RESILIENCE, BEAUTY AND COMMON SENSE: DENSE URBAN LANDSCAPES IN TURBULENT TIMES

Speaker
Herbert Dreiseitl
Founder of Atelier Dreiseitl and Ramboll’s Liveable Cities Lab.
Today Professor in Praxis and Independent as “Herbert Dreiseitl Consulting”

Moderator
Wong Mun Summ
Founding Director, WOHA Architects
Resilience, Beauty and Common Sense
Dense Urban Landscapes in Turbulent Times

Herbert Dreiseitl, DREISEITLconsulting
April 16th 2019, CLC
My best learnings were on informal playgrounds.
Deep impact of Trust and Joy in risky conditions
Learning Resiliency means also how to handle unforeseen challenges and risks.
LEARNINGS FROM NATURE
Change, Adaptation and Regenerative Processes happen permanently in natural water regimes
Testing Water Flow Dynamics

Herbert Dreiseitl with Architecture Students at Harvard GSD
TRAINING THE TEAM OF ATELIER DREISEITL
now Ramboll Studio Dreiseitl (DNA of RSD)
Starting with small experiments and projects
STEAM – LIGHT – ICE

Design by Herbert Dreiseitl
If we do not feel welcome in this world ...
FIGHTING SOCIAL ISOLATION

Loneliness and social isolation are greater public health problems in many Cities than obesity.

Old people need attractions to go out of their homes and overcome isolation.

In UK there is a Minister of Lonliness; “Social Prescribing” to fight isolation.

Sources:
DIE ZEIT, Nr. 15/2019
John Cacioppo, Co-Author of „Loneliness“
“Design of urban environments has the potential to **contribute substantially to physical activity**. Similarity of findings across cities suggests the promise of engaging urban planning, transportation, and parks sectors in efforts to **reduce the health burden** of the global physical inactivity pandemic.”

Recommended by UN-Guidelines: **Minimum 150 min. activity/week for adults**
Physiological and psychological benefits:

• **Diabetic patients**: more effective at decreasing blood glucose levels than other forms of exercise, such as walking on a treadmill.

• **Rejection of tumours**: Higher activity levels in the immune system cells that act to reject tumours

• **Reduced levels of stress indicators**
SINGAPORE – MULTIFUNCTIONAL BUILDING BLOCK

WOHA Architects, Singapore
Ramboll Studio Dreiseitl
HOLISTIC VERTICAL STORMWATER MANAGEMENT

SAVE 1.1 MILLION GALONS TAP WATER PER YEAR!

**Green Roof**
- 50% of total roof surface area
- Intensive green roof construction
- Equipped with downsprout connection towards surface and underground detention units.

**Vegetative Filter**
- Serves as vertical conveyance elements along the building facade
- Provides additional surface area for WSUD tools and increase aesthetic value of the

**Rain Garden**
- A total of 295 m² is required, and up to 7 basin units, each 42.1 m² can be silled.
- Provides treatment for 1 in 3 months storm event.
- Interconnected with vegetated swales to induce overflow

**Harvesting Tank**
- Receives infiltrated water from bioretention units.
- Provides additional storage volume when surface detention overflows
- Can be discharged in a controlled way.

**Annual Rainfall**
- 7.7 ML (100%)
WORKSHOP WITH PUBLIC & STAKEHOLDER INVOLVEMENT
Tanner Springs Park under leadership of Herbert Dreiseitl
Imagine the Future Co-creation for resilient places
Pearl District in Portland
Atelier Dreiseitl – now Ramboll Studio Dreiseitl, as Prime
Greenworks, local Landscape Architect
Herbert Dreiseitl, Art Work
RAINWATER COLLECTION SYSTEM
RAINWATER RECIRCULATION SYSTEM AND OVERFLOW

Recirculation of rainwater to spring

Clean water overflow into river

Recirculation of rainwater to spring
Multifunctional Use
BLUE, GREEN, RED
FROM SEGMENTATION TO SEAMLESS INTEGRATION

DRAINAGE
Single
Problem solution

FUNCTIONALITY
Separated elements
parallel

RESILIENCE
Sectoral dynamic
elements

INTEGRATION
The water-sensitive city
BLUE-GREEN INFRASTRUCTURE TOOLKIT

**QUALITY CONTROL**
- Biological Absorption
- Filtration
- Sedimentation
- Infiltration
- Recycle

**QUANTITY CONTROL**
- Evaporation
- Conveyance
- Detention
- Retention
- Storage

- Sedimentation
- Detention
- Storage
- Quality Control
- Quantity Control
BLUE-GREEN INFRASTRUCTURE TOOLKIT

BGI’S SCALES OF IMPACT

OVER
Rainwater, greywater and blackwater treated on building scale

ON
To treat and mitigate water flow on surface of urban landscape

UNDER
Underground water treatment and storage
BGI – BUILDING SCALE

- **Vegetated roof**
- **External green facade**
- **Green balconies**
- **Internal greenery**
- **Storage and infiltration**

**Key Processes**

- **Conveyance**
- **Biological Absorption**
- **Infiltration**
- **Reuse**
- **Storage**
POTS DAMER PLATZ BERLIN, GERMANY
OPEN SPACE IS NOT LIMITED TO THE GROUND LEVEL
To treat and mitigate water flow on surface of urban landscape
BGI – NEIGHBORHOOD SCALE

**Urban Vegetated Waterbodies**
- Urban Parks and Vegetated Waterbodies enhance urban beauty, control erosion and regulate water flow and sedimentation.

**Urban Trees**
- Tree boxes control stormwater runoff. They are connected to Rain Gardens and help to filter and lessen runoff.

**Urban Gardens**
- Rain Gardens treat stormwater runoff. Impurities are removed through filtration, sedimentation and biological absorption. They reduce flow speed and encourage infiltration while beautifying landscapes.
Normal conditions

Monsoon rain
BLUE-GREEN INFRASTRUCTURE

BGI’S SCALES OF IMPACT

UNDER
Underground water treatment and storage
Rainwater Harvesting

Rainwater harvesting provides an independent water supply through accumulation and deposition of rainwater for reuse on-site. The process consists in catchment, conveyance, filtration, storage, distribution, and purification of rainwater.

BGI – UNDERGROUND SCALE
HAVE COURAGE FOR EXPERIMENTS
ABC Waters Design Guidelines for Singapore
OFFENBACH GERMANY, INNER HARBOR
BLUE/GREEN INFRASTRUCTURES WITH ECOSYSTEM SERVICES NEED TO BE FIRST !!!

OFFENBACH, GERMANY, INNER HARBOR RESTAURATION
BASIC ECOSYSTEM SERVICES HAVE TO BE EXPERIENCED PLAYFULLY AND UNDERSTANDABLE !!!
Herbert & Bettina Dreiseitl

Herbert 1980
Founder Atelier Dreiseitl GmbH
Überlingen (G), Singapore, Beijing
2013-2018
Director at Ramboll Group
Germany, Boston

Bettina 1997
Founder & Owner PlanSinn GmbH Wien
Both since 2018  DREISEITLconsulting

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The 2000 Watt Society: An innovative tool for a sustainable city planning

The concept of the 2000 Watt Society has been developed in Switzerland at the ETH domain for innovation leading to more sustainability and as a yardstick for planning energy and materially efficient cities. The concept has been introduced as a planning tool to many central European cities. New districts in various cities have shown the political acceptance and economic viability of the consequences of the concept. The buildings and workplaces at the EcoCampus of NTU are approaching the terms of reference of the 2000 Watt Society for working places.

Speaker
Alexander J.B. Zehnder
Visiting Professor
Nanyang Technological University
Founder and Director, Triple E Ltd