

# Optimizing material recovery through LiDAR-based waste monitoring

## OVERVIEW

Cireco (Scotland) LLP, a leading company for complete resource management, works with volumetric measuring specialist Quvo Limited in deploying Blickfeld LiDAR sensors for stockpile monitoring. The automated volume monitoring solution provides the company with accurate data on the amount of waste stored in bunkers before sorting. The real-time data not only improves the utilization of the materials recovery facility but also provides the accounting and the logistics departments with a reliable source of data to more easily comply with material storage regulations for safety and risk reasons.

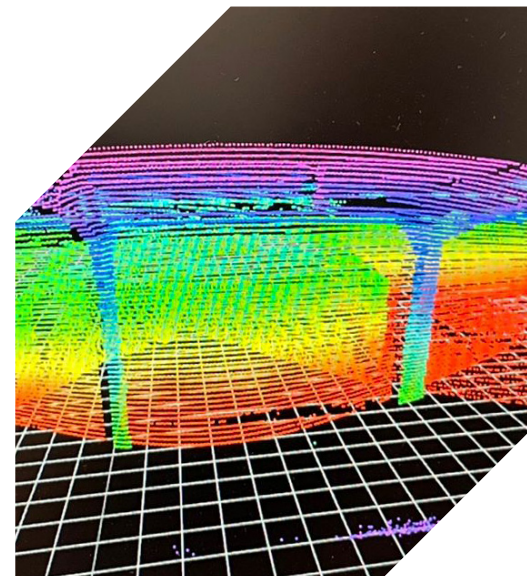
## CHALLENGE

Until now, Cireco relied primarily on the weighbridge data for inventory monitoring, recording when the materials were delivered and dispatched. This data was combined with the experience of the experts to plan and control the capacity utilization of the sorting machine. The current stock in the storage boxes was visually estimated for this purpose. Due to the frequent delivery and movement of waste between the storage boxes and the sorting machine, the piles were a constantly moving entity. Hence, deviations in the estimations of the actual quantity available for sorting were unavoidable. As a result, the total storage and plant capacity could not always be utilized fully.

Therefore, the goal was to enable a reliable on-demand inventory monitoring of the materials through a digital solution to optimize the planning and utilization of the material recovery plant and the associated processes, such as logistics.

## VORTEILE

- Accurate, real-time inventory capture
- Flexible installation
- Coverage of large areas
- Easy registration of point clouds from multiple devices



## SOLUTION

Three Blickfeld Cube 1 LiDAR sensors were mounted on the ceiling to cover the storage bunkers and detect the stored waste. Due to the large field of view, three devices were sufficient to cover the vast area.

The laser-based sensors continuously generate a live stream of 3D data. The associated perception software uses this data to calculate the volume of material in the respective boxes down to the ton. Any change in the inventory becomes immediately visible. The data can also be accessed remotely, making on-site employee estimation obsolete.

Thanks to Blickfeld's volume monitoring solution, the waste company now has on-demand access to a reliable data source for inventory management. The accurate data enables Cireco to better forecast the resources in each bunker and leverage more storage capacity, leading to improved planning, utilization, and control of the material recovery facility.



**“We were looking for a solution to provide continuous and accurate data on our waste stockpile levels to optimize our processing efficiency. With the Blickfeld volume monitoring solution, we have found one solution that helps us to solve multiple issues. It not only enables us to better plan the throughput of material but also optimize internal logistics and accounting accuracy.”**

Robin Baird, CEO of Cireco (Scotland) LLP

## OUTLOOK

In addition to the current installation at the materials recovery facility, further sensors are currently being installed at a second site. By expanding the sensor system, Cireco will be able to record inventory at multiple locations on demand and can thus further improve efficiency and accounting accuracy across sites.