

Melchior Laager
Schreinerfachlehrer
Bürglenstrasse 30
8570 Weinfelden
Germany

Lernholz.com
laager@lernholz.com

**As an apprentice at the vocational school specialised in wood, I am confronted with questions about ecology in construction everyday. As I am concerned about this, I've been developing teaching material for my favourite subject, which demonstrates the ecological aspects.
Therefore, your competition topic intrigued me and led me to submit two of my innovations in this field.**

Submission documents for the competition topic: become the CO₂ champion

Introduction:

Building strategy:

- To live the philosophy as the company executing the construction, to build new living space in harmony with humans and nature
- Determine the building strategy
- Measures for the building strategy
- Implementation of the building strategy

These four points are central and are to be considered for a building construction.

Introduction to the main part: a contribution to apprenticeship

Facts: different buildings components/materials are produced in a high production process in the factory and made available to the specialised builder for the constructional implementation.

A: in order to guarantee the sustainability of the corresponding products innovation, the apprentice is to be integrated into the downstream process steps

B: with the inclusion of the apprenticeship aspects and the increasing consciousness regarding environment, the topic ecology will become a personal concern of each individual specialised builder.

Conclusion:

the internalisation and the new consciousness may lead to living space being increasingly created in a CO₂-neutral way.

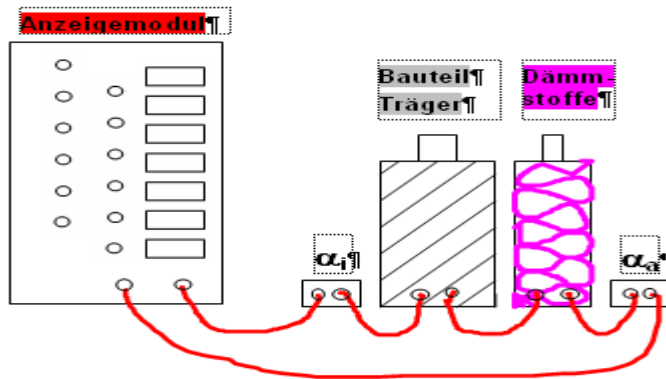
The executor will be able to present themselves to the customer in a professionally correct way. However, this will only work, if the ecological way is already being pursued during apprenticeship.

Two parts – one topic

u-measuring model and store with a system

Part 1 u-measuring model

The u-measuring model enables a graphic material testing and helps demonstrate how the final product can be kept CO₂-neutral.



Functional scheme

Arrange building component/joist (e.g. wooden post-and-beam structure, brick) and the building component insulating material. Both building components are connected with the heat transfer coefficient to the indication module with the cables in series.

Principle:

with this learning module, any building material/component can be checked for diathermancy and made visible for all learners by the lamps installed there illuminating according to the thermal conductivity.

The u-value of the example is e.g. 0.4 W/m²K (theoretical: 0.387 W/m²K), this means that the fourth lamp from the bottom illuminates in this case.

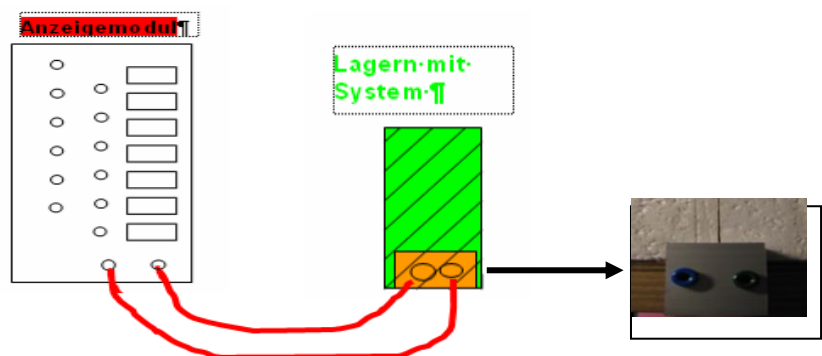
Part 2 Store with a system

recognise, act, transfer

The present module demonstrates the different material criteria with the help of the illuminating lamps and graphically provides information on CO₂ values.

Functional scheme

Arrange indicating module and material. The material sample is connected with the two cables to the indicating module.



Principle:

as an example, Pavaflex is described here as a CO₂-neutral building material. In this case, the top lamp on the left side illuminates in a green colour. Contrary to this, the first or second lamp from the bottom will illuminate in a red colour for PVC sheets.

Practical

The usual materials in the building industry are stored in a set of boxes. The following labels designate the samples which are designated each with a consecutive decimal number. The FileMaker database and the enclosed sample file provide all relevant product data for this and are easy to use in class.

1	2	3	4	5	6	6	7	8
9	10	11	12	13	14	15	16	18

**By active action, we develop procedures that are directed at a clear CO₂ failure prevention,
for the one is successful in the long term who thinks ecologically.**

Weinfelden, 30 October 2008

Melchior Laager