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# CIRCULAR DISPOSITION

Magazine for Construction Management and Engineering

# INTERVISIA

# EDITORIAL

## COLOPHON

## IN PREVIEW

## EDITION NR. 30

Dear IntervisiE reader,

As I am writing this message to you, we are passing through a strange time of our life. It is perhaps the first time for our generation all around the world to be in this together and to share a common struggle, or maybe an opportunity, or even a trigger. It has been argued that the current pandemic caused by the spread of covid-19 is the result of several ecological interruptions. Nevertheless, didn't we have enough reason to do something about the somehow rapid loss of our planet? Unlike geographical boundaries and borders, emissions do not have borders, so we are in this together no matter which part of the globe we live at.

The unsustainable use of resources and the damage caused to our environment in the past decades, makes it very crucial to think about what is left for the future generations. Looking into the main agenda of construction sector in Europe and more particularly the Netherlands, there could not be a hotter topic than the practice of circular economy in construction industry. Hence, this theme was selected for the 30th edition of IntervisiE by the 17th board.

The EU has set the milestone of being 100% circular by 2050. The built environment sector has the bumpiest path towards attaining the goal. Reason being one of the most resource consuming and waste-producing sectors. Even though the concept of circularity is gratifying, there are still many downsides to it. The ladder of circular economy proposes many approaches, with recycling and recovery being at the bottom of the ladder. It should be considered and clear that these approaches are not good enough, and they are just less bad. Therefore, this edition of the IntervisiE presents the idea of innovative minds working towards greener approaches in both the industry and the academic world.

At last, on behalf of the 17th board, I would like to personally thank everyone who helped us in finalizing this edition of IntervisiE! especially the authors and sponsors. Although it has been published with delay this year, we believe it has valuable contents to go through. And don't forget, these are hard times for all of us, so don't go harsh on yourself and others ;)

Enjoy Reading!

Yours sincerely,

Ramin Khoshnevisansari - Chief Editor

### General

IntervisiE is a publication of-of CoUrsE!, the study association of the master track Construction Management & Engineering (CME) at the Eindhoven University of Technology.

### Edition

This is the 30th edition of the magazine

### Sources

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## ABOUT CME

Master of Science (MSc) in Construction Management and Engineering (CME) is a two-year master's programme taught in English. It addresses the increasing need for reforms within the architectural, engineering and construction (AEC) industry. The CME program is a 4TU program given at TU Eindhoven, TU Delft, and TU Twente and does not include the Wageningen University of Research. ("Education | of CoUrsE!," n.d.)

### CME at TU/e

An interdepartmental program between the Built Environment (BE) and Industrial Engineering & Innovation Sciences (IE&IS) departments, the CME program possess a distinctive research-driven and project-oriented approach to education. You will use a combination of urban/building sciences and management and innovation sciences to develop solutions for smart urban development.

### Focus at TU/e

#### Smart Cities

Our Construction Management and Engineering program anticipates that change by exploring the area between 'construction engineering' and 'scientific management and economics'. It focuses on the management and implementation of urban development processes with an emphasis on smart cities. In particular, it looks at:

#### Energy Neutral Cities

creating more reliable models to estimate the effects of renewable energy technologies (e.g. batteries) and promote energy savings through smart infrastructure design (e.g. for autonomous vehicles) and behaviour adaptation.

### Urban Management

looking into socio-economic models to manage cities and forecast spatial effects and financial risks of policy measures by considering the emerging area of urban informatics (i.e. using sensors, GPS, social network data)

### Building Information Management

improving the effectiveness of the Architecture, Engineering, Construction, and Operation process, including interoperability and open data management

### Reasons to study CME

The scientific and social relevance of the CME program is beyond doubt and offers long-lasting career opportunities for CME graduates of the TU/e. CME graduates find jobs at: engineering consultancy offices, governmental institutes, start-ups, and contractors. This applies to all students, irrespective where they come from, because the CME program has a very international scope. These prospects are evidenced by the CME alumni association.

CME at TU/e has a unique position, not only in terms of its existence in the Netherlands, but also in terms of its scientific embedding at TU/e. It involves a cooperation between two domains of science: Built Environment and Industrial Engineering & Innovation Sciences.

### Research

The CME program has a clear scientific signature: strong involvement with research activities, organized and captured within two research schools: DDSS and Beta. CME students can be involved in state-of-the-art research projects, often funded from EU and national research funds or from industry, and learn from top researchers in the field.

### References

Master Construction Management and Engineering. Retrieved November 1, 2020, from <https://www.tue.nl/en/education/graduate-school/master-construction-management-and-engineering/>



## THE 18TH BOARD OF - of CoUrsE!

The 18th board of-of CoUrsE! started their board year of 2020-21 with many complexities. Adapting to the new way of working, studying and living, all together created a unique year for us. Although the board is small, the energy within is big. We are looking forward to great achievements and collaborations.

Dear readers,

My name is Ece Karabinar and I am a second year international student in CME in TU/e. After serving as the Secretary and Website Manager of the 17th board of of CoUrsE!, this academic year I took on two new roles for the 18th board of of CoUrsE! as Chairperson and Commissioner of Education. I am delighted to work together with our Commissioner of Public Relations Ellen van den Bersselaar and our Secretary & Treasurer Ramin Khoshnevisansari.

As we all know, this year has been a special one because of COVID-19 and we have realized that it is especially important to keep up the motivation and positive energy flowing, since our habits of how we live, work and socialize have changed completely. As the 18th board of of CoUrsE!, we are working hard to ensure that we maintain the connection and collaboration between students, academics and our industry partners, even in these difficult times!

We hope that you will enjoy reading this edition of Intervisie. To learn more about us and our activities, don't forget to follow us on our social media channels. Stay tuned and stay safe!



Ece Karabinar,  
Chairperson  
18th board of CoUrsE!



# EVENTS OF THE 17TH BOARD

## The footprint of the 17th board!

The 17th board managed to organize varieties of educational and non-educational activities. The scope of activities targeted educational lectures and excursions, and also student development related. Fun activities are of course one of the best ones. Some of the photos are presented below. Unfortunately, many activities such as COD, and study trip got cancelled due to the rise of pandemic. We look forward to have such pictures soon with less distance between us.



Cobo+GMM#1



Brink lunch lecture



SDK excursion



Weekend trip Antwerpen and visit to ABT



Blockborrel Q1



Sint Nico bowl





CME end of the year dinner

7



Blockborrel Q2

10



8



YER beer tasting

11



Maurik infra lunch lecture

9



CME graduation theme info

# REPORTING FROM CHICAGO

**BOUKE BOEGHEIM**



**E**ach year the Chicago Council on Global Affairs organizes the Pritzker Forum on Global Cities. The Forum was initiated five years ago by the council to underline the importance of future cities and share thoughts on pressing challenges cities face. For example, some cities do have bigger economies than whole countries. Therefore, cities' global economy influence is rising. In general, the council is a think

tank membership organization which brings together people from business, government, education, and the arts in international forums driving the critical dialogue; offering policy analysis on a wide spectrum of global issues. The Pritzker Forum is one of their yearly events.

**Last June the Pritzker Forum on Global Cities took place, representing the University of Technology I took place in the so-named Global Student Delegation.**

This student delegation exists out of over 25 students originating from Mexico to India and from Japan to Israel. All students were pursuing their master degrees or doctoral degrees in urban related issues. For example, subjects studied are: public policy integration towards a green economy; creating efficient and equitable systems to enhance urban landscape and empower local communities; temporal and spatial variability of ultrafine particles in cities; potential contribution of climatically adapted vegetation to reduce the urban heat island footprint of residential landscapes. As you read, a great variation in research focusses are covered, however all these topics are connected to urban challenges and/or future cities. During the forum a wide spectrum of global city challenges was discussed by an impressive list of global practitioners and government officials (e.g. AI; Migration Policy; Urban Green). I found the forum an inspiring and enriching experience. If you are interested, all panel discussions and flash-talks can be reviewed on the YouTube channel of The Chicago Council on Global Affairs. The most interesting panel discussions for me were on MaaS and on (un)affordable housing. During the MaaS panel discussion Heidi Alexander (Deputy Mayor, Transport for London); Chris Pangilinan (Head of Global Policy, public transportation, Uber); Jan Vapaarvuori (Mayor of Helsinki) and others discussed the potential and practical issues of MaaS, answering whether it is a "Boom or Bust". In addition, to the MaaS panel discussion I also attended the MaaS workshop at McKinsey & Company. In the (un)affordable housing panel discussion Koon Hean Cheong (CEO Housing and Development Authority of Singapore) gave her opinion and insights

on how housing is organized in Singapore compared to other countries. Furthermore, the flash-talk about "The Senseable City" by Carlo Ratti (Senseable City Laboratory MIT) was a great outlook into promising tech applications in urban planning. Lastly, I spent some more days in Chicago enjoying all the skyscrapers and architecture of this city. At the Chicago Architecture Center (CAC), I bumped into a very interesting temporal exhibition: from me to we – imagining the city of 2050. Covering many topics which are taught in CME and USRE master programs as well (e.g. urban housing, mobility, livability, healthy cities and technology). In addition, a map of future mega-cities was displayed showing whole regions turned into mega-cities. Next, of course made the obligatory "bean" (cloudgate) photo and visited cultural neighborhoods out of downtown: Pilsen (Mexican) and Chinatown. To summarize a very enriching and international experience resulting in a huge amount of inspiration and network opportunities. I would like to close this report with my sincere thanks to the Department of the Built Environment for nominating me as student delegate this year.

Bouke Boegheim  
Student,  
MSc Construction Management and  
Engineering,  
Eindhoven University of Technology  
(TU/e).



# REPORTING FROM TAIWAN

STIJN VAN DE NOUWELAND



Taiwan

**M**y time is up here in Taipei to a fantastic semester at the National Taiwan University of Science and Technology (NTUST). Of course by Covid-19 a special time to go on exchange. Once I arrived in Taipei I first traveled through Taiwan for 3 weeks because of the semester that was postponed by the virus. After this I followed courses from the Faculty of Construction & Civil Engineering and Business Administration. A nice combination where I got to know many international students as well as many Taiwanese students. The Taiwanese

government was well prepared for the virus and the situation was good in the country. During the semester there was a lot of partying, traveling and sports with both local and international students. Normally the exchange students travel all over Asia.

**The study pressure is a lot lower in Taiwan and therefore you have a lot of free time to enjoy the beautiful country.**

Unfortunately this was not possible due to the virus. However, this did bring the possibility that all exchange students stayed in Taiwan and that you would often meet them here and there. During the semester I visited cities like Taichung, Taitung, Tainan, Keelung and Kaohsiung multiple times. I also visited the national parks Taroko Gorge, Yushan, Alishan and Kenting. As a literal high point I also climbed Taiwan's highest mountain, Jade Mountain (3952 meters). Next to that, Taipei is an excellent city for an exchange with a lot of diversity which makes it a lovely place to live.

My time is really up and I am currently at the airport to catch my flight back to Amsterdam. All in all a great time in this beautiful country and I will definitely come back. Xie Xie Taiwan!



Stijn van de Nouweland  
Student,  
MSc Construction Management and  
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# BIM-based building circularity assessment from the early design stages

JIANLI ZHAI

A BIM-based framework for automating the building circularity assessment from different levels of a building's composition and providing the decision-making support on the design of the circular building from the early design stages

Firstly, I will briefly introduce myself. My name is Jianli Zhai, and I got my bachelor's degree in Civil Engineering in China. After that, I was enrolled in the CME master program at TU/e and graduated in September 2020. My interest in this subject started when I knew the concept of Circular Economy. Its great potential in bringing benefits to mitigate the negative impact of the construction industry on the environment attracted me. Combining this with a keen interest in Building Information Modelling (BIM), I soon decided the graduation topic: BIM-based building circularity assessment from the early design stages. Furthermore, working in close collaboration with the company Alba Concepts, which focus on the circular solutions in the built environment, I got more insights about building circularity assessment. In this article, I will provide a brief description of my graduation project. I wish you enjoy reading it.

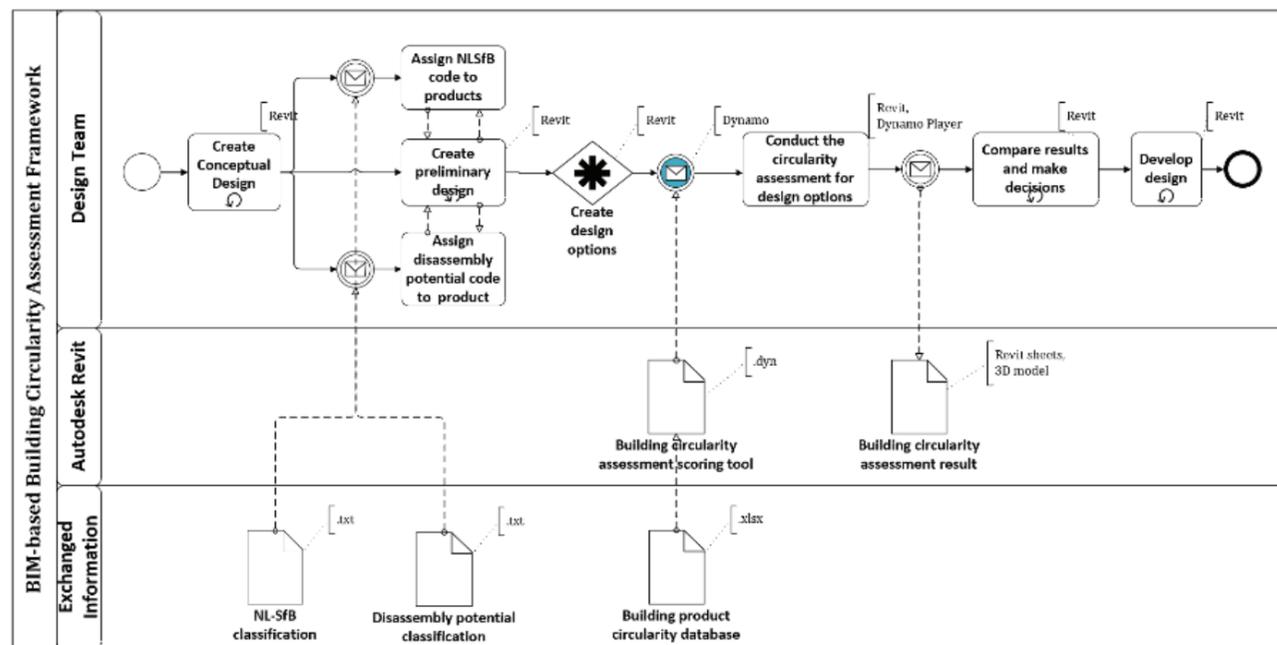


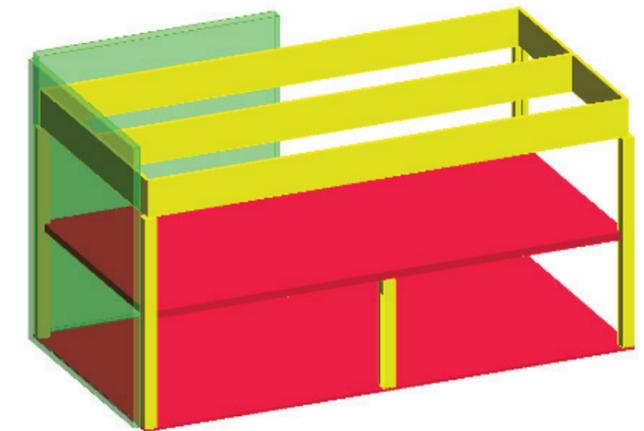
Figure 1: The process map of BIM-based BCA framework

Globally, demand for raw material has been seeing rapid growth over the past few decades. The construction industry, as a highly material-intensive sector, has a great contribution and responsibility to this rise. This is due to the use of the linear economy (LE) model, which follows the pattern “take-make-use-depose”. As opposed to the current LE model, the circular economy (CE) model adopts a more sustainable approach “take-make-use-reuse and recycle”. It aims to not only close the material loop by recycling and reusing the disposed of products but also slow the loops by using durable products.

However, despite the great potential of CE in reducing natural resources usage, its application in the construction sector is limited to the management of construction demolition and waste (CDW). To promote the implementation of CE from the design phase of building, the stakeholders (e.g., architects, engineers, project managers) should have tools to support them in exploiting the value of building's circularity. Since a large amount of data is needed to supply the measurement of building's circularity, it is suggested to integrate BIM to improve the efficiency of the assessment.

To show how BIM can be combined to automate the building circularity assessment and facilitate the decision-making regarding the design of a circular building, this research developed a BIM-based building circularity assessment (BCA) framework (Figure 1). This framework mainly utilizes Dynamo for Revit as the essential tool to establish an automatic and efficient link between BIM model and external building circularity database. Furthermore, the designed Dynamo prototype, which is called Building Circularity Assessment Scoring (BCAS) tool enables to conduct a quantitative BCA and generate the outcomes in the interface of Autodesk Revit. The assessment results are presented in the form of charts (Figure 2) and override the Revit model elements with different colours (Figure 3).

Furthermore, the framework is validated by a real case that aims to design for circularity. The results prove that the possibility to assess the building circularity from an early stage schematic design and promote the circular design based on the assessment results of different design options. If you want to know more, please refer to my thesis or contact me via my LinkedIn.



Class	Description	PCI	Colour
1	Very high	0.8 – 1.0	Green
2	High	0.6 – 0.8	Light Green
2	Medium	0.4 – 0.6	Yellow
4	Low	0.2 – 0.4	Orange
5	Very low	0.0 – 0.2	Red

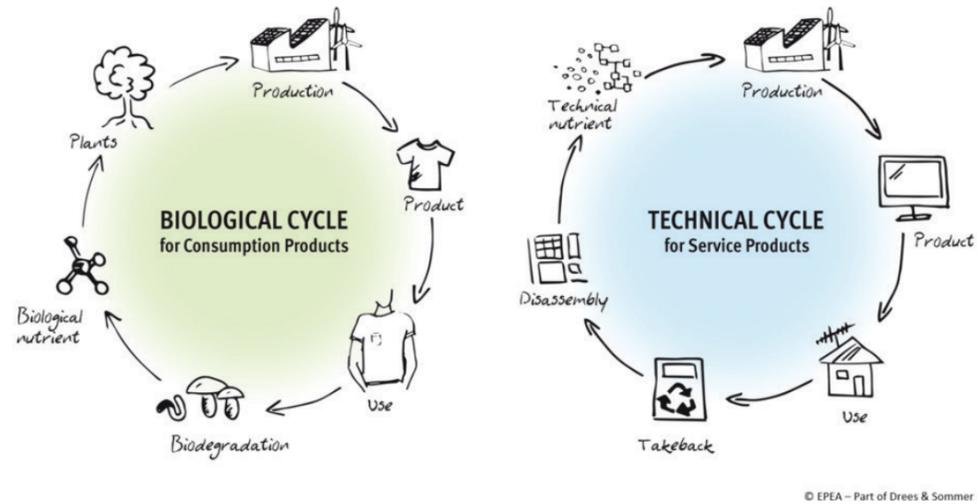
Figure 3: 3D BIM model override by different colours



Figure 2: The pop-up window generated by the BCAS tool

Jianli Zhai  
CME graduate





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## CIRCULAR CONSTRUCTION: “MASTER IN MATERIAL FLOWS”

### HEIJMANS / THIJS HUIJSMANS

Due to current consumer behaviour, technological developments and climate change, the construction industry is confronted with a rapidly increasing dynamism in building usage. As a result, the required building material increases and these are used over shorter cycles. The consequence of this is more depletion of raw materials, more CO2 emission and a rising mountain of waste. Instead of curving the use of materials, Heijmans directs and stimulates, through circular construction, towards positive material flows that add value the build environment.

#### Cradle to Cradle

Heijmans as a construction organization has the mission to create a healthy society, with sustainability as one of the three strategic themes. Furthermore, is Heijmans leading in what is called the ‘material goal/challenge’ by focussing 100% on circular construction by the year 2023. Circular construction arises from the Cradle to Cradle (C2C) philosophy, which emphasizes the added value people can give to our planet. They must act according to the ‘rules of the earth’: 1. Waste equals food, 2. Use current solar income as primary energy source. 3. Celebrate diversity. Waste equals food is the answer to the material issue. It is important to know that this philosophy makes a clear distinction between the biological and technical cycle.

The challenge in the construction industry is to completely close the technical cycles, however it also important to swift more and more towards biological cycle. This development makes circular construction encompass the entire spectrum, whereby, based on the available material stock, both extension of the technical lifespan and the environmental performance are prioritized. This spectrum is central to Heijmans’ circular approach and is also in line with the developments of the CB’23 platform.



#### Material flows

Initially there seems to be a conflict between extending the lifespan and reducing the environmental impact. After all, conserving material often directly worsens the environmental impact. In addition, conflicting design choices (e.g. between wood and steel) can lead to the game goal: a circular building. Yet behind this conflict a uniform and essential guiding principle can be found: valuation of material flows.

Material flows are by principle not the problem with which the construction industry is struggling. The real problem is the linear framework in which these flows originated that must be solved. This framework has resulted in unwieldy building elements, high ‘embodied



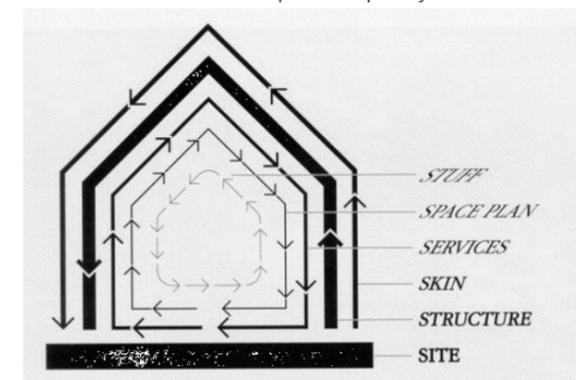
carbon’, deep-seated interweaving and unclear origin. Material flows can certainly flourish if construction is done with lighter and pure materials, simple (dis)assembly, traceability and local reuse. This way the balance is restored between the environmental burden of production & transport and the shorter functional lifespan.

Within this spectrum of completely closed cycles Heijmans takes the responsibility and acts like a thriving construction company in a circular world. This being the supervision of material flows during the entire construction process: design, realization, management, disassembly and reassembly at a new location.

#### Adaptivity

The ultimate purpose of construction processes is to realize valuable construction objects, that are of great value to its users now and in the future. In these dynamic times, this future value strongly depends on the building’s adaptability. Adaptivity means that the object is suitable to undergo functional changes, whereby released materials can easily be reused. In this way adaptivity functions as one of the pillars in the Heijmans strategy in order to deliver 100% circular houses by 2023. This already starts with capturing the dynamics in the program requirements and adjusting the choices accordingly in the design. At Heijmans the Shearing Layers of change principle of Steward Brand is central, in which a building is described as a “machine with 6 layers, each with its own speed”. By allowing the different layers (each with its own functional lifespan) to function independently of each other and by giving each layer a dynamic strategy (from robust to transformable), the building acquires adaptive qualities and embraces the dynamic housing demand. This requires a conscious choice on the lifespan and a clear elaboration of the detailing and connections for each layer in order to encourage detachability and reuse.

Material flows and adaptive capacity come well to-



gether in the Fenixloodsenproject. The amalgamation of existing and new constructions respects the qualities of the existing construction and thus saves unnecessary dismantling and extra material use. At the same time, the new buildings have a uniform and flexible structure, in which the current and future residents will have the freedom to design their future home (Open Building Principle).



#### Reuse

In 2023 Heijmans will be using circular asphalt and concrete and by 2030 it will use them to build 100% of its tasks. With this responsibility is taken to close cycles at material level. In 2020, Heijmans is also encouraging actual reuse of building materials, including their own office accommodation. In the case of a renovation the reuse of materials is used as much as possible for the façade, installations and finishing. Glass interior walls are used that have been “mined” from a renovation project in the neighbourhood. Existing facades are acquired from a dedicated supplier for which these facades were superfluous. And materials released from various regional offices are collected to make the permanent furnishingscircular.

It is clear that the current circular business case for composite construction products, such as interior walls anything but profitable is. High-quality reuse is labour-intensive, whereby availability and quality are not always guaranteed and where the chain has not been developed sufficiently. Heijmans is actively acting to



fathom the supply chain in order to gain insight into the linear thresholds, and thus to steer the chain towards circular opportunities. Not only financial values play a role in order to close the business case, also values aimed at the environment.

#### Environmental performance

The current legislation already stipulates that homes and offices must achieve a certain environmental performance (MPG). This performance is determined on the basis of the Life Cycle Assessments (LCA), with

which the environmental impact for each material can be determined.

The MPG is expressed in shadow costs, fictitious costs that are necessary for the restoration of the environment. This standard will be tightened considerably in the upcoming years. The application of reusable (biobased) materials helps to reduce shadow costs and wood is already used as the primary construction material in various Heijmans projects.

To actually extend the lifespan of materials and act more strongly on the biosphere, a considerable development of the determination method and its database is required. This also includes a clear task for producers, who will increasingly have to draw up their own LCA scores. Heijmans is strongly committed to this theme. In 2023, Heijmans wants to determine a full LCA score for each offer, so that the environ-

mental performance of all projects can be transparently shared with customers. A logical consequence is that Heijmans prioritises the products and its suppliers filters based upon the environmental performance, in order to make material flows greener and healthier.

#### Expert in Material flows

In Stewart Brand's book *How Buildings Learn*, the challenge for circular construction was already sharply described: all buildings are predictions and all predictions are wrong. Buildings should not have the implicit arrogance of surviving the future, but should serve the environment and move with appropriate changes in order to guarantee future housing. Material flows are by principle a good thing, and as an expert of material flows, Heijmans contributes to a fully circular construction industry.



# THE CIRCULAR WASTE PROCESSING CENTRE ANNO 2020

WITTEVEEN + BOS RAADGEVENDE INGENIEUS B.V. DEVENTER

11th of september 2020

Until late in the 1980s our household waste was generally landfilled or incinerated. The first signs of a different way of collecting appeared cautiously at the start of 1990, with the realisation that waste could also have a value. At the time bulky household waste was collected every month on our doorsteps, entailing considerable nuisance on the streets. Alongside problems caused by the weather, significant numbers of people also scoured the streets looking for reusable items and metals. In retrospect this can be seen as an early iteration of the circular economy. The first facilities where private individuals could dump bulky household waste were a few containers at the local municipality's depot. That's where residents could get rid of their large items. One of the first circular waste processing centres was in Maastricht, intended to keep the city litter-free for the European summit. Commissioned by Witteveen+Bos, futurologist Rudolf Das produced an initial sketch for it in the early 1990s.

These years laid the foundation for the waste collection we still encounter today in many waste processing centres. An example can be seen in one of the first Witteveen+Bos waste processing centres built for the municipality of Roosendaal in 1995.



Maastricht Treaty (7 February 1992) establishing the European Union

We have steadily come to the realisation that waste is more of a raw material than simply a residual product you want to get rid of. So, waste incineration or landfill is becoming less common, with waste separation fortunately on the rise.



An increasing volume of waste materials can also be put to good use in new products. Paper is an example of something we have been reusing for many years. Reusing metals has also been commonplace for some time, but mattresses, deep-frying fat, batteries and electrical appliances are also being recycled increasingly. Where there were 12 fractions in 1995, the Dutch national waste management plan, LAP3, now refers to 24 fractions. This means the waste processing centre contributes increasingly to the circulation of raw materials. And that means the waste processing centre is evolving. Alongside being a facility for users, for many municipalities it is a means of raising awareness. In many cases simply dumping all fractions free of charge is no longer possible, with a charge being levied at the gate for several fractions. This also means users are becoming increasingly

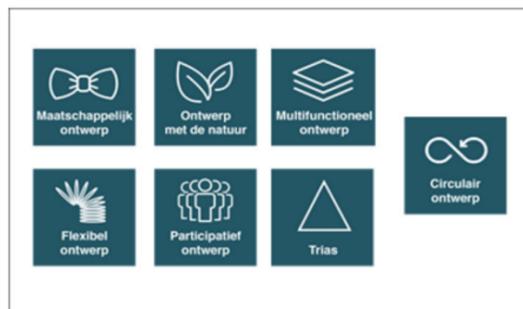
aware of the storage and reuse of residual flows. There are waste processing centres with separate facilities for paid and free flows.

The next step in the national goal of being circular by 2050, is the sustainable and circular design and construction of the waste processing centre itself. Not only will this let waste separation contribute to a circular economy, but the waste processing centre itself should also be designed circularly. The design must be future-oriented through a flexible layout, along with limiting the use of raw materials, but it should also facilitate other applications, like offering space for companies turning the raw materials collected in the waste processing centre into new products, also known as 'Circular Craft Centres'.

For us, sustainability means providing added societal value. Previous materiality analysis has shown that Witteveen+Bos can deliver the most societal value in our design projects. Our projects follow our seven sustainable design principles based on the United Nations' Sustainable Development Goals. The seven principles help us to shape sustainability in its broader sense, and are an important part of the design of a waste processing centre.

Although all the principles are important, our vision of circularity in waste processing centres is accorded special attention. The circular economy is based on the idea of recirculating products and materials, thereby reducing the amount of new material needed in the future. We apply this by first performing a 'reuse scan' of an existing object; this indicates which products (i.e. products as a whole) or raw materials can be reused or recycled (often leading to secondary building materials). The same consideration can be made in the 'circular design', by investigating the reuse of existing components, and the end-of-life options of the components. For example, a high degree of disassembly will result in a better facilitation of the future reuse of the components. The environmental impact/sustainability expressed in CO2 and ECI (Environmental Cost Indicator) are also important balancing factors in determining the ultimate design, given that there is no need to focus blindly on circular material use.

In an iterative process, it is possible to improve a design by considering its circularity and sustainability. Witteveen+Bos developed the +Circular Design Tool for this purpose; the +Circular Design Tool assesses a building or installation design for sustainability and circularity, visualising the results in a material flow analysis. At a glance a dashboard



Witteveen+Bos duurzaamheidsprincipes

with indicators shows just how a design will perform in

terms of raw material and material use, circularity and environmental impact (CO2 and ECI). This insight enables an easy comparison of the circularity and sustainability of various designs, allowing users to work towards maximum results in a circular design process and to motivate choices appropriate to the circularity policy objectives.

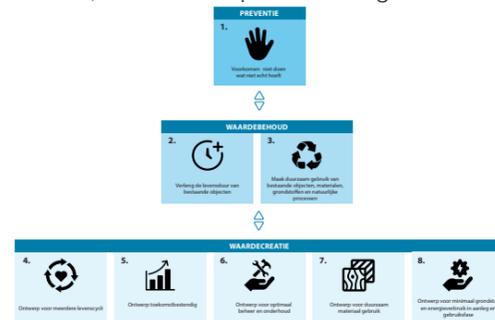
Ultimately it's essential that these specific requirements be included in the contract to be fulfilled by the contractor. An important document here is the materials passport and disassembly manual, indicating which materials have been used in the design and how they can be disassembled, thus facilitating future reuse.

We use the following order of preference based on the Ellen MacArthur Foundation's Butterfly model for both the 'reuse scan' and the 'circular design':

Following these circular principles produces not just an environmental benefit, but also a financial one over the long



term, given that reusing products as a whole holds a higher value than raw material or secondary waste. In Gouda, this led to a design deviating from the previously customary one with concrete, sand and asphalt. Although these materials



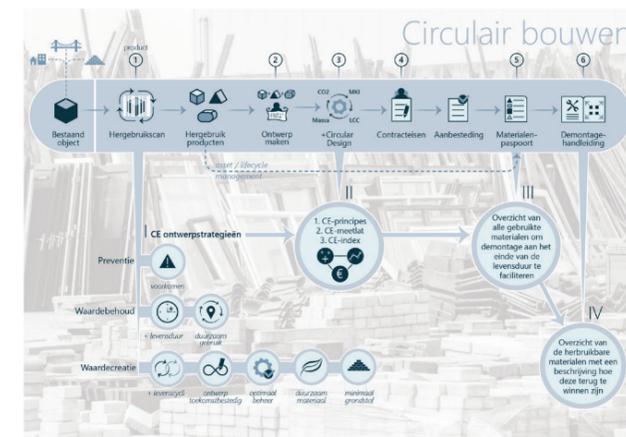
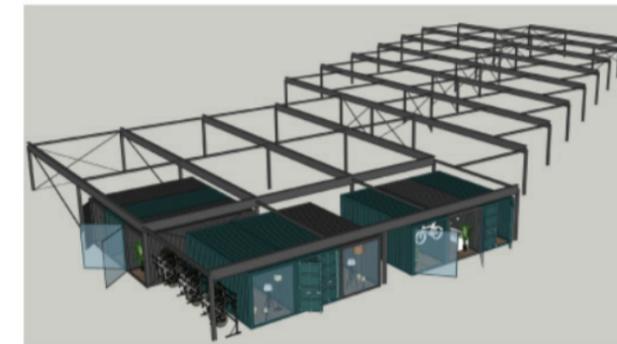
can often be reused as raw materials after processing, in the new designs, we aimed at limiting the raw materials, and at the possibilities for the (future) reuse of the materials, without any need for processing (i.e., from product to product). To this end, the 'parking garage' model was developed for the Ecopark in Gouda. This model features a single-layer parking deck, placed such that it becomes a functional dumping platform for a waste processing centre. It is standard available technology, which after its use has ended can always be deployed as a parking garage, for example. The dimensions of the connected decks also lets them be used in other ways, for instance for bridges in slow traffic routes. An additional benefit is the creation of space underneath the platform for multiple applications. Small businesses can thus be accommodated, storage is possible, but of course also parking for staff vehicles, for example. Accommodating companies or workshops are also flexible. Closed shipping containers are used, slid under the platform according to demand. This means it is not a part of the platform, thus saving material and also requiring lower investment.

Searching for suitable solutions that are not only sustainable and circular, but also functional, is the challenge when

designing a new raw material drop-off facility. It's not only Witteveen+Bos, but also its clients, who realise the usefulness and need for new possibilities and opportunities.



The first waste processing centre designed according to this concept, will open at the end of 2021.



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# Wie zegt mij dat ik beter af ben bij Mourik?



Denk je aan een nieuwe baan in de infrastructuur of industrie? Waar kijk je dan naar? Bij Mourik zeggen we: "Praat gewoon met de mensen die bij Mourik werken."

Ontmoet ze op [www.werkenbijmourik.com](http://www.werkenbijmourik.com).  
Mourik. Het betere werk.



# EEN TRAINEESHIP BIJ MOURIK

## Waarom zou je het traineeprogramma bij Mourik Infra volgen?

Mourik is een familiebedrijf met ruim 85 jaar ervaring. Kenmerkend is de grote betrokkenheid die er binnen de organisatie is. Mourik opereert internationaal in de sectoren infrastructuur, (petro)chemie, bouw, energie en milieu. We werken veelzijdig binnen wegebouw, verkeersmanagement, onderhoud sluizen en stuwen, bruggen en ondergrondse leidingen, industrieel onderhoud, nieuwbouw, civiel, milieu, werktuigbouw en elektrotechniek. Daardoor krijg je met veel verschillende afdelingen en disciplines te maken. Zo ontwikkel je meteen een breed netwerk. Ook geeft het inzicht welk bedrijfs onderdeel of welke activiteit bij jou het beste tot z'n recht komt. Het traineeship is veelzijdig.

## Meteten groeien

Wij zorgen voor draagvlak, ontwikkelingsmogelijkheden en kansen. Jij neemt je eigen verantwoordelijkheid en krijgt daarbij veel bewegingsruimte. Zo kun je je grenzen verkennen en groeien. Belangrijk is dat je een ondernemende instelling hebt. Je bent commercieel, ondernemend en functioneert als een professioneel binnen onze uitdagende werkomgeving. Dit zijn de pijlers van succes. Na je traineeship weet jij wat je competenties zijn en gaan we samen met je op zoek naar de beste plek voor je binnen Mourik Infra.

## Coaching

Gedurende je traineeship heb je een persoonlijke coach. Deze begeleidt je in je persoonlijke ontwikkeling, behoedt je voor de valkuilen, is je aanspreekpunt en bespreekt je leermomenten met afdeling P&O. Deze afdeling vormt het aanspreekpunt voor de algemene zaken rondom je traineeship. Zij kennen de organisatie van Mourik en ondersteunen en adviseren je bij de optimalisatie van je leerproces.

- » Periode van **2 jaar**
- » Je doet ervaring op binnen **verschillende afdelingen** van Mourik Infra
- » Je krijgt **een vaste coach** voor het gehele traject
- » Wij hebben aandacht voor **jouw persoonlijke ontwikkeling**

Neem vooral een kijkje op [werkenbijmourik.com](http://werkenbijmourik.com) maar wil je liever direct contact dan zijn wij te breken op **0184 66 72 00**.

[mourik.com](http://mourik.com)



# THE ADDED VALUE OF MADASTER

## SANDER BEEKS / BUSINESS SUPPORT & PARTNER MANAGEMENT MADASTER

There are plenty of ambitions about circularity. Websites and business plans are stacked with it, and the material passport is also rising. Many contractors, real estate owners and developers see that besides the social, legal, and ecological urgency, a Madaster registration can also be of added value financially. Mitchell Gmelich and Rob Oomen already wrote about the MIA/VAMIL regulation, which can add up to a tax advantage of 9%. In this blog, I will show you two proper examples of how a registration of real estate can offer interesting possibilities for new business models or create financial value for organisations.

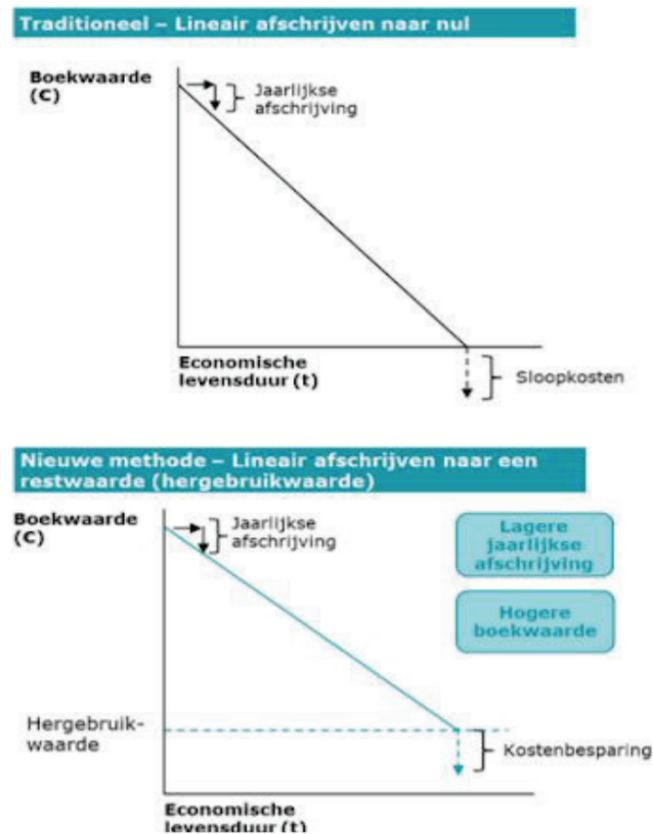
### But first: What is Madaster?

We consider the Earth as a closed system in which no spillage takes place. Raw materials are limited available. They need to be documented in order to be unlimited available as raw materials. "Waste is material without identity" - Thomas Rau. It is the mission of Madaster to have materials always available by giving it an identity. If materials have an identity, they can never disappear in anonymity as waste. Every building becomes a depo of materials with a certain value. To achieve this, the Madaster platform creates transparency about material assets in the built environment. Product and material data can be stored, enriched, shared, and controlled. A material passport gives insight into the materials, components, and products that are used to create a building and their quantities. In addition, the material passport contains information about the quality of materials, their locations, and their monetary and circular value. By using this method, it is easier to reuse materials, to minimize waste, and to lower the costs of material reuse. A better insight into material usage will stimulate the circular economy which can lead to better design solutions.

### Less depreciation costs by not depreciating to zero

Traditionally, organisations depreciate their real estate to zero in for example twenty or thirty years. Subsequently, demolition costs are added, for which a certain amount is reserved in the budgeting. By creating insight into the actual value of materials your real estate never has to be depreciated to zero, but to the residual value of the building. "Does the accountant allow this?", I hear you thinking. Based on the research "C8: Van vastgoed tot Losgoed" of Deloitte in cooperation with 8 respectable companies

from different sectors, it became clear that insight in the reuse value of materials for real estate owners can lead to a financial incentive to get started with circular development. The potential of this development was pinpointed again in the report by Arup in cooperation with the Ellen MacArthur Foundation in which the circular building business models of the Built Environment got highlighted. There are many variances present in the different industries, causing it to be more attractive in certain situations. Additional research is currently being conducted about taking the residual value of certain products into account.



### Prevent costs by knowledge about your real estate

Costs can be prevented by having actual knowledge and direct insight into the materials, products and elements in your real estate. Think about the information you have about your roof construction that is directly available in the cause of a leakage, or information about fire safety of certain materials that is always accessible, even if you are not the first owner of the specific object. What to think about the costs that could have been prevented if the location of asbestos was neatly documented? Nobody knows the feature, but by documenting which materials and products we use, we can prepare for the future. "Reality only forms afterwards. Madaster creates an accessible reality which nobody knows yet!" Thomas Rau.

### A diverse variety of possibilities

Fifty partners are currently connected to Madaster and many new partners are still added each month. A diverse variety of supporting parties who support real estate owners by the registration of their real estate in Madaster or who provide added value based on that registration. Ranging from contractors to (circular) consultancy agents, or from architects till subsidy advisors. Each party has their own expertise, connected by the Madaster partner network. A complete overview is provided on our website.

The financial aspect of circular building is no limitations, it offers opportunities!

There are multiple ways – direct or indirect- that can create added value in the corporate or private construction. We should not see the financial aspect as a limitation, but rather as an opportunity! Only like that we can build the world of tomorrow. We look – especially during these strange times– forward to the future. Are you joining?



Sander Beeks - Business Support & Partner Management Madaster

**DAT WIJ  
EEN VERVUILD  
TERREIN  
KUNNEN SANEREN,  
DAT WETEN WE WEL.**

Maar wat kan jij?

Van projectleiders tot trainees, onze collega's vertellen graag over hun ervaringen bij Dura Vermeer. Pieter-Bas Dijkman (28) is projectcoördinator bij Dura Vermeer.

Bij Dura Vermeer voel ik mij prima op mijn plek, dit is mede door de ongedwongen sfeer die er heerst. Tweeënehalf jaar geleden ben ik met mijn traineeship begonnen bij Dura Vermeer Infra Milieu. Ik kende het bedrijf nog niet zo goed, maar ik voelde me er direct op mijn gemak. Zo zat ik tijdens het eerste gesprek al met een projectleider aan tafel en werd ik als gelijkwaardige gezien. Hierdoor voelde het meteen goed.

#### SANERING VAN HET EMK-TERREIN

Momenteel werk ik als projectcoördinator aan de sanering van de Stormpolderdijk, het voormalige EMK-terrein. Een uitdagend en complex project, want we saneren een terrein dat al vanaf eind negentiende eeuw wordt gebruikt als locatie voor verschillende industrieën. Wij gaan de vervuilde grond afgraven in een speciale tent die ervoor zorgt dat er geen emissie naar de omgeving kan plaatsvinden.

#### HET BETERE REGELWERK

De ene dag ben ik aan het modelleren, calculeren of leid ik een meeting. De dag erna lig ik in mijn overall op de grond een installatie uit elkaar te schroeven. Momenteel breng ik alle kansen en risico's van het project in kaart, maak ik plannings en maak ik systeem engineering in orde. Naast deze werkzaamheden krijg ik ook alle ruimte om me te ontwikkelen op het gebied van BIM. Ik zit zowel met de opdrachtgever aan tafel, als met de mannen die buiten werken. Deze afwisseling vind ik super!

Wil je ook werken aan technisch uitdagende projecten in de meest complexe omgevingen van Nederland? Maak je ambities waar en bekijk onze vacatures op [DURAVERMEER.NL](https://www.duravermeer.nl)



## A SECOND LIFE FOR A DISCARDED BRIDGE

DURA VERMEER

Dura Vermeer envisions the circular economy as a solution for limiting our material usage. Also, the Rijksoverheid must replace around forty thousand post-war bridges and viaducts. Managing director Erik van Doorn from Dura Vermeer says that: "We want to address as little raw materials as possible for such replacement tasks, and we want to reuse the materials that are released. This requires a completely new method of working and thinking".

Our first tangible example of a circular bridge is the reusage of a bicycle and pedestrian viaduct spanning across the A27 near Vianen. Erik: "Sustainability is one of the key strategic pillars of Dura Vermeer, so we have taken the initiative to not deconstruct the viaduct and by reassembly we have reused high-value materials. The modules were disassembled, placed in a depot, and a new location was allocated." This location was found in the Floriade Expo 2022, the international horticultural expo who rises in Almere in which the Divisie Bouw en Vastgoed and the Divisie Infra are involved in the development and realisation.

A hundred sixty meter long wooden bicycle and pedestrian bridge had to be designed. The civil design group manager Arjen Schoondermark of Dura Vermeer: "Normally we create a design and we investigate which materials are required, but this time we looked at it backwards: we have designed a new bridge based on harvested materials. This design does not require any additional materials". The Floriade also prioritises circularity. Despite their request

for a wooden bridge, they are still enthusiastic about this design proposal. It is constructed on a structural frame of steel piles and harvested concrete I-beams, which is decked with Azobé sheeting boards, and has sawn oak rail beams as railings. Arjen: "We are currently engineering the bridge. It is our intention to start construction of the bridge on the Floriade in July. The bridge has been named the "Reused Bridge". De Rijksoverheid plans to procure all infrastructural works as circular projects in 2023. Erik: "Solid references and examples of circularity in EMAB (Dutch: EMVI) project plans are becoming increasingly important. We want to increase our knowledge about the reusage of materials, discover which difficulties occur, and how different parties can resolve those". For example, Dura Vermeer is partner of the Bouwcampus, an initiative in which the whole construction chain thinks about how such transitions can be formed and be realised.



# CIRCULAR CHALLENGES

IR. H. (HAJO) SCHILPEROORT

Planetary boundaries and definitions  
Huesemann & Huesemann (2011, p.124) define three indicators for circularity on planetary level:

All energy comes from renewable sources at or below renewable rates.

All materials come from renewable sources at or below renewable rates.

Waste (this includes emissions, HS) can only be released at or below assimilation rate, without negative impacts for the ecosystem or biodiversity.

The aim of circularity is to keep impacts within planetary boundaries, and moreover avoid depletion of needed resources. We are currently far removed from that point as we overshoot particularly the safe boundaries for biodiversity loss, deforestation, nitrogen and phosphate depositions and global warming, risking/causing substantial alteration of the Earth System (Steffen et al, 2015).

“Rate” is the keyword in the Huesemann (2011) indicators. Overshooting is temporarily possible, but only at the cost of damage, destruction and depletion. Restoration is sometimes possible, but not all processes are reversible, or not in a linear manner.

Then if this is our global compass, where do we meet problems, what are the circular challenges?

Challenge 1: Renewable energy and non-renewable materials

One problem is that we are moving towards renewable energy - the Sun provides plenty of energy, so at least that boundary is not in sight (Perez et al, 2015) - but in doing so we rely on non-renewable materials, particularly a wide array of (rare) metals for solar, wind and batteries.

Various reports (European Commission, 2018; Metabolic et al, 2018; TNO, 2018b) signal that mining production needs to grow at unprecedented annual rates for 17 metals in the next 30 years to bring about the Paris energy transition, while this does not even take into account the metal use by other industries (such as electronic consumer devices). This is also a geopolitical problem, as Europe has almost no relevant mining and refining capacity of its own.

Metal production is moreover particularly damaging. The Environmental Cost Indicator (TNO, 2018a) shows that the “shadow costs” of for example 1 kg aluminum or 1 kg steel are roughly 1000x (!) and 100x (!) higher than those of 1 kg concrete (which has a bad name because so many kilograms are used). The ECI is based on Life Cycle Analysis

with 11 monetized environmental impact categories.

Reuse and recycling can help to reduce the demand for virgin metals, but only in the long term, while we need the renewable energy transition now (before 2050). Reuse and recycling do moreover not allow volume growth, while the global demand is far exceeding the global supply. Substitution of rare materials in solar, wind and batteries would really help, but without shifting to other materials that will then be quickly depleted.

Figure 2 OneClickLCA screenshot showing a comparative Life Cycle Analysis of a steel structure versus an equivalent timber structure, limited to the stages of production and deconstruction and five environmental impact categories (plus primary energy use). Timber scores much better on all of these categories, while “external impacts” (carbon sequestration) have not even been included yet (structural design and modelling by Bart van den Hurk, LCA calculation by dr.ir. Lisanne Havinga).

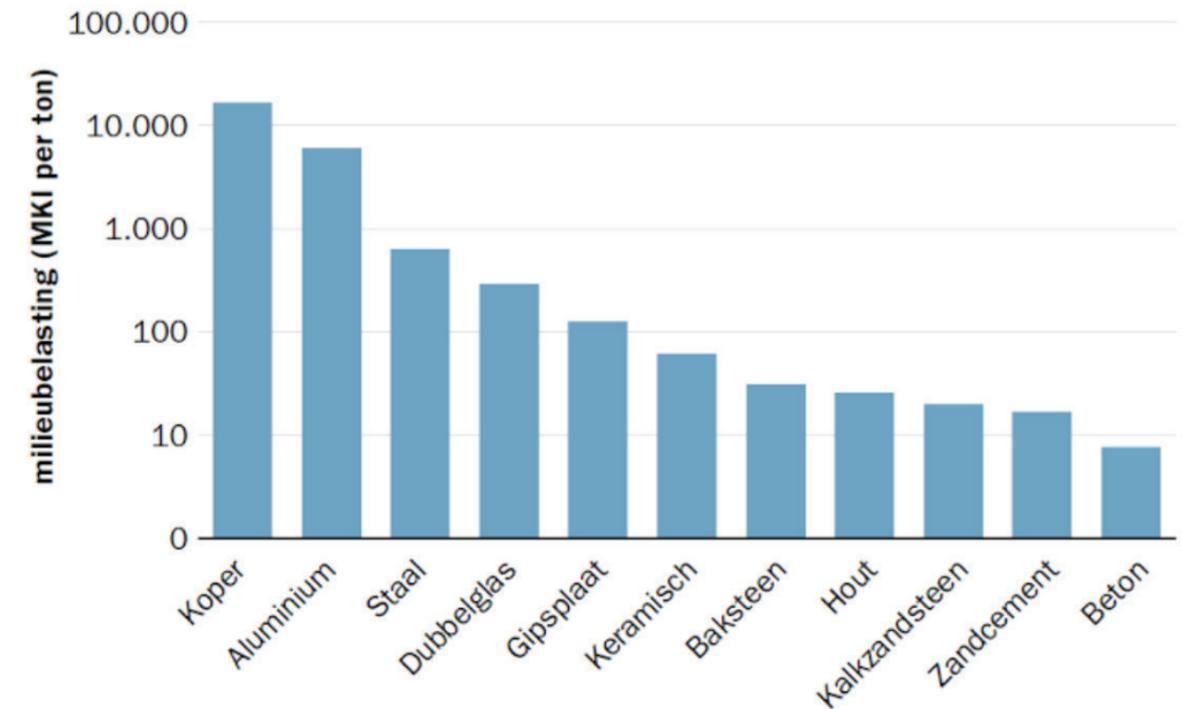
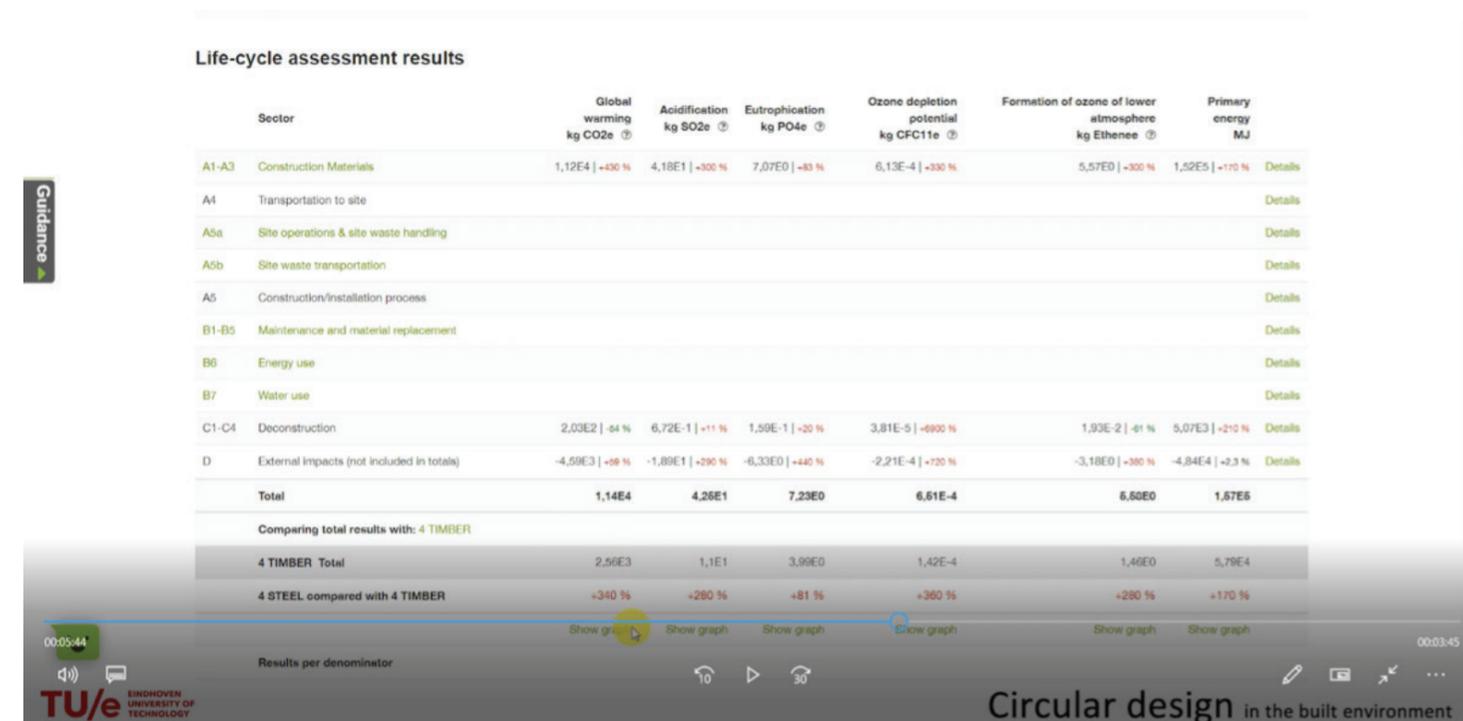


Figure 1 The Environmental Costs (or shadow costs) for common construction materials (image credit: TNO, 2018a), based on Life Cycle Analysis of 11 monetized environmental impacts. Note the logarithmic scale! Looking at these figures, some conclusions: metals have by far the highest shadow costs per kg; concrete has a bad name but mostly because it is used so much; while the position of timber in this chart is finally controversial: the carbon sequestration of wood is not credited in this method, because “carbon will be released at some point”, which is true, but that point can be very far in the future.



### Challenge 2: Organic and economic growth

The Huesemann (2011) definition brings also another problem to light. At some point we will run out or exceed the production rates of non-renewables. For metals, concentrations get lower, so mining gets more costly and ever more damaging (common construction materials such as aluminum and steel are btw for now not endangered in supply). Minerals seem abundant and harmless, but in Asia a “sand mafia” steals entire beaches and river banks to provide sand with the particular properties that are needed in concrete production (Tweedy, 2018). Identified fossil fuel reserves are finally available for another 50-150 years (Perez et al, 2015), but we can use only a very small portion of them to avoid catastrophic global warming.

The only resources that allow ongoing volume growth (and have a low or positive ecological impact), are bio based materials. Their growth is infinite in that the Earth and Sun combined can produce them forever, but it is not unlimited in terms of production rates. For example, it takes decades to grow trees into maturity. We are limited to the production capacity of sustainably managed forests, that urgently needs to grow. Materials such as bamboo, straw, flax, hemp, reed and mycelium have considerably shorter cycles, and can be implemented without such delay.

Not just time, but also space is a fundamentally limiting factor (Rovers, 2018). The production of non-food organic materials is in competition with land claims for (circular) agriculture (particularly meat production requires large areas of land, not to mention its significant contribution to global warming), built-up area and wild diverse nature (Van Diepen et al, 2010). This is an important task for global spatial-temporal planning.

### Challenge 3: Systemic changes and considerations

Technological innovation can play an important role in solving our problems. We need a systemic view though. We are not yet in the advanced stage that technological solutions create no new and serious problems (“side effects”) in different areas.

Systemic thinking should also include an assessment of rebound effects, as efficiency gains due to innovation can actually lead to more (!) consumption. Examples are care-

less use of energy efficient lighting, or buying bigger energy efficient cars (primary rebound effect); or spending money that was saved on basics now on luxuries such as travel and meat consumption (secondary rebound effect). It is never enough to modify one control, effective policies will have to oversee the whole dashboard.

Much will finally depend on simultaneous social economic innovation, as the overshoot of various planetary boundaries and the scarcity of time, land, energy and materials are directly caused by the size (and growth!) of global consumption, which puts everything “under pressure”. The developed countries have a special responsibility here, as the few rich have a much bigger footprint, per capita and combined, than the many poor (Rosling, 2014).

A circular economy will have to acknowledge ecological boundaries, and step away from the modern idea of infinite (and even exponential) “growth”. “Doughnut economics” (Raworth, 2018) embodies this vision, whereas a more equal global distribution of capital and consumption is part of the global solution. A circular economy will also feature Fair Pricing of products and services. This creates a level playing field for sustainable solutions, that are often considered to be more expensive, but that holds only true when “shadow costs” are ignored and not paid for (i.e. they are ultimately “paid” by others elsewhere and future generations) (Sustainable Finance Lab, 2014). That mix will ecologically and economically change everything.

The author is lecturer of the elective Master course 7xc1m0 Circularity in the Built Environment, which is part of the TU/e wide Master Certificate Circular Design in the Built Environment.

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**June 2020**

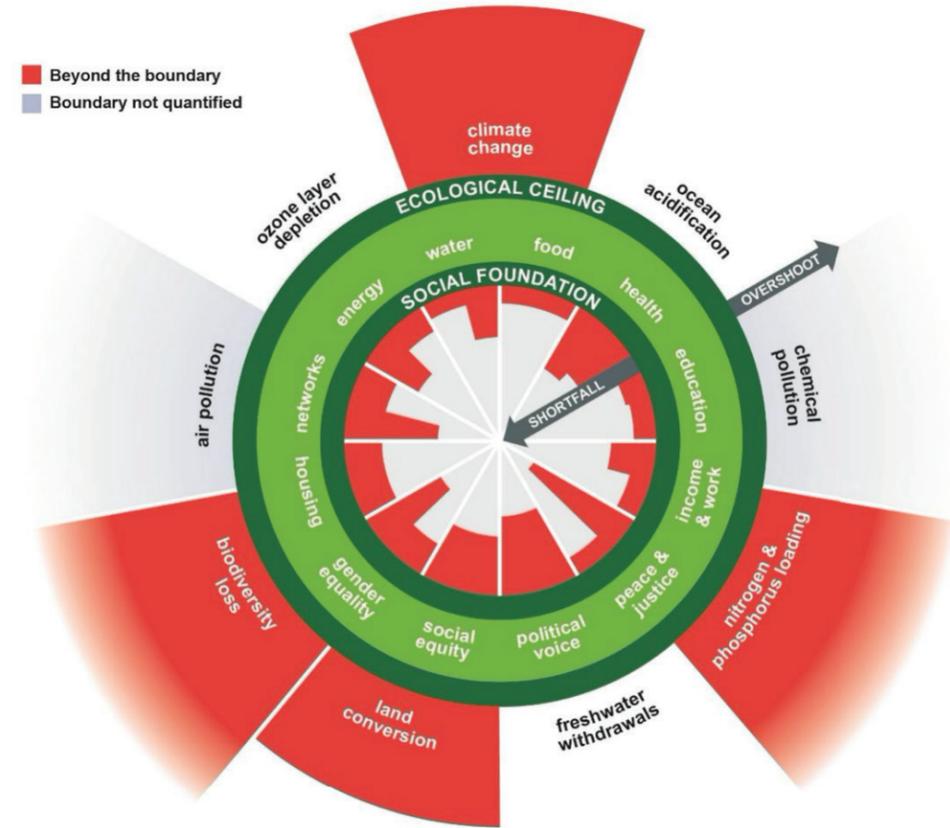


Figure 5 Doughnut economics (Raworth, 2018) presents an economic compass based on boundaries. The red color marks either overshoots of environmental boundaries or shortfalls in providing social needs [image credit: Creative Commons <https://commons.wikimedia.org/wiki/File:Doughnut-transgressing.jpg> ]

### maximization map; water, food, materials, energy

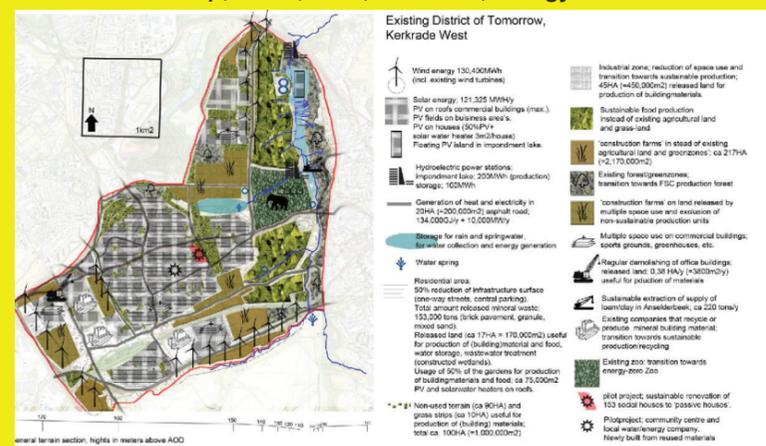


Figure 4 Space is a limiting factor, on oceans (wind farms, fishing, transport, undisturbed diverse nature) and on land (food, biobased non-food, buildings and infrastructure, undisturbed diverse nature). The Urban Harvest+ method calculates space claims for energy (wind, solar), food, materials (bio based), water and air. Here used to redesign Kerkrade West (image credit: Creative Commons <https://commons.wikimedia.org/wiki/File:Doughnut-transgressing.jpg> ] Rovers et al, 2011).

### References

- European Commission (2018). Report on Critical Raw Materials in the Circular Economy.
- Huesemann & Huesemann (2011). TechNO-fix. Why technology won't save us or the environment.
- Metabolic, Copper8 & CML (2018). Metal Demand for Renewable Electricity Generation in the Netherlands.
- Perez, R. et al (2015). A fundamental look at the supply side energy reserves for the planet.
- Rosling, H. (2014). Hans Rosling showing the facts about population.
- Rovers, R. et al. (2011). Zero impact built environments, transition towards 2050.
- Rovers, R. (2018). People vs Resources. Restoring a world out of balance.
- Steffen, W. et al (2015). Planetary boundaries. Guiding human development on a changing planet.
- Sustainable Finance Lab (2014). Een schuld bewust land. Naar een stabiel en duurzaam Nederland.
- TNO (2018a). Circulair bouwen in perspectief.



Figure 1: WFH from March 2020

## ALUMNI STORY: AMANDA FENG

### My Story

Hello, my name is Amanda Feng. I am a CME alum and the Commissioner of Education of the 16th board of ofCoUrsE. Last October, I passed my thesis defence and finally graduated from TU/e. Then I rushed into a job immediately after graduation. Even though I have met loads of challenges at the beginning of my first job as a junior consultant, I was pretty happy to work for a global project management consultancy, Turner and Townsend, in my favourite city Amsterdam.

Three months later, I went back to my hometown in China for vacation but didn't expect my life to change entirely since then. I am from a small town called "Zhijiang", a neighbour of Wuhan where the COVID-19 first broke out right after I arrived in China. Our province was very quickly placed under a strict lockdown, and all the public transport was suspended. As a result, I got stuck at home. I was banned by the local government to even go out of my apartment. Hoping to go back to Amsterdam when the pandemic is

over, I started working from home, which is super hard as I worked in a different time zone with my team. That lasted until May when my boss in Amsterdam asked me if I wanted to be transferred to our Shenzhen office as a quantity surveyor in China as they saw the difficulties for me to return to the Netherlands and also for them to feed me work.

That was the most challenging decision I have ever made. I had just started building my life and career in Amsterdam, but the opportunity of working on a stunning project in a city of my own country was also appealing. Eventually, I decided to move to Shenzhen at the end of June and have worked there since then.

Though I was enjoying working from Amsterdam and would have loved to continue to do so, the pandemic paved my path in a different direction. I have had quite a thrilling ride to transit from university to work in Amsterdam and shifting to China where the work culture is entirely different.

### The transition from university to work

#### Time Management

When I was in university, I didn't have a daily routine. I stayed up all night to do assignments and papers, and then after I turned in the assignments, I would hibernate to compensate for my lack of sleep. I would wake up at different times every day because my classes were in the afternoon. In my first couple of weeks of work, my lack of a routine hurt me. I was barely getting to work by 9 am and skipping breakfast because I didn't have time. After a month or so, I developed a daily routine of forcing myself out of bed before the 10th snooze, sleeping 7-8 hours a night, and not skipping any meals. In a few months, I noticed that my routine helped boost my energy and productivity, and I was consistently getting to the office on time.

#### Feedback

At university, everything was graded. We could get immediate feedback on our performance. But at work, we are not getting that immediate feedback, and I think that was one of the biggest challenges throughout the transition. For starters, the feedback we receive at work is often more qualitative than quantitative, which can be confusing to graduates like me who are fixated on what our specific grade was and where they fall on the overall class curve. As a result of these cultural differences, I wondered how to improve, if I need to improve, and how I can develop the skills necessary to improve at my company and in my career.



From left to right: Stan Bouwens, Amanda Feng (me), Siddharth Panjwani

## 16th board of- of CoUrsE!, Legendary BBQ 2019

### Working in the Netherlands VS working in China

Even though I work for the same company, the Netherlands and China's workplaces are quite different.

#### Work Overtime

At the Amsterdam office, working hours are fixed; usually, 8 hours a day, and overtime is an exception that rarely happens. However, In China, the situation is different. Working beyond regular working hours is considered normal and proper. I work as a junior consultant in both offices but my workload is definitely higher in the Shenzhen office. Once I worked until 3 am with my colleagues to meet a delivery deadline on that day. Crazy huh?

#### Afternoon Nap

When I worked in NL, sleeping in the workplace is punishable and undoubtedly not well seen by managers and colleagues. However, in China, napping is quite typical among office workers. It is normal to see colleagues sleeping after lunch for 20-30 minutes and then going back to work.

#### Hierarchy

At the Amsterdam office, I found it common that colleagues made jokes about each other regardless of his/ her position

while this did not happen in the Shenzhen office. China is a society of rigid hierarchy. With this kind of order, employees know that it is essential to follow their superior's guidelines and instructions. It is better to first listen to your boss and then carry out the duties to the best of your abilities. Sharing opinions or making suggestions is best done after you reach a certain level of capabilities and trust, to avoid criticism.

#### Project Management Style

A key difference I noticed about Project Management work in both countries was the way of communicating and dealing with conflicts and confrontation. Chinese tend to be more modest, quiet and avoid confrontations as we prefer not to attract attention. On the contrary, Dutch culture encourages project managers to handle arguments openly and directly.

Obviously, 2020 is an unforgettable year for me because in this year I have made the shift from a university student to work in Amsterdam and then in China and each transition was not easy for me. What I learned from them was that life is so unpredictable and we never know what is going to happen next. Don't ever get too comfortable. Always be ready to change.



Amanda Feng  
CME Alumni

