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DESIGN, SALES AND SERVICE FOR BOLLEGRAAF, LUBO AND TOMRA

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Operating the First RoBB-ACQ: A Q&A with Andrea Rodriguez-Piñero, Director of Recycling at FCC Environmental Services

When shopping for a robot, why did you choose the Bollegraaf RoBB-AQC model?
Andrea Rodriguez-Piñero: FCC Environmental has been committed to innovation in technology as an essential tool for consolidating and developing our position in the communities where we operate, and often being ahead of the game. We are running worldwide projects with different technologies that help our MRFs recover more materials and thus diverting more from landfill. At our U.S. branch we have been very happy with the quality of the Bollegraaf equipment that we installed in our Dallas and Houston facilities over the last six years. In regard to the robot, the technology that the RoBB-AQC provides is based in NIR which is very accurate at identifying materials, and that's very important for us as MRF operators. Also, all equipment bought through Van Dyk comes with the full parts and service support of Van Dyk. Their support team responds immediately to any issue we have. And they have some very experienced technicians that we have gotten to know – Roberto Hidalgo, Josh Robbins, Tom Davis just to name a few. So that level of trust was certainly a big factor.

Is there anything about RoBB-AQC that stood out to you compared to competitor models?
Rodriguez-Piñero: Our RoBB-AQC is equipped with TOMRA AS5 recognition. TOMRA is a leader in sensor-based sorting, and this is their latest recognition software. Our RoBB has multiple sensors for identifying objects, including: NIR, camera, laser, and metal detection. The ability to integrate TOMRA's high resolution NIR stood out to us. NIR has unique capabilities in the recognition world. Two bottles from a packaging manufacturer can be identical in shape, color, and label but made with two different polymers. Only NIR can determine 100% which type of polymer each of those bottles are. Between our two Texas facilities, we have over 10 TOMRA optical sorters installed, and we have a comfort level with their capabilities. Our operators know how to maintain TOMRA machinery, and our technicians know how to trouble shoot them.

Another advantage of the RoBB-AQC is that it works with one arm on large width conveyors. This is important because it can be installed easily in the plant without making any conveyor changes. Safety always influences our decisions at FCC. The RoBB is installed with a total enclosure so no one can access the arm of the robot while the machine is working. Bollegraaf designs their equipment keeping the safety of the end user in mind, and this was a very important factor in our decision making.

Are you satisfied with the construction quality of RoBB-AQC and the installation process?
Rodriguez-Piñero: The Van Dyk installation team is very thorough with close attention to detail. The mechanical installation of RoBB-AQC was very smooth because of Bollegraaf's expert design team. They design and manufacture their equipment to very precise custom measurements, and when RoBB showed up, it fit perfectly on top of the feed conveyor. The chutes and feed hoppers for RoBB's recovered material are also well-designed with real MRF usage in mind. The feed hoppers are in just the

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right place to accept RoBB's throws and are sloped in such a way so that throws don't bounce out. The chutes flow into the bunkers in such a way that products are directed away from the chute to prevent clogging. You can really tell the equipment has come from an experienced system and retrofit builder.

How is RoBB-AQC performing?
Rodriguez-Piñero: The purity of what RoBB recovers is perfect. It picks material and places it into the correct chute at a high accuracy rate. RoBB works very well when it is fed consistently and the rest of the plant is functioning properly. We are absolutely happy with the performance! The TOMRA high resolution sensors, the gripper, and the proper design and placement of the chutes all play a role in the success of the purity. And it is reliable. We can get a consistently high level of performance from RoBB throughout each shift, day after day.

When deciding where to place RoBB-AQC, why did you choose to apply it where you did?
Rodriguez-Piñero: We considered placing RoBB in several spots in the Houston MRF. One was at the end of the container line sorting HDPE-natural from HDPE-color. Another was as a "last chance" sorter, rescuing value out of the end of line residue.
In the end, we choose the mixed paper QC line and made RoBB's two sorting tasks be:

1. Recovering outthrows (OCC) from the mixed paper. We get a higher value for the OCC when selling it as OCC rather than as part of the mixed paper bales.
2. Recovering prohibitives (bottles, cans, film) from the paper. This helps us improve mixed paper quality while recovering high value Aluminum and PET from paper.

What do you see the future looking like at a waste processing facility? Do you see the equipment and available technology changing significantly in the next 5-10 years, and how?
Rodriguez-Piñero: I see future MRFs having more and more intelligence. I see more predictable maintenance features on SCADA and on control systems for optical sorters. I see robots that have multiple recipes allowing us to quickly change settings as our inbound material changes. I see flexible optical sorters that can eject OCC when we run residential volumes and then be reprogrammed to eject white paper when we run commercial/school volumes.

Would you consider adding another robot? If so, where do you think you would apply it to most benefit your system?
Rodriguez-Piñero: We've observed so far that the RoBB works very well sorting 2D materials. So, I would consider adding another one on the quality control lines for any 2D products.

For more information on the RoBB-AQC, please contact:

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