

S.A.F.E. SUSTAINABLE DESIGN OF ANTI-SEISMIC FURNITURE AS SMART LIFE-SAVING SYSTEMS DURING AN EARTHQUAKE

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Related research groups: Computer Science/Chemistry

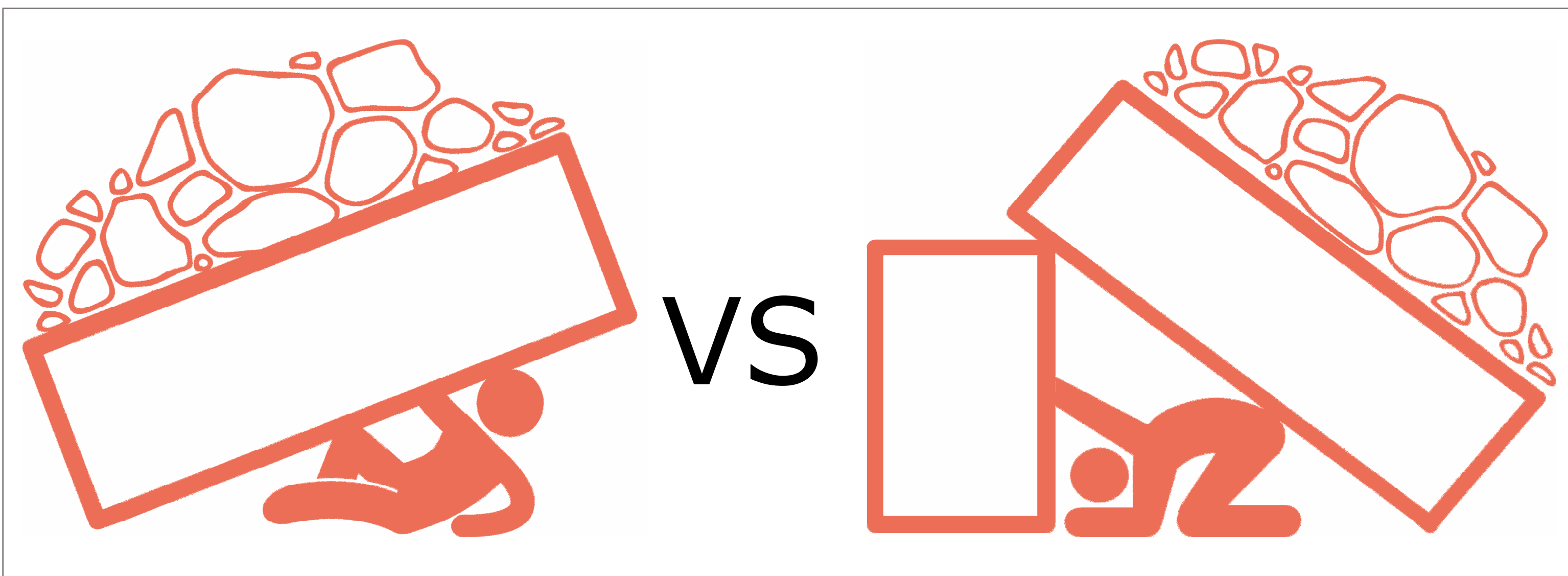
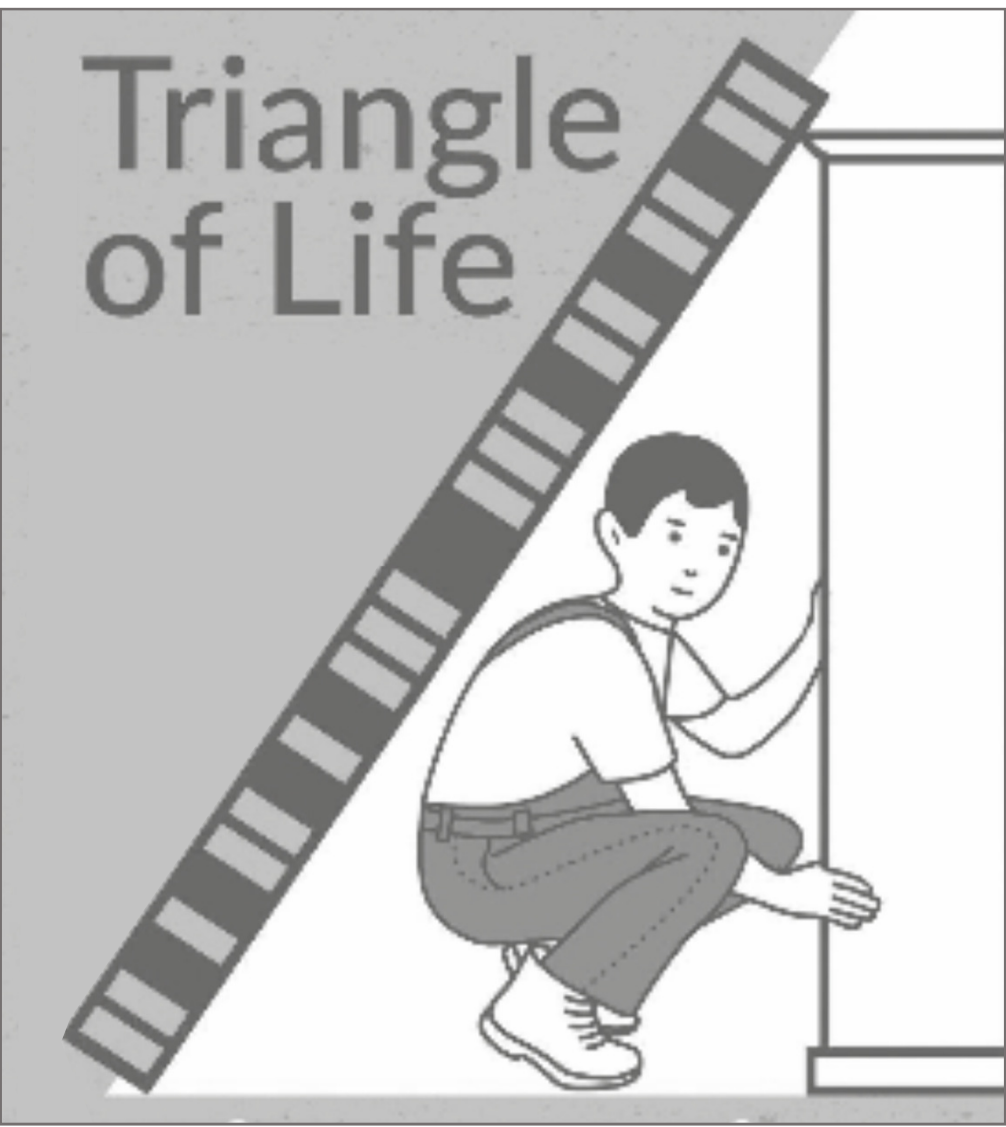
Permanent/temporary staff: 30% permanent staff/70% temporary staff

School of Architecture and Design



Characterising studies

The aim of the S.A.F.E. industrial research area is to conceive, design and manufacture furniture sets capable of transforming into intelligent passive and “life-saving” protection systems for people during an earthquake, through a process of cross-fertilisation of different academic scientific and technological expertise (industrial design, structural engineering, computer science and chemistry) with the technical and industrial research know-how of wood-furniture manufacturing companies and ICT and IoT technology companies. The challenge for scientific, technological and industrial research is to innovate and transform, from a structural point of view, the design of furniture into intelligent passive safety systems that can contribute to the protection of life, also through the development and integration of sensors and a management IT platform useful for locating and rescuing people in the event of collapse during an earthquake.



← The new approach to earthquake-proof furniture design based on the Triangle of Life strategy.

✓ The physical and digital systemic approach used in the development of the S.A.F.E. life-saving furniture system.

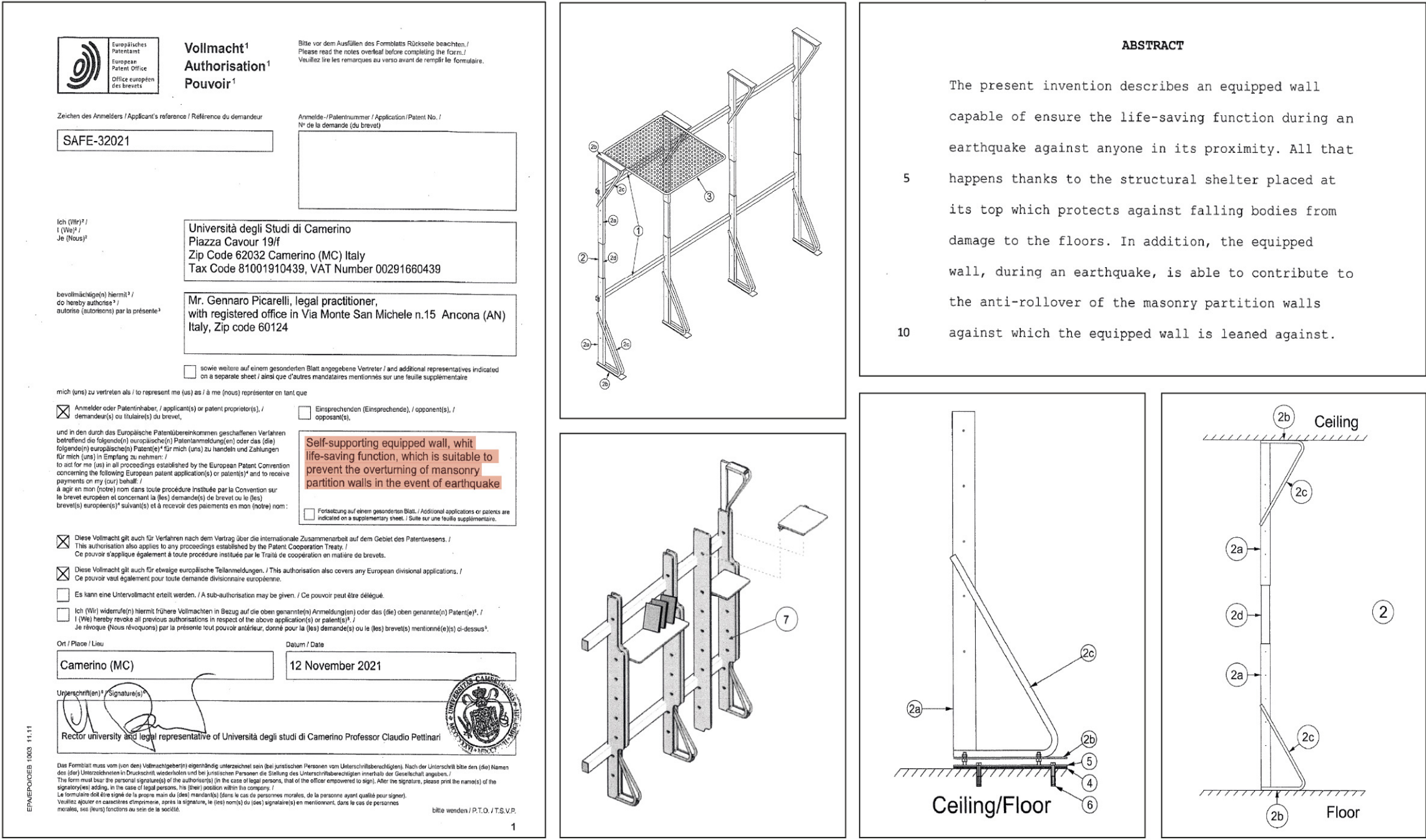
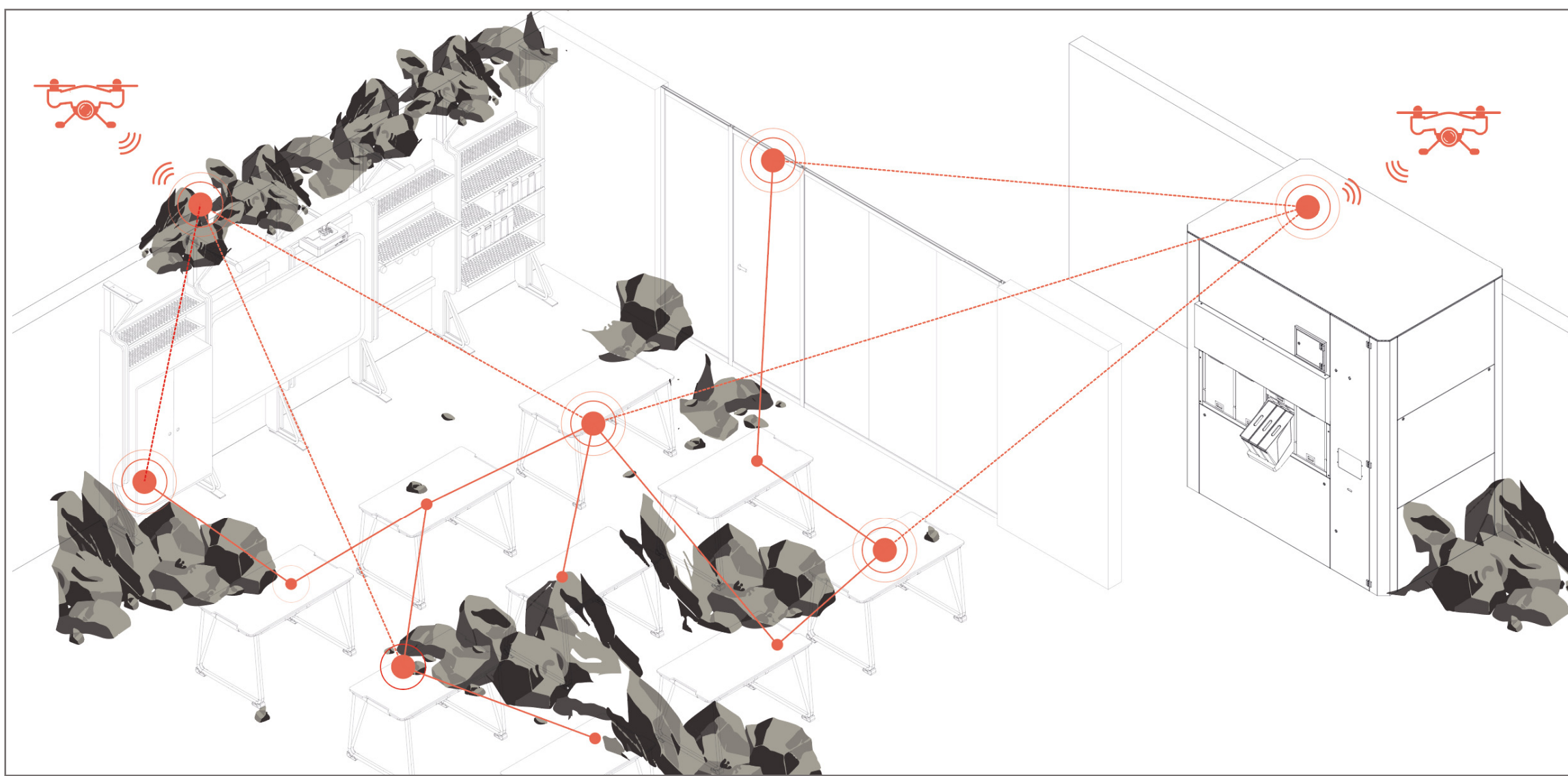
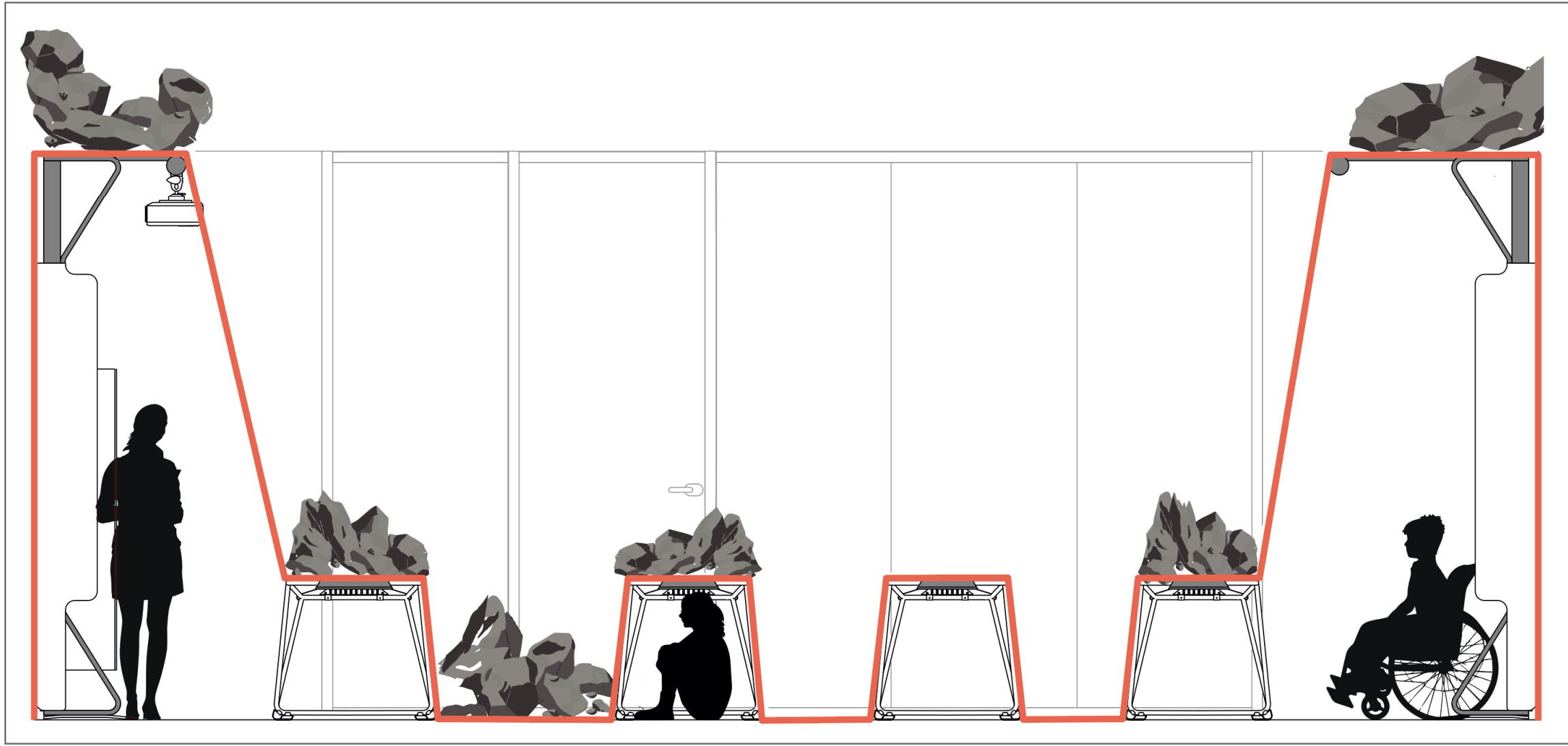
↓ One of the innovation patents obtained by the S.A.F.E. project.

Financing and business relationships

Launched in 2018 and coordinated by Unicam (P.I.: Prof. Lucia Pietroni), the S.A.F.E. research project was co-funded by the National Operational Programme “Research and Innovation 2014/2020” of the Ministry of University and Research in the Specialisation Area “Design, Creativity and Made in Italy”. The project has involved a public-private partnership consisting of three universities (Unicam, Univaq, Unibas) and eight companies, six of the wood-furnishing sector (Cosmob, Sirianni, Vastarredo, Styloffice, Icam, AZUfficio), and two from the ICT and IoT sector (Filippetti, Santer Reply). The results are being further developed within WP 3 of the Spoke 6 of the Innovation Ecosystem “Vitality” research project, co-funded by the MUR/PNRR programme.

National and international results and impacts

The scientific, economic and social results and impacts are numerous: 7 types of furniture that function as an intelligent system in the event of an earthquake; new test protocols for the structural verification of furniture; draft of new certification scheme for furniture with a life-saving function; a methodology for managing complex innovation design processes for the development of life-saving furniture; many scientific publications in 4 different scientific fields; 1 open access publication; 1 European trademark, 2 invention patents, 3 utility models (in the fields of industrial design/structural engineering and informatics), 13 design models; winner of the “ADI Design Index 2022” award and participation to the “Compasso d'Oro 2024” award.



Design for Survival research network

Since 2023, the research area has contributed to the “Design for Survival” research network, which aims to deepen and broaden reflection on the contribution of design culture to the theme of survival, positively countering threats to life and adverse conditions in processes that lead from crisis to new equilibrium, through adaptations and transformations that go far beyond the emergency perspective.