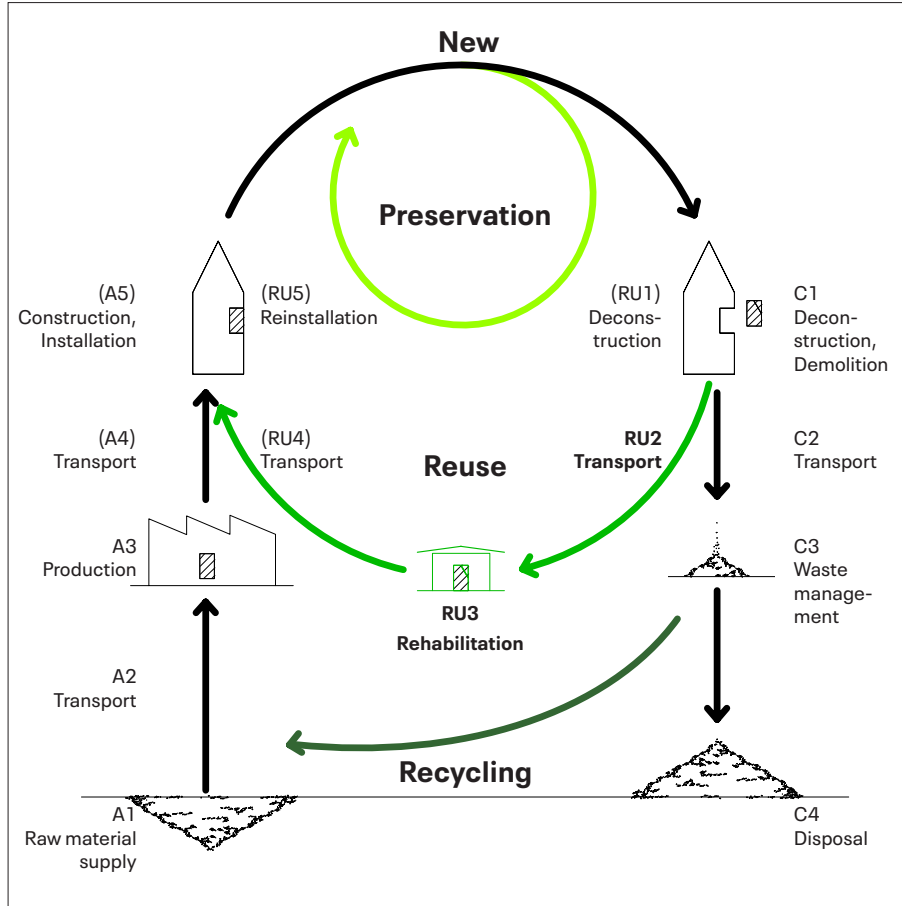


CO2 balancing of reuse



The **life cycle assessment** of a component quantifies the environmental impact of the material used and makes it comparable. The figure illustrates the steps along the life cycle.

A1-A5 describe the production of new components out of virgin material.

C1-C4 describe the destruction and disposal at the end of life of a component.

RU1-RU5 Describe the steps involved in reuse.

The steps in brackets may be neglected according to SIA 2032:2020. In order to maintain comparability, the equivalent processes are excluded for reuse components.

This means that only the following two steps need to be taken into account for a reused component:

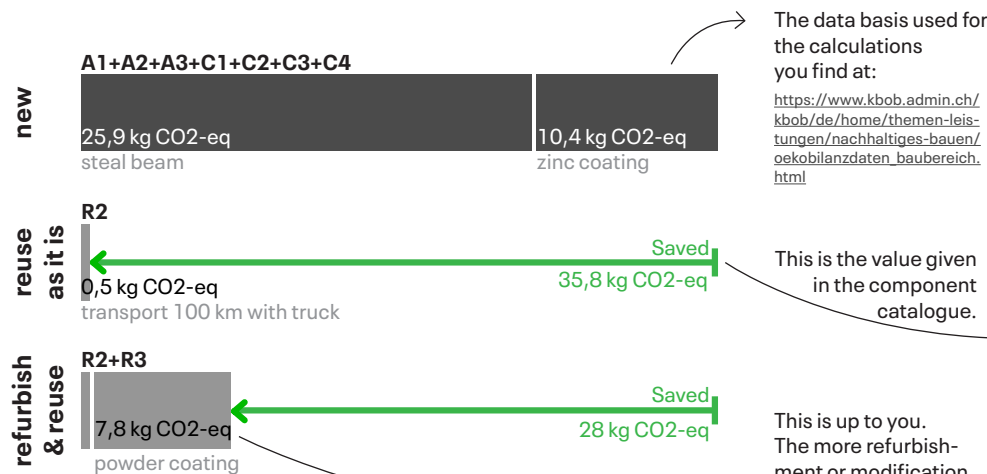
- **RU2 - Transport** from the deconstruction site to the storage or workshop.
- **RU3 - Rehabilitation**, refurbishment, modification at a workshop.

The **methodology** is based on the study "Grey energy and greenhouse gas emissions of reused building components; Methodology and calculation in variants using building K118 in Winterthur as a case study", 2020, by Kathrin Pfäffli as part of the ZHAW research project *Zirkulär Bauen*. For the balancing of reused building components, the steps defined in SIA 2032:2020 (A and C) were expanded to include steps RU.

The values of KBOB/ecobau/IPB Recommendation 2009/1 „Life cycle assessment data in the construction sector“ were used as **data basis**. In the material data, the production (A1-A3) and disposal (C1-C4) of each material are already summarised. For building materials not covered by the KBOB list, the balance was estimated with values given on Ricardo.ch for similar objects. However, they can only provide a rough guide.

In the component catalogue, the saving per component is given.

How to save emissions with reuse?



This is the value given in the component catalogue.

This is up to you. The more refurbishment or modification you plan for the components, the more CO2 is emitted and the lower the savings are compared to a new component.

Basel Pavillon 2022

Catalogue of reused components

All products > linear > metal/steel

Steel Beam IPE120

source: Textilfabrik, B610 Uster

Dimensions	3.61m x 12cm x 64cm
Quantity	50 pcs
Embodied CO2-eq emissions, rescued if reused	36 kg
Downloads	Data Sheet 3D Model