

## The Solar tree

Designing an interactive seating area that advertises sustainability.

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The assignment Solar tree has been done as part of a bachelor assignment for the programme Industrial Design Engineering. The focus of this document is on the process of designing an interactive solar tree for the company 100%FAT. 100%FAT specializes in designing and creating custom interactive installations for a wide range of different customers. The project Solar tree is a product they came up with themselves as part of a larger project called Innovare. Project Innovare is a collection of concepts for interactive installations that combine “living technology” with living nature. As the solar tree was chosen as the favourite concept in the project 100%FAT decided they wanted to further develop this concept into a feasible product design.

A solar tree usually is a structure with one or more solar panels resting on it. Apart from this the further appearance of a solar tree can vary widely. The solar tree concept of 100%FAT is intended to be an installation that works as an advertisement for companies that want to advertise green, eco-friendly and high-tech technologies. Municipalities with a wish for green and high-tech area development are also potential target groups. The concept 100%FAT has created is largely based on already existing solar trees so the goal of this assignment was to create a new and unique design that fits the target group and the message it should advertise.

The research and design question for this assignment was:

How can the Solar Tree reflect an image of sustainability and innovation to its environment and provide an interactive and social meeting area for its users and how can this be incorporated into a feasible product that can be produced and sold?

The research questions have been answered in this report by performing a design process that consisted of an analysis phase followed by a concept generation phase, concept detailing phase and an evaluation.

The analysis phase consisted of a market analysis, context analysis and appearance analysis to get a better understanding of what a solar tree is and what it should do to fit the target group. A user analysis, stakeholder analysis and function analysis has been conducted to map the users and the stakeholders of the solar tree together with their needs for specific functions.

After the analysis brainstorming, idea generations and shape generations have been done to create the first ideas and solutions to the set requirements. Using a morphological scheme concepts were generated and scored to define the best concept. This concept was developed in further detail to be evaluated by a construction company. Together with this company the possibilities for realizing the concept have been evaluated and a method has been chosen.

After the production method had been chosen the concept could be further detailed to create a 3d model of the full installation. This yielded the precise measurements of the components.

Together with 100%FAT the interaction and the functions the solar tree should have has been defined after several brainstorming and the analysis phase. The components necessary for the interaction have been chosen together with the components for the functions such as charging devices and Wi-Fi connectivity.

The end result is a product concept with a cost price estimate and a production method. Some recommendations have been made to further detail and develop the concept