

# **PILOT PROJECTS: LEARNING BY DOING**

# From theory into practice

Fact sheets





## A smart parcel locker network - City of Mechelen



## CONCEPT

Parcel lockers contribute to sustainably organizing urban logistics: they avoid failed home deliveries, they make consolidation possible, they avoid unnecessary vehicle movements, driven kilometers and CO2-emission. A part of the logistic streams in the inner city of Mechelen concerns B2C parcels. In order to handle these parcels in a sustainable way, the city joined forces with national courier server Bpost. First, three big parcel lockers were installed. Afterwards, over 50 small parcel lockers followed. This sucessful concept is being duplicated in different cities in Belgium as we speak.

What: more than 50 small parcel lockers, spread out over the Mechelen inner city (and the vilages surrounding the inner city). Strategically located at a distance of 400m from each other, the lockers encourage picking up or dropping off parcels on foot or by bike. In addition, Bpost engages itself to supply and empty all parcel lockers with zero emission vehicles (bike trailers, e-vans, light electric vehicles). From their city hub just outside the city, parcels are collected and strategically distributed to the different parcel lockers.

The small parcel lockers work on batteries. In addition to the small lockers, 3 big lockers (connected to the grid) have been functioning for a few years.

## **PROCESS AND PROGRESS**

Experiments with lockers started in 2018. The first locker was a Bringme type. Then a Cubee locker followed (bpost was share holder of Cubee at the time). Negotiations with bpost started in the fall of 2019, in parallel with drafting the text for the covenant for zero emission logistics. Together with logistic players and interest groups, Mechelen aims for zero emission urban logistics in the inner city by 2030. Bpost signed the covenant as well and was involved in the process. They saw an ideal partnership with Mechelen to test out a parcel locker system concept.

In the spring of 2020, different locations throughout the city were scouted. The city approved installing the lockers on public domain stating that their use is in the interest of the citizens and of a general interest that justifies taking up the needed space. Also, by choosing for public domain the locker is reachable 24/7. Advice for the exact location of a locker was asked from different city departments: monuments, police, mobility, public domain... When none of them had any arguments, the location was debated during the board of aldermen and finally approved.





Bpost is a national parcel delivery company in Belgium. It has the largest market share in Belgium and has locations all over the country.

In this project in Mechelen, Bpost has won a tender procedure. Bpost was selected to place its lockers on different locations throughout Mechelen.



## **LESSONS LEARNED**

#### Advice #1.

Write out a tender to choose the right party. Make sure the tender mentions the lockers should be an open system, available to use by different logistic players.

#### Advice #2.

Strategically locate these lockers: accessible on foot or by bike, 24/7 reachable in a safe environment with enough passing through.

#### Advice #3.

Only with enough lockers, a city can encourage its inhabitants to pick up or drop off parcels in a sustainable way.

#### Advice #4.

Involve all relevant stakeholders to guarantee broad support.

#### RESULTS

The use of the lockers, both the big and the small lockers, increases steadily. Since the start of the project, the existing lockers perform better every year, and new lockers were added to be able to handle the volumes. During Black Friday and Christmas season, temporary lockers are installed next to existing lockers.

Between January 2022 and the end of October 2022, 72.617 pick ups and drop offs were registered in the small parcel lockers.





# Consolidated ZE deliveries for 1 shopping street in reconstruction - City of Mechelen



## CONCEPT

A popular shopping street in the heart of Mechelen was being reconstructed. The intended result was a pleasant shopping experience with climate adaptation and plenty of green. The street will become a carfree zone with timeframes for deliveries.

The final design looked promising, but the nuisance for retailers would be considerable. The works would last for 6 months. Couriers wouldn't be able to drive in front of the shop to unload their deliveries and would have to stop at the borders of the ongoing construction works. Even cargo bikes would have difficulties passing through during some weeks when specific construction works demand all the available space.

Thanks to a cooperation with third party BD Logistics, Mechelen was able to offer a logistic alternative to its retailers. Retailers were encouraged to change their shipping address to the city hub of BD Logistics in the North of Mechelen. BD Logistics would bundle the goods and deliver them with zero emission vehicles. This resulted in less vehicle movements and was an appetizer for retailers to test consolidating their goods at the border of the city.

## **PROCESS AND PROGRESS**

Different preparatory meetings took place in the year preceding the works. The meetings were held online to inform the impacted retailers about the latest updates (construction details, deviations for cars, different phases of the works etc). These meetings, hosted by colleagues from public domain, economic affairs, construction works and the contractor himself, were sometimes open for the mobility colleagues as well.

Here, we presented our idea to offer a logistic alternative. Together with the retailers, we brainstormed on how this alternative should look like: lockers at the border of the reconstruction works? Or a dedicated cargo bike to use between the parked van/truck and the shop? Or a microhub next to the reconstruction site with a unique code for each supplier and each retailer?

After several meetings, the logistic alternative took form: we wrote out a tender to appoint a third party that could both receive the goods of shop keepers in a hub as well as deliver them to the shop keepers in a zero emission way.

Watch the video: <a href="https://youtu.be/dertPlGkjFg">https://youtu.be/dertPlGkjFg</a>





Logistic company, based in Mechelen (among others)





#### **LESSONS LEARNED**

#### Advice #1.

Facilitate a good connection between the contractor of the works and the third party appointed. By doing so, the third party has privileged access to the construction site.

#### Advice #2.

Try to emphasize the 'what's in it for me' to the retailers. They are by nature reluctant. Therefore, make the process to temporarily change the delivery process with as little hurdles as possible.

#### Advice #3.

Regularly check for frustrations or other stumble blocks that could hinder a smooth continuation.

#### Advice #4.

Foresee a dedicated loading and unloading zone for the appointed party.

#### **RESULTS**

- 12 retailers made use of the services of BD Logistics.
- There were 172 deliveries done and 227 collections of paper and carton were performed.
- 399 deliveries and pick ups were consolidated during that time, saving 255 rides into the city.
- In total, 100kg CO2 emissions were saved.



# Installation of a city hub + courier service – shop owner approach - City of Mechelen



## CONCEPT

Mechelen aims for 4 goals when it comes to handling logistics streams: less vehicle movements, less driven kilometers, less CO2 emissions and therefore better air quality. All pilots keep these goals in mind. The installation of a city hub with courier service served these goals.

In cooperation with the ECOkoeriers, Mechelen's local bike courier, the city set up a pilot to test the potential of a city hub with added courier service. ECOkoeriers already operated from a strategically located city hub in the Southern part of Mechelen. The pilot was called Logistics unburdening of the shop owner in the city center.

The city approached as many inner city retailers as possible with the following proposition: change your delivery address to the city hub of ECOkoeriers, have your goods delivered there and ask ECOkoeriers to come and drop off the parcels in one go. This saves time (only one delivery at an agreed time instead of different deliveries at unexpected times) and comes at no additional cost.

## **PROCESS AND PROGRESS**

When trying to convince retailers of the added value of this trial – both for them as well as for the society – an often heard reply was: this doesn't interest us too much. Personal meetings were set up, follow up meetings were organized,

extra information moments were scheduled, but nothing changed the low enthusiasm. In addition, ECOkoeriers was very slow in reacting when a retailer actually did show interest.

Another often heard argument of retailers was: what added value does my participation in this pilot have when I see that my neighbor retailers are still delivered by the same van in which my parcels are transported as well? They have their parcels immediately dropped of while I still have to wait an extra day for my parcels to be dropped off at the city hub and then transported into the inner city again.

To make the effect of this trial more tangible, we had REBEL develop a city logistics calculator. It showed, case per case, what (hidden) logistic costs were actually present and how making use of city hub would change these costs.

You can discover the calculator: www.mechelen.be/surflogh-calculator

As a city administration we concluded: unless there are more incentives for retailers to make use of this logistics alternative, there's no unburdening to speak of. Access restriction policy is key to incentivize retailers.





Shop owners in the city center







# MECHELEN

## RESULTS

- 5 interested retailers.
- Results for 1 shop for +/- 6 months:
  - Cost: +/- 600 €
  - Delivery in store: same day or day +1
  - Average 3 to 4 deliveries in city hub was delivered in 1 consolidated delivery with the cargobike
  - 48 rides x 6 km = 288 zero-emission driven kilomters
  - 224 avoided vehicle movements of a van in the inner city.

Watch the video: <u>https://youtu.be/Z-25pp8flyQ</u>

## **LESSONS LEARNED**

#### Advice #1.

Be prepared that, unless a retailer is obliged to have deliveries go through a city hub, there is little interest in changing logistical habits.

#### Advice #2.

Emphasize the 'what's in it for me' to retailers. They are by nature reluctant. Therefore, make the process to temporarily change the delivery process with as little hurdles as possible.

#### Advice #3.

Regularly check for frustrations or other stumble blocks that could hinder a smooth continuation.





# Installation of a city hub + courier service – logistics player approach - City of Mechelen



## CONCEPT

Consolidation of goods at the border of the city in a city hub is key to reach more sustainability and efficiency in the delivery of goods. In order to give the concept a push and to further profesionalize activities, Mechelen wrote out the tender called 'upscaling sustainable urban logistics'.

Mechelen aims for 4 goals when it comes to handling logistics streams: less vehicle movements, less driven kilometers, less CO2 emissions and therefore better air quality.

A reduction of vehicle movements and driven kilometers can be reached by bundling at the border of the city and driving the last mile in a zero emission way. ECOkoeriers mainly focussed on local streams and incidental deliveries. That's why a new partner was looked for that would intensively work with Mechelen based companies to upscale the volume for the following logistic streams: small parcel deliveries to companies and city services, as well as pallets and big parcels. In addition, local streams from A to B got a focus.

## **PROCESS AND PROGRESS**

Several meetings were set up to align expectations and to set up an agreement between the city and Bpost.

From the very beginning, Bpost expressed their surprise about the fact that Mechelen didn't have any volume 'ready' to go through their hub right away. Indeed, the city had to convince different parties – both internally and externally – to have their volume go through the city hub. This was a disappointment for bpost who hoped to kickstart their hub right after winning the tender. From the cities side, we expected bpost to create volume by their own.

Two pilot projects were suggested to bpost to test the city hub:

- The volume of our city service dealing with tea, coffee, toilet paper etc.
- The volume of our IT service.

Different meetings were set up to come to very practical agreements: which products are eligible, which aren't, which locations should be served, how can bpost access these etc. Negotiations took a long time with long intervals between different mails. Bpost was hesitant for different internal reasons to actually get started, and we had difficulty convincing our city services to use the city hub. After 1,5 years of trying, not a single parcel went through the city hub of bpost.







#### RESULTS

- Three parties showed interest in the tender and applied.
- 50.000 euro was foreseen to give a financial push to the winning party. The amount of money asked was one of the two award criteria in the tender, together with a plan of approach.
- Bpost asked a symbolic 1 euro and automatically won the tender. They could ask for less money since they already had all facilities in place (city hub, depot, zero-emission fleet, software...).

## **LESSONS LEARNED**

#### Advice #1.

Define very clear expectations as a city in the written tender.

#### Advice #2.

Don't put to much points in the tender on price. In innovative solutions price is often not the key driver.

#### Advice #3.

Find a good balance in formulating policy measures and trying to influence the market itself. They have to follow the same pace. Maybe the tender was written too early?



# Good Goods - consolidated deliveries with electric vehicles - City of Borås



## CONCEPT

Good Goods provides consolidated deliveries with electric vehicles in the city center of Borås. The concept is one part of Borås strategy to create a sustainable down town. Good Goods supports the need to create solutions for consolidation of goods to the central part of the city, as well as the aim of zero emission for the distribution of goods and collection of waste. The business model, certainly from the perspective of urban freight logistics, can best be described as a micro hub, where deliveries are consolidated over the last mile. As a package, this is reducing emissions and driven kilometers in Borås, while maintaining or reducing the overall cost to the clients. These improvements constitutes the central aspect to create a more sustainable and attractive city center.

Whilst the initial freight flows were based on the current business of the local haulier Stures Åkeri (DHL), the last mile service was independently branded (as 'Good Goods') and open to other PCS providers. Additionally to the freight distribution service, Good Goods also provides home deliveries (B2C) as well as pickup of recycling material as complementary services.

Good Goods is a unique service in a city of Borås size and is viewed as having significant potential over the next few years. With focus on emission free distribution and electrification, as well as a more efficient distribution system with consolidation, the Good Goods initiative is very much in line with the future vision of the municipality of Borås.

## **PROCESS AND PROGRESS**

Following a pre-study of goods flows in the city center, as well as a market research on consolidation schemes, the municipality of Borås (Department of Business Development), The Merchant Organization Borås City, and the local real estate owners association joined forces with local transport company Stures Åkeri (a DHL contractee), and the municipal energy and environment company Borås Energi och Miljö in order to establish a pilot project under the branding of "Good Goods".

Focus for the delivery option was exclusively on small consignments. This was generally consistent with Stures Åkeri AB existing business for DHL in Borås, however a specific city route was developed for the city center, and an electric van was leased exclusively for Good Goods.

In order to provide the service, small warehousing space was rented to the west and adjacent to Borås city center. However it turned out to be most efficient to use the facilities at Stures Åkeri (also centrally located).

Since the "base volumes" regarding goods and recycling material makes the marginal costs low for keeping the consolidation and zero emission transport services in place, Good Goods has a robust base, and the possibility to provide the perseverance needed to keep the services running even with slow progress in adding further volumes and customers.







#### RESULTS

- Reduction of approximately 5 tons of CO2 annually compared to a conventional diesel van.
- Approximately 20 000 parcels delivered annually.
- An established service for consolidation of smaller deliveries to the city center.
- An operational network for city logistics in Borås and a platform for additional development steps.

## **LESSONS LEARNED**

#### Advice #1.

Focus on financial sustainability from the very beginning, and try to obtain "critical mass" as soon as possible.

#### Advice #2.

Try to find "common ground" regarding the perceived problems, challenges and potential benefits among the involved stakeholder groups. Organize a round table for open dialogue both regarding operational, practical issues and future planning.

#### Advice #3.

Assume that the implementation and uptake of the solution probably will take more time than initially projected.





## Good Goods – electric vehicles and consolidation within waste management - City of Borås



## CONCEPT

The Good Goods has been running an extensive pilot test with a small custom-built electric vehicle for waste transports. The concept came about due to the overall need to create solutions for consolidation of goods to the city centre, as well as the aim of zero emission for the distribution of goods and collection of waste. Another area of improvement was to obtain a solution for waste collection that was less intrusive in the street environment than conventional refuse trucks. Emptying bins can also be quite noisy (especially when handling glass), and a qualitative improvement was anticipated if the entire handling could be moved outside the most crowded and central areas of the city.

In the Good Goods waste collection service, the waste bins are collected with the electric vehicle (electric car with a custom built trailer with hydraulic height adjustment) from various businesses in the city center , and then the different materials and fractions are consolidated in containers at micro hub adjacent to the area. The containers are then collected by conventional trucks from the consolidation hub and transported to the process facilities respectively.

Similar concepts have been used in certain environments such as parks and campus areas in some cities, but with Good Goods the scale and potential of the entire city center is included.

## **PROCESS AND PROGRESS**

The municipality of Borås (Department of Business Development), The Merchant Organization Borås City, and the local real estate owners association joined forces with the municipal energy and environment company Borås Energi och Miljö in order to establish a pilot project under the branding of "Good Goods".

In order to provide the service, small warehousing space was rented to the west and adjacent to Borås city centre, which has served as a micro-hub, and where basic facilities have been installed.

An electric car with a custom built hydraulic trailer was leased exclusively for Good Goods. The principle of transport waste bins is quite different from regular refuse trucks with less storage space and no opportunity to compact waste.

The limitations in capacity for certain materials (which normally are compacted) means that the benefits of the solution are most prominent when used for specific materials like glass (which also is noisy to handle) in areas like pedestrian zones, where space is generally limited, and traffic safety and a pleasant street environment have high priority.







#### RESULTS

- Vehicle and custom designed trailer successfully used in all designated tasks in the city center.
- Seven customers with different volumes and prerequisites served since the project start.
- Completely replaced six conventional refuse truck for waste collection in the central area of Stadsparken.
- A suitable solution for waste collection in park environments with more quiet, safer and sustainable collections instead of heavy vehicles.

## **LESSONS LEARNED**

#### Advice #1.

Identify the user cases where the custom service generates most value, and prioritize those from the start.

#### Advice #2.

Be transparent with possible extra costs compared to "business as usual", and discuss the value of the qualitative improvements with the stakeholders involved.

#### Advice #3.

Develop the operation continuously, and make the service as flexible and adaptive as possible.





# Last mile delivery pilot with small autonomous vehicles - City of Borås



## CONCEPT

The HUGO-pilot aimed to test the technical abilities of a small autonomous vehicle in a central city environment, and to demonstrate the solution to the public and the Surflogh project partners.

The main task was to deliver packages with clothing between the Gina Tricot headquarters and a centrally located Gina Tricot shop, and the route for the test was set along a central street, little less than a kilometer long. The task included to deliver orders from the shop as well as returns back to the shop. When a package was delivered to the headquarters, the vehicle awaited possible returns of parcels for a short time (making it possible for the buyer to try the clothing) before driving away.

The reactions from the public have been very positive, and the vehicle also quickly became a "familiar" and natural part of the traffic flow, where HUGO was considered much less disturbing than cars and trucks, and rather like a positive element in the street environment.

The general perception among the participants in the project was that the solution proved to be an interesting future option for certain last mile deliveries. This mainly due to the obvious advantages linked to low environmental impact, low cost, and low physical impact in the street environment.

## **PROCESS AND PROGRESS**

After a short inquiry, a consortium of five partners was created with Borås Stad, the University of Borås, Easycom, Care of Carl and Gina Tricot. A number of meetings were arranged in order to discuss the content and different steps of the pilot, were all parters participated, and with Gina Tricot, and the university taking the lead with the supplier, Hugo delivery.

Along the selected route, there were a number of different obstacles, such as pavement edges, waste bins, different uneven surfaces, and not least crossings with appurtenant challenges. It was not just pedestrians crossing the path of the vehicle, but also bicycles, kick bikes, mopeds, and cars. Further the vehicle had to pass crossings, both with and without traffic lights.

During the test, the vehicle could unfortunately not operate fully autonomous, and it had to be remotely maneuvered by an operator, and assisted by a "driver"/observer, who due to the present traffic rules had to follow the robot within 15 meters, in order to be able to intervene if needed.

Further test and development of the HUGO solution is however likely, and there is a clear potential for the concept in complementing traditional means of transport regarding the very last mile.







#### RESULTS

- Successful operation and test of distribution with a small autonomous vehicle.
- Pathway to future implementation both from technical and legislative points of view.

## **LESSONS LEARNED**

#### Advice #1.

Assess present legal aspects regarding the use of the specific technology.

#### Advice #2.

Harmonize the technical abilities and limitations of the solution with expectations, and don't overstrain possible outcomes.

#### Advice #3.

Focus on possible future uses and business cases early in the process.





# **Goederenhub** - Province of Drenthe



## CONCEPT

The flower auction Royal FloraHolland is well located near highway A28. Given that the location consists of a large warehouse with both cooled and uncooled parts and can be reached by Longer Heavier Vehicles (LHV), it can play a strategic role in the regional distribution logistics. During the Surflogh pilot we explored several opportunities.

According to the 'Design Based Research methodology' a prototype or concept is designed and consecutively tested for its merits. The methodology is iterative by nature in order to continue evolving prototypes until a working prototype is developed or the conclusion is drawn that no viable solution can be found.

The designed prototypes are as follows:

- 1. Supplying shops in downtown Groningen
- 2. A service for existing logistics service
- providers for using the hub
- 3. Development of Truckbreak
- 4. Matchmaking distribution logistics on Royal FloraHolland compound and GHGE

## **PROCESS AND PROGRESS**

Together with Royal FloraHolland, University of Groningen and NHLStenden University the province of Drenthe prepared the pilot which was active till October 2019. Halfway 2018 a start-up called GoederenHub Groningen Eelde was established to run the Urban Consolidation Centre. During the preparation phase we decided the activities should be established as a franchise of GoederenHubs Nederland. We found a entrepreneur who wants to start up and run this urban consolidation center on the plant of Royal FloraHolland Eelde. During the pilot researchers of both University of Groningen and NHL Stenden University were closely involved in the pilot activities.

Within a bit more than one year time we brought several business ideas in practise. In the end none of these activities seems to be profitable on the short run. Because of that the activities were not extended after the pilot period.







#### RESULTS

The four prototypes appeared interesting from a theoretical point of view, yet did not appear sufficiently profitable in practice. We learned about various bottlenecks while aiming to realize a hub.

Although we do not argue that bottlenecks cannot be overcome, we do argue that they could not be overcome in the time span of the pilot project. A trajectory of multiple years is needed, but even then uncertainty about the profitability of the hub will remain for a long period of time. An important question is whether the final merits of the hub are worth the long trajectory and high costs.

## **LESSONS LEARNED**

#### Advice #1.

Sufficient knowledge about the market(development) and existing hub-structures is necessary.

#### Advice #2.

Local government should set goals and create sufficient policy measures to reach them.

#### Advice #3.

Starting up a logistic hub is not profitable (at least on the short term). Another source of income is needed.



# Parcel lockers - Province of Drenthe



## CONCEPT

Inspired by the City of Mechelen the province of Drenthe started a pilot with parcel lockers on three public transport hubs in the more rural areas. The idea was to figure out if the concept works outside the city where transport kilometres per parcel are bigger and bundling in a locker can be an answer in getting transport more efficient and sustainable. Another important goal was to embed the locker system in the local community and test opportunities together with local shop owners.

Soon after the start of the pilot shops were forced to close due to the lockdown. We gave the local shop owners the opportunity to use the lockers as pick-up point. During this time we got a lot of questions about the possibility to use the lockers for food and perishables. This wasn't possible because the lockers are not cooled.

During the extension of Surflogh we start a pilot in cooperation with De Streekboer. De Streekboer is an initiative to sell local produced food (i.e. meat, milk and vegetables) to consumers. In this pilot we successfully tested delivery of cooled and frozen products in conditioned boxes in which the temperatures were monitored.

Another pilot in the extension is a test with parcel delivery in a locker by drones. Within this pilot we will give a drone delivery demonstration with the use of minimum viable product of a locker with a 'door' on top.

## **PROCESS AND PROGRESS**

The parcel locker pilot started in January 2021 at three public transport hubs. Due to the positive results the pilot was extended till April 2023 and two new pilot initiatives were added: 'food and perishables' and 'drone delivery'.

We selected three public transport hubs in the province of Drenthe. The philosophy behind the public transport hubs is to bundle all different kinds of transport and add facilities for convenience of travellers. The basic idea behind putting parcel lockers at a hub was that people combine pick up with a ride they already made.

We started a tender procedure to select a provider of white label lockers. One of the requirements was to share detailed data and cooperate with a research by the University of Groningen. Provider De Buren installed the three lockers. After wrapping them in the Hub layout they were officially opened in January 2021.

The pilot project attracted quite some media attention and was even an item on the national news. After a difficult start (due to Covid lockdowns) the lockers are doing quite well both in terms of business and consumer satisfaction. We decided to extend the locker pilot, added two new tests (drone delivery and food & perishables) and in the meantime parcel lockers are installed on other public transport hubs.

#### http://www.reisviahub.nl/pakketkluizen





DDS (Start-up in drone delivery services)





#### RESULTS

The use of the parcel lockers grows steadily during the last two years. Till November 2022 the parcel lockers were used 12.553 times.

It took quite some time before people get used to the use of the parcel lockers. The start of the pilot was followed by several lockdowns. Although the amount of parcel deliveries increased during the lockdowns, the majority of people prefers home delivery instead of using a parcel locker. Surprisingly during the early phase parcel lockers became popular as a return in stead of pick-up point.

## **LESSONS LEARNED**

#### Advice #1.

The locker concept at public transport hubs works, also outside urban areas.

#### Advice #2.

Take your time. People need to adopt the use of a locker for pick-up and/or drop off in their daily live. Same is valid for local business.

#### Advice #3.

Take installation of parcel lockers in to account while designing and developing public space (It took quite some time to arrange the basic needs to install a locker in public space (i.e. electricity point, foundation, permits).





# Cycle logistics, the partnership business model. - City of Edinburgh



## CONCEPT

The Edinburgh pilot was established through a collaboration between the Regional Transport Partnership, SEStran, and the cycle logistics operator Zedify, through their licensee Pedal Distribution Logistics (PDL). The pilot was an expansion of the latter's existing operations in Glasgow.

The Edinburgh pilot, this was founded on the basis of an extension of PDL's operations in Glasgow, and to use the experienced gained there in developing the Edinburgh market.

Key to this was the idea of 'complementarity' of urban freight operations, hence in simple terms rather than compete with existing logistics providers in the city, work in partnership through the idea of complementarity. An agreement was therefore reached with FedEx to deliver the couriers smaller items from a hub located on the west side of the city centre.

The FedEx business would in turn support Zedify by providing a 'bassline' so that additional business opportunities at a more profitable rate could be secured.

## **PROCESS AND PROGRESS**

The Edinburgh pilot began operations in 2018 and was supported by SURFLOGH & SEStran for 3 years. It is still in operation today without subsidy funding being provided.

Zedify has close contacts with major parcel delivery operators TNT (now FedEx) and offers an express next day multi-drop service on their behalf. This relationship works for both parties, providing a consistent revenue stream for the hub and reducing costs for FedEx. The use of more flexible cargo bikes and other small vehicles makes it possible to do the parcel deliveries for about half the cost per stop. It also aligns with FedEx's national goal linked to emissions reductions, although perceptions from PDL is that this is less of an issue at the local level and that outright costs are the main driver of operations.

On the back of the partnership with FedEx, PDL have also developed several strong working relationships with local businesses, including dental laboratories, bookbinders and even local cafes offering lunch deliveries.

The Edinburgh hub is also supported by the national Zedify franchise model, providing technical & marketing support (reducing costs) and access to a national business development network, providing scale and revenue generating opportunities.





#### **ZEDIFY Logistics**

Zedify at the time the project began was the only viable commercial cycle logistics operator working in Scotland. Discussion took place with them, and they saw an opportunity to work via SURFLOGH and expand their operation into Edinburgh.



#### RESULTS

The Edinburgh pilot can be described as a successful 'pure market' operation. At the time of writing, it is still in operation and business is growing.

Over ten thousand deliveries covering over 5000 kms and saving over 8 tonnes of CO2 (based on 160g per km). From starting with 3 bikes the operation has grown to 7 bikes operating across the city.

Over the time of the pilot over 20 riders have been employed and the hub has provided opportunities for people to explore and develop logistics careers outside of 'traditional' paths.

#### **LESSONS LEARNED**

Build Business Relationships from the start - Important to have baseline core business that covers majority (all) of operational costs – then grow the business from there.

Develop Good Route Planning – this was a challenge in Edinburgh due to the topography of the city, where some slopes are too steep for cargo bike distribution (given 250W support engines). The same amount of distribution work could be performed in half the time in other cities e.g., Glasgow compared to Edinburgh. On the other hand, the route in Edinburgh would take 1 day for a van but 3-4 hours for a bike.

Don't be afraid to adapt and change - the Edinburgh hub had 2 locations from which operations were tested. The bikes also had to adapt to the specific environment and demands of the city, which in terms of topography (hilly...) and road conditions (wet cobblestones...) presented major challenges. This took time to work out.

Be able to operate in a 'policy light' environment – In Edinburgh (and Scotland) policy tends to be 'problem focused', with interventions centred on traffic management issues rather than developing the concept of city logistics. It is therefore important that operations can develop without government interventions and hence be part of a 'potential policy solution'. If this is possible then when policy change happens the business will be well placed to take advantage.





# Cargo Bike Logistics - City of Groningen



## CONCEPT

The municipality of Groningen is working on a liveable, accessible and an attractive city centre, with emission-free city logistics in 2025. The future ZE zone in combination with time windows creates many challenges with regard to delivery and freight traffic. To investigate how city logistics can be more efficient and sustainable, the city experimented with cargo bikes to replace delivery vans in 3 pilots.

- 1. A centrally located microhub provided cycling logistics for retailers in a busy shopping street with mainly local entrepreneurs.
- 2. In the pilot 'Local and Incidental Flows' Go-Fast cycling logistics tested 3 different types of distribution: the First, Last and Only Mile with a hub as it base.
- 3. The Smart and shared Logistics by Stadlogistiek + Go Fast pilot is a follow-up to the previous pilot. The platform offers services as an alternative to self-supply by inner-city entrepreneurs, such as ZE vehicles, courier service, delivery service (B2B and B2C), supplying shops/ catering and warehouse space outside the inner city.

## **PROCESS AND PROGRESS**

During the project we organized three pilots that succeeded each other in terms of content.

Before the first microhub pilot started, the university conducted research into the supply profile of retailers in the Oude Kijk in't Jat street. Entrepreneurs were interviewed about which forms of logistics they consider suitable for cycling logistics with a microhub on the outskirts of the city centre as its base. During the three-month practical implementation that followed, the hub was manned in collaboration with students and shopkeepers were served twice a day with cargo bike deliveries as well as return goods.

The follow-up to this practical study was about 'local & incidental flows' for entrepreneurs. A hub concept was developed in which goods are temporarily stored after being brought from the city (first-mile) or from outside the city (last-mile). In addition, Go-Fast also added the so-called only-mile which concerns all logistical operations that take place within the city.

Thirdly additional services were added to the hub. The platform offers services as an alternative to self-supply by inner-city entrepreneurs, such as ZE vehicles, courier service, delivery service (B2B and B2C), supplying shops/catering and warehouse space outside the inner city.





Go Fast is an all-round bicycle courier service from and for the city of Groningen and offers a wide range of bicycle services.

Stadlogistiek is a hub for sustainable (last-mile) emission-free city logistics.





#### RESULTS

The pilots created some new insights:

- Cargo bikes in logistics: a realistic revenue model is possible.
- Time and again it appears in practice that cargo bikes can be faster than delivery vans in the inner cities.
- In many cases a cargo bike can replace a delivery van 1 on 1.

## **LESSONS LEARNED**

- There is potential for smart cargo bike logistics.
- Satisfied customers will keep coming back.
- Large and stable customers are needed for a business case.
- For large volumes cargo bikes seem to be inefficient because they must drive back and forth several times.
- Due to the lower weight and lower speed, the ecological footprint of cargo bikes is significantly smaller.





# **City Friendly Parcel Deliveries** - City of Groningen



## CONCEPT

The pilot was set up to test whether a business case is possible for parcel deliveries with cargo bikes and/or LEFVs in the inner city of Groningen from a hub. The pilot investigated the effect of the distance from the hub to the delivery area. In addition, research has been conducted into the effect of different types of vehicles on PostNL's business case and the quality of life in the city centre.

A new logistics structure has been set up by PostNL for the pilot. Normally, parcels for Groningen are delivered directly from the parcel sorting center in Kolham. For the pilot, a delivery had been organized twice a day from the sorting center in Kolham to the city hub and back. The parcels were then re-sorted at the hub using a newly developed software system with dynamic route planning. Various small electric vehicles were tested in the second phase of the pilot. The width of the vehicle and the position of the vehicle on the road were taken into account. The aim of this project was a new process design for the delivery of parcels in inner cities in an efficient and city friendly manner.

After the pilot, PostNL made a definitive switch to delivering in the city center with small electric vehicles from the city hub.

## **PROCESS AND PROGRESS**

The Pilot consisted of two phases. In the first phase, the effect of delivering with a Cargobike from a hub was investigated. In the second phase, different types of vehicles were compared with each other.

The first phase of the pilot lasted 6 months. In this phase, research was done into the effectiveness of a cargo bike with a trailer and into the effect of the location of the city hub on the business case. There was collaboration with the company Dropper, who was responsible for the sorting process and the last mile delivery. The pilot started with a small delivery area. During the pilot, the delivery area was expanded to eventually cover almost the entire inner city.

The second phase of the pilot lasted 3 months. In this phase, different types of vehicles were tested by PostNL in various Dutch cities. The effect of the vehicles on the business case and on the quality of life in the inner city was investigated. The experiences of the deliverers were also evaluated.

After the pilot, PostNL decided to set up a definitive city hub to supply the inner city of Groningen with light electrical freight vehicles.





PostNL is the largest delivery service company for parcel deliveries in the Netherlands.

PostNL and the City of Groningen share the same ambition of zero-emission and city friendly deliveries.



#### RESULTS

The pilot created some new insights:

- Insight into the effect of the location of a city hub.
- Insight into the effect of the use of small delivery vehicles on the business case and on quality of life.

After the pilot the city hub of PostNL for last mile deliveries with LEFV's in the inner city of Groningen was established.

#### **LESSONS LEARNED**

- A delivery van blocks the road 4 to 5 times as often as a LEFV.
- Sustainable and city-friendly delivery is highly appreciated by customers.
- A deliverer with a LEFV feels much less rushed, compared to a van.
- Parcel delivery is much faster with a LEFV than with a delivery van.
- The sorting process requires more time when using a LEFV, so containerized working is a prerequisite for a positive business case.





# **Construction and Service Logistics**

## - City of Groningen



## CONCEPT

The ideas for the pilots were put forward by the sector itself. The idea behind the pilots is that the concepts can be tested on a small scale and in a practical way. A condition for the pilot concepts was that they were scalable.

The pilot Construction Hub as a Service by LCW focussed on the logistics for small construction projects. Normally these projects are too small to set up a construction hub. The pilot was executed with a plug inn Hybrid truck. Therefore the vehicle movements within the city were emission free.

The pilot Small vehicle installation company by Rensa focussed on replacing the usual van by a smaller and clean vehicle. Advantages of a small vehicle are faster movements in the city and less space consuming when parking the vehicle. The limited loading capacity of a small vehicle means a challenge for the technicians using the vehicle.

The pilot ZE Construction site by Wagenborg Nedlift focussed on the use of an electric crane on a construction site. The goal of using electric machines is to turn the construction site into a healthier working space for the workers with less nuisance for the area around. Main challenges are the higher prices of electric machines and the presence of power current.

## **PROCESS AND PROGRESS**

The process started with a webinar on construction and service logistics. The webinar was organized by Surflogh, together with three business organizations who represent construction and service companies. The aim of the webinar was to inform and inspire the companies and to pursue them to participate in the Surflogh pilots.

Approximately 36 participants attended the webinar. After the webinar, the participants could send their proposals by email and indicate whether they would like to be involved in the further development of the pilot ideas. The following pilot ideas were mentioned.

- Construction hub as a service
- Charging on the construction site / energy as a service
- Separating the transport of personnel, equipment and materials
- Collective service hub for housing associations/ companies
- Joint deployment of Third-Party Service (e.g. electric crane)
- Deployment of small vehicle for installation engineer

After the webinar two workshops were organized to further develop the pilot ideas. This led eventually to the three pilots which were executed.





LCW is a logistics service provider, specialized in large and heavy goods. In the pilot LCW provided a logistics service for construction sites.

Rensa is a wholesaler for technical service companies. In the pilot Rensa provided a small electric vehicle to service companies.

Wagenborg Nedlift is a provider of cranes for construction works. In this pilot an electric crane was tested.



#### **LESSONS LEARNED**

The pilots are still running. So no results to mention yet.



#### RESULTS

The pilots are still running. So no results to mention yet.



