

## COMPANY

**TATA Consulting Engineers Limited**

## LOCATION

**Mumbai, India**

## SOFTWARE

**Autodesk®Revit®**

# Improving the quality and value of health care system with BIM

## Tata Consulting Engineers Limited delivers Cancer Hospital & Research Center



Image courtesy: TCE

**TATA Consulting Engineers (TCE) Limited, a wholly-owned subsidiary of TATA Sons Ltd is an integrated engineering consultancy solutions provider. Founded in 1962, the company offers engineering services from concept to commissioning in key industry segments like power, nuclear & advanced technologies, chemical, infrastructure, master planning for townships, steel mining & metals and construction management.**

The Mumbai-based company also has its offices in New Delhi, Pune, Jamshedpur, Kolkata, Bengaluru, Chennai, South Africa, Qatar and USA. TCE has successfully delivered more than 7,150 projects to clients across the globe and is an established name in India, Middle East, Africa and the USA.

TATA Consulting Engineers' consultancy solutions include engineering consultancy services such as feasibility studies, pre-project reports and technical studies, design, engineering, detailed engineering, environment impact assessment, sustainability and green technology solutions. Apart from this, the company also provides project management consultancy services include EPCM services, project management services, equipment management and commissioning

support; construction management consultancy includes construction, support and safety management services.

The firm has an international reputation for its work in the infrastructure sector, confirmed by many notable design awards for its environment and sustainability contributions that reflect the firm's success in managing complexity and improving lives around the globe.

### The Project

The hospital project is a dedicated center that brings healthcare, of international standards, particularly cancer care to the masses.

The hospital is designed to provide a friendly, welcoming environment for patients and their families. Each section is given its unique treatment, differentiating it from the others and providing varied visual stimulation. The focus rests on the patient, at both physiological and psychological level, and although the effect of nature, green spaces and water is not quantifiable, they have been integrated and emphasized at every level of planning. The hospital is spread across 2.5 acres with a built-up area of about two hundred thousand sq. ft. and 175 beds to cater to the needs of the cancer patients. The hospital offers state-of-the-art diagnostic, therapeutic and intensive care facilities under one roof.

# The BIM model also provided the client an unprecedented insight into the progress and completeness of the design process.

## Investing in the right technology

Technology is changing the face of the health care industry. The Medical and Research Foundation was looking for a holistic approach to healthcare – one that takes the healing environment into consideration. The motive was to make the facility more welcoming and diverse. While patient care remains the primary objective, they wanted almost equal care into the interiors, façade and surroundings.

The Hospital and Research Centre required collaboration and effective design processes to quickly and accurately reveal and communicate constructability issues and clashes with other trades.

“The project involved several services like electrical, plumbing, HVAC, FPS and lighting among others to be integrated with structural and architectural elements, interiors, facade and landscape. Having a platform that could bring together models from every discipline was a critical task. Visualizing this project three-dimensionally was also crucial to fully understand the scope,” said Engineer, TCE.

## An information model for each phase

Autodesk BIM platform generates construction documents, presentation imagery and rapid prototypes. The building design, exterior envelope, interior architecture, furniture, fixtures and medical equipment are being developed within this environment. The flexibility of Autodesk BIM allowed TCE to develop structural and MEP models in a single environment.

BIM was used to develop the in-patient room design and coordinate the complex medical systems, as well. The rendered model was an invaluable tool for understanding and communicating how the patient room, OPD, reception, consulting rooms, private room, etc would look. The BIM model also gave the client an unprecedented insight into the progress of the design process.

For successful project delivery, the team had to communicate thoroughly. The Autodesk BIM solution brought together models from every discipline providing better collaboration between the team members. With Autodesk Revit’s high quality rendering capability the client was able to visualize exactly what each design would look like; it enabled review options and ensured that making changes to the design was easy and quick.

## Communicating clearly and delivering more efficiently

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The Autodesk BIM software brought the vision quickly to life. Using their BIM capabilities, TCE was able to take informed design decisions. The entire job was more efficient, since everyone could actually visualize the project in 3D and provide their feedback in real time. Further, the design in 3D platform facilitated construction activities and resulted in a better finished project.

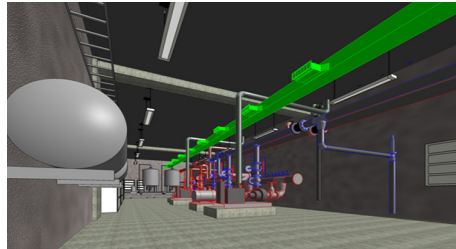


Image courtesy: TCE

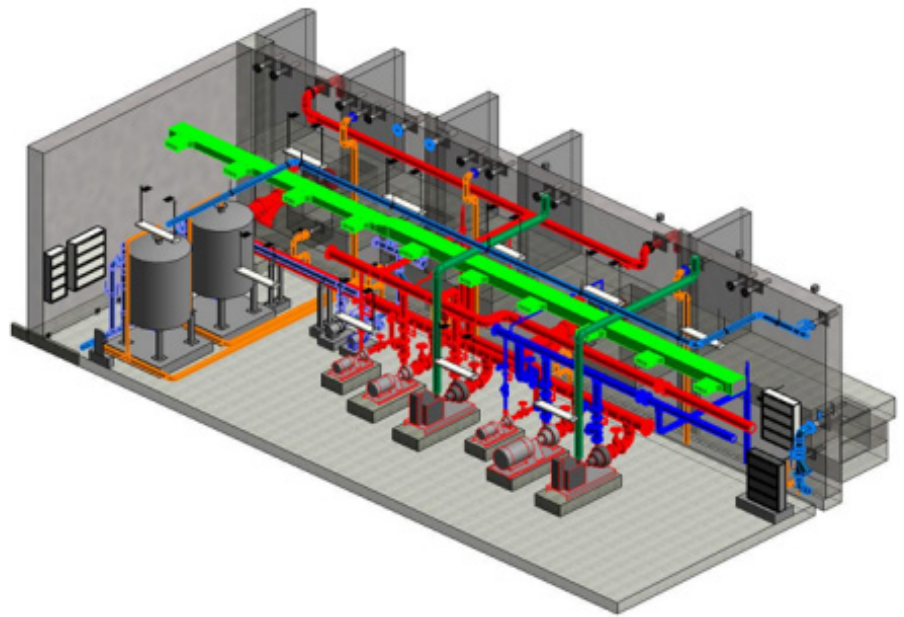


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