



Robust timber structural components

Sustainable technological development for the six-storey
timber high-rise buildings of the future **Research project · 2025–
2026 (+ 2 years)**

Detailed catalogues show the FINAL RESULTS. **RobuKomp** describes the DECISION-MAKING
PROCESS

Why RobuKomp?



Increasing demands on structural systems,
fire, sound, thermal and moisture protection,
construction, cost-effectiveness and
sustainability.



At joints and spatial nodes, many requirements
converge simultaneously.



Early decisions regarding the system, structural
framework, materials or prefabrication
significantly limit the scope of possible
solutions later on.



Existing detail catalogues usually show the result
– not the decision-making process behind it.



The aim of RobuKomp is to develop a
transparent, transferable methodology for robust
and standardisable timber construction details.

3) What is the outcome?

- A systematic overview of relevant requirements, boundary conditions and interdisciplinary dependencies.
- A methodological model for the knowledge-based development and evaluation of timber construction details.
- Transparent mapping of requirements, functions, materials, functional layers and interfaces.
- Analysis and comparison of different detail variants.
- Consideration of technology, assembly, construction sequence, costs, sustainability and dismantlability.
- Documented decision-making processes and multi-criteria evaluation of solutions.
- Transferable 'knowledge of why' for design, construction, research and teaching.
- A foundation for future digital, BIM-supported and knowledge-based applications.



RobuKomp – Formula

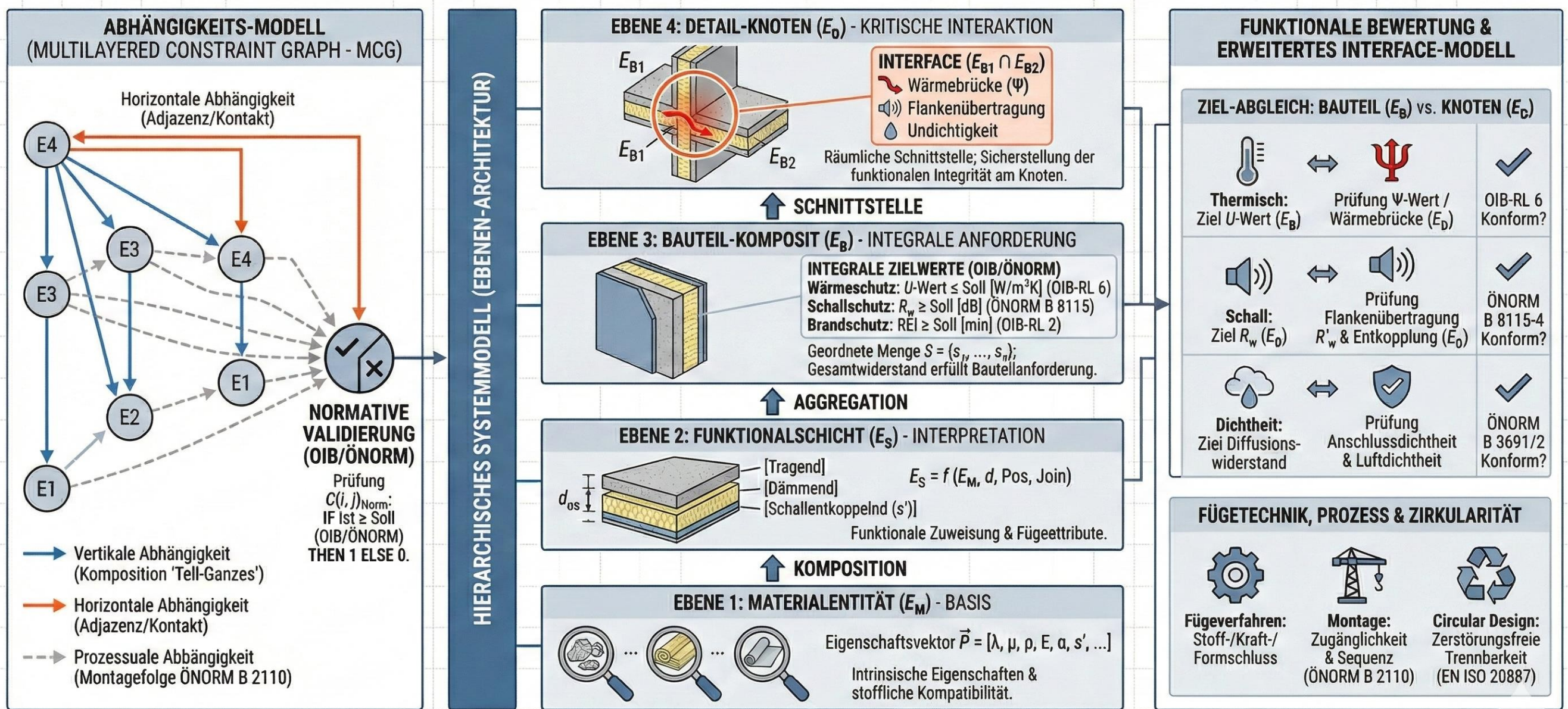
resilient reflective comprehensive conscious

$$re^2 + be^2 = \text{RobuKomp}$$

FORMULA FOR ROBUST TIMBER STRUCTURAL COMPONENTS

SYSTEMMODELL: ABSTRAKTION UND BEWERTUNG VON HOCHBAUDETAILS

Technischer Bericht: Systematische Abstraktion, multidimensionale Optimierung und normative Konformität (OIB/ÖNORM)



FAZIT: Objektivierter Detailplanung durch systemtheoretische Abstraktion und formale Prüfung multidimensionaler Abhängigkeiten zur Sicherstellung der funktionalen Integrität über den Lebenszyklus.

Key message

Robustness is not a property of a single detail – it arises from the interplay of requirements, material, function, load-bearing capacity, building physics, interfaces, execution and process.

It is **principles, decision-making processes and verifiable boundary conditions** that are standardised – not a fixed detail.

UNDERSTANDING THE WHY creates traceability, adaptability and trust.

Project duration:
12/2025–12/2026
+ 2 years planned



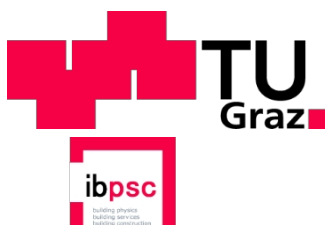
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Project partners:
WKO / Timber Industry Association



Project participants:
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