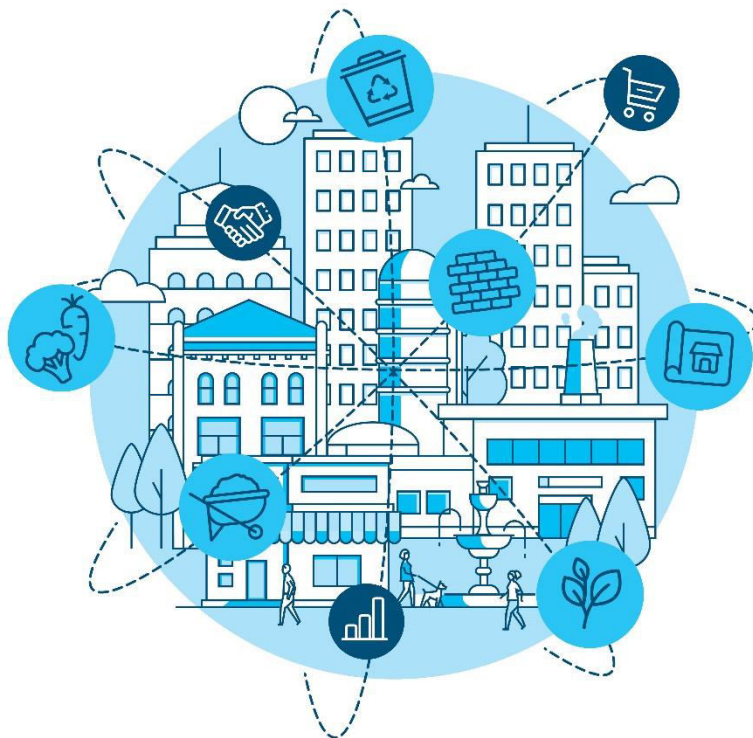




# Material banks and marketplaces in Mikkeli

Extract from the Demonstration Report

Mikkeli, Finland



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This text describes Mikkeli's experience in physical material banks and digital marketplaces. The sections come from Mikkeli's CityLoops demonstration report available [here](#).

# Integration of the recovered materials data into the databank and digital marketplace

## Databank

The data bank was designed by Xamk to store demolition site data gathered from drone monitoring. Developing the databank and testing it for Mikkeli demonstrations is described in more detail in a separate report (Hämäläinen 2023).

### DATABANK

The data bank was designed by Xamk to store demolition site data gathered from drone monitoring. It was developed using the MERN stack. The data bank is designed to handle three layers of data: demolition sites, material lots, and materials. Site data was classified based on the Finnish Ministry of the Environment's guidelines (Wahlström et al. 2019) along with some minor changes. Material lots contain data such as the lot id, volume, and weight. Materials contain a category, reusability grade, a description, and file attachments.

#### Lessons learned

Balancing the amount of detail and ease of data entry suited our needs for the pilot sites but ended up creating some challenges when considering compatibility with other systems such as the marketplace. Originally there were plans to have the option to transfer material lots from the data bank to the marketplace automatically but having to enter the same amount of information for each material in the data bank as the marketplace wasn't feasible.

The CityLoops databank has been tested in Mikkeli, but it has not been used on a larger scale. During the implementation of the CityLoops project, it was noticed that there is a need for a more advanced system. In a spin-off project of CityLoops, Miksei Ltd. and Xamk have developed a pre-demolition audit reporting software program to be used to report and archive audit findings. Lessons learned from the development of the CityLoops database were used in the creation of the pre-demolition audit software.

#### <Link to instrument>

[https://cityloops.eu/fileadmin/user\\_upload/Materials/Factsheet\\_tools/Factsheet\\_Databank\\_and\\_Digital\\_marketplace\\_Mikkeli.pdf](https://cityloops.eu/fileadmin/user_upload/Materials/Factsheet_tools/Factsheet_Databank_and_Digital_marketplace_Mikkeli.pdf)

## Digital marketplace for reusable items

### INSTRUMENT NAME

The Digital marketplace (DMP) was developed by Miksei Mikkeli in close collaboration with the Mikkeli stakeholders and users of the DMP. The programming work was executed by an SME Metatavu Oy.

The DMP holds information about volume, price and general quality of several construction material categories. It is working as a web platform to facilitate the exchange of materials between the seller and buyer of the reused material. In the marketplace, currently available materials are listed as ads, with the opportunity for entities or households seeking such materials to search for them or solicit what they need.

In the demolition phase, the target users were the local waste management company Metsäsairila Ltd and the local non-governmental organisation Mikkeli Activity Centre. Metsäsairila sells demolition materials, like crushed concrete, while Mikkeli Activity Centre sells building parts, such as taps and sinks, and different equipment and furniture dismantled or taken from the demonstration object buildings on location and in digital marketplace.

Finally, the marketplace efforts were integrated with another similar national initiative in Finland (<https://materiaalitori.fi>), and efforts were made to increase awareness of the marketplace to encourage its use by other entities who demolish buildings or possess surplus building parts and materials.

### Lessons learned

Miksei has found out that it has been challenging for the sellers and buyers to know about, and also for the circulation operators to start using the marketplace, despite being involved in the development of it. The marketplace was used in the demonstration phase to enhance the reuse and recycling of the materials, but for now its effectiveness in doing that has been quite low. To develop more flexibility and bring new ideas to the demolition process and the value chains, Miksei uses social media and organises workshops and meetings with potential sellers that could be useful. We expect to get more material offers in the marketplace before the end of the CityLoops project from the planned demolitions, but also understand additional effort will be required to find many more users for the platform after the demonstration phase.

Since the start of the CityLoops project, many digital marketplaces for the construction and demolition materials have been established in Finland, and now there are marketplaces available for public organizations and households as well. For example, the biggest marketplace, [tori.fi](https://tori.fi), has continuously over 100 ads of dismantled bricks for sale, and dozens ads of dismantled windows, doors and timber. Besides Tori, there are other marketplaces, based on auction principles, and Facebook groups, which sell

recycled construction materials and building parts.

The conclusion is that commercial marketplaces are wide-spread and well-known for the public in Finland, and they manage nowadays a lot of reusable material and building parts. The success of the ads in the commercial DMPs is not known, though, and there still is a place for a dedicated solutions targeted to companies and public organisations, at least locally.

The publication of DMPs and other digital solutions require vast amount of marketing and communication to the stakeholders, which requires resources dedicated to the marketing and communication. The stakeholders must also be willing to implement the circular upcycling operation model, so that more items and building parts are to be reused.

[www.kiertoon.fi](http://www.kiertoon.fi)

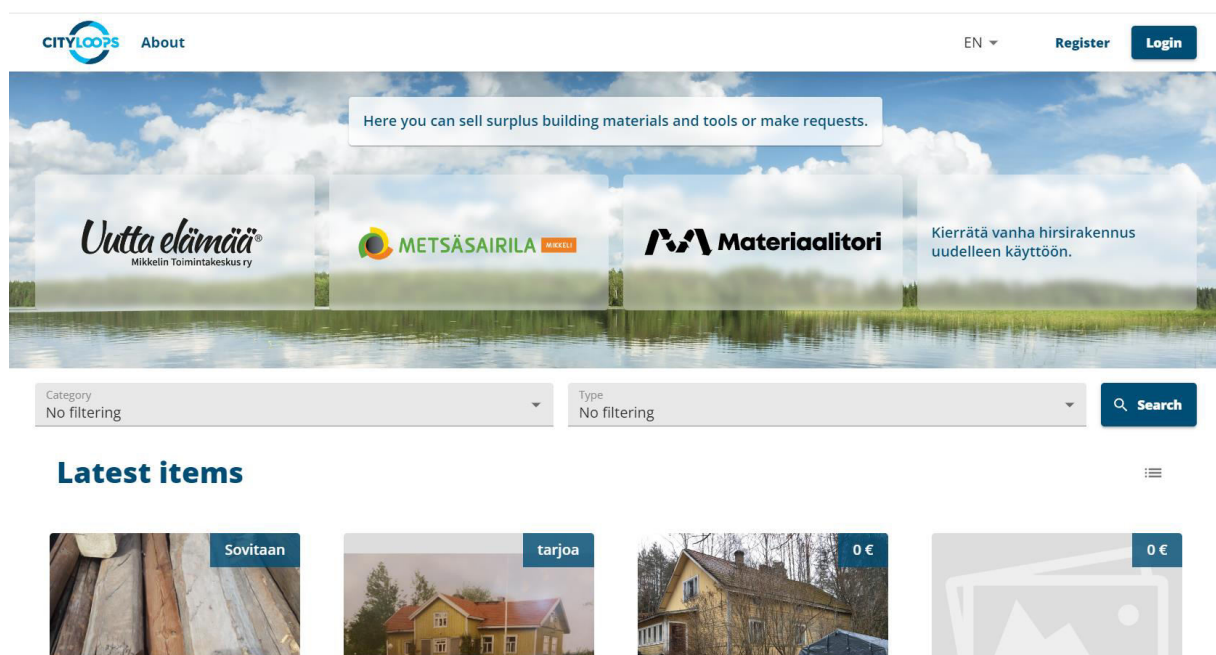


Fig.1. Screenshot from the front page.



# CITYLOOPS

CityLoops is an EU-funded project focusing on construction and demolition waste (CDW), including soil, and bio-waste, where seven European cities are piloting solutions to be more circular.

Høje-Taastrup and Roskilde (Denmark), Mikkelí (Finland), Apeldoorn (the Netherlands), Bodø (Norway), Porto (Portugal) and Seville (Spain) are the seven cities implementing a series of demonstration actions on CDW and soil, and bio-waste, and developing and testing over 30 new tools and processes.

Alongside these, a sector-wide circularity assessment and an urban circularity assessment are to be carried out in each of the cities. The former, to optimise the demonstration activities, whereas the latter to enable cities to effectively integrate circularity into planning and decision making. Another two key aspects of CityLoops are stakeholder engagement and circular procurement.

CityLoops started in October 2019 and will run until September 2023.



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