Urban Gardening: Development of a Smart System for Growing on Balconies.

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Urban Gardening: Development of a Smart System for Growing on Balconies

▾ Oldenburg, Malin

▾ Ramén, Lina

2012 (English)Independent thesis Advanced level (professional degree), 20 credits / 30 HE creditsStudent thesis

Abstract [en]

It has become increasingly important in todayâ™s society to know where our food comes from and that it has not been transported over a long distance due to the environmental aspects that is brings. This combined with the fact that more people tend to move to bigger cities gives an increased need for smart solutions for growing vegetables and herbs on limited spaces such as a balconies. This is the background for this master thesis in collaboration with Hammarplast Consumer AB. Hammarplast Consumer AB has a couple of product lines that includes simpler hanging baskets and window boxes. They want to get ahead in the market and start selling more innovative products. The objective with this project is to design a smart system for growing on balconies and other limited spaces by implementing the knowledge gained during the Industrial design program at Luleå University of technology.A web-based survey was done at the start of the project, in order to receive information of what different needs there are among potential customers. To get a better view of what experienced growers need, a survey was posted on two different gardening forums. An interview was made with a sales person at Granngården in Luleå to get necessary information about growing plants. The results of the interview and the two surveys, together with a benchmarking about the current day situation, formed the basis for the needs analysis that later formed the requirements specification. The requirements

specification lists the demands and wishes that the system for growing has. The demands and wishes were set against each other in a matrix in order to decide which demands and wishes were more important than the others.To get started with the creative thinking a mood board was made and a brainstorming was done with the help of the mood board. The brainstorming begun with writing a list of words that represented what the growing system should stand for. Four words were a bit more important than the others and these were chosen as key words for the project. The key words were simple, stable, smart and flexible. After the brainstorming some simple sketches were made that represented the words. These sketches together with the results of a workshop that was held were the basis for the conceptual design.Among the different solutions for the system of growing, three concepts were picked with the help of different evaluation methods. These concepts were developed further and then put against each other in a matrix with the demands and wished in order to evaluate which concept to choose for the final concept. Together with the results of this evaluation and the wishes of the client company a concept was chosen.The final concept consists of a big container shaped like a quarter of a circle so it can stand in a corner. It has a trellis attached to it for clinging plants and the possibility of hanging pots on it. It is 400 millimeter in height and has a 400 millimeter radius to manage even the most demanding vegetables and plants. It has a self-watering insert so it can be left unattended for a few days. There is a possibility to put two containers together to form half a circle so that it can stand against a wall. The final concept fulfilled all the needs that were found during the process of needs analysis.

Educational program

Industrial Design Engineering, master's level

Supervisors

▸ Wikberg-Nilsson, Ã…sa

Examiners

▸ Pettersson, Dennis

Note

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