

BEEES AND URBAN ARCHITECTURE

A short talk by Ian Ritchie

at ARUP on the occasion of the public debate about Bees

to celebrate

ANIMAL ESTATES

A project by Fritz Haeg

and housed at Arup London

16 January 2012

Five Reasons we like bees:

reconnecting with nature: psychologically important. We are in one world though many, if not most, human actions seem to fly in the face of such a simple fact.

increasing the number of pollinators: for a healthy biosphere

saving bees: human reaction to their loss from pesticide poisoning in the countryside

health consciousness: the benefits of honey don't just stop at satisfying the palate; honey also offers incredible antiseptic, antioxidant and cleansing properties for our body and health, hot beauty and skin care tips for ladies, and amazing healing properties as a head-to-toe remedy, from eye conjunctivitis to athlete foot. The renowned UMF Manuka honey, perhaps the tastiest natural medicine, is commonly cited in many discussions on the health benefits of honey. This honey not only fights infection and aids tissue healing but also helps reduce inflammation and scarring. In addition, it is often used for treating digestive problems such as diarrhea, indigestion, stomach ulcers and gastroenteritis.

business - making money from honey

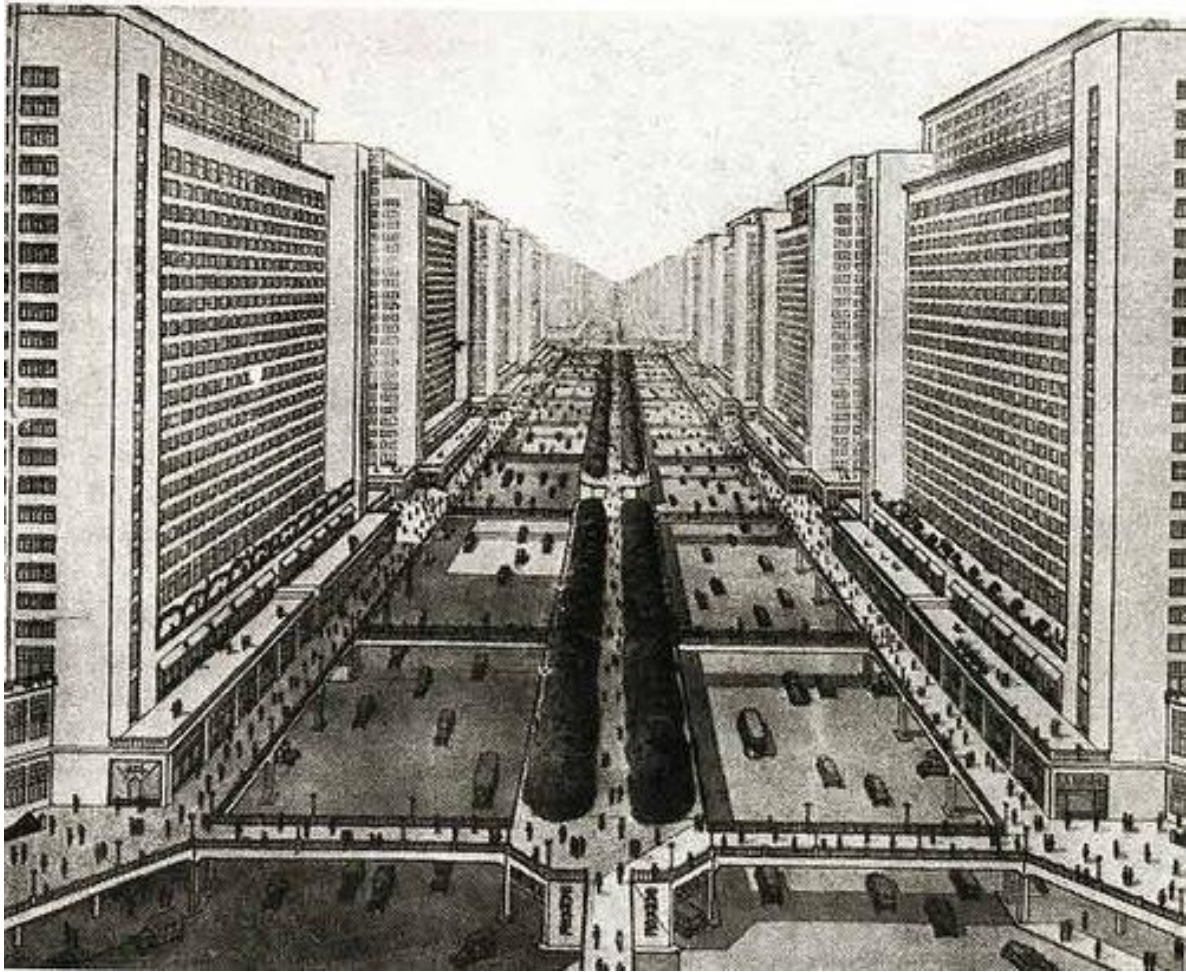
As architects how should we think about the city from an ecological perspective?

Ecology is complex set of relationships between living things and the physical environment. We understand only a little of it, and pretending we know a lot discredits us.

Ecology has, since the industrial revolution, largely been seen from the perspective of the countryside, while the city has become the habitat for more and more humans and their pets.

Although the history of architecture has been concerned with shelter for human beings - the quality of which has been hugely variable - the design of the city has largely sterilised nature, or manicured it as far as possible. Of course there have been movements against such an approach - The Garden City of Ebenezer Howard at the beginning of the 20thC interpreted by Parker and Unwin at Letchworth, then Hampstead, Bourneville and Port Sunlight. It was seen as a design method that engaged socio-economic issues of the man-made and nature with the need for human scale architecture.

These ideas were later reinterpreted by the architect Le Corbusier. The basis of his 'ville radieuse' utopian dream was man reunited with a well-ordered (green) environment - a manicured vision of nature.



It had naïve notions - a linear city based upon the abstract shape of the human body with head, spine, arms and legs, that was fundamentally flawed by an insistence on high-rise housing blocks - which may have freed the ground plane for infrastructure and landscape and promoted rooftops as social space and running tracks - but left people stranded and isolated in their 'airy' homes between the ground and the sky. Although never built, it influenced a generation or two of architects and urban planners.

The Garden City idea evolved into Harlow, Peterlee and Milton Keynes.

Now the demarcation between brown, grey and green fields has been eroded, and one of this century's great challenges will be how to create a sense of belonging, of connexity, and social value in both the city, but more significantly the sub-urban hinterland of cities. Obviously all areas and activities are interconnected.

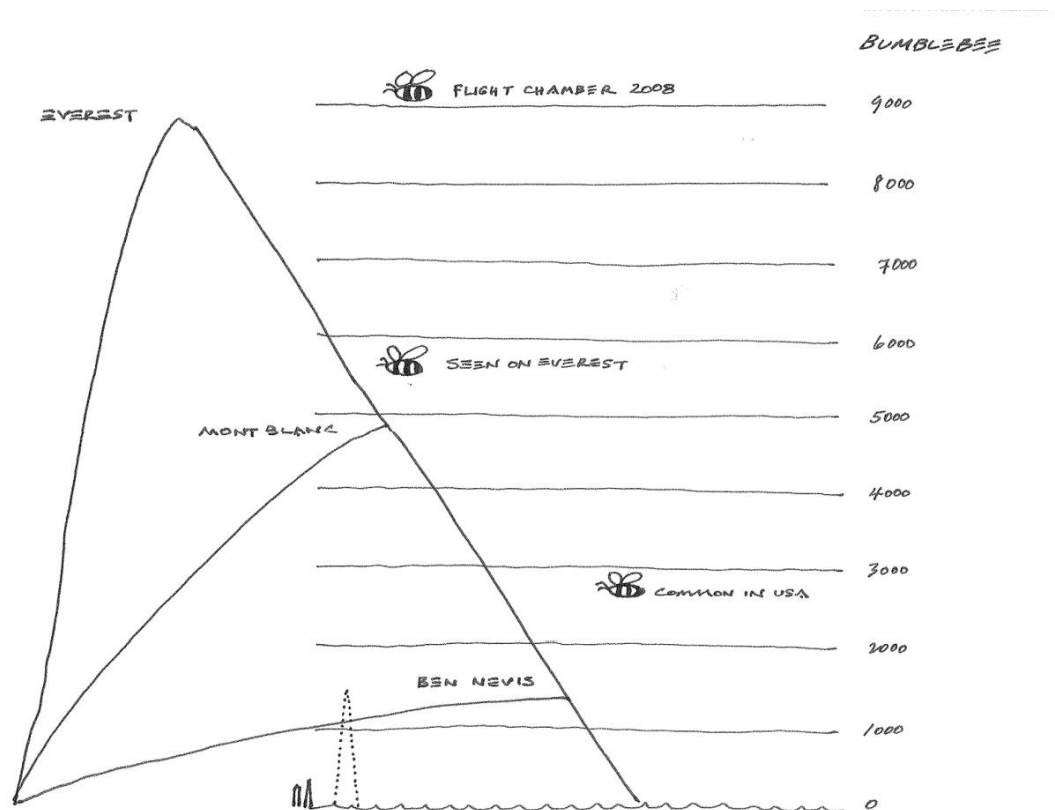
But never, until recently, have we thought of architecture and cities as spaces and places to share with so many other species.

This evening is about insects, more specifically bees, key pollinators in the ecosystem, of which there are 250 in the UK, and of which there are 24 bumblebee species, 6 of which are currently under threat. Worldwide there some

20,000 varieties - grouped into - Honey bee (only 7 species world-wide - genus *Apis*), Bumble bee (250 species N hemisphere, NZ and Tasmania), Stingless bee (500 species sub and tropical - not in Europe), Carpenter bee (500 species world-wide and always nest in wood, hence the Carpenter).

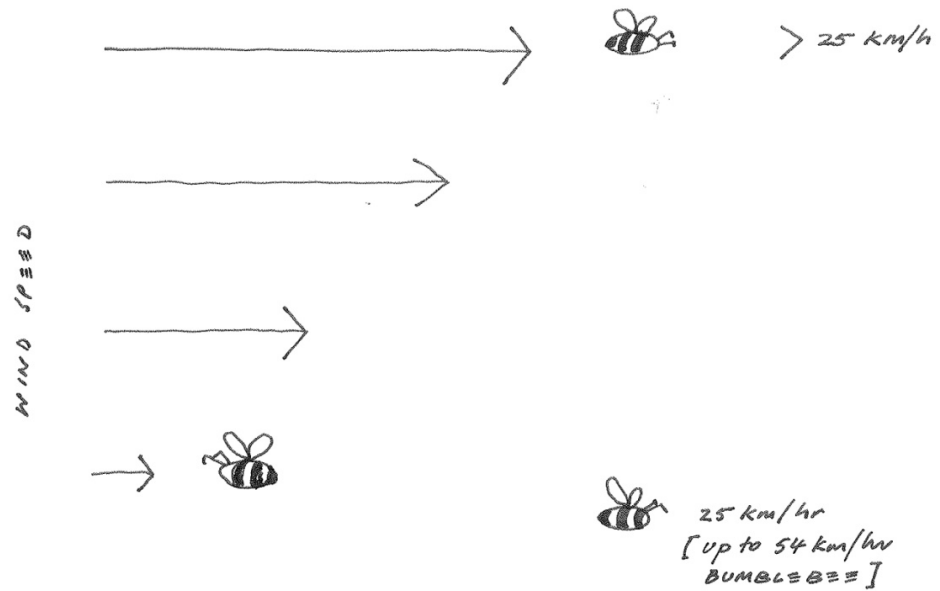
Honeybees need beekeepers. It is farming whether in the countryside, suburbia or in the city. The quality of life of the honeybee is dependent upon the quality of the beekeeper. To become a master beekeeper can take ten years. At the moment there are not enough beekeepers for those wanting to host hives.

Bumblebees are beautiful and welcome visitors to our gardens. They also play a crucial part in the ecosystem and we rely on them to pollinate specific food crops like onions, tomatoes, peas and strawberries.



Bumblebee flight altitude while always maintaining a constant body temperature

Bumblebees need a variety of pollen and nectar-rich flowers to feed on, but as a result of intensified farming and the use of pesticides, only 3% of the UK's wild flower meadows remain. This is bad news for our bumblebee populations - two UK species are already extinct and six of the remaining 24 are seriously threatened.



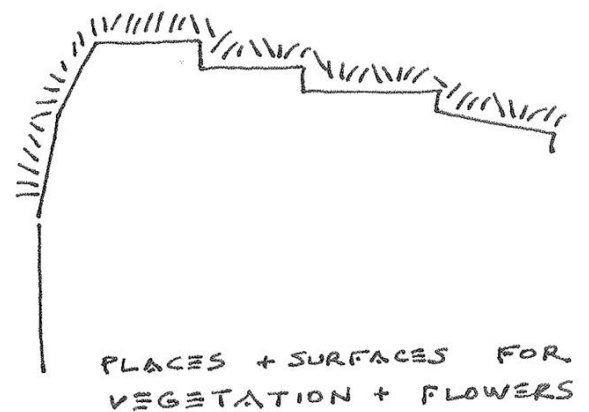
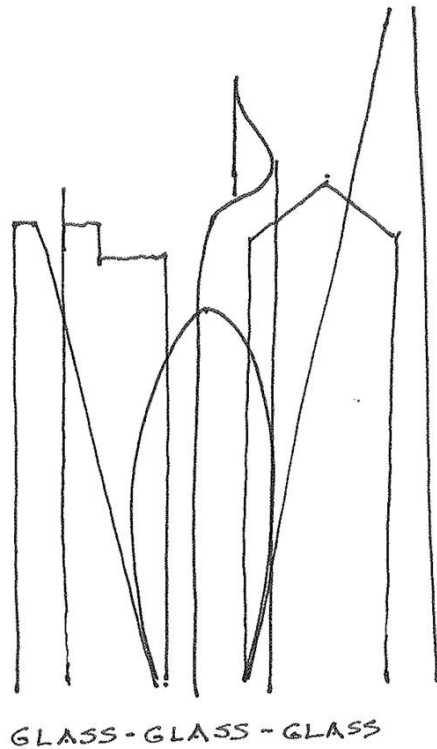
Bumblebee speed -they tend only to head butt each other (some species) rather than buildings!



Bumblebee navigation is sophisticated. They even compensate for wind buffeting.

Perhaps we should develop some Guidelines for the new Urban Eco-Architect.

1. Consult the local ecologist.
2. Remember, honeybees need beekeepers. It is honey farming
3. Understand the urban eco-corridors



The surfaces of urban architecture: do we consider them realistically as cooling surfaces - or simply for visual effect while demanding high maintenance.



Caixa Forum, Madrid

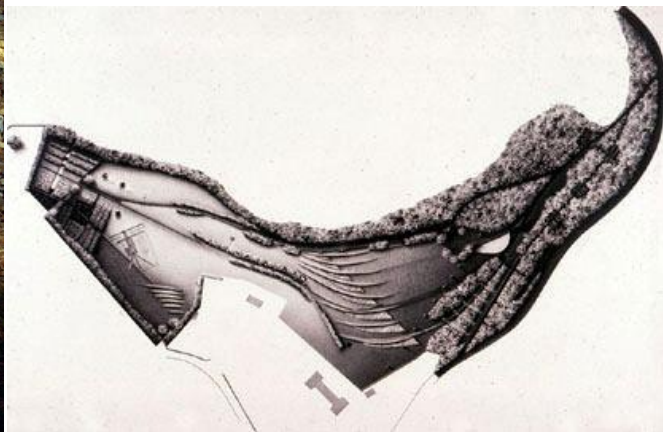


Highline NY



Toyota factory roof

An example: In 1992 we designed a 'cultural greenhouse in Terrasson La Villedieu that requires no maintenance other than cleaning the glass roof, it has only trickle heating and trickle evaporative cooling. It is an element in a new garden - Les Jardins de l'Imaginaire by Kathryn Gustafson. The walls are made of gabion - rough rocks in wire cages - and are the first use to my knowledge of this millennia old civil engineering technique in architecture. The ecological value, particularly for birds, insects, small mammals and plants lies in the interstices within the walls enabling new, and importantly, un-manicured natural habitats to be created.



Terrasson Cultural Greenhouse Ian Ritchie Architect, 1992



Interior of Terrason Cultural Greenhouse Ian Ritchie Architects with K Gustafson, 1992

An example: Sainsbury Wellcome Centre at UCL (under construction)



Wild flower rooftops (not Sedum)

To maintain wild flower rooftops it is vital to

Keep **fertility down** otherwise grasses get too strong and dominate, to recognise that

Rain is good for feed,

And not to add nutrients or fertiliser.

Irrigation is vital, and summer soil should be kept moist - not the same as fertility.



Moths , particularly "hummingbird moths" are excellent pollinators as are hover flies. Butterflies are generally not -not accurate enough, but there are exceptions.



Thyme, bird's foot trefoil, red clover and white clover

Flowering is predominantly May-June, and then the seeds form and the birds come.

Roof landscapes are expensive. They require more structure, irrigation and maintenance. Perhaps we should imagine different ways of accepting landscapes onto buildings that are less demanding. This will requires a paradigm shift in the way we seen the manicured environment of our cities. Only since the industrial revolution has the quality and regimes of maintenance dictated so much the aesthetic appearance of our cities.

In conclusion, we have cities seen nearly always from the centre, not the suburbs, and rarely as an ecological whole.

Urban ecology like most things in our society becomes a fashion, and the value of local landscapes is still driven largely by man's amenity needs.

This tendency leads to celebrated 'greenwashing' of icon buildings with so-called green energy and expensive landscaped walls and roofs rather than addressing the far bigger issue of the suburbs and what they can contribute to the city ecology as whole. We have to learn how we can make our suburbs more beautiful and to enjoy them as much as we, or at least some of us, enjoy the heart of the city.