

# THE HELSINKI SOLUTION

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Helsinki, the capital of Finland, is leading the way in sustainable urban mobility and **last-mile logistics**. With a target of achieving carbon neutrality by 2030, innovative solutions like autonomous delivery vehicles and parcel locker systems are transforming the city's logistics landscape.

With over 660,000 inhabitants, the Capital of Finland, Helsinki, is targeting carbon neutrality by 2030. Recognised as the most prepared city for the future of urban mobility by the Oliver Wyman Forum, Helsinki leads in innovative urban transport solutions. This success is fuelled by continuous research and development in smart mobility technologies, always prioritising the well-being and happiness of its residents.

However, achieving efficient urban life depends on addressing last-mile logistics, which poses a significant challenge to Helsinki's carbon neutrality goals. The city has implemented numerous solutions to tackle this issue, with parcel locker systems standing out as particularly effective. Innovations like outdoor locker systems, which include features such as audiovisual guidance and the possibility to opt for lower lockers for those with special needs, have notably enhanced service quality for residents.

As e-commerce thrives and parcel locker systems have become the preferred delivery method for many residents, more traditional delivery methods still contribute to congestion, emissions, and safety concerns, indicating that progress is further needed to fully optimise urban logistics and achieve Helsinki's ambitious sustainability targets.

## Delivering the 'tools' for change

Forum Virium Helsinki, a non-profit innovation company owned by the city of Helsinki, plays a crucial role in decarbonising conventional last-mile logistics and piloting innovative solutions in the urban environment. Overall, Forum Virium Helsinki is managing a wide range of projects contributing to the shared vision of making Helsinki the most functional city in the world, and as a neutral facilitator, it fosters collaboration between various stakeholders, including residents, businesses, academic institutes, other cities, and the public sector. This collaboration is evident, especially in the URBANE project, funded by the EU Horizon program, which focuses on demonstrating innovative solutions for last-mile deliveries while prioritising sustainability and efficiency.

The URBANE project uses the Helsinki Living Lab as one of its testing grounds, where Forum Virium Helsinki, together with LMAD and DB Schenker, have conducted two successful pilot sprints, each showcasing distinct use cases.

The first sprint focused on B2B deliveries, utilising an autonomous delivery vehicle (ADV) manufactured by TwinswHeel and operated by LMAD, along with a cargo bike provided by DB Schenker. These vehicles delivered tools directly to construction sites from the Würth Center Sörnäinen, an external partner in the first pilot sprint.

This initiative aimed at eliminating unnecessary trips for construction site workers while enhancing tool delivery services — moreover, it became evident that the construction site workers were unwilling to give up their break to pick up the necessary tools themselves instead of having them directly delivered to the site by the ADV.

## User-centric innovations ahead

mobile locker pilot, a modular parcel locker system was integrated into the ADV, allowing residents to conveniently pick up e-commerce parcels from a predetermined location during a one-hour time slot of their choice.

Seasonal changes in Finland provided an opportunity to test the ADV's functionalities under extreme winter conditions. While cold air and snow piles in random locations posed challenges to both sensors and route optimisation, light snowfall had less impact on the Lidar cameras than anticipated. Moreover, the integrated parcel locker system, featuring a pin-code mechanism for parcel retrieval, received positive feedback from users, and the ADV's design, named HeRo (Helsinki Robot), was praised both locally and in international media for its user-friendly appearance.

## Looking to the future

The upcoming third pilot sprint, scheduled for Summer 2024 in the districts of Ruoholahti and Jätkäsaari, will showcase the benefits of consolidating logistics operations within shopping centre premises. This pilot — done in collaboration with the EU Horizon-funded DISCO project, which brings together a wide range of service providers, such as Rolan, A2B, and more — aims to create a neutral platform for various logistics operators to collaborate and optimise last-mile deliveries.

**Satu Reijonen at the Autonomy  
Mobility World Expo in 2024**

*Renske Martijnse-Hartikka*





The pilot's vision is to facilitate e-commerce parcel deliveries using ADVs and cargo bikes from a central location, thereby reducing the need for vans and trucks in the city centre. Additionally, residents will have the opportunity to conveniently drop off parcels for further shipment.

POLIS once again invited Reijonen to discuss the management of last-mile logistics in Helsinki at the [Autonomy Mobility World Expo](#) held in Paris in March 2024. Her key message emphasised that the shift towards sustainable last-mile deliveries is inevitable and requires multidisciplinary collaboration. While some regulations are most likely necessary to facilitate this change, they must support rather than hinder innovative solutions. This means that, above all, regulations should support wise land use for sustainable urban logistics and address the responsibilities, safety concerns, and movements of autonomous vehicles in the urban environment.

Additionally, residents play a key role, too: they do so by choosing environmentally friendly logistics services, even if these might be more expensive during the piloting phase. Therefore, achieving a financially sustainable solution requires meeting user needs and delivering value that surpasses existing alternatives, ultimately reshaping consumer behaviour over time.

## Leading by example

Raising public awareness about innovative delivery solutions, such as autonomous delivery vehicles, is critical for widespread adoption. Furthermore, the social impact of ADVs, including aspects of safety, inclusivity, accessibility, and public acceptance, should be further measured, monitored, and adjusted using key performance indicators (KPIs) — the first set of KPIs used in URBANE's Helsinki

operations was developed in collaboration with students from the Hanken School of Economics during their Corporate Responsibility project course, exemplifying the multidisciplinary collaboration facilitated by Forum Virium Helsinki to ensure that the City of Helsinki continues to be one of the best cities to live in.

Ultimately, Helsinki's commitment to innovation and sustainability positions it as a global leader in urban logistics. By embracing cutting-edge technologies and fostering collaboration across sectors, the city not only aims to decarbonise last-mile delivery, but also to enhance the overall quality of life of its residents. As Helsinki continues to pioneer these advancements, it sets a powerful example for cities worldwide, showcasing how sustainable urban living and efficient logistics can go hand in hand.

***HeRo delivering B2C e-commercial parcels during the winter pilot***

*Vesa Laitinen*

