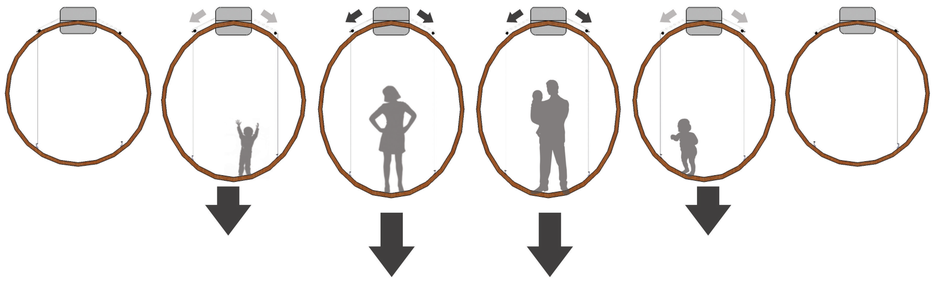
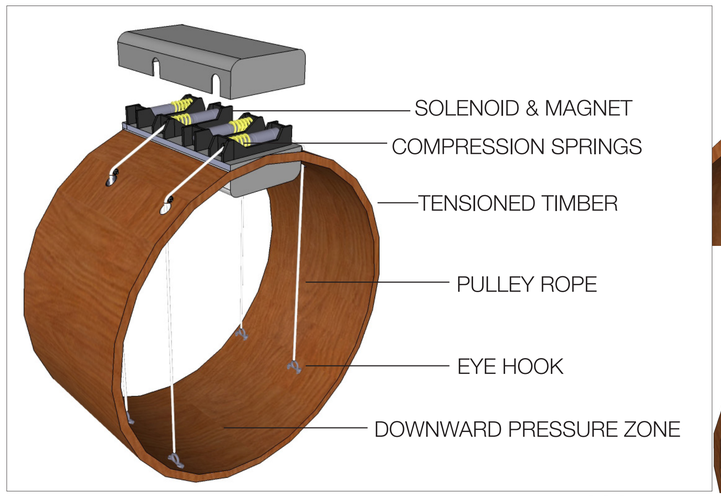
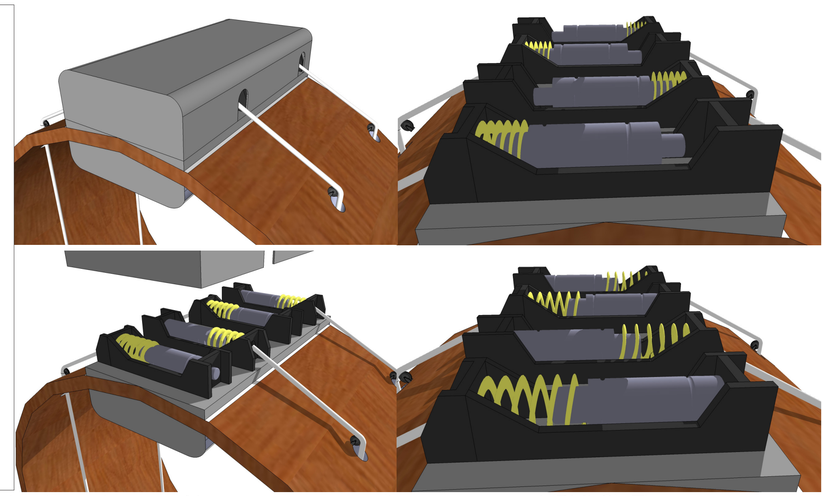
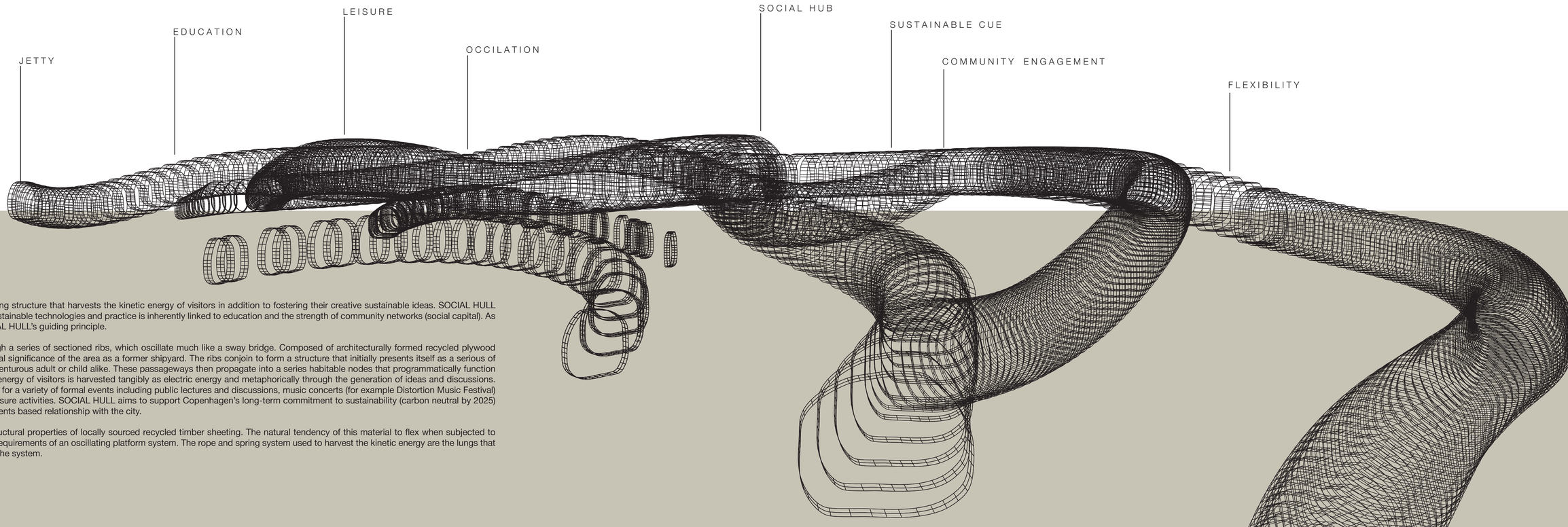






In harnessing the kinetic energy of the suspended timber ribs, SOCiAL HULL adopts the use of ‘permanent magnet linear generators’ (PMLG). The generators use a neodymium magnet within a copper solenoid which transfers kinetic energy into a changing current (flux) that inturn outputs a voltage. Here we see that when downward pressure is applied (walking), the pulley ropes experience strain forces pulling the magnet through the soleniod. The compression spring acts as a structural member keeping the timbers form. In addition they facilitate high pressure loads and finally increase the number of oscilations maximising electrical energy output.



DESIGN INTENT:

SOCIAL HULL is an interactive oscillating structure that harvests the kinetic energy of visitors in addition to fostering their creative sustainable ideas. SOCIAL HULL recognises that the long-term rise of sustainable technologies and practice is inherently linked to education and the strength of community networks (social capital). As such, community engagement is SOCIAL HULL’s guiding principle.

Visitors experience the structure through a series of sectioned ribs, which oscillate much like a sway bridge. Composed of architecturally formed recycled plywood timber, these ribs reference the historical significance of the area as a former shipyard. The ribs conjoin to form a structure that initially presents itself as a serious of mysterious passageways fit for the adventurous adult or child alike. These passageways then propagate into a series habitable nodes that programmatically function as educational and event spaces. The energy of visitors is harvested tangibly as electric energy and metaphorically through the generation of ideas and discussions. SOCIAL HULL is envisioned as a space for a variety of formal events including public lectures and discussions, music concerts (for example Distortion Music Festival) and markets, in addition to everyday leisure activities. SOCIAL HULL aims to support Copenhagen’s long-term commitment to sustainability (carbon neutral by 2025) by providing an ongoing and flexible events based relationship with the city.

The oscillating structure utilises the structural properties of locally sourced recycled timber sheeting. The natural tendency of this material to flex when subjected to perpendicular forces compliments the requirements of an oscillating platform system. The rope and spring system used to harvest the kinetic energy are the lungs that allow the ribs to breathe and animates the system.