



Saint Gobain Glass 圣戈班玻璃公司

Architects:
Ebbens architecten
Location:
Amersfoort, the Netherlands
Gross floor area:
7,600 m²
Project year:
2010
Photographer:
Jan de Vries
设计师:
伊本斯建筑事务所
项目地点:
荷兰, 阿默斯福特
建筑面积:
7,600 平方米
完成时间:
2010
摄影师:
简·德维里斯

- Glass plays an explicit role in this project by Ebbens Architects design. Both applications of glass in the production, interior and exterior of the complex. This is the building itself an example of the possibilities that glass offers.
- The façade of the hall is the U-glass strips around applied along the eaves and also is equipped with horizontal sandwich panels and around an insulated precast concrete plinth. During the day makes the U-glass for natural light in the hall. In the evening, this application from outside a beautiful picture.
- The staircase has a triangular shape

.The façade at the location of the spike is made of glass spider. The relatively slender shape, the sharp tip of the cantilever and the light weight of the staircase was a heavy foundation.

- 伊本斯建筑事务所将玻璃材料运用到了建筑的室内外设计之中, 让建筑本身成为了玻璃产品的代言。
- 大厅的外立面采用了U形玻璃一直延伸到屋檐, 同时还装备着水平夹层板, 板材环绕着一个预浇筑的混凝土基座。白天, U形玻璃能为大厅带来自然采光; 夜晚, 建筑仿佛一幅美丽的图画。
- 楼梯采用三角造型。顶端的外立面由玻璃四角架组成。相对细长的形状, 悬臂的尖端和楼梯轻盈的质感形成了夯实的基础结构。



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1. In close collaboration with Saint-Gobain glass applications are designed and incorporated into the building. This materialization is also the next two adjacent units on the industrial application
2. On the long front, these strips of glass U-playfully zigzagging high and low along the façade
3. Typically in the façade of the hall are the U-glass strips around applied mainly along the eaves to a height of about 2 metres
4. The building consists of approximately 6,000 m² warehouse and an office of approximately 1,600 m². The warehouse has a height of 11 metres and consists of two separate components which together form an L-shaped building
5. Night lighting effects
6. The outer walls of the office consist of a combination of spider and glass curtain walls

1. 对圣戈班玻璃的应用贯穿了整个建筑设计。这种物质化同样体现在两个连接单元的工业应用上
2. 在大楼的长边上，玻璃带呈现出高高低低的曲折造型
3. 大厅的外立面由U形玻璃带环绕，主要沿着屋檐，高度约为2米
4. 建筑由近6,000平方米的仓库和近1,600平方米的办公区组成。仓库高11米，两个独立的结构共同组成了L形大楼
5. 夜间灯光效果
6. 办公区的外墙由蜘蛛网结构和玻璃幕墙组合而成



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7. The small staircase that is located next to the hall is completely designed as an independent building section
8. During the day the glass facade bring natural light into the hall
- 9,10. The 3-layer office with triangular floor plan has a height of 11.8 metres
11. The office has a wider field of view, making a full use of natural sunlight
12. Production areas

7. 紧邻大厅的小楼梯被设计成完全独立的建筑结构
8. 白天玻璃幕墙能为大厅带来自然采光
- 9,10. 三层的办公空间采用三角形楼面布局，高11.8米
11. 办公室内可以拥有广阔的视野，充分地利用自然光
12. 生产车间



Cross Section 横切面



Elevations 立面图



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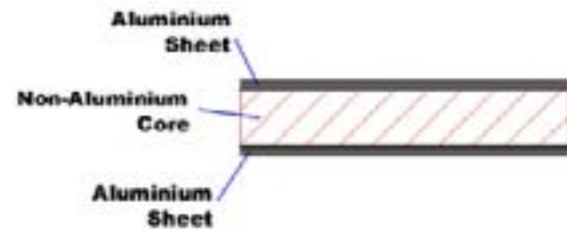
TIPS:

◆ **Sandwich panels**

Aluminium Composite Panel (ACP; also Aluminium Composite Material, ACM) or sandwich panel is a type of flat panel that consists of two thin aluminium sheets bonded to a non-aluminium core. ACPs are frequently used for external cladding of buildings (building facades), for insulation and for signage. Aluminium sheets can be coated with PVDF or Polyester paint.

Applications

ACP is mainly used for external and internal architectural cladding or partitions, false ceilings, signage, machine coverings, container construction etc. ACP has been used as a light-weight but very sturdy material in construction, particularly for transient structures like trade show booths and similar temporary



Aluminium composite panel structure
铝板结构图



elements. It has recently also been adopted as a backing material for mounting fine art photography, often with an acrylic finish using processes like Diasac or other face-mounting techniques. The main advantages of ACP are:

- increased rigidity and durability
- low weight
- weather and UV resistance
- easy forming and processing

◆ **Triangles in construction**

Rectangles have been the most popular and common geometric form for buildings since the shape is easy to stack and organize; as a standard, it is easy to design furniture and fixtures to fit inside rectangularly shaped buildings. But triangles, while more difficult to use conceptually, provide a great deal of strength. As computer technology helps architects design creative new buildings, triangular shapes are becoming increasingly prevalent as parts of buildings and as the primary shape for some types of skyscrapers. In Tokyo in 1989, architects had wondered whether it was possible to build a 500-story tower to provide affordable office space for this densely packed city, but with the danger to buildings from earthquakes, architects considered that a triangular shape would have been necessary if such a building was ever to have been built (it hasn't by 2011). In New York City, as Broadway crisscrosses major avenues, the resulting blocks are cut like triangles, and

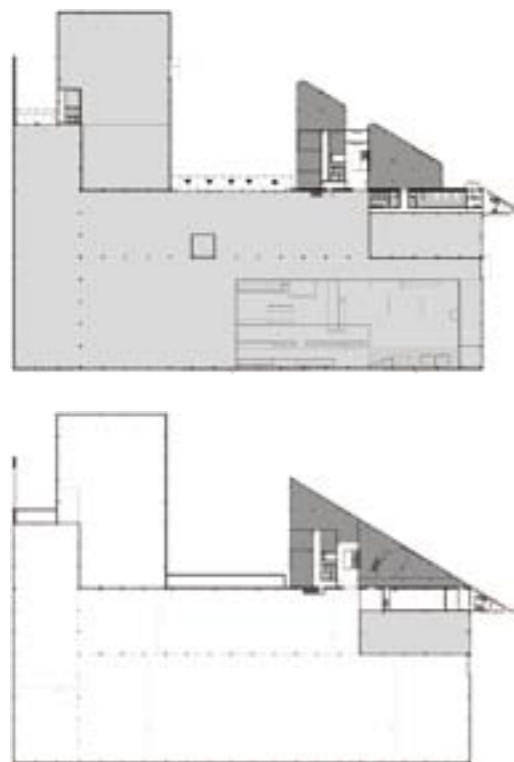
buildings have been built on these shapes; one such building is the triangularly shaped Flatiron Building which real estate people admit has a "warren of awkward spaces that do not easily accommodate modern office furniture" but that has not prevented the structure from becoming a landmark icon. Designers have made houses in Norway using triangular themes. [33] Triangle shapes have appeared in churches[34] as well as public buildings including colleges[35] as well as supports for innovative home designs.[36] Triangles are sturdy; while a rectangle can collapse into a parallelogram from pressure to one of its points, triangles have a natural strength which supports structures against lateral pressures. A triangle will not change shape unless its sides are bent or extended or broken or if its joints break; in essence, each of the three sides supports the other two. A rectangle, in contrast, is more dependent on the strength of its joints in a structural sense. It is likely that triangles will be used increasingly in new ways as architecture increases in complexity. It is important to remember that triangles are strong in terms of rigidity, but while packed in a tessellating arrangement triangles are not as strong as hexagons under compression (hence the prevalence of hexagonal forms in nature). Tessellated triangles still maintain superior strength for cantilevering however, and this is the basis for one of the strongest man made structures, the tetrahedral truss.



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Floor plan 平面图



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贴士：

◆ 夹层板

铝复合板 (ACP; 又名铝复合材料, ACM) 或夹层板, 是一种将两个薄铝板绑定到一个非铝核心的板材。它经常用于建筑物的外部包层 (建筑立面) 隔热层和标牌。铝板可以用聚偏氟乙烯或聚酯漆涂覆。

应用：

ACP 主要用于内部和外部的建筑覆面或隔墙、吊顶、标牌、机覆盖物、容器结构等。

在建筑中 ACP 已被用来作为一个轻量级的, 但非常坚固的材料, 特别是对于临时构筑物, 如贸易展位和类似的临时设施。最近它还被采纳作为背衬材料用于艺术摄影, 同时也经常与丙烯酸面漆在某些过程中一起使用, 如 Diasec 或其他表面安装技术。

ACP 的主要优点是：

- 提高刚性和耐久性
- 质量轻
- 不易受气候影响和抗 UV 辐射
- 易于成型和加工

◆ 三角形在建筑中的应用：

因为形状易于堆积和改变, 矩形一直是建筑物中最受欢迎和最常见几何形状; 作为一种模型标准, 人们可以很容易用它来设计家居和固定装置并且在矩

形建筑内使用。三角形虽然可以提供很大的力量, 但是在理论上讲它更难使用。因为计算机科技可以帮助设计师设计有创意的新建筑, 所以三角形作为楼宇的一部分和某些类型的摩天大楼的初级形状也开始变得越来越普遍。

在 1989 年的东京, 设计师都想知道是否可以建造一个 500 层的高塔来为这个稠密的城市提供经济适用的办公空间。但考虑到地震给建筑物带来的危险, 设计师认为因为以前从未建造过这样的建筑物, 所以还是不要采用三角造型。(到 2011 年还没有出现过三角造型的建筑) 在纽约市百老汇纵横交错的主要干道上, 街区被切割成三角形, 建筑物也被建造成三角形; 熨斗大厦就是这样一个三角形的建筑, 虽然做房地产的人们认为它是“不容易容纳现代办公家具的尴尬空间”, 但是这并没妨碍它成为具有里程碑意义的图标。

挪威的设计师用三角形的主题设计了房屋, 三角形造型还出现在教堂和公共建筑包括大学上, 同时也为创新家庭的设计提供了支持。矩形可以从任何一个点被压成平行四边形, 而三角形是坚固的, 其结构可以抵抗外侧压力。三角形不会改变形状, 除非其两侧弯曲或延长或折断; 从本质上讲, 三条边中每条都分别支撑其他两个。相反, 矩形更依赖于其结构意义上的接头强度。

随着建筑结构复杂性的增加, 三角形将被应用在越来越多的方面。重要的是我们要记住三角形有很强的刚性, 尽管装在镶嵌装置里的三角形在重压下强度不如六边形 (因此六角形式自然流行起来)。镶嵌化的三角形仍可保持悬臂的高强度, 不过, 这是最坚固的人造四面体结构 --- 桁架的基础之一。