MIMA – MINIMAL INVASIVE MONITORING ASSISTANT FOR APIARISTS

LISA REICHARDT
Industrial Design
Muthesius Academy of Fine Arts and Design
Germany

Project Subtitle

Mima is a concept of a minimal invasive monitoring assistant for apiarists, which enables the identification of the bees medical statuses without opening the beehive and keep the bees from human disturbance.

The Inspiration

Since there are no longer sufficient amounts of bees in some Chinese regions the Chinese fruit blossom has to be pollinated by humans. Recently there have been numerous reports about mysterious bee deaths. Although this severe problem has been researched intensively a solution has not yet been found.

In addition apiculture is now in a state of flux, which also means that the profession of apiculturists is changing too. Especially in urban areas apiculture becomes more popular. The „Apiarist 2.0“ is therefore characterized by new values. Consequently, empirical knowledge is lost and apiculture is repositioned in our society.

The aim of my thesis is to develop a new system for disease control for bees. This system will be beneficial for the apiarists, who will be informed about the bees medical statuses at all times without disturbing their work.
An intuitive monitoring tool will make the profession of an apiarist more attractive and reduce the fear of the job’s complexity. More so, the containment of diseases through improved precaution and detection will be trend-setting for hobby apiarists.

Stages of Development

During the development phase I have worked with local apiarists. Thus, I was able to study the occupation with and the behavior of the bees. A special challenge turned out to be retaining control over one single bee. Accomplishing this goal requires high awareness. Also, there was the question of whether the information was sufficient for the apiarist. I combined these issues in a series of design concepts, which I continuously verified and adapted in Mock Ups. The idea of creating new ways of

experiencing bees and at the same time an intuitive flow of information for the apiarist accounts for the spheric form.

The Function

Mima is the concept of a measuring instrument, which provides help for the apiarist when it comes to controlling and maintaining the bees' health. Instead of opening the beehive for each control, it can now stay closed. Thus, the sensitive climate in the hive is retained and the bees live and work without interruptions. The instrument is mainly a tool which is designed to support the apiarist by providing important information regarding the bees' health.

The instrument is being inserted in the beehive via a minimally invasive access. The apiarist is now able to measure the climatic conditions in the hive. These are crucial for the bees' mood, the development of the brood and also the outbreak of various diseases. What makes Mima special is the ability to monitor one single bee at a time. Through a pneumatic system the bee can be selected and then intensely examined.

The data that has been gained provides a detailed picture of the bees' health. Thus, a safer work environment for both – the bees and the apiarist – can evolve. External influences are now easier to determine. Along with new diagnostic patterns the survival of the bees can be efficiently supported.

Awards

Finalst for the Muthesius Award 2014 - special mark of distinction