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Innovating and city building in Jamshedpur

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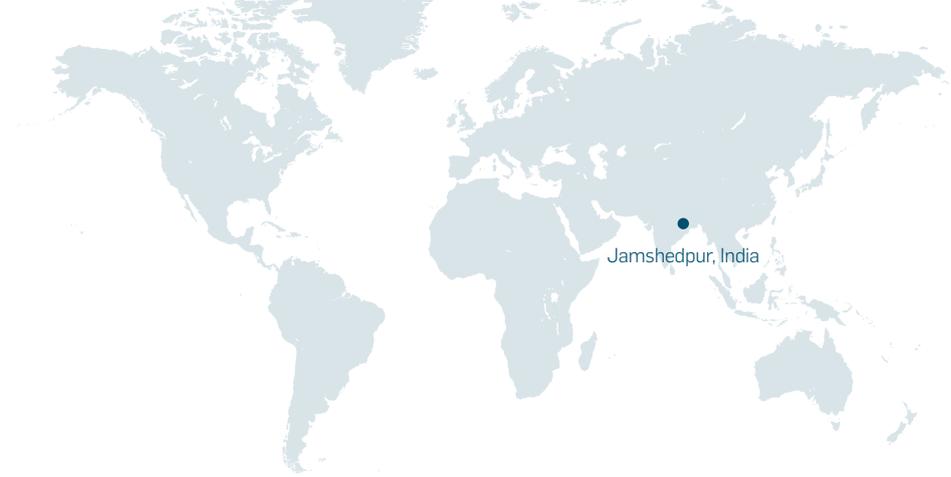


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Jamshedpur, India



Human Rights

Labour

Environment



Cross-sectoral
Collaboration

Innovating and city building in Jamshedpur

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In Jamshedpur in the Indian state of Jharkhand, cross-sector water, waste and education projects led by Tata Steel have sought to embed improved human rights and environmental goals in the city's development.

A sustainable city uses fewer resources, produces less waste and reduces levels of waste and pollution. Over the last 100 years, Jamshedpur has managed to improvise, innovate and implement many sustainable solutions to improve its citizens' quality of life. A signatory to the Global Compact since 2005, JUSCO, the urban service delivery arm of Tata Steel, has managed the city's municipal services, undertaking projects to improve the city's water and waste management, power distribution and education programs.

A heritage city

Five years before the first steel plant in India was set up by the Tatas at Jamshedpur, Tata Steel founder Jamsetji Tata described his dream "city of steel" to his eldest son, Dorab, in a letter in 1902: "Be sure to lay wide streets planted with shady trees, every other of a quick growing variety. Be sure that there is plenty of space for lawns and gardens. Reserve large areas for football, hockey and parks. Earmark areas for Hindu temples, Mohammedan [sic] mosques and Christian churches."

Between 1907, when Tata steel started operations in what was then a small village called Sakchi, and 1924, the Tatas built a city out of the jungle. In 1911, English journalist and editor of *Times of India*, Lovet Fraser, said of Jamshedpur: "I walked through street after street of commodious, one-storey brick houses, all well ventilated, all supplied with running water and lit by electric light." The town became a model of what modern India aspired to be.

Jamshedpur was the first modern industrial city of India planned before independence and has a history of over 100 years. New Delhi, Chandigarh and Pune followed many years later.

In 1919, Lord Chelmsford renamed Sakchi village 'Jamshedpur' and Kalimati Railway Station 'Tatanagar' to honour the visionary Jamsetji Tata.

Jamshedpur today

In a landmark land lease agreement between Tata Steel and the then Government of Bihar, now Jharkhand, Jamshedpur was handed over to Tata Steel for the company to set up a steel plant and other facilities such as housing for employees, schools, and hospitals. Tata Steel took responsibility to provide municipal and civic services to the citizens of Jamshedpur. The company set about extending civic amenities in adjoining private land areas around the leasehold. This initiative ensured inclusive growth together with community participation, resulting in the Tatas earning a generous amount of goodwill and loyalty from the stakeholders at large. Today, Jamshedpur citizens have become the city's brand ambassadors.

There is no municipal corporation or urban local body in Jamshedpur. The magisterial power lies with the local administration and police. Municipal services are managed by JUSCO, which is uniquely placed as India's first 'Comprehensive Urban Integrated Infrastructure Service Provider'. Jamshedpur's population is over one million and only 15 per cent of residents are employees and dependents of Tata Steel and other Tata Group companies.

Jamshedpur has one of the highest green covers (more than 27 per cent) of all cities in India, with over 30 community parks covering an area of more than 162 hectares. The largest, Jubilee Park, measures about 93 hectares. The Tata Zoological Society, which houses approximately 400 animals, birds and insects; about 60 of them endangered species, is situated within this park. In the last decade, Tata Steel has planted over 1.2 million trees in the town to improve air quality. The city is also blessed with four water bodies covering an area of over 12 hectares and the huge Dimna Reservoir, with a capacity of 35,000ML. The standard and quality of potable water, sewage treatment, power distribution and municipal and solid waste (MSW) management at Jamshedpur are considered to be benchmarks in India. As a result,

Jamshedpur has been consistently identified for its high standard of living.

Toward a sustainable city with integrated city management

Integrated city management in Jamshedpur is accomplished through JUSCO Sahyog Kendra (JSK), a one-stop shop providing all civic amenities and municipal services. JSK is an IT enabled unit that runs 24 hours a day, seven days a week and is responsible for the operation and maintenance of the entire city in terms of logging customer complaints and requests for JUSCO services. JSK is wirelessly connected to 20 service depots across the city, ensuring quick resolution of all customer complaints. In 2009, it was conferred the National Urban Water Award for Customer Care by the Honorable President of India.

Waste management, public health and horticulture services

Jamshedpur has an integrated MSW management strategy with environmental sanitation, disease prevention and control that aims to improve sanitation and promote healthy living amongst Jamshedpur citizens.

MSW is collected daily and approximately 800 people are engaged for maintenance activities, including sweeping, drain cleaning, carcass removal, cleaning urinals/public toilets and garbage removal. An efficient storm water drainage system takes care of rainwater. More than 43,000 houses are treated every year for mosquito breeding sites to restrict cases of malaria, dengue fever and other

communicable diseases. As a result, local cases of malaria and dengue are the lowest in the country. All children between the ages of one and three years are immunized.

Some of the public health solutions implemented in Jamshedpur over the years include:

- a compost plant to treat and convert municipal waste into compost for in-house use
- a biogas plant to convert food waste into energy for in-house use in TATA Steel's guest houses
- recycling and treatment of storm water for irrigation purposes
- the use of waste plastics as one of the ingredients in road construction
- a drip irrigation system at Jubilee Park – the lungs of the city – uses treated sewage water to reduce raw water consumption
- the development of green patches and tree planting to improve air quality
- a stray dog sterilization centre.

Water and wastewater services

Water management in the city is based on the river-to-river model, which means pumping water from the river, treating and converting it into clarified and potable water, collecting sewage, treating it and sending it back to the river. Average daily water consumption is 200 LCD (litres/capita/day). This is the highest in the country. Jamshedpur



Dimna Reservoir. Jamshedpur has one of the highest green covers of all cities in India, with over 30 community parks covering more than 162 hectares. The standard and quality of potable water, sewage treatment, power distribution and municipal and solid waste management are considered to be benchmarks for the country. Image: Tata Steel.

is now in the process of recycling and reusing sewage water by treating and converting it for irrigation and other purposes. The objective is to reduce the river water requirement and move towards achieving Zero Liquid Discharge within the city premises.

Robust process control measures are in place to ensure that potable water is consistently better than the Bureau of Indian Standards and World Health Organization norms. In Jamshedpur, people can drink water straight from the tap with over 90 per cent coverage through pipe networks. The water management department of JUSCO has a NABL-accredited water laboratory to ensure its potable water quality. Because of its consistent performance and quality control systems and processes, the department was conferred with the TPM Excellence Award by the Japan Institute of Plant Maintenance in 2008. The department also received the 5th Asia Water Management Award (2008) and the Commendation from Global Water Intelligence Award (2008).

While the age of the water network is increasing by the day, the company continues to provide uninterrupted service through continuous improvements. Water loss during distribution, or Non Revenue Water (NRW), is measured regularly to reduce/arrest leakages in the system. Jamshedpur's NRW is a benchmark in the country.

Sewage disposal is another important part of city management services and Jamshedpur benefits from complete network connection in its command area. The sewage network is connected to a state-of-the-art plant that treats sewerage to levels above Indian regulatory requirements and recycles it for irrigation purposes. Some of the water and wastewater solutions implemented over the years include:

- rain/surface water harvesting as an integral part of new construction guidelines. Implementation of these in existing residential and commercial establishments is in progress
- recharge pits to arrest stormwater for in-house use
- potable sewage treatment plants to convert sewage into reusable water for irrigation and other purposes
- a geographical information system and SCADA system for real-time data analysis and corrective measures
- the use of electromagnetic metres, insertion probes, leak detection equipment and pressure sustaining valves to reduce water loss.

Power distribution

Jamshedpur receives uninterrupted power throughout the year. Power consumption in the city is 800 units/capita/year as against the country average of 600 units/capita/year with power reliability of 99.9 per cent, availability of 99.97 per cent and street light availability of 99.2 per cent. Transmission and distribution loss (4.5 per cent) is a country benchmark and compares with Singapore at 3 per cent. More than 700 km of Low and High Tension network exists with over 60 per cent of these underground.

The power services department uses state-of-the-art technology and processes and proactively maintains and upgrades equipment to improve its efficiency. These

factors contribute to making Tata Power one of the country's most efficient power utilities. The Government of India's Ministry of Power has conferred the company with the national Gold Shield Award for two consecutive years for 'Outstanding Performance of Distribution Companies'.

Some of the solutions implemented over the years include:

- a SCADA System for real-time data analysis and corrective measures
- LED street lights
- cool roofs in place of conventional rooftops to reduce heat load in residential housing
- solar water heaters in company guest houses
- aerial bundled cables to reduce theft and loss
- use of new static electronic meters, three phase electronic static meters and energy meters with remote meter reading modems
- compact sub-stations.

Community development

Jamshedpur has been a successful smart city model for over 100 years. But to achieve sustainable and inclusive growth, effective modes of communication and active community participation are required. Tata Steel has several citizen initiatives in Jamshedpur to build a happy and engaged community, garner support and cooperation and help conserve key resources for the generations to come.

Community development initiatives are driven through the Urban Services Department and Tata Steel undertakes multiple initiatives to support health, education, livelihood and sports initiatives in the Jamshedpur community.

Vocational training

Tata Steel seeks to empower the community's male and female youth to improve their economic status through vocational training. Community youth have been able to undertake job-oriented training in various vocational trades – such as road safety, motor driving, business process outsourcing call centres and beauty – with reputable professional bodies so that young people receive training and subsequent employment. The company has also started creating an inventory of trades that are in demand to provide training either in-house or through professional bodies.

Training opportunities for women

Education is a key part of strategies to improve individual wellbeing and society's economic and social development. Providing educational opportunities for women has been an important part of India's national endeavour. Tata Steel works toward increasing community literacy levels for development and growth by supporting women's access to education through multiple means.

The midday meals scheme

Under this scheme, midday meals are provided to students in government schools in and around Jamshedpur to enhance enrolment, retention and attendance and improve nutritional levels among children. Approximately 469 schools in the two neighbouring districts of East Singhbhum and Seraikela–Kharsawan have been adopted, with a total student base of approximately 65,000. An estimated 50,000 children benefit from midday meals every day. Tata Steel has built a modern kitchen for this initiative, with logistics and food provided in partnership with the Government of Jharkhand.

Adult literacy

To address the issue of illiteracy amongst adults, Tata Steel provides an adult literacy program that focuses on improving functional literacy to approximately 3,000 women every year.

Mainstreaming students into formal schools

Early child education (*Bal Vikas*) is one of Tata Steel's focus areas, with the company aiming to provide basic preschool education to approximately 600 underprivileged children each year. These classes are designed to increase interest among the children and give them the opportunity to compete with others in the field of education.

Community building and sports

The 'Engage the Youth through Sports and Leadership' program is one initiative that helps build strong community bonds. The program provides infrastructural facilities for the community, assisting disabled people to get mainstream and government jobs, building awareness of social issues and organizing cultural events to establish family connections.

Jamshedpur has been a signatory to the Global Compact since 2005. It has been a participant at the Innovating level. Tata Steel is a Lead Global Compact corporate participant.



Early childhood education is a focus area for Tata Steel, which aims to provide preschool education to 600 underprivileged children in Jamshedpur. A midday meals scheme aims to enhance retention, enrolment, attendance and nutritional levels. Meals are provided to an estimated 50,000 children per day. Image: Tata Steel.