

DIGITAL DECONSTRUCTION

'LESSONS LEARNED'

**FOCUS ON CIRCULAR ECONOMY AND SOCIETY
BY DR. HARMA ALBERING, COÖRDINATOR
CIRCULAIRE ECONOMIE BIJ PROVINCIE LIMBURG
(NL)**

Circularity is high on the agenda of the Dutch province of Limburg. The province of Limburg wants to work towards a society in which raw materials are used sparingly and responsibly. Europe and the national government put the dots on the horizon, for which the province of Limburg wants to share responsibility. Not only must the use of raw materials be reduced by 50% by 2030, in 2050 waste will no longer exist.

The province of Limburg is therefore happy to contribute to the European Digital Deconstruction project. The first steps were taken about 10 years ago within a European Interreg IVC project, in which the province of Limburg as lead partner, together with nine European regions, went in search of successful practical cases of the cradle-to-cradle principle in economics. The core elements of this are the development of new, more conscious ways to produce goods respectively, erect buildings and plan without wasting resources. These elements are economically very interesting and offer a better quality of life, while they are also good for the environment. This course has now been further developed into a circular economy that is resilient and agile with a future-proof society as the ultimate goal.

Building a circular economy

"With the Limburg Circular Economy Policy Framework, we are continuing to build a circular economy in the province, and we are setting frameworks in close collaboration with the municipalities and national government. For the province, knowledge and educational institutions, the business community and SMEs, the four Brightlands campuses and the regional development agency LIOF are particularly important key players.

[Read the article on the website.](#)

Provincie Limburg is lead partner van het Digital Deconstruction project. Dr. Harma Albering is circular economy coordinator at the provincie of Limburg.

IN DEZE EDITIE

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level up circular building

SHOWCASE EVENT | JUNE 8, 2023

SHOWCASE EVENT DIGITAL DECONSTRUCTION | June 8, 2023 Brightlands Smart Services Campus Heerlen (NL)

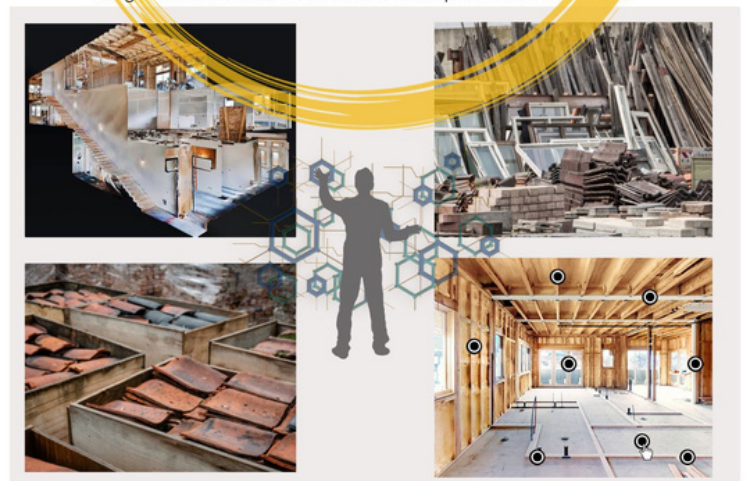
An open source for the reuse of building materials
The digital software platform is the perfect tool
to level up circular building.
The aim to make the construction industry more
sustainable is by inventing tools which serve the
builders, developers, architects and owners of
demolition companies.

Join us on June 8 and find out what the results are
of a three year project in which 13 partners from
France, Belgium, Luxembourg and The Netherlands
worked together to develop the digital software
platform. The day will be an inspiration for
stakeholders in de building sector like architects,
designers, constructors, demolition businesses
and governmental decision makers.
Get inspired by the Digital Deconstruction experts
on digitalization of buildings, learn about the
main achievements of the project and see what
the results are at one of the pilot sites of the
project, at GTB-Lab in Heerlen.
Digital Deconstruction platform: an open source
to level up circular building and create a green
environment in the very near future!

We welcome you at our DDC show case event on
June 8, at the Brightlands Smart Services Campus
in Heerlen. [Register here!](#)



Invitation
June 8, 2023
Digital Deconstruction Showcase Event
'Level up circular building'
10.00 - 18.00 h
Brightlands Smart Services Campus Heerlen | NL



PLEASE REGISTER NOW | PROGRAM FOLLOWS SOON



MODULE: DIGITAL DECISION PLATFORM

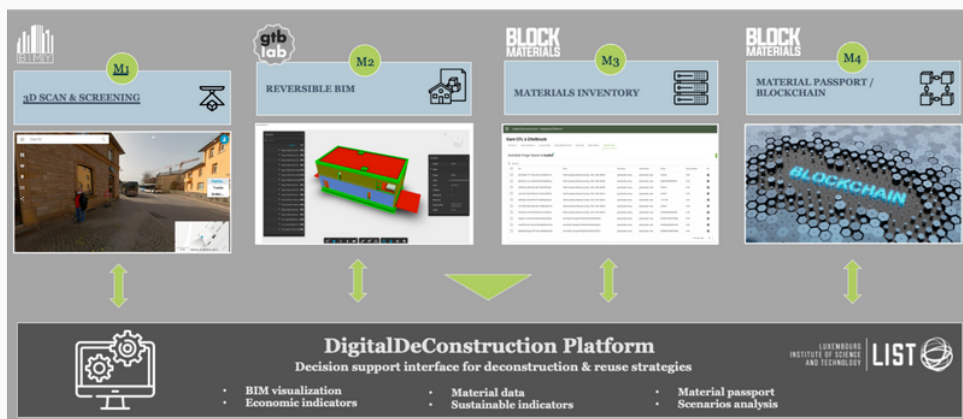
One of the main goals of the Digital Deconstruction (DDC) project is to develop an innovative digital decision support system, integrating four technical modules: 3D scanning, Reversible Building Information Modelling, Materials inventory and Blockchain technology. Each technical module provides interesting insights for supporting reuse strategy analysis (i.e. 3D point clouds, Building Information Model, reuse potential, inventory data, etc.) but we consider that the centralization of all the information inside a unique platform will reinforce the potential of the technical module considered independently. This approach of centralization of information allows the platform to provide consolidated data inside a dashboard enabling to support the analysis of the reuse strategy including both economic and environmental data.

When using the platform, the user has access to several visualizations supporting the reuse decision. Concretely, after logging into the platform, the user has access to the projects list (1) and then to several tabs structuring the content of each project:

- Details (2): The Details tab gathers all administrative data of the deconstruction project.
- Participants: This tab is dedicated to the management of the participants and their roles.
- Locations (3): The spatial structure of the deconstruction project can be defined, and links can be created towards both maps and 3D scan.
- Documentation (4): Documents regarding the project can be uploaded on the platform.
- 3D Scan (5): The 3D Scan can be explored by the user.
- Reversible BIM: The BIM (6) as well as the Reversible BIM (RBIM) (7) are accessible in this tab. A connection between these models and the materials inventory list is created. The color codes of the RBIM model allow the user to visualize if a building component has a high or low reuse potential (i.e. green versus red color code).

- Inventory (8): The Inventory tab allows users to browse and filter the previously imported inventory. When selecting elements of interest in the inventory,
- the user can see the respective elements highlighted in the BIM/RBIM model (9)
- Dashboard (10): A dashboard tab allows the user to access graphs about the project in order to support the collective decision-making process regarding the reuse strategy.

This platform has been developed by LIST (Luxembourg Institute of Science & Technology) in collaboration with the partners of the DDC project. It will be delivered under an opensource licence at the end of the project.



URBAN MINING IN PARKSTAD LIMBURG

BY PAUL CONSTEN, CITY REGION PARKSTAD LIMBURG (NL)

The Parkstad Limburg city region is seizing the unique and extensive transformation task and restructuring in the region to switch from a linear to a circular economy. Parkstad Limburg, located in the southernmost part of the Netherlands, has the ambition to realize a vital and liveable region with a strong economic, physical and social profile, aiming for a level of prosperity and well-being at least the average Dutch level. As a result of this major transformation task, the urban region sees circular construction as a leading part of the step towards a circular economy in Parkstad Limburg.

'The task in the various area developments is central to this; cooperation is therefore not sought on the basis of one specific theme or policy field, but instead there is an integrated and cross-sectoral approach. The circular construction economy serves as a means for the broad prosperity in Parkstad, in which it is of fundamental importance to share the knowledge and expertise gained in all projects and to connect various parties. In addition, knowledge and experience must be safeguarded and valorisation must take place within the programs and area developments in the region (Region Deal, Public Housing Fund, etc.).' says Paul Consten, Sustainability program officer at the city region.



'For circular construction, it is partly clear what needs to be done, but partly not. For example, it is not yet clear which parties will be able to supply which circular products and services, how the economic management of circular construction will develop, what financial consequences this will have for which chain partners and how and by whom circularity can be made normative. In our region, more than 8,000 homes will be demolished in the coming years and 130,000 square meters of retail and office buildings will be taken off the market. Some 7,500 new homes must also be built. To enable materials from existing buildings to be used in new buildings, a physical infrastructure for circular construction is needed. Basic components of this new physical infrastructure are Refurbishment Hubs (where existing materials and products are given a new shape by repairing and remanufacturing building materials) and a Circular Materials Hub (sale of circular materials).

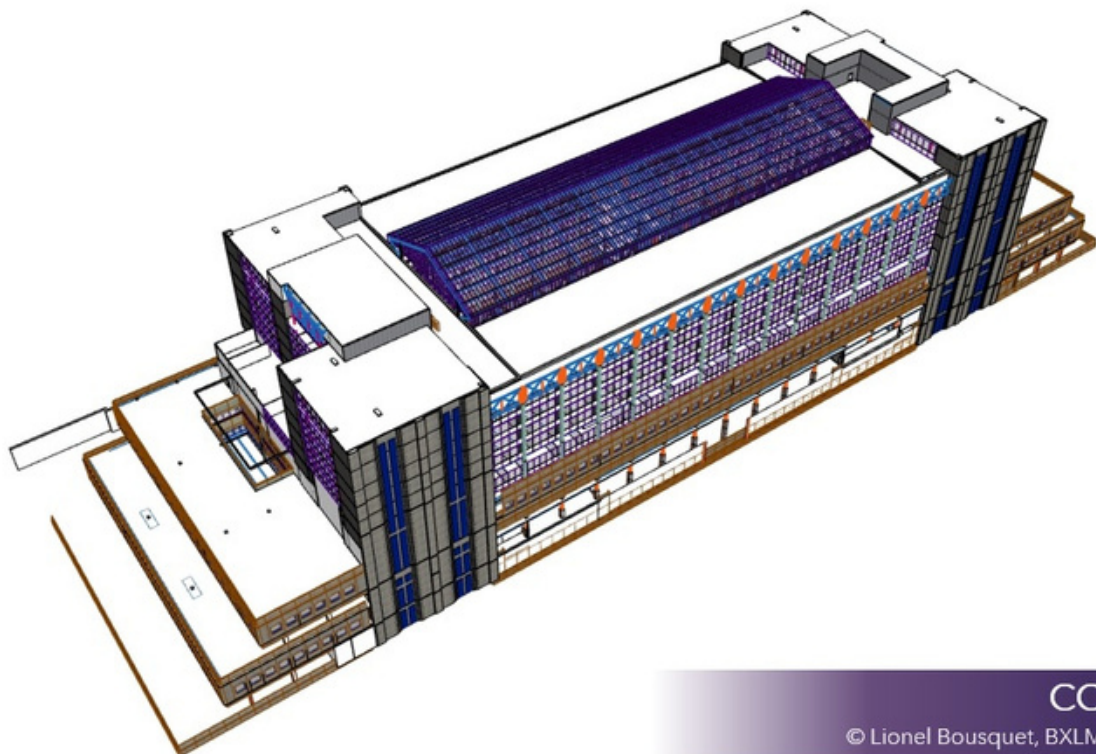
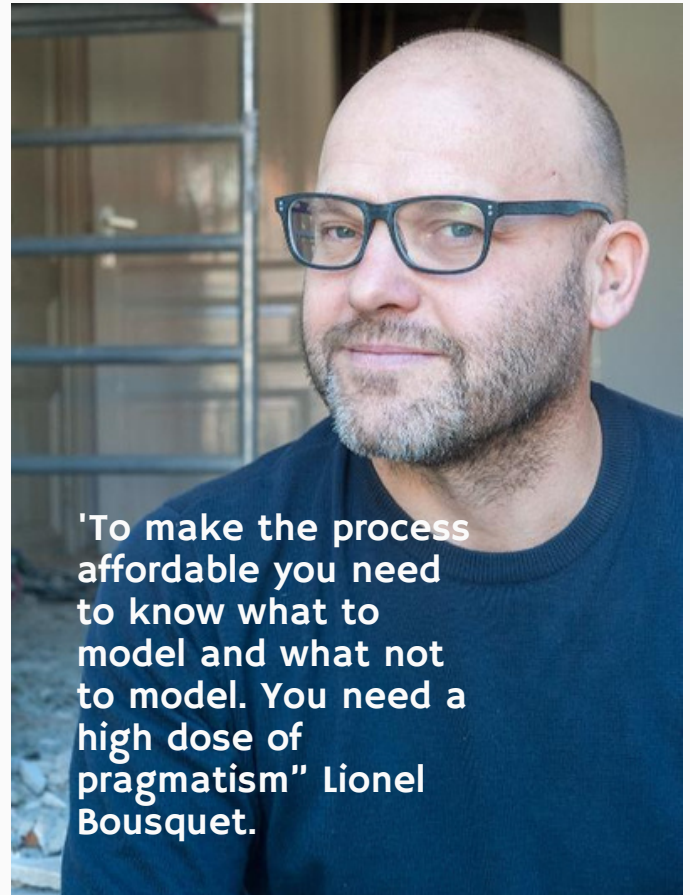
Read the whole article on the [website](#).



BIM-BASED INVENTORY TO PREPARE CIRCULAR DEMOLITION

Sustainability and digitization go hand in hand and are gaining popularity. Digital tools are proving their usefulness in achieving high circularity in both the construction and demolition industries. Lionel Bousquet of BXMLMRS Architects applied a BIM model to create a digital inventory of all materials in the CCN (Communication Center North), which enables circular demolition.

Find [here](#) the BIM inventory by Buildwise & BXMLMRS Architects (B) in Dutch, French and English.



REUSE INNOVATION HUB PARIS

| FRANCE |

REUSE INNOVATION HUB PARIS MARCH 2023

Reducing building waste, a major lever to reduce our CO2 emissions! In any case, it is on the right track. The figure to begin with: 46 million tons of waste for the construction sector in France in 2022.

One of the main solutions envisaged to reduce this waste: to create a real circular economy in the sector. Our buildings are an infinite source of resources: concrete, brick, wooden beam, steel, floor, staircase, sink. All these products designed to last should not be reduced to the status of waste when a building is demolished.

But fortunately several actors are now positioning themselves on the subject of reuse and things are moving!

Audélie Le Guillant was at the 4th Reuse Innovation Hub of the Digital Deconstruction project, which aims precisely to massively increase the share of reuse in deconstruction projects, and in 3 years of project, there have been great improvements!

Read [her story](#) on the website.



REUSED HEATING PIPES FOR A REVERSIBLE TABLE

BY GTB-LAB HEERLEN

First fully circular and reversible table initiated by Green Transformable Building Lab (GTB Lab) has been finalised. It is made of reused heating pipes from a home of GTB Lab employ Thomas Bergstra, reused screws from the old wall, reused tabletop, and pieces of old tables (oak wood) which have been saved from the incineration plant by the table designer Annet Butink and Rob Nieuwenhuizen. No glue has been used, connection types are reflecting combination of interlocked and direct fastener connections, ranked very high in Reuse Potential© scoring system by Elma Durmisevic.

By unscrewing 4 pressurised interlock connections all table pieces automatically split appart, ready to be reused as new table or in another product. Realisation of the table is made possible by GTB Lab by supporting start-up company Van Goedhout. After realization of a the first circular GTB Lab table series of three more has been made by "Van Goedhout" and many more are to come.



Review visit University Windesheim (D) at Brightlands Smart Services Campus & GTB Lab

In February first years Bachelors Bouwkunde students from Hogeschool Windesheim - Techniek visited the Brightlands Smart Services Campus in Heerlen on their tour through the South of the Netherlands, attending presentations about the campus and Digital Deconstruction by Yanick Dols, Circular Construction by Elma Durmisevic from the GTB-Lab and Paul Consten from the Stadsregio Parkstad Limburg who provided the regional context and insights into current activities in the region and its transformation to a circular economy.



DDC EVENEMENTEN

Interreg North-West Europe
Digital Deconstruction
European Regional Development Fund

SAVE THE DATE

REGIONAL INNOVATION HUB LUXEMBOURG

Évènement en ligne et présentiel | Mardi 16 mai de 09h30 à 14h00 Belval

LUXEMBOURG INSTITUTE OF SCIENCE AND TECHNOLOGY LIST SCHROEDER & ASSOCIÉS BIMBY

INVITATION
DIGITAL DECONSTRUCTION
SHOW CASE EVENT
Level up circular building

BRIGHTLANDS SMART SERVICES CAMPUS
HEERLEN | JUNE 8 | 2023

Development of a digital software platform to make circular building possible and the environment green

Interreg North-West Europe Digital Deconstruction

- **May 16, 2023, Belval (Lux)**
Regional Innovation Hub Belval, Luxembourg. [Register here.](#)
- **May 23, 2023, Zaventem (B)**
Buildwise, Zaventem, study day on digitalization for a more circular demolition. [Register here.](#)
- **June 8, 2023, Heerlen (NL)**
Show case event 'Level up circular building' Digital Deconstruction, Heerlen. [Register here.](#)



You have received this Digital Deconstruction newsletter from one of the project partners involved as a valued contact in the field of construction, circular economy, circularity, construction and design industry and reuse of building materials. Feel free to forward this newsletter to people from whom you know may also be interested in the project.

It is possible to register for the following editions via the **registration form** on the website. If you would like to share your knowledge and experience in the field of digitization for the construction and deconstruction sector, please contact one of the project partners in your country.

Follow us on **LinkedIn** and **Twitter** to stay informed about the latest DDC developments, events, seminars, pilot visits and information about the Regional Innovation Hubs.

The next newsletter will appear end of June 2023.

