OCTOBER, 2022, NO.2

DIGITAL DECONSTRUCTION

Interreg North-West Europe Digital Deconstruction

TAKING STEPS

IMPLEMENTING DIGITAL DECONSTRUCTION IN REGIONS AND MARKETS

BY EROL OZTAN, CIRCULAR ARCHITECT BLOCKMATERIALS/PROJECT PARTNER IN DDC

Taking steps to secure the DDC-results in the following five years.

The city region Parkstad Limburg in the south of The Netherlands has written a transformation plan, and a ten-point-action-plan for Circular (De)construction, resulting in a Circular Hub in this southern region. This implementation plan is the next step to broaden the scope, projects and results of circular developments into a regional sector. The implementation plan will also deal with issues like the energy crisis, scarcity of materials and inflation. The implementation plan combines the needs of the regional program with different tools, services, financial opportunities and example projects. Partly based on DDC-activities and results, partly based on regional developments. The goals of the Parkstad Limburg Region provide a unique opportunity to use the DDC platform as a new tool to activate this implementation plan. The resulting implementation steps and achievements will give blueprints for other regions to copy and follow, according to their local needs. Including the time after the Interreg Digital Deconstruction (DDC) project (final June 2023), since all tools and services produced and financed by Interreg are common goods. In such a way different DDC-goals for the next five years could be reached.

Read the article on our website

IN THIS EDITION

REUSE POTENTIAL

PILOT ROMAN MUSEUM (NL)

Roman Museum in Heerlen is GTB Lab run pilot in collaboration with the municipality of Heerlen. After Digital inventory of the existing building using RBIM methodology and tool a circularity profile of the building has been created with specification of materials which had potential for reuse. This inventory has been used by the municipality of Heerlen in defining the tender for partial deconstruction of Roman museum. Municipality of Heerlen did insertion of REUSE POTENTIAL in tender specifications. Tenders are assessed on multiple quality criteria. For each quality criterion, the assessment committee indicates how much added value can be achieved on this particular quality criterion. The extent to which the reuse of materials is achievable is used as a quality criterion following reuse potential index. (see table below).

"Municipality of Heerlen did insertion of REUSE POTENTIAL in tender specifications Roman Museum"

Nr.	Definition	Re-use potential	Score
1	Reuse within the project (on-site)	099	100
2	Reuse within other project(s)	05-09	70
3	Recycle	02-04	40
4	Waste	01	10

Background Roman Museum Heerlen

Since 1977, the well-preserved remains of a Roman bathhouse can be seen in the Thermenmuseum in Heerlen. After thorough research and restoration, this is the oldest stone building in the Netherlands. A unique archaeological national monument of national allure. To properly manage, preserve and present it in an inspiring way to a large audience, this monument requires a new building.

The deconstruction of the Thermenmuseum/Roman Museum is an important pilot of the DDC-project. The demolition of the building by Bureau Peutz has started in sub-partnership with the municipality of Heerlen, with GTB Lab taking care of the activities surrounding the development of the museum's deconstruction and reuse strategies. For the museum the start of an important transformation: from the Thermenmuseum to the Roman Museum de Thermen. A place to meet, a crossroads of connections between past and present, between Heerlen, South Limburg and the Euregio, between residents, entrepreneurs, students and tourists.

MODULE: REVERSIBLE BUILDING INFORMATION MODELING (BIM)

Reversible BIM module developed by E. Durmisevic 2018 is one of the four modules that are integrated on the Digital Deconstruction platform to support decision making regarding reuse and deconstruction strategies. Reversible BIM© module enables a digital assessment of the technical reversibility of buildings and recovery options of building components and materials by assessment of technical and physical dependences between building parts based on the model (Durmisevic, 2006).

Reversible BIM module is a BIM software module developed by E. Durmisevic (Durmisevic 2009 and 2019) that, based on captured cloud points (from 3D scanning) and with use of a Revit plugin for digital reversibility assessment, enables the reconstruction of the digital models of existing buildings covering spatial dimensions, relationships, quantities and reversibility properties of building and its components.

ReversibleBIM© has 7 major steps and 16 sub-steps covering the process for data gathering (archives research and point cloud files), the creation of the reversible BIM, running RBIM plug-ins for Reuse potential calculation, 3D visualisation with colour coding (i.e., colours representing reuse potential score) and the access to RBIM© deconstruction in a new construction project. Reversible BIM is viewed in 3D viewer (see first Figure)

Reversible BIM supports the process of designing, constructing and operating a building (i) with the reversibility principles defined by Durmisevic and (ii) with reuse of computer-generated object orientated information in mind. It is identified as a value maintaining and re-creating process through the multiple lifecycles of a building and its parts (Durmisevic, 2019).

Read the whole orticle on BIM on DDC website
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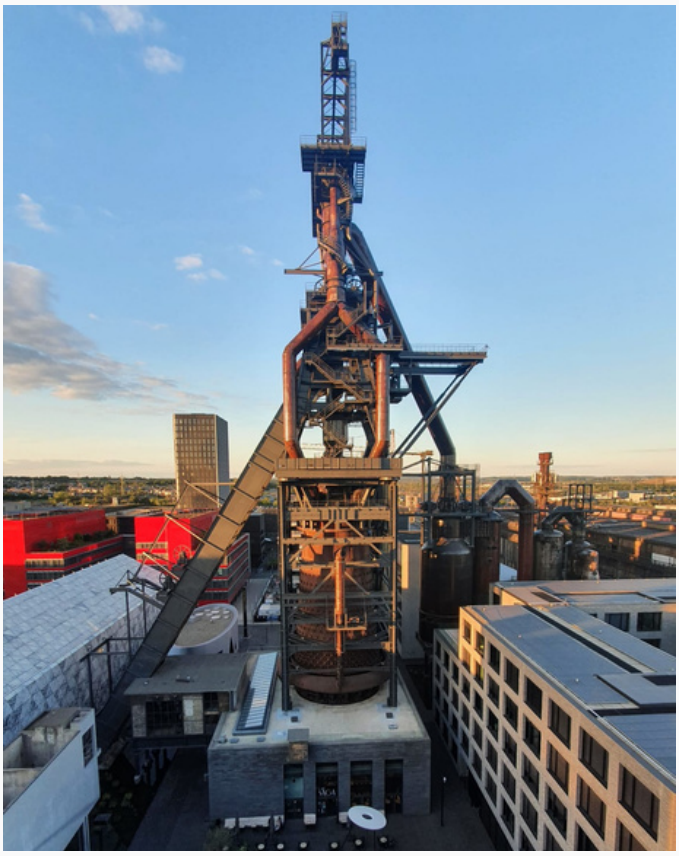
DDC PARTNERS IN LUXEMBOURG
ORGANIZED BY LIST



On Thursday September 22th 2022, project partners concluded the 2 days partner meeting at Université de Luxembourg Belval in Esch-sur-Alzette and visited a pilot Petite Maison on circular building of the university. The EU partners came together to discuss the development of the digital software platform and each work package presented their status on modules, navigator and platform. The meeting was well organized by Luxembourg Institute of Science and Technology (LIST).
On picture below: the EU project partners of Digital Deconstruction.

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INTERVIEW

Philippe van de Velde I OVAM

How do policymakers view the challenges for urban mining? And, more specifically, what opportunities do they see for the solutions that a project like Digital Deconstruction can begin to offer? We asked Philippe van de Velde of the Public Waste Agency of Flanders (OVAM).

OVAM is the Public Waste Agency of Flanders and as such is responsible for sustainable waste and materials management and clean soil in the Flemish region of Belgium. Together with the Flemish government and all relevant stakeholders, OVAM has worked out the policy program 'Towards Circular Construction 2022-2030'. Philippe van de Velde is a policy advisor at OVAM and specializes in construction waste, among other things.

What is OVAM's role in the development of urban mining and improved recycling and reuse of building materials?

"In the policy program 'Towards Circular Construction 2022-2030', we have included the objective of building basically everything with materials from the available potential by 2050. This means urban mining is obviously becoming increasingly important. For some materials, such as stony materials, we are already doing well. For that type of material, we are at 95% recycling or reuse. However, most of it is used for foundations. This is not a bad result in itself, but we should still try to transform those materials into real high-quality building materials, preferably within our own value chain. One challenge we still have in that regard is the definition of 'high-grade'."
"For the other, non-stony streams, we are facing a catch-up move, which, on the one hand, we are imposing on ourselves, and where Europe is also asking us to reincorporate 70% into the chain. OVAM wants to do this in close cooperation with the sector. The current policy program for 2022 to 2030 has been jointly developed with the ambition of making construction completely circular by 2050. This cooperative process started in 2012 when we moved from 'implementation plans' to 'policy programs'."

Read the whole article on DDC website

SAMEN MAKEN WE MORGEN MOOIER

OVAM

REGIONAL INNOVATION HUBS

BELGIUM | FRANCE | LUXEMBOURG | THE NETHERLANDS

REGIONAL INNOVATION HUB HEERLEN
(NL)
NOVEMBER 22, 2022

On Tuesday November, 22, a Co-Design Lab/ Break out sessions workshop Reversible BIM and Digital Deconstruction software platform take place at Brightlands Smart Services Campus in Heerlen. Professionals in the building industry, policymakers in NL are welcome to join this innovative afternoon in Heerlen.
Register here!

REUSE INNOVATION HUB
VILLENEUVE D'ASCQ (FR)
NOVEMBER 30, 2022

FOR THE FRENCH PROFESSIONALS IN THE BUILDING INDUSTRY A 3TH EDITION OF THE REUSE INNOVATION HUB IN VILLENEUVE WILL TAKE PLACE AT OUR PARTNER VILOGIA, ON NOVEMBER 30, 2022. THE RIH AIMS TO FIND SOLUTIONS AND LEVERS FOR ACTION TO IMPROVE THE SUPPLY OF REUSED MATERIALS SO THAT IT IS AS QUALITATIVE AS NEW MATERIALS, BY QUESTIONING ON THE ROLE OF PRIME CONTRACTORS AND CONTRACTORS.

TIME: 14H - 18H.
PLACE: VILOGIA, 74 RUE JEAN JAURÈS, 59491 VILLENEUVE D'ASCQ (FR)

REGISTER HERE

REGIONAL INNOVATION HUBS

BELGIUM | FRANCE | LUXEMBOURG | THE NETHERLANDS

REUSE AND DEMOLITION INVENTORY FORUM (B)
NOVEMBER 24, 2022

A good inventory is the starting point for high-quality recycling and reuse at the demolition site. Several players are developing services and digital tools to create inventories. These are presented at the Reuse and Demolition Inventory Forum on 24 November 2022.

Register here!

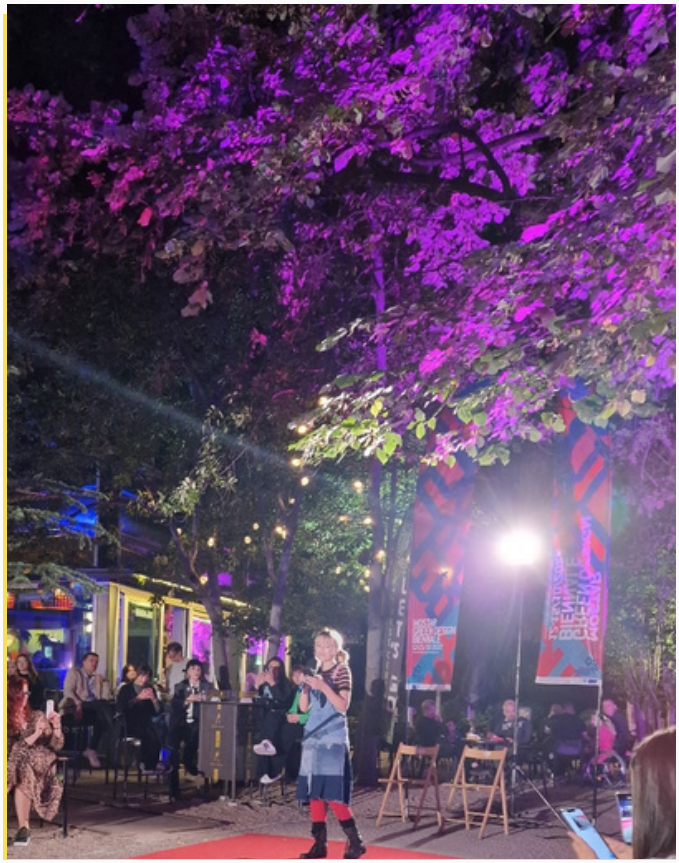
Hergebruik- en sloopinventaris

FORUM

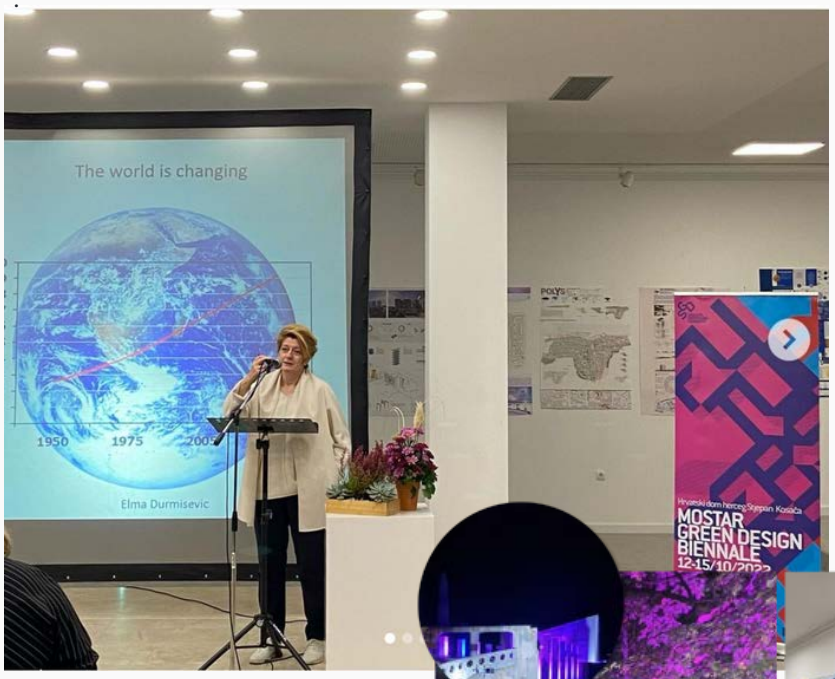
Inventaires réemploi & démolition

GREEN DESIGN BIENNALE MOSTAR

GTB-LAB & BIM-Y | OCT. 2022



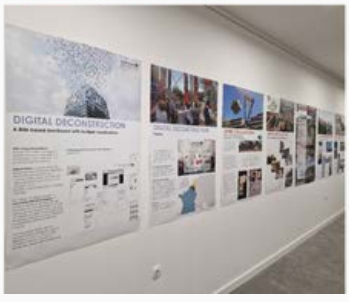
This year, the 10th Green Design Biennale organized by Sarajevo Green Design Foundation and City of Mostar brought together international networks and knowledge in the field of green and circular design, into a unique multidisciplinary, multi-layered and creative platform. Green Design Biennale involves all scales of design from product scale to urban scale. Number of exhibitions, lectures, town hall discussions and workshops were organized addressing the state of the art in sustainable design and dilemmas that product-design, architecture, urban design and construction industry are facing in the 21st century.



Objectives of this initiative are to:

- highlight the role of a good quality design in circular economy;
- promote the role of digitalization in circular buildings;
- bring focus to sustainability and green design;
- bring together designers, academic institutions and manufacturers;
- inspire new types of collaboration that will provide more intelligent and green design solutions.

This year's themes were dealing with digitalization and implementation of circular economy in architecture and design of healthy and inclusive green buildings and cities. Read more in this article.



DDC EVENTS

OVERVIEW UPCOMING EVENTS

November 22, 2022
Regional Innovation Hub Heerlen (NL)
register here

November 24, 2022
reuse and demolition inventory forum (B)
Register here

November 30, 2022
Reuse Innovation Hub Villeneuve d'Ascq (FR)
Register here

December 7,8, 2022
Open days Brightlands Smart Services Campus, during 3 digital days in Heerlen (NL). See program here.

PHOTO: BIM-Y, SCHROEDER & ASSOCIÉS S.A. AND LUXEMBOURG INSTITUTE OF SCIENCE AND TECHNOLOGY (LIST) PRESENTED THE RESULTS OF OUR PROJECT TO HIS ROYAL HIGHNESS THE HEREDITARY GRAND DUKE OF LUXEMBOURG DURING BENELUX CIRCULAR ECONOMY FORUM.

THANK YOU FOR SHARING

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 whome 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.