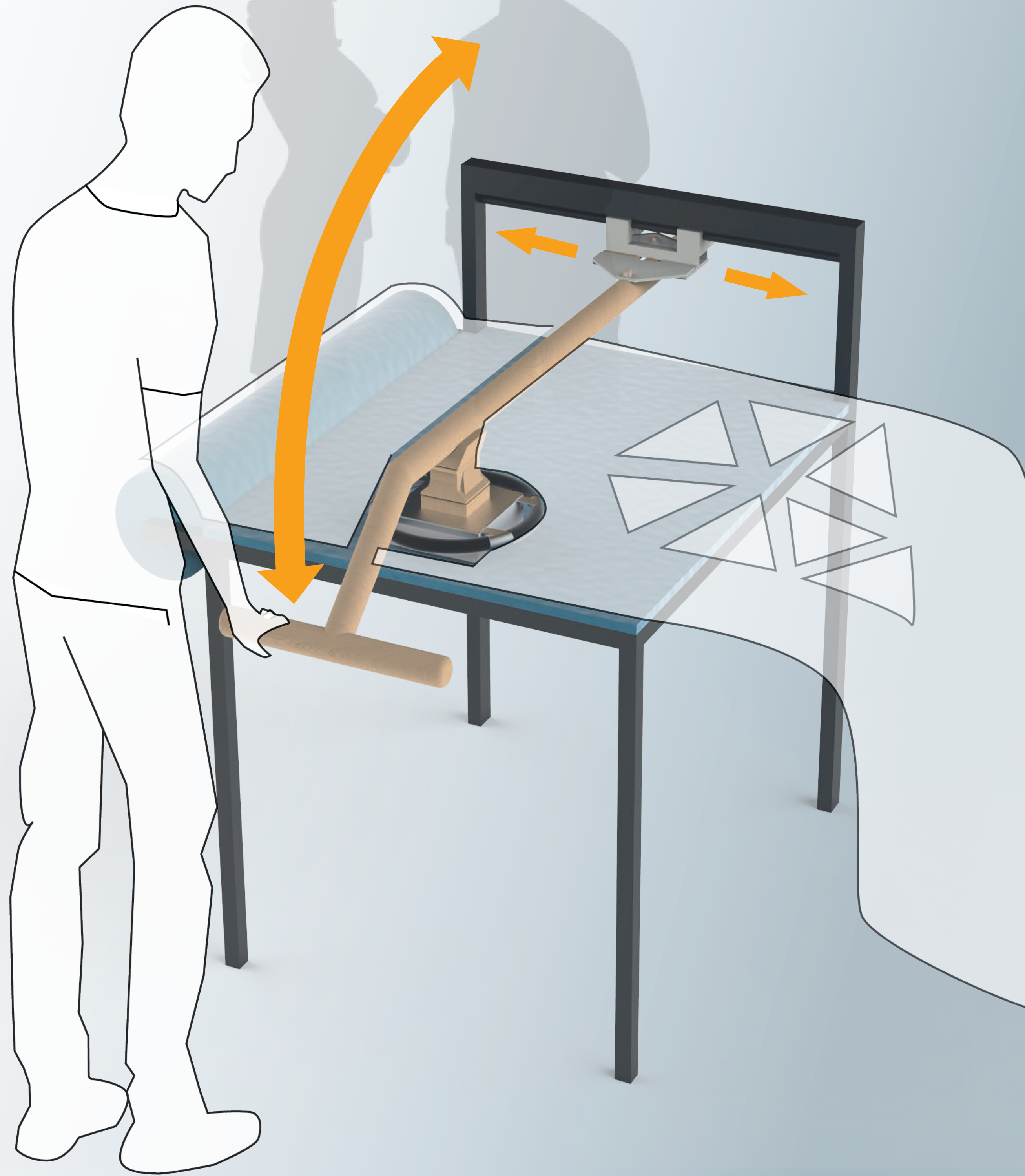


The Development of an Accessible Machine to Discover and Demonstrate the Possibilities of RECURF- a Promising Biocomposite



RECURF is a research project conducted by the Amsterdam University of Applied Sciences (AUAS) in cooperation with local SME's and the Delft University of Technology (DUT), among others. The goal of the project is to upcycle local residual textiles into circular, economical products which will be appreciated by the consumers. So far, new materials have been developed by mixing residual burlap, wool and denim with biobased plastics, mainly PLA. In these materials a wide variety of fiber appearances (woven, non-woven, short /long fibers etc.) could be achieved. The recently developed composites showed improved mechanical properties and unique experiential qualities. Based on these, distinctive characteristics product concepts were developed and embodied. These products (like a lounge chair, arm rest and acoustic panel) were also compared on end of life scenarios. This initial research brought us to a point that we have some unique qualities of the material to be further explored, tested and applied in product applications.

One of these unique qualities has been challenged by Alex Brink in his graduation project conducted at the Faculty of Industrial Design Engineering, TU Delft: the combination of soft-hard qualities of RECURF materials for large scale foldable structures.

Supervised by Dr. Elvin Karana and David Klein (TU Delft) and Mark Lepelaar (AUAS), Alex aimed at illustrating the RECURF materials' potential as an eye-opener to a larger public. Following this aim, he has built a machine that engages people in the process of heating and pressing large sheets of RECURF, by making a small manoeuvrable press that presses using a lever, keeping it approachable and easy to work with. By designing and building this interaction and machine he hopes to inspire people to further explore the capabilities and possibilities of the RECURF material.

The processing technique used with this machine brings forward the dualistic nature of the material having for example both hard and soft, stiff and flexible, dark and light, all in one piece of material. The tactile interaction enhances the duality and hopes to stimulate curiosity and fascination. When pressing an origami pattern this duality becomes even more visible.

Engaging creators and designers to use this machine and create a pattern has the potential to inspire and encourage using sustainable materials such as RECURF more often.