

Autonomous Litter Collection — The Next Chapter After Trombia

01 — THE CHALLENGE

Helsinki proved that autonomous cleaning robots work in real urban conditions when Trombia's electric sweeper was piloted in Jätkäsaari in 2021 — a collaboration between Forum Virium Helsinki and Stara that launched Trombia into international markets. But sweeping is only half the problem. Individual litter items — cigarette butts, bottles, wrappers, food containers — scattered across parks, waterfront promenades, and pedestrian zones still require manual collection by Stara's 1,200+ workforce. As Helsinki pursues Carbon-neutral 2035, the last major outdoor maintenance task untouched by automation is street-level litter picking.

02 — OUR SOLUTION

CleanWalker is the world's first commercial quadrupedal litter-collecting robot — built to complement sweepers like Trombia, not replace them:

- **AI-powered detection** across 20+ litter categories (25,000+ real-world images)
- **Four-legged locomotion** navigates grass, gravel, cobblestones, curbs, and mixed-terrain park paths
- **Nordic-weather operation** — IP65 weatherproof for year-round Helsinki conditions including snow and sub-zero
- **Quiet operation** (<55 dB) suitable for residential areas and waterfront paths
- **Data integration** — litter heatmaps and waste composition data for Stara operations

Collected waste is bagged for existing Stara collection routes — no new infrastructure required.

03 — PILOT PROPOSAL — 4 UNITS, 6 MONTHS

Deployment zones: Jätkäsaari / Hietaranta (Trombia's pilot area), Esplanadi / Kaivopuisto, and Kalasatama

KPI	TARGET
Litter items collected per unit/day	Tracked & reported weekly
Coverage per shift	2,000–4,000 m ² /hr per unit
System uptime in Nordic conditions	>90%
Terrain types navigated	Grass, gravel, cobblestone, paved, curbs
Cleanliness score improvement	Pre/post measurement in pilot zones

04 — VALUE PROPOSITION**1.5-2.5**

FTE OFFSET PER UNIT

40-60%

COST REDUCTION AT SCALE

RaaS

ROBOT-AS-A-SERVICE MODEL

Zero

HARDWARE OWNERSHIP REQUIRED

Forum Virium helped Trombia go from Helsinki pilot to global markets. CleanWalker is ready for the same journey — starting where Trombia left off, addressing the complementary problem of individual litter collection on complex terrain. Finland's permissive robot regulations and Helsinki's smart city brand make this the ideal European launchpad.

Want to discuss the Urban Mobility Future? [Contact us](#) or [Book a demo](#) with Maurice Bos Founder & CEO

cleanwalkerrobotics.com | walker@cleanwalkerrobotics.com | MB Software Studio LLC

walker@cleanwalkerrobotics.com | cleanwalkerrobotics.com

cleanwalkerrobotics.com/pilot