

Actions for circular architecture

Which actions would you take
to integrate circularity in architecture?

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Which actions would you like to take?

As an architectural designer or engineer, or other member of the design team, you get triggered to design a **building according to the principles of the circular economy**.

This booklet presents **26 actions** to increase the circular economy potential of your architectural project. Each action is presented on an **action sheet**. These sheets contain information about the preferred expertise to be able to perform an action, the already available tools and information to support you in performing the action, and so on.

The actions are linked to the design phases of a design process and to common design tasks to facilitate their **integration into the daily workflow**. A template page (p. 7) gives a visual preview of the layout of such an action sheet and explains the individual sections.

Preferably, **start at the beginning** of the design process and follow the actions in a chronological way. This enlarges the chance to successfully carry out the following actions and to obtain a building with a higher circular potential.

Please note that you do not have to perform all the actions for every project. Also, do not worry that you have to perform the actions in a correct way. This method applies the “**Learning by doing**”-approach: the more you prototype and learn, the greater your positive impact on the system.

5 action categories

Antecedent: Actions to take before, after, or outside the design process.

Collaboration: Collaboration and business related actions.

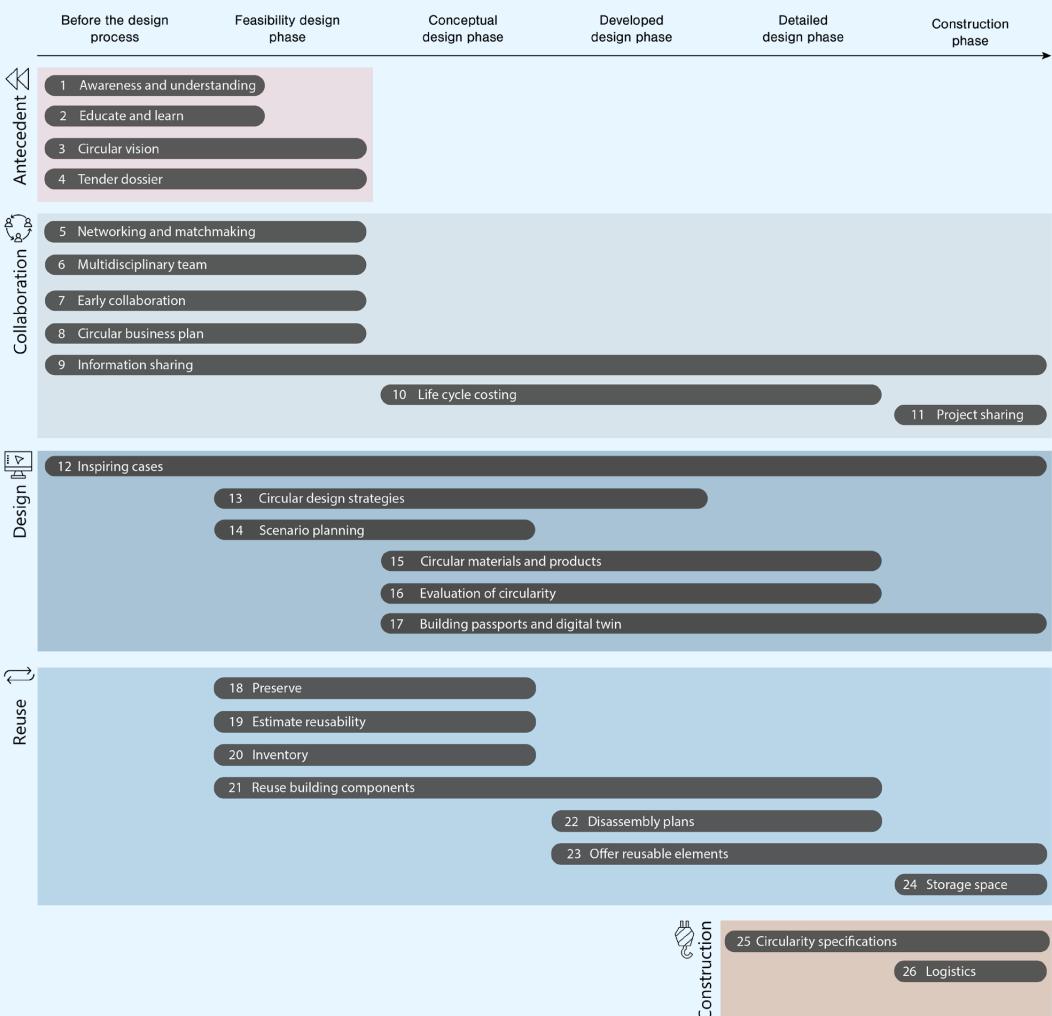
Design: Actions to tackle the technical building design.

Reuse: Actions to increase the use cycles of buildings and their components.

Construction: Actions that are about executing the works in a circular way.

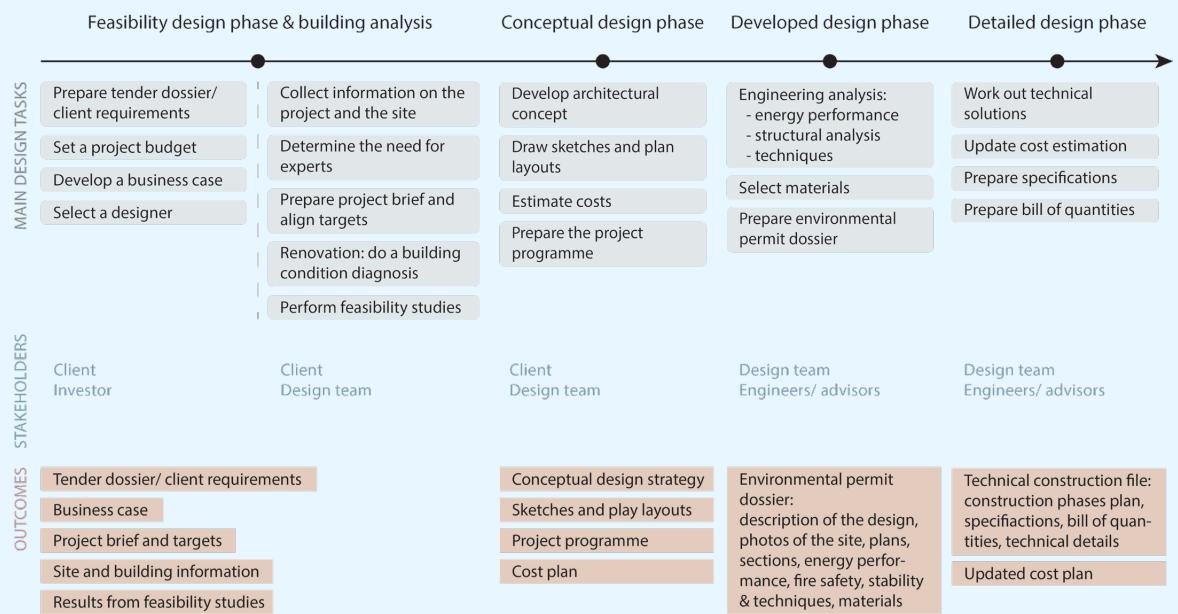
Actions for circularity: overview

Overview of the 26 main actions you can take during the various design phases. Each action is further explained in its own action sheet.



Common design tasks

This framework shows an overview of the common design tasks during the design process. In the action sheets, the actions for circularity are linked to these common design tasks.



Start here

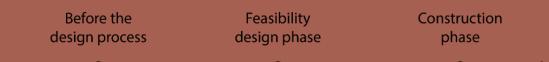


Template page

Action title

Short formulation of what the action entails.

When & who



Action

PERFORM DURING/ INSTEAD OF

Common design task



Stakeholders involved in/ during the action



Expertise needed to carry out the action

Take action

Tools and sources

Explore all suggested sources and tools, but be critical which ones makes most sense for you and the building project.

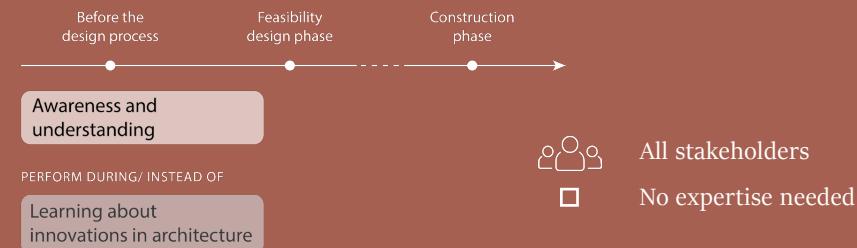
Input

Outcome

Awareness and understanding

Inform yourself and your team members and learn about the circular economy in the building sector.

When & who?



Take action

- Read publications on circular building.
- Explore realised projects with circular ambitions.
- Experiment with different tools for circular building.
- Discuss with other stakeholders on the implementation and impact of circularity principles in building design.

Tools and sources

- [Introduction to circular economy in the built environment](#) by Circular Flanders.
- [Building a circular economy](#) by VUB Architectural Engineering.
- [Circular economy introduction](#) by the Ellen MacArthur Foundation.
- [Circular economy in the built environment](#) by ARUP.
- [Vademecum circulair bouwen](#) by Leefmilieu Brussel.

Input

Provide time to learn.

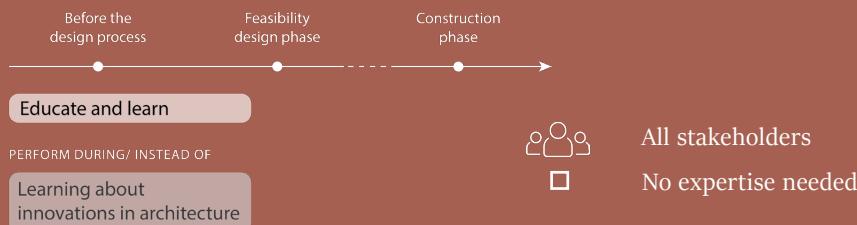
Outcome

Understand the concept of a circular economy. Being more aware of the opportunities and risks of the circular economy is the base to take further steps in practice.

Educate and learn

Get a deep understanding and raise your knowledge on circular economy in the built environment.

When & who?



Take action

- Follow courses, lectures, or workshops.
- Try to apply the theoretic principles to your own building design.
- Ask feedback to the educator if possible.

Tools and sources

Educational programmes from schools, universities, and other institutions.

- [Postgraduaat Circulair Bouwen](#) at Howest hogeschool (in cooperation with VIBE)
- [Circulair Bouwen](#) by Confederatie Bouw Limburg
- [Circular Building Products for a Sustainable Built Environment](#) at TU Delft

Input

Interest in the topic and time to get educated.

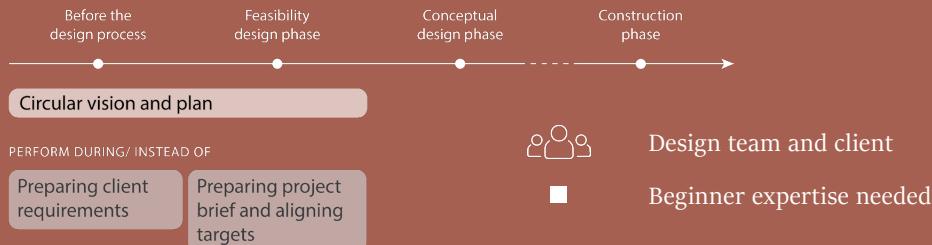
Outcome

Spreading of knowledge and application of it in practice.

Circular vision

Articulate the circular ambition and vision for the project and develop a plan of approach for the entire design process.

When & who?



Take action

- Gather with the team that will be designing the building.
- Define the strategic vision together: What are the ideal (circular) outcome and the goal of the project? What impact do you hope to have?
- Develop a plan of approach: set goals, organise the collaboration. Who does what? How to fulfil the ambition?
- Risk management: Are we open to shifting our vision of success as the collaboration progresses? If so, what will be our process for revisiting it?

Tools and sources

- [Define Your Challenge](#) - The Circular Design Guide by Ellen MacArthur Foundation
- [Creating a circular vision](#) - Circular Economy Lab
- [Share a vision of success](#) - Circular Regions

Input

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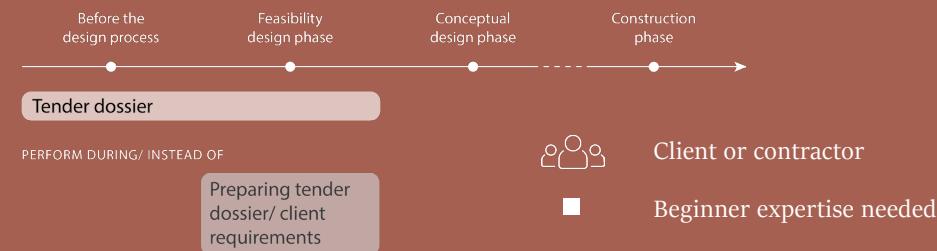
Outcome

A collective vision and end goal of the circular project and a clear plan of approach.

Tender dossier

Include a circular strategy in the tender dossier or create support for circular design strategies in the tender dossier.

When & who?



Take action

- Pour your motivation why you focus on circularity into a descriptive text.
- Indicate which circularity aspects are most important for this building's context.
- Decide how the design team will be supported to implement circularity.
- Specify the selection and award criteria.
- Determine how the circularity of the building project will be evaluated during the design process.
- Reflect if this tender dossier can be improved for future projects and if it can serve as an example for the construction sector.

Input

Background knowledge (Action Awareness and understanding) and a vision on circular building (Action Circular vision).

Tools and sources

- Circular tendering: where to start? by Bond Beter Leefmilieu
- The Flemish Government has an action plan for sustainable public procurement.
- Also have a look at the European Union Green Public Procurement and the Belgian sustainable public procurement.
- Vademecum Circulair Bouwen by Leefmilieu Brussel

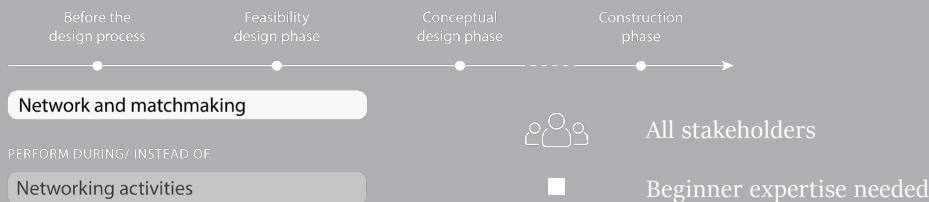
Outcome

The tender dossier includes a circular strategy.

Network and matchmaking

Start a conversation on circular economy and engage with partners that have a circular ambition or experience.

When & who?



Take action

- Participate in matchmaking events.
- Start a conversation on circular economy with other stakeholders.
- Engage with colleagues that have the same circular ambition and vision.

Tools and sources

There are various platforms available that facilitate networking and matchmaking between engaged stakeholders. Two examples are:

- [Green Deal Circulair Bouwen](#) by Circular Flanders
- [UK Green Building Council](#) set up a platform to connect professionals during meeting, events, and courses.

Input

None, or your own project and vision.

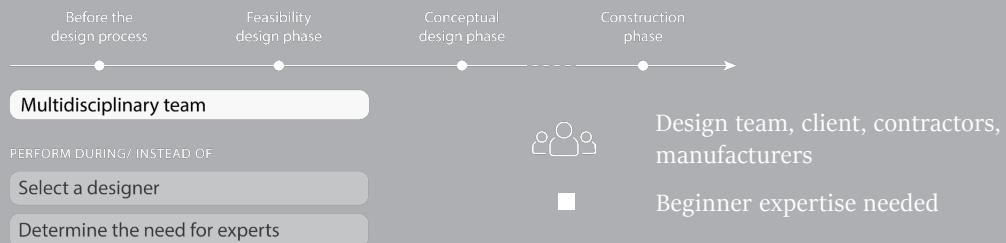
Outcome

Design and construction teams that have a circular ambition.

Multidisciplinary team

Build multidisciplinary teams with collaboration in mind: a design and construction team wherein various experiences and viewpoints (on circularity) by different expertises are included, to co-create a circular building project.

When & who?



Take action

- Define who needs to be involved in each life cycle phase to make the building project a success.
- When reaching out to these people, make sure you set clear expectations around what you are asking of them.
- Ask for their input to gather and share knowledge and information.
- Discuss your roles and make a collaboration plan and agreement.
- Refer back to the collaboration plan once the project has started.

Tools and sources

- [Building teams](#) - The Circular Design Guide by Ellen MacArthur Foundation
- [Leising, E. et al. 2018. Circular Economy in the building sector: Three cases and a collaboration tool](#)

Input

None, or your own project and vision.

Outcome

A team with different (useful) backgrounds and expertises that have a shared goal and a collaboration plan.

Early collaboration

Share information and ideas from the beginning of the design process with the design team or even the whole supply chain to obtain an early informed design process and to avoid rework later in the design process.

When & who?



Take action

- Search for partners that are making efforts in circular building, before the design process starts.
- Define which stakeholders need to be involved from the beginning to make the building project a success.
- Inform all these partners from the start to gather various insights, information, and participation.
- Involve more stakeholders at the start of the design process than just the client, the architect, and the engineers.

Tools and sources

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Input

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Outcome

Early informed design process and less need to adapt the design later in the design process.

Exemplary case



Circular Retrofit Lab by Kaderstudio and VUB Architectural Engineering in Brussels (BE) in 2019

Since the early design phases, a close collaboration with all value network stakeholders was set up. Collaborating with industrial partners in this project showed the added value for the development of circular architecture: technical knowledge available from the start, sharing expertise, etc.

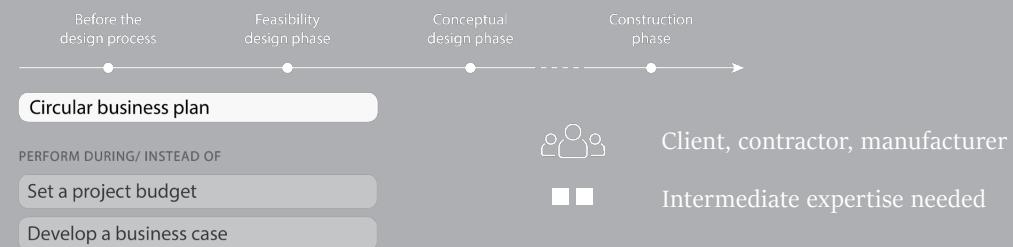
**Interventions Early collaboration, Multidisciplinary team,
Scenario planning, and Circular design strategies**

Photo by Simone Valerio

Circular business plan

Re-conceive how you operate and make up a circular business plan according to it. Shift your thinking from products to services and create value from prolonged product lifetime and closed material loops. Include financial, social, and environmental considerations.

When & who?



Take action

- Understand the ‘as-is’ business model: key stakeholders, material, and value flow mapping
- Map out key trends in the business environment. Which ones are relevant to circular economy? (Such as fiscal measures, waste and recycling regulations, public procurements, ...)
- Take your vision and ambition and develop a value proposition: What is the value delivered to the client, How does it incorporate elements of CE? What are the end-of-life channels? Who will be a key partner? How do circular economy elements have an impact on costs?

Input

Overview of participating stakeholders (Action Multidisciplinary team), current material and value flows, the vision and ambition (Action Circular vision).

Tools and sources

- [Circulator by VITO](#)
- [Business model innovation grid by Circular Flanders](#)
- [CEvaluator by OVAM and VITO](#)
- [Circular Business Model by The Ellen MacArthur Foundation](#)
- [Circular Business Models for the Built Environment by Arup](#)
- [Circular Business Models by The Sustainability Guide](#)
- [Smith-Gillespie, A. 2017. Circular Economy Business Model Case Studies: Introduction and Methodology](#)
- [Nußholz, J. 2020. Circular Business Model Design](#)

Outcome

Circular business model(s) and value model applied to your building project or organisation.

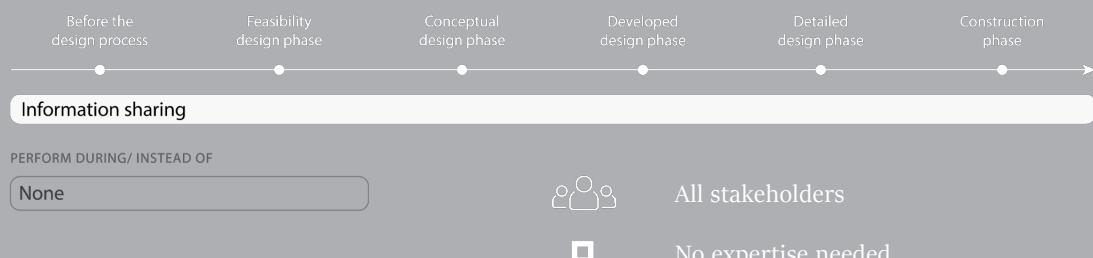


Collaboration

Information sharing

Share all information on and for the project in an efficient and clear way with the whole supply chain, preferably through a digital information system using high quality data and information.

When & who?



Take action

- Based on the developed vision and a first conceptual business model, consider which information each stakeholder needs, in each design phase.
- Make up a plan and timing who needs to share which information when.
- Repeat these steps after each design phase.
- Decide where the information will be shared (which platform), and who can access it.

Tools and sources

The common digital information tools and platforms that suits your team's working method best (SharePoint, Dropbox, etc.).

Input

Vision and ambitions for the building project (Action Circular vision).
Business model concept (Action Circular business plan).
Information worth sharing and information other stakeholders need.

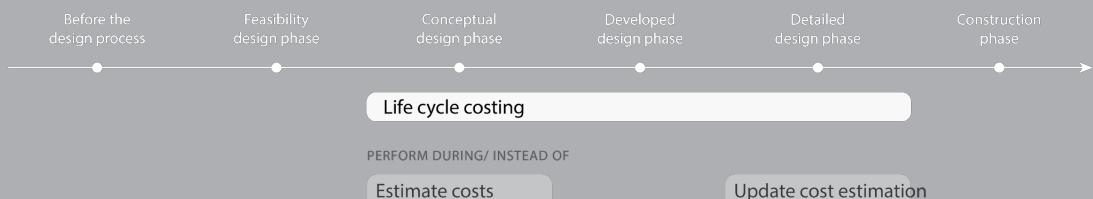
Outcome

Informed partners result in better-informed design decisions.

Life cycle costing

Calculate or estimate the financial costs and benefits for each life cycle stage of a building project, with multiple use cycles and various plausible future user scenarios.

When & who?



 Client, Contractor, Design team

 Intermediate/ advanced expertise needed

Take action

- Collect project information (surfaces and volumes, economic boundary conditions, etc.)
- Look up unit costs (materials, labour, rent, energy, etc.), interests, and fees
- Starting from the user scenarios, determine which changes will occur over time and which building components will be removed or added for each scenario.
- Use a LCC calculation method or tool and give in as much as possible data to become a nearly correct result.

Tools and sources

- [One Click LCA](#)
- [CRAVEzero tool](#)
- Galle, W. 2016. [Scenario based life cycle costing](#)
- Cambier C., Galle W., and De Temmerman N. 2021. [Expandable Houses: An Explorative Life Cycle Cost Analysis](#)
- Ghisellini P., Ripa M., and Ulgiati. S. [Exploring environmental and economic costs and benefits of a circular economy approach to the construction and demolition sector](#)

Input

Unit costs (materials, labour, rent, energy, etc.), details of the building project (materials, volumes, service lives, etc.), scenarios (from Action Scenario planning).

Outcome

Overview of the costs per life cycle stage.

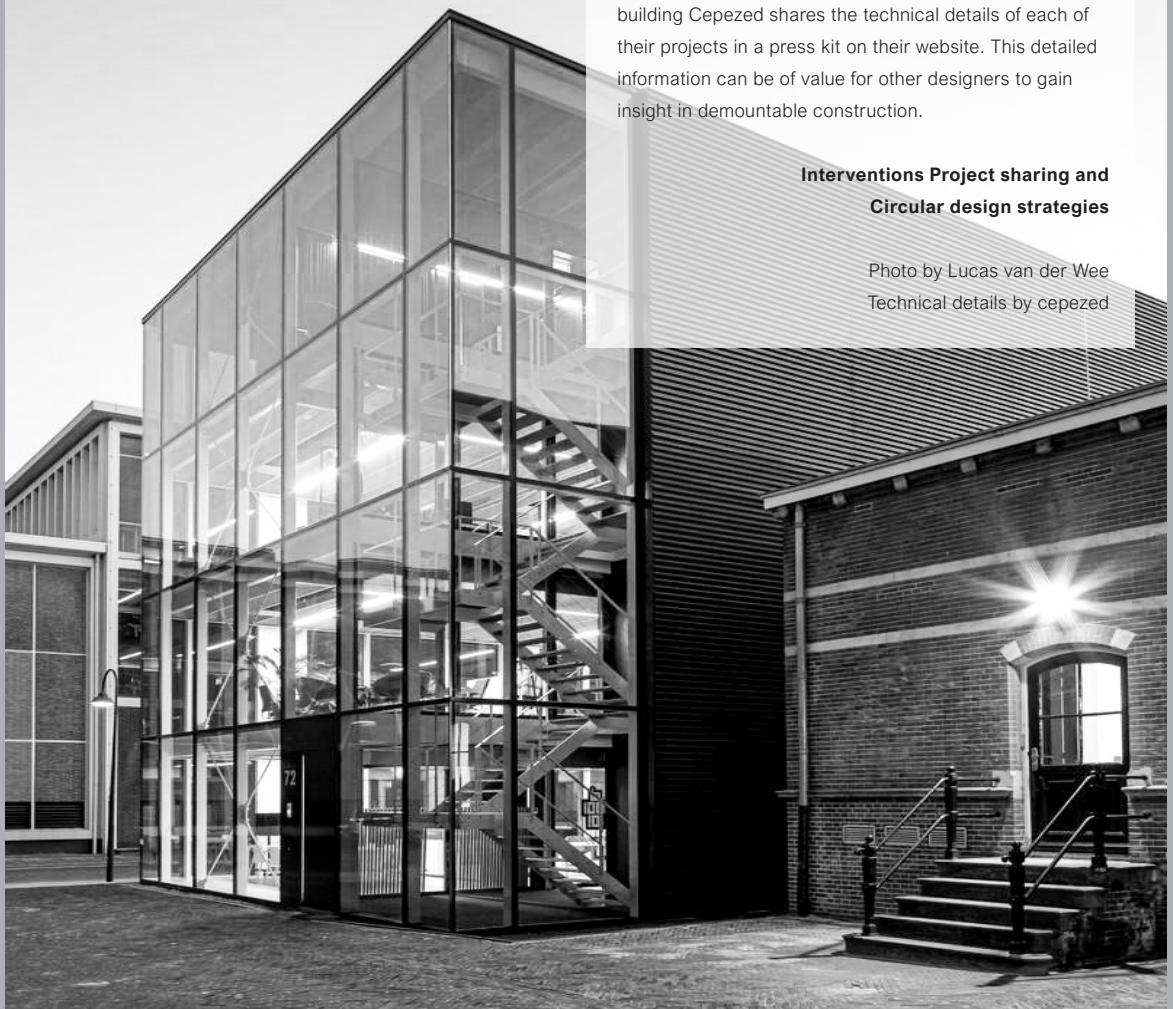
Exemplary case

Bouwdeel d(emontabel) by cepezed in Delft (NL) in 2019

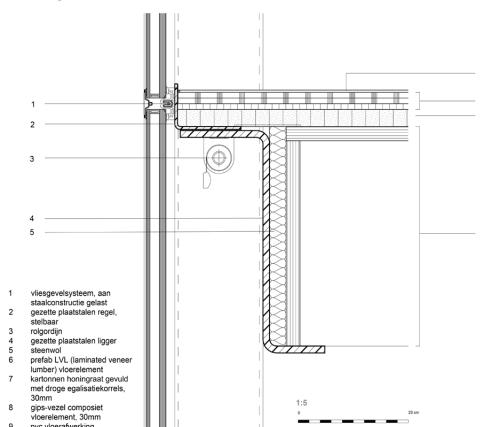
Bouwdeel D(emontabel) is a completely disassemblable building. Cepezed shares the technical details of each of their projects in a press kit on their website. This detailed information can be of value for other designers to gain insight in demountable construction.

Interventions Project sharing and Circular design strategies

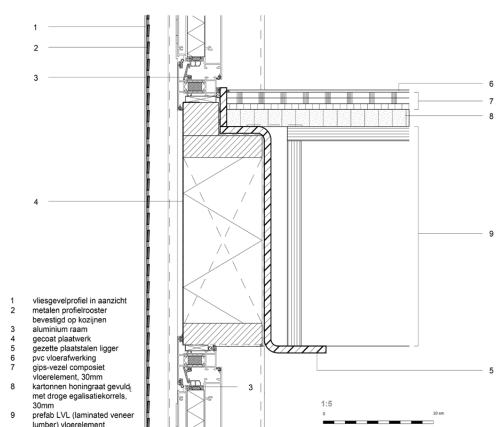
Photo by Lucas van der Wee
Technical details by cepezed



Verticaal geveldetail



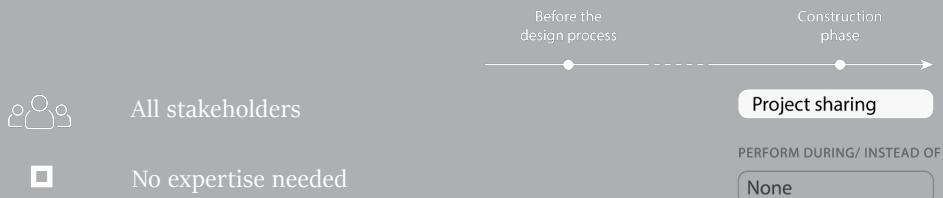
Verticaal raamdetail



Project sharing

Share your circular project and solutions, with useful and detailed information, in a strategic way to inform stakeholders outside your project team and to increase awareness and knowledge.

When & who?



Take action

- Document well the design process, the circular building project, and the innovative results.
- Select the useful information for outsiders
- It is important to mention the context and the boundary conditions that were set during the project.
- Do not only share success stories, but also missteps or misconceptions, for everyone to learn from it.
- Give lectures and on the project and tours in the building.

Input

Information, documents, and pictures of the circular building project.

Tools and sources

Online platforms that share circular building projects:

- [Gids Duurzame Gebouwen](#) by Leefmilieu Brussel/ Bruxelles Environnement
- [Duurzame woningen](#) by Ecobouwers, Bond Beter Leefmilieu
- [Case studies](#) by Circubuild
- [Pilot projects](#) by FCRBE (Facilitating the circulation of reclaimed building elements in Northwestern Europe)

Outcome

Open source information and exemplary projects on circular building.



Design

Inspiring cases

Take a look at other realised projects with a circular ambition, get inspired, and learn from other practices to integrate the circular principles in your project faster.

When & who



Take action

- Take a look at other realised projects with a circular ambition.
- Always consider the applied circular design strategies in their context. Circular design is context-specific.
- Get inspired!
- Translate the references to your design to show what 'circularity gain' it provides: residual value after use, lower environmental impact, or less use of materials.

Tools and sources

Online platforms that share circular building projects:

- [Gids Duurzame Gebouwen](#) by Leefmilieu Brussel/ Bruxelles Environnement
- [Duurzame woningen](#) by Ecobouwers, Bond Beter Leefmilieu
- [Case studies](#) by Circubuild
- [Pilot projects](#) by FCRBE (Facilitating the circulation of reclaimed building elements in North-western Europe)

Input

None

Outcome

Inspiration and insights to get started with applying circular economy principles in the design strategy.

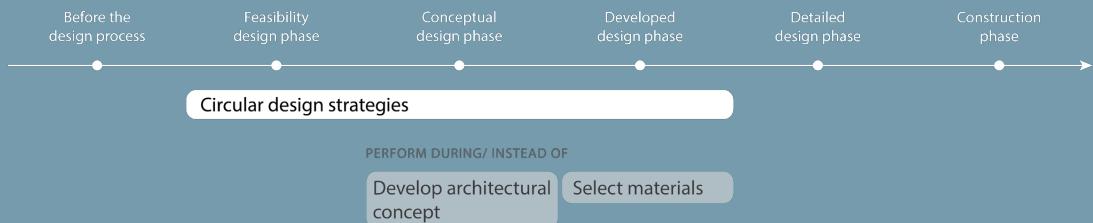


Design

Circular design strategies

Develop a circular design strategy for your specific building project and context. Base the approach on the vision about a circular built environment, and translate it in a set of concrete project choices, varying from preservation to enabling future material harvesting.

When & who



Design team

- Beginner expertise needed

Take action

- Take your circular vision and your circular business plan.
- Assess your building's context and architectural concept against the Circular Design Qualities. Which qualities fit the concept? Which are feasible? Which are not?
- Evaluate which of these qualities have an impact on ultimate sustainability and which are feasible. This can be done visually in a matrix.

Tools and sources

- [16 design qualities](#) for a circular economy by VUB Architectural Engineering
- [Catalogus veranderingsgericht bouwen](#) by OVAM
- [Circular design guide](#) by Ellen MacArthur Foundation
- [The Sustainability guide](#) by Interreg Baltic Sea Region
- [Scholen voor de toekomst](#) by Groep Van Roey and VUB Architectural Engineering

Input

Circular vision (Action Circular vision), Circular business plan (Action Circular business plan), Future scenarios (Action Scenario planning)

Outcome

Buildings design with a high(er) circular potential.

Exemplary case



Aeropolis II by Architectes Associés in Brussels (BE) in 2010

The facade consists of prefabricated facade modules. They are connected to the building's concrete skeleton structure by reversible metal connection elements, making the facade easily demountable.

Intervention Circular design strategies

Photos by Architectes Associés

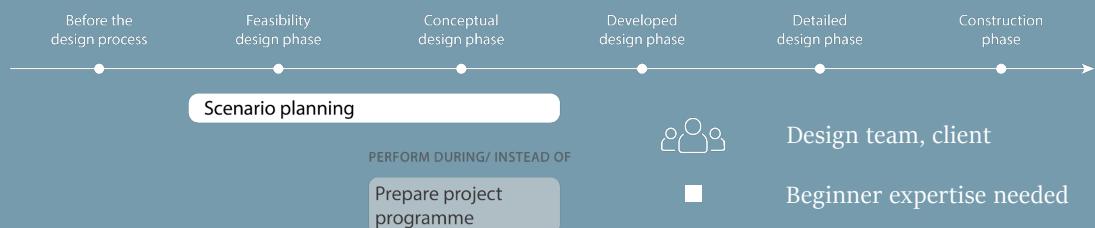


Design

Scenario planning

Develop plausible future user scenarios for the building project and apply it to the design to make a building adaptable to future changes.

When & who



Take action

- What triggers change? Define the known and unknown drivers for change.
- Select the most important drivers.
- Develop plausible future user scenarios based on the drivers.
- Decide for which scenarios you will design.
- Design for each selected scenario. Compare the different designs to each other.
- Decide which adaptable, generic, or durable elements will be integrated in the design.

Input

Information on the project and its context.

Tools and sources

- Workshop format and worksheets for scenario planning on [circularactions.be](#)
- Cambier C., Galle W., and De Temmerman N. [Expandable Houses: An Explorative Life Cycle Cost Analysis](#)
- Galle W. and De Temmerman N. [Scenario developing for life cycle design and analyses](#)
- [Circular Retrofit Lab](#): Full renovation of prefabricated student housing modules for multiple uses - Buildings as material banks (BAMB)

Outcome

Plausible future user scenarios and a conceptual design that can adapt to future changes.

Exemplary case



Baumschlager Eberle Architekten and Osar Architects,
Hospital in Kortrijk (BE) in 2012

A building structure and infill consisting of individual modules generates a use-neutral and highly flexible building and makes it possible to follow changing needs in the hospital.

Interventions Circular design strategies and Scenario planning

Photo by Werner Huthmacher

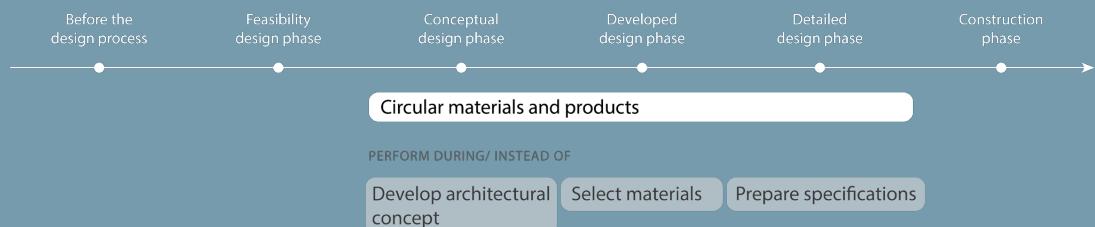


Design

Circular materials and products

Choose materials according to the life cycle duration, their potential reuse or recycling possibilities, and its impact on the environment.

When & who



Design team, contractors

Beginner expertise needed

Take action

- Avoid inseparable or difficult to separate composites.
- Opt for degradable raw materials (compostable, biodegradable, soluble...).
- Opt for non-toxic alternative materials
- Opt for inexhaustible raw materials (biobased, fast-growing...).
- Reuse building components.
- Use recycled material (= processed residual flows).
- Make sure that the lifetime of the product or material is compatible with the lifetime of the functional layer in which it is located.

Input

Conceptual design of the building project.

Tools and sources

- [NIBE Environmental Classifications](#)
- [TOTEM](#): to measure the environmental impact when selecting materials
- [16 design qualities for a circular economy](#) by VUB Architectural Engineering
- [Smart material choices](#) by Circular Design Guide
- [Catalogus van secundaire en gerecycleerde granulaten](#)

Outcome

Buildings with lower impact and a high(er) circular potential through the choice of materials.

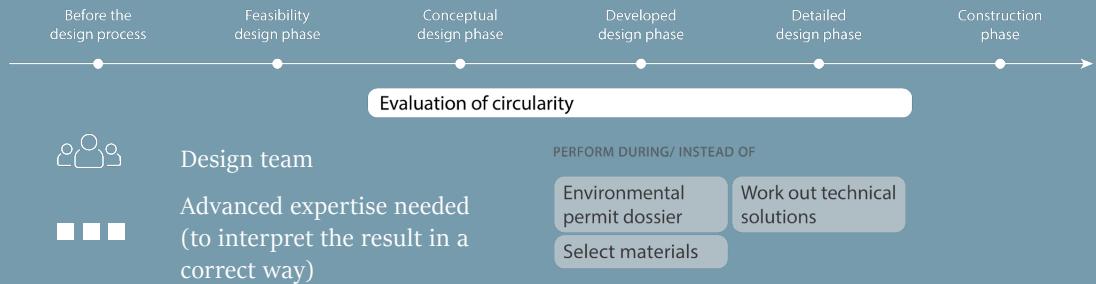


Design

Evaluation of circularity

Calculate and evaluate the circularity level or score of a building project: calculate the material flows, the embodied carbon of materials and building elements, the life cycle of building elements, etc.

When & who



Take action

- The action steps to take differ largely from one evaluation method to another. Here, we use the Level(s) method as an example.
- Make up a bill of quantities, materials, and lifespans
- Calculate the construction & demolition waste and materials
- Assess how your design could extend the service life of the building, by facilitating the continuation of the intended use or through possible future changes in use.
- If wished, you can set design targets to compare design options for their relative adaptability.

Input

The needed input can vary largely from one evaluation method to another. Generally, the following input data is needed: detailed information on the connections, the materials and components, and the building site. For the example of Level(s), the outcome of the Scenario planning Action can be useful.

Tools and sources

- [Building circularity index](#) by BCI
- [GRO](#) by Facilitair bedrijf
- [Level\(s\)](#) by European Commission
- [Circultics](#) by Ellen MacArthur Foundation
- [C-Calc](#) by Cenergie
- [Meten van circulariteit](#) by CB'23

Outcome

A score or another output that allows to compare different designs on circularity.

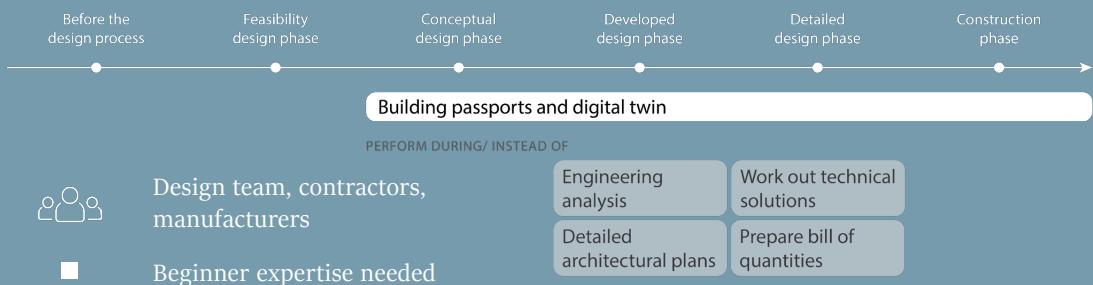


Design

Building passports and digital twin

Make a digital twin (e.g. BIM model) of the building project to store and share quantitative and qualitative data, and to get quick feedback on design changes. Make material/ building passports of the materials and elements in the building and couple it to the digital twin.

When & who



Take action

- Create a detailed digital file, including all technical data sheets of the materials, products, and elements used.
- Use material and building passports or Building Information Modelling (BIM).
- Update the information throughout the life cycle of the building. Appoint a person responsible for this.
- Consider how this can be included in the as-built file.

Tools and sources

- Material and building passport software, such as [Madaster](#)
- [BIM - Guide sustainable buildings](#) by Brussels Environment
- Honic et al. 2019. Data- and stakeholder management [framework](#) for the implementation of BIM-based Material Passports
- Munaro and Tavares. 2021. [Materials passport's review](#): challenges and opportunities toward a circular economy building sector

Input

Developed design of the building project, quantitative and qualitative data on the project.

Outcome

Structured storage of data, which can facilitate maintenance and reuse in the future.



Reuse

Preserve

Preserve a maximum of the building by well maintaining and repairing the building. Decide to preserve the largest possible volume of the building during renovation (instead of deconstruction).

When & who



Take action

- Consider whether demolition is unavoidable. Can the building be used for other functions? Can the building be renovated/adapted/expanded?
- It is important that a minimum if changes are made to the existing building, while meeting current standards and regulations.
- Estimate the possible value of the building and the possible savings through its preservation (financially and ecologically) and verify the condition of the elements to be preserved.
- Reflect: If some building elements cannot be preserved: What causes this? Could it be avoided in the future and how?

Input

Circular vision

Tools and sources

- [Vademecum Circulair Bouwen](#) by Leefmilieu Brussel

Outcome

Preservation of (a part of) the building, a lower impact on the environment. The material loop is at its smallest by keeping the materials in place and by well maintaining them.

Exemplary case



UCO by B-architecten in Ghent (BE), in design phase

The UCO project involves the renovation of a factory building. To keep its industrial character, a large part of the building will be preserved. In addition, the use of movable and modular lightweight walls may become a circular key aspect in this project.

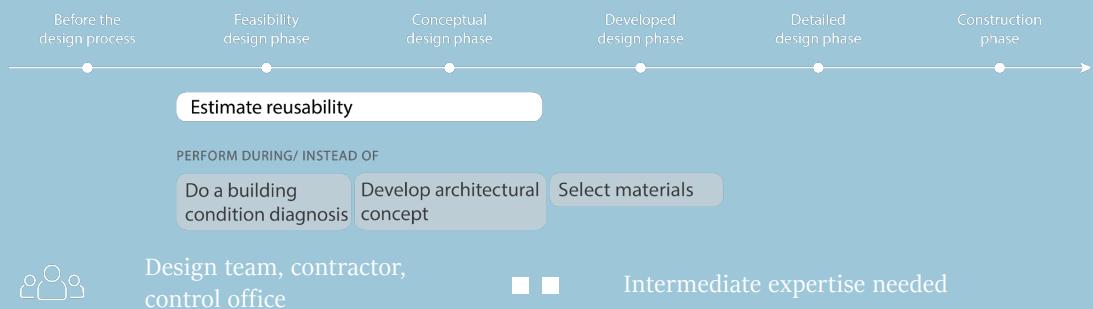
Interventions Preserve and Circular design strategies

Render and photo by B-architecten

Estimate reusability

Test and estimate which building elements are reusable and for which functions. Assess their performance and their (financial) residual value.

When & who



Take action

- From the inventory, select the elements which are suited for reuse.
- For each kind of element, decide which kind of test is appropriate to estimate or calculate its unknown properties and performances.
- Try to use existing testing methods.
- Ask for guidance from a control office.
- Reuse or sell the reusable building elements.

Tools and sources

- Akanbi et al. 2019. [Reusability analytics tool](#) for end-of-life assessment of building materials in a circular economy

Input

An inventory of reusable building elements. (Action: Inventory)

Outcome

An overview on which building elements are reusable for which functions and what their (financial) residual value is.



Reuse

Inventory

Make an inventory of the present building elements, including necessary details (its condition, the materials it is made of, which ones can be preserved and reused, etc.).

When & who



Take action

- As client or architect, determine the minimum information to be included in this inventory.
- Identify potentially reusable and recyclable building elements: is it in good condition, how many of these elements are available, etc.
- Collect and structure detailed information on these elements.
- Share, through various channels, the inventory with potential users.

Tools and sources

- Facilitating the circulation of reclaimed building elements in Northwestern Europe by FCRBE

Input

None

Outcome

An inventory of the building components that can be preserved, reused, or recycled. A complete overview of the resources and wastes and to define their future destination, use and/or treatment.

Reuse building components

Integrate reused building elements in your project, from the project or from another building site, to recover and reuse as much material as possible.

When & who



Design team, contractor

Take action

- Set an ambitious reuse target at the beginning of the design process.
- Check the inventory and/ or online material platforms for reusable building components
- Analyse which reusable components fit the provided functions during the feasibility phase, and update this list during the next design phases according to the availability of the components.
- Foresee time and budget to buy and install the reused components in the building.

- Beginner expertise needed

Tools and sources

Material sharing platforms:

- [Opalis by Rotor](#)
- [Werflink](#)
- [Insert Marktplaats](#)
- [Batiterre](#)

Other sources:

- [Vademecum Circulair Bouwen](#) by Leefmilieu Brussel
- [Hergebruik, hertoepassen van bouwmateriaal](#): praktische gids by CIFFUL
- [Vademecum voor hergebruik buiten de bouwsite](#) by Rotor

Input

Inventory of reusable building components, information on the performance of the components, overview of reusable components on online material reuse platforms.

Outcome

Avoidance of demolition waste by reusing building components. The closing of material loops.

Exemplary case



The Botanical Institute by Michel Pregardien and Anne-Françoise Marique in Liège (BE) in 2019

The renovation of the Botanical Institute of the University of Liège included the reuse of wooden planks as facade finishing. They refer to the wooden planks that once served as a casting for the brutalist building in the 1960s (by Roger Bastin).

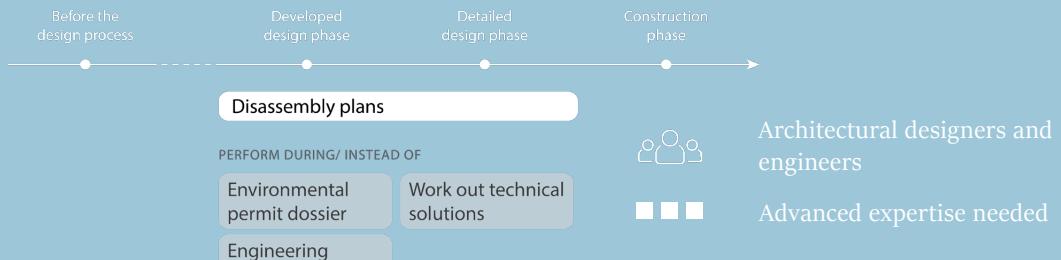
Intervention Reuse of building components

Photo by S. Defourny

Disassembly plans

Make a disassembly plan. Apart from constructing with reversible connections, a better guidance for the future disassembly stakeholders is developed to ensure a fast and correct disassembly of the building.

When & who



Take action

- From the scenario planning exercise, evaluate which building components will be demounted.
- Figure out which building components should be demounted first and which ones last, to generate the optimised disassembly plan for retrieving single or multiple components from a given building's assembly.
- Create graphical and textual disassembly plans.
- Indicate if some precision or caution is needed when demounting certain components (to avoid destruction).

Tools and sources

- Denis, F. et al. 2018. Using Network Analysis and BIM to Quantify the Impact of Design for Disassembly
- Sanchez, B. et al. 2020. A selective disassembly multi-objective optimization approach for adaptive reuse of building components
- Hertoghs, P. et al. 2019. Quantifying the Generality and Adaptability of Building Layouts Using Weighted Graphs: The SAGA Method
- Level(s) by the European Commission

Input

- Architectural and technical plans
- Plausible future scenarios (Action: Scenario planning)
- Data on the materials and the building components (technical life cycle, performance, properties, etc.)

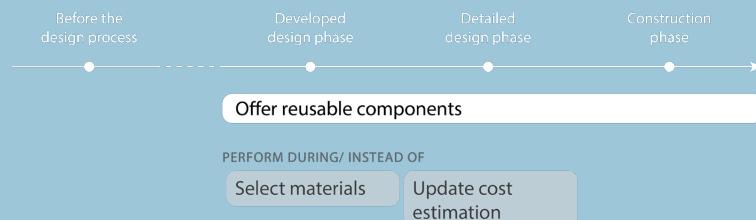
Outcome

Ensuring a fast and correct disassembly of the building. Avoidance of demolition waste by reusing building components. The closing of material loops.

Offer reusable components

Offer or sell reusable components which cannot be reused in your projects to other interested stakeholders.

When & who



 Design team, contractor

 Beginner expertise needed

Take action

- Inform the demolition company which building components will be recovered before the actual demolition begins.
- Contact the designers and/or the contractors of promising projects about the possibilities to reuse your building components.
- Put the reusable elements and the detailed information from the inventory on online platforms to donate or sell to other interested stakeholders.

Tools and sources

Material sharing platforms:

- [Opalis by ROTOR](#)
- [Werflink](#)
- [Insert Marktplaats](#)
- [Batiterre](#)

Other sources:

- [Vademecum Circulair Bouwen - Leefmilieu Brussel](#)
- [Hergebruik, hertoepassen van bouwmateriaal: praktische gids](#) by CIFFUL

Input

Inventory of reusable building components. Performance, amount, and other data of the reusable components (Action: Inventory).

Outcome

Avoidance of demolition waste by reusing building components and enlarging the reusability potential of the building components.



Storage space

Include enough storage space on site or elsewhere to store the demounted and reusable building components. This way, the quality of the reusable components is preserved and the chance of being reused is enlarged.

When & who



Design team, client, contractor



Beginner expertise needed

Take action

- Search for available storage space close to or on the construction site.
- Check the quality of the space: dry, can be closed, reachable by car or truck, and so on.

Tools and sources

None

Input

Volume and surface of the reusable components that need to be stored. Information on whether the building components require specific storage conditions.

Outcome

Safeguarding of the reusable building components: the quality of the reusable components is preserved and the chance for being reused is enlarged.



Construction

Specifications

Describe in the specifications how the execution works should or can be done to become a building with increased circular potential. This can help to motivate and guide the contractors to carry out the construction works in a circular way.

When & who



Design team



Intermediate expertise needed

Take action

- Include a page in the execution file on the motivation of the client and the design team on why to build circular and what their view is.
- Describe precisely which actions the contractors can take to make the construction process more circular.
- Add examples of construction works of circular building projects

Tools and sources

- Circubestek by Redactiebureau Palindroom, VIBE, and Blieberg A. C. E.
- Vademecum Circulair Bouwen - Leefmilieu Brussel

Input

Motivation, knowledge, and insights from the construction team. Exemplary case studies.

Outcome

A low-impact construction site, exemplary specification documents.

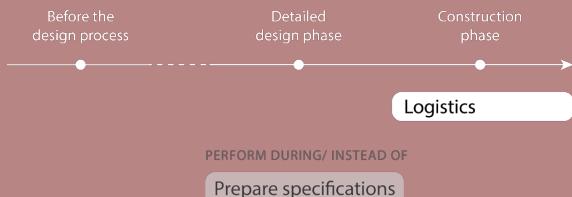


Construction

Logistics

Minimalise the amount and the impact of the logistics.

When & who



Design team, contractor



No expertise needed

Take action

- Avoid transport: distribute locally, serve the local market, purchase locally, produce or optimise locally
- Avoid packaging material for transport, opt for reusable or biodegradable material

Tools and sources

[CE Kompas - Circular Flanders](#)

Input

None

Outcome

Lower environmental impact of the construction site. Smaller (logistical) loops.

As an architectural designer or engineer, or other member of the design team, you get triggered to design a building according to the principles of the circularity economy.

This bundle reveals **26 actions** to increase the circular economy potential of your architectural project.

For each action, an action sheet indicates by whom the action is preferably performed and how much expertise is required. It also indicates what the detailed action steps are, what input is needed to be able to start the intervention, what outcome will be achieved once the intervention is completed, and what helpful tools and other sources are already available to support you in performing that certain action for circular architecture.

Discover the online version of the actions & more through the website
www.circularactions.be

