the
BEE AGENCY
project

proposition by AnneMarie Maes
for Meakusma and OORtreders

Pollinators are threatened in all industrialized nations.
Given that the survival of bees is crucial for human sustainability, there is a great urgency to improve by all means the ways in which wild colonies could thrive.

With **the Bee Agency project**, AnneMarie Maes wants to give back autonomy to the *Apis mellifera* and support colonies to live again 'in the wild', after being domesticated for long times by beekeepers who's apiaries are mainly honey production factories.

The Bee Agency project has an exemplary meaning when it comes to the public perception of biodiversity and sustainability.
It is a project on the interstices of the arts, design and science.

AnneMarie Maes founded **the Brussels Urban Bee laboratory** in 2009.
It is the place of action for a group of artists, scientists and technologists to observe bee colonies in non intrusive set-ups.
The Urban Bee Lab is also a vehicle to raise public awareness via **art installations, talks and workshops**.

The Bee Agency project is one of these actions.
In this project, bees, humans, micro-organisms and plants are working together to assure a sound basis for the further development of our ecosystem.
With the Intelligent Guerrilla Beehive, the project proposes a shelter for swarming bee colonies and supports the bees in their roles as pollinators and caretakers of biodiversity rather than as honey producers.
Because bees are recognized as important biomarkers, the Guerrilla Beehive is augmented with sensors and sensory processing algorithms that observe the behavior of the colonies, analyze the diversity of pollen and monitor airborne pollution in order to check the state of the ecology in the surrounding area.
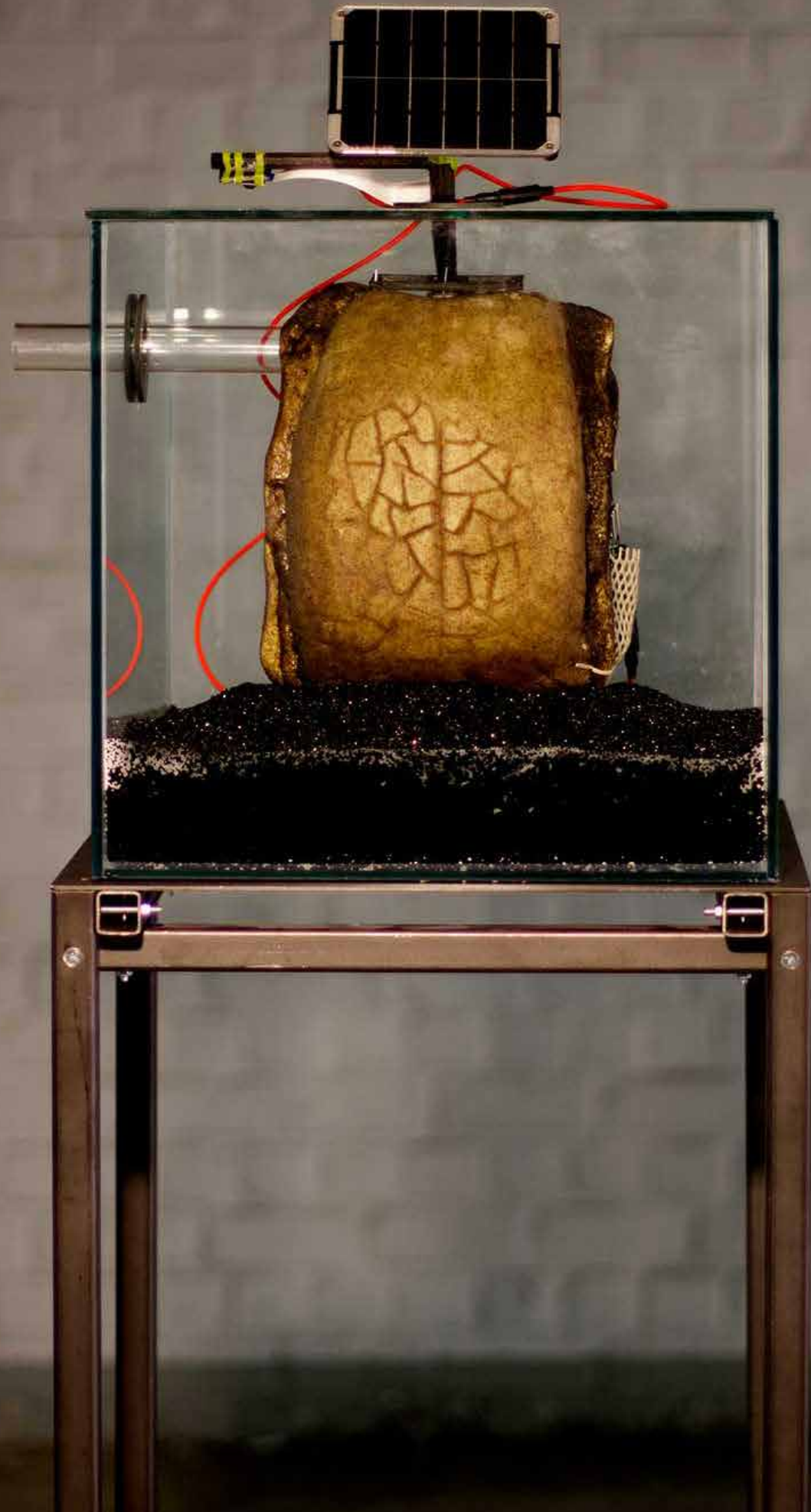
Bee Agency

the Intelligent Guerrilla Beehive (sculpture)
Variation Games (video)

Art/Science research is used to draw attention to pressing ecological issues. **Bee Agency**, an installation in 2 parts, is an answer on the threat faced by pollinating insects.

AnneMarie Maes studies the close interaction between pollinators and ecosystems while experimenting with a wide range of biotechnologies and organic materials.

The Intelligent Guerrilla Beehive is a radically new beehive offering an organic shelter to swarming bee colonies.
This beehive is tailored to the needs of bee colonies 'living in the wild', in opposition to colonies that are domesticated by beekeepers.
Non-domesticated colonies can work on their own rythm and focus completely on their pollination tasks.
This results in the preservation of the biodiversity on their foraging fields.

Variation Games is a video filmed with an infrared camera inside the beehive. It is a condensed edit of a year-long observation of the behaviour of a bee colony and is revealing that community life for bees is based on networking, collaboration and collective intelligence.

Bee Agency
The Intelligent Guerrilla Beehive (installation)

The design of **the Guerilla Beehive** is inspired by nature. The content responds to the nest-needs of a bee colony living in the wild, and the mobile architecture makes it easily deployable on different spots in public space, hence its name: the Guerrilla Beehive.

The hive can be grafted on the wall of a building or wrapped around the branch of a tree in a park. The beehive has been enhanced with a sensor network in order to monitor the health of the colony without interference and thus allow better care. The Guerrilla Beehive is made out of smart organic materials with usefull properties in respect to temperature fluctuation, humidity and ventilation.

The hive has a high tactile potential; the flexible bacterial cellulose of the outer skin and the warm and soft cork of the inner skin invite to touch and feel. All materials are biodegradable.

Once the colony decides to leave the hive, the Guerilla Beehive will fall as a ripe apple from the tree and decompose completely. It is a cradle to cradle design.

The Intelligent Guerrilla Beehive project received an Honorary Mention in the category Hybrid Art at Ars Electronica.

The Intelligent Guerrila Beehive can be presented in multitude of ways: fixed on the wall, presented as a laboratory setup under glass on a metal pedestal ... The installation is completed with the projection of the video Variation Games.

Bee Agency
Variation Games (video)

The video **Variation Games** (21'59") is a condensed edit of a year-long audiovisual observation of the behaviour of a honeybee colony in their private environment.

The recordings are made with an infrared camera and contact microphones inside the beehive. We follow how the bees start to build their nest. First they scan the new space and clean it from foreign objects. Then the worker bees organize to build the nest. Hereby they reveal decision-making, networking, collaboration and collective intelligence.

Single agents are teaming up without any decision maker. Important is the arrangement and relationship of the tasks which provokes the emergence of a bottom-up intelligence in this self-managed group with independent actuators. The group is build on diversity which provides resilience.

With the Guerrilla Beehive, they are offered a shelter -prototyped by nature- which is designed to grant equilibrium and homeostasis.

The video premiered in 2018 at the BEEHAVE exhibition, curated by Martina Milla for the Miró museum in Barcelona.
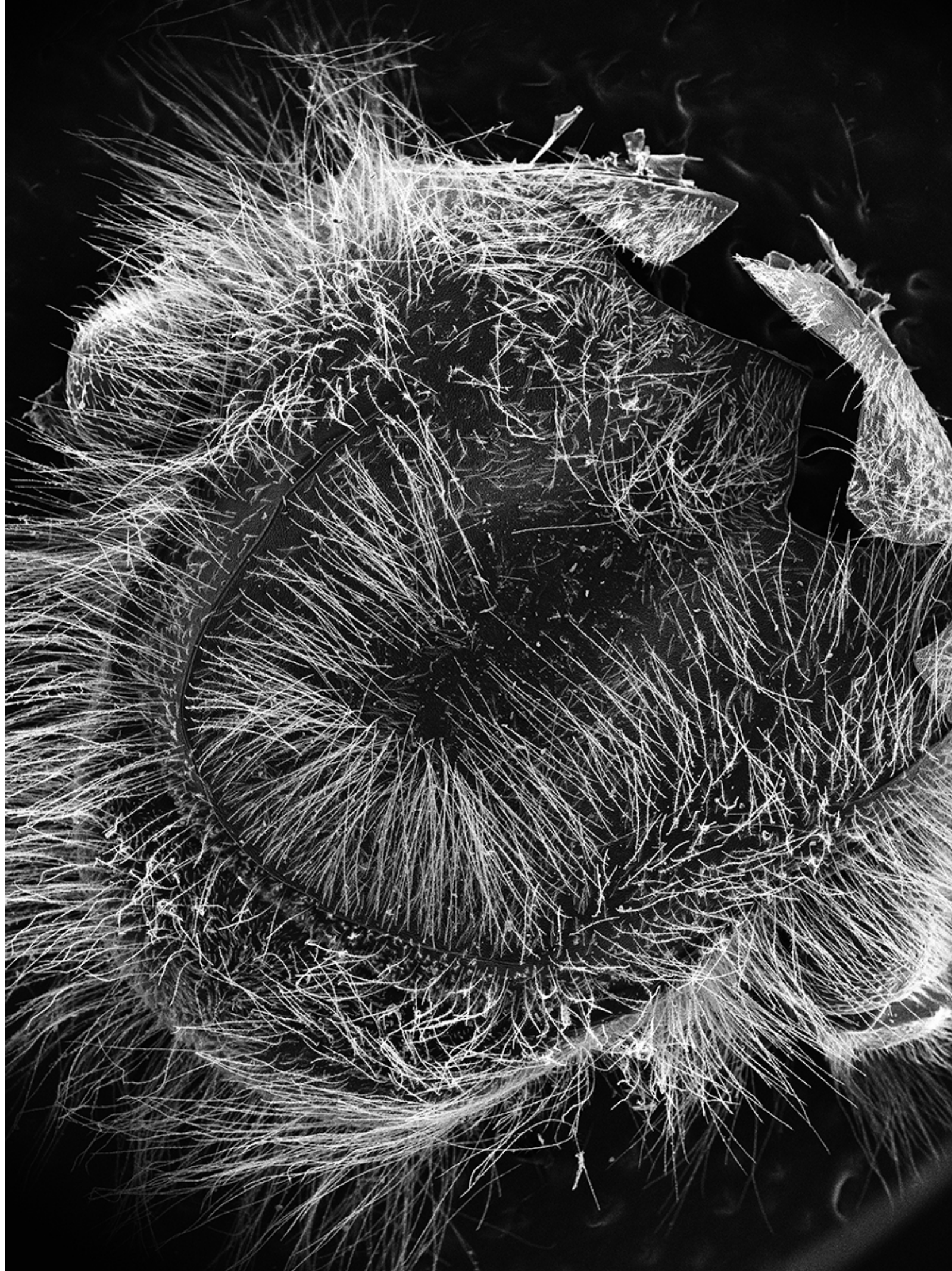
Bee Agency
Caput [head]

Since Darwin, it is clear that flowers and pollinators engage in an evolutionary race.

The honey bee is a complex insect with numerous sensorial features which are matching perfectly with the demands of sensual plants.

The black-and-white photograph **Caput [head]** reveals the elaborate design of a dissected part of the honey bee. It shows in detail the wide variation of furs that cover a bee's body, and in which pollen but as well pollution particles are transported to the beehive.

Samples were collected in the Urban Bee Lab, the artist's apiary and rooftop garden laboratory in the centre of Brussels.

B/W print on Hahnemühle paper 300gr, 215cm x 165cm.
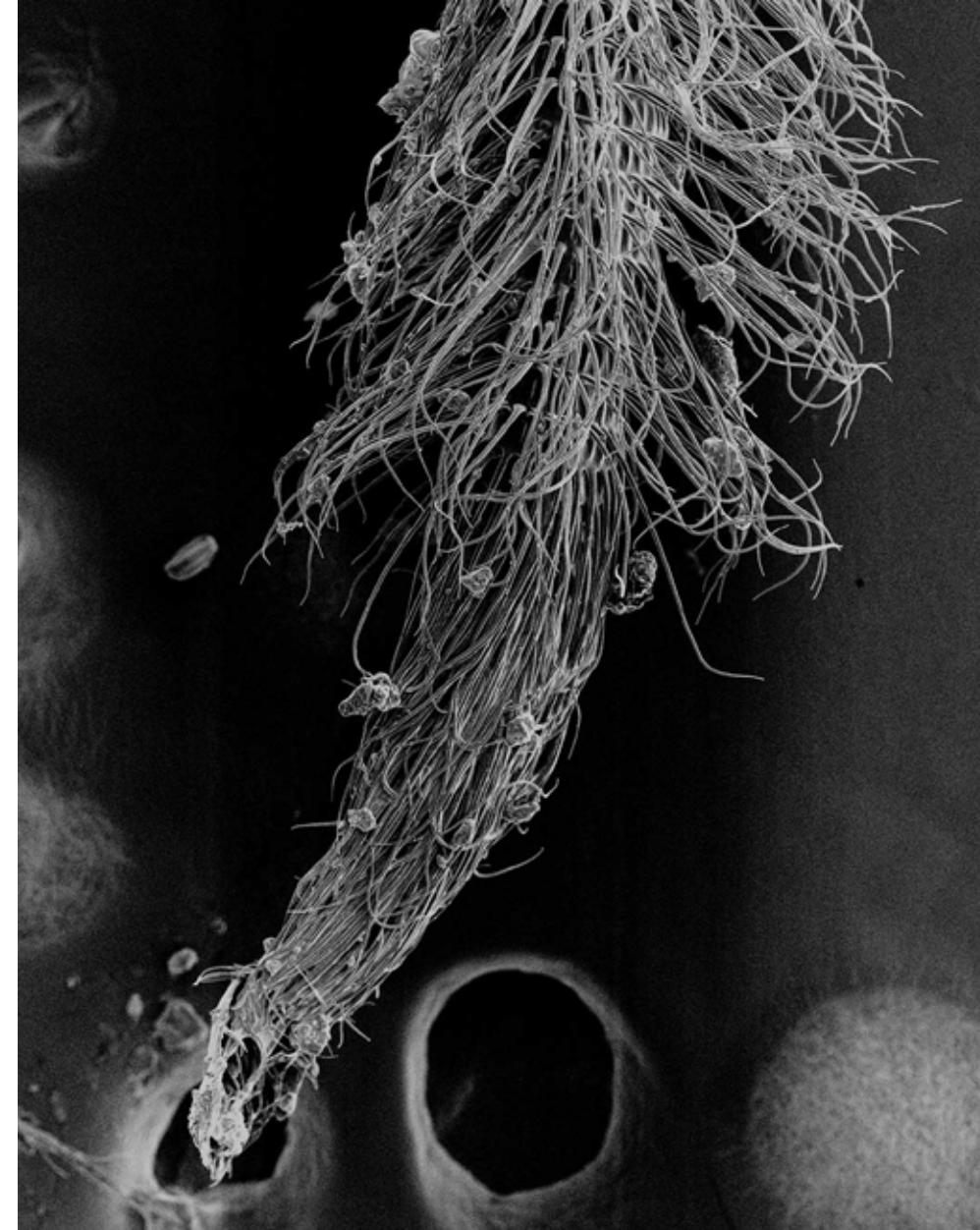

Bee Agency
Glossa [tongue]

Glossa is the Greek word for 'tongue'.

The glossa is similar to a long segmented cylinder covered with hairs. When the bees are foraging, the tongue is extended and immersed into the nectar. The hairs on the glossa erect to collect the liquid and the nectar is sucked into throat of the bee.

Besides being a feeding instrument, the bee-tongue serves also for licking the queens' pheromones which regulate the life in the hive. As such the glossa is also a kind of communication instrument.

Glossa (x 150 magnified). B/W print on Hahnemühle paper 300gr, 165cm x 215cm.

Bee Agency
Glossa [tongue]

Bee Agency

*Intelligent Guerrilla Beehive (sculpture)
and Variation Games (video 20:59);
installation on metal stand 100x100x-
175cm.
Biomaterials, electronics, sound.*

Bee Agency
Scaffolded Sound Beehive

The scaffolded beehive is an immersive multi-media installation which provides visitors an audio experience of activities in a beehive. The centerpiece of the installation is the top of a Warré beehive constructed using open source digital fabrication and mounted on scaffolds. The hive is 2.5 m high and visitors can put their head inside the beehive and experience an auditory interpretation of hive activity.

A 2-channel sound installation plays continuously inside the hive. This sound installation is based on fieldrecordings made in the broodnest of a beehive installed on the roof top of the Brussels Urban Bee Laboratory.

The 15 minutes-piece pans over the spectrum of a day, from midnight to midnight. The increase and decrease of swarm activity in the hive became the guideline for the processing of the recordings. The audio work tries to embody the bee swarm while simultaneously intersecting the swarm with swirling electronic sound clusters.

Credits:

Fig.1: Intelligent Guerrilla Beehive (version 1.0) - **the Intelligent Guerrilla Beehive project**
Concept and production AnneMarie Maes, research in collaboration with Núria Condé

Fig.2: still from the video **Variation Games**
Concept, research and production AnneMarie Maes, Editing Margarita Maximova, Sounddesign Yuri Bultheel

Fig.3: Intelligent Guerrilla Beehive (version 2.0) + 3D printed skeleton of the Intelligent Guerrilla Beehive // wall installation at the exhibition
UN/GREEN: Natural Artificial Intelligences at the museum of Contemporary Art in Riga, Latvia
Concept and production AnneMarie Maes

Fig.4: Caput [Head] - Scanning Electron Micrograph (SEM) - 165cm x 215cm
Research & production AnneMarie Maes, SEM operator Alexander Lutz (VUB Brussels)

Fig.5: Intelligent Guerrilla Beehive (version 2.0) // **sculptural installation**
Concept and production AnneMarie Maes

Fig.6: Glossa [tongue] - Scanning Electron Micrograph (SEM) - 165cm x 215cm
Research & production AnneMarie Maes, SEM operator Alexander Lutz (VUB Brussels)

Fig.5: Scaffolded Sound Beehive in installation @ the exhibition **ARTES@IJCAI**, Luis Borges center, Buenos Aires, Argentina
Concept, research and production AnneMarie Maes, Sounddesign Bill J. Bultheel

Fig.6: Scaffolded Sound Beehive in installation @ the exhibition **Bee Monitoring Devices and Curious Observations** at the Institute of Evolutionary Biology in Barcelona, Spain
Concept, research and production AnneMarie Maes, Sounddesign Bill J. Bultheel

All Photographs © AnneMarie Maes

The Bee Agency was exposed at:
- Hybrid Arts, Ars Electronica, Linz (Austria)
- IBE (Institute of Evolutionary Biology), Barcelona
- Resonances, (Museum Science & Technology Leonardo da Vinci), Milano
- HeK (museum Electronic Art), Basel
- MAAT (museum for Art, Architecture & Technology), Lisbon
- IJCAI (International Conference of Artificial Intelligence), Buenos Aires, Argentina
- Hiperorganicos, Rio de Janeiro, Brazil
- Bozar (Palais des Beaux Arts), Brussels
- Hamburg Machine (Art in Public Space), Hamburg, Germany
- Scientific Inquiries, Koç Gallery, Istanbul, Turkye
- BeeHave, Fundación Miró, Barcelona
- Un/Green, Museum of Contemporary Art, Riga
- Drive (Volkswagen Group Forum), Berlin, Germany
- Centre Wallonie Bruxelles | Paris, Paris, France
- Humms & Buzzes, Ludwigshafen, Germany
- Mirage Festival, Lyon, France
- Cities beyond Technology, Seoul, South Korea
- Piksel 18, Bergen, Norway
- Art & Science in Symbiosis, Brussels, Belgium
- Ecovention, Museum Contemporary Art Sittard, Netherlands
- Transformative Ecologies, Mons, Belgium
- Urban, Beeing, Skolska Gallery, Prague, Tchech Rep.

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- Open BioLab Brussels (Erasmus Hogeschool)

AnneMarie Maes is an artist who has been studying the close interactions and co-evolutions within urban ecosystems. Her research practice combines art and science, with a keen interest in DIY technologies and biotechnology. She works with a range of biological, digital and traditional media, including live organisms.

Her artistic research is materialised in techno-organic objects that are inspired by factual/fictional stories; in artefacts that are a combination of digital fabrication and craftsmanship; in installations that reflect both the problem and the (possible) solution, in multispecies collaborations, in polymorphic forms and models created by eco-data.

On the rooftop of her studio in Brussels she has created an open-air lab and experimental garden where she studies the processes that nature employs to create form. Her research provides an ongoing source of inspiration for her artworks.
The Bee Agency as well as the Laboratory for Form and Matter -in which she experiments with bacteria and living textiles – provide a framework that has inspired a wide range of installations, sculptures, photography works, objects and books – all at the intersection of art, science and technology.

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