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COST ACTION CA 20139, HELEN

HOLISTIC DESING OF TALLER TIMBER BUILDINGS





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WHAT IS COST

- COST (European Cooperation in Science and Technology) is a funding organisation for research and innovation networks.
- Our Actions help connect research initiatives across Europe and beyond and enable researchers and innovators to grow their ideas in any science and technology field by sharing them with their peers.
- COST Actions are bottom-up networks with a duration of four years that boost research, innovation and careers.
- Simply put COST funds the networking of people (travel, sleep, meet, repeat)







HOLISTIC DESIGN OF TALLER TIMBER BUILDINGS

This COST Action is NOT about really tall timber buildings.

- We are not pushing the envelope in that direction
- We are not in favour of the idea in general
- Neither is most of the scientific community
- Such buildings can act as pilot lighthouses, however this is not the way we should
 use major quantities of wood in the future

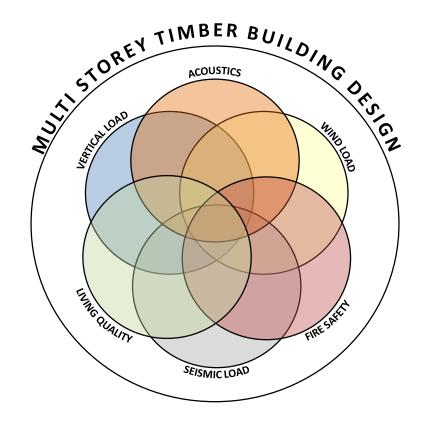






WHAT INTERACTIONS ARE WE MISSING?

Just the basic engineering collisions



INTERACTIONS + positive - negative N neutral	VERTICAL LOAD	WIND LOAD	SEISMIC LOAD	FIRE SAFETY	ACOUSTICS	LIVING QUALITY
VERTICAL LOAD		+	-	-	+	N
WIND LOAD	+		+	N	-	N
SEISMIC LOAD	-	+		N	-	N
FIRE SAFETY	-	N	N		+	-
ACOUSTICS	+	-	-	+		-
LIVING QUALITY	N	N	N	-	-	

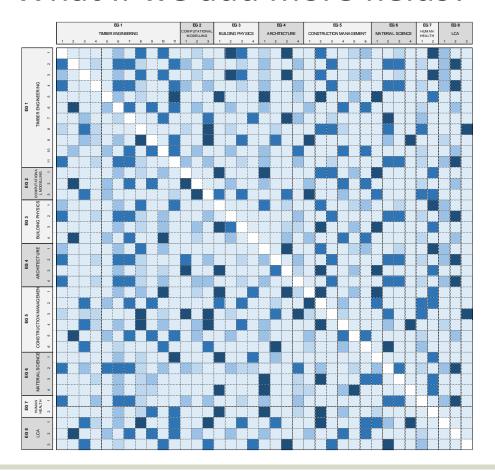






WHAT INTERACTIONS ARE WE MISSING?

What if we add more fields?



MAIN GOAL:



FIND AS MANY PROBLEMS RELATED TO TALLER TIMBER BUILDING BEFORE THEY FIND US!

THROUGH INTERDISCIPLINARITY!

and hopefully prevent them ...







HOW TO FIND AND PREVENT PROBLEMS?

- Establish a strong group of experts from different fields
- Come up with the **state of the art** in individual fields with an emphasis on the interdisciplinary work done so far
- Perform a collision survey with the widest possible crowd
- Identify the problems emerging from the results
- Focus research on those areas
 - Within the action (STSMs, Training schools, Conferences, ...)
 - Topics for research tenders
 - Lobby at the EU level to focus research call on specific topics







STATE OF THE ART

Working group 1: Design for adaption, reuse and repair

Working group 2: Deformations and vibrations

Working group 3: Accidental load situations

Working group 4: Sustainability and durability

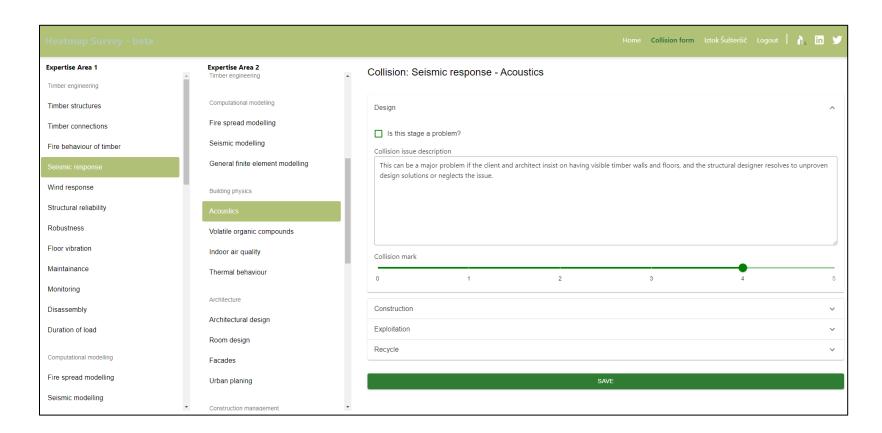
→ Publicly available from 1. December 2022







COLLISION SURVEY





https://survey.cahelen.eu/







INVITATION TO JOIN THE COST ACTION

ESPECIALLY TO NON-STRUCTURAL ENGINEERS ;)





https://cahelen.eu/