



2010年上海世博会 来实项目手册



2010 Shanghai Expo



AUSTRALIA 澳大利亚

Lysaght Projects in 2010 Shanghai Expo





AUSTRALIA
澳大利亚

外墙材料

澳大利亚馆采用来实SMARTCLAD™开放式外墙系统，其原材料是由博思格钢铁集团提供的耐候钢板，外墙颜色会不断变深变红，唤起人们对澳大利亚内陆景象的记忆。

耐候钢是一种高强度，低合金钢，在一定的环境和应用下，其耐腐蚀性可以是普通结构钢材的4-6倍，这是因为钢材表面可以生成防护性的氧化锈层，且无需上漆或做防护镀层处理。

Fabric of exterior skin

Lysaght SMARTCLAD™ open joint walling system is applied in Australian Pavilion, which was made from the weathering steel sponsored by BlueScope Steel. The walling steel will develop an increasingly deep, red-ochre colour, evocative of the Australian outback.

Weathering steel is a high strength, low alloy steel that may exhibit a greater resistance to corrosion than normal structural steels up to approximate 4-6 times under some environments and applications. The improved corrosion resistance is the result of development of protective oxide patina that eliminates the need for paint or other protective coatings.

Australian Pavilion 澳大利亚馆



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环保考量

SMARTCLAD™开放式外墙系统不产生传统密封胶系统引起的污染，外墙极好的保温密封性能大大削减了建筑物内部的能耗。

外墙板块的生产不需要镀层或涂层处理，这种节能环保和环保的措施是对世博主题“城市让生活更美好”的最好响应。

深化设计

项目的安装包括标准板及独特的女儿墙板，合理的设计为实现高品质安装打下了扎实的基础。

澳大利亚馆外立面及屋顶轮廓呈曲线状，墙板单元模数尺寸选择小宽度大高度，设计中采用两种不同的板块折边形式来满足立面半径的变化要求。在图纸深化阶段，标准板及女儿墙板尺寸设计精准，为工作的顺利开展创造了条件。

Considerations on environmental protection

Open joint system doesn't generate pollution that a traditional sealant-sealed joint normally does. The excellent insulation performance and air tightness of the facade cuts the energy consumption inside building significantly.

Manufacture of panel doesn't require coating or painting procedures. This energy-saving and environment-protecting solution is the best response to the World Expo theme 'Better City, Better Life'.

Detailed design

Rational design has built a solid foundation for achieving high quality in a construction which includes installation of typical panels as well as unique parapets.

The Australian Pavilion features a curved façade and roofline where a small width and large height is chosen for panel modular size, and two types of panel fold are devised to accommodate the change of façade radius. In the drawing development stage, the typical panels and parapet panels are all dimensioned precisely to create the smooth flowing lines.



板块加工

所有的板块都是在非常严格的公差控制下，由最高等级的折弯机加工成型。内部的质量保证体系涵盖整个加工过程，确保任何瑕疵都在产品进入下个阶段前被筛选出来并加以整改。

现场安装

准确的放样定位对于项目的顺利完工是至关重要的，所有可能的偏差都是在严格的控制之下，最终，第一列板与最后一列板按照设计的要求闭合。

由于我们出色的施工技术以及板块最大的可塑性，较为困难的玻璃筒与钢板墙面交界面安装满足了设计的要求。

Panel fabrication

All panels are produced with top class bending machine that produces to a very tight tolerance. The in-house QA system covers the whole fabrication process to ensure that deficiencies, if any, are picked out and rectified before the product gets into the next phase.

Site installation

The accurate setting out is vital to the successful completion for such a project. Any possible deviations are all under tight control. Eventually the last strip panels meet the first strip as designed.

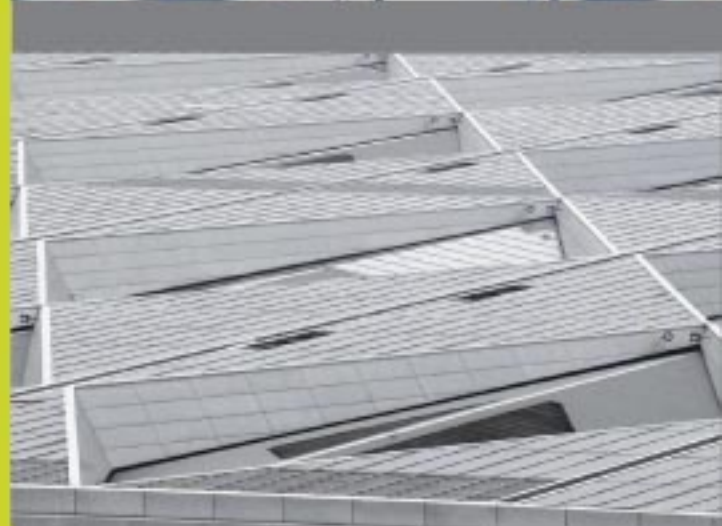
The challenging installation work at the interface between glass tube and steel cladding satisfies the design requirement due to our superb workmanship and maximum panel alterability we allow for the job.



Shanghai Expo Theme Pavilion 上海世博会主题馆

博思格来实为2010年上海世博会主题馆提供了KLIP-LOK®和TRIMDEK®屋面系统，以及大量的檩条系统。

BlueScope Lysaght provided the 2010 Shanghai Expo Theme Pavilion KLIP-LOK® and TRIMDEK® roofing systems, along with large amount of purlin systems.



对于博思格来实而言，这是一个特别的项目。该项目的屋面总体面积达63,000M²，博思格来实提供了近160,000M²，即1260吨的来实®屋面产品。

该项目的屋面设计十分新颖，屋面系统从最外层到内层依次为：太阳能光板，来实KLIP-LOK®外层屋面板系统，以及来实TRIMDEK®屋面内层板系统。

在该项目中，博思格来实负责屋面的安装设计、产品供应和安装施工协调，即将完工的屋面工程将为业主展示来实®系统出色的品质和建筑效果。

对业主而言，施工安全尤其重要，总包商在所有安装工人高空作业的区域都安装了安全网。这种由防坠网和双钩安全带组成的安全网系统，在中国建筑业起到领先的示范作用，使该项目成为最安全的施工现场。

This has been a particularly exciting project for BlueScope Lysaght China. The total roof area is 63,000M² with a total material supply area of 160,000M² or 1,260MT of LYSAGHT® materials for the total building roof.

The roofing system design is quite creative, consisting of 4 layers of roofing panels, they are: solar panels, LYSAGHT KLIP-LOK® roofing system and LYSAGHT TRIMDEK® and TRIMDEK® perforated roofing systems.

BlueScope Lysaght took responsibility for roof build up design, supply and site coordination of the installation. A full roof structure build up was developed to show the owner the LYSAGHT® system elements and constructability.

Safety is very important to the project owner and the general contractor installed nets for all project areas in which workers conducted activities at height. This is excellent leadership in China and coupled with static lines and twin lanyard safety harnesses, made this site one of safest construction projects in China.



Shanghai Expo Theme Pavilion 上海世博会主题馆

来实建筑系统(上海)有限公司的管理层每周都对项目施工现场进行安全检查，确定在现场工作的所有来实员工和合同工都采取了符合安全规定的操作标准。在现场，还有一位全职的来实安全顾问和一位现场项目经理，协调业主和各方供应商的工作。

由于屋面采取了双层防水设计，屋面系统的防水性至关重要。整个建筑结构采取3D曲面大跨度设计，结构主体在建筑内部可见。

23%穿孔率的来实TRIMDEK®板被作为内层板，穿孔直径为2.5mm，保证了屋面板的结构完整性的同时，还提供了极佳的吸音效果。双层保温棉降低了雨鼓效应可能带来的噪音，内层板上的玻璃棉起到进一步防止灰尘进入建筑内部作用。

The Lysaght Shanghai management team also conducted weekly safety audits of the site to ensure safety compliance of all Lysaght employees and contractors. A Lysaght full time safety professional was employed on site during all work hours in addition to a site project manager who attended all the daily and weekly meetings and interfaces with the owner and contractors.

Water proofing the roof was critical to the owner with a twin rain protection system. The building structure was designed as an exo-skeletal 3D space frame structure which is exposed on the interior of the building.

Perforated Lysaght TRIMDEK® was utilised for the liner panel with 23% perforation and 2.5mm holes to preserve the structural integrity of the panel. This guaranteed excellent sound attenuation for the building interior. The twin layers of insulation eliminated rain drumming from the top roof skin. A layer of felt was laid on top of the TRIMDEK® to prevent any dust penetration through the liner.



Finland Pavilion 芬兰馆

博思格来实MC多肋板™等多种产品，完美演绎了芬兰馆冰壶外型的优美曲线。

BlueScope Lysaght MULTICLAD® walling system embraces the elegant and smooth curves of the Ice Kirnu.



Saudi Pavilion 沙特馆

来实BONDEK®II楼承板等多种产品，有力的支撑起世博园中这只月亮船。

LYSAGHT BONDEK® II decking system floats the Moon Boat in the Expo sea.

New Zealand Pavilion 新西兰馆

新西兰馆简洁有力的线条内，多种来实®产品应用其中。

Inside of these simple and natural lines of New Zealand Pavilion, there are several different LYSAGHT® systems.



Shanghai Enterprises Pavilion 上海企业联合馆

来实TRIMDEK®墙面系统包裹着上海企业联合馆内的魔方。

LYSAGHT TRIMDEK® walling system palms the Magic Mushrooms inside of Shanghai Enterprises Pavilion.





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