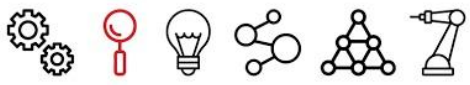


INFORMED MILLING

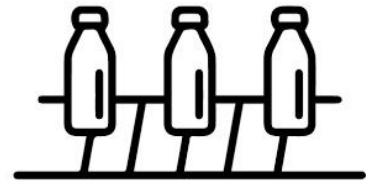


RESEARCH

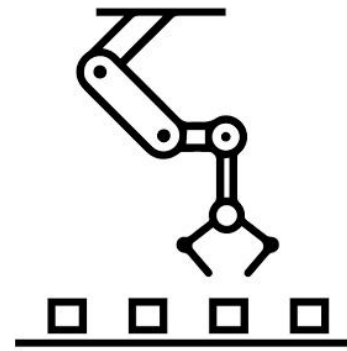




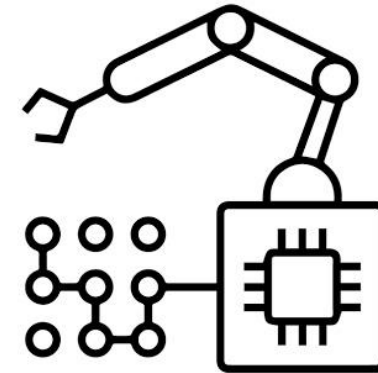
mechanical production



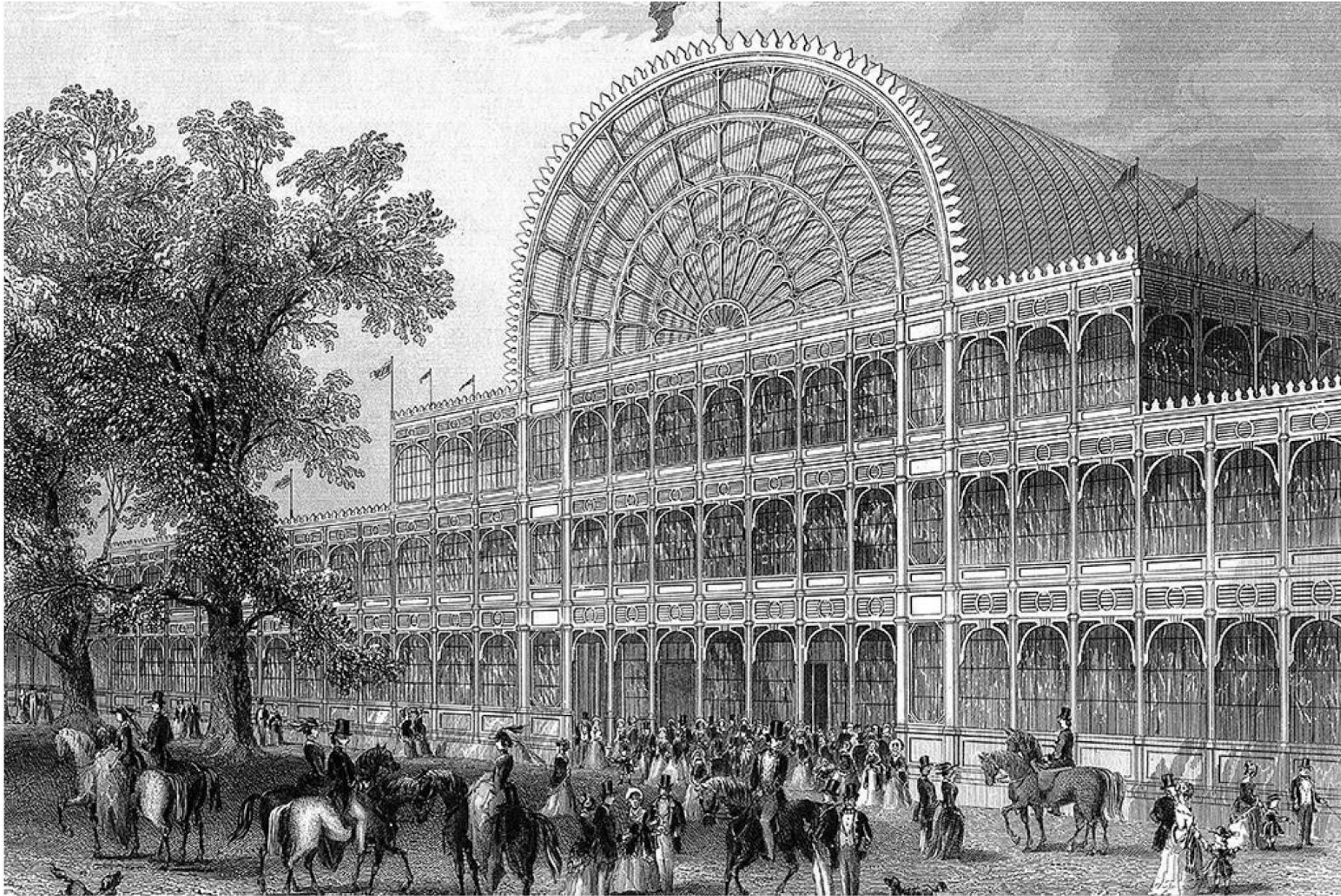
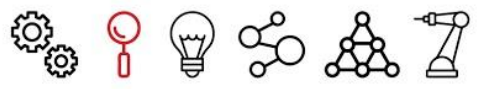
mass production

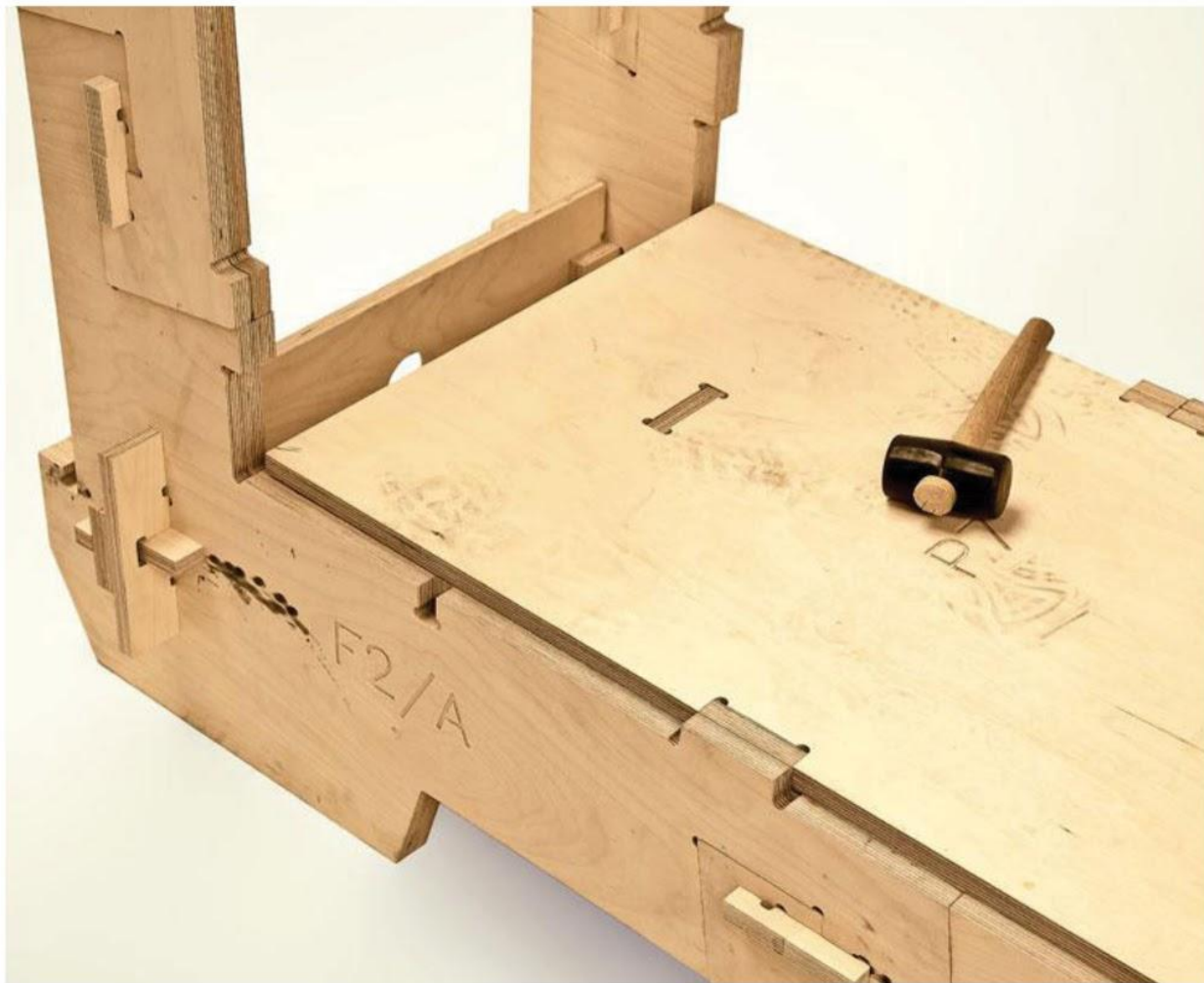
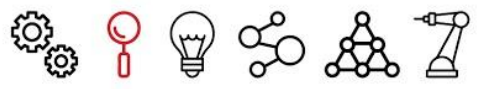


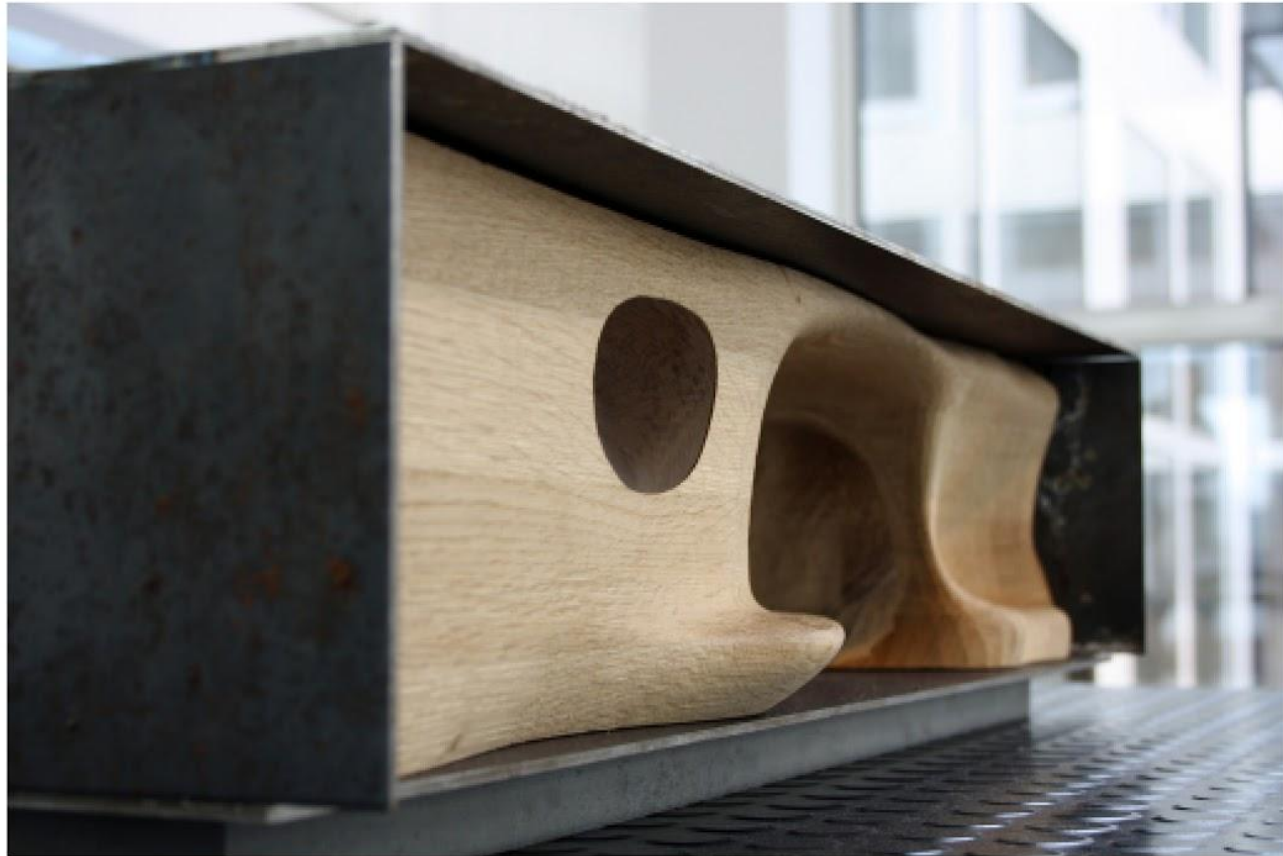
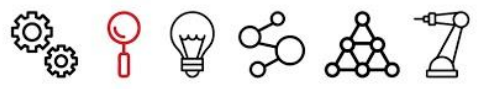
automation



artificial intelligence







CONCEPT DEVELOPMENT

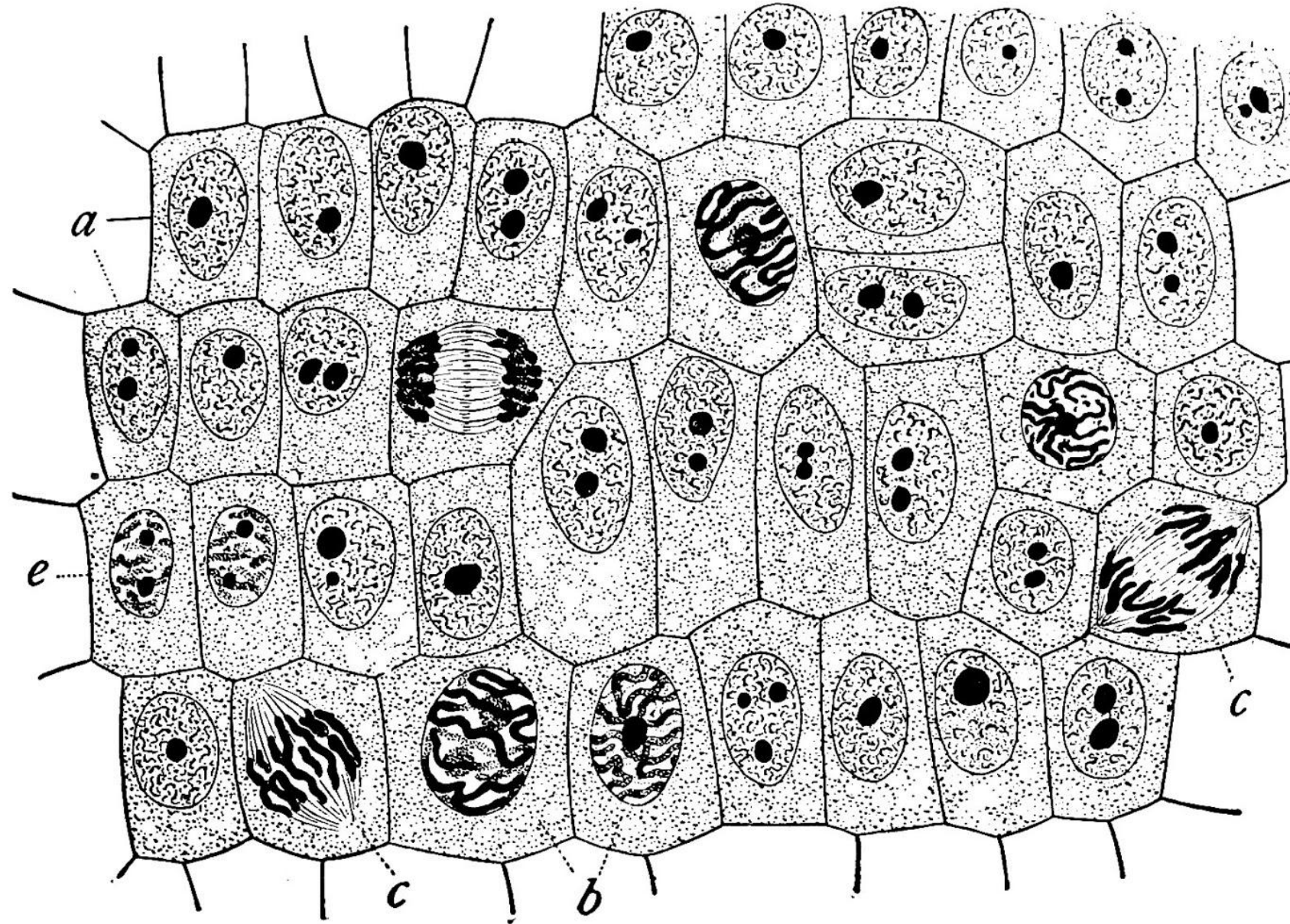




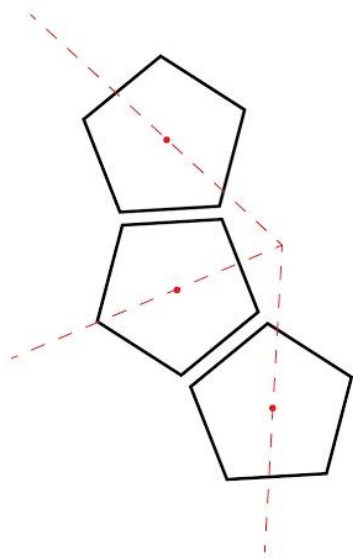
D2RP feedback loop

performance-based design

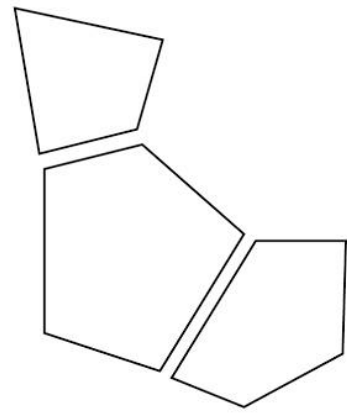
cyber physical



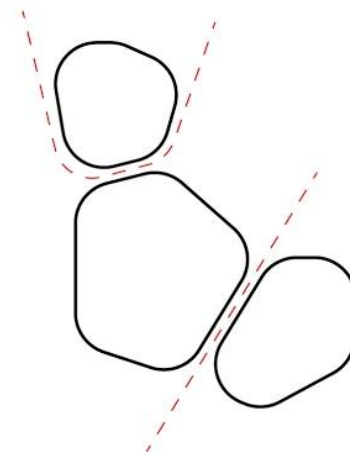
Onion [*Allium cepa*] root cells in different phases of the



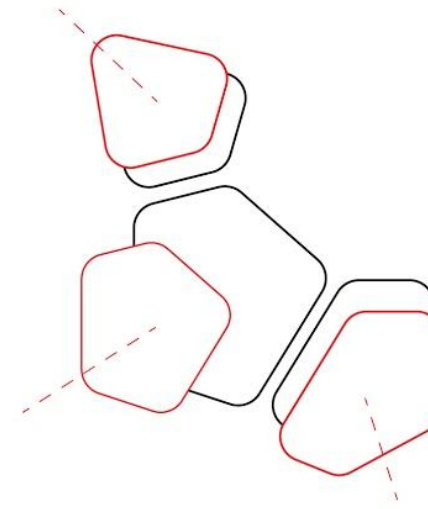
solar porosity



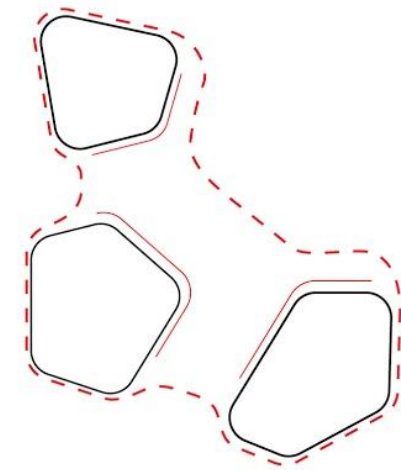
voronoi meshing



structural awareness



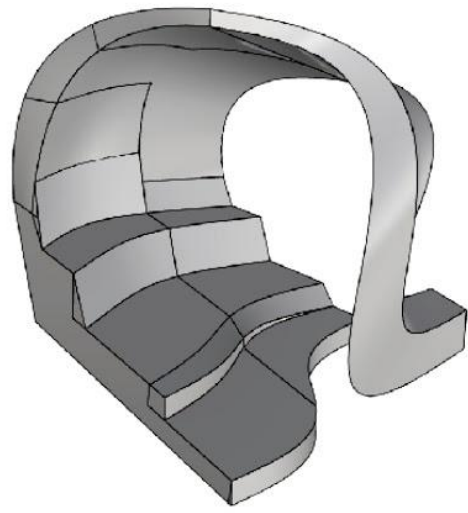
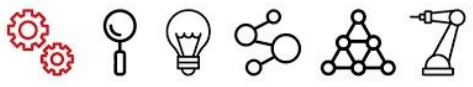
acoustic morphing



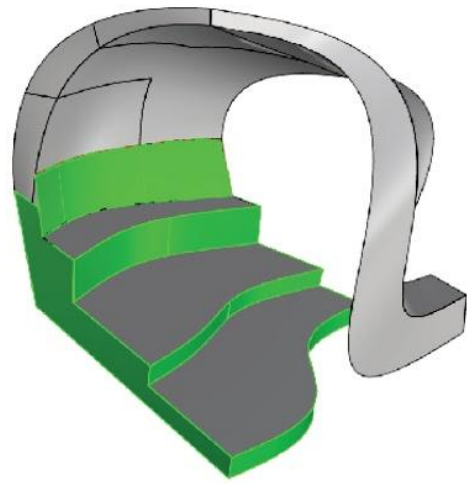
robotic optimization

FUNCTIONAL MODIFICATION

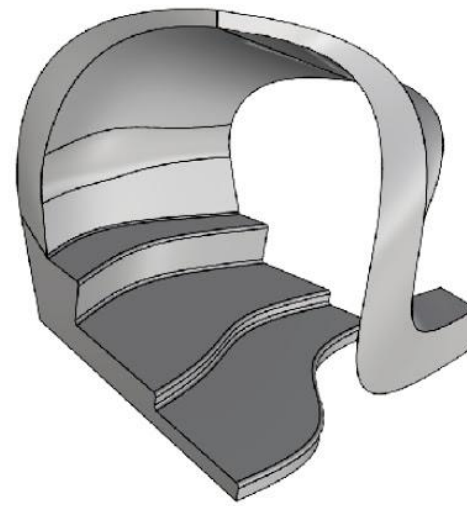




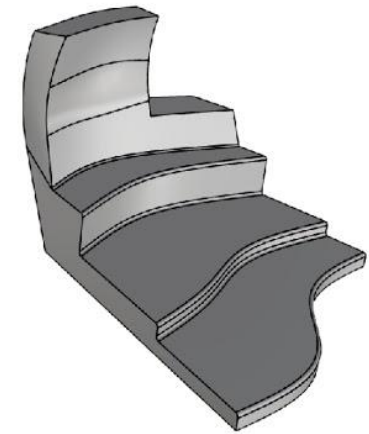
original model



change surfaces for functional purposes



smoothen surfaces



trim to relevant element

STRUCTURAL ANALYSIS

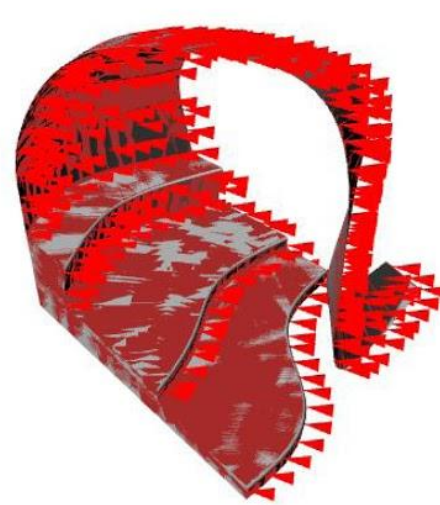




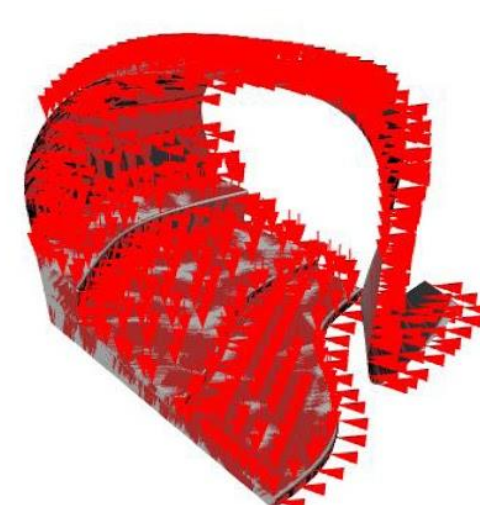
human load



snow load



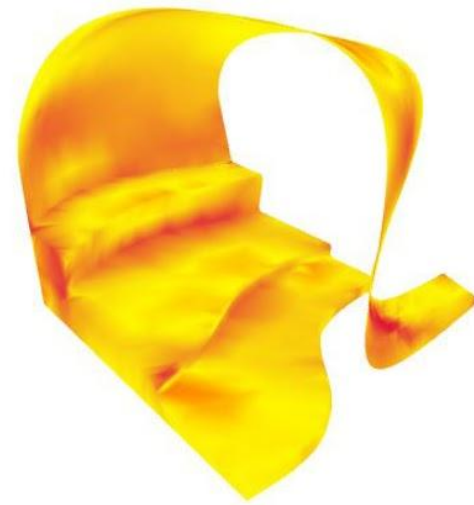
wind load



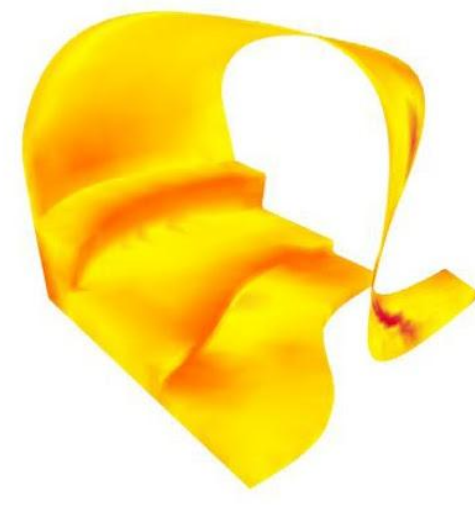
all loads



deformation



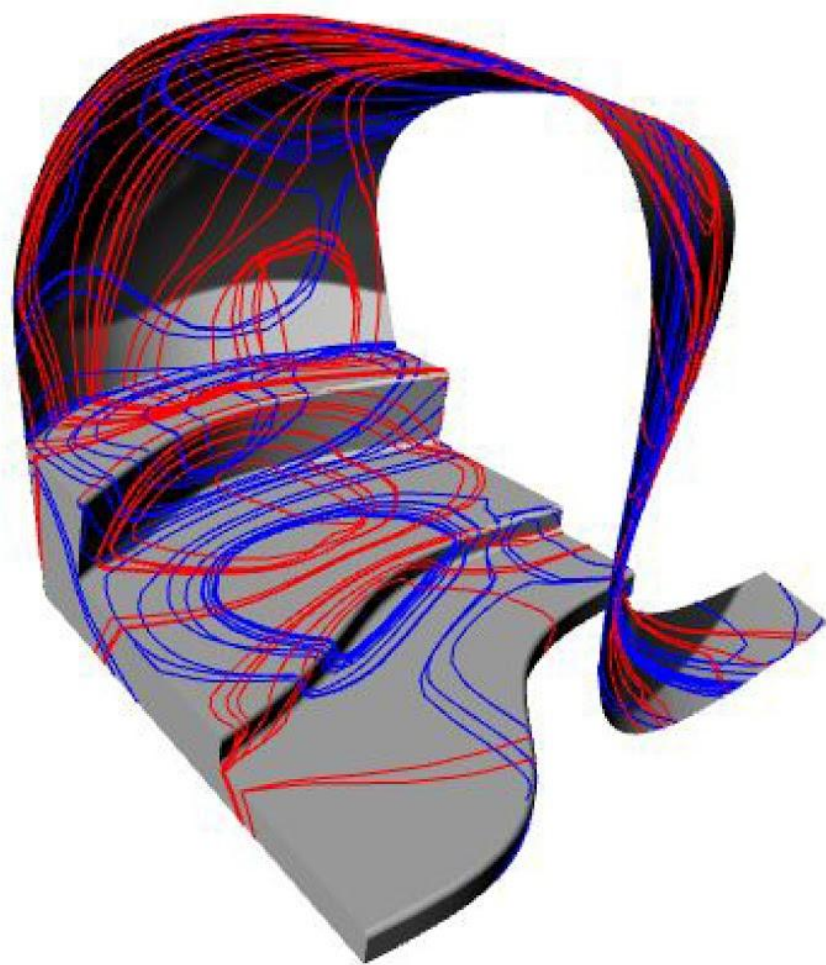
stress: stress dominant



stress: tension dominant



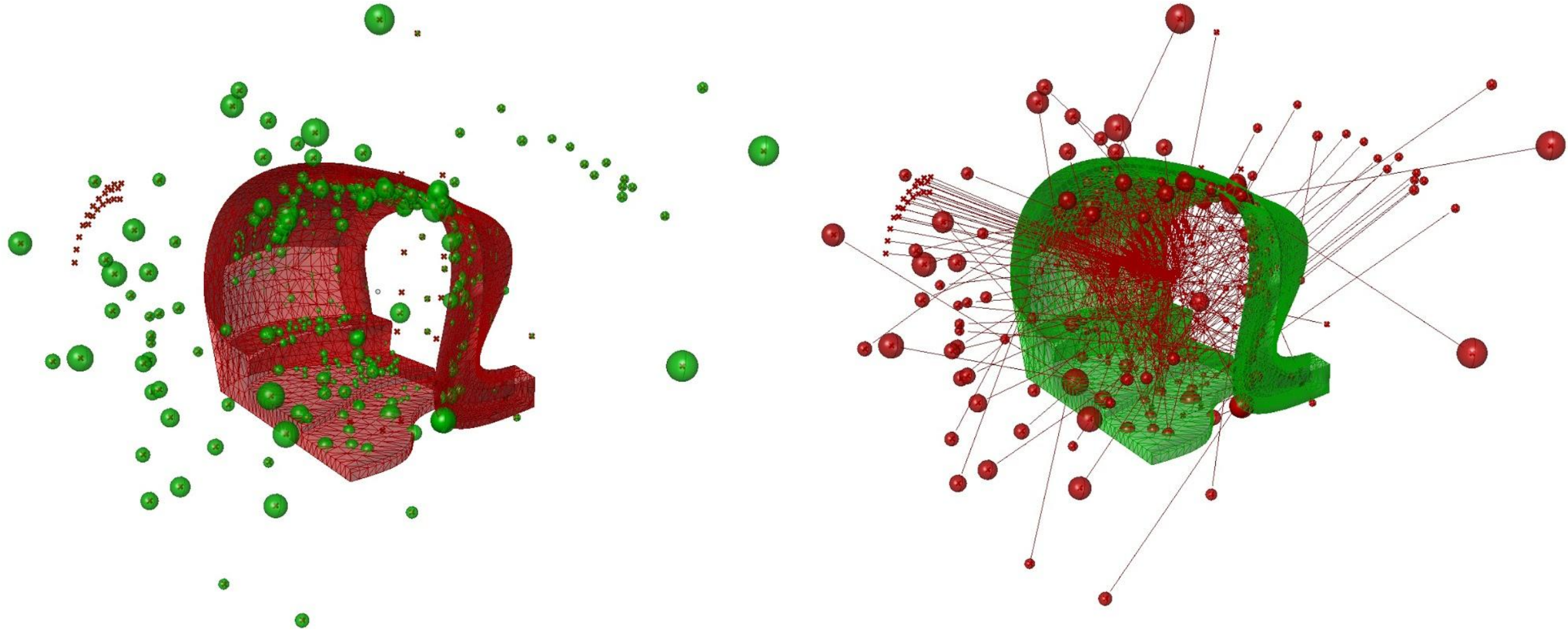
cross-section



iso curves

ACOUSTIC ANALYSIS



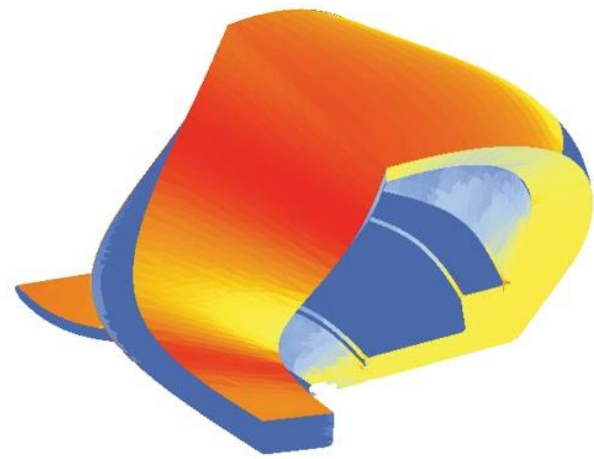


acoustic reverberation vectors and amplification

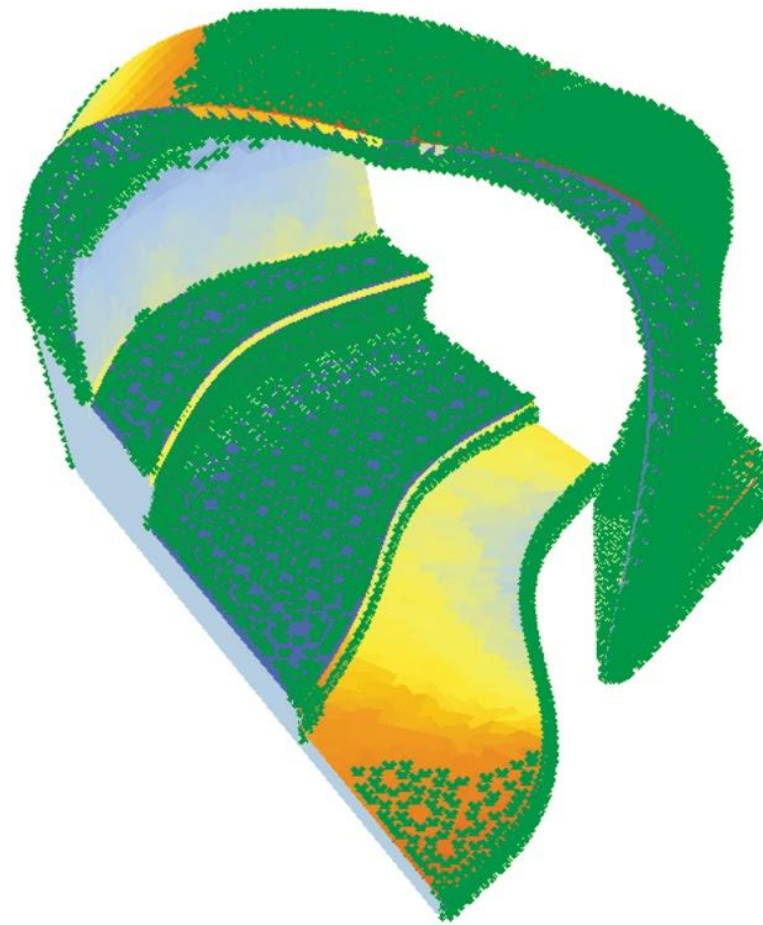


SOLAR ANALYSIS

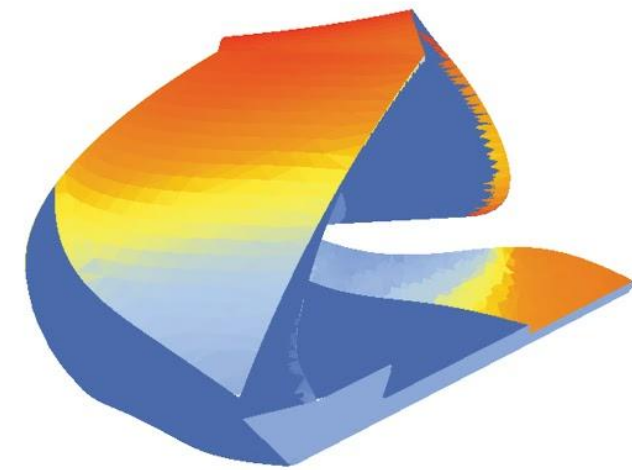




area of high solar radiation



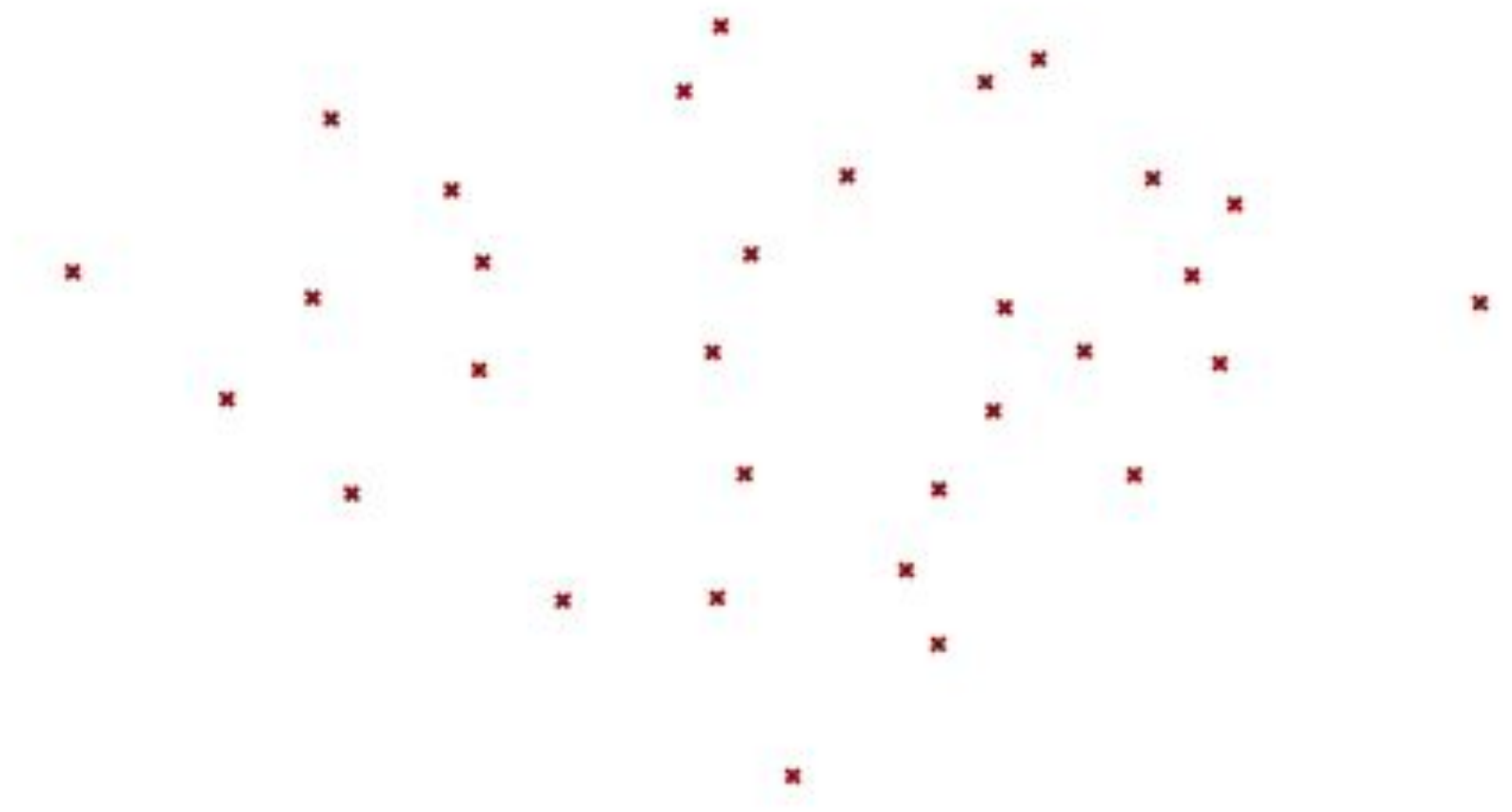
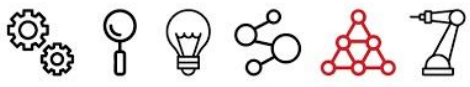
points of interest

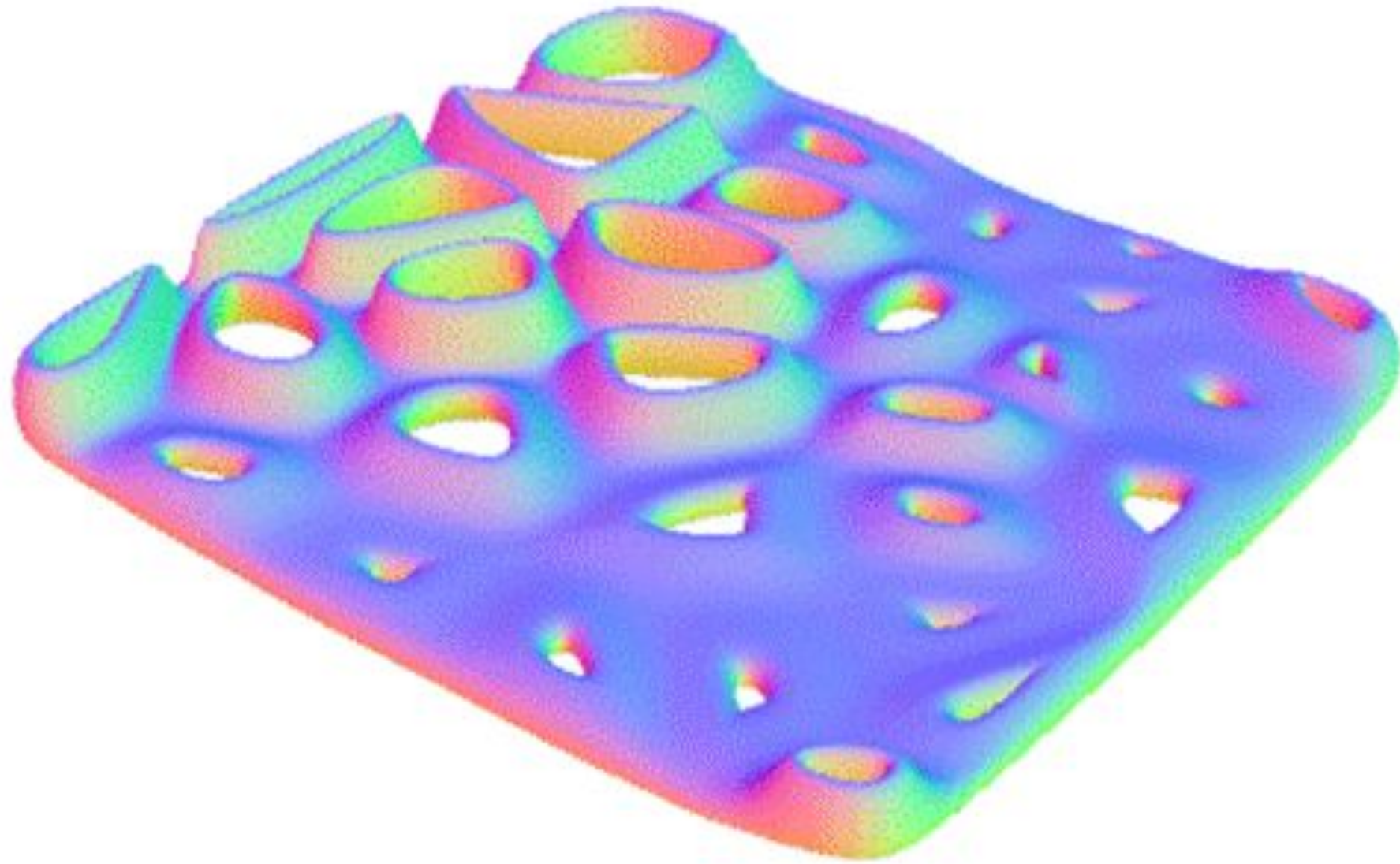
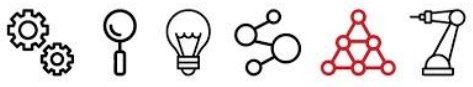


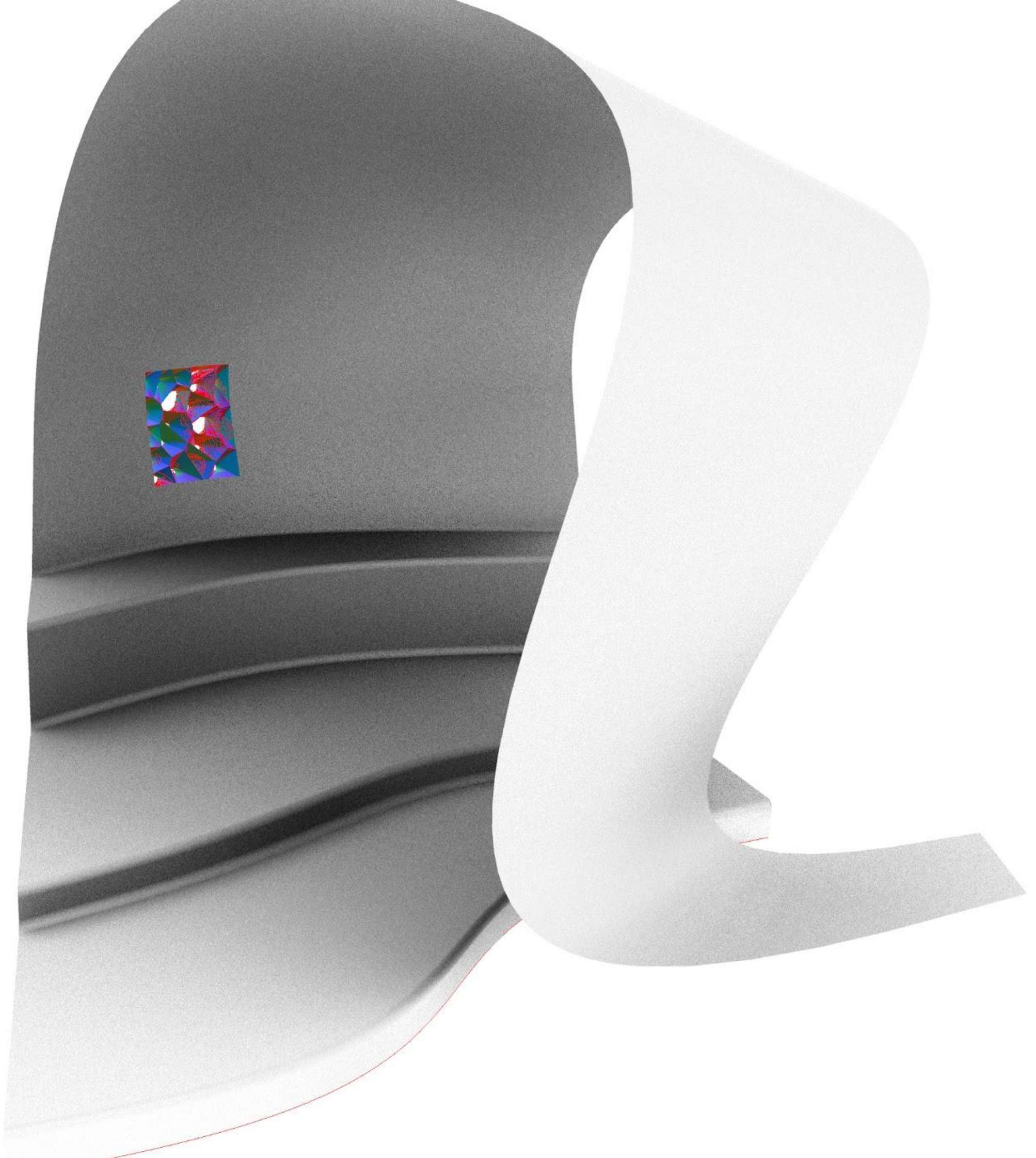
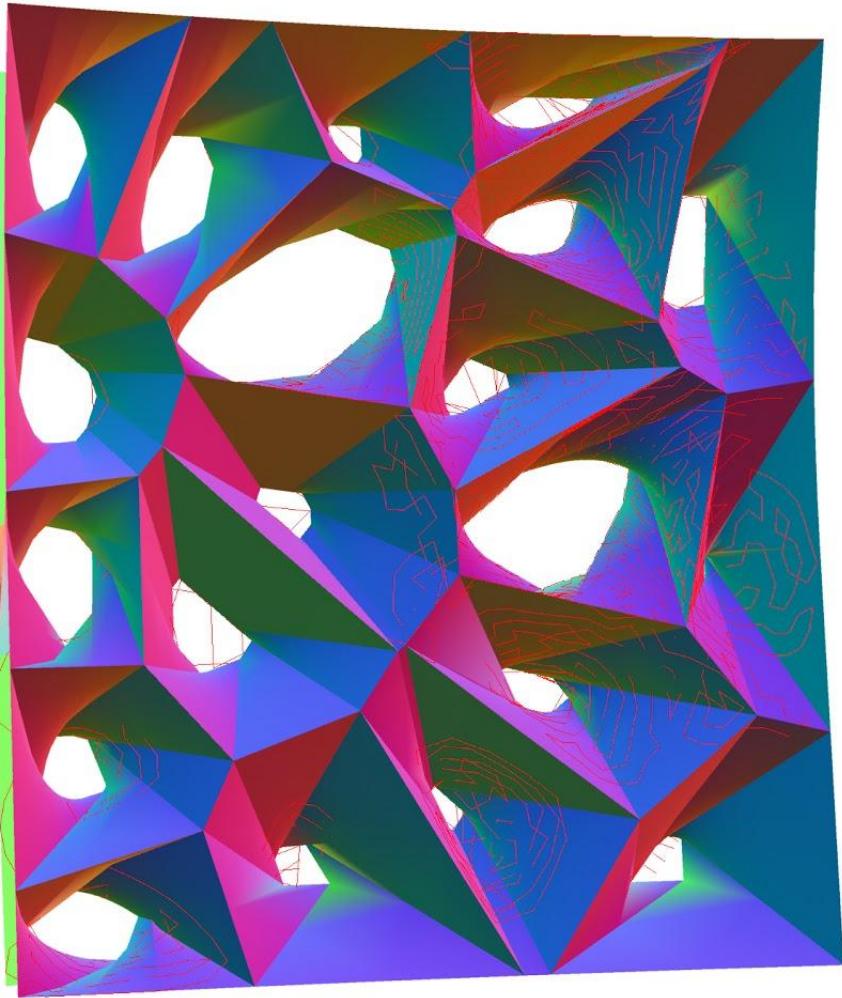
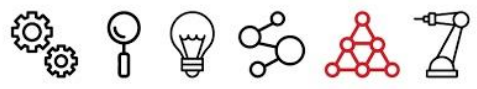
area of low solar radiation

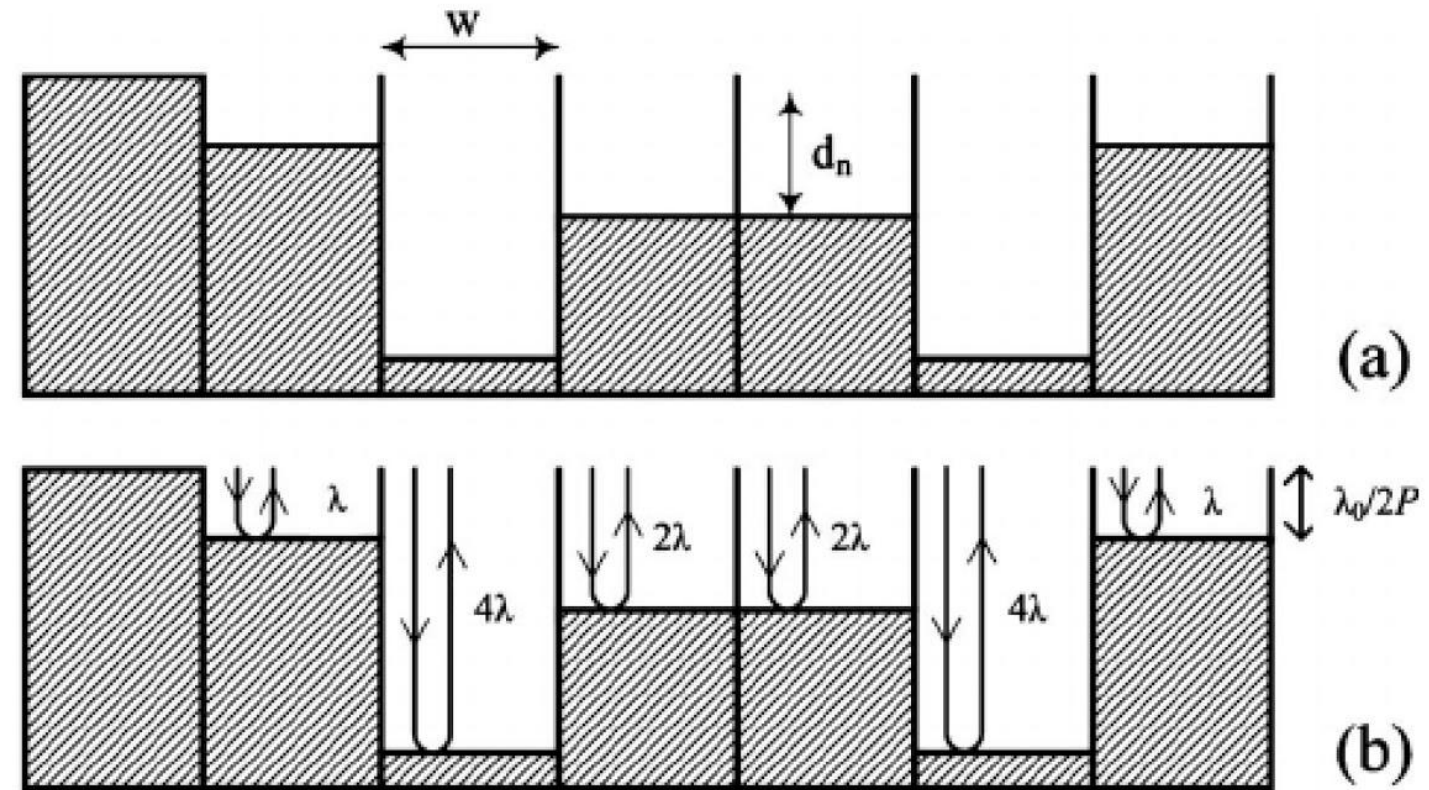
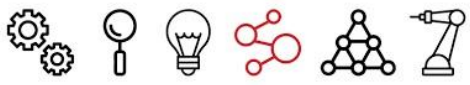
DESIGN DEVELOPMENT





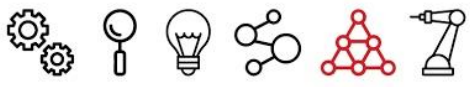


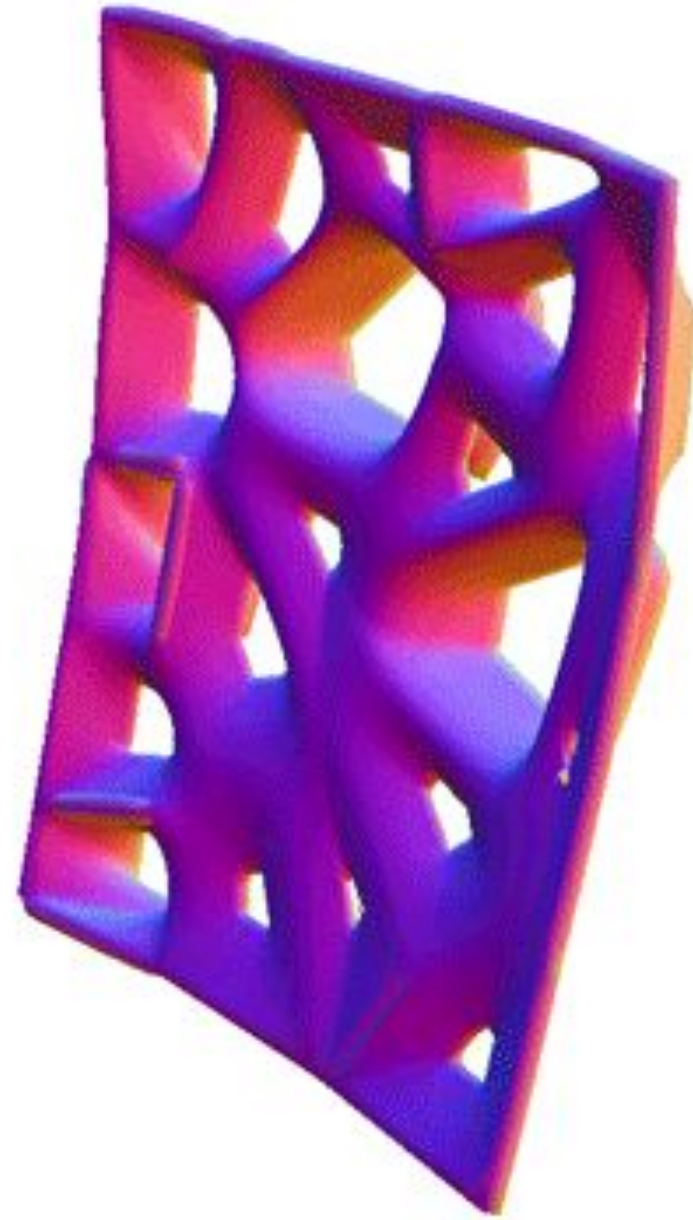
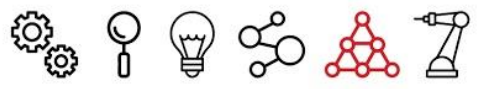


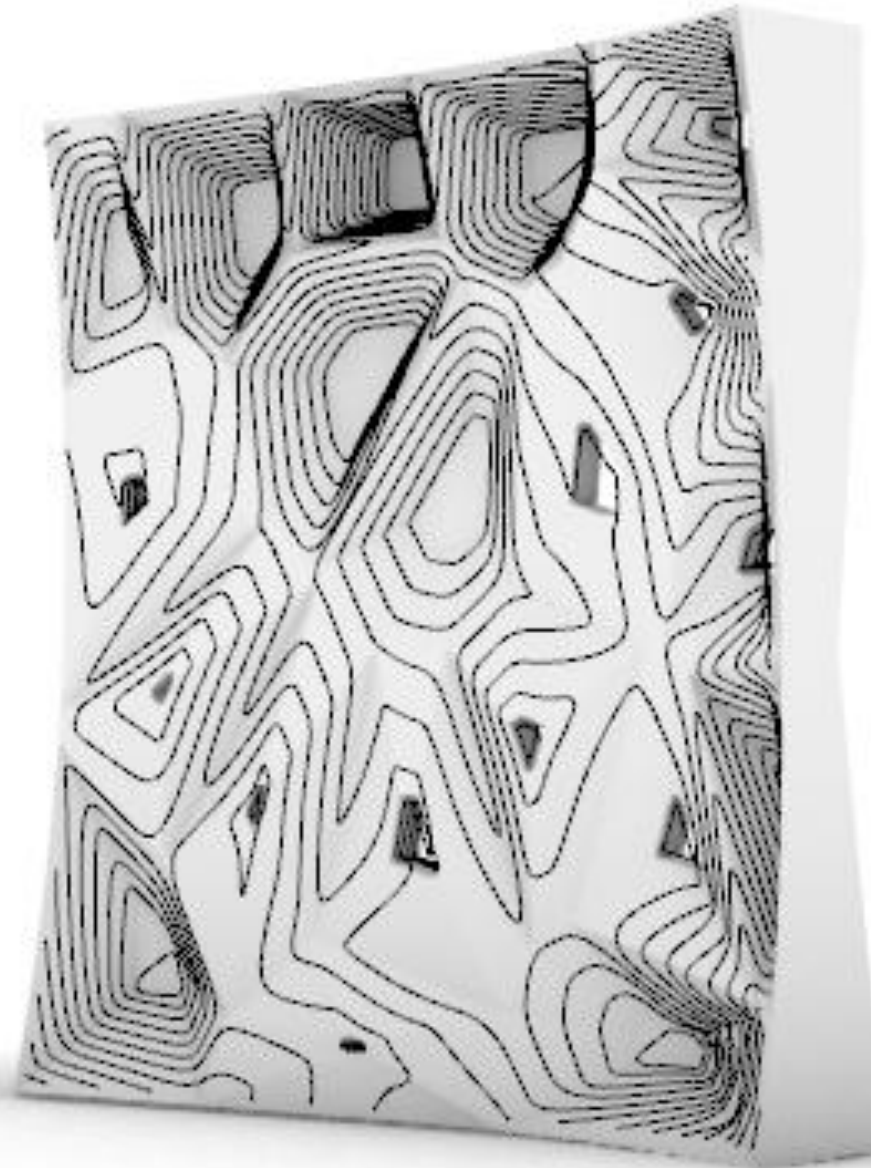
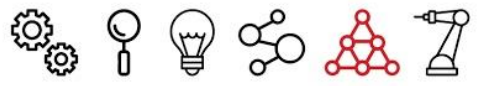


Modulation: one period of a quadratic residue diffuser

Dadiotis, K.; Angus, J. A. S.; Cox, T. J. 2008. Lúke and power residue sequence diffusers. ARS. Salford







PRODUCTION



