

Abbildung und Bewertung von Energieeffizienzmaßnahmen in bestehenden Industriegebäuden auf Basis der Modelica-Bibliothek „buildings“



TECHNISCHE
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Institute of Structural Mechanics and Design
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Mapping and evaluation of energy efficiency measures in existing industrial buildings based on the Modelica "buildings" library

**Master thesis/Bachelor thesis
from the field of energy-efficient construction and energetic networking**

Topic:

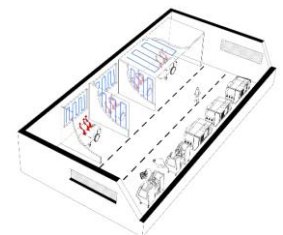
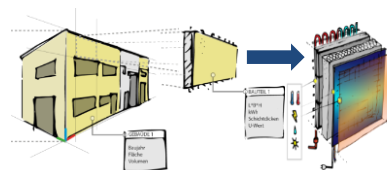
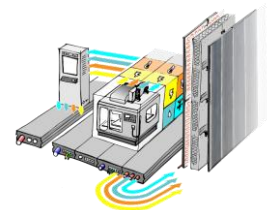
The energetic renovation of the building stock is an important step towards achieving the European climate targets. The renovation of production buildings is often avoided in order to prevent expensive production stops. Retrofitting solutions for existing industrial buildings are being developed in the research project “ETA im Bestand”. One focus is on the interconnection of buildings, technical building equipment and production. The modelling language Modelica is used to map the production environment and to analyze energy efficiency measures. A model library is created as a basis for the selection of measures, which shall be used by scientists as well as by energy consultants. In this way, obstacles to the implementation of measures can be removed.

Task:

The building model is based on the Modelica library "buildings". This is to be expanded to include components for mapping building-side energy efficiency measures (e.g. the targeted cooling of certain areas by means of thermal component activation). The catalog of measures developed in the project can be used for this purpose.

Approach:

- Familiarization with the Modelica library "buildings"
- Selection of suitable energy efficiency measures
- Modelling of the selected components and measures
- Simulative plausibility check of the models
- Evaluation of the selected measures



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