

## Bachelorarbeit

Am Lehrstuhl für Betriebswirtschaftslehre ist in der Arbeitsgruppe Projekt- und Ressourcenmanagement in der bebauten Umwelt eine Abschlussarbeit zu folgendem Thema zu vergeben:

### **Material flow analysis in the concrete industry** **An investigation of concrete volumes, deconstruction and recycling processes and economic aspects**

#### ■ Background

The production of concrete, especially the production of cement, is associated with serious environmental impacts. Given the increasing need to develop more environmentally friendly and innovative approaches in the concrete industry, it is essential to examine the material flow of concrete more closely. To this end, the tendered work must look in particular at stocks, deconstruction and economic aspects. The first innovative projects show alternatives for sustainable construction, which are to be evaluated techno-economically and ecologically.

#### ■ Content of the work

In the course of the bachelor thesis, the service life of concrete structures and products, the amount of demolished material and the recycling process of demolished concrete are to be examined. Through a comprehensive literature research and interviews with representatives of the local industry, (1) the expected concrete demolition quantities in Baden-Württemberg are to be quantified. Furthermore, (2) the service life and distribution of concrete components and structures are to be determined. In addition, (3) an evaluation of the quantities of material generated during demolition is to be carried out about economic efficiency in terms of the cost structures for concrete demolition recycling (recycling, backfilling, landfill acceptance prices).

#### ■ Requirements

This work is suitable for students of industrial engineering, civil engineering and similar courses. Intrinsic motivation, initiative and a certain open-mindedness for conducting and evaluating interviews are helpful. The person should also enjoy expanding their knowledge of new, sustainable materials and the circular economy. The insight into the industry and the exchange with different players is also a valuable experience.

#### **Start / Duration**

Immediately, 6 months.

#### **Contact person**

Antonia Frank,  
Tel.: 0721/608-44463  
antonia.frank@kit.edu



Bildquelle: <https://www.architektur-online.com/kolumnen/architekturzene/eine-renaissance-des-brutalismus>



Bildquelle: <https://www.feess.de/qualitaets-recycling-baustoffe.html>



Bildquelle: <https://www.deutschlandfunk.de/klimasunder-beton-ein-baustoff-sucht-nachfolger-100.html>



Bildquelle: <https://blog.kiarx.de/recyclingbeton-betonrecycling-in-der-baubranche>