全球新建筑

Global Architecture Today II

办公、酒店、度假村

《设计家》编

Headquarters Office and Showroom 企业总部办公及展示

Office Building 办公楼

Municipal Office 市政办公

Office Park 办公园区

Innov[redacted] 小型创意办公

Hotel & Resort 酒店&度假村

天津大学出版社
TIAN JIN UNIVERSITY PRESS

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图书在版编目（CIP）数据

全球新建筑：全5册／《设计家》编．— 天津：天津大学出版社，2012.6
ISBN 978-7-5618-4283-6

Ⅰ．①全 ••• Ⅱ．①设 ••• Ⅲ．①建筑设计—作品集—世界—现代 Ⅳ．①TU206

中国版本图书馆CIP数据核字（2012）第009669号

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出版发行 天津大学出版社
出 版 人 杨欢
地　　址 天津市卫津路92号天津大学内（邮编：300072）
电　　话 发行部：022—27403647　邮购部：022—27402742
网　　址 publish.tju.edu.cn
印　　刷 上海瑞时印刷有限公司
经　　销 全国各地新华书店
开　　本 240mm×320mm
印　　张 93.75
字　　数 1426千
版　　次 2012年6月第1版
印　　次 2012年6月第1次
定　　价 1288.00元（全5册）

序言——全景展现全球建筑最新成果与动态

《全球新建筑》是《设计家》编辑部继成功出版《中国新建筑》之后，及时推出的具有全球视野，关注全球范围内最具创新性、引导性的优秀建筑作品集，旨在为正在快速成长中的中国建筑业提供一个深入了解并感受世界各文化地域近年来最前沿的建筑发展动向及成果的机会，以期为中国的建筑实践提供有价值的参考。

《全球新建筑》共五册，书中汇集了来自全球七十多家著名建筑师事务所在全球范围内完成或在建的最新原创建筑设计作品200多个，涵盖商业、办公、酒店、文化、教育、体育、公共服务、宗教、会议、剧院、博览、美术馆、图书馆、居住等各种建筑类型，是当下国际建筑创作的集中体现，也是城市建筑风貌的一个很好缩影。

I 商业空间：

商业空间以全球最具代表性的商业类建筑事务所的最新优秀作品为主体，如美国凯里森的作品：杭州万象城；美国捷得的作品：日本桥本市 Konoha 购物中心；英国贝诺的作品： St.David 购物中心等。甄选作品时，我们希望兼顾全面性与代表性，既有大型购物中心及旗舰店、商业综合体，亦收录了商业步行街及其它休闲娱乐项目的优秀代表作。

II 办公、酒店：

办公部分由企业总部办公及展示、办公楼、市政办公、办公园区及小型创意办公五个章节组成。清晰详细的分类不仅提供了方便有效的阅读，同时也旨在展示一幅全景式的办公作品盛宴。如果说索尼大崎新楼、米兰杰尼亚总部等作品展现了高层、多层办公及企业展示项目的丰富经验，那么，光之屋、福戈岛艺术工作室等则为创意类工作场所的实践提供了丰富的灵感与想象。

此次酒店部分的作品甄选更加关注作品本身的独特性，因而我们分别从城市五星级酒店、度假型酒店、设计酒店案例中慎重筛选收录了十个最前沿、最经典、最设计、最浪漫的酒店作品，如：新加坡 St. Regis 酒店，克罗地亚 Lone 酒店，及悦榕庄的最新力作。

III ，IV 文教空间：博览空间

文教空间包含文化中心、剧院、音乐厅、会议中心、教育、体育及宗教等方面的作品。博览空间包括：博物馆、美术馆、展览馆、图书馆、公共服务设施等方面的作品。

本套书的征稿过程中，文教及博览类项目给我们带来了连连惊喜。这些事务所及作品大多集中在欧洲、北美，也有部分作品分布在泰国、日本及中国等。它们在为我们展示多层次、多方面的空间形体的同时，也带来了全球各文化地域在建筑材料、技术等方面的丰富经验与创新成果，如 Henning Larsen 建筑事务所在雷克雅未克“哈帕”音乐厅与会议中心的立面设计中运用新材料——“准砖”（quasi-brick）创造出了一种模糊室内与室外，主体与客体，幻象与再现的视觉装置，令人印象深刻。

V：居住及小型独立建筑

居住及小型独立建筑旨在收录全球各文化地域内既具本土特色又显现代设计理念的精品别墅及公寓，如：美国 Preston Scott Cohen 公司设计的林间雅舍、秘鲁 Jarvier Artadi 建筑事务所设计的浪漫的拉斯帕尔梅拉斯海滨别墅，日本富士山建筑事务所的代表作树屋，丹麦 Henning Larsen 事务所设计的滨水地标性公寓——瓦埃勒海浪等。

在中国建筑实践丰富多彩的当下，深入了解全球建筑的最新成果与动态，无疑将是中国建筑融入世界并凸显自我的最佳路径。

《设计家》编辑部

2012 年 5 月

Global Architecture Today is a collection of the architectural works in the worldwide area by Designer & Designing Magazine, instantly after the successful publication of the series books- ***New Architecture In China***. The new collection focuses on the most innovative and leading projects with a global vision, and aims at providing a valuable reference for the fast growing Chinese buildings with the thorough touch of the latest architectural development achievements and trend of the worldwide regions of different cultures.

Global Architecture Today includes five volumes in all, which provides a professional platform for more than 200 works, finished or unfinished, from a global wide of 70 top architects studios. These latest achievements covered a wide range of fields, including commercial areas, offices, hotels, culture, education, sports, public facilities, religion, conference, theatre, exhibition, art museum, library, housing, etc. They showed readers with an overview of the latest international architecture works, and reflections of the images of urban buildings.

The Editorial Department of Designer & Designing Magazine

May, 2012

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Headquarters Office and Showroom

企业总部办公及展示

Sony's Osaki New Building

索尼大崎新楼

NIKKEN SEKKEI 日建设计

Location: Tokyo, Japan
Typology: Office
Site Area: 16,558.52 m^2
Building Area: 10,611.26 m^2
Gross Floor Area: 124,041.48 m^2
Status: Completed in March 2011
Image Courtesy: Harunori Noda,Yutaka Suzuki

区位：日本，东京
类型：办公
基地面积: 16558.52 m^2
占地面积: 10611.26 m^2
总建筑面积: 124041.48 m^2
状态：2011年3月建成
图片提供：野田东德，铃木丰

BIO SKIN

In March 2011, construction of Sony's new R&D office building was completed near the West Gate of Osaki Station (Shinagawa City, Tokyo). In this building, an innovative exterior system called the BIO SKIN, newly developed by Nikken Sekkei with several partners, has been adopted. The BIO SKIN enables reduction of the heat load inside the building and helps to reduce the urban heat island effect. Specifically, the BIO SKIN functions as a handrail of the balcony on the northeast facade of the building and as a sunshade during the morning hours. The BIO SKIN's delicate appearance also helps people to feel less overwhelmed with the largeness of the building.

The building was designed to be compact, enabling to create an area landscaped with bushes and trees. In addition, we have designed the building to have a smaller area facing the prevailing wind from the south, so that in the summer, the cool wind from the Tokyo Bay is blocked less and is allowed to blow to inland areas with some heat being taken away with the BIO SKIN and the grove. These are the efforts to make the best use of the site, which is located in a valley near the Meguro River and the Tokyo Bay, and in fact, was the bottom of the ocean in the Japanese prehistoric "Jomon Era."

In planning the new R&D office building, Sony, the client who had already owned a high-performance green building as its head office, requested that the R&D building make further progress in corporate environmental performance. Nikken Sekkei responded to the request by proposing to make the mitigation of the heat island effect as the underlying environmental theme, and this was approved by Sony.

The Nikken Sekkei Research Institute (NSRI), our landscape designers, and other staff studied various options by using heat environment simulation. While an increase in the amount of vegetation is proven effective in reducing the heat island effect, the site of the new building is such that the main facade would face northeast, making it unfavorable for use of a wall covered with vegetation. In addition, there was limited space to add plantings around the building. The planning team then found out that a significant effect could be delivered if the building itself could have a similar heat island mitigating effect as trees provide.

The first work undertaken was mock-up experiments of BIO SKIN's materials. Specifically, we used porous terra cotta that is suitable for evaporation of internal moisture. The sample louver made of terra cotta which has high evaporative cooling capacity and an ordinary sample louver made of aluminum were installed to face the same direction as the actual building plan and their surface temperature, ambient temperature, amount of evaporation, temperature and humidity of the surrounding areas, and wind speed were measured at periodic intervals. We found that the temperature of the wet terra cotta louver was 5-6℃ lower than that of the aluminum louver, proving the superior cooling capacity of terra cotta.

Mold and moss tend to grow on terra cotta, which has a high water absorption rate. This problem has been solved by a coating of a photocatalyst (titanium oxide; TiO_2) on terra cotta louvers and installing louvers with sufficient in-between space in a well-ventilated area. The high water absorption rate also can cause ice jams in the winter. This has been solved by shaping the louver symmetrically with a certain thickness, which helps disperse the expansion and contraction stress caused by freezing water.


SONY


SONY

生态幕墙

2011年3月，位于大崎站（日本东京品川区）西门的索尼公司新的研发大楼竣工了。这座大楼采用了被称作生态幕墙的创新外部系统，该系统是由日建设计研究院和几家合作伙伴新近开发的。生态幕墙的使用能够减少楼内的热负荷，也有助于降低城市热岛效应。具体来说，生态幕墙是作为该大楼东北面阳台的栏杆，同时也可在上午作为遮阳罩使用。生态幕墙的精美外表还有助于使人们在面对如此大体量的建筑时，感觉不那么压抑。

该大楼紧凑的设计，创造出了一个被灌木丛和树木美化的景观。此外，通过设计减少了面向从南面来的盛行风的建筑面积。这样，在夏季，从东京湾刮来的凉风所受到的阻碍较少，凉风便可刮进内陆区域，和生态幕墙、小树林一起，带走一部分热量。这些努力的目的是以最优的方式利用该基地——基地位于目黑河和东京湾附近的谷底，正是日本史前“绳文时代”海洋的底部。

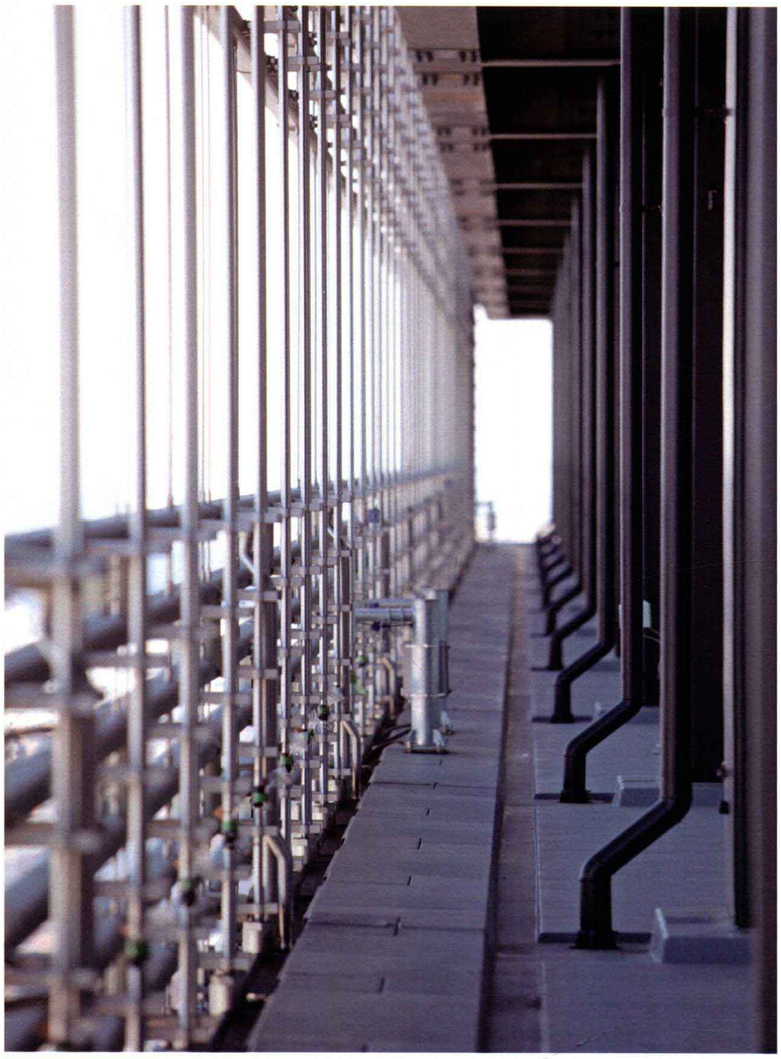
在规划新的研发大楼时，索尼公司已经拥有一座高性能的绿色大厦作为其总部。业主要求研发大楼在环境性能方面继续深化，并有所进步。于是日建设计研究院建议以减少热岛效应作为基本的环境主题，并获得了索尼公司的批准。

日建设计研究院（简称“NSRI”）和其他工作人员利用热环境模拟研究了各种设计选项。虽然增加植被数量已被证明可有效减少被热岛效应，但是受限于基地所在位置，新楼的主立面朝向东北方，并不适宜被植被覆盖。此外，在大楼周围可用来增加绿化的空间也十分有限。项目规划小组后来发现，如果大楼本身能够像树木那样有助于减少热岛效应，就可取得显著效果。

我们所做的第一项工作就是对生态幕墙材料进行模拟试验。具体来说，我们使用适合内部水分蒸发的多孔赤陶土。我们将具有高蒸发冷却能力的赤陶土制成的百叶窗样品和普通的铝制百叶窗样品分别安装，朝向与实际建筑设计方案中的朝向相同，然后定期记录其表面温度、环境温度、蒸发量、周围区域的温度和湿度以及风速等。我们发现，潮湿的赤陶土百叶窗的温度比铝制百叶窗要低5~6 ℃，证明赤陶土具有良好的冷却功能。

赤陶土因吸水率高，往往会长出霉菌和苔藓。对这一问题的解决办法是在赤陶土百叶窗上采用光触媒（氧化钛；TiO_2）涂层，并且将百叶窗安装在通风良好的地方，留出充足的间隔空间。高吸水率还可能在冬天造成冰塞，对这一问题的解决办法是把百叶窗做成带有一定厚度的对称形状，这有助于分散因水结冰而产生的扩张和收缩压力。


SONY

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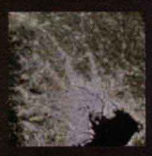
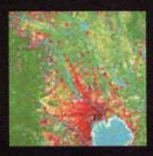
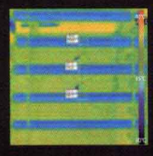




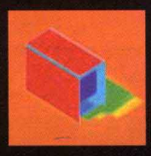
Heat island:
Temperatures in Tokyo increased by 3°C in the past 100 years.

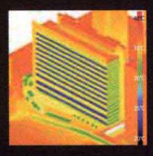
The average global temperature increased by 0.7°C in the past 100 years, and the major cause is global warming. On the other hand, the annual average temperature in Tokyo increased by 3.0°C, and the annual average temperature in small and medium-size cities increased by 1°C. The difference is attributed to the heat island phenomenon. As a result, the heat island induces heavy downpours, and the number of persons hospitalized due to heat stroke is increasing dramatically.



Mockup experiment:
Decrease in surface temperature is verified with the actual product.

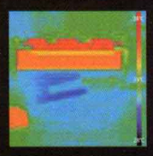
A mockup experiment was conducted in the summer of 2008. To ensure an environment as close as possible to the actual installation condition, the system was arranged to face the northeast side of the building, shield the other sides with solar insulation, and ensure adequate air flow and ventilation. The surface temperature and atmospheric data on the external environment were measured, and the loss of water in the water-retentive ceramic pipe was measured on a regular basis to calculate the amount of evaporation.

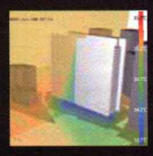




Experiment ⇔ Simulation:
Forecast of effects at actual building

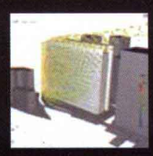
The experiment stated above was reproduced in a simulation. The correlation between the surface temperature data acquired through experiments and the atmospheric data were also reproduced. Furthermore, the entire building for the project was reenacted including the surrounding environment. As a result, the simulation proved that the surface temperature of the water-retentive ceramic pipe was lowered by up to 10°C.





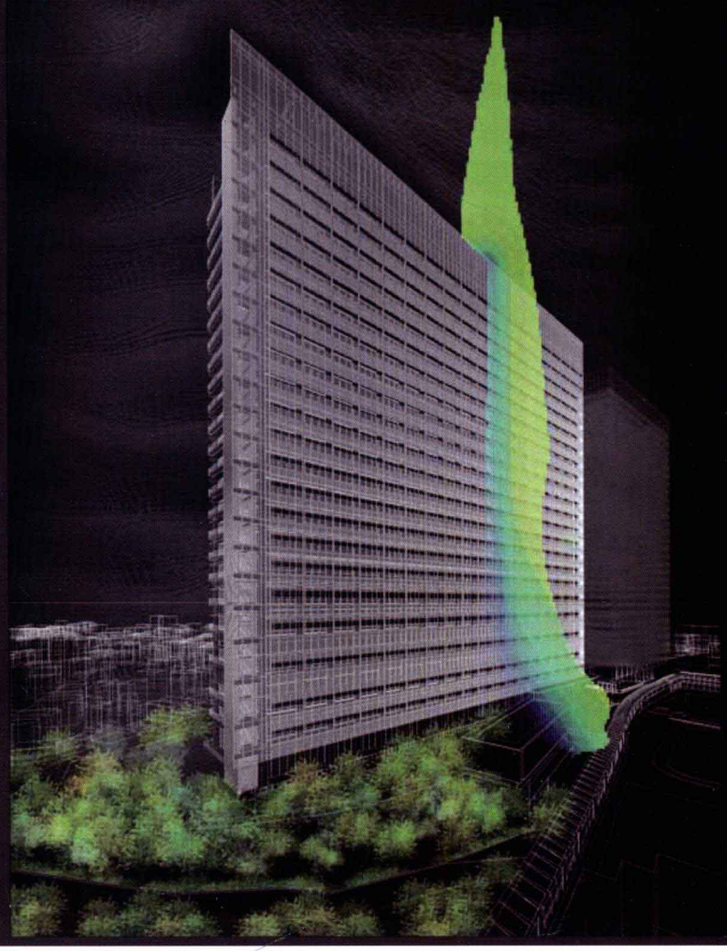
Airflow analysis of the surrounding environment:
The surrounding air temperature decreased by 2°C

The airflow analysis based on the calculation of the surface temperature revealed that the temperature of the surrounding air decreased by up to 2°C. Furthermore, calculation of MRT (mean radiant temperature) in the pedestrian route verified that comfort improved from the cold radiation from the cooled exterior wall surface.

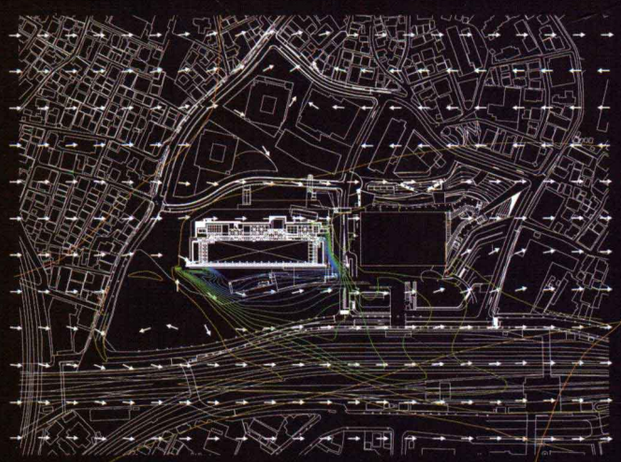


NIKKEN SEKKEI

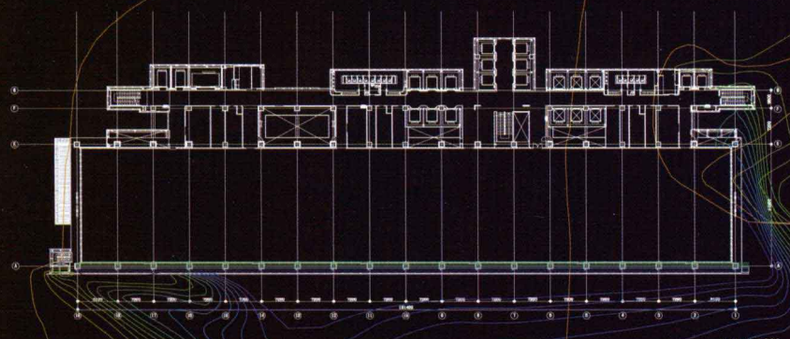
Building a large architectural structure, just like planting a tree



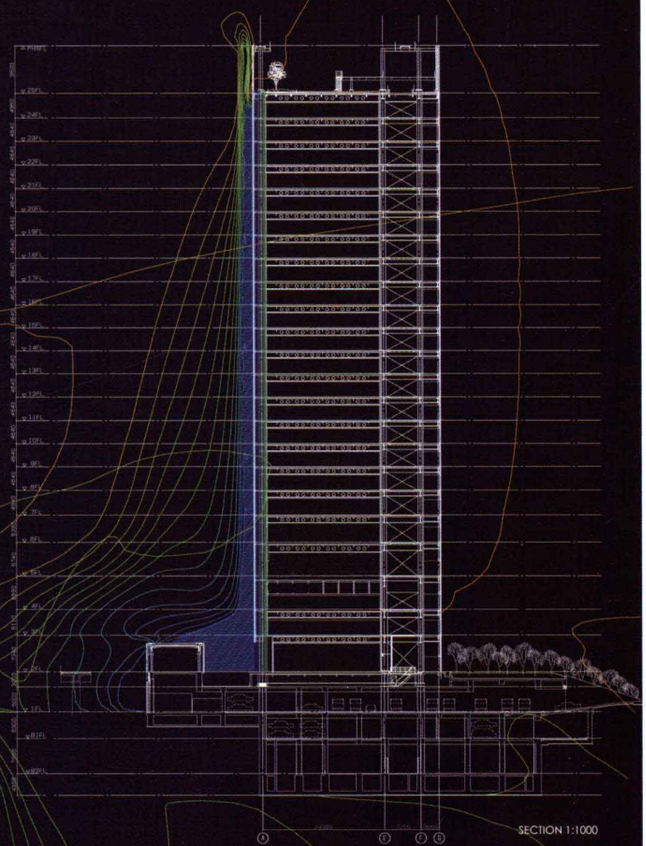
Façade filled with BIO SKIN decreases the surrounding temperature by 2°C



SITE PLAN 1:5000



PLAN 1:1000



SECTION 1:1000

For Sony' s new office building, BIOSKIN is applied to the entire east side of the building. By cooling the prevailing winds from the south that strike the side of the building facing east, the temperature of the surrounding air can be reduced by 2°C, thereby reducing the air-conditioning cooling load and creating a comfortable exterior environment.

NIKKEN SEKKEI