BENEFITS OF BIOPHILIC DESIGN

DEREK CLEMENTS-CROOME

- CIBSE INTELLIGENT BUILDINGS GROUP SEMINAR DECEMBER 1ST 2016 at LDA DESIGN

- WWW.DEREKJCROOME.COM
Biomimetics

The abstraction of good design from Nature
What is Biophilia?

First described by Erich Fromm (1960’s) Biophilia is the Love of Life, or Living Systems.

Edward O. Wilson (1980s) went further with the ‘Biophilia hypothesis’—we don’t just love all things in the natural world, but we are genetically connected to them.

As humans we have a deep desire to connect with nature whenever possible.

Our subconscious desire to be close to nature in our everyday lives continues even in the workplace.
improved stress recovery rates
cognitive functions
mental stamina & focus
elevated moods and increased learning rates
decreased violence, social isolation

[Source: Love (2007), quoted in Terrapin Bright Green (2012).]
Those who work in environments with natural elements, such as greenery and sunlight report:

- 15% higher level of well-being
- 6% higher level of productivity
- 15% higher level of creativity

than those with no connection to natural elements in the workplace.

WWW.HUMANSPACES.COM 2015 Cooper and Browning
Benefits of Biophilia

- Increased physical activity
- Reducing harmful exposures,
- Increases social engagement
- Improves mental health
- Off-sets Heat Island Effect
- Green landscaping may help climate change in regards CO2, temperature......
- Green vegetation associated with decreased mortality (Harris et al Harvard 2016)
Biophilic Garden Cities Benefits

- Healthier — happier and calming experience;
- Encourages healthy behaviour — walking, cycling
- Beauty of Nature — fragrance, colour, sound
- Crime is less
- Control of urban micro-climate
- Flora and Fauna diversity
- Enhances community life
Views out (Kevin Korczyk 2014 Interior Design)
Bosco Verticale, the ‘vertical forest’, and the gleaming pinnacle of the UniCredit tower – Paolo Roselli
Museum in Ningbo
House in Australia
Parkroyal on Pickering Hotel
Singapore
Parkroyal on Pickering Hotel
Singapore
Reinventor Paris by Callebaut
Medianera Verde by Capella Garcia
BIOPHILIA CAN BE CONTRIBUTED ACTIVE MEASURES
The biomass and heat generated by the façade elements are transported by a closed loop system to the plant room, where both forms of energy are exchanged in a separator and a heat exchanger respectively. The temperature levels of the heat generated can be increased by using a hot water pump for the supply of hot water and for heating the building. Excess heat can be stored by use of a geothermal system © Brown Bird Design.

Algae can be left to reproduce and reduce solar gain in the summer season. Monitoring identified that the efficiency of algae power, although lower, was more stable than that of solar panels. The bottom of the panel and the algae cover were heated by list.
INTERNAL LANDSCAPING
Sisil Showroom by Yuko Nagayama Associates
Quick Left by Tres Birds Workshop
Biophilic Design is vital for Buildings and Cities that will Improve our Quality of Life

Technology alone is not enough
SENSEABLE BUILDINGS AND CITIES
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