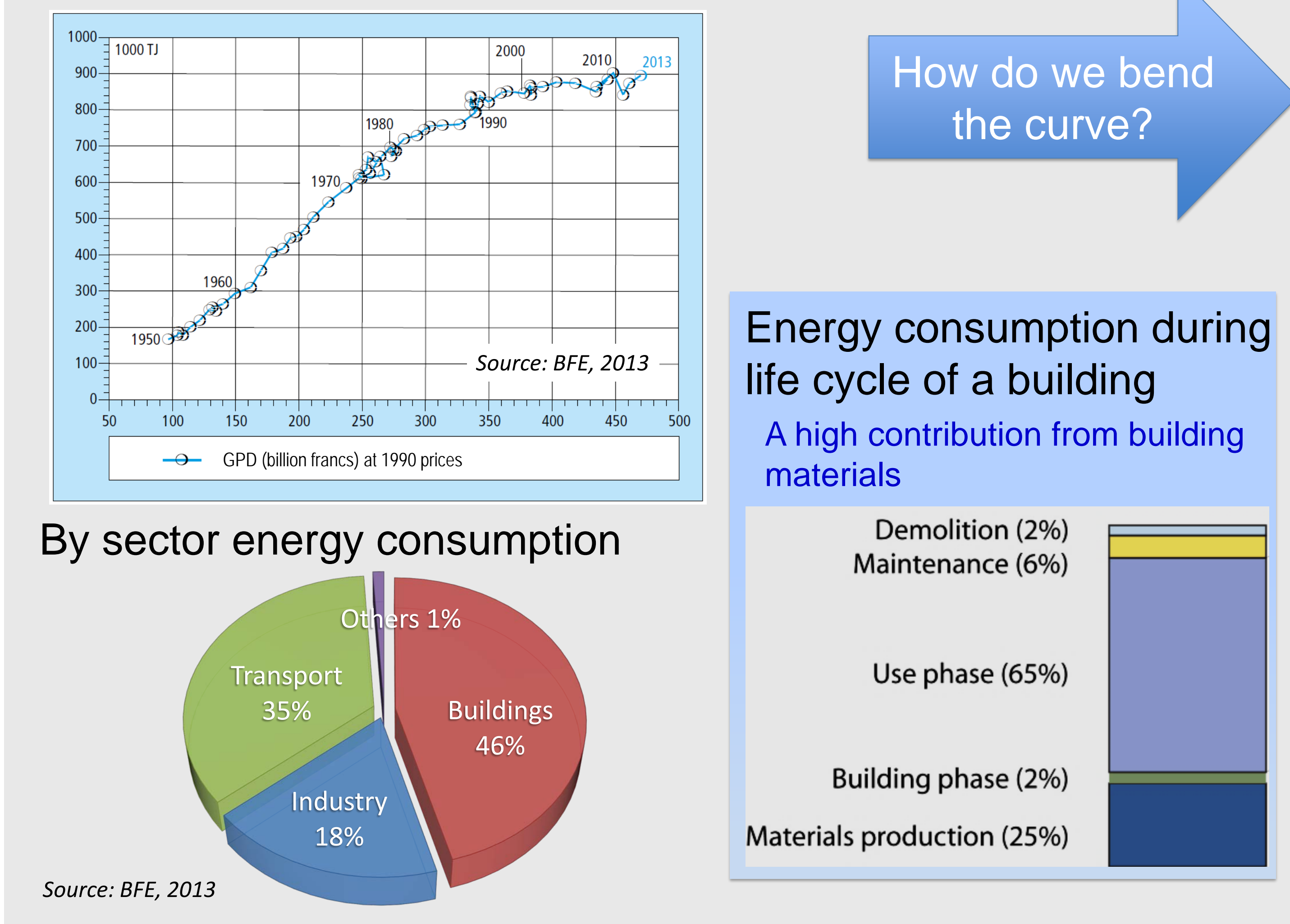


Overview

Energy consumption in Switzerland



Our project proposition

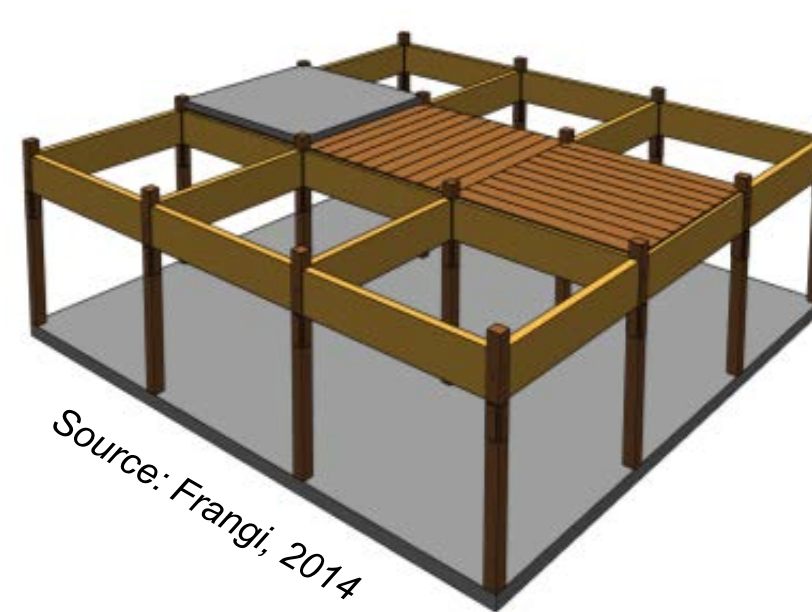
Cut energy consumption from building materials by developing low energy products in the market

- **Concrete with low clinker cement**
 - Cement substitution via use of locally available materials (limestone fillers, etc.), alkali activators, synthesized superplasticizers
 - Better understanding of carbonation and steel corrosion to optimize cement substitution up to 65% (*allowance as per the new SIA guideline, SIA 2049*)
- **Structures with reduced steel content**
 - Substitution of steel, a high energy imported material, with other tensile resistant materials

Material level



Structure level

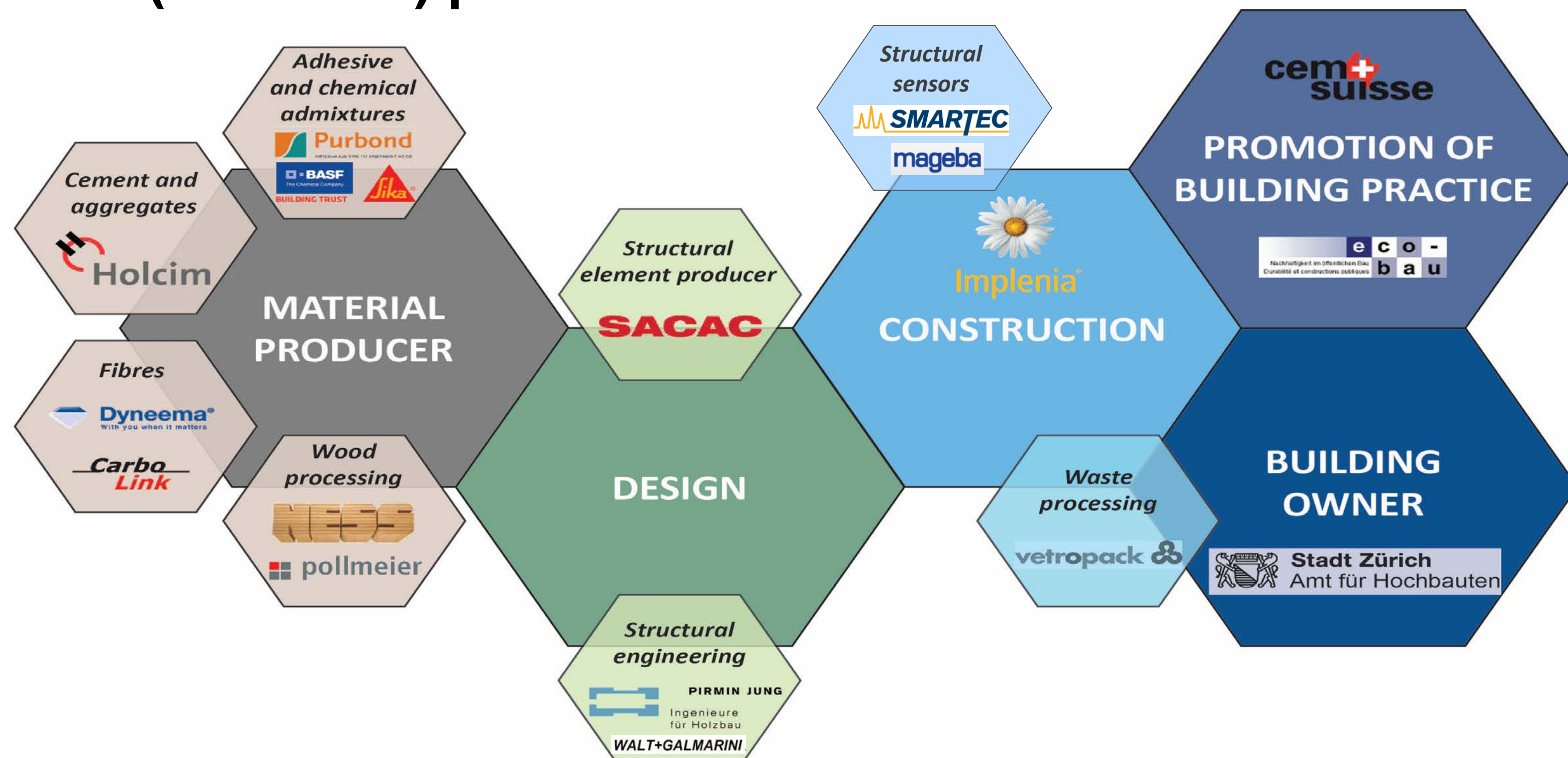


Wood concrete hybrid structure

Carbon fiber reinforced high performance concrete

Ultra high performance fiber reinforced concrete

Main (industrial) partners:

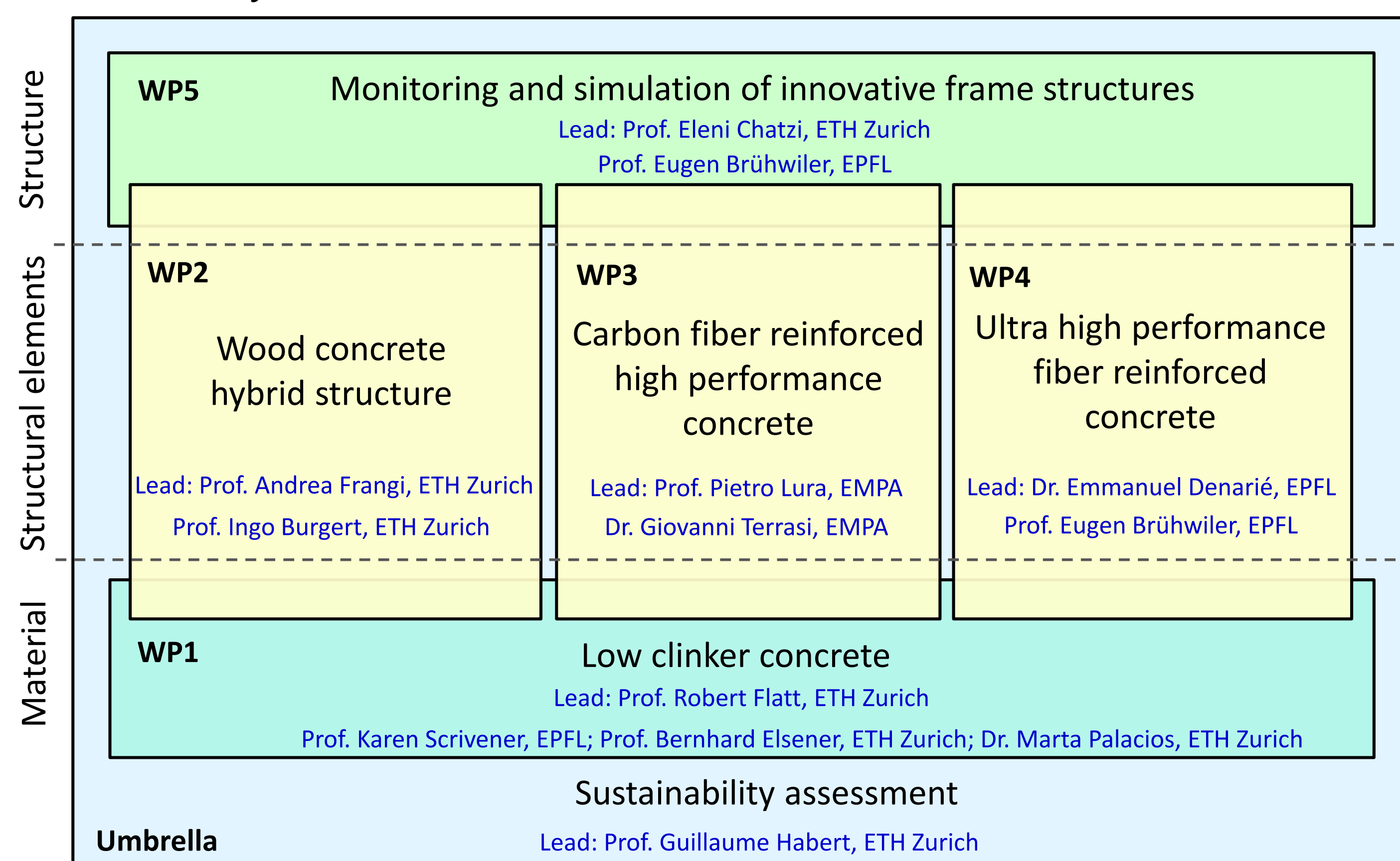


Research focus:

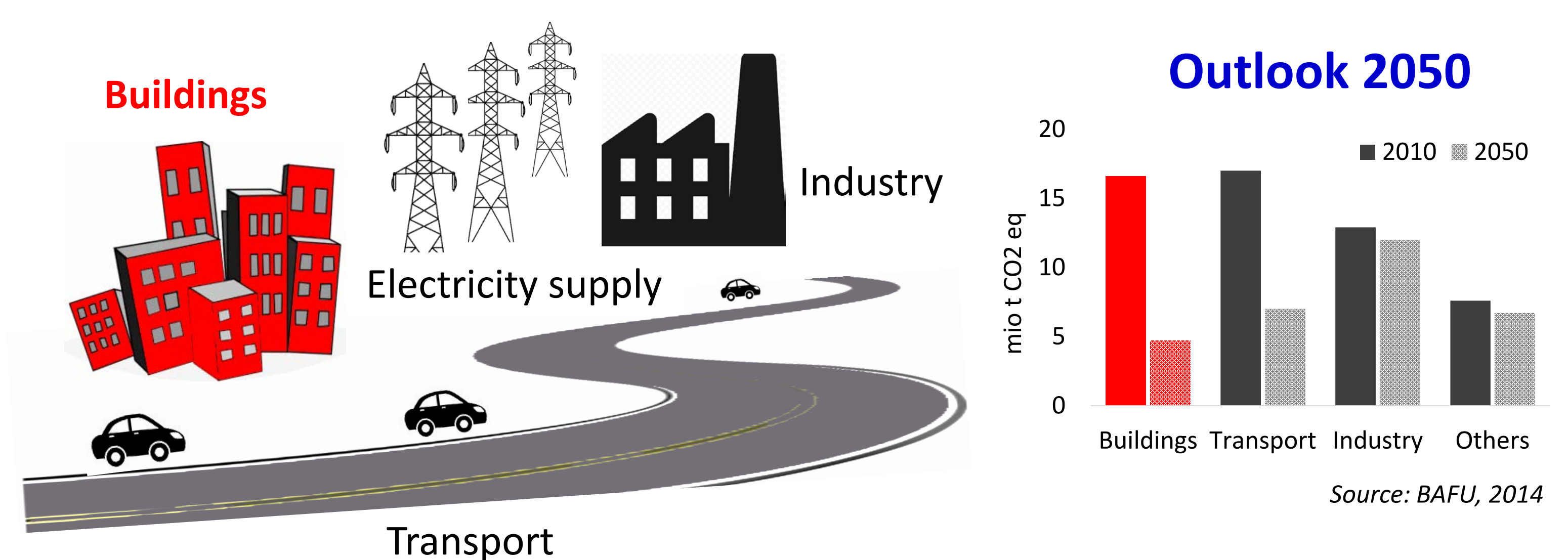
- The balance between the benefits of *eliminating steel* and the potential disadvantages of using *alternative materials* needs to be assessed in order to maintain the overall focus of the joint project on sustainable construction.
- Another challenging question to be answered by this joint project concerns ways in which these radical innovations can be implemented in frame structures.

Subprojects

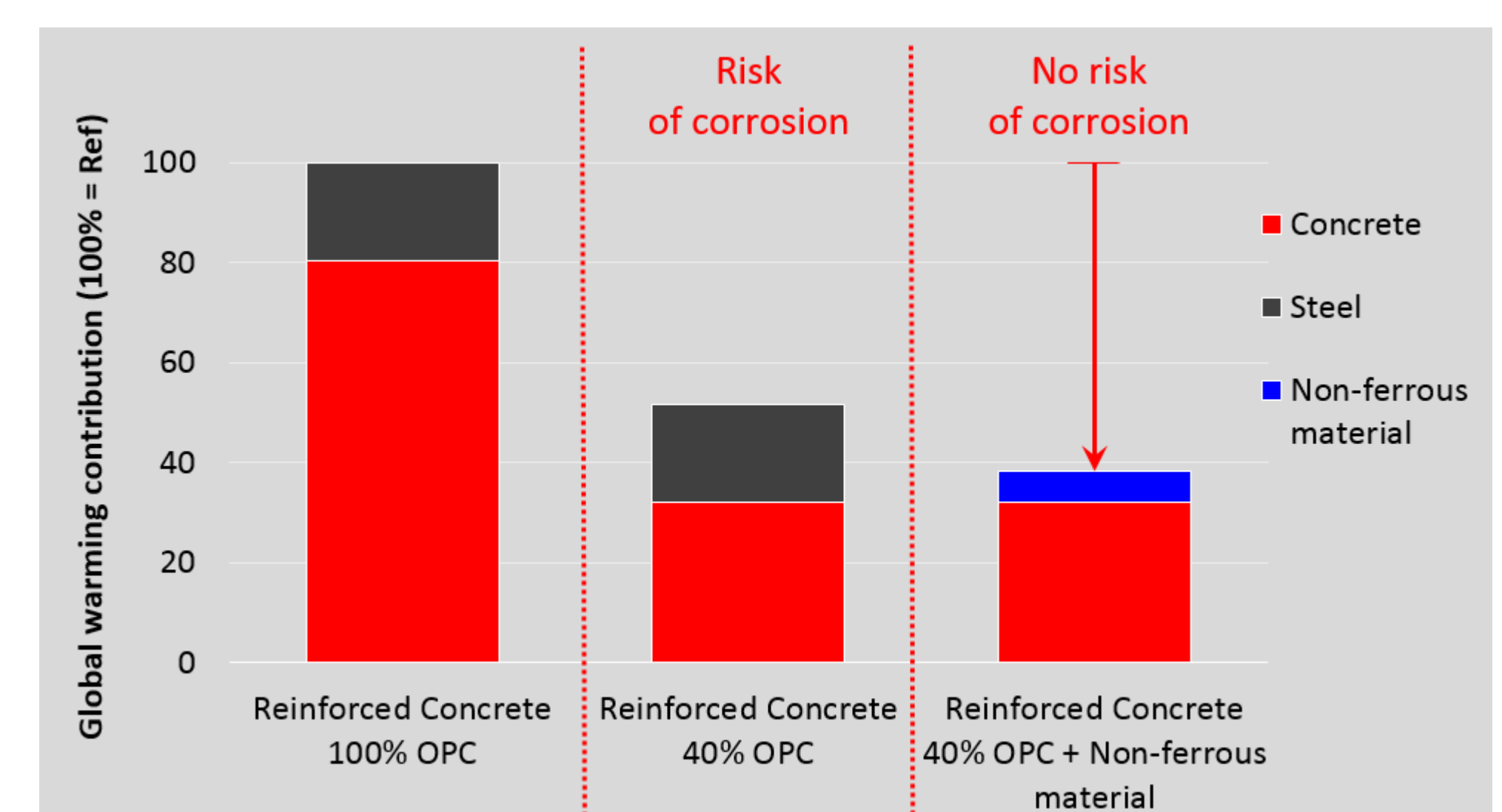
The project is composed of *five work packages* that looks into improvement potentials in buildings construction, from material up to structural level, and an *umbrella project* that takes care of the sustainability assessment.



Energy Turnaround



'Low energy concrete' focuses on *low energy constructive system* that presents huge energy and emission savings potential for Swiss Energy Turnaround.



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