

Acknowledgement prize 2008 North America

Strategy for environmentally-friendly integration of beehives, Detroit, USA

Project data

Type of project Landscape design
Estimated start of construction May 2009

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Comment of the Holcim Awards jury North America

This innovative and unique project strives for the resettlement of honeybees in Detroit in order to address the sharp decline of bee colonies over recent years. Bees are vitally important agricultural insects throughout Michigan where fruit and vegetable production is a significant sector of the economy. The convincing advantages of this project are manifold. One of the crucial problems in Detroit is the many abandoned former industrial sites and vacant land plots coupled with a lack of investment. The project aims to transform these open spaces into green parks planted with flowers varieties to feed the bees and to function as buffer zones between the remaining active industrial areas and residential precincts.

The new honeybee colonies shall not only be deployed in underprivileged areas, but shall become an integral part of the city's life. Therefore the bees will be colonized in public areas such as streets and squares. In order to avoid the bees from becoming a nuisance to pedestrians, the beehives will be elevated. By this re-settlement of bee colonies the city will create new workplaces for unskilled people and offer pollination services to the large fruit and vegetable farms in Michigan. Although this project is quite far away from sustainable construction in the narrow sense, the jury has commended the project due to its positive impact on living conditions and on biodiversity in urban areas.

Project description by author

On October 5, 1999, the people of the State of Michigan (an important fruit and vegetable producing state) designated the honey bee, *Apis mellifera*, as their official agricultural insect. The paradox is that from this particular year onward the number of bee colonies has been in constant decline. Detroit is not exactly what most people would consider a part of rural America. Vacant land is scattered all over the city and continues to extend further. Large parcels of vacant and under-utilized land with a low potential of investment are found along industrial zones.

The city identified land-use conflicts in these areas and looks for ways to buffer the negative impacts of industrial land upon residential areas. We propose an agricultural land-use strategy for these areas, temporary apiaries and bee pastures to buffer negative impacts. This will be the beginning of a local beekeeping industry, which will first redevelop under-utilized areas and then offer a pollination service for fruit and vegetable farms in Michigan.

The pollination of Detroit will encompass the supply of, at first 30, then 300 to perhaps culminate at about 3,000 oversized beehives that will be strategically positioned. We decided to oblige the bees' flight to be above people's heads, because they travel in a straight path to their hives. Each of the hives store up to five colonies in horizontal polystyrene hives using Langstroth movable plastic frames. There will be four categories of beekeeping: 1) small scale, only customary beekeeping, up to 3 colonies, hobby; 2) small scale, mostly customary beekeeping, 3 to 30 colonies, sideline; 3) large scale, mostly commercial beekeeping, 30 to 300 colonies, sideline; and 4) large scale, only commercial beekeeping, 300 to 3,000 colonies, commercial beekeeping enterprise.

It is considered most important in the city that the insects' flight will be directed. Technically, this is why the beehives are oversized, so that bees' flight path is 6 to 8ft in the air. In addition, we plan to seed local bee-pastures that offer great food sources for the bees, so when they leave the hive to forage they will choose those fields. Once they have found an appropriate food source they will continue to visit the same flowers. First we will use Tübingen mixture, a mix of annuals developed for farm-set-aside land in Europe. Its main component is *Phacelia tanacetifolia*, a very popular bee-plant and *Fagopyrum esculentum*, as well as *Sinapis alba*, *Corinadrum sativum*, *Calendula officinalis*, *Nigella sativa*, *Raphanus sativus*, *Centaurea cyanus*, *Malva sylvestris*, *Anethum graveolens* and *Borago officinalis* in smaller quantities. Native plants are undoubtedly the best food source. In the future we would like to develop local seed mixtures with high rates of seeding on the vacant sites.

Relevance to target issues by author

Quantum change and transferability

Long-term planning of working conditions and new investment can no longer be planned by city authorities alone. The possibility for residents to use the land temporarily and in an environmentally-friendly way can improve current circumstances. The project supports biodiversity not only for local flora but also visually for different cities. The beehives address industrial derelict buildings and direct people's view to the pastures.

Ethical standards and social equity

Long-term vacant lots have negative effects on residents and the city. They depreciate property values, reduce property tax revenue, attract crime, and degrade residents' quality of life. The landscape project brings people together and encourages residents to get involved in revitalizing their neighborhood.

Ecological quality and energy conservation

The beekeeping industry offers work in the neighborhood, reducing the need for commuting. The apiaries and bee pastures will be placed on vacant, under-utilized land and where there are no actual development plans. No fertilizers, no pesticides and no herbicides will be used to establish the flower fields. They will form environmentally friendly "nectar corridors" and contribute to more ecological areas within the city. The plants are chosen for their nectar and pollen value, and visual quality. In former industrial areas flower fields will decontaminate the soil and improve soil quality.

Economic performance and compatibility

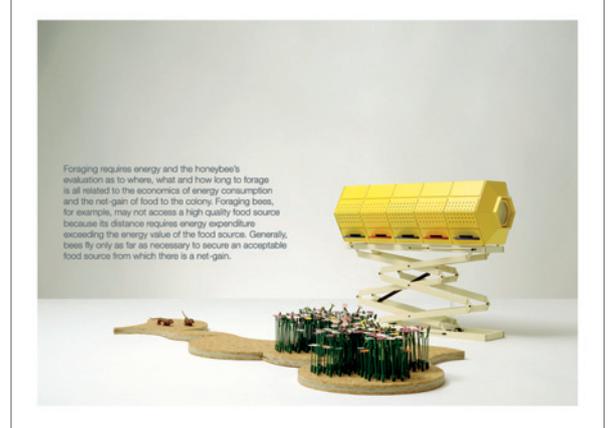
The project will be a cooperative and find sponsors to construct the beehives. The cooperative will own the equipment, be responsible for the contracts with the city council, and be financed by membership and additionally by a percentage of the pollination fees. The project will provide equipment, training, and offer the land for the operations until new investment is secured. The city council will save costs of maintaining vacant land. Until future investment is found, the project will build the bridge of vacancy and investment on under-utilized land.

Contextual and aesthetic impact

The project will revitalize urban areas in an economic and ecological way. Flower fields and the pollination of plants will enrich biodiversity and lead to a better environment. With the apiaries, locals get involved in beekeeping and work in their neighborhood again. They have the choice to produce honey for themselves or to extend to a larger, more profitable, business. The beekeeping industry will enhance economic growth by building on agricultural diversity and revalue Detroit's neighborhoods.



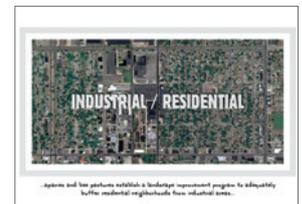
Beehives: out of the way but surely not "out of sight".



Bee foraging: the economics of energy consumption.



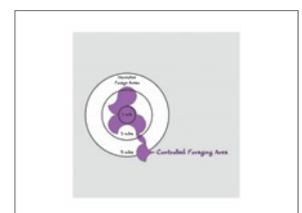
The honeybee: official agricultural insect of Michigan.



Buffering residential areas from industrial zones.



Proposed locations for apiaries and bee pastures.



Controlled foraging area.



Bees Asteraceae and Rosaceae.



Bee pasture from Tübingen Mix seed variety.



The economics of honeybee pollination.