

Design for Change, creative opportunity or another constraint?

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Once again, we need another approach to designing our buildings.

Things have changed before, and we no longer take the tabula rasa approach as in early modernism, when Le Corbusier could wipe out the existing fabric of Paris and designed in favour of space, light and fresh air new buildings as with a touch of magic.

Today we design with people, their social interaction and the specific neighbourhood in mind; but still we continue replacing buildings, creating a lot of waste and consuming even more materials.

Understanding that the capacity of our planet is limited, we need a new approach to building. One wherein the buildings of our city are the resources of tomorrow. One wherein urban mining has become the new normal.

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#2

ANOTHER APPROACH

Image Ville Radieuse (1924), Le Corbusier © FLC/Adagp, Paris, 2007 via archdaily.com

Trained as architectural engineers, the TRANSFORM team of the Vrije Universiteit Brussel works towards that new approach.

In the BBSM project we study the role of designers and the impact of that new approach on the architectural practice. The end goal is preventing waste and stimulating reuse through the design and construction of buildings. Therefore, we raise awareness based on best practices, provide practitioners with tools, and enable a transition with inspiring challenges.

How the architectural practice will look like in the future, remains unknown. But in this presentation some dilemmas illustrate possible direction.

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Design, the key for reusing spaces, buildings and components



Objective

Prevent waste and **stimulate** reuse through the design and construction of buildings, while anticipating the impact on practice.



Method

- Raise** awareness based on best practices.
- Provide** practitioners with tools and tips.
- Enable** transition, with inspiring challenges.



Deliverables

The concepts studied will be the subject of five **practical guides** for entrepreneurs, project owners, architects and students.

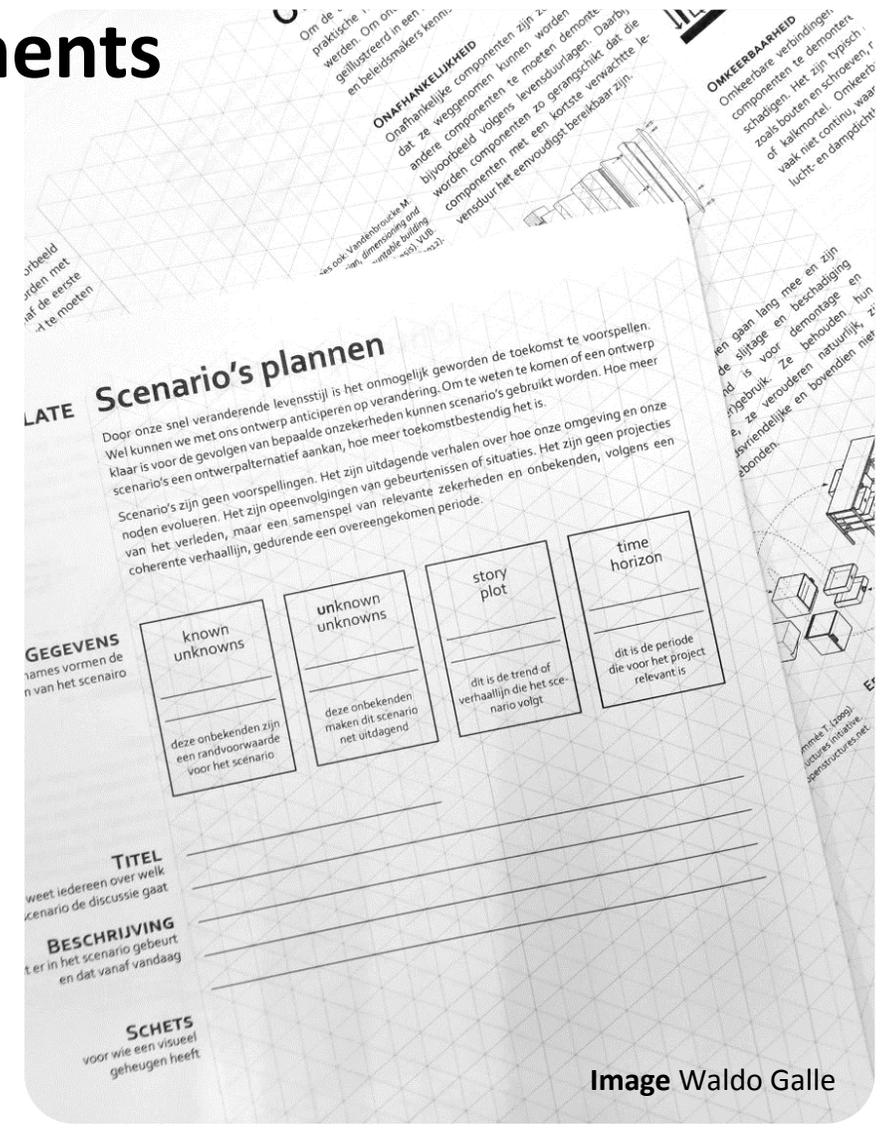


Image Waldo Galle

Let us start at the start and ask ourselves why design matters?

Design is the way we shape our buildings. It determines for what they can and can't be used, how easily they can be adapted, and thus how fast they will become obsolete.

Design is also the way we use our materials. It determines how easily they can be recovered, what their residual value is, and thus if it would be feasible to reuse them in endless loops.

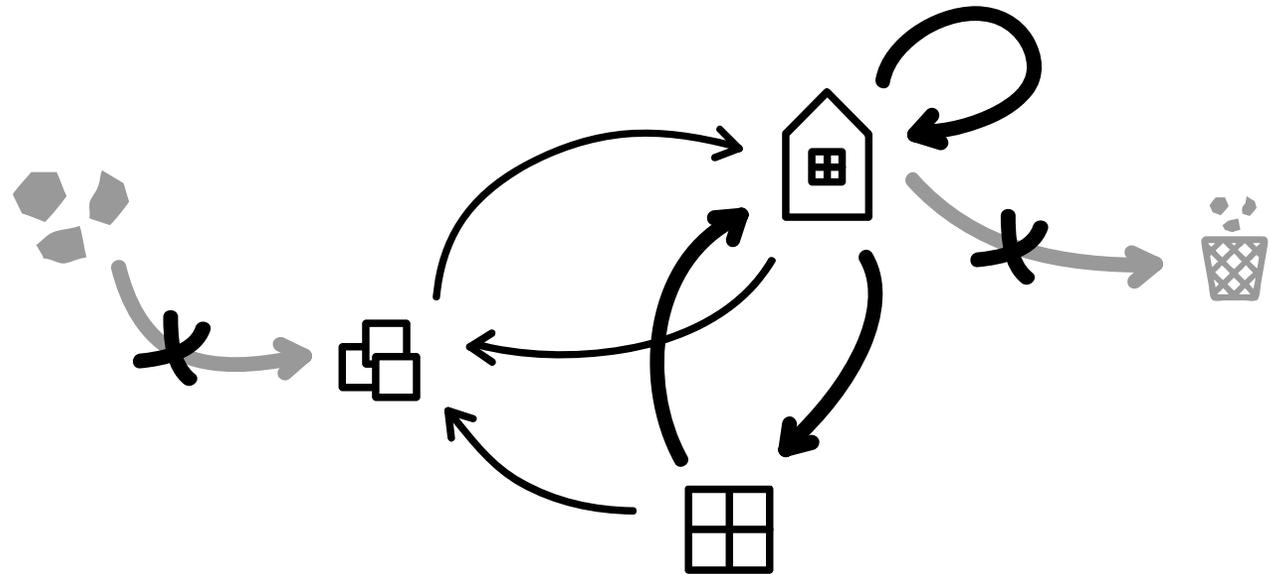
Since these design choices are crucial for the subsequent life cycle stages of a building and its components, it is necessary to act in accordance with that long-term responsibility.

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#4

In an economy of closed material loops the designer plays an important role.



material

product ↔ component ↔ building

waste

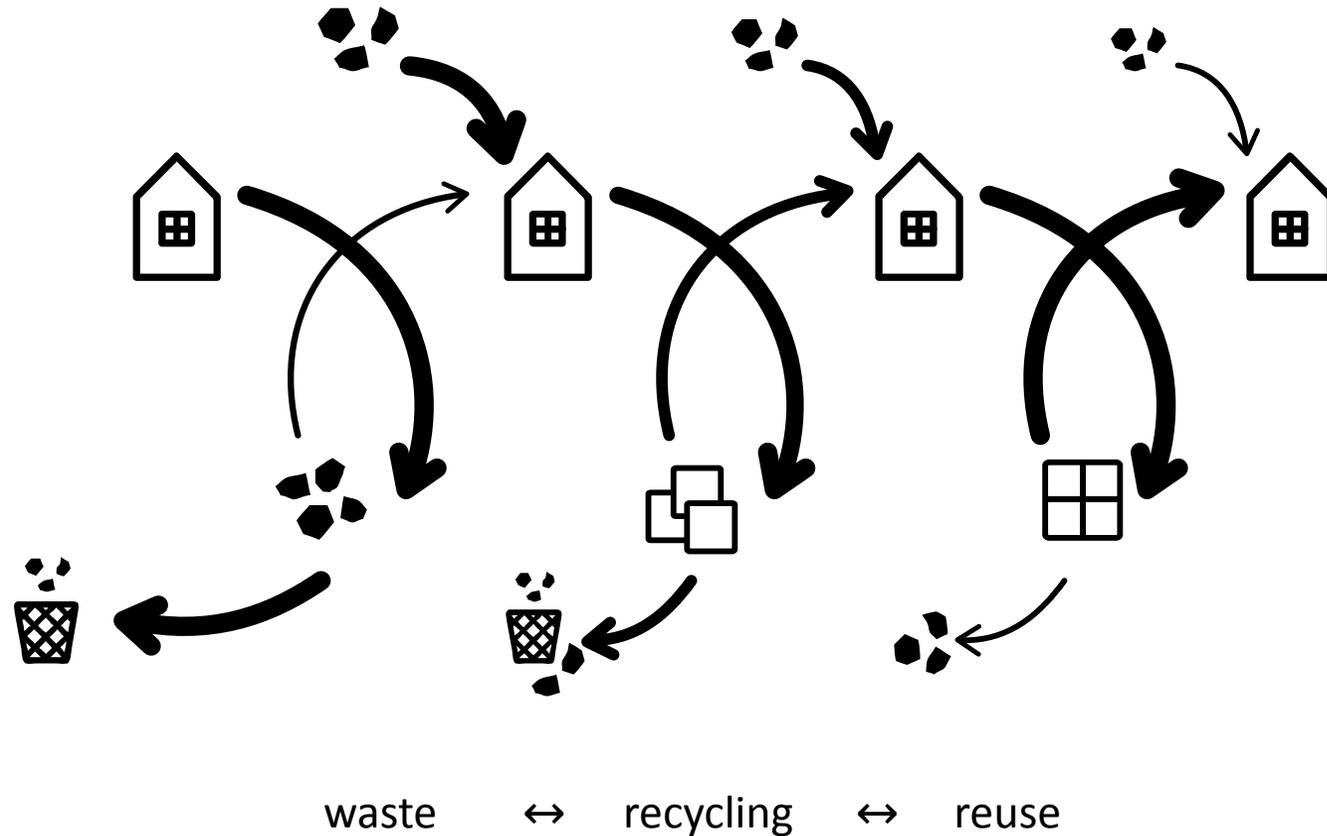
But we cannot close material loops by tabula rasa. Reality is a little more complicated than the idea.

More precisely, being part of a transition towards an economy of closed material loops, we should aim at increasingly more effective and efficient reuse over time; a transition wherein increasingly less raw materials are used and that allows to retrieve valuable materials from the building stock.

The fact that making different choices today, would not immediately result in completely closed material loops cannot stop us. If we don't make different choices today, it will be as difficult to reuse spaces, buildings and their components during the next refurbishment as it is now.

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To start an economy of reuse tomorrow we must already act today.



To change something, we must make different choices. But change is challenging.

How will we deal with those challenges? Are they just another constraint to the design process, or can we approach them as a creative opportunity? Four cases from Brussels and abroad illustrate this challenge.

A hand in a dark suit sleeve points towards a detailed architectural model of a city. The model features a grid of streets and numerous rectangular buildings of varying heights. The entire scene is bathed in a monochromatic teal light.

OPPORTUNITY / CONSTRAINT

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#6

Image Ville Radieuse (1924), Le Corbusier © FLC/Adagp, Paris, 2007 via archdaily.com

MOD's is a system of square wooden modules that can be used to assemble various structures.

Disassembly allows the modules to be recovered and reused, while MCB Atelier remains owner and rents and leases the modules to a variety of customers.

Does this modular system limit the creativity of the designer and hamper the traditional design process, or does it facilitate temporary and adaptable design possibilities?

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New possibilities and a new design process

constraint or opportunity?



Image MCB Atelier © Julien De Visscher, via nudgesustainabilityhub.com

New expressions and a new profession
constraint or opportunity?

The interior of the Dekkera bar, designed by Rotor, is made almost entirely of high quality construction elements dismantled from Brussels buildings deemed to be demolished.

The ceiling, for example, is made of the diffusing “mille-feuille” of the Générale de Banque’s former headquarters.

Does reuse entail a new architectural vocabulary and reflect society’s changing values, or should we all start harvesting and mining materials, and change profession?

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#8

Image Bar Dekkera, Rotor asbl © Eric Mairiaux, 2017 via rotordb.org



Systemtrennung, or system separation, is a requirement for all public buildings in the Swiss canton of Bern.

Separating building parts that are expected to change at a different pace allows the Inselspital University Hospital to install up-to-date facilities in the most material efficient way.

Is this requirement another guideline architects should check off, or is it an opportunity to deliver a building that can change and bring enduring value to its owner and users?

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New guidelines and new design ambitions

constraint or opportunity?



Image Inselspital University Hospital, Itten+Brechbühl © Waldo Galle, 2015.

Suteki, the Japanese wood frame structure system, is characterized by its reversible connections.

But it is not simply demountable. Its components of engineered wood are standardized, prefabricated, compact in transport and can be assembled quickly and safely.

Are this and other emerging techniques making buildings more complex, or is it an opportunity to optimize the construction process and the sectors' material use?

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10

New techniques and new solutions

constraint or opportunity?



Image Suteki Wood System (photographer unknown) via woodinc.be and nieuwbouwzondag.be

If the whole economy changes, should architectural practice change too?

If architects will have to make different choices and foster the transition towards an economy of closed material loops, including a lot of challenges, it is conceivable an architect's role in the value change of the construction sector can or must change. In this respect, two dimensions of development are identified.

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#11



A NEW ROLE

Image Ville Radieuse (1924), Le Corbusier © FLC/Adagp, Paris, 2007 via archdaily.com

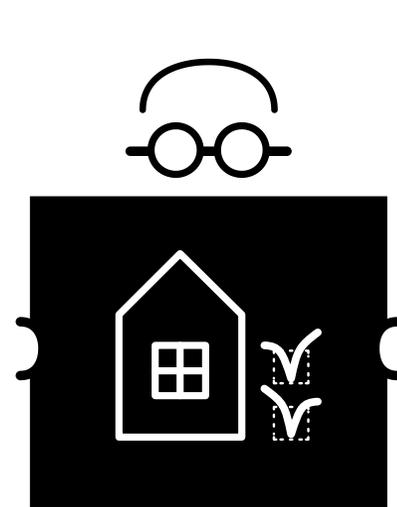
The first dimension of development of an architect's role in the value chain of construction contrasts a short-term with a long-term involvement.

Conventionally, designers deliver a design and support the construction process. With the increasing understanding of the importance of design choices to the lasting value of a building and its components, the design will have to fulfil increasingly more criteria. In some cases, it is already necessary to plan the future of the building: how it could be used in different scenarios and which material loops each component will follow.

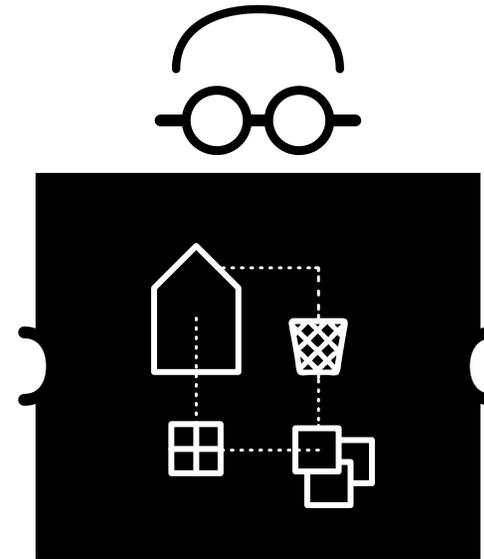
However, is it wise to simply hand over that knowledge, or can a designer profit from the developed insights throughout the buildings' service life?

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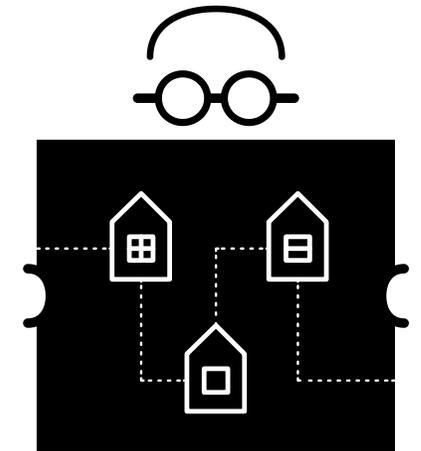
In an economy of reuse, what is the added value the architect offers ?



design + **process**



design + **plan**



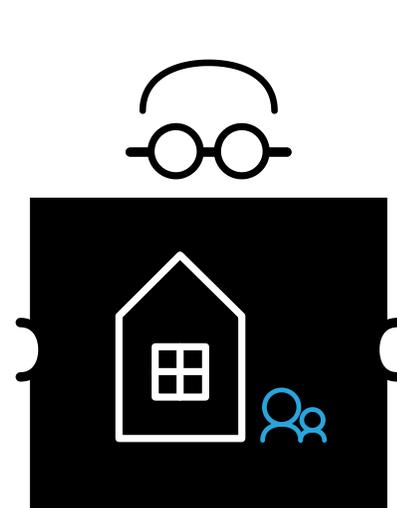
design + **redesign**

The second dimension of development of an architect's role in the value chain of construction contrasts a direct with an indirect design service.

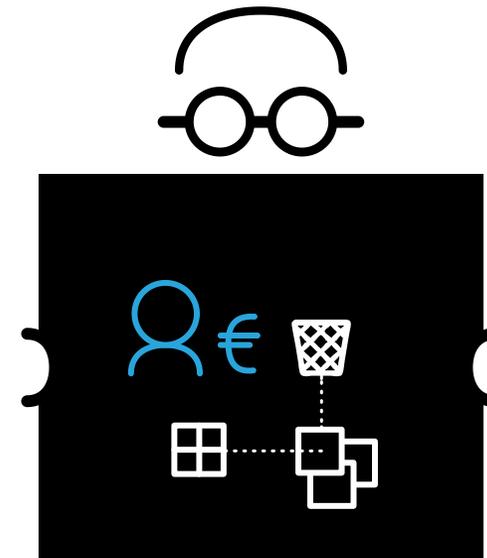
Conventionally, the client is also the investor and future building user or owner and manager. However, in a circular and service-based economy, that is no longer self-evident. If spaces are shared, components rented or materials leased, the owner is not the user, let alone the building manager.

Each will have its demands and needs that the architect will have to align. But who is the architect's client? And how does that change design choices?

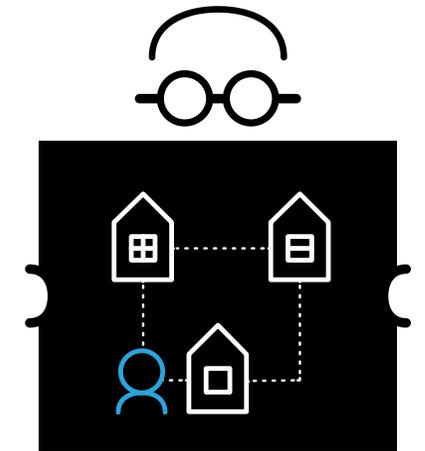
In a circular economy, will architects design for building users or material managers?



the user



the material owner



the building manager

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So, what are we up to?

We are part of a transition, with increasingly more reuse over time. But if we don't make different choices now, the next refurbishment it will be as difficult as today.

Designing with and for reuse demands many changes. Each requires us to adapt, but offers also opportunities to the relevance and impact of design.

If the economy changes, it might be wise to rethink the role of the architect and the added value of the profession. Should we offer the same services, to the same people?

Yet, the future is in designers' hands.

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#14

DESIGN + CHANGE

Image Rotor Deconstruction (photographer unknown), via ecodesignlink.be

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More information

vub.be/arch/transform

bbsm.brussels

