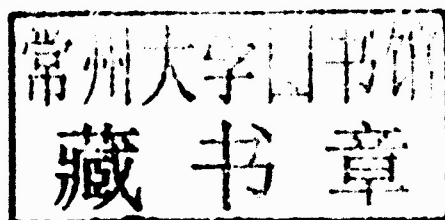


Architecture for a
**GREEN
FUTURE**



**PACE
LINKS**

A r c h i t e c t u r e f o r a
**G R E E N
F U R T U R E**



**PACE
LINKS**

©2013 by pace books limited
isbn 978-988-16214-0-5

pace books limited
RM 704, 7/F., Hong Kong arts centre,
2 Harbour Road, Wan Chai,
Hong Kong
t: +852 2897 1688
f: +852 2975 3146
www.beisistudio.com
booknews@beisistudio.com

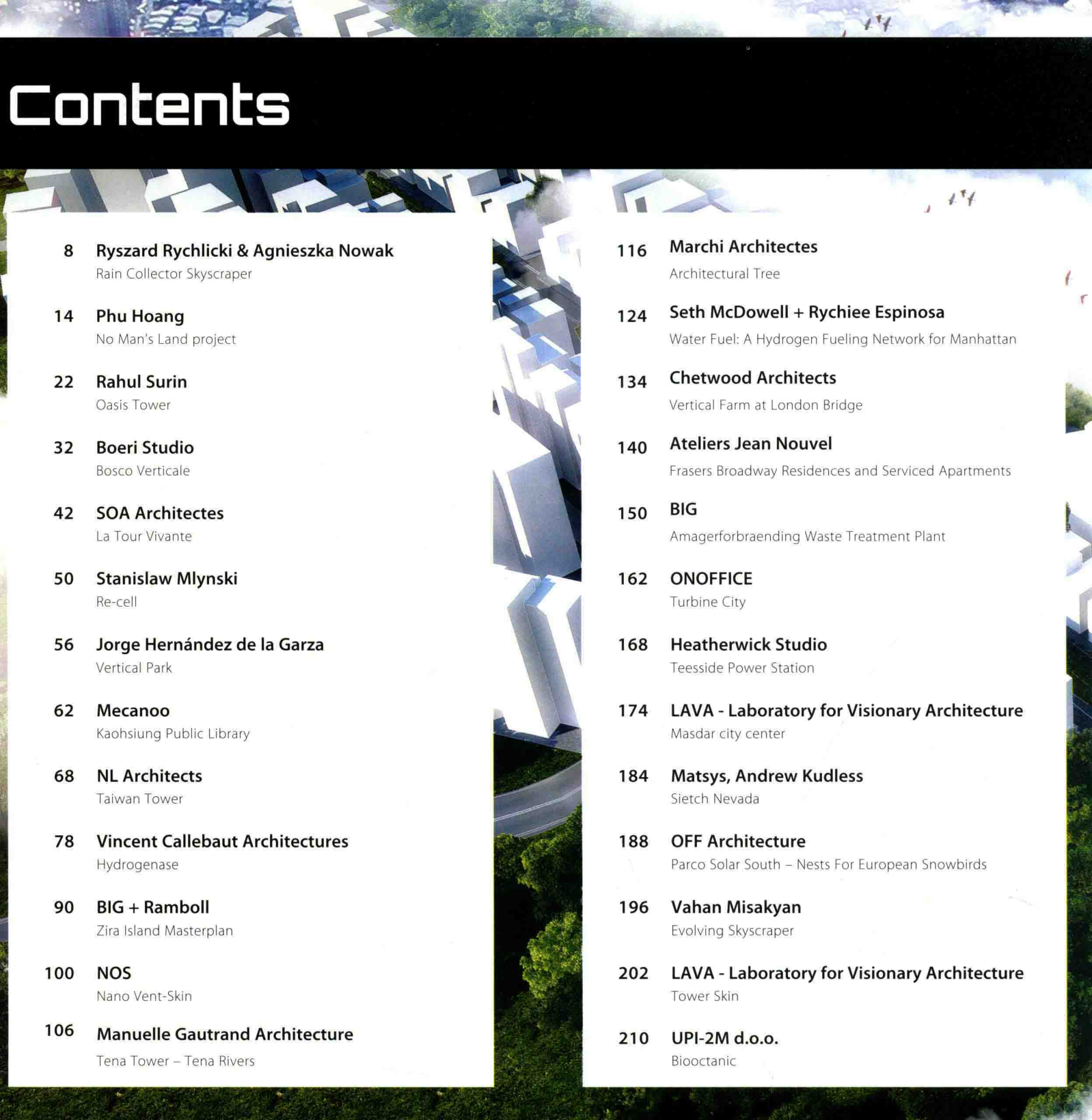
Original Edition © Linksbooks
Jonqueres, 10, 1-5 · 08003 Barcelona, Spain
Tel.: +34-93-301-21-99 · Fax: +34-93-301-00-21
info@linksbooks.net · www.linksbooks.net

While all reasonable efforts have been made to ensure accuracy, Pace Books Limited and the publishers do not, under any circumstances, accept responsibility for errors, omissions and representations expressed or implied.

All rights reserved. No portion of "Architecture for a Green Furture" may be reproduced or transmitted in any form or by any means electronic or mechanical, including photocopying, recording, or any information storage or retrieval system, without prior permission in writing from the publishers.

Printed in China

Contents

- 
- 8 **Ryszard Rychlicki & Agnieszka Nowak**
Rain Collector Skyscraper
- 14 **Phu Hoang**
No Man's Land project
- 22 **Rahul Surin**
Oasis Tower
- 32 **Boeri Studio**
Bosco Verticale
- 42 **SOA Architectes**
La Tour Vivante
- 50 **Stanislaw Mlynski**
Re-cell
- 56 **Jorge Hernández de la Garza**
Vertical Park
- 62 **Mecanoo**
Kaohsiung Public Library
- 68 **NL Architects**
Taiwan Tower
- 78 **Vincent Callebaut Architectures**
Hydrogenase
- 90 **BIG + Ramboll**
Zira Island Masterplan
- 100 **NOS**
Nano Vent-Skin
- 106 **Manuelle Gautrand Architecture**
Tena Tower – Tena Rivers
- 116 **Marchi Architects**
Architectural Tree
- 124 **Seth McDowell + Rychiee Espinosa**
Water Fuel: A Hydrogen Fueling Network for Manhattan
- 134 **Chetwood Architects**
Vertical Farm at London Bridge
- 140 **Ateliers Jean Nouvel**
Fraser's Broadway Residences and Serviced Apartments
- 150 **BIG**
Amagerforbraending Waste Treatment Plant
- 162 **ONOFFICE**
Turbine City
- 168 **Heatherwick Studio**
Teesside Power Station
- 174 **LAVA - Laboratory for Visionary Architecture**
Masdar city center
- 184 **Matsys, Andrew Kudless**
Sietch Nevada
- 188 **OFF Architecture**
Parco Solar South – Nests For European Snowbirds
- 196 **Vahan Misakyan**
Evolving Skyscraper
- 202 **LAVA - Laboratory for Visionary Architecture**
Tower Skin
- 210 **UPI-2M d.o.o.**
Biooceanic

- 
- 216 **Palette Architecture, LLC**
Center for High-Efficiency Farming,
Community Supported Agriculture
- 224 **Michael Yarinsky and Carla Lores**
Subnature
- 232 **Vincent Callebaut Architectures**
Bionic Arch
- 244 **S+PBA**
Wetropolis
- 252 **AB Elis Ltd.**
Eco-City 2020
- 258 **de bever architecten**
Ocean Urbanisation
- 262 **Louis Paillard**
Haut-Buc Fortress Eco-Village
- 272 **Atelier CMJN**
Skywater
- 280 **Brandon Martella**
London Farm Tower
- 288 **LIB LAB architecture**
Graft Tower
- 296 **Phu Hoang Office**
Foodopolis

A r c h i t e c t u r e f o r a
G R E E N
F U R T U R E

PACE
LINKS

©2013 by pace books limited
isbn 978-988-16214-0-5

pace books limited
RM 704, 7/F., Hong Kong arts centre,
2 Harbour Road, Wan Chai,
Hong Kong
t: +852 2897 1688
f: +852 2975 3146
www.beisistudio.com
booknews@beisistudio.com

Original Edition © Linksbooks
Jonqueres, 10, 1-5 · 08003 Barcelona, Spain
Tel.: +34-93-301-21-99 · Fax: +34-93-301-00-21
info@linksbooks.net · www.linksbooks.net

While all reasonable efforts have been made to ensure accuracy, Pace Books Limited and the publishers do not, under any circumstances, accept responsibility for errors, omissions and representations expressed or implied.

All rights reserved. No portion of "Architecture for a Green Furture" may be reproduced or transmitted in any form or by any means electronic or mechanical, including photocopying, recording, or any information storage or retrieval system, without prior permission in writing from the publishers.

Printed in China

A r c h i t e c t u r e f o r a
**G R E E N
F U R T U R E**

**PACE
LINKS**

Contents

8 Ryszard Rychlicki & Agnieszka Nowak

Rain Collector Skyscraper

14 Phu Hoang

No Man's Land project

22 Rahul Surin

Oasis Tower

32 Boeri Studio

Bosco Verticale

42 SOA Architectes

La Tour Vivante

50 Stanislaw Mlynski

Re-cell

56 Jorge Hernández de la Garza

Vertical Park

62 Mecanoo

Kaohsiung Public Library

68 NL Architects

Taiwan Tower

78 Vincent Callebaut Architectures

Hydrogenase

90 BIG + Ramboll

Zira Island Masterplan

100 NOS

Nano Vent-Skin

106 Manuelle Gautrand Architecture

Tena Tower – Tena Rivers

116 Marchi Architectes

Architectural Tree

124 Seth McDowell + Rychiee Espinosa

Water Fuel: A Hydrogen Fueling Network for Manhattan

134 Chetwood Architects

Vertical Farm at London Bridge

140 Ateliers Jean Nouvel

Frasers Broadway Residences and Serviced Apartments

150 BIG

Amagerforbraending Waste Treatment Plant

162 ONOFFICE

Turbine City

168 Heatherwick Studio

Teesside Power Station

174 LAVA - Laboratory for Visionary Architecture

Masdar city center

184 Matsys, Andrew Kudless

Sietch Nevada

188 OFF Architecture

Parco Solar South – Nests For European Snowbirds

196 Vahan Misakyan

Evolving Skyscraper

202 LAVA - Laboratory for Visionary Architecture

Tower Skin

210 UPI-2M d.o.o.

Biooceanic

- 
- 216 **Palette Architecture, LLC**
Center for High-Efficiency Farming,
Community Supported Agriculture
- 224 **Michael Yarinsky and Carla Lores**
Subnature
- 232 **Vincent Callebaut Architectures**
Bionic Arch
- 244 **S+PBA**
Wetropolis
- 252 **AB Elis Ltd.**
Eco-City 2020
- 258 **de bever architecten**
Ocean Urbanisation
- 262 **Louis Paillard**
Haut-Buc Fortress Eco-Village
- 272 **Atelier CMJN**
Skywater
- 280 **Brandon Martella**
London Farm Tower
- 288 **LIB LAB architecture**
Graft Tower
- 296 **Phu Hoang Office**
Foodopolis

Introduction



Today no architect would deny that the greatest single challenge facing the profession and the most exciting opportunity it has ever faced is to reconstruct the delicate balance between human life and the health of the ecosystems we depend on.

The issue of the sustainability of our construction practices is one of which building professionals have long been aware: the first petrol crisis in the 1970s sparked the first questions to be raised about energy usage in our buildings, and in the cases of the most daring or – as we would now say – visionary, to look beyond, to our relationship with the natural world and in particular our stewardship of its finite resources. Though important advances were made at this time with the first building energy use legislation being passed, the subject remained low on the political agenda during subsequent years. It has only been with recent political concern over global warming and the crude oil peak that “sustainability” has stopped being a niche interest amongst building professionals and has come to represent a primary criterion for practically every architectural project in Europe, America and increasingly, Asia.

While legislation and accreditation systems now ensure a minimal level of good practice across the bulk of the profession, there is a vanguard of architects that are imagining solutions that go far beyond these ambitions to challenge fundamental assumptions about our settlements and living spaces. Inspired by the very real challenges that are facing our civilization, this new generation of architects are envisioning a future in which architecture exists in a symbiotic relationship with nature; a future of living buildings with growing, plant-based structures; new forms of urbanity in which the integration of the food cycle, the water cycle and highly efficient residential units generate self-sufficient ecosystems.

This volume presents some of the most imaginative, creative and exuberant solutions for a greener future from architects from all over the world, from both established and up-and-coming practices. Bursting with inspirational ideas, this is an unmissable volume for practicing architects, designers, students and the visionaries of tomorrow.

Ryszard Rychlicki & Agnieszka Nowak

Rain Collector Skyscraper

Design: Ryszard Rychlicki and Agnieszka Nowak

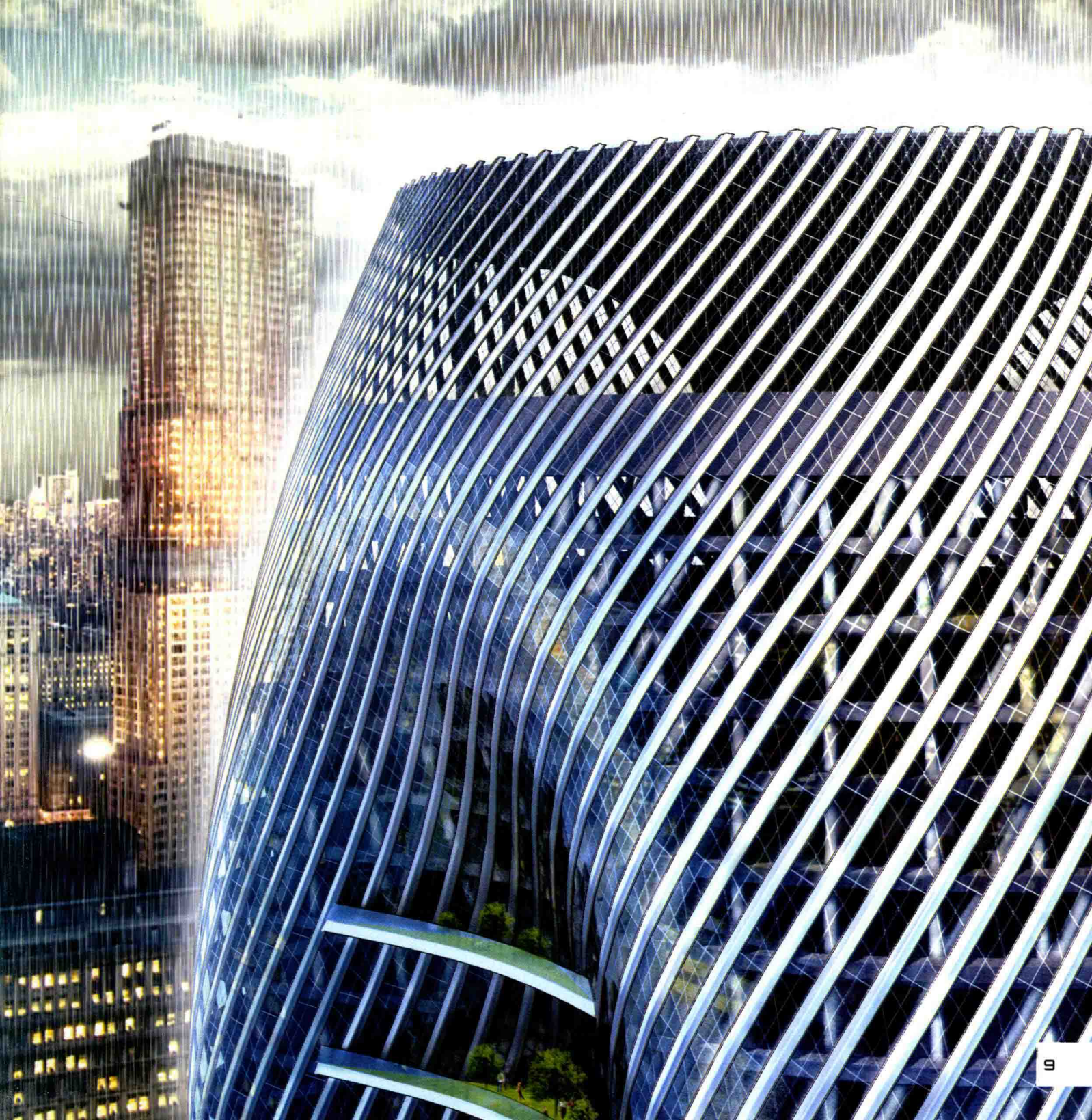
4th year students of architecture at the Academy of Fine Arts in Poznan Poland

Awards: Special Mention, 2010 Skyscraper Competition eVolo

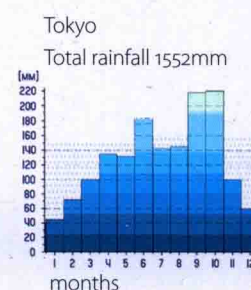
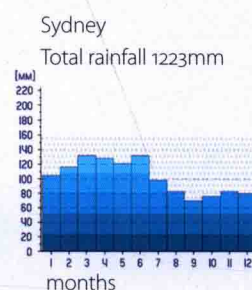
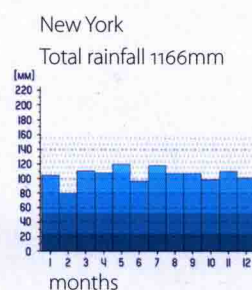
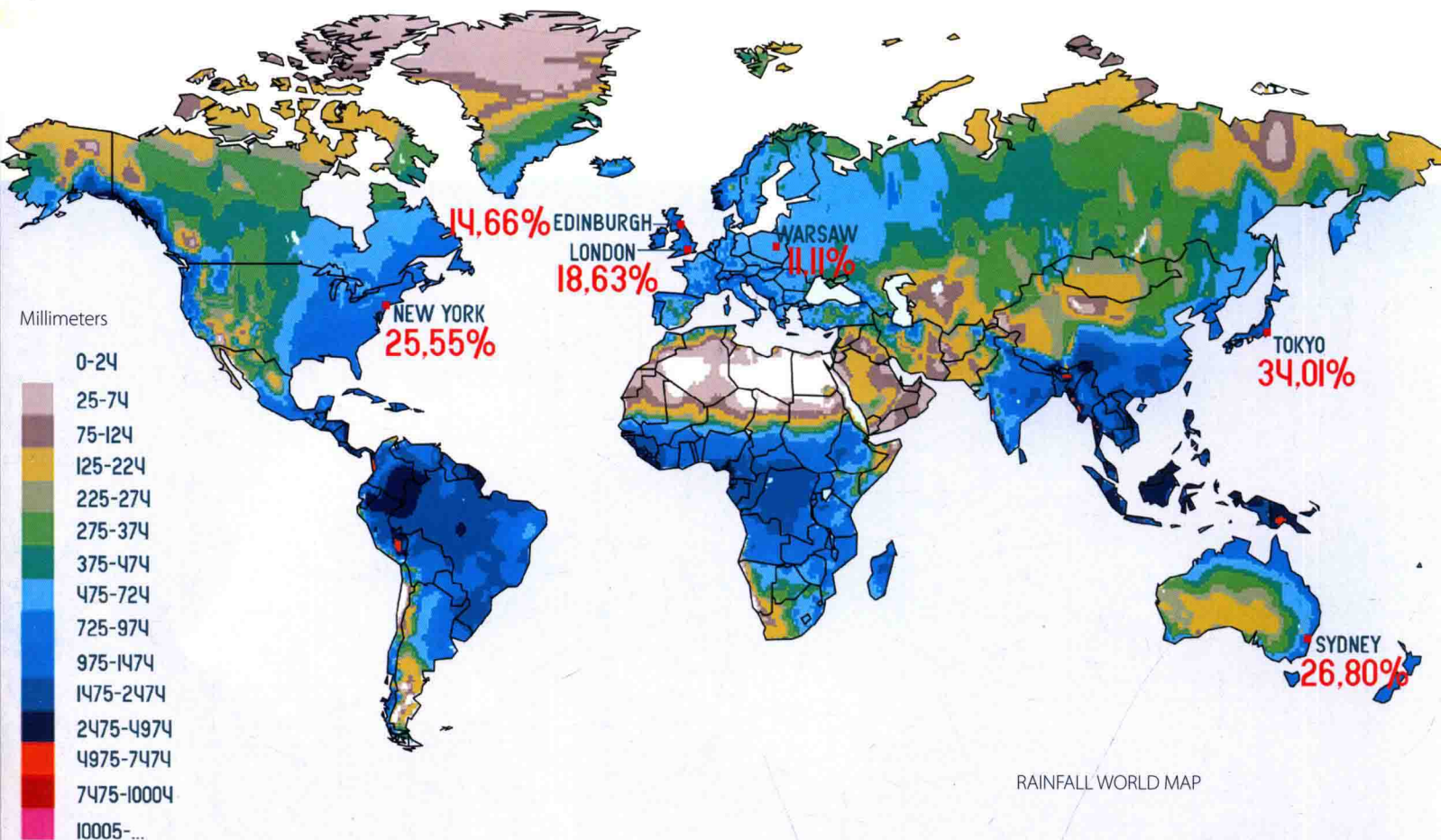
Images: contributed by Ryszard Rychlicki and Agnieszka Nowak

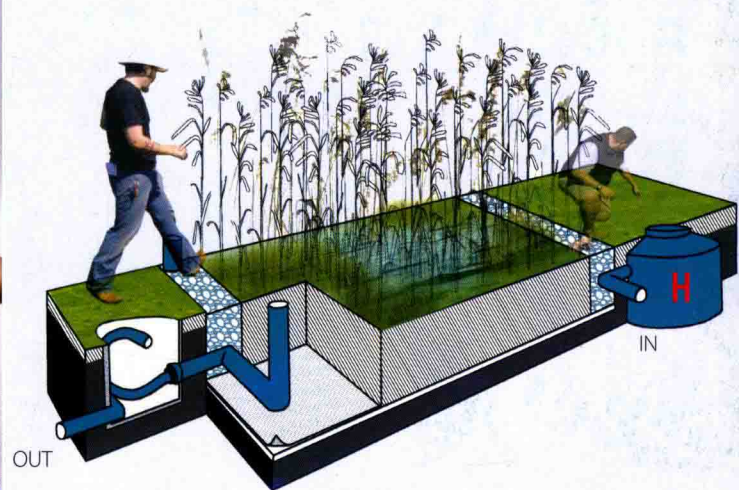
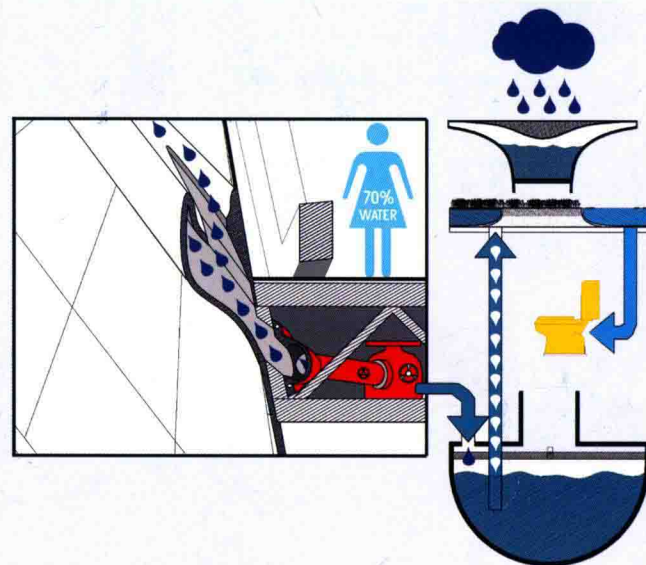
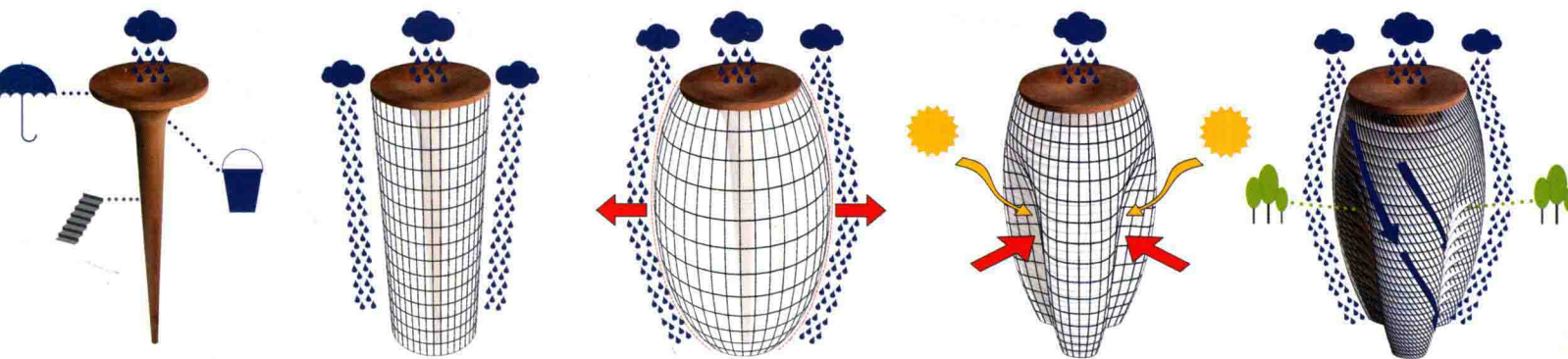
The Rain Collector Skyscraper is a building whose roof and external shell are designed to capture as much rainwater as possible to meet the daily needs of its inhabitants. Average daily water consumption per person is currently 150 liters, of which 85 liters could be replaced by rainwater. Within the last thirty years water consumption has significantly increased. There are many factors that have contributed to this increase, such as the growth of washing machines and dishwashers, garden sprinkler devices and flushing toilets. A third of the water used in households in western countries is flushed down toilets. Since 1900 the total water consumption in the US has increased by 1000%. At present, an average American uses five times more water than a citizen in a developing country. In Denmark, however, collecting rainwater for washing and watering plants is practically a national hobby. Within the last ten years the average consumption of drinking water in Denmark has dropped by 40% and inhabitants of the so-called 'eco-villages' consume a third of the national average. In view of these figures, the architects decided to design a tower whose structure would allow for capturing and processing as much rainwater as possible to provide water for its inhabitants. Inspired by the systems of capturing and processing rainwater which plants have developed over millennia to cope with water shortages and surpluses, the architects set out to copy these simple mechanisms. The starting point for the design was the shape of the roof, whose surface was modeled to capture as much rainfall as possible. Under the roof's surface, there are water reservoirs in the form of a large funnel and reed fields which serve as a botanic water treatment unit. The unit processes the water to make it usable before it is transmitted to the apartments.





A network of collectors on the exterior of the building is designed to capture rainfall flowing down the building. This rainfall is transmitted to each floor and any surplus is stored in a reservoir under the building. Water captured and processed by the building may be used for flushing toilets, washing clothes, watering plants, cleaning floors and other domestic applications.





Hydro-botanic water treatment unit

Having analyzed rainfall in several large cities in developed countries, the architects obtained a formula that shows what percentage of daily drinking water consumption could be replaced with rainwater using the technology applied in this building.

