Southeast Treatment Plant Modernization

San Francisco, CA, USA (2023)

PRODUCT USED:

Maturix® Smart Concrete® Sensors

CONTRACTOR:

The Walsh Group Ltd.

BACKGROUND

While the infrastructure throughout the United States of America has helped cities thrive for years, it is also now quite old. In fact, a large portion of this infrastructure is at least a century old. And with age comes a need for repairs and even rebuilds. Without that modernization, structures can fall into disarray, losing their ability to be useful to the communities that need them.

One such example of this is San Francisco's Southeast Treatment Plant. Built in 1952 and now over 60-years-old, the plant has been critical for treating around 80% of San Francisco's wastewater. However, it has also been encountering issues with operating efficiently. For instance, its headworks facility was unable to effectively remove debris and grit from the wastewater stream, reducing the amount of protection downstream equipment received and the required odor control.

Realizing they needed to upgrade and modernize the plant, the San Francisco Public Utilities Commission created a joint venture with The Walsh Group Ltd. and Sundt. As part of this collaboration, they planned to construct a new headworks facility, modify the plant's Bruce Flynn Pump Station, and construct a new odor control structure.

However, this plan involved challenging logistics that required the companies to determine how they could maintain efficiency and preserve their high work quality at the same time. The Walsh Group Ltd. in particular chose to focus on how they could do that for their structural concrete construction as that would be their main work for at least two years.

SOLUTION

The Walsh Group Ltd. knew that they'd have a lot of wall placements to do for this project. They also knew their previous concrete monitoring process, which involved crushing concrete test cylinders, would take up more time than they'd like. If they kept that process, they'd have to rely solely on testing concrete samples to determine if they could remove the formwork for each placement. And if they wanted to remove that formwork early, they'd have to test even more samples, which can be quite expensive and labor-intensive to do.

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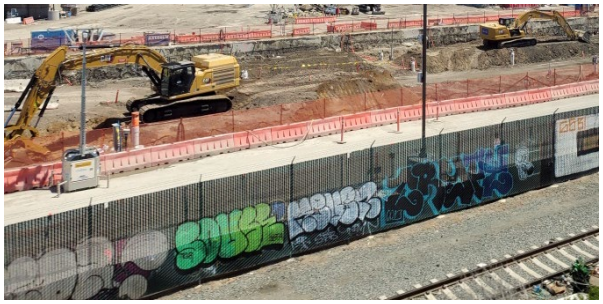

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From there, they'd have to transport the samples to the laboratory, wait for the break results from those samples to see if the concrete reached its minimum strength, and wait to get those results from the laboratory. That can mean waiting during work hours, making the work process inefficient as none of the concrete formwork can be stripped without that information.

Luckily, they found a solution to this: Maturix Smart Concrete Sensors. These devices allow them to get a readout of their concrete placements' compressive strength in real time. All that was needed was for them to connect the Maturix®'s reusable transmitter to a type K thermocouple wire embedded in the concrete. From there, they'd receive compressive strength data through the Maturix platform and know exactly the amount of strength the concrete had gained already and when they could strip formwork. There's no waiting involved, and they can even get temperature data at the same time as their strength data. That allowed The Walsh Group Ltd. to realize they were working with a concrete mix that could gain relatively high internal temperatures quickly. This insight gave them further knowledge about how their concrete mix was performing and opened up opportunities to adjust the mix better according to their needs.

On top of that, Maturix also helped them streamline their communication for the whole process. It enabled them to set up notifications through the superintendent's cell phone to notify them when each concrete placement had reached the desired compressive strength. That way, before starting the work on-site every morning, the superintendent knew which placements were ready to strip and could direct workers to where those placements were.

In short, they created a much more efficient work process with Maturix. And they'd be able to do this exact same process for future projects as Maturix Sensors are reusable, only needing a thermocouple replacement after each use.

Remarking on all these benefits, The Walsh Group Ltd.'s Superintendent Tanner Santo had this to say about Maturix:

> *It's streamlined. It's easy. As far as cost-effective, it's not even close compared to the competitors out there with the one-time sensors. And the labor you save in collecting data is also a huge cost saving as well. So we've just been very happy with what these sensors have provided for us here.*

While The Walsh Group Ltd.'s work won't be complete until 2023, it's clear that Maturix has already given the company a good head start in balancing efficiency with quality work.

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