

SIMONE GIOSTRA & PARTNERS | GREENPIX - ZERO ENERGY MEDIA WALL, BEIJING

Simone Giostra & Partners | Architects

The project was designed and implemented by Simone Giostra & Partners, a New York-based office with a solid reputation for its innovative curtain walls in Europe and the US, with lighting design and façade engineering by Arup in London and Beijing.

Simone Giostra graduated from the Polytechnic School of Architecture in Milan, where he earned a Master's Degree in Architecture in 1994. He acted as Project Architect for the construction of several prestigious buildings in the US and Europe for Alvaro Siza, Raphael Vinoly, Raimund Abraham, Steven Holl and Richard Meier.

The knowledge acquired in more than 12 years of professional practice led Simone Giostra to create a company dedicated to the investigation and performance of architecture and new media. The office combines a series of existing and new professional collaborations and cross-disciplinary partnership to address the full potential of the contemporary condition.

Currently, the firm is responsible for the design and implementation of some of the most innovative projects under development in China, including the Jinbao Entertainment Center in Beijing and the Jingya Grand Hotel in Wheihai.

Simone Giostra is also involved in the academic community, combining professional practice with a commitment to investigation and research. Currently, he is Visiting Professor at PRATT Institute in New York, where he teaches Design Studio at the Thesis level.

He has lectured extensively in Europe and the US, most recently at the Polytechnic School of Architecture in Milan and at the "SOM Lecture Series" in New York.

Arup

Arup is a global firm of designers, engineers, planners and business consultants providing a diverse range of professional services to their clients around the world.

Sustainability underpins their work and the firm is the creative force behind many of the world's most innovative and sustainable buildings, transport and civil engineering projects. Their innovative and fully integrated approach brings their full complement of skills and knowledge to bear on any given design problem.

Arup has three main global business areas – buildings, infrastructure and consulting – although their multi-disciplinary approach means that any given project may involve people from any or all of the sectors or regions in which they operate. Their fundamental aim is to bring together the best professionals in the world to meet our clients' needs.

Established in 1946, Arup has over 9,000 employees working in more than 90 offices in over 35 countries, working on up to 10,000 projects at any one time. Arup has operated in China for more than 30 years and almost a quarter of its staff are based in Hong Kong and the mainland.

Arup has worked on more than 500 projects in China including sports venues, skyscrapers, airports, bridges highways and railways. In addition to Beijing Capital International Airport Terminal 3, currently in Beijing Arup is engaged as engineers for the National Stadium, the National Aquatics Centre, the CCTV Headquarters, the China World Trade Centre Phase Three (Beijing's tallest building), South Station (rail) and the National Convention Centre, which will serve as the main broadcast centre and press facility for the Olympic Games.

P06 | GreenPix - Zero Energy Media Wall

Location

Xicui Road, Beijing, China

Project

2005

Completion

2008

Client

Mr. Zhang Yongduo, Jingya Corporation

Architect

Simone Giostra & Partners Architects

Façade Engineers

Arup

Lighting Designer

Arup

Solar technology R&D

Schüco International KG
Sunways AG

Solar panel manufacturer

Suntech China

LED Manufacturer

Thorn China

Web Site

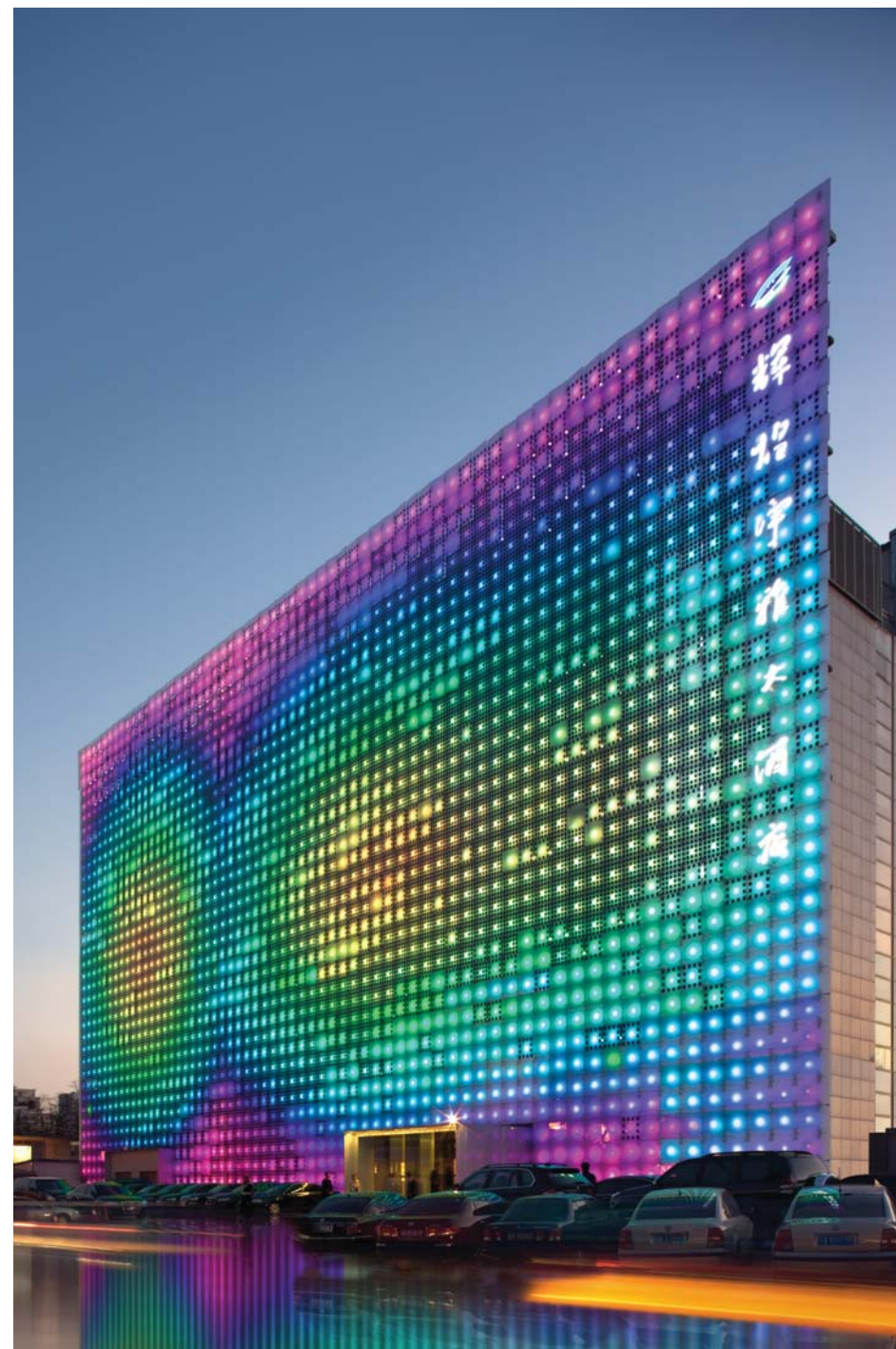
www.greenpix.org

GreenPix - Zero Energy Media Wall - is a groundbreaking project applying sustainable and digital media technology to the curtain wall of Xicui entertainment complex in Beijing, near the site of the 2008 Olympics.

Featuring the largest color LED display worldwide and the first photovoltaic system integrated into a glass curtain wall in China, the building performs as a self-sufficient organic system, harvesting solar energy by day and using it to illuminate the screen after dark, mirroring a day's climatic cycle.

The Media Wall will provide the city of Beijing with its first venue dedicated to digital media art, while offering the most radical example of sustainable technology applied to an entire building's envelope to date.

The building will open to the public in June 2008, with a specially commissioned program of video installations and live performances by artists including: Xu Wenkai, Michael Bell Smith, Takeshi Murata, Shih Chieh Huang, Feng Mengbo and Varvara Shavrova.



The Media Wall Projecting Media Art Content



| Glass Solar Panels

P06 | GreenPix - Zero Energy Media Wall



| The Media Wall During Construction

P06 | GreenPix - Zero Energy Media Wall



The Media Wall at Sunset



The Media Wall at Night

With the support of leading German manufacturers Schueco and SunWays, the architect Simone Giostra with Arup developed a new technology for laminating photovoltaic cells in a glass curtain wall and oversaw the production of the first glass solar panels by Chinese manufacturer SunTech. The polycrystalline photovoltaic

cells are laminated within the glass of the curtain wall and placed with changing density on the entire building's skin. The density pattern increases building's performance, allowing natural light when required by interior program, while reducing heat gain and transforming excessive solar radiation into energy for the media wall.

P06 | GreenPix - Zero Energy Media Wall



The Media Wall Generating Energy During the Day

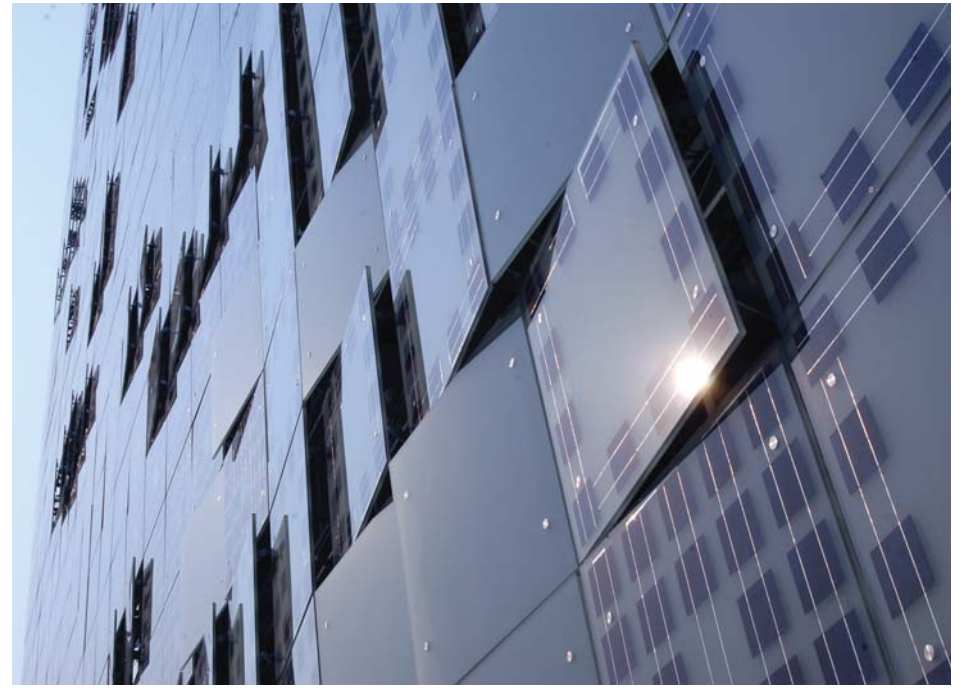
Xicui's opaque box-like commercial building gains the ability of communicating with its urban environs through a new kind of digital transparency. Its "intelligent skin" interacts with the building interiors and the outer public spaces using embedded, custom-designed software, transforming the building façade into a responsive environment for entertainment and public engagement.

P06 | GreenPix - Zero Energy Media Wall



The Media Wall Main Entrance

P06 | GreenPix - Zero Energy Media Wall

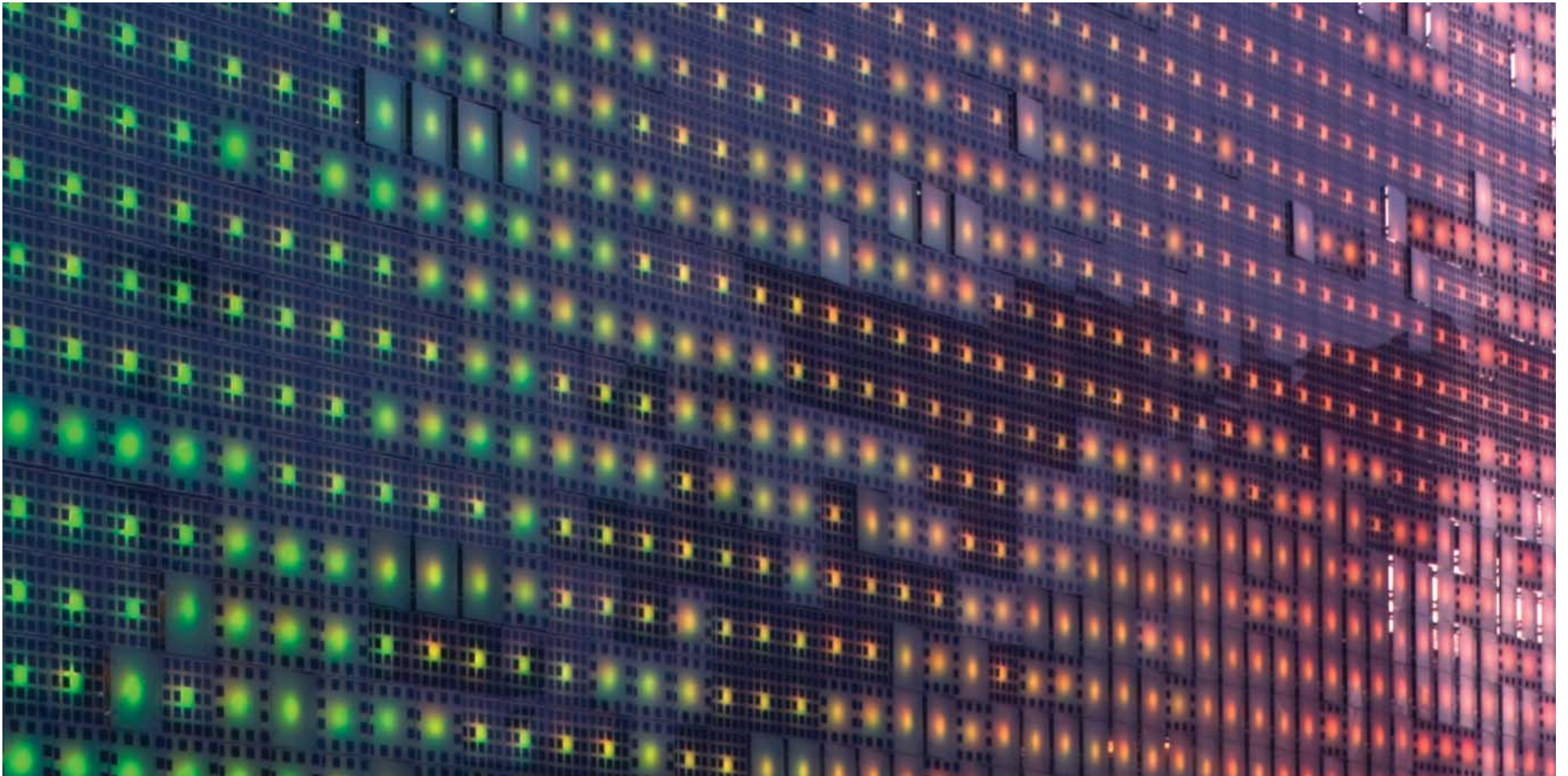


Media Wall Reflecting Different Lighth Conditions

The full integration of media/information technology with architecture in an urban context represents a new kind of communication surface devoted to unprecedented forms of art, while projecting information about the behavior and activity of the building to a wide range of distances and engaging a vast audience within the city of Beijing.

The innovative use of technology and experimental approach to communication and social interaction defines new standards in the context of urban interventions worldwide, raising global interest in the integration of digital technology with architecture and reinforcing the reputation of Beijing as a centre for innovation and urban renewal.

P06 | GreenPix - Zero Energy Media Wall



Close-up of the Media Wall at Dusk



Workers on Site

P06 | GreenPix - Zero Energy Media Wall



Installation of the Media Wall

GreenPix is a large-scale display comprising of 2,292 color (RGB) LED's light points comparable to a 24,000 sq. ft. (2.200 m2) monitor screen for dynamic content display. The very large scale and the characteristic low resolution of the screen enhances the abstract visual qualities of the medium, providing an art-specific communication form in contrast to commercial applications of high resolution screens in conventional media façades.

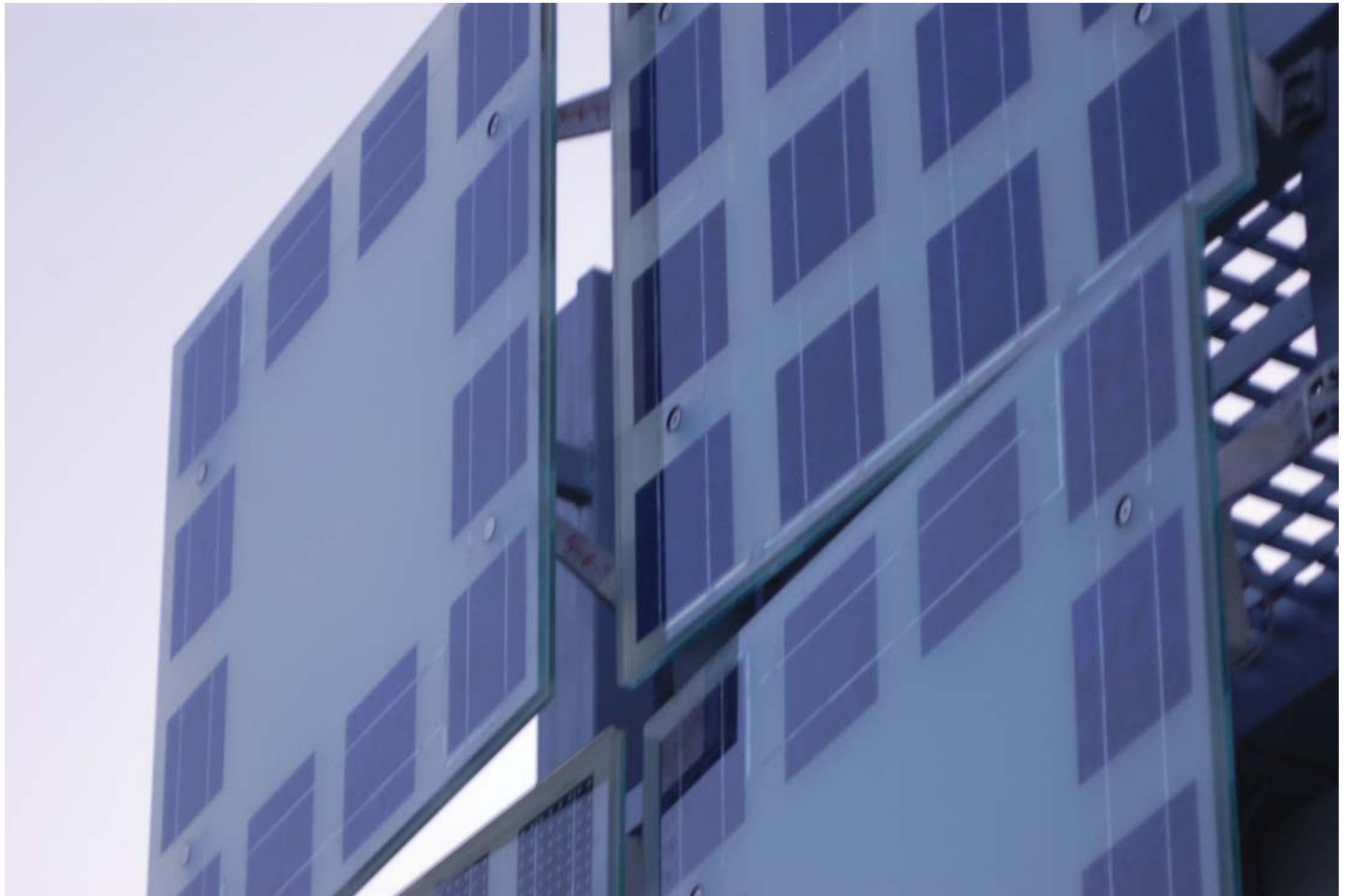
P06 | GreenPix - Zero Energy Media Wall



| Lighting Test Using the Prototype



P06 | GreenPix - Zero Energy Media Wall



| The Prototype Was Used for Extensive Testing of the System

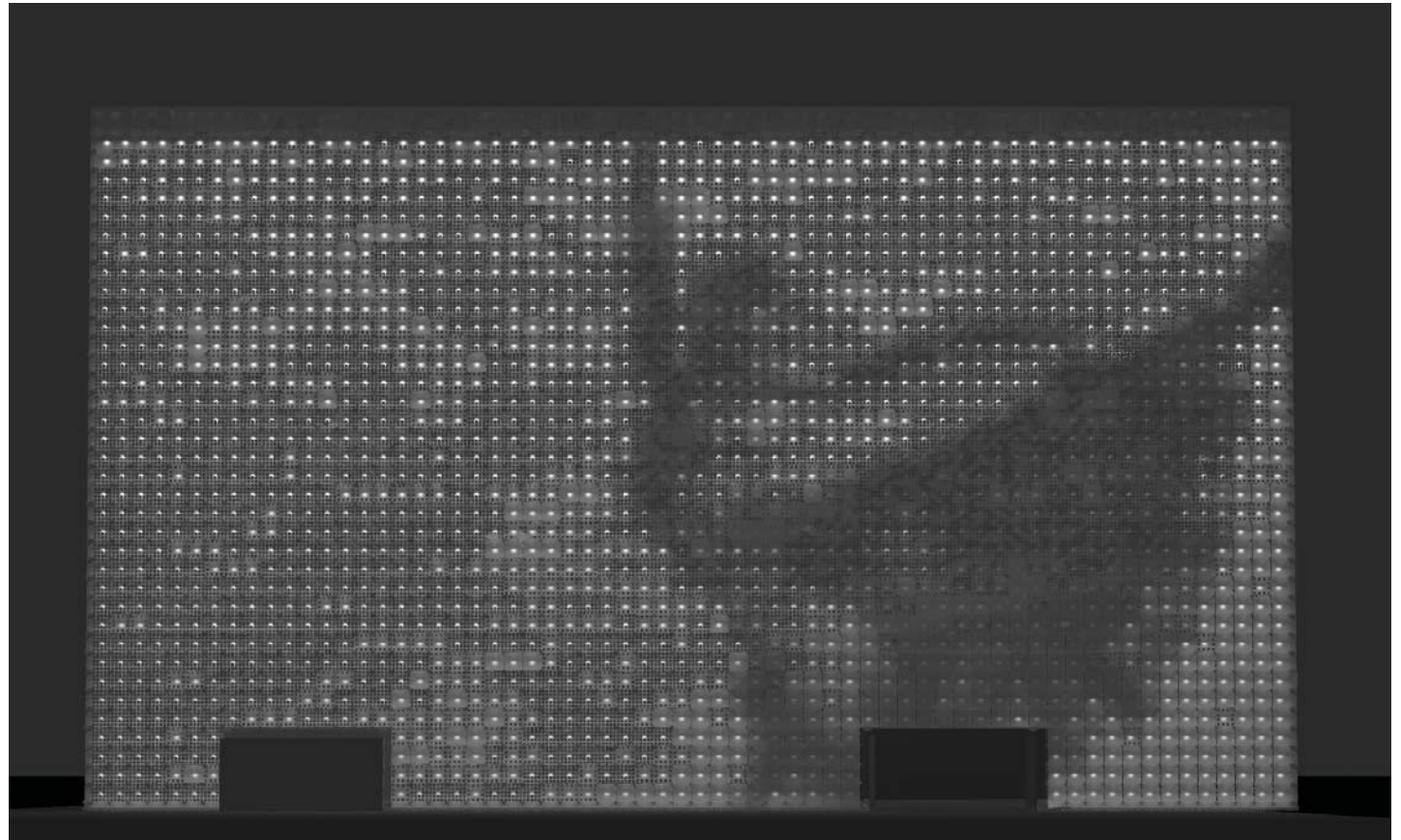


Model View



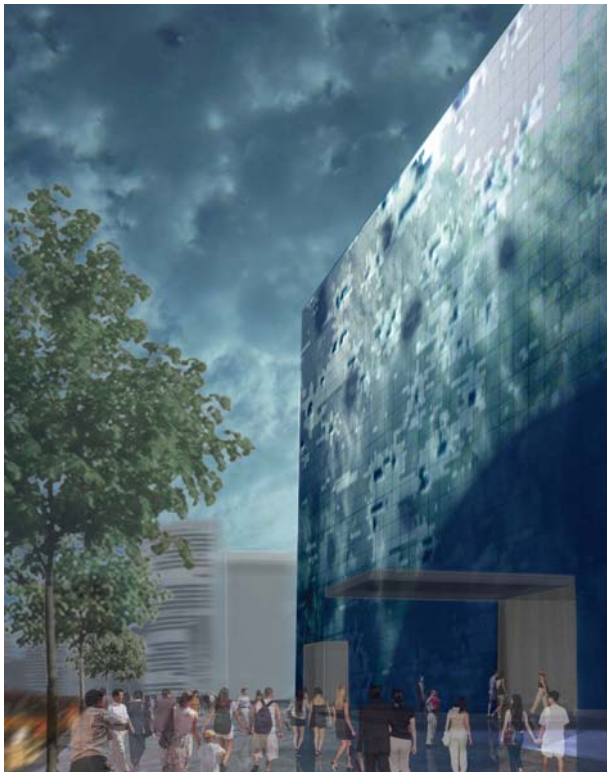
Model View - Detail

P06 | GreenPix - Zero Energy Media Wall



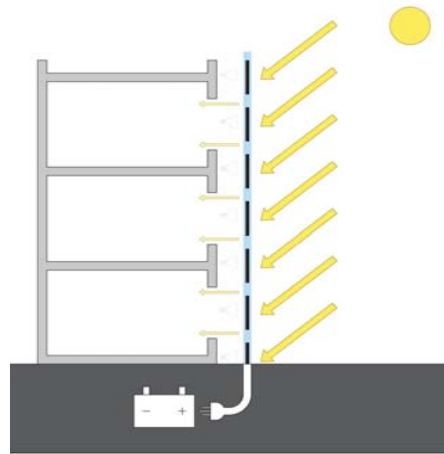
The Media Façade: Still Frame from the Concept Animation

P06 | GreenPix - Zero Energy Media Wall

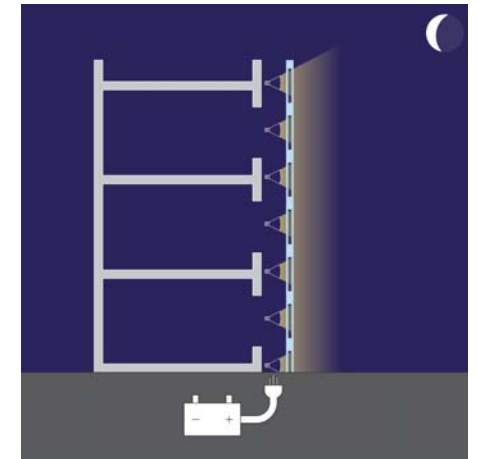


The Building Transforming Through the Day

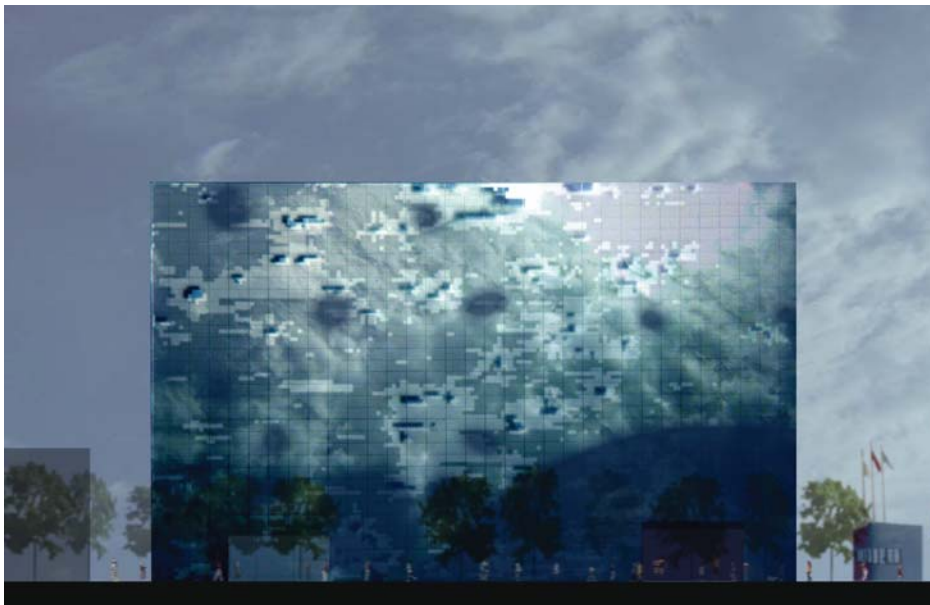
P06 | GreenPix - Zero Energy Media Wall



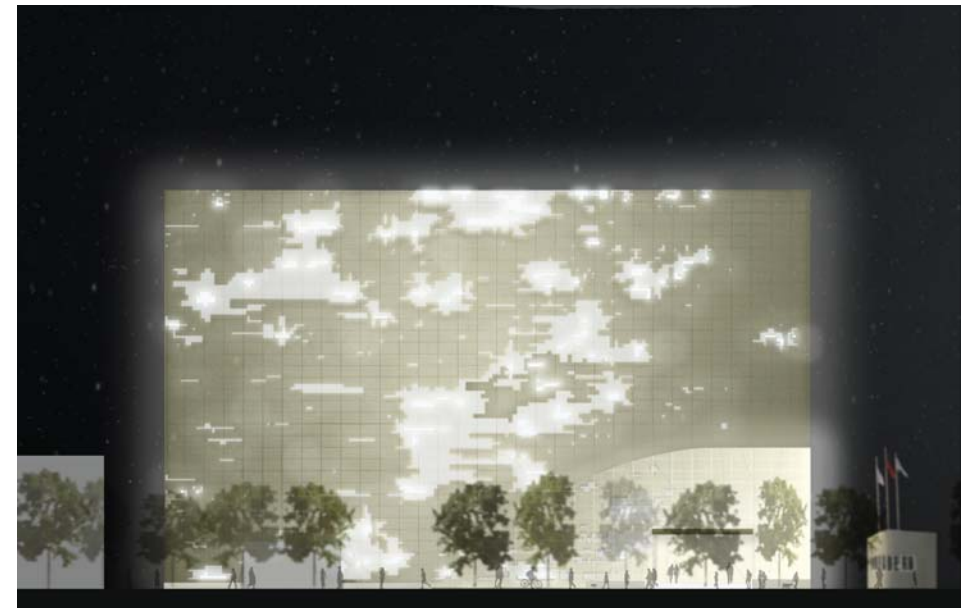
Day Cycle: Energy Production.
The photovoltaic solar cells store the solar energy that is not required to the activities in the building during the day, while acting as an affective shading device and protecting the building from excessive heat gain.



Night Cycle: Energy Consumption.
The media envelope releases the energy accumulated during the day, in form of bursting light, transforming the facade in a glowing beacon, and the building in an overwhelming visual experience within the nightscape of Beijing.

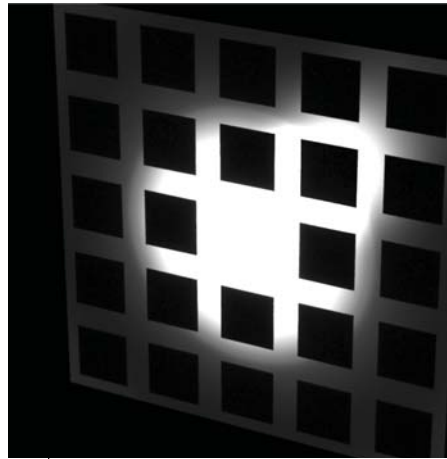


The New Façade: Midday

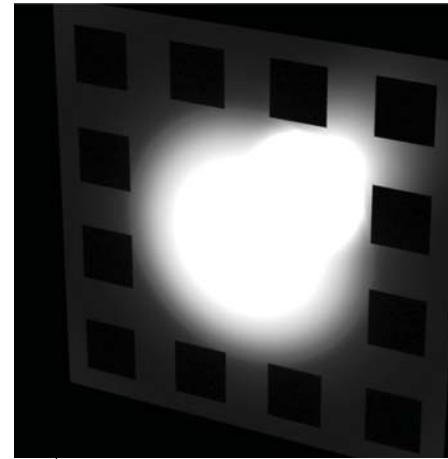


The New Façade: Midnight

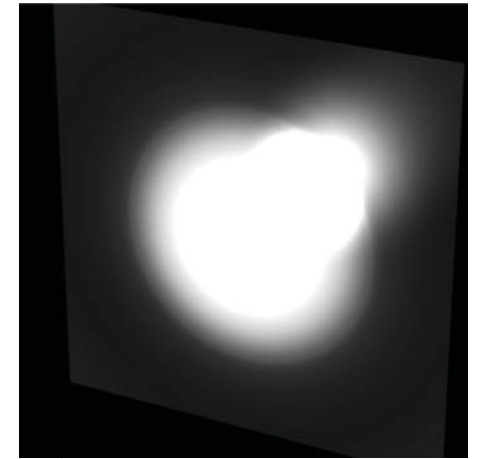
P06 | GreenPix - Zero Energy Media Wall



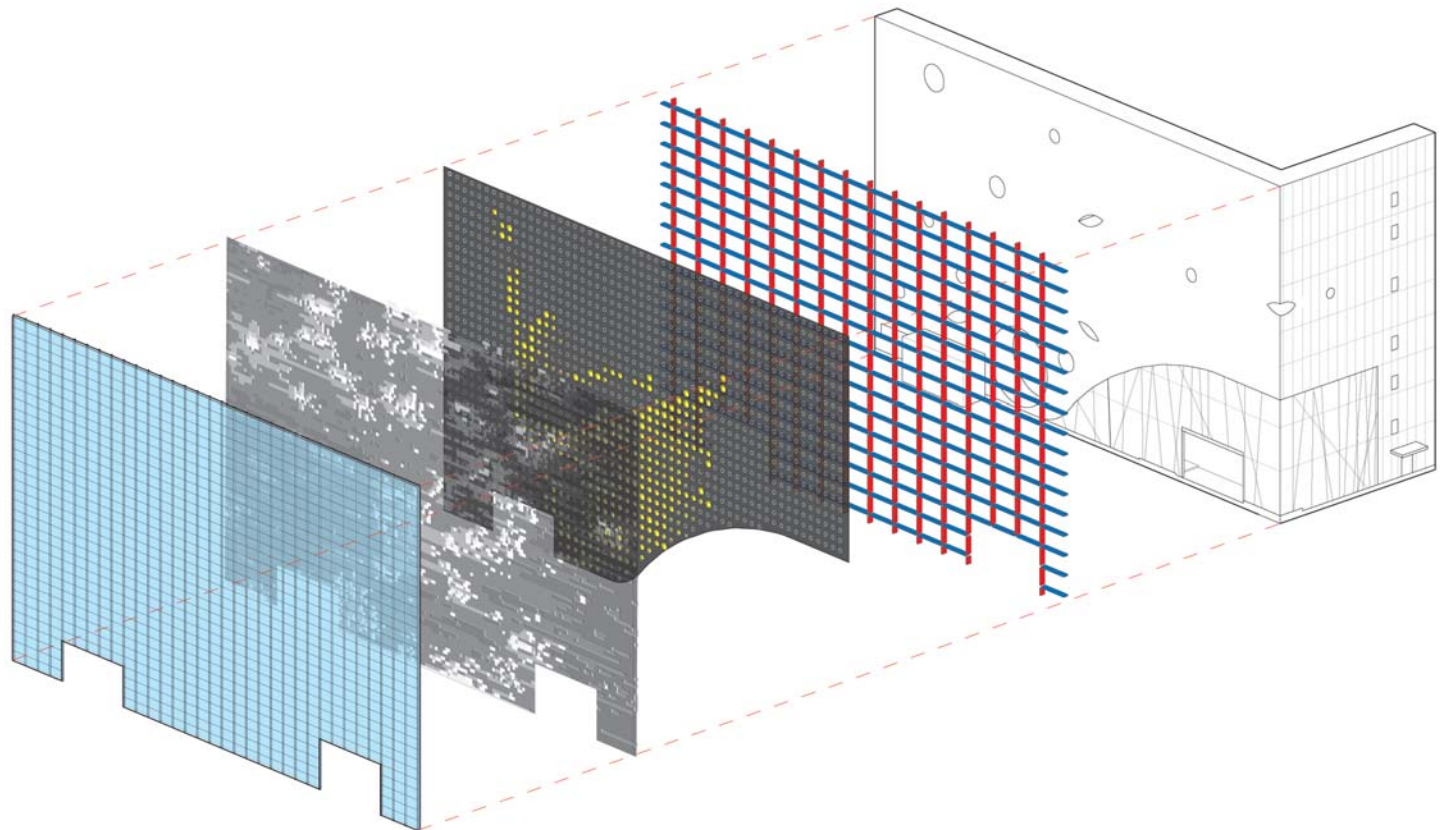
| Low Transparency Lighting Simulation by Arup



| Medium Transparency Lighting Simulation by Arup

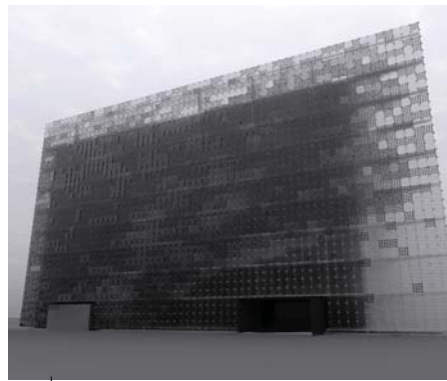


| High Transparency Lighting Simulation by Arup

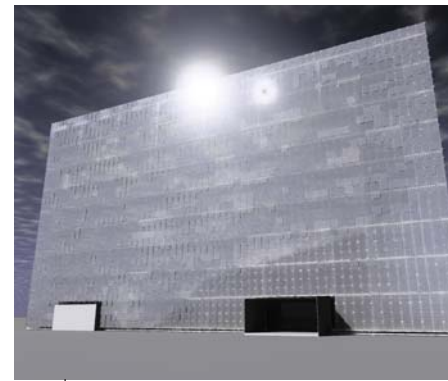


| Layering of the Façade

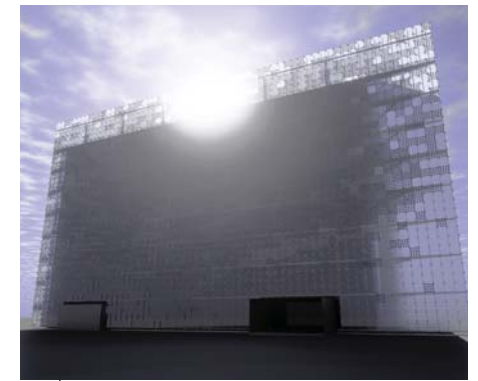
P06 | GreenPix - Zero Energy Media Wall



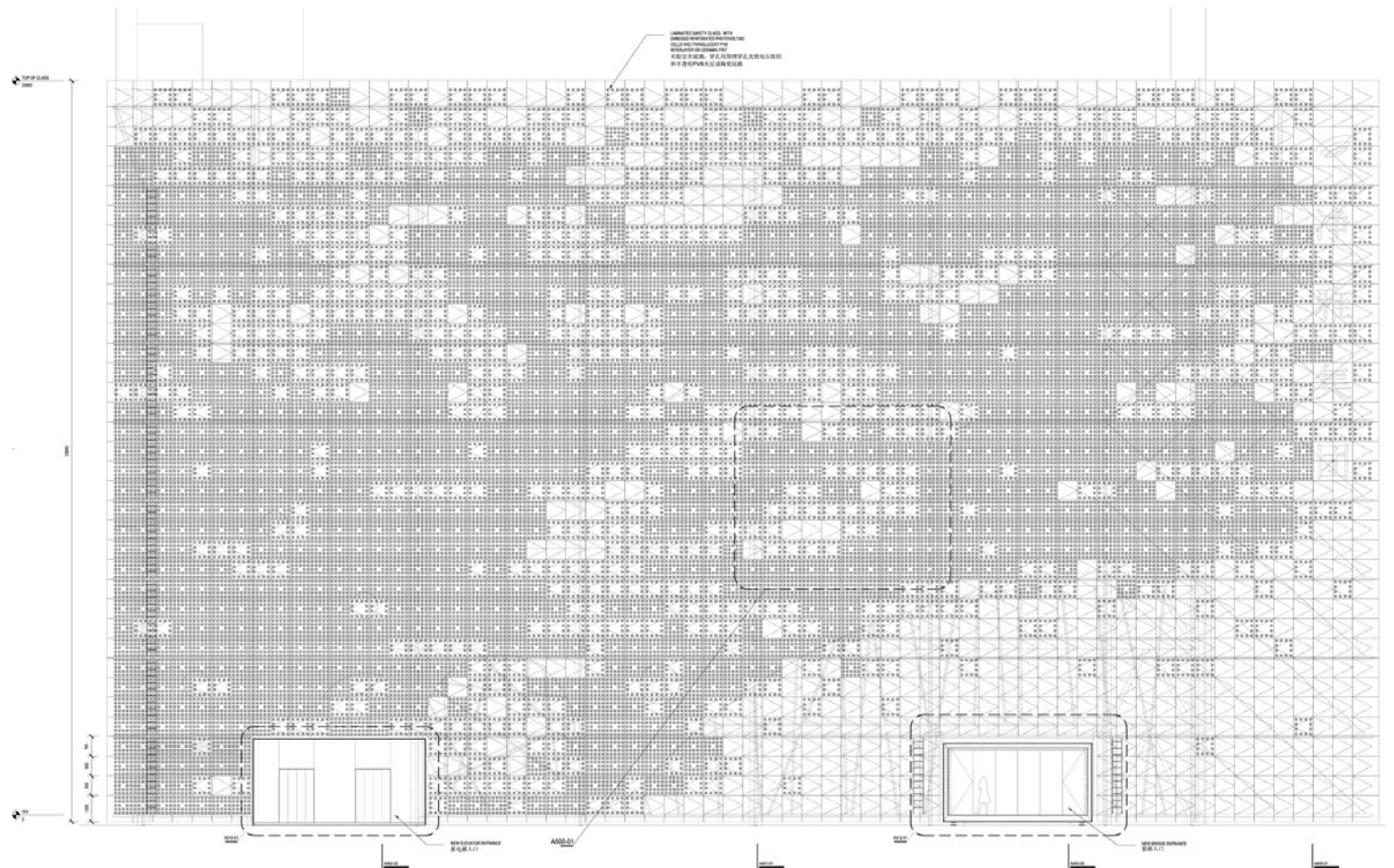
Overcast Afternoon Rendering by Arup



Clear Morning Rendering by Arup

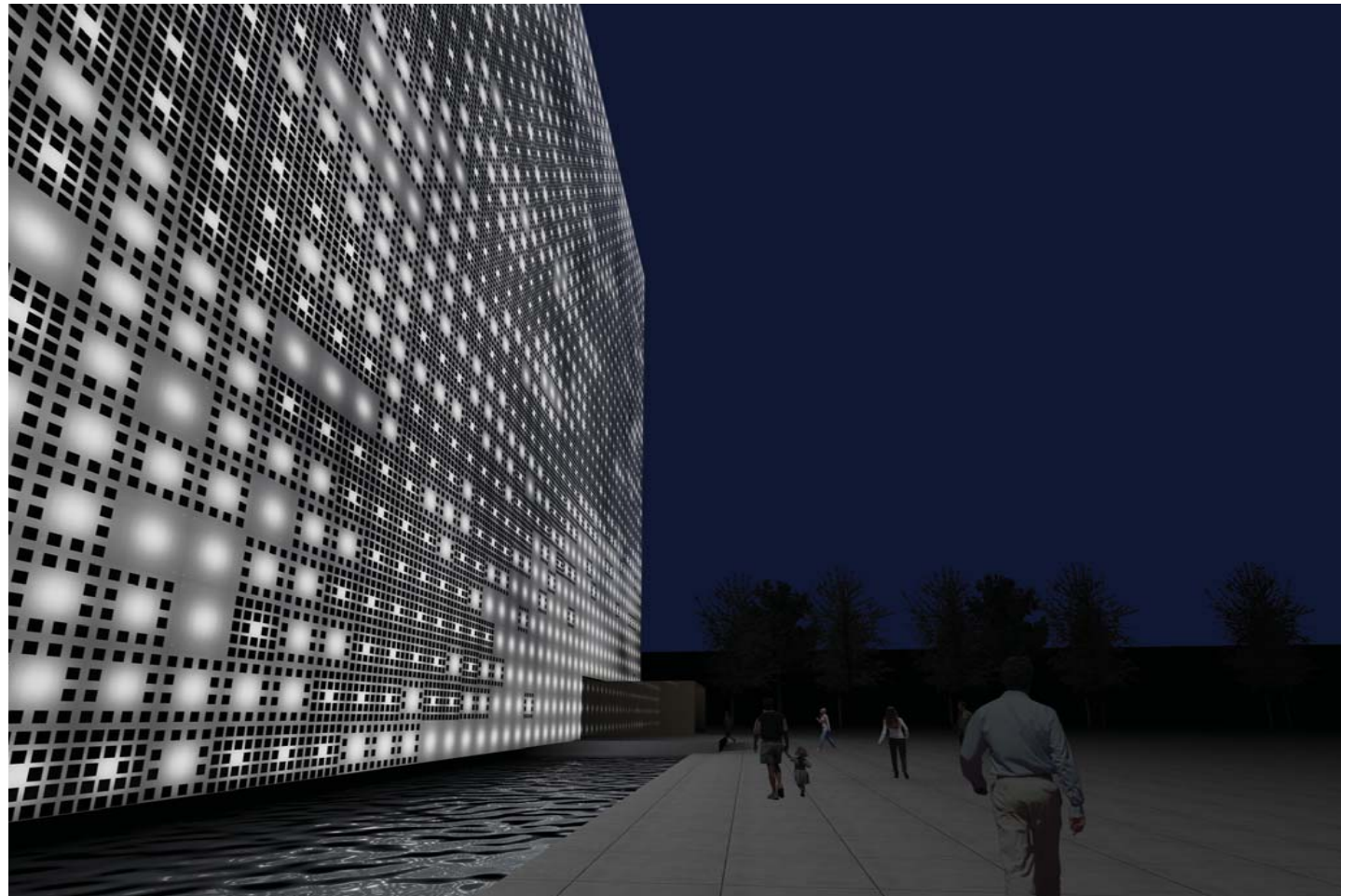


Clear Afternoon Rendering by Arup



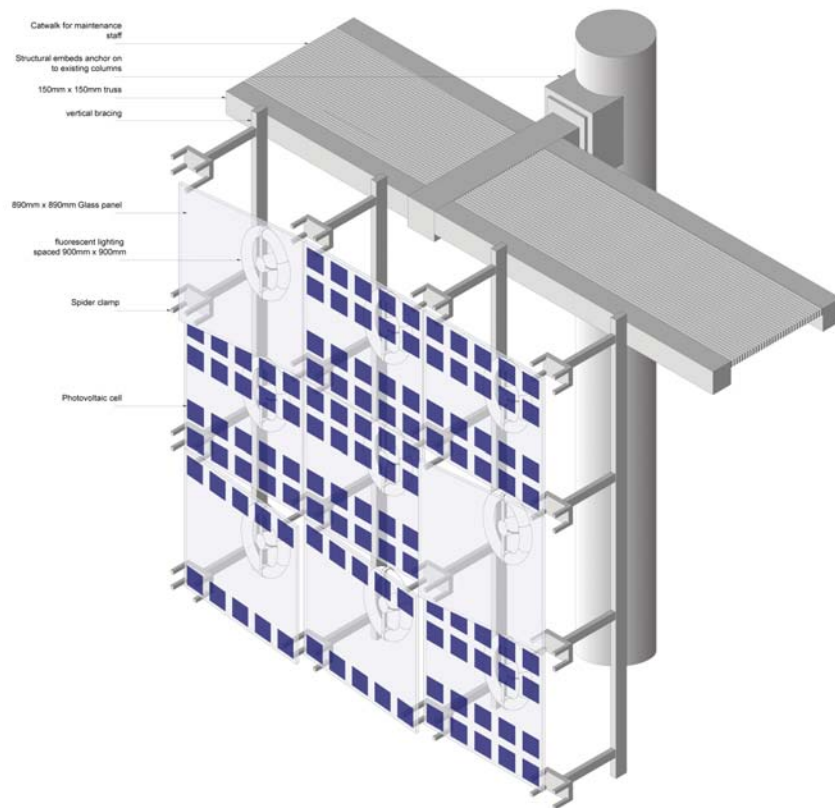
Elevation from the Construction Documents Set

P06 | GreenPix - Zero Energy Media Wall

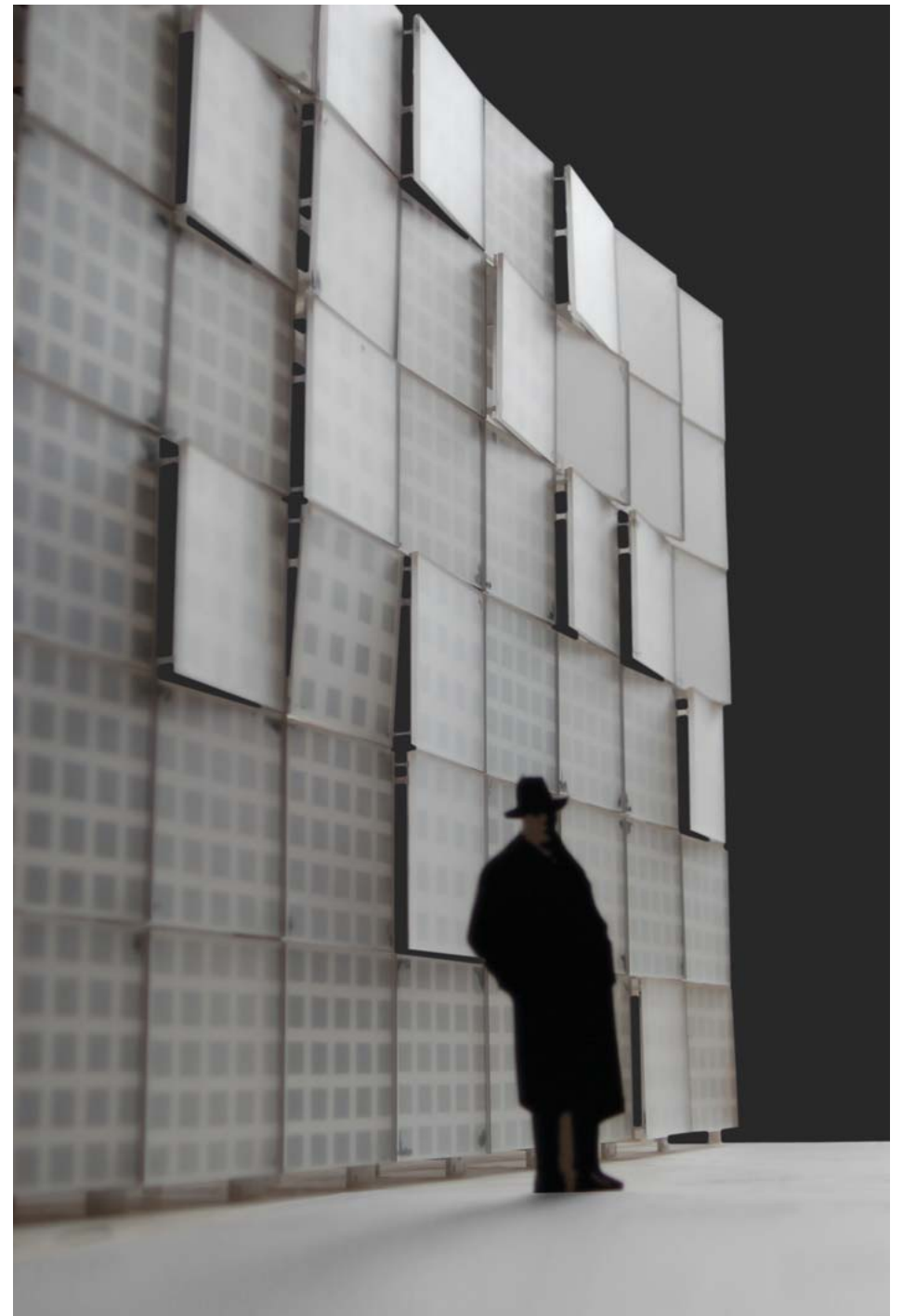


| Perspective Rendering

P06 | GreenPix - Zero Energy Media Wall

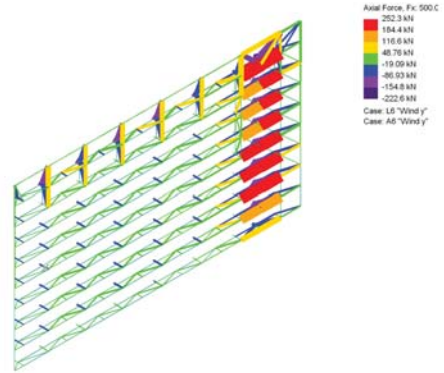


Axonometric Detail

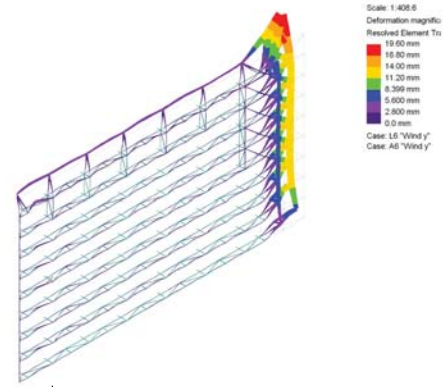


View of the Model

P06 | GreenPix - Zero Energy Media Wall



Axial Forces Simulation by Arup

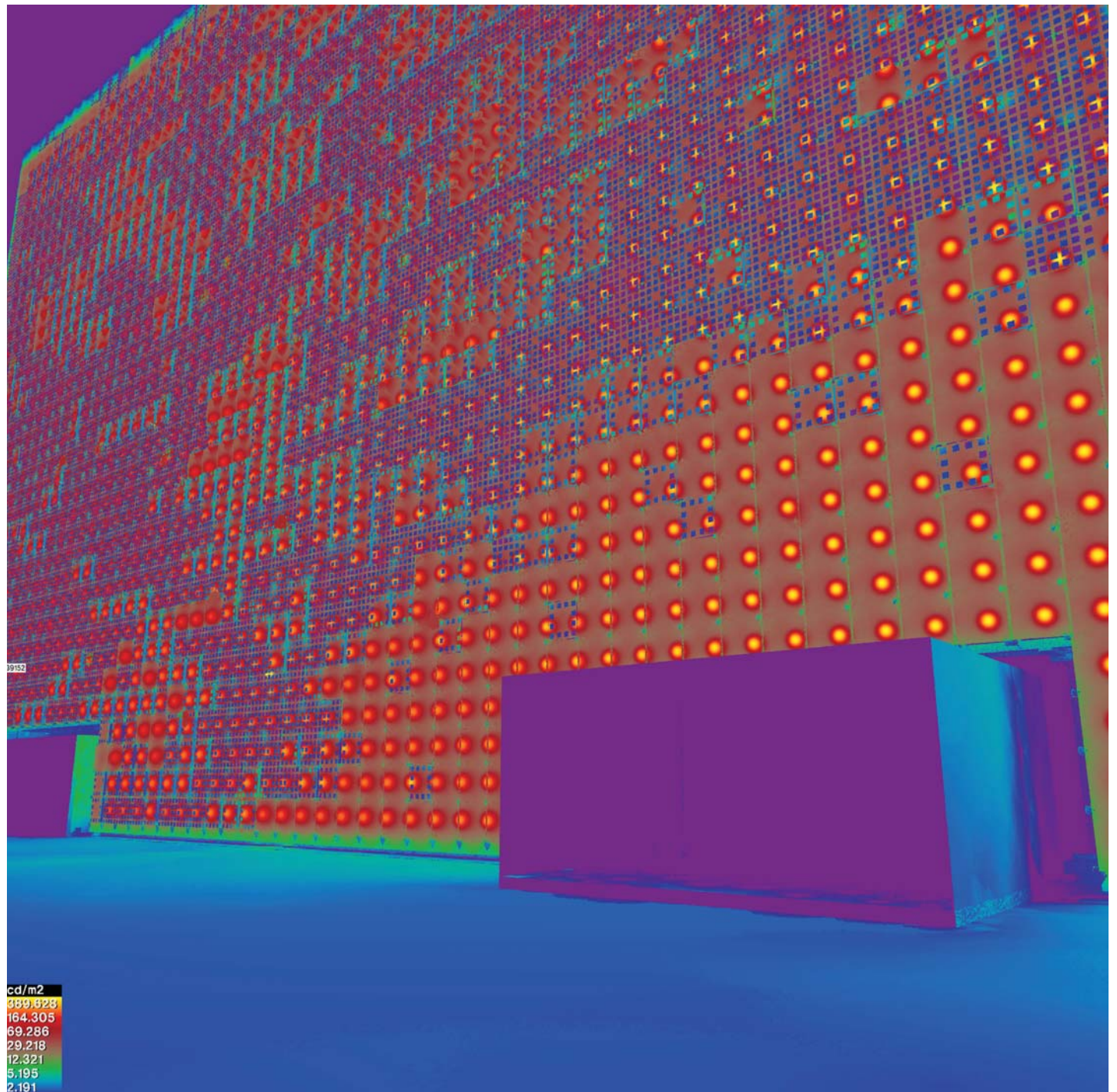


Deformation Simulation by Arup



Entrance

P06 | GreenPix - Zero Energy Media Wall



Simulation by Arup



SIMONE GIOSTRA & PARTNERS | PROJECTS

P09 | Whehai Grand Hotel

Location

Whehai, China

Project

2007

Completion

2009

Client

Jingya Corporation

Scope of Services

Architecture Design
Contract Documents
Construction Administration

Structural Engineer

TianJin Engineering

Gross Floor Area

120,000 sf

Construction Cost

Confidential

Program

Hotel
Entertainment Center

P08 | GreenPix
Content Management System

Location

Beijing, New York

Project

2007

Completion

2007

Client

SGPA

Scope of Services

Software Development
Content Management

Media Development

Jeremy Rotsztain

Gross Floor Area

20,000 sf

Construction Cost

Confidential

Program

Content Management System for
Xicui Media Wall

P07 | D'EAR Flagship Store

Location

Frankfurt, Germany

Project

2006

Completion

2007

Client

Hubertus von Alvensleben

Scope of Services

Concept Design
Design Development

Gross Floor Area

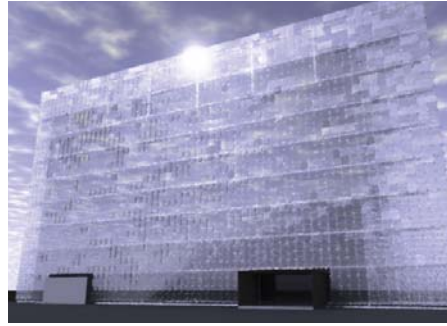
5,000 sf

Construction Cost

Confidential

Program

Store Concept and Flagship Store
for hearing-impaired equipment



P06 | Xicui Entertainment Center and Media Wall

Location
Beijing, China

Project
2005

Completion
2008

Client
Jingya Corporation

Scope of Services
Architecture Design
Contract Documents
Construction Administration

Media Concept
Mark van S.
Bernardo Zavattini

Structural Engineer
Ove Arup & Partners

Lighting Engineer
Ove Arup & Partners

Gross Floor Area
180,000 sf

Construction Cost
Confidential

Program
Entertainment Center
Sustainable Media Wall



P05 | "Foragers" Green Supermarket

Location
Dumbo, New York

Project
2005

Completion
2006

Client
Anna Castellani

Scope of Services
Architecture Design
Contract Documents
Construction Administration

Gross Floor Area
25,000 sf

Construction Cost
Confidential

Program
New-concept "green" supermarket,
offices and storage place.



P04 | Castiglion del Bosco Hotel and Resort

Location
Tuscany, Italy

Project
2005

Completion
2006

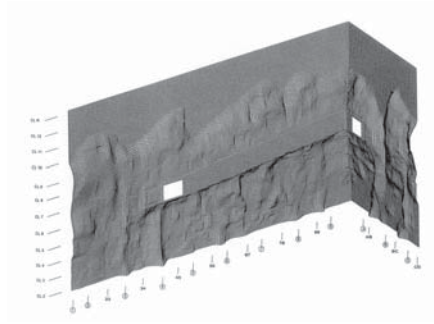
Client
Faithful + Gould

Scope of Services
Specifications Consultant

Gross Floor Area
45,000 sf

Construction Cost
Confidential

Program
Luxury Hotel and Spa



P03 | Jingya Ocean Entertainment Center

Location

Beijing, China

Project

2003

Completion

2005

Client and Architect

Atelier Raimund Abraham

Scope of Services

Curtain Wall Design

Structural Engineer

Ove Arup and Partners, New York

Gross Floor Area

120,000 sf

Construction Cost

Confidential

Program

Entertainment center, restaurants, commercial space, meeting spaces, theater, exhibition space

Note

The firm is engaged in the coordination of the Jingya Ocean Entertainment Center in Beijing, China, for Atelier Raimund Abraham. The firm is overseeing the implementation of a groundbreaking curtain wall technology, coordinating its structural design with Ove Arup and Partners in New York and supervising the production and installation of all components by China's local manufacturers.



P02 | Pierce House

Location

Cape Cod, Massachusetts, USA

Project

2004

Completion

2005

Client

Benita Pierce

Scope of Services

Architecture Design
Contract Documents
Construction Administration

Gross Floor Area

2,100 sf

Construction Cost

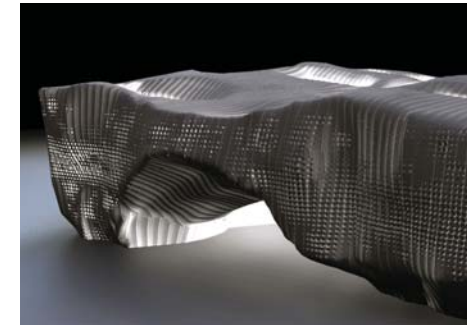
Confidential

Program

House extension

Note

The building, comprised of a gym and steam room and a ground level for car parking, plant and storage, fuses state-of-the-art digital design tools and traditional, indigenous building techniques to create an environmentally-sensitive building.



S13 | MOCAPÉ Shenzhen

Location

Shenzhen, China

Competition

2007

In Partnership with

Marchi Architects, Ove Arup & Partners, CCDI Shenzhen

Structural Engineer

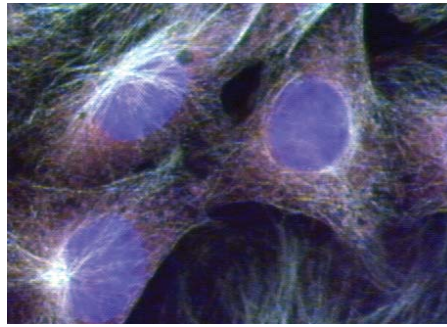
Ove Arup & Partners, Beijing

Gross Floor Area

850,000 sf

Program

Museum of Contemporary Art, Theater, Commercial Program, Sculpture Garden



S12 | Seoul Performing Art Complex

Location

Seoul, Korea

Competition

2005

Client

City of Seoul

Gross Floor Area

250,000 sf

Construction Cost

Confidential

Program

Theaters, performing spaces, library, restaurants, meeting spaces, park



S11 | New Seat for the Lombardy Regional Government

Location

Milan, Italy

Competition

2004

Ranking

Short-listed

Client

Lombardy Regional Government

In Partnership with

Steven Holl, Guy Nordenson, Remo Dorigati

Structural Engineer

Guy Nordenson

MEP Engineer

Mahadev Raman, Ove Arup & Partners

Gross Floor Area

900,000 sf

Construction Cost

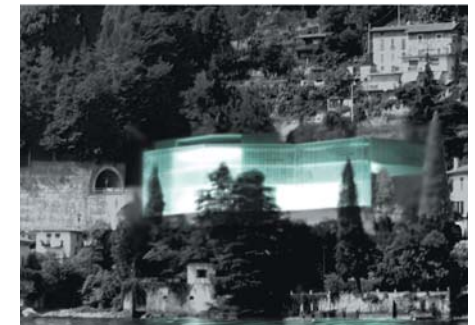
US\$ 180,000,000

Program

Offices, commercial space, meeting spaces, theater, exhibition

Note

In 2004, the firm, in partnership with Steven Holl and Guy Nordenson, was chosen among 10 international offices, including Frank Gehry and Norman Foster, to submit a proposal for the 160-million dollar project of the new Regional Government Headquarters in Milan.



S10 | The New City-Gate for Brienno

Location

Brienno, Italy

Competition

2004

Client

City of Brienno

Gross Floor Area

25,000 sf

Construction Cost

US\$ 1,000,000

Program

Parking, community facilities

Note

The new structure is a distinctly twenty-first century interpretation of the traditional typology of the parking garage. The horizontal and vertical pedestrian circulation is organized within a multi-level, open "double-wall" overlooking the lake that exposes users to striking views while moving through the building, making the parking area a destination in its own right.



S09 | **New Façade**
for the **Art Interactive Gallery**

Location

Cambridge, USA

Competition

2003

Ranking

Honourable Mention

Client

Art Interactive Gallery

Note

The Art Interactive Gallery sought a new façade to announce its presence and mission to the city community, with a cost for materials not to exceed US\$2000. A new skin wrapping the whole gallery was proposed, using the nylon fabric employed in construction scaffolding.



S08 | **"Porta Aurea" Archeological Park**

Location

Benevento, Italy

Competition

2003

Client

City of Benevento

Gross Floor Area

27,000 sf

Construction Cost

US\$ 3,000,000

Program

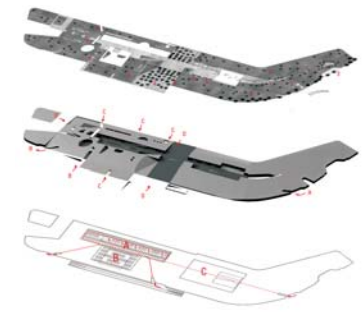
Protection of the Roman Arch, new Archeological Museum and Park

Bibliography

Il progetto a Port'Aurea a Benevento, in "Architetture di ieri nei Musei di Oggi", Cattolica University Press, Milan, 2003

Note

In 2003, the City of Benevento launched an international competition to create a new Archeological Park, where the underlying challenge was to connect fragments of the city's historic heritage, including a prominent Roman Arch perfectly preserved, by creating an identity not based on architectural typology. The true significance of the Arch is as the "Gate" of a new cultural path; the iconic point of departure for an authentic understanding of the city's history and heritage.



S07 | **The New Headquarters**
for the **Regional Government**

Location

Pisa, Italy

Competition

2003

Client

Pisa Regional Government

Gross Floor Area

85,000 sf

Construction Cost

US\$ 17,500,000

Program

Administration offices, meeting rooms and auditoriums, retail spaces, community facilities

Note

The New Seat provides the Tuscany Region with a major administrative center to respond to its growing political and financial power and allows it to become an iconic presence in the much-celebrated, and yet increasingly-corrupted, Tuscany landscape. This design proposal suggests a possible reconciliation between the traditional landscape and the ruthless urban sprawl that surrounds the site by combining a traditional hillside, re-invented within the given site, and the building program which is placed in the new topography.



S06 | Savona Waterfront
Feasibility Study

Location

Savona, Italy

Competition

2002

Ranking

Honourable Mention

Client

City of Savona

Construction Cost

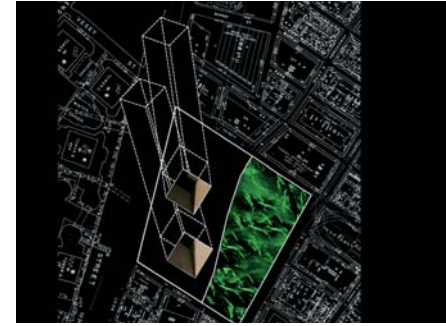
US\$ 4,000,000

Program

Urban design for a new pedestrian and commercial area at the city waterfront

Note

The firm's Savona Waterfront Master Plan consists of a duplication of the existing site along the water in response to the progressive and menacing occupation of public soil by unlawful parking. The new space will contain a "virgin" site dedicated solely to leisure and sport activities. The "high walk" unfolds a double-deck supported by a band of new programs and functions related to the waterfront activities that guide and attract visitors.



S05 | World Trade Center Memorial
Site Study

Location

New York City, USA

Study

2001

Gross Floor Area

6,000,000 sf

Program

Memorial, Downtown Park, commercial offices, retail spaces

Note

Responding to a call for design proposals by a renowned Art Gallery in Manhattan, the firm contributed a visionary proposal for the future of the World Trade Center site. The design begins with the acknowledgment that the entire WTC site is a sacred precinct that should be dedicated to renewing the spirit and the quality of life in Lower Manhattan. The final shadows cast by the two towers, based on the angles of the sun at the last moments before each fell, cuts two oblique voids through the bedrock, forming the memorial. These voids and the resulting light employ the synergy of the different programs to create a new identity, determining the overall character of the WTC site and defining its attraction.



S04 | New Square and Civic Center

Location

Arezzo, Italy

Competition

2001

Client

City of Arezzo

Gross Floor Area

75,000 sf

Construction Cost

US\$ 12,000,000

Program

New Square, Public Library, 1,500-seat Auditorium, Hotel, Civic Center

Note

The site appears as the undeveloped rear elevation of a fragmented urban block within the city wall of Arezzo. Our proposal uses the 75,000 sf programmatic injection to redefine the notion of open public space: an urban "room" for the city generated by a 24-hour library and theater and amplified by commercial and cultural programs. Rather than creating a conventional plaza defined by a continuous curtain of public and commercial buildings, the program is placed on the entire extension of the plaza and unified by a large roof acting as an urban deck, thus creating an extraordinary new kind of public space.



S03 | Audiovisual Lab
Leipzig Academy of Visual Arts

Location

Leipzig, Germany

Competition

2001

Ranking

Short-listed

Client

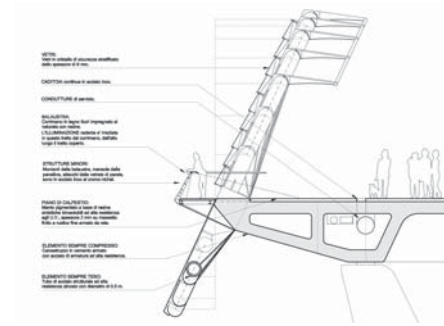
Leipzig Academy of Visual Arts

Program

Exhibition space, administrative offices, multimedia room, research lab

Note

This award-winning design proposal combines the mandatory connection of the new volume to the street via fire stair and elevator with the formulation of a "narrative façade". The activities within the building are broadcast on the projection plane of the building envelope, much like the front of medieval churches would represent the story of mankind, acting as the interface between the "enlightened" inner users and the outer local community.



S02 | "Ponte della Scienza"
Pedestrian bridge

Location

Rome, Italy

Competition

2000

Ranking

Selected Project

Client

City of Rome

Structural Engineer

Ove Arup & Partners, New York

Construction Cost

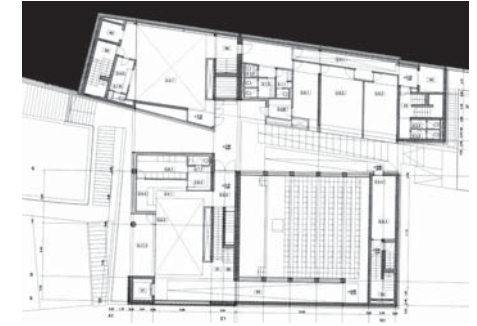
US\$ 1,500,000

Bibliography

"Icarus Wing" in: "Due ponti pedonali sul Tevere", Alinea, Rome, 1999

Note

The "Icarus wing" bridge is the result of a creative collaboration between the firm and engineers at Ove Arup and Partners in response to one of the most popular international competitions held in Italy in recent years. This is an uncompromised, adventurous declination of the suspended bridge, resulting in a profile that is both structurally clear and formally mysterious.



S01 | Center for Medieval Art
Site Proposal

Location

Assisi, Italy

Project

1995

Client

City of Assisi

Gross Floor Area

42,000 sf

Program

The Research Institute is comprised of offices, classrooms, conference room and library. The Museum includes exhibition space, auditorium, cafeteria and storage

Note

The Center's footprint blends into the uninterrupted fabric of the city by adopting the scale of the adjacent buildings, interconnecting with neighboring sites and ensuring a seamless urban integration. The complex of museum, auditorium and research facilities appears solid and fortified, reinforcing the image of dignity and sobriety. Like all successful civic architecture, these buildings suggest permanence.

SIMONE GIOSTRA & PARTNERS | 设计

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