



# Driving Robotics in Large Logistics Centres

## How Limcamar achieved success with autonomous cleaning machines

Large logistics environments require fast, reliable, and consistently high standards of cleaning to keep operations moving smoothly. To meet growing performance expectations while navigating workforce and sustainability pressures, Limcamar partnered with Tennant to introduce autonomous robotic solutions across its sites, transforming the way large-scale facilities are cleaned from day one.

### **BACKGROUND: RAISING THE BAR FOR LOGISTICS CLEANING AT SCALE**

Large logistics hubs operate at high velocity and across vast surfaces, where consistent cleaning is mission-critical for safety, image, and smooth operations. To meet rising expectations on quality and sustainability—while dealing with workforce constraints—Limcamar chose to modernise its service model with autonomous floorcare technology from Tennant.

### **THE CHALLENGE: CONSISTENCY, TRACEABILITY, AND ALWAYS-ON OPERATIONS**

In complex, high-traffic sites, Limcamar needed to maintain consistently high cleaning standards, document exactly what was cleaned and where, and ensure continuity despite staff turnover or absences.

Their core pain points were:

- Consistent performance: delivering the same high standard of cleaning across all areas, not only during peak periods.
- Full traceability: having a clear, verifiable record of what was cleaned and its precise location.
- Operational continuity: ensuring reliable, high-quality cleaning regardless of workforce changes or temporary absences.



### **CHOOSING THE RIGHT SOLUTION: WHY TENNANT'S AMR FIT THE BRIEF**

To deliver high-quality, sustainable cleaning while investing in its people, Limcamar adopted Tennant's autonomous AMR scrubbers, deploying the industrial T16AMR within a hybrid fleet that combines autonomous and conventional machines. This approach enabled automated routes, site-specific mapping, and digital capture of all cleaning activity—building a reliable, data-driven cleaning model.

### **ROLL-OUT: A HYBRID FLEET BUILT AROUND THE SITE**

Limcamar structured operations by sector:

- Large, continuous areas were assigned to autonomous routes for predictable coverage.
- Smaller or precision-critical zones remained with traditional machines for fine control.

All machines fed usage data into a central portal, giving supervisors a live, verifiable view of cleaning progress.



**RESULTS YOU CAN SEE: EFFICIENCY, QUALITY AND SUSTAINABILITY**

Limcamar’s programme has delivered measurable improvements in both output and control:

- ~2,000 m<sup>2</sup>/hour average productivity per AMR route.
- >80% of floorcare work completed autonomously, enabling stable, repeatable performance.
- 89,655 m<sup>2</sup> cleaned in the last 30 days of the referenced reporting window.\*
- Significant reductions in water and chemical use thanks to Tennant’s ec-H<sub>2</sub>O NanoClean™ technology, supporting environmental goals.

**MAXIMISING HUMAN POTENTIAL: FROM REPETITION TO HIGHER-VALUE WORK**

Autonomy freed the team from repetitive floorcare, creating time for tasks requiring judgment and care—such as targeted detailing, supervision and quality checks. On average, ~4 hours per operator per day were reallocated to higher-value work, contributing to upskilling and broader responsibilities across the team.



**2,000 M<sup>2</sup>/HOUR AVERAGE PRODUCTIVITY**



**>80% OF WORK PERFORMED AUTONOMOUSLY**



**89,655 M<sup>2</sup> CLEANED IN THE LAST 30 DAYS\***



**SIGNIFICANT REDUCTION IN WATER AND CHEMICALS WITH EC H<sub>2</sub>O NANOCLEAN™**



**100% DIGITAL TRACEABILITY OF CLEANING OPERATIONS**



**≈ 4 HOURS/DAY FREED PER OPERATOR FOR HIGHER VALUE TASKS**

**THE VALUE OF THE TENNANT-LIMCAMAR PARTNERSHIP**

Through a unified mixed-fleet model delivered by Tennant, Limcamar has simplified day-to-day operation, strengthened service reliability, and improved response times across its sites. Tennant contributes proven, safe, and globally deployed AMR technology—with more than 12,000 robotic scrubbers in operation worldwide—while Limcamar brings nearly four decades of expertise in service management, training, and adaptation to complex logistics settings. Together, these capabilities have enabled significant optimisation in maintenance, efficiency, and cleaning quality, without compromising operational continuity.

And this is only the start. Robotics is now a strategic pillar in Limcamar’s service offering, with plans to expand the AMR fleet and integrate additional automated solutions. The success of this programme shows how combining advanced technology, sustainable practices, and workforce development strengthens a cleaning model that is reliable, safe, and ready for the demands of today’s logistics operations—and those of the future.

**CONCLUSION**

By combining Tennant’s autonomous technology with a hybrid-fleet strategy and robust training, Limcamar has built a scalable, repeatable cleaning model for large logistics centres, delivering consistent quality, better resource allocation, and tangible sustainability gains. The programme is designed to expand with new AMR models and routes, strengthening service reliability and readiness for future logistics demands.

\*Reporting period: 25 December 2025 to 25 January 2026.