

Matching platforms for construction materials



CDW

Description

In a circular economy it is still possible, just like in a linear economy, that materials, products and components change hands. Although some circular movements focus on letting the right of usage prevail above ownership, online matching platforms are by many seen as a useful instrument to let ownership change from one person or organisation to another, while maintaining high user value. When it comes to trading used materials, products and components, the website <http://www.marktplaats.nl>, established in 1999, is one of the best-visited websites in the Netherlands; namely 8 million unique visitors each month out of a population of 17.8 million. All kinds of small and large consumer products, but also professional trades and even building materials are offered on this website. However, as a municipality or company in the construction industry, it is not easy to upload your used materials, products or components completely and quickly. It takes quite some effort to correctly express their quantity and quality. After uploading, you normally would need to just sit down and wait for someone who is interested.

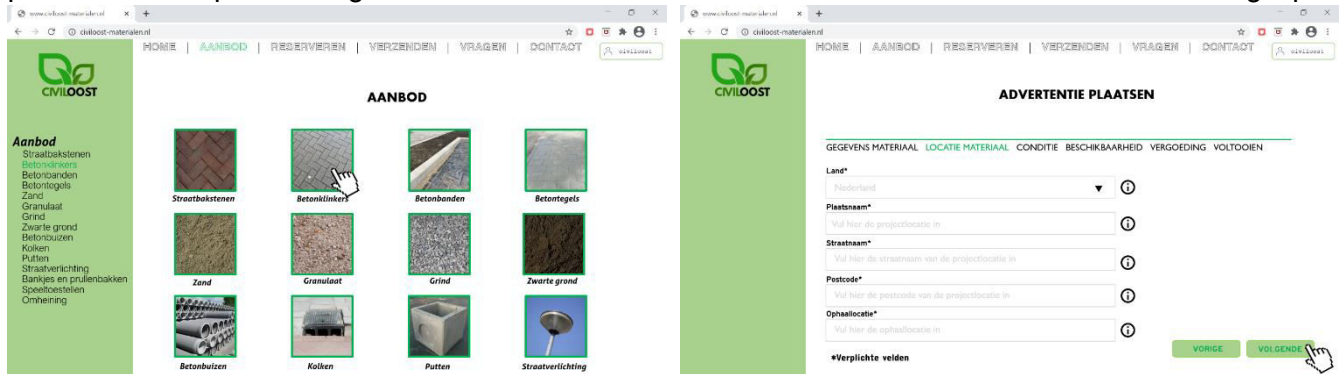
The Municipality of Apeldoorn looked for opportunities to let her road materials experience the best next usage possible by collaborating with existing trading platforms and by giving a try with a newly



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designed website. Students of Saxion UAS designed a website with specific categories of materials, products and components useful to the construction industry (ten Brinke et al., 2021). Furthermore, a new function to date availability was introduced. This date addresses when a certain building material, product or component might come available and can be harvested on-site. However, setting up a



completely new site means that you will start at zero regarding visitors and, therefore, potential buyers. It will take time and money to attract visitors to your new website.

Figure 1. Two impressions of an online marketplace for public space materials and products as designed by the students (ten Brinke et al., 2021)

To cope with the problem of the number of users, the municipality of Apeldoorn tried to collaborate with the more established online matching platform Excess Materials Exchange (EME). This technology company has the ambition to find new high-value options for materials or (waste) products by showing their financial and ecological value. By means of four instruments 1. Resource passports, 2. Tracking and tracing, 3. Valuation and 4. Matchmaking (<https://excessmaterialsexchange.com>, visited December 6th, 2022), the used materials available in Apeldoorn could have been linked to new users. However, after a first inventory of the environmental impact of some of the old materials in Griffiersveld by EME, the company lost interest and the collaboration came to hold.

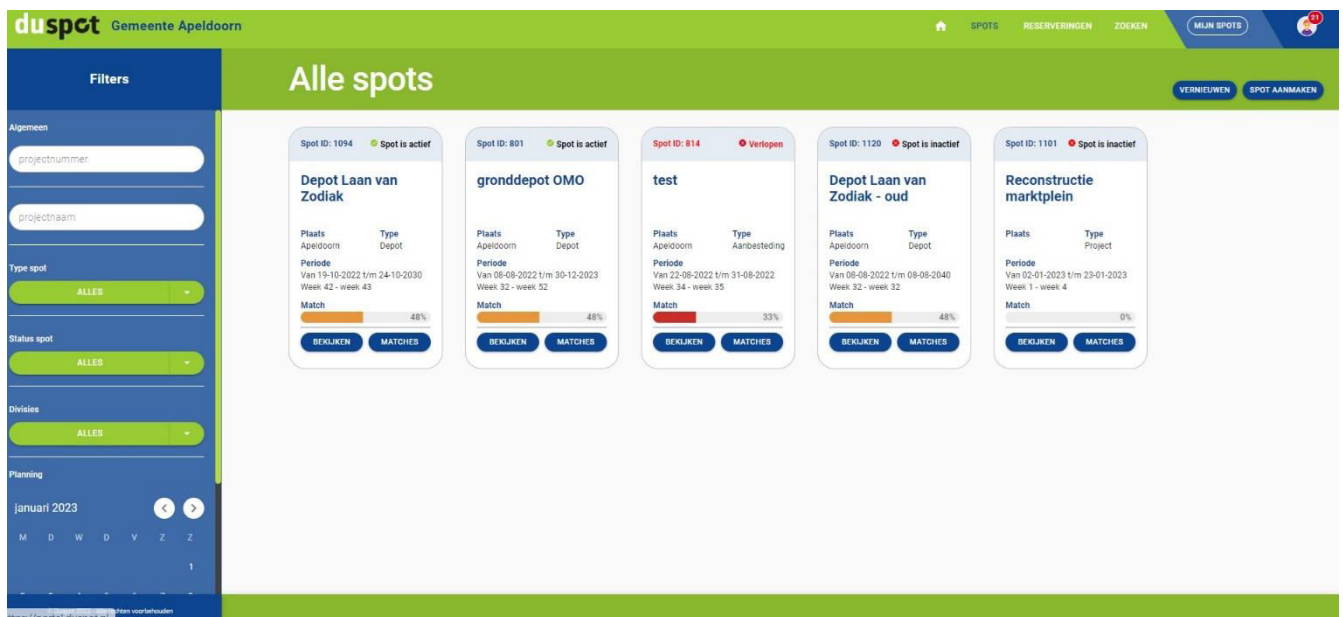


Figure 2. An impression of how a set of spots in the municipality of Apeldoorn look like in DuSpot (courtesy of Mart Mensink)



The third trajectory that started and is sealed by an agreement, is the collaboration between the municipality of Apeldoorn and DuSpot. DuSpot is also an online matching tool and it specifically focuses on matching materials in civil construction projects (see Figure 2). Materials coming available in different stages of a building project are offered in a user-friendly, organized and comprehensible way. This is being achieved by making use of the standardized way specifications for civil construction projects are organised (<https://duspot.nl>, visited December 6th, 2022). As its name implies DuSpot enable a user to make a building project or depot online visible as a spot where products and materials are offered and needed for certain users (see Figure 3 and Figure 4). The user can select who will be able to see this spot. By this means DuSpot is used to facilitate the reuse of materials needed and coming available in Apeldoorn's construction projects in public space. To facilitate circular material loops DuSpot also shows the inventories of the material depots Apeldoorn is operating.

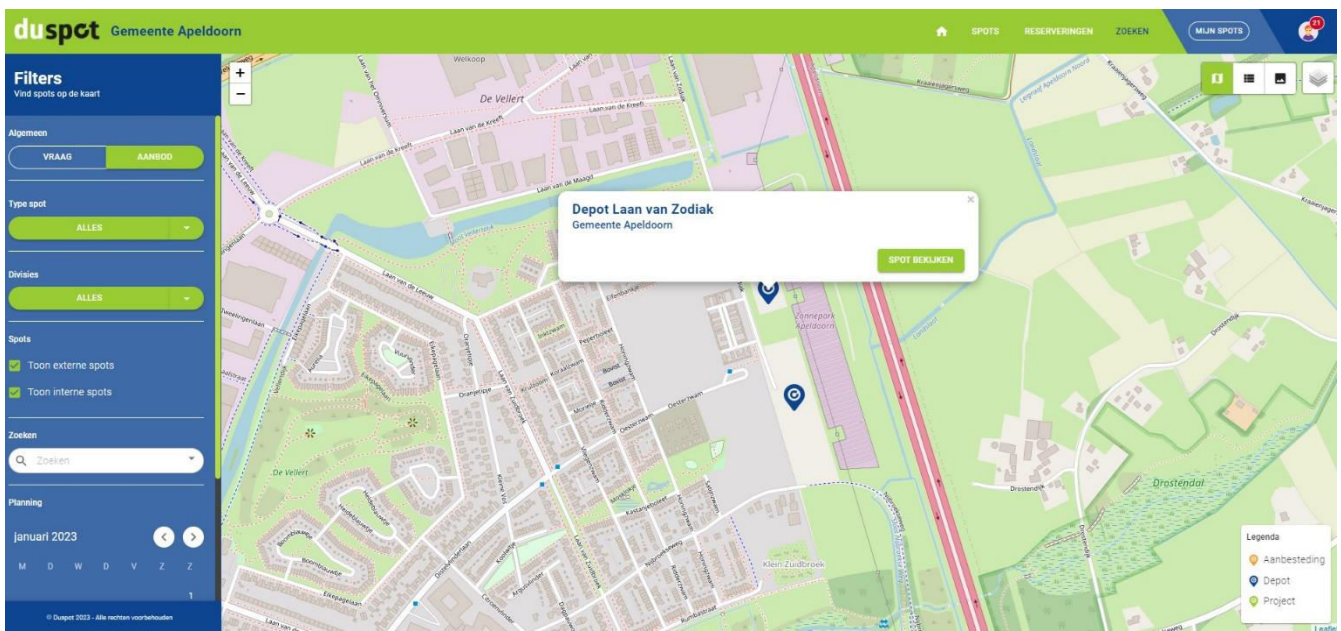


Figure 3. The location of the material depot at the Laan van Zodiak as shown in DuSpot (courtesy of Mart Mensink)



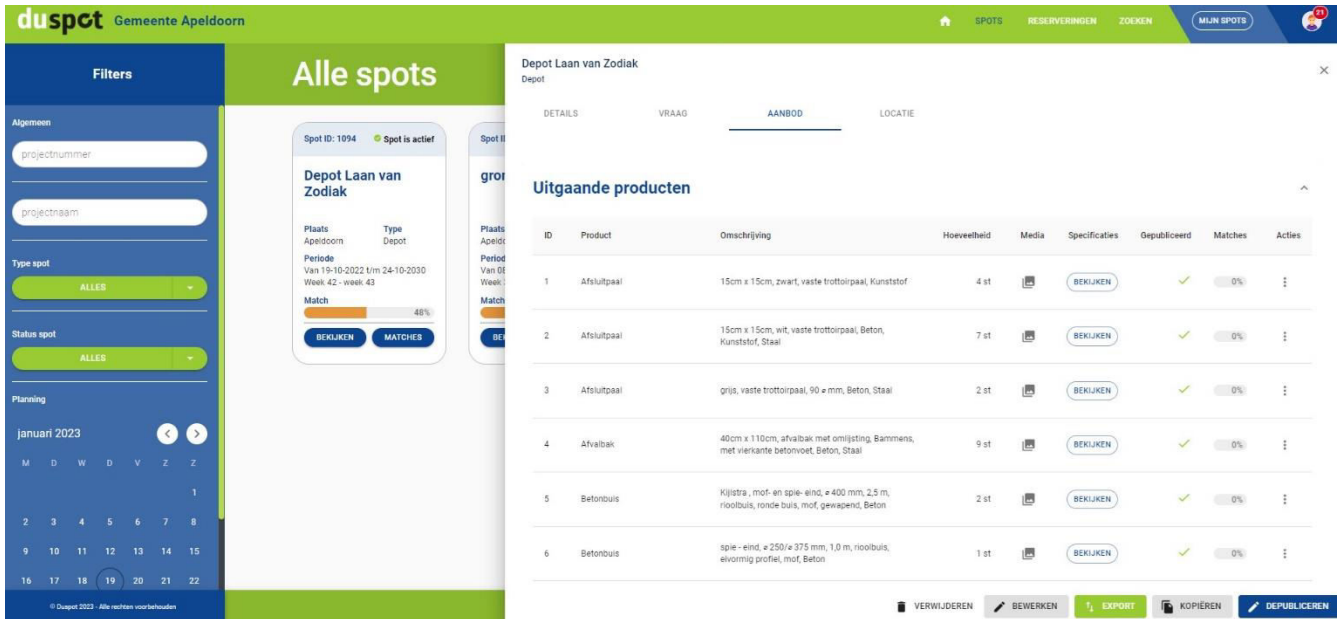


Figure 4. Some of the products and materials that are offered at the depot at the Laan van Zodiac as shown in DuSpot (courtesy of Mart Mensink)

Keywords:

- Online marketplace, matching platform, matching tool

Complementary tools:

- In the Netherlands and in many other countries municipalities have e.g. public works municipal yards, soil and sand sites, depots with used light poles and bridge depots. These kinds of depots can also be put in DuSpot as spots where materials are available.

Target user:

- Governments (e.g. ministries, provinces, municipalities and water authorities);
- Contractors that have materials available or are in need of materials;
- Engineering offices designing and preparing the execution of building projects.

Format:

- DuSpot is hosted centrally as Software as a Service (SaaS) matching tool. When a spot is a building project, the data-input can consist of project specifications aligned according to the Netherlands commonly used 'Rationalisatie en Automatisering Grond-, Water- en Wegenbouw' (RAW)-system, which encompasses juridical, administrative and technical requirements. When a spot is representing any kind of depot, its inventory can be shown.

Development

When a DuSpot user was able to match certain material flows and waste materials or used materials have been reused, it will in the nearby future be possible to get insights on how circular certain projects were and the organisation is. The plan is to facilitate within DuSpot a dashboard to show key performance indicators regarding circularity.



Barriers:

- The challenge is to make sure that simplicity prevails above completeness. The focus of DuSpot is to be and to stay a matching tool and not to become a matching platform.
- A linguistic barrier can exist, because in different regions and nations many different names can relate to one and the same kind of product or material. The algorithm within DuSpot continuously needs improvements to make sure proper matches can and will be made.

Deployment

Within CityLoops, the municipality of Apeldoorn introduced the residential area Griffiersveld, part of the relatively large neighbourhood De Maten, as a casus to test tools and to come to circular road renovation. The online marketplace and experiences with EME presented in this tool factsheet were focusing on this demonstration project. When it was noticed that DuSpot has some advantages compared to these two, a trial period not limited to Griffiersveld was started, which ended in December 2022. After that, the matching tool is now widely available to enable material loops in municipal projects to be closed. The material depots of the municipality also became available as spots in Duspot.

Replication

The Netherlands municipalities of Amsterdam, Rotterdam, The Hague and Enschede were four launching customers that helped DuSpot in becoming the matching tool it currently is. The municipality of Apeldoorn decided after the experiences in Griffiersveld to adopt the tool to be better equipped, when it comes to closing materials loops. The soil and sand site, materials depots and public space building projects can from this point on be shown as spots offering and needing building products and materials in DuSpot. To be able to replicate these procedures abroad, one needs to be aware of the fact that in different regions the users of DuSpot use different names for particular building products and materials. This makes it necessary to continuously improve the algorithm to come to proper matches. Therefore, investments are needed to make this Dutch tool available in other countries without any linguistic barriers.

References

Company website of DuSpot, <https://www.duspot.nl/>

Company introductory movie DuSpot, <https://youtu.be/lnrstyrr6XY> “Met Duspot op weg naar volledige circulariteit!”

Company website of Excess Materials Exchange (EME), <https://excessmaterialsexchange.com>

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Developed by



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