

结构与材料
Structure & Materials



建筑与都市

中文版 05:03

Architecture and Urbanism

Chinese Edition 05:03

专辑：结构与材料

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Architecture and Urbanism

结构与材料
Structure & Materials

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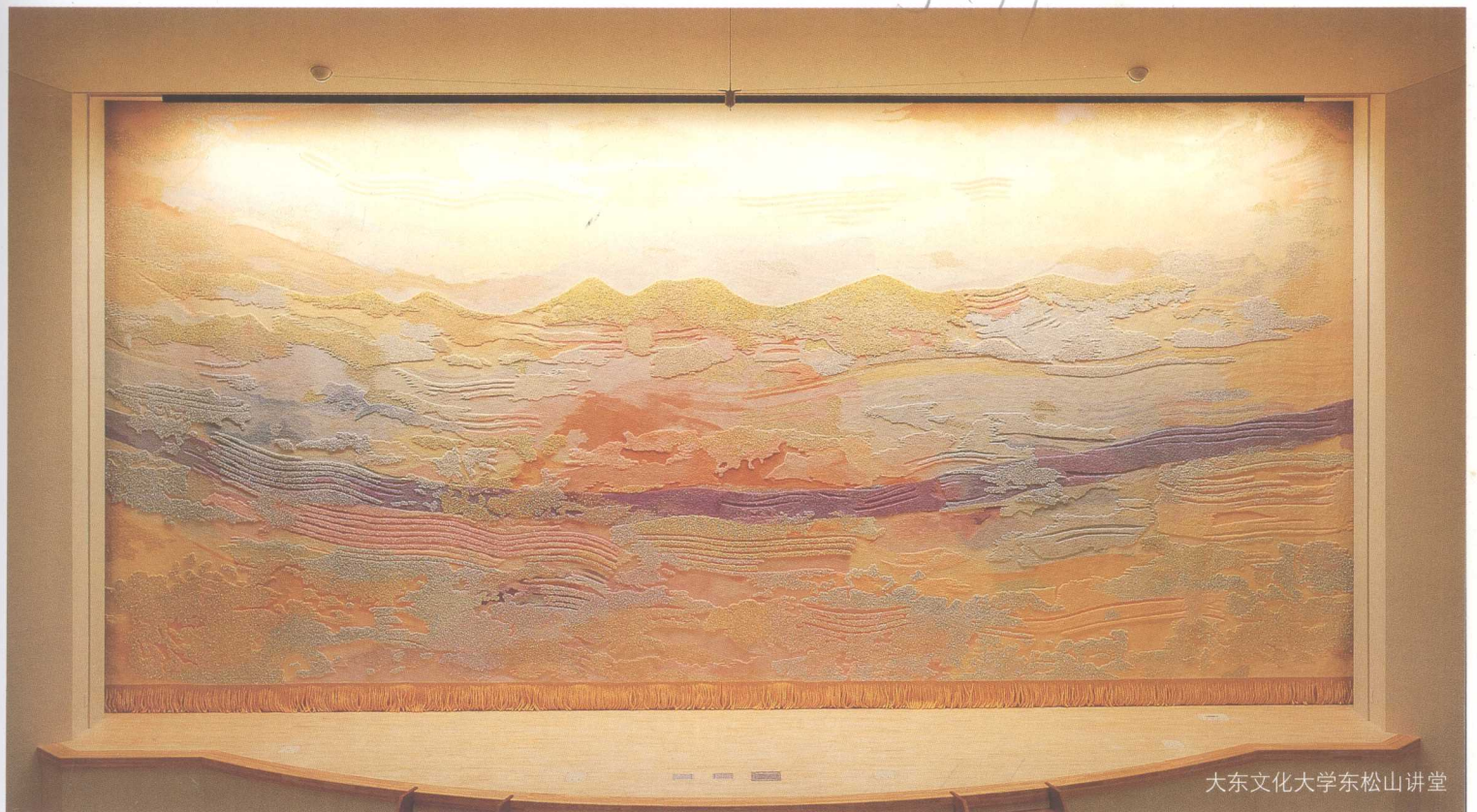
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◆ Coordinator

Shuzo Murakami

(Chair of The National Conference Board, SB05Tokyo and Professor of Keio University)

◆ Jury

Tadao Ando Richard Rogers

◆ Host

The National Conference Board, The 2005 World Sustainable Building Conference in Tokyo
Shinkenchiku-sha, Co., Ltd.
Yoshioka Foundation

◆ Support

Japanese Ministry of Land, Infrastructure and Transport

◆ Competition Purpose

The 2005 World Sustainable Building Conference (SB05Tokyo) will be held from September 27th to 29th, 2005. To mark this event, The SB05Tokyo National Conference Board, Shinkenchiku-sha, Co., Ltd., and Yoshioka Foundation will jointly sponsor The Shinkenchiku Residential Design Competition 2005. Each year since 1965, The Shinkenchiku Residential Design Competition has called for entries that explore new potential in architecture through the design of "the residence, a place for human dwelling," asking an architect of international standing to serve as a judge in selecting the winning submission. This time, in a departure from past competitions, two architects, Tadao Ando and Richard Rogers, will serve as judges. Shuzo Murakami (The Chief of the National Conference Board and Professor of Keio University) will serve as coordinator. The judging will be done in two stages, with the second-stage public jury to be held at the SB05Tokyo conference.

◆ Theme Description

In the 20th century, mankind attained prosperity by creating a culture of mass production and mass consumption. For that prosperity we must pay a terrible price, however, for we now confront a crisis of global proportions – our destruction of the earth's ecosystem. The signs of impending catastrophe are numerous. They include global warming, ozone destruction, receding glaciers, and the depletion of mining, farming, and marine resources.

Since 1987, when the Brundtland Commission of the United Nations popularized the concept of "sustainable development," sustainability has become a paradigm for an age of environmental awareness. Numerous hopes are confided in this word, among them a desire for intergenerational ethics, for preservation of the ecosystem, and for historical and cultural continuance. Under pressure from accelerating global population growth, however, sustainability is growing increasingly difficult to maintain.

Beginning with the Club of Rome, organizations of authorities, in all sectors, have issued warnings. If mankind maintains his present economic and industrial systems, it is believed, catastrophic change will occur in the earth's ecosystem within 50 to 60 years. We have little time remaining. We must act for the sake of sustainability. This is the purport of our theme this time: Action for Sustainability.

The building sector consumes 30 to 50% of the earth's resources and energy. As such, the building sector bears a great responsibility to advance the cause of sustainability, and expectations are high that it can do so. SB05Tokyo, a global conference on sustainable building, will be held in Tokyo next autumn. Opinion leaders in such fields as industry, government, education, and business, from around the world, will gather at the conference to discuss sustainable building from wide-ranging

perspectives. We plan to hold the second-stage public jury for this design competition at SB05 Tokyo. Through the residential design proposals submitted to this competition, we seek to send a strong message to the conference, one that will stimulate thoughtful discussion among the experts in sustainable building who gather here from many nations.

(Shuzo Murakami)

◆ Application and Entry

Contents: Site plan, floor plan, elevation, section, perspective drawings and axonometric drawings in any scale. Photographs of models may be used. You are free to append detailed drawings and other charts or descriptive texts that make your design clearer. Descriptive texts should be in either English or Japanese.

Paper: Complete all drawings, illustrative materials, and texts on ONE sheet of A1 size (594mm x 841mm). Include two copies with the original. DO NOT USE A PANEL.

Media: You may use blueprints, pencil, ink, color, or photographs. NO ELECTRONIC MEDIA

Identification: On the back side of the original and each of the two copies, the entrant must show his or her name, occupation, age, address (home and office), telephone and facsimile number and e-mail address. All of these items should be typed for sake of legibility. Cover this information with a strip of opaque paper that may be easily removed later

Deadline: All entries must reach the competition office no later than June 13th (Mon.), 2005.

Mail entries to the following address:

attn: Entries Committee, The Shinkenchiku Residential Competition 2005
Shinkenchiku-sha, Co., Ltd.

2-31-2, Yushima, Bunkyo-ku,
Tokyo 113-8501, Japan

URL: http://www.japan-architect.co.jp/english/1all/top_frame.html

◆ Judging Method

First stage: Tadao Ando and Richard Rogers will each select three finalists. First stage finalists (6 teams or less) will be notified of their selection by the end of July.

Second stage: The finalists will present their proposals at the SB05Tokyo conference (September 29th, 2005) and the Jury will choose the winner before the public. The finalists will be invited to the SB05Tokyo conference. (One person from each finalist team. A part of his or her traveling and accommodation expenses will be paid by the hosts).

◆ Announcement of Winners

Winners will be announced in the 2005 December issue of 'SHINKENCHIKU' and vol.60 issue of THE 'JAPAN ARCHITECT'.

◆ Prize

The prize (total: 1,500,000 yen) will be distributed at the discretion of the Juries.

◆ Notice

* No registration is necessary for entry in this competition.

* Entries must never have been made public in any form previously. Nor can they be submitted simultaneously to any other competition.

* The hosts reserve publication rights with regard to all entries.

* Questions will not be answered by the hosts. All matters not covered in the regulations listed above are left to the discretion of the entrants.

* The work must not (in total or in part) infringe on a copyright. Do not use images copied from magazines, books or Web sites. If a copyright infringement is discovered in the winning entry, the award may be taken back at the hosts' discretion.

* No entries will be returned.

* Entries will only be accepted if they adhere to all the rules appropriately.

* All necessary costs for submission (airmail charge, air courier charge, tax, insurance, etc.) must be fully paid by entrants.

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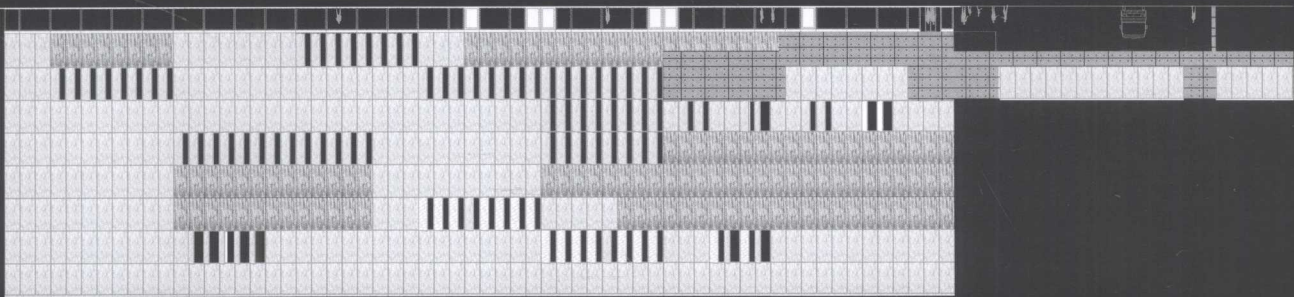
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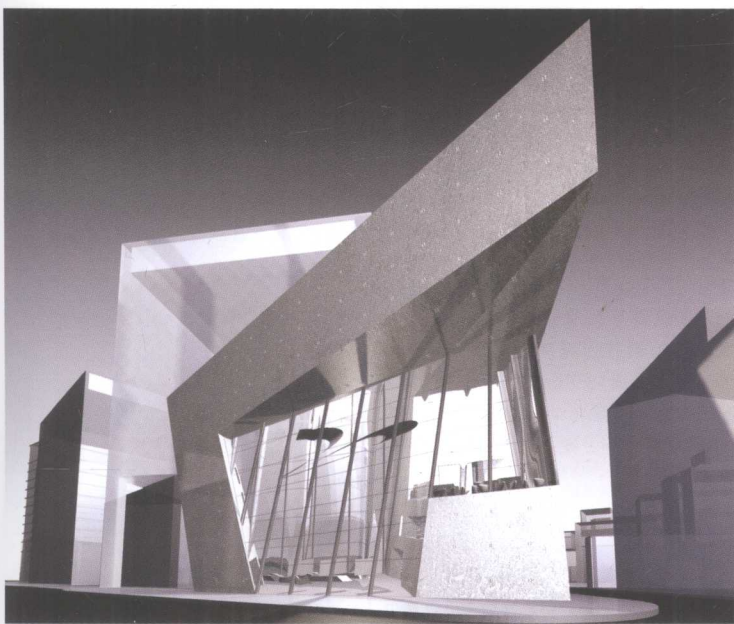
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Zaha Hadid to Design the Architecture Foundation Building

扎哈·哈迪德赢得了建筑基金会新建筑中心的设计竞赛

Zaha Hadid was announced as the winner of the international competition to design the Architecture Foundation's new centre for architecture, which is to be her first building in London. The new centre for architecture will be a place of energy, creative ideas and activity where the public can engage with the best contemporary architecture. Due to open in 2006 at its site in Southwark Street, London, close to Tate Modern and the Globe Theatre, the building will be the new home of the Architecture Foundation and will house exhibition space, events space, offices and a bar. The building and the competition to design it have been made possible with sponsorship from Land Securities, the UK's largest quoted property company.

Zaha Hadid's scheme will set the highest standard of design, creating dramatic and engaging architecture that will take the Architecture Foundation's programme and mission to a new level. The building, formed by a solid concrete ribbon wrapped around a full height glazed space at its centre, combines an emphatic presence and form with visual permeability and public accessibility.

Other shortlisted architects include: a-Graft, AOC, Caruso St John, Foreign Office Architects,

Lacaton & Vassal, MVRDV and Bernard Tschumi.

扎哈·哈迪德赢得了建筑基金会新建筑中心设计的国际竞标, 该建筑将成为她在伦敦的首个作品。

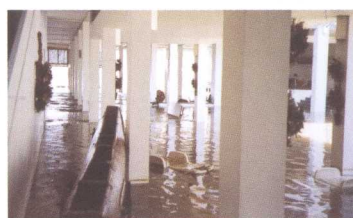
新的建筑中心集活力、灵感和动感为一体, 将成为这一时期公众所能见到的最好的建筑。这幢大楼预计在2006年开放, 它位于伦敦的南沃克大街, 靠近现代艺术博物馆和伦敦环球剧院, 拥有房屋展示厅、项目规划厅、办公室等设施, 甚至还有一个酒吧, 将成为建筑基金会的新总部。作为这个项目的赞助商和英国最大的财团公司, Land Securities为大楼的设计竞标和建造提供了大量的帮助和支持。

扎哈·哈迪德计划以最高的设计标准, 创造出一个极富魅力的建筑, 她希望使这个项目能达到一个从未有过的高度。整幢建筑的中心光滑处将被水泥制成的丝带包围, 将强烈的视觉冲击和大众化感觉完美的结合在一起。

其他参加候选的建筑事务所有: a-Graft, AOC, 卡卢索圣约翰建筑事务所, 外国建筑师办公室, Lacaton & Vassal, MVRDV建筑与都市工作室和伯纳德·屈米建筑事务所。

Tsunami Causes Considerable Damage to Geoffrey Bawa's Works in Sri Lanka

海啸对高夫里·巴瓦在斯里兰卡的工作造成了相当大的破坏



On December 26th, 2004, a devastating tsunami that had occurred in the area of the western coast of Northern Sumatra hit Sri Lanka and inflicted terrible damage on Geoffrey Bawa's works. *a+u* will report the situation of his work in the April issue.

2004年12月26号, 北苏门答腊岛的西部沿海地区发生了极具破坏力的海啸灾害, 对高夫里·巴瓦在斯里兰卡的工作造成毁灭性的打击。《a+u》将在四月份出版的杂志中对高夫里·巴瓦的工作情况进行报道。

Xaveer De Geyter Architects Wins First Prize in European Patent Office The Hague Competition

爱克萨维尔·德·甘特建筑师事务所在海牙欧洲专利局的竞标中赢得一等奖

The European Patent Organization has announced the competition prizes for its new high-profile 72,000 m² European Patent Office in The Hague. The 1st prize was won by Xaveer De Geyter Architects. The team of Xaveer De Geyter Architects worked for this competition in close collaboration with Ove Arup & Partners for the engineering and with Michel Desvigne for the garden design.

"The European Patent Organization, represented by the European Patent Office, seek to obtain with this project competition a design proposal for the urbanistic and architectural reorganization of its premises at The Hague, the Netherlands, by way of replacement of an existing building with a new structure. It has been established as the guiding principle that

Top: CG rendering of Zaha Hadid's proposal for Architecture Foundation Building. Bottom left: Image of badly damaged Blue Water hotel by Geoffrey Bawa. Bottom right: Bird's-eye view of European Patent Office by Xaveer De Geyter Architects.

本页, 上: 扎哈·哈迪德设计的建筑基金会新建筑中心大楼方案的CG透视图; 左下: 遭到严重破坏的高夫里·巴瓦设计作品——蓝水宾馆; 右下: 由爱克萨维尔·德·甘特建筑师事务所设计的欧洲专利局大楼鸟瞰图。



'the new office building should become a model for innovative, scientifically supported, progressive construction work offering a high standard for its users and an optimum cost/benefit ratio over the entire life time of the structure, taking account of all consequences'. It is a crucial part of the design task to integrate the new building and its outdoor facilities with the context of the existing distinctive buildings in a respectful, while independent manner so as to create a new overall ensemble favourably marking out the site for decades to come..." (Quote from the competition brief.) The proposal by Xaveer De Geyter Architects was found to be capable of fulfilling these requirements.

欧洲专利组织公布了72,000m²全新高楼——海牙欧洲专利局的竞标结果。爱克萨维尔·德·甘特建筑师事务所在此次竞标中赢得了一等奖。爱克萨维尔·德·甘特建筑师事务所在此次竞标过程中,分别与阿乐普·舍合伙人事务所以及米歇尔·戴斯威纳开展了密切的合作,阿乐普·舍合伙人事务所以及米歇尔·戴斯威纳分别承担了整个项目的工程部分工作和花园设计部分工作。

以欧洲专利局为代表的欧洲专利组织希望通过此次竞标为荷兰海牙的新大楼找寻一个以城市规划和建筑整合为前提的理想设计方案,以此来替换原来的建筑。新大楼必须是创新的典范,此外还必须具有先进的建造工艺和高科技的支持。新的大楼将为使用者提供一流的服务,同时在它的整个使用期内,各方面的花费成本都要合理。新大楼以及它外部设备既要与现有建筑的风格相和谐,又要具有自身的特点,并以未来10年作为一个整体来进行规划。

爱克萨维尔·德·甘特建筑师事务所的设计方案被认为是最具可行性的,也是最符合上述要求的。

Saint-Michel Environmental Complex Transformed into Circus Art City, TOHU

圣马克环境综合体将转变为马戏艺术城市



The second-largest landfill site

in North America, namely the Saint-Michel Environmental Complex (CESM), is the site of a remarkable new model of urban redevelopment. Located about 15 kilometers from central Montreal, and 190 hectares in size, CESM is the home of a new circus art city opened in 2004 and operated by the non-profit organization TOHU.

The reason why this development is so revolutionary is that the initiative in creating it was taken by En Piste, the national association of circus arts professionals, companies and institutions, together with the National Circus School and Cirque du Soleil, the internationally renowned circus company. The TOHU project has also received public support from the Quebec government and the city of Montreal as well as from the private sector, totaling well over \$73 million.

The project has a threefold mission: 1) a community mission, 2) an environmental mission, and 3) a cultural mission.

The community mission is to create jobs and contribute to the development of this area, originally an underprivileged residential district. The cultural mission is to make Montreal an international circus arts capital. The environmental mission is to contribute to the rehabilitation of this urban landfill site.

TOHU's environmental values are evident in the design of its facilities. They are heated and cooled by connection to an adjacent recycling center which generates power from captured landfill gases. This includes the performing pavilion, which seats 1,700 during the summer months. Hot and cold air is pumped in directly, ensuring clean air and comfortable temperatures both for artists performing close to the high ceiling and the audience in the seats. Second-hand materials were utilized for the steel frame and walls of the pavilion.

The chief architect of TOHU is Jacques Plante, and Michael Lapointe is responsible for the National Circus School.

In Montreal, the circus is recognized as a performing art, like dance and the theater. It is also regarded as an industry. The huge international success of Cirque du Soleil has reinforced this perception. Founded 20 years

ago by two street performers, the company has performed for 7.1 million spectators around the world, and has annual revenues of \$70 billion. Both as an industry and as a cultural asset, it exerts a strong influence on society.

Rumika Nishida
url: www.tohu.ca/en/

北美第二大垃圾场, 圣马克环境综合体, 现在已成为重振城市经济的典范。它占地190ha, 距离蒙特利尔中部有15km。2004年, 它在非盈利组织TOHU的领导下, 成为了一座全新的马戏艺术之城。

就是因为有由马戏艺术专业人士、公司和学校以及国家马戏艺术学校和国际知名公司都·索雷马戏团所组成的国家联盟恩·皮斯特的初期创作, 才使得这座城市有了革命性的发展。TOHU的这个项目不仅得到了来自魁北克政府和蒙特利尔市的大力资助, 还得到了不少私营企业的资助, 总金额达到7300万美元。整个计划将包括3个项目: 1. 社区项目, 2. 环境项目, 3. 文化项目。社区项目将着手改善社会较低层居民的生活, 致力于发展这些地区, 并为那里的人民创造出更多的就业机会; 作为文化项目, 他们希望将蒙特利尔建设成一座国际性马戏艺术之都; 而在环境项目中, 他们则希望将原来垃圾场的形象彻底改变。

TOHU项目的环境价值在其设施的设计上是显而易见的。它通过一个邻近的循环中心, 将垃圾再生, 产生的气体作为新能源被用来提供暖气和冷气。整个表演棚在夏季可容纳1,700名观众, 暖气和冷气将直接通过管道提供, 保证每一名坐在座位上的观众和参加表演的艺术家、甚至是在房顶附近表演的艺术家能在适宜的温度下呼吸到干净的空气。建筑的钢结构和顶棚、墙壁都将使用二手的材料来完成。

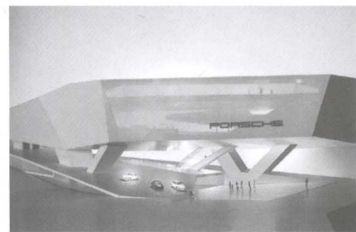
TOHU项目主要由建筑师杰克·普兰提负责, 米歇尔·来彭特则负责国家马戏学校的工作。在蒙特利尔, 马戏如同舞蹈和戏剧一样, 一直被视为一种表演艺术, 甚至被视为是一种工业。都·索雷马戏团在国际上的巨大成功进一步加深了人们对此的理解。从20年前的两个街头表演家开始, 这家公司已经为全世界近七百万的观众进行过表演, 他们的年收入已经达到了七千万美元。作为一种工业同时也是一种文化财产, 她的存在对于社会具有重大的影响。



announcements

Delugan Meissl Architects to Build New Porsche Museum

建筑师德卢甘·迈斯尔建造全新的保时捷博物馆



Delugan Meissl architects will build the new Porsche Museum in Zuffenhausen. The Austrians' design won the architects' competition, in which Porsche invited ten renowned architect's offices from Germany, Austria and Switzerland to take part. Construction work on Porscheplatz will commence later this year. The cost of the new Porsche Museum, which is to be opened in 2007, amounts to approximately 50 million euros. The new Porsche Museum will be perceived as a detached and dynamically formed monolithic body, which appears to hover above the ground and the first-floor level. This body will contain the exhibition area of approximately 5,000 m² and create space for "Experiencing the Porsche Cosmos". The first floor contains the entrance area, which not only acts as a foyer and starting point for guided tours, but also allows interesting insights into the workshop for historic vehicles and the archive.

建筑师德卢甘·迈斯尔将在德国的祖芬豪森建造全新的保时捷博物馆。保时捷公司此次邀请了来自德国、奥地利和瑞士的十家知名建筑事务所参加竞标, 奥地利知名建筑师德卢甘·迈斯尔从中脱颖而出, 赢得了此次竞标。保时捷博物馆将在今年下半年正式开工, 本次工程计划花费约五千万欧元, 将于2007年正式对外开放。

新的保时捷博物馆的主体建筑将集动感与独立感为一体, 由地面盘旋至一楼。建筑主体包含约5,000m²的展览区以及保时捷的体验创造区。一楼包括入口区, 入口区不仅仅是休息室或参观起点, 在那里人们还能看到这一在历史上享有盛名的汽车品牌的工作车间和档案资料。

Alvaro Siza and Eduardo Souto de Moura to Create First Building in the UK, 2005 Serpentine Gallery Pavilion

阿尔瓦罗·西扎和艾多阿斗·桑托·德玛拉创作了在英国的第一件作品——蛇形画廊2005年馆

The Serpentine Gallery has announced that the Portuguese architect Alvaro Siza and his long-time collaborator, Eduardo Souto de Moura, will design the next Serpentine Gallery Pavilion. Opening during the summer of 2005, it will replace the previously announced project by the Dutch architectural practice MVRDV, with Arup, which requires further development. The Serpentine Gallery Pavilion is the only architectural programme of its kind in the world. Since the commission was launched in 2000, it has resulted in four landmark temporary structures. The architects – Oscar Niemeyer (2003), Toyo Ito with Arup (2002), Daniel Libeskind with Arup (2001) and Zaha Hadid (2000) – were chosen because of the way in which they consistently push the boundaries of architectural practice. At the time of their invitation, none had completed a structure in the UK.

蛇形画廊的负责人宣布，葡萄牙建筑师阿尔瓦罗·西扎和他长期的合作伙伴艾多阿斗·桑托·德玛拉将负责下一个蛇形画廊的设计工作。他们的方案将取代原来由荷兰MVRDV建筑事务所与阿乐普结构工程咨询事务所尚不成熟、有待改善的设计方案，并将于2005年的夏天开始动工。蛇形画廊这种建筑类型在世界上是独一无二的。该规划项目自2000年始创建以来，已产生了4个划时代的临时构造。建筑家奥斯卡·尼迈耶（2003）、伊东丰雄与阿乐普（2002）、丹尼尔·利伯斯金与阿乐普（2001）以及扎哈·哈迪德（2000）的设计方案都曾由于他们超越现代建筑结构的设计方法而入选，但他们都未曾曾在英国完成过作品。

call for

Appeal For Funds From The Sri Lanka Institute of Architects

从斯里兰卡建筑学院申请资金

The Sri Lanka Institute of Architects (SLIA) launches an

appeal to raise funds to re-house the Tsunami victims. This programme is being carried out in close collaboration with the Sri Lankan Ministry of Urban Development and Water Supply.

斯里兰卡建筑学院为海啸受难者家园的重建筹集资金，斯里兰卡城市发展和水利部门将共同参与执行此项活动。

Bank account:
"Architects' Fund to Shelter Tsunami Victims" (AFSTV), Bank of Ceylon, Torrington Square Branch, Colombo 07, Sri Lanka, Account N° 004530207698. Swift Code: BCEYLKX.

competitions

Urban Habitats Competition 城市居住地竞标

Through this competition, Habitat for Humanity is seeking realistic, universal models for multi-family housing while preventing gentrification and displacement of the current residents. It aims to transform Sunrise Trailer Court into a renewed community.

通过竞标，希望得到适合多口家庭居住的、具有现实性和普遍性的城市住所方案，避免贵族化。它计划将“日出活动住屋苑”改变为一个全新的社区。

Host organization: Charlottesville Community Design Center-Charlottesville, VA 22902, USA
Registration deadline: March
e-mail: competition@cvillegedesign.org
url: www.cvillegedesign.org

Promosedia International Design Competition 桌椅制造商协会国际设计竞标

The aim of the competition is to stimulate creative ideas of chairs, which must however be technically feasible. Submissions are invited which express originality and innovation, giving due consideration to ergonomics, choice of materials and the requirements for mass production. Entries should present ideas for Indoor Chairs, making a significant use of wood.

此次竞标希望取得具有创造力又切实可行的椅子设计。邀请的仲裁会提出了以人为本的创新理念，设计和材料的选取都应符合大规模生产的要求。设计者要用木材设计出独特且有意义的室内座椅。

Host organization: Promosedia SpA, Via Trieste, 9/6 - 33044 Manzano (UD), Italy
Submission deadline: May 6
eligibility: Young designers under 40
e-mail: promosediadesign@caltpr.it
phone: +39 432 229 127
url: www.promosedia.it

Cork 2005 Design Competition "Art Box" 2005年科克设计竞标“艺术之盒”

Design ideas are sought for an "Art Box" mobile exhibition / performance space, owned by the City Council and accessed by artists who wish to exhibit and / or work outside of the context of the existing permanent infrastructure. Artists will have a project space that allows them direct access to the audiences.

寻找“艺术之盒”巡回展览的设计方案，为市议会所拥有，任何希望举办展览和 / 或在外部机构工作的艺术家都可以入内。艺术家将有一个可以直接同观众交流的设计空间。

Host organization: Cork 2005, Civic Trust House, 50 Pope's Quay, Cork, Ireland
Registration deadline: April 1
phone: +353 1 669 1463
e-mail: jjacob@riai.ie
url: www.cork2005.ie/programme/default.asp?id=143&p=227

exhibitions

Egon Eiermann (1904–1970) —The Continuity of Modernism 现代风的延续 Bauhaus Archive / Museum of Design Until May 16

On the occasion of Egon Eiermann's 100th birthday, the Bauhaus Archive is showing the first major retrospective of his diverse oeuvre. With the German Pavilion for the 1958 World Exposition in Brussels, Eiermann

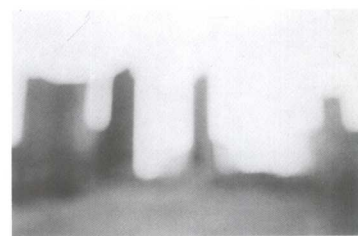
established an international reputation as an architect of Modernism.

在埃贡·埃尔曼的百岁生日会上，包豪斯建筑学派档案文件所放映了她早期的各种代表作品。自她的作品——“德国天棚”在1958年布鲁塞尔举行的世界展览会上出现后，埃尔曼在国际上赢得了现代主义建筑大师的盛名。

Contact: Bauhaus Archive / Museum of Design
Klingelhofstraße 14, D-10785 Berlin (Tiergarten), Germany
phone: +49 30 25 40 02 43
fax: +49 30 25 40 02 10
e-mail: bauhaus@bauhaus.de
url: www.bauhaus.de/english/aktuelles/presstexte.htm

Hans W. Mende: Mass And Light

汉斯·W·蒙德：形体和光线
Galerie Pernkopf
March 4–April 16



This exhibition shows almost abstract pictures, which only offer the actual object of the images when 'paying' a fantasy-fee. They circle around, focus and vary a famous place in Berlin.

本次展览绝大多数为抽象图画，仅展出现实中未实现的幻想形象。他们将柏林的某一著名地点或环绕、或集中或改变。

Opposite left: General view of the headquarters of TOHU designed by Jacques Plante. The theater has 860 seats and the first Canadian stage in the round. Opposite middle: Interior. View of a lesson of Circus School. Photos by Yasukei. Opposite right: Model of new Porsche Museum by Delugan, Meissl architects. © 2005 Porsche Cars North America, Inc. This page: Abstract photo of Berlin by Hans W. Mende. Photo courtesy of Galerie Pernkopf.

左页，左：杰克士·普兰提的TOHU总部设计方案的草图。剧院有860个座位，是加拿大最大的舞台；中：内部图，在马戏团学校上课。右：德卢甘·迈斯尔设计的保时捷博物馆模型。2005年保时捷北美车展。本页：汉斯·W·蒙德创作的柏林抽象画。

Contact: Galerie Pernkopf
Pariser Straße 56, 10719 Berlin,
Germany
phone : +49 88 62 40 09
fax : +49 88 77 37 75
e-mail: mail@galerie-pernkopf.de
url: www.galerie-pernkopf.de

Fast Forward Johannesburg —New Architecture and Urban Planning from South Africa

约翰内斯堡快速向前进
——南非的新建筑和城市规划
Aedes East
March 11–April 21

By means of current architectural and urban planning projects, this exhibition showcases the developments of the past decade in Johannesburg. The focus, encouraged by the new democratic order, is on novel approaches and solutions.

本次展览通过陈列当今的建筑和城市规划项目，向人们展示了过去10年内约翰内斯堡的发展历程。在新民主秩序的推动下，此次展览集中关注于那些新颖独特的方法和解决方案。

Contact: AEDES gallery,
Rosenthaler Str. 40–41, 10178
Berlin, Germany
phone: +49 30 282 70 15
url: www.aedes.galerie.de/

Mexico City Dialogues

墨西哥城对话
Center for Architecture
Until May 7

The work of twelve young architects from Mexico City – the oldest of whom is 42 and the youngest 27 – is the focus of this exhibition. On view will be fourteen fresh projects, two of them still in development and the rest completed within the past year and a half. Also on display will be contextual information – diagrams, photographs, aerial images, texts – to suggest how the challenging realities of Mexico City shape the work of these architects.

来自墨西哥城的12位年轻建筑家的作品（最大42岁，最小27岁）是此次展览的关注焦点。展览上共有14幅新作品，其中的2项尚在建设中，其余12项都已经在去年完成。同时还有图表、照片、空间图像、原文等相关信息的陈列，告诉人们这

些来自墨西哥城的建筑家是如何面对这些现实挑战的。

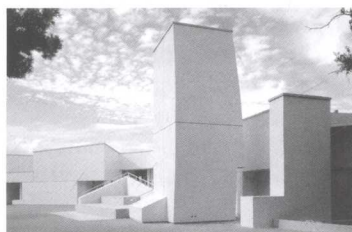
Contact: Center for Architecture
Greenwich Village, New York,
USA
phone: +1 212 358 6116
e-mail: ppuchalski@aiany.org
url: www.aiany.org

Michael Maltzan: Alternate Ground

迈克尔·曼尔赞：交替的地面
Carnegie Museum of Art
Until June 12

This exhibition presents sixteen projects that collectively demonstrate Maltzan's design strategies: the grafting of new and old, sensitivity to topography, the prioritization of natural light, and the pleasure of promenade. It also includes 200 models documenting the firm's design process.

本次展览展出了16幅迈克尔·曼尔赞的作品，这些作品全都反映了她善于嫁接新旧、对地形敏感、对自然光偏爱以及享受散步等的设计风格。同时还展出了200份模型，用来说明公司的设计程序。



Contact: Carnegie Museum
of Art, 4400 Forbes Avenue,
Pittsburgh, PA 15213-4080, USA
phone : +1 412 622 3131
url: www.cmoa.org/exhibitions/
/exhibit.asp

*This page: Feldman / Horn Center for the
Arts, North Hollywood, California, 1995–
1998. Photo by Tom Bonner.*

本页：弗尔德曼 / 霍恩艺术中心，加利福尼亚，好莱坞北部，1995–1998。



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下榻于安藤忠雄亲自设计的淡路威斯汀宾馆内。
游览2005日本爱知世博会。
观赏京都歌舞伎表演，体验关西风土人情。
赠送《安藤忠雄建筑之旅》一本。

时间：2005年5月

主办单位：上海文筑文化传播有限公司
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Structure & Materials

Technological developments are giving form to previously unimaginable designs and spaces that can now be virtually experienced within the computer. *A+U* has also been in pursuit of such possibilities, which have been introduced in this magazine. However, to actually construct architecture, the combination of structural design and materials is critical. This relationship remains constant, even if there is no limit to the number of combinations of structures and materials. Within all of these possibilities, this issue looks at impressive spaces that are supported by and crafted through intricate and elaborate techniques. This issue also introduces new materials that substitute for existing ones and features an essay that considers their architectural possibilities.

Translated by Ken Tadashi Oshima

科技的进步，使通过计算机进行假想空间体验变成了现实，超越人类想象的造型和空间不断涌现。《a+u》一直致力于对这种可能性的追求，并已陆续对此进行了介绍。然而，在现实的建筑建造中，结构设计和材料选定仍然是至关重要的因素。

结构与材料的组合方式可以无穷无尽。面对无限的可能性，本专辑将镜头的焦点对准了魅力空间背后复杂而缜密的设计手法。

同时本专辑也刊登了探求材料可能性问题的论文，对替代现存建筑材料的各种新材料进行了介绍。

编辑部

*Drawing of Federation Square by Lab
architecture studio in association with
Bates Smart*

由实验室建筑工作室+贝茨·司麦特设计的
联邦广场工程的图纸。

Essay:

Smart Materials and Technologies

Michelle Addington and Daniel L. Schodek

论文:

智能材料与技术

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Thermochromic paint. Electroluminescent textiles. Shape memory alloys. Photochromic glass. Conductive polymers. Smart windows. Intelligent environments. The vocabulary of the design world has undergone a radical change during the last decade, as several new materials and technologies have been introduced with transient or changeable properties. Often referred to as “smart”, these new materials offer the seductive opportunity to design dynamic objects and environments, animating the architecture as they interact with and respond to our surrounding environment. As a result, we are beginning to see many proposals speculating on how smart materials could begin to replace more conventional building materials.

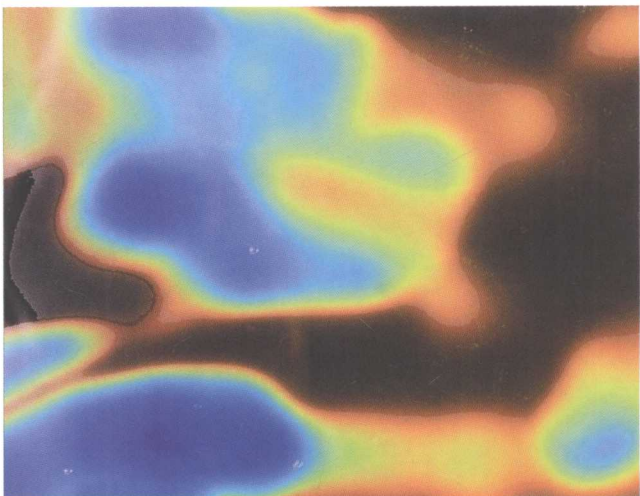
Many of these new materials have already become commercialized in a wide variety of other design applications from the mundane to the purely frivolous. Electrochromics are in most of the rear view mirrors currently being installed in new cars, thermochromics are being used in candy bar wrappers, smart gels are being exploited to produce novelty items and toys, and piezoelectrics have found a niche in top-of-the-line skis and bicycles. Architects have tried to embrace these new materials and technologies, adding them to their design palette as if they are simply another choice within normative practice. The assumption is that smart materials are but one more step in the trajectory of materials development since the industrial revolution toward increasingly selective and specialized performance. As a result, the field of architecture has often characterized these materials within the same family as high performance materials such as composites. This concept of a material with specific properties that have been engineered to optimize the response to a single situation or state has simply been expanded to include the ability to respond optimally to two or more states. For example, aerogel, a high performance material, maximizes the thermal resistivity of glazing to minimize conductive heat transfer: optimal performance for the situation in which there is a large temperature difference from the exterior to the interior, but not optimal under other circumstances, particularly when daylighting is an equally important requirement. Smart materials offer the further ability to match the conditions for more than one optimum state, thereby extending functionality: photochromic materials change opacity in response to solar radiation, and could thus be capable of dynamically adjusting the light transmission through glazing to either shield or admit available sunlight.

Before going further, however, we should define more precisely the meaning of a ‘smart’ material or technology. Here we should keep in mind that although the term is already in wide use there is no general agreement about what it actually means. The term is generally associated with materials or technologies that in some way alter their properties or behaviors when a change occurs in their surrounding external environments. Thus, a thermochromic material changes its color, or a pyroelectric material produces a current, when there is a change in the thermal environment that surrounds them. Properties

热变色涂料、电子发光织物、形态记忆合金、光变色玻璃、导电高分子、智能窗户、智能控制环境。近十年来，随着具有瞬变特性和可变特性的新材料与新技术的导入，设计界使用的术语也发生了巨大的变化。经常被冠以“智能”的新材料为进行动态的物体及环境设计开辟了充满魅力的天地，它们与周围环境相互作用并产生反应的过程赋予建筑以活力。基于这样的原因，我们开始关注许多关于如何以智能材料取代传统建筑材料的提案。

从日常用品到琐碎之物，许多新材料已经在相当广泛的设计领域内得到应用和商品化。电致变色材料已开始应用到许多新款汽车的后视镜中；热变色材料被用于糖果包装；智能胶在新奇小物品和玩具的生产上大显身手；而压电材料则在高级滑雪板和自行车的制造中占优势。建筑师们已经在尝试将这些新技术和新材料当作常规设计实践中的一种选择，加入到设计手法中去。其前提是，所谓智能材料的发展就是工业革命以来材料发展过程中的一个阶段，其发展愈来愈具有选择性和专业化的特点。结果，在建筑领域，这些材料经常被等同于诸如复合材料等的高性能材料。这种有关特性材料的概念——即最优化地对应单一环境条件的概念，被简单地扩展为也可以最优化地对应两种或两种以上环境状况的概念。例如，气凝胶这种高性能材料虽然在室内外温差很大的情况下可以达到其性能的最优化，即玻璃的抗热性能达到最大化而导热性达到最小化，但它却不能在其他环境状况里达到最优，尤其是在日照也成为一个重要需求时。而材料的智能化则进一步提高了材料适应多种最优化状态的能力，从而增强了材料的功能性。光致变色材料会随着太阳光线强度的变化而产生不同的阻光率，因而能够动态地调节透光率，或让光线透过，或阻挡其进入。

在做进一步讲解之前，我们需要更准确地定义“智能”材料或“智能”技术的概念。应该注意的是，虽然这个术语已经得到了广泛应用，却至今没有一个准确统一的定义。这个词语一般与材料或技术一起出现，指当外界环境发生变化时其某些特性或反应方面会发生一定的变化。因此，当环境温度变化时，热变色材料的颜色就会改变，而热电材料就会产生电流。材料的特性或反应并不是稳定的，而是动态的。动态反应直接受诱发变化产生机制影响。材料中的“智能性”通常受两种主要机制中的一种影响。如果一种机制通过改变材料的分子结构或微结构而影响材料的内部能量，那么由此产生的是材料特性的变化。这种变化可以是内在的，也可以是外在的。内在特性依赖于材料的内部结构和构成。许多化学的、机械的、电的、磁性的及热的特性通常都是内在的。外在特性则由其他因素决定。例如，外部光线的特点及暴露在这种光之下的微结构的特性决定了材料的颜色。如果这种机制改变了材料的能量状态而没有改变材料的本质，那么一



Thermochromic film

Thermochromic film (liquid crystal) calibrated for 25 to 30. Different colors indicate different temperature levels in the film. Blue is the highest temperature level and black is the lowest.

热变色胶片

热变色胶片（液晶）在25~30℃时显现色彩。不同的色彩表示胶片的不同温度水平。蓝色表示温度最高，黑色表示温度最低。



Electroluminescent wire diagram.

电子发光线图

or behaviors are not static, but dynamic. This dynamic behavior is in turn directly influenced by the mechanisms through which the alteration occurs. Smartness in a material is generally determined by one of two primary mechanisms. If the mechanism affects the internal energy of the material by altering either the material's molecular structure or its microstructure then the input results in a property change of the material. These properties may be either intrinsic or extrinsic. Intrinsic properties are dependent on the internal structure and composition of the material. Many chemical, mechanical, electrical, magnetic and thermal properties of a material are normally intrinsic. Extrinsic properties are dependent on other factors. The color of a material, for example, is dependent on the nature of the external incident light as well as the micro-structure of the material exposed to the light. If the mechanism changes the energy state of the material, but does not alter the material per se, then the input results in an exchange of energy from one form to another.

In property changing materials, the material undergoes a change in one of its properties – chemical, mechanical, electrical, magnetic or thermal – as it absorbs energy from external stimuli associated with the environment surrounding the material. Within this class of smart materials we find photochromics, thermochromics, chemochromics, thermotropics, magnetorheological, shape memory materials, and many others. Changes are direct and reversible – there is no need for an external control system to cause these changes to occur. A photochromic material, for example, changes its color in relation to the amount of ultraviolet radiation on its surface. In a thermochromic material, an input of thermal energy (heat) to the material alters its molecular structure. The new molecular structure has a different spectral reflectivity than does the original structure; as a result, the material's "color" – its reflected radiation in the visible range of the electromagnetic spectrum – changes.

A second general class of smart materials transforms input energy – radiant energy (light), mechanical energy, heat energy, electrical energy and so forth – from one form to output energy in another form, and again does so directly and reversibly. The material inherently stays the same but the type of energy undergoes a change. Thus, a photovoltaic material transforms radiant energy into electrical energy; or a piezoelectric material can transform mechanical energy (e.g. created by a force causing a deformation in the material) into electrical energy. Among the materials in this category are piezoelectrics, thermoelectrics, photovoltaics, pyroelectrics, photoluminescents, and others. Within this class, however, we should be aware that many of the "materials" are actually made up of several more basic materials that are constituted in a way to provide a particular type of function. A thermoelectric, for example, actually consists of multiple layers of different materials including a semiconductor layer. The resulting assembly is perhaps better described as a simple device. The