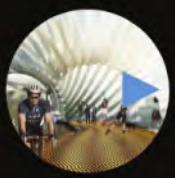
issue 6

Ground Up magazine

EGSHPA
European Ground Source Heat Pump Association

Thermal conductivity - can we do better

Solar Power - Are you eligible for a loan



Green Design: How Green is your office

Training Centre Special

Ground Up magazine / ISSUE 6 / **5.99€**
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How

Following the success from our previous issue with our expert columnist, we are continuing with further articles from Ed Lohrez, this month covering headers and how to make your GSHP installation easier and more efficient. We always welcome reader's comments and questions, so feel free to ask away and we will get back to you.

We are also featuring green build projects in this issue and looking at energy efficient buildings and investigating how to retro fit a GSHP.

Of course, we're always looking for more feedback, so please contact me direct on adrian@egshpa.com with any thoughts and suggestions. I look forward to hearing from you.

Your Editor

Adrian Bridgwater

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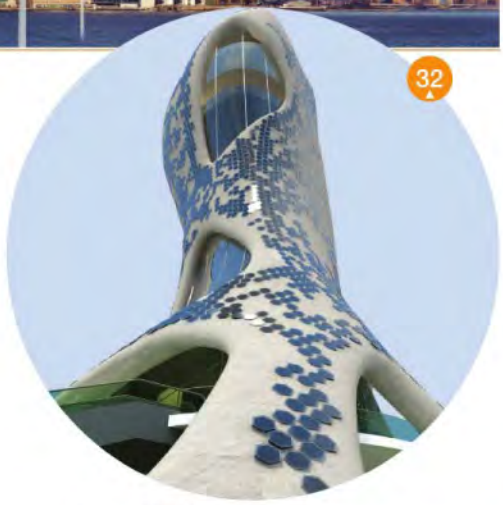
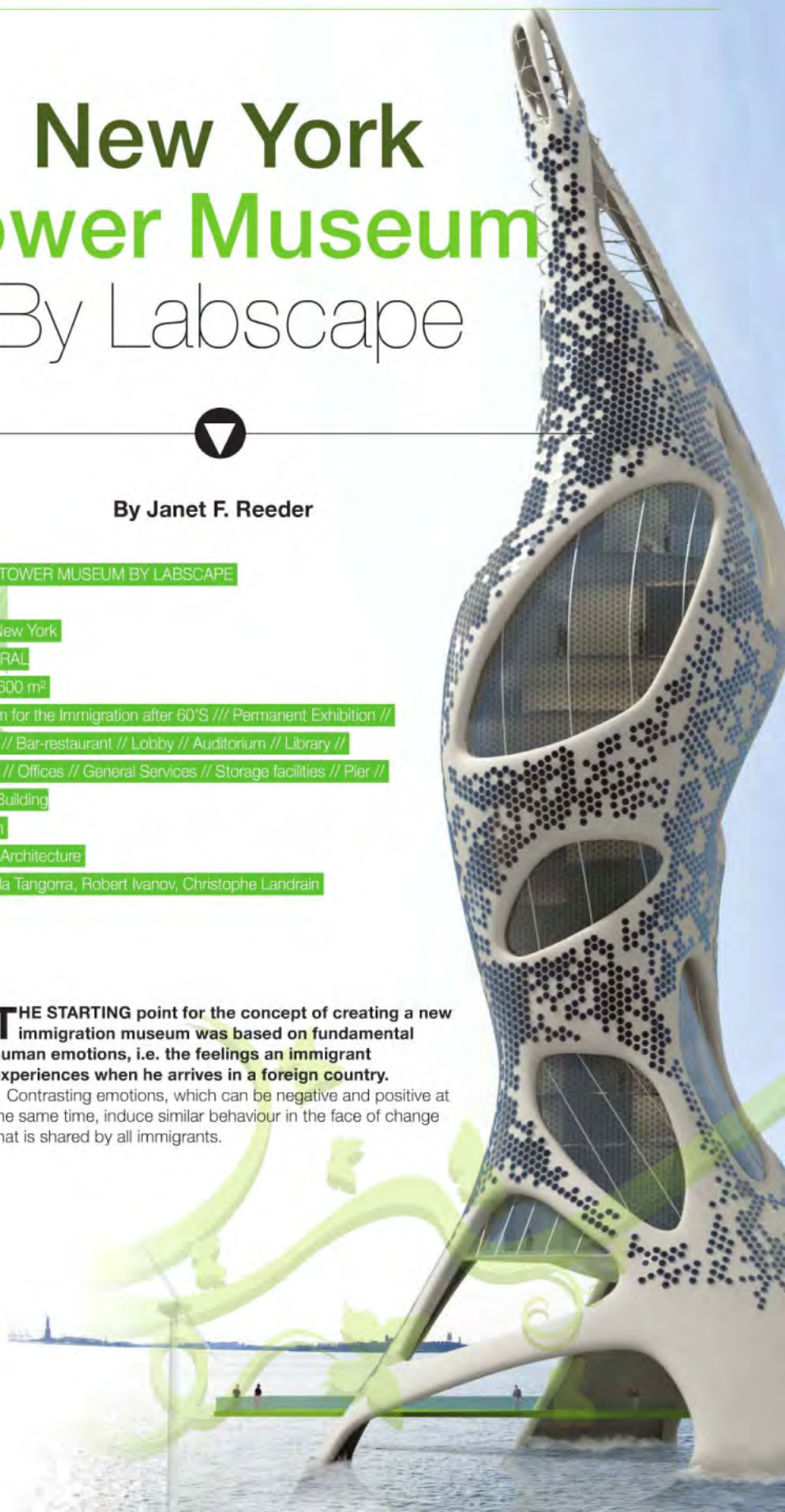


New York Tower Museum By Labscape

By Janet F. Reeder

NAME: NEW YORK TOWER MUSEUM BY LABSCAPE
YEAR: 2007
LOCATION: USA - New York
CATEGORY: CULTURAL
SURFACE AREA: 4600 m²
PROGRAM: Museum for the Immigration after 60'S /// Permanent Exhibition // Temporary Exhibition // Bar-restaurant // Lobby // Auditorium // Library // Store // Bio-terraces // Offices // General Services // Storage facilities // Pier // Ecological High-rise Building
CLIENT: Arquitectum
STUDIO: LABscape Architecture
DESIGN TEAM: Tecla Tangorra, Robert Ivanov, Christophe Landrain



THE STARTING point for the concept of creating a new immigration museum was based on fundamental human emotions, i.e. the feelings an immigrant experiences when he arrives in a foreign country.

Contrasting emotions, which can be negative and positive at the same time, induce similar behaviour in the face of change that is shared by all immigrants.

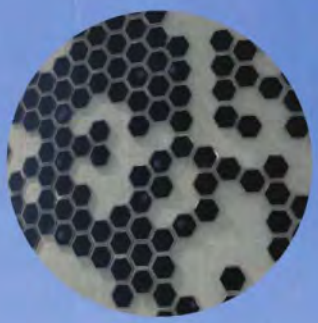
The feeling of being completely lost, the change in surroundings, adaptation, isolation, integration, growing linguistic and cultural understanding, the euphoria of starting life anew and the discovery of the "New World" were the basis for the architectural development of the museum.

Based on these notions, the first aim was to banish the monotony that is very typical of towers. We therefore created for the visitor a feeling of disorientation, a change of scenery, and also a lack of guidance in finding their way from one storey (or programme) to another.

The desire to provoke an emotion, a change of state, the stimulation of interest, the slow and often complicated understanding of the space and surrounding environment were the first steps in the creation of this symbolic place in New York.

Another important element is the migratory flow, the mix of different populations and cultures leading to the one great body of people.

A variety of apertures and walls allow the visitor to have an unexpected and amazing 360° view of the urban and aquatic surroundings, to alternate between the open (terraces), half-open and enclosed spaces that form the structure and shape of the building.



AN ECOLOGICAL TOWER - AN ENERGY SELF-SUFFICIENT BUILDING

The shape of the tower is not only generated by the symbolic thoughts of every immigrant, but is also linked to a sustainable ecological system, energy efficiency and a contrasting relationship with the urban environment.

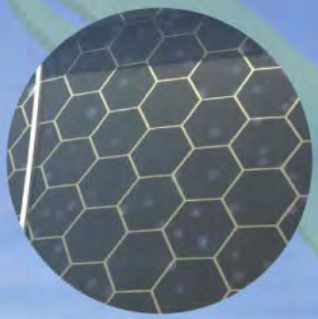
The building sits completely in the water, where the pier is the only access to the building. This symbolise the detachment of the foreigner with his country. And mark the detachment with the city grid.

The building has an aerodynamic & asymmetric body, supported by 4 huge structures rising from the water; creating an open-air public space and an axis between Battery Park and the Statue of Liberty.

After considering the sunshine, wind and climate patterns, we created a structure with apertures facing south, in order to maximize ventilation and the amount of sunlight entering the building.

MATERIALS & RECYCLED MATERIALS

The towers manufactured out of concrete ultra-high performance Ductal®, durability, and strong resistance to the external aggressions like abrasion, the bad weather and pollution. The White concrete helps to mitigate the urban heat island effect. The shell components are pre-assembled in factory and bring on site for final assembling. This will reduce significantly the waste due to the construction on the site.



WIND TURBINES
57 small wind turbines positioned at the top of the building.

GREEN TERRACES & MODERATE GREENHOUSE
The vegetation ensures a solar protection of the exposed frontages and refreshes the terrace & greenhouse. In the meantime, it provides terraces for the restaurant and the bar.

THE PHOTOVOLTAIC CELLS
More than 2000 m² Photovoltaic cells (Thin Film Solar Cell mono-crystalline) are integrated into the fabric of the façade generating a significant amount of free energy. These cells are positioned on the façade of the building and act as a double skin. This allows creating an interesting pattern covering the building.

THE TRANSPARENT PHOTOVOLTAIC CELLS
Windows are covered by semi-transparent photovoltaic cells, acting as protective screens and generating energy. The multifunctional characteristics of the "POWER Cell" satisfy the requirements of transparency, production of energy and shadows inside the building. The optical effect creates a connection between the outside and the inside while the generated shadow reduces the energetic requirements for the conditioning of the premises.

WATER TURBINES 18 water turbines are placed on the base of the building (under-water), generating rotating motor that takes energy from moving water.

WATER PURIFICATION
The complete skin of the building is acting as an enormous water filter. It takes the water from the river and purifies it, using the technology of Nano Ceramic utilizing the principle of electro-adhesion and Nano technology; Nano Ceramic is capable of removing a wide range of water borne contaminants including bacteria, cysts, viruses and colloidal particles. This allows using the water of the river for all wet purposes of the building including drinking water.

All these components and technologies make a full and complete self-sufficient building not attached to the city grid.

Ground Up magazine

Ground Up magazine delivers the latest news and information on the Renewable Energy Industry. Each issue brings you unrivalled in-depth features along with exclusive interviews of the biggest players in the game.