

Client



Location

Pune (India)

Application

Air Purifier Automation

Problem

It is a well-known fact that construction activities are one of the major sources for bulk dust generation. Adding to this grave situation, cleaning and maintenance of the construction vehicles like cranes, JCBs etc. also contribute eminently to the dust production. These heavy vehicles carry dust particles with them to their maintenance centres. Hence, these areas are also exposed to excessive dust. Severe dust exposure can lead to chronic breathing and lung problems, and possibly heart disease in workers.

Devic Earth has designed Pure Skies purifier, an ambient air quality purifier to remove dust particles from the air. They installed a purifier at JCB's maintenance plants. Continuously operating the air purifier is expensive and hence, the real challenge was to assess the impact and accordingly switching on the Pure Skies purifier.

Oizom Solution

Oizom offered help to Devic Earth in automating the Pure Skies purifier's operation by installing Dustroid in the locations along with the purifiers.

Dustroid monitored dust particles ($PM_{2.5}$ & PM_{10}) and generated real-time data. It provides quantitative and qualitative analysis to distinguish different particle sizes with their concentration. It helped to set up a PM threshold limit beyond which the dust particles need to be removed from the plant. The data gathered by Dustroid can help in identifying the critical hour to switch on the air purifier.

Data-driven operation of purifiers can reduce the power consumption and ultimately cut down the operational cost.



Impact

Installing Dustroid has helped JCB maintenance plants to reduce the excess dust exposure. The combined effect of Dustroid and Pure Skies purifier can eliminate the dust pollution from the maintenance areas to a great extent. The objective was achieved by hitting the correct time to put the purifier in use to optimize the purification process. It substantially reduced the operational cost of the air purifier by switching it on only when required. Reduction in dust level also improved the health conditions of the workers.

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