



EIC Multicorporate Day on ConTech – SFS & Heco's Challenges

As part of the EIC Multicorporate Day on ConTech initiative, SFS & Heco are specifically looking for innovative solutions in the following domains:

Challenge 1 – Change the way they design and engineer their buildings and infrastructure

Challenge 1.1 – CO2 footprint calculation: The calculation of CO2 emissions is becoming increasingly important in any productive activity, and the building industry.

- How they can simulate the embodied carbon, the future CO2 footprint of a building during the early stages of its design?
- How can they be guided in making the right choices from the beginning?
- Can they "Carbon engineer" new projects?
- Can they include the calculation of the carbon footprint during the design of a new building?

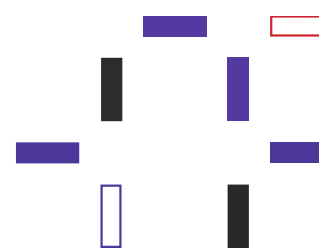
Challenge 1.2 – Safety on the job site: Most risky activities on the job site happen at height.

- How can architects use design tools and plug-ins in the planning phase to reduce these risks, being guided through best practices and regulations that can prevent incidents?

Challenge 1.3 – Online platform to connect suppliers and share data Communication:

Every day designers, architects, and specifiers struggle to find the right information and the right supplier in the building industry. That is why they are interested in possible online platforms to easily search for partners, suppliers, players, and building material producers. Such a solution might offer added value throughout the construction process, from the design to its full life cycle.

Challenge 2 – Change the building materials they use and source for their buildings and infrastructure





Challenge 2.1 – Aluminium 2.0 and fire protection Research for a less CO2-intense aluminium or even for a new material that can replace Aluminium with low environmental impact: E.g., the use of composite/fibreglass brackets and/or profiles produced out of recycled materials that do not compromise on the fire resistance high standards. There are already some reinforcements in PVC profiles in the Fenestration business realised in these materials.

Challenge 2.2 – CO2 waste materials: Research someone who can capture CO2 waste and convert it into solids for use in the construction industry.

Challenge 2.3 – Thermal performance: Research new isolation materials or any clever solution to cut down thermal dispersion and thermal bridges in the building envelope.

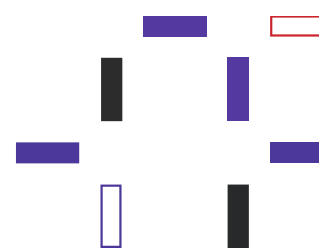
Challenge 2.4 – Block-chain: Research for blockchain applications, providers, or solutions to monitor industrial processes or supply chain operations to improve effectiveness.

Challenge 2.5 – Artificial Intelligence: Research for Artificial Intelligence applications, providers, or solutions to monitor industrial processes or supply chain operations to improve effectiveness.

Challenge 3 – Change the way they fabricate and construct their buildings and infrastructure

Challenge 3.1 – Smart screwdriver: Research a screw-driving machine that can deliver clear installation logs for all fixations, with the indication of the position, torque, installation depth, or any other info.

Challenge 3.2 – Fixing 2.0: Which alternatives could they explore to secure two things together? Which system quickly connects materials (e.g. push fit) providing structural loading immediately and improved installation time?





Challenge 3.3 – Robotics in Construction Research: Robotic solutions that might help their customers in the construction of a building envelope, with a particular interest in robotics for setting fasteners, or any solution that could be used together with their setting tools for similar applications.

Challenge 3.4 – Measuring in Construction: The activity of taking measures on a construction site is always time-consuming and requires expertise and effort. Are there any solutions that might help speed up this task, as for measuring the façade as/or for the roof?

Challenge 3.5 – Modern Methods of Construction Pre-fabrications and Modern Methods of Construction are a reality that is shaping more and more the future of the construction industry. What are the hardware and software solutions, the products, and the services that are developed specifically for this new application that could have a direct impact on their business (fastening systems in the building envelope)?

Challenge 4 – Change the way they operate their buildings and infrastructure over their lifetime

Challenge 4.1 – Facades 2.0: The offer of sensors and smart solutions is crowding the market of construction.

- What are the most successful business cases of the use of these sensors to open a new stream of revenue, to collect useful data, and provide a better life cycle for the building?
- Can they use the building envelope to maximise solar gain to make buildings and infrastructure less dependent on finite resources?
- What is the possible use of the collected data?
- Can they capture and share useful data for themselves or for the owner, to use this information and ultimately improve the building's use of energy?

Challenge 4.2 – Smart hinges: Research for possible smart solutions, even with the use of AI, which could be integrated into their hinges to communicate environmental or movement data.





In particular, they are interested in any solution that might work without the use of electric energy.

Challenge 4.3 – Safety during lifetime: How to protect the safety of inhabitants and visitors of a building by maintaining it, monitoring, and predicting in a timely and costly efficient manner its intervention? (Focus on the building envelope)

Challenge 5 – Change the way they dispose of buildings & infrastructure and recycle their building materials

Challenge 5.1 – Use of recycled materials: Being a minor component of the entire building materials, it is hard to motivate their workers to separate screws from the rest of the components (e.g., Facade panels, metal sheets, insulation panels) and to recycle fasteners separately.

- How could they motivate their customers?
- How can they collaborate with OEMs to recycle/reuse materials during the disposal process?

