



INNOVATION & BALANCE

PUBLIC ARCHITECTURE

Architectures with Energy Saving, Low Carbon, Environmental Materials, Technology and Reuse Ideas

创新与平衡·公共建筑

办公·休闲娱乐·公共与文化·零售·展示·远期项目



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OFFICE

Port of Portland Headquarters	8
UNStudio Tower in Amsterdam	16
BPC Parks Maintenance Facility	20
Elithis Tower in France	24
Costa Palace in Italy	28
Galilee in France	32
The Orange Cube in France	38

HOSPITALITY

Ecolodge in Egypt	46
Orchard Garden Hotel in USA	52
Nine Hours Hotel in Japan	58
Golf Club in Russia	62
Southern Ocean Lodge	72

PUBLIC & CULTURE

The Convention Centre Dublin	78
AERL Biodiversity in University of British Columbia	84
SkySong at Arizona State University	88
Surry Hills Library and Community Centre	92
Ballard Library and Neighborhood Service Centre	98
Cardiff Central Library	104
Cesar Chavez Library	110
The Green Building	116
Old Market Library in Bangkok	122
Los Angeles Museum of the Holocaust	126
Water+Life Museums and Campus	132
Haverford Athletic Centre	140

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Architectures with Energy Saving, Low Carbon,
Environmental Materials, Technology and Reuse Ideas

Sun Valley Music Pavilion	148
Manassas Park Elementary School	152
Murska Sobota Music School	156
Ponzano Primary School	160
Poquoson Elementary School	168
Battery Park City School in New York	176
St Luke's CE Primary School	180
University of Arizona Poetry Centre	184
Wifi Pavillion in Spain	188

RETAIL

City Square Mall Singapore	196
Crystals City Centre	202
Star Place in Taiwan	206
The North Face in USA	210

EXHIBITION

German Pavilion Expo 2010 Shanghai	216
Living Nature in Spain	224
Monaco Pavilion Shanghai EXPO	230
Norwegian Pavillion Shanghai EXPO	234
Poland Pavillion Shanghai EXPO	240
Ologic Corian® Living	246
Sustainable Winter Lounge	252
Miele Gallery in Chile	258

FUTURE

Wind Tower in Dubai	266
4 Collective Housing Units	270
Columbus Island in Santo Domingo	276
Loop City in Danmark	280
Masdar Plaza in Masdar	284
Vertical Park in Mexico	290
Shenzhen International Energy Mansion	294
Vilhelmsro Primary School	300
UN Memorial in South Korea	304
Pedregal Shopping Centre	308

INNOVATION & BALANCE

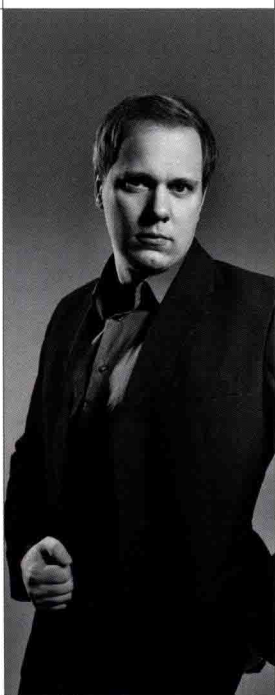
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办公·休闲娱乐·公共与文化·零售·展示·远期项目

D. Schulz



Daniel Schulz

Architect - M.A. M.Arch. Dipl.-Ing.

Daniel Schulz, born in 1977 in Germany, was educated in the field of monument protection, sustainable and ecological design, possessing the German Diploma of Engineer in Architecture and later the International Master of Art in Architecture at the University of Wismar. In 2004, he continued and got a postgraduate Master of Architecture in China. After having design experiences in Germany and Australia, he went back to China as a principal architect for the Australian company, Jackson Architecture, at the branch office in Shenyang. Today, Mr. Schulz is leading the branch office in China as a project manager and principal architect. He has completed medium and large projects, among which are airports, stadiums, administration centers, hospital, office and residential designs. Each project designed in China includes ideas and expertise of ecological and sustainable design (ESD). With the issue of this book, he hopes not only to encourage designers to consider ESD in their designs, but also to inspire developers and investors of reconsidering ESD when taking actions and responsibilities for the future development. The book gives ideas of combining design and technical aspiration into the great architecture.

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With the strong appeal from people on "low-carbon life", the rapid development of green economy and environmental protection has been representing the general trend worldwide. In particular, people increasingly focus on construction energy consumption accounting for about one third of the total energy consumption globally. As a result, with the beautiful desire of protecting habitat for humanity together, german senior architect Daniel Schulz elected as editorial adviser, editorial board of the book collaborate with authority in the field of architectural design all over the world, planning and compiling this series of classic work together. The work aims to enlighten readers and make them reflect on Ecological Habitat, thus initiate solutions for harmonious commensalism on human beings, architecture and environment.

Taking green design concepts such as energy saving, low carbon, environmental protection, reuse and sustainability as the main theme, this book has selected nearly 100 recent outstanding green architectural works worldwide. A wide variety of green works and perspectives are included, ranging from public buildings to private residences, from high-end architectural complex to affordable social housing, from strategies of passive energy saving to technologies of zero energy consumption. Along with specific planning drawings and professional conceptual introduction, readers are able to have a deep insight into how creatively the renowned architects express and interpret green concept. Meanwhile, professional readers can also aquire stronger competitive advance in this field and expand their business opportunities by studying these remarkable green design ideas in this book.

随着人们对“低碳生活”的强烈呼吁，环保、绿色经济的迅猛发展已经成为全球大势所趋。其中，约占世界总能耗1/3的建筑物能耗更日益成为人们关注的焦点。由此，秉承“携手保护人类家园”的美好愿景，本书编委与各国建筑设计界权威人士倾力合作，并推举德国资深建筑师Daniel Schulz担任编辑顾问，共同策划编写了这套经典著作。希望能够借助此书带给人们更多关于生态人居的启发和思考，从而提出更多人类、建筑与环境和谐共生的解决方案。

本书以节能、低碳、环保、再利用、可持续性绿色设计为主题，为读者精选出近100例新近期最为突出的绿色建筑作品。从公共建筑到私人住宅，从高端建筑群到社会保障房，从被动式节能措施到零能耗领先技术，在书中都有所涵盖，同时配以详细的设计方案图和专业的理念解读，使读者可以充分领略到世界各地知名建筑师如何创造性地表现与诠释绿色理念。与此同时，专业读者通过对本书绿色创意的研究，将获得更大的行业竞争优势，利于拓展更多的商业合作机会。

OFFICE

Port of Portland Headquarters	8
UNStudio Tower in Amsterdam	16
BPC Parks Maintenance Facility	20
Elithis Tower in France	24
Costa Palace in Italy	28
Galilee in France	32
The Orange Cube in France	38

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Orchard Garden Hotel in USA	52
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Golf Club in Russia	62
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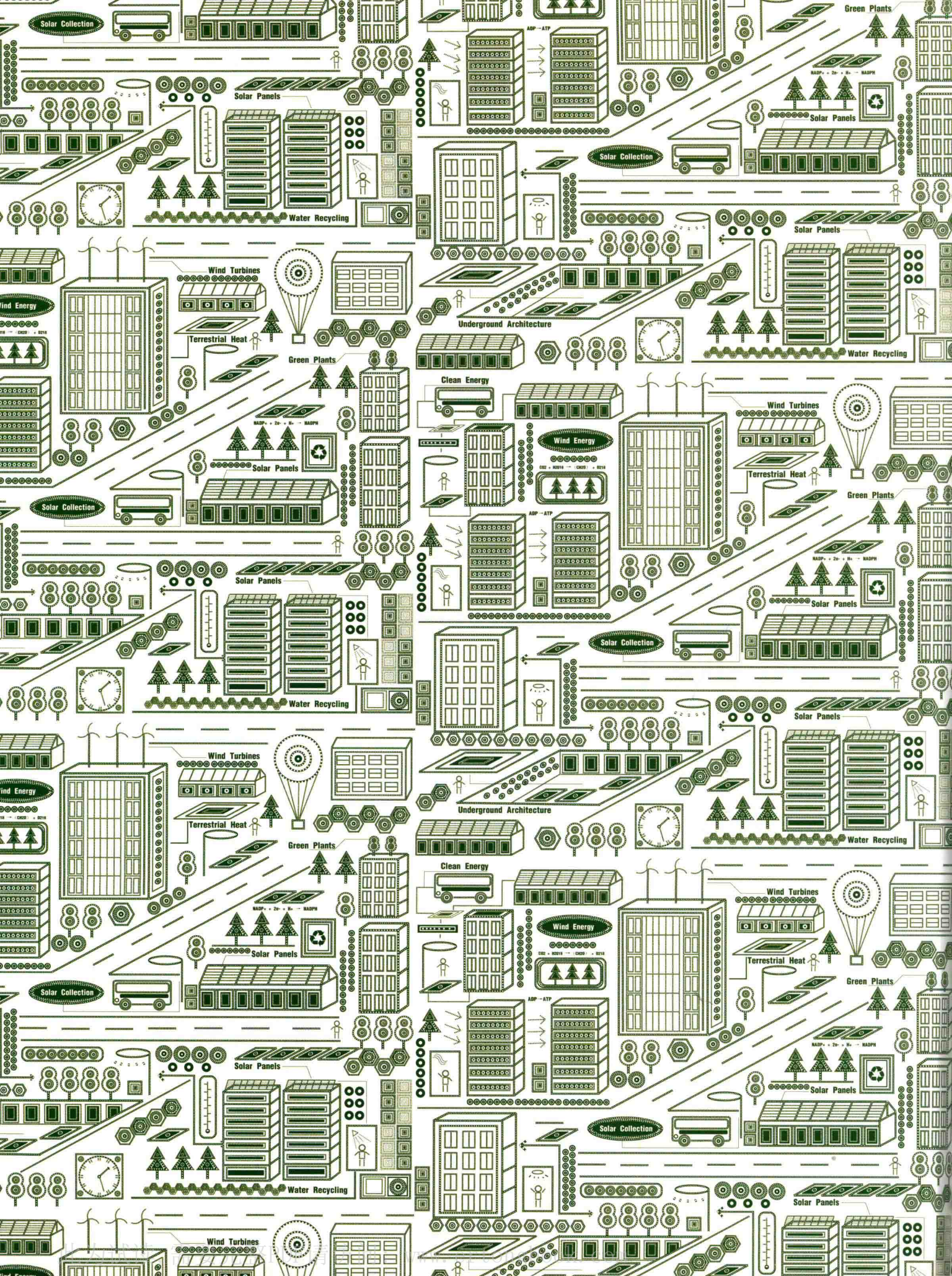
City Square Mall Singapore	196
Crystals City Centre	202
Star Place in Taiwan	206
The North Face in USA	210

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German Pavilion Expo 2010 Shanghai	216
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Miele Gallery in Chile	258

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Wind Tower in Dubai	266
4 Collective Housing Units	270
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Pedregal Shopping Centre	308





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OFFICE
PUBLIC VOLUME
PART 1

Port of Portland Headquarters

The Port of Portland's headquarters is sited immediately to the east of Portland International Airport's main terminal building and is connected to the existing parking structure, serving as a new gateway to the airport. The building is visible to those arriving and departing the airport, either by roadway or by air.

The Port of Portland's commitment to sustainable practices is showcased in its new Headquarters Building and Long-Term Parking Garage. Sustainable design was a critical driver, with LEED Platinum Certification serving as a project goal. In addition, the building allows the Port to consolidate most of its workforce, bringing together approximately 240 employees located in a downtown Portland headquarters facility with 230 employees occupying offices in the airport terminal. This will save additional operating costs and provide the Port with an opportunity to lease the airport terminal space to other users. It also adds parking capacity to Portland International Airport.

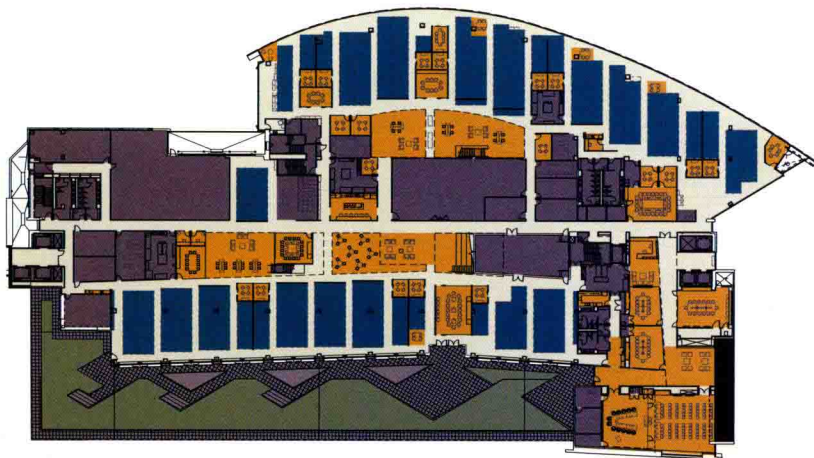
The new 19,045 m² building consists of three floors of office space atop seven floors of public, airport parking. The new offices reflect a 21st century culture – “One Port” – in an effort to increase collaboration and foster a team environment. Cost-effective solutions were a primary concern, as well as telling the Port of Portland story through environmental graphics and artwork. ZGF worked closely with the Port to develop new standards for office space to accommodate a shift from a closed office environment to a primarily open plan.

Port波特兰总部位于波特兰国际机场东侧主航站楼旁。它与原有的停车场相连，形成了通往机场的必经之路。凡是经过机场的人，无论是启程还是到达，从陆地还是空中，都能看到这个建筑。

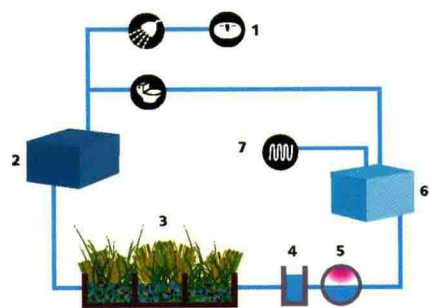
Port波特兰公司对于可持续性设计实施的决心体现在新总部大楼和长期停车场的建筑中。可持续性设计是本案开发的主要导向，荣获LEED白金证书则是目标。不仅如此，建筑还整合了Port公司大部分劳动资源，将位于波特兰市中心总部的约240名员工和机场航站楼的230名员工安置在一起。这将节约额外的运营开支，使Port公司有机会将机场航站楼对外出租，同时还为波特兰国际机场提供了更多的停车位。

这栋总占地面积达19 045平方米的全新办公大楼包含3层办公区、7层公共空间以及机场停车区。新办公区体现了他们于21世纪的企业理念——“一港”，以增强合作，强化团队环境。成本效益方案是首要的考虑，同时也要通过环境导视图和艺术陈列品来讲述Port波特兰公司的故事。ZGF事务所与Port团队密切合作，共同为办公区创立了全新标准模式，从封闭式环境转换为相对开放的办公空间。

Name of Project / 项目名称:
Port of Portland Headquarters
Office Building and Parking Garage
Location / 地点:
Portland, USA
Area / 占地面积:
19,101 m²
Completion Date / 竣工时间:
2010
Architecture / 建筑设计:
ZGF Architects LLP
Landscape / 景观设计:
Mayer/Reed
Interior Design / 室内设计:
ZGF Architects LLP
Photography / 摄影:
Nick Merrick © Hedrich Blessing,
Eckert & Eckert
Client / 客户:
Port of Portland





**Water Efficiency**

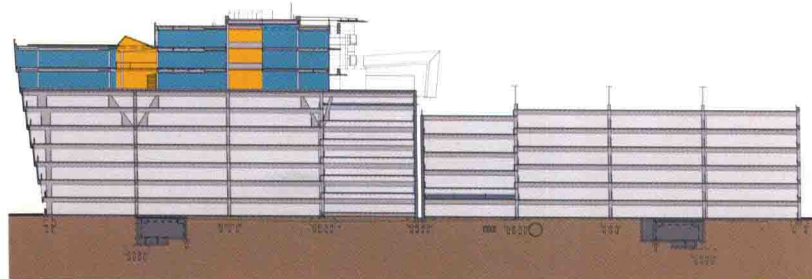
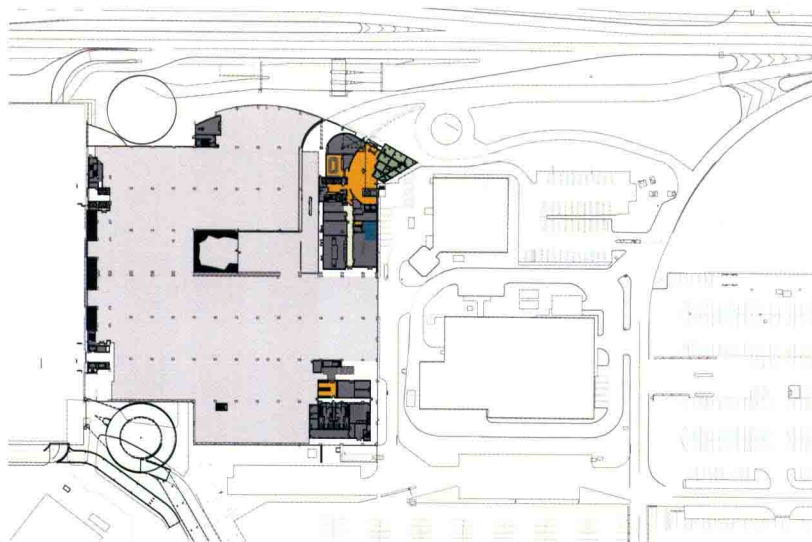
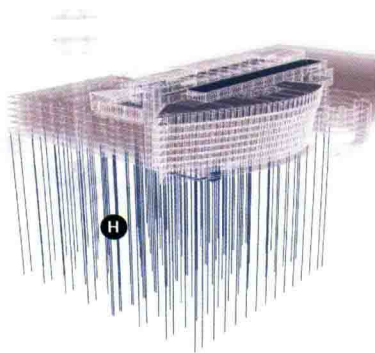
- A 8th floor landscape deck with adaptive plants and micromist irrigation
- B Low-flow fixtures
- C Eco-roof with adaptive plants and micromist irrigation
- D Living Machine® system

Energy Efficiency

- E Reflective membrane roof
- F High-performance glazing
- G Radiant heating & cooling ceiling
- H 200 wells provide ground source heating & cooling with auxiliary cooling tower for peak periods

**The Living Machine® System**

- 1 Office building: toilet, sink & shower
- 2 Primary & equalization tanks
- 3 Tidal flow wetland
- 4 Polishing vertical flow wetland
- 5 UV sterilization disinfection
- 6 Clean effluent tank
- 7 HVAC office cooling tower



Underneath the building, more than 200 pipes in a continuous loop system provide ground source heating and cooling, complementing the passive radiant ceiling panel heating and cooling inside. This is the first coupling of these heating and cooling systems in the United States. Features like daylighting, window glazing, fixed exterior shading, water-efficient fixtures, and a 929 square metres eco-roof help to save energy, water and money. All combined, the building uses 75 percent less water and 36 percent less energy compared to a standard building of the same size. The Living Machine System® is a new approach for organic waste water treatment and water re-use that treats waste water on-site to be reused in the building for non-potable uses. It's a proprietary, on-site ecological wastewater treatment system developed by Warrell Water Technologies that produces quality recycled water out of both grey and black water without chemicals, odor, offensive by-products or high-energy usage required by conventional systems. The Living Machine System® used a patented, automated tidal wetland process to produce treated water that will be re-used in the building for toilet flushing and in the HVAC cooling towers.

建筑下方，由200多条管道组成的供热系统不间断地为大厦提供地源热能和制冷，同时内部安设的被动式辐射天花板与其协同工作，补充采暖和制冷。这是在美国首次使用的双重加热及制冷系统。日光照明、密封窗、室外遮阳设施，节水器具以及929平方米的生态屋顶等设计细节都有助于节约能源、水以及资金。综合起来，与同样大小的建筑物相比，该建筑将减少75%用水和36%能耗。“活化机系统”是一种有机废水处理及废水再利用的新技术，它可以将废水就地处理，并且在建筑中再次用在除饮用水以外的其他用水环节。它是一项享有专利的现场生态废水处理系统，由“Warrell Water Technologies”团队研发，它从污水中产生出高质量的再生水，而且不会产生化学物质、异味、副产品，也不需要传统废水处理系统那样高的能耗。活化机系统使用专利的自动潮汐湿地系统来产生净化水，这些水可以再用于建筑的卫生间用水以及HVAC冷却塔。

