TeleBrick

5G enabled IoT camera for construction recycling waste management





Problem

Solution

A LEED certified building requires the separation of construction recycling waste. Typically, a construction project would utilize an average of 400 truck-scale waste containers. When a dedicated container becomes contaminated, recycling services bill it as commingled waste at \$1,500. Conversely, they reimburse \$2,000 for pure recycling dumpsters. Foremen, who are responsible for waste management, monitor the purity of the dumpsters and dispatch a truck to the site daily. However, this method may lead to inaccuracies in tracking and potential workflow bottlenecks if the dumpsters are not removed at the appropriate time.

Telebrick uses Groundlight AI to analyze imageries from an on-site IOT camera mounted above the waste bin. Foremen can use this to address contamination at the source, pre-plan contamination management, incentive compliance, and schedule waste pick-ups efficiently.

Our app helps construction foremen manage their waste by alerting them through notifications when contamination occured with improper waste disposals and when the bin is full.





*loT Camera

*System

*Contamination Monitor

*Notification

*Waste Stream Separation for LEED Certification







*HW Architecture

*SW Architecture

*Dumpster Monitor



Process

*Concrete Dumpster

- \$1,500 + \$2,000 with Comingled with Recycling Dumpster

400 = \$1.4 mil \$3,500 Benefit/ Maximum Dumpsters Project Benefit/Bin (In average)



Explore	Define	Design	Deliver
Secondary Research User Interviews Contextual inquiries	Challenge Area Jobs to be done User Journey	User Flows Usability Testings UI Design	PRD Functional POC

Our product development approach involved several key steps: exploration, during which we identified problem areas within the construction domain where 5G technology could have the greatest impact. We narrowed down the scope of the challenge area through secondary research and understood the problems by conducting user research with five users; define, during which we specified challenge areas and design principles our team could address within given time and capacity constraints; design, involving the creation of a product that effectively addressed identified issues and met user needs; and continuous iteration, refining the solution based on feedback from users and stakeholders. At each stage, we carefully considered user data to inform our decisions.

**Recycling Benefits*

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