

Project I Description

Project Name: Power from the People: Design and construction of a model energy harvesting dance floor.

Team Size: 3 MEE Students

Project Overview

An average-sized person stores as much energy in fat as a 1000-kg battery. Numerous efforts have been exerted to make use of power generated by the human body during everyday activities like walking, running, cycling and dancing. Particularly, the concept of a sustainable dance floor has been introduced in nightclubs in the Netherlands and Britain, where up to 60% of the club's energy consumption is supplied via an energy harvesting floor that converts the mechanical energy of the dancers into electrical energy. The latter floor utilizes piezoelectricity for energy conversion.

The aim of this project is to design and build a model of such an energy harvesting dance floor to be displayed at LAU. A feasibility study is to be done to arrive at optimal choices for the technology to be used for the energy conversion, as well as the size and detailed design of the floor.

Project Areas and Majors

- Sustainable Energy
- Kinetic Energy Harvesting

Project Deliverables

- Report detailing the feasibility study, analysis and the final design
- Construction and operation of the model energy harvesting dance floor

Design Constraints