

Viviana Mall, Thane – Saves INR 10.5 million annually by going Solar



Quick Facts

- ▶ Location – Thane, Maharashtra
- ▶ Capacity – 1.5 MW
- ▶ Type of System – Spread across Metal and RCC roofs
- ▶ Annual reduction in energy bills – INR 10.5 million
- ▶ Carbon Dioxide abated – 1904 tons of CO₂ per annum
- ▶ Date of Commissioning – October 2018

Overview

Located in Thane, Maharashtra, Viviana is one of the busiest malls in Mumbai. Built by Sheth Developers, the 'Destination Mall' houses more than 250 leading brands and receives an average footfall of 35,000 on weekdays. It has one of the largest multiplexes in India, Cinepolis, with 14 mega-screens and 19 large anchor tenants. Consequentially, the electricity consumption of the mall is immense. With the vision of becoming a green energy powered facility, Viviana Mall partnered with CleanMax. Between 2016 and 2018, CleanMax successfully installed rooftop solar plants with a total capacity of 1.5 MW across 5 roofs. As a result of this, the mall observed savings of INR 10.5 million annually. The benefit of this saving was further translated to the mall tenants by reducing their Common Area Maintenance (CAM) charges. The ease and efficiency of plant performance in combination with the cost benefits acquired from the initial 1 MW plant commissioned in September 2016, an additional 500 kW was installed in October 2018. This reflects the trust that CleanMax has built with its clients through its exceptional service and consistent performance over the years.

Highlights

- Viviana Mall is India's first mall to have a rooftop solar plant at a single site surpassing a capacity of 1.5 MW.
- Initially, a capacity of 1089 kW (1 MW) was installed and following the excellent plant performance, an additional 89.6-kW capacity was added in September 2017. Furthermore, in October 2018, another 390-kW capacity of solar plant was installed.
- Since the city experiences heavy monsoons, a unique non-penetration system for 'Kalzip' roofs with standing seam structures was designed to make the roof leak-proof. However, this was done keeping in mind all the necessary safety guidelines.

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Challenges

- By adopting solar power, Viviana Mall saves INR 10.5 million annually on its electricity bill and this saving is passed on to its tenants through reduced Common Area Maintenance (CAM) charges. This initiative has greatly benefited all its stakeholders.
- As one of the busiest malls with an average footfall of 35,000 daily, 250 popular brands and 14 mega-screens, the process of unloading construction materials during open hours/day time was a major challenge. Therefore, the logistics for material supply at the site were planned and executed only during night time.
- As the solar plant was a rooftop installation positioned right above the 14-screened multiplex, Cinepolis, it was important to ensure that the movie experience was not hampered or disturbed in any way during construction. This meant planning a major part of the construction work during no-show hours, which further added to the pressure of timely project completion.
- Viviana Mall is a fully operational mall which made it difficult to shut down the premises during daytime for the purpose of integration or testing of the solar plants. Hence, the complete configuration of the solar plant with its existing power evacuation point was executed without any day time shutdown.
- The solar plant was installed using non-penetrating system across its 'Kalzip' roofing – metal roof structure with standing seam. This technique was a much needed because the city witnesses heavy monsoon rainfall every year.
- Working at height is always a challenge and Viviana Mall's roof is at a distance of 16 meters above the ground level with a high curvature of 15° – 20° inclination. Which is why extreme safety measures had to be taken to avoid any accidents during the process of installation, operation and maintenance. However, as most of the construction work was executed during the monsoon season, additional safety procedures were followed.

Solution

- To overcome the problem of vehicle movement and to avoid any disturbance in the activities/ footfall in the mall, most of the materials were unloaded at night between 10 pm to 5 am.
- The multiplex, Cinepolis, is housed immediately under the terrace of the mall and therefore any sound developed from the construction and installation activities on the roofs could resonate across the theatre. Hence, the entire procedure was executed only during the no-show hours.
- Power system shutdown during plant integration was planned at night between 12.30 am to 2 am. This ensured that the installation process did not interfere with the mall's regular operations.
- Since the roof is 16 meters high with an inclination of 15° – 20°, a safety-life line was installed even before the commencement of the installation work to ensure the utmost safety of the workers. As per the Environment, Health & Safety Initiative, safety guidelines have been installed across the rooftop plant to ensure that all the set safety standards are strictly adhered to at all times.
- To match the 'Kalzip' standing seam roof structure, special clamps were used for installation of the panels without penetrating into the roof. Additionally, for the RCC roof, portable structures were created without puncturing the roof. Thus, customized solutions were provided to help Viviana Mall meet its solar requirements.

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- The project was installed during the monsoon season, which means working at a height of 16 meters and on high curvature roofs made the construction process extremely risky. As a result, additional safety procedures were followed.
- On an average, the installation work could be executed only for 6 hours a day. Yet CleanMax managed to complete the initial 1 MW project in 80 days and the additional 500 kW in 24 days beating its own record time in project completion.
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About CleanMax



CleanMax is the sustainability partner for India's leading corporates. Headquartered in Mumbai, we are the largest provider of solar power to commercial and industrial customers.

The company develops projects on turnkey basis, providing cheaper-than-grid solar power without any upfront investment from its customers. With a highly skilled in-house team, CleanMax operates across India, Middle East and South East Asia.

Our track record with India's top companies has made CleanMax a preferred partner across sectors such as Automotive, Pharmaceuticals, Food & Beverages, Information Technology, Education and many other industries. We also partner with some of India's leading government institutions and top universities.

About Viviana Mall

Located at Thane Maharashtra, Viviana Mall is well known as a 'Destination Mall'. A part of Sheth Corp, the mall is built on a 13-acre plot and spread over an area of one million sq. ft, the mall has over 250 stores which comprise of 19 large and mini anchors brands and a megaplex with 14 screens. This is India's first visually impaired friendly mall.

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