- Understanding the devices' lifespan aids in budget planning, enabling timely replacements and preventing treatment disruptions. Signs of wear and tear, such as peeling, sagging, or loss of rigidity in specific immobilisation devices (like headrests), become evident over time due to multiple uses. These observable changes indicate potential problems with the devices, prompting the need for replacements or further evaluations.
- The replacement cycle significantly impacts treatment quality, which is crucial for precise patient positioning during radiation therapy sessions.
- External support remains vital for prompt procurement, ensuring uninterrupted high treatment standards despite equipment wear and tear.
- The hospital faces difficulties in procurement due to lengthy government procurement procedures, which can take four to six months. Direct procurement through donors can save time and provide continued care to the patients.

As per the engagement terms, Tata Capital has effectively provided the GeneXpert equipment (XVI), Immobilization Device, and Hemodynamic Monitors to the Tata Memorial Hospital. These equipment are presently in use and the hospital is responsible for their ongoing maintenance and upkeep, marking the completion of Tata Capital's role in this regard.

# Installation of Oxygen Plants at Prakash Hospital and Parbhani Municipal Corporation Hospital

As an ongoing commitment to bolster the collective efforts against the coronavirus pandemic, Tata Capital actively contributed by establishing two oxygen plants with a capacity of 500 litres per minute (LPM) each. These vital facilities were set up at Prakash Hospital in Greater Noida in September 2021 and at the Municipal Corporation Hospital in Parbhani in October 2021.

Tata Capital's intervention was a proactive response to the substantial challenges posed by the persistent global pandemic, particularly the severe impact of the second wave on India, its populace, and the strain it imposed on the healthcare infrastructure. Recognising the urgent need for enhanced medical resources, Tata Capital's support underscored its dedication to alleviating the adverse effects of COVID-19 on communities and healthcare systems in India.

**About 500LPM, Oxygen Generator**

A 500 Liters Per Minute (LPM) PSA (Pressure Swing Adsorption) Oxygen Generator is a medical device designed for the continuous production of a high flow rate of oxygen using PSA technology and playing a critical role in healthcare settings, particularly during periods of heightened demand similar to what was experienced during the COVID-19 pandemic. PSA is a widely used method for generating medical-grade oxygen by separating it from the air. The "500 LPM" rating signifies the ability of the generator to deliver 500 litres of oxygen per minute, making it suitable for providing oxygen to multiple patients simultaneously, including those in critical conditions.

PSA-based oxygen generating devices are indispensable in hospitals and healthcare facilities where a consistent and ample oxygen supply is essential for treating patients requiring continuous oxygen support. The 500 LPM capacity indicates the capability of the generator to meet the oxygen requirements of a large number of individuals, serving as a valuable asset in managing medical emergencies and ensuring that healthcare providers have the necessary resources to support patients in need of oxygen.

**Oxygen Plant - Prakash Hospital, Greater Noida**

| Impact figures up till April 2022 | Prakash Hospital, Greater Noida | Parbhani Municipal Hospital |
|---|---|---|
| Average oxygen output | 2,91,000 LPM | 2,40,000 LPM |
| Average oxygen consumption per patient | 1,500 LPM | 1,142 LPM |
| Approximate number of patients treated | 150-200 patients | 100-150 patients |

**Prakash Hospital, Greater Noida**

| Oxygen plant details | Reading during installation | Current reading |
|---|---|---|
| Oxygen Flow Rate ($Nm^3$/hour or LPM) | 500 | 500 |
| Oxygen Pressure (bar g or $kg/cm^2$ | 4.2 bar | 4.3 bar |

**Current $O_2$ Pressure**

## Impact on patient treatment and care: Prakash Hospital, Greater Noida

- The oxygen plant has significantly enhanced accessibility to critical medical infrastructure, particularly regarding oxygen availability for the surrounding communities. This improvement was evident during the second wave of COVID-19 and continues to benefit the community even after the wave has subsided. With a total run time of 8,782 hours until now, the plant has significantly increased the treatment capacity of the hospital for patients in need of respiratory support during periods of heightened demands.
- The capability for on-site oxygen generation has markedly decreased the hospital's reliance on external suppliers for oxygen cylinders. This reduction mitigates the risk of supply shortages or disruptions and ensures uninterrupted access to oxygen for patients in critical care (such as those with chronic respiratory conditions, cardiovascular diseases, or surgical complications), by making life-saving oxygen therapy available during their recovery period.
- The operational effectiveness of the oxygen plant at Prakash Hospital has had a profound impact on health outcomes and overall well-being for both COVID-19 patients and individuals requiring medical oxygen in the aftermath of COVID-19 within its catchment areas. The plant's functionality ensures a reliable and sustainable source of oxygen, contributing substantially to enhanced patient care.

**Maintenance of oxygen plant: Prakash Hospital, Greater Noida**

- Maintenance protocols include monitoring various parameters such as electricity voltage, oxygen pressure levels, and the functioning of essential components like filters and compressors. Additionally, routine maintenance tasks such as cleaning filters, inspecting drainage systems, and verifying the proper functioning of backup systems are performed.
- There is no established protocol document or guideline overseeing scheduled maintenance checks. However, the hospital's maintenance team comprises technical professionals who are actively involved in the regular operation of the oxygen plant, and they vigilantly monitor the system.
- Since the installation, the maintenance team has faced a singular challenge concerning drainage leakage occurring post-production of oxygen. Upon reporting the issue to the procurement company, a technician was promptly dispatched to address and successfully repair the problem.
- Prakash Hospital has no existing annual maintenance contract (AMC) with any external party. Given the current low reading of Oxygen Purity (measured in ppm or %) at 7.5%, engaging an external party for maintenance through an annual contract would be prudent and a positive move forward.

According to the engagement terms, Tata Capital has successfully provided the 500LPM Oxygen Plant to Prakash Hospital. The financial support for this intervention was equally split between Tata Capital and Prakash Hospital. The Oxygen Plant is presently in use as needed, and the hospital is responsible for its ongoing maintenance and upkeep, marking the completion of Tata Capital's role in this regard.

**Challenge with stakeholder coordination during the impact assessment study**

Given the infrastructural nature of the intervention and as it took place during the second wave of COVID-19 (September-October 2021), unfortunately, establishing contact with the medical stakeholders of Parbhani Hospital has proven challenging, as they have moved on and transitioned to different roles.