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先锋建筑
PIONEER ARCHITECTURE

FROZEN CULTURE
凝固的文化

HKASP | 先锋空间 主编

江苏科学技术出版社

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FROZEN CULTURE
Analysis of Cultural Architecture
凝固的文化
解析文化建筑

博物馆 影剧院 文化中心 文体建筑

江苏科学技术出版社

A COMET OVER MILAN

米兰的“彗星”

Architect: Mario Bellini
设计公司：Mario Bellini

Project Team: D’ Arcangelo
Location: Milan, Italy

项目团队：D’ Arcangelo
项目地点：意大利米兰

SHAPE FEATURES

A graft of metal and glass bodies – three tapering foyers on different levels with spectacular 180 degree views over city life – will give a radical twist and conclude the old building head which has remained incomplete until now. A great square volume bulges outward and violates the existing roof, while an unexpected asteroid-auditorium floats beside it on a crown of preexisting columns.

造型特点

有着高低不同的三个锥形大厅且能够 180 度俯瞰壮观的城市生活全景的一种金属与玻璃主体拼接的建筑形式，将改变延续至今的旧建筑破落的屋顶。一个巨大的正方体取代了旧屋顶，紧邻着的是“飘”在现有柱冠上令人惊奇的星状会堂。

DESCRIPTION

Overview

It is extremely rare that an architect gets the chance to bring a creation of his to life a second time. After only 11 years, the Portello exhibition complex – which I worked on between 1993 and 1997 – was in danger of ending up as industrial archaeology. But it was not to be. Thanks to a complex operation of "architectural surgery", it is already destined to play a leading role in Milano Expo 2015.

The first stage – to be completed by 2010 – will be the construction of a large congress centre in the southernmost building. This structure – overlooking the site where city life with its already renowned skyscrapers is going to be built; it is first off the blocks and issues a renewed challenge.

Eventually, the entire complex will express all of its original potential as a great bustling bridge: 800 m of urban pergola coinciding with the "green ray" which will connect the city centre with the Expo area, and, more closely, the green oasis of city life with the new "Portello Nord" area already under construction.

But what form does this renewed challenge actually take? A graft of metal and glass bodies – three tapering foyers on different levels with spectacular 180 degree views over city life – will give a radical twist and conclude the old building head which has remained incomplete until now. A great square volume bulges outward and violates the existing roof, while an unexpected asteroid-auditorium floats beside it on a crown of preexisting columns.

A real earthquake in volumetric terms which required and generated the synthesis which resolves all: the invention of a silvery airy comet which surmounts and embraces the new building head together with part of the flanks and roof of the building, transforming it into a rare new creature, yet remaining coherent with the overall complex.

It will be an unmistakable landmark, conceived as a swarm of luminescent rays rippling from the denser nucleus of the bulkhead and forming a 200 m long tail. A comet, in fact, has destined to become a symbol and engage in dialogue with city life on equal terms, because its horizontal extension competes with the height of the skyscrapers.

项目概况

一位建筑师有机会将他的生活进行二度创作是极为罕见的。我曾于 1993 年到 1997 年之间在波特洛展览中心工作，这里作为工业考古学地址几近消失。然而仅仅 11 年后它已不是原来的样子。由于一场综合“建筑手术”，此处注定要在 2015 年米兰世博会上发挥主导作用。

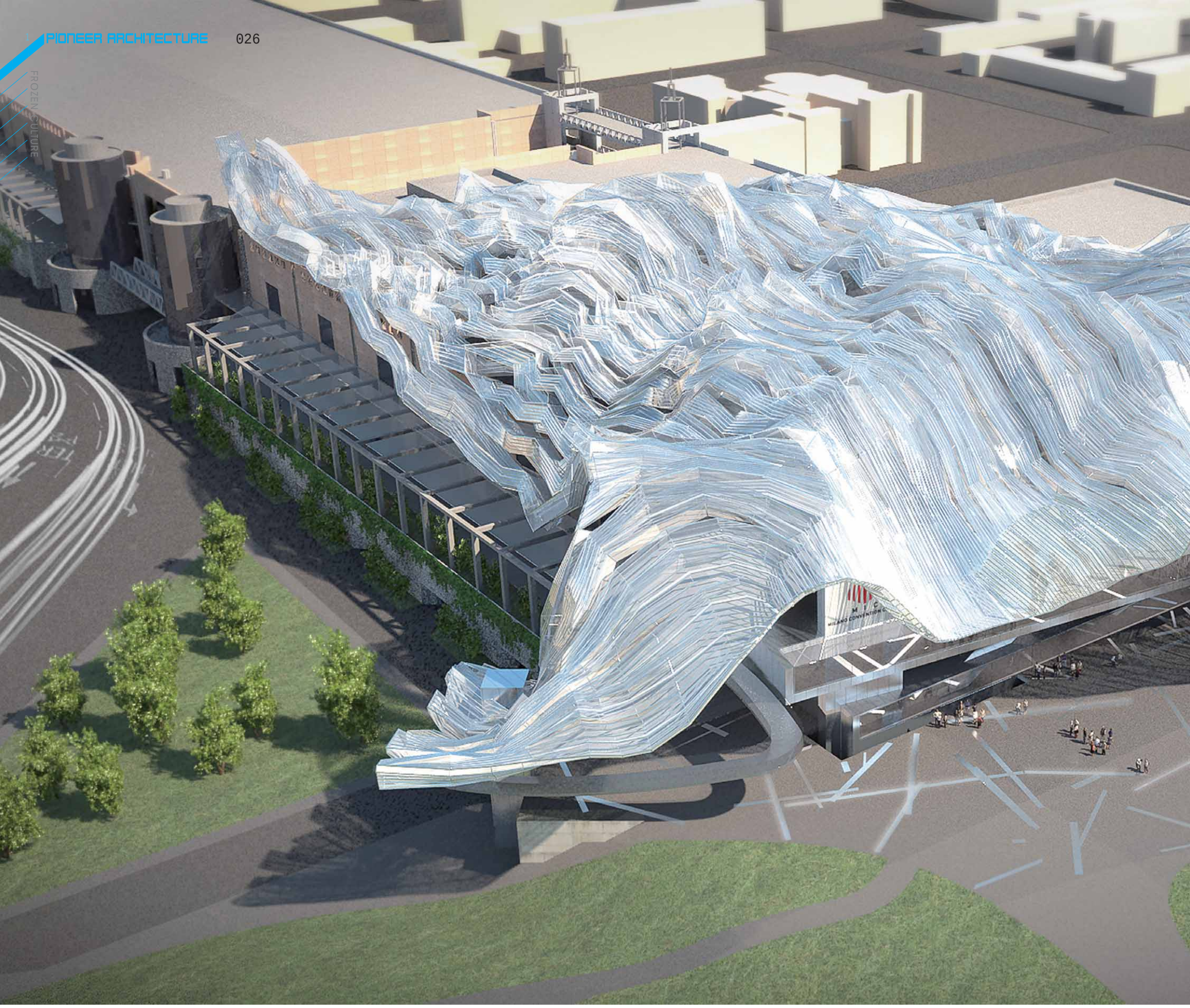
第一阶段是在最南部建立一个大型会议中心，此项工程已于 2010 年完成。会议中心能够俯瞰城市生活区内在建的著名的摩天大楼，它首次不使用砖，作为对以往建筑技术的一种全新的挑战。

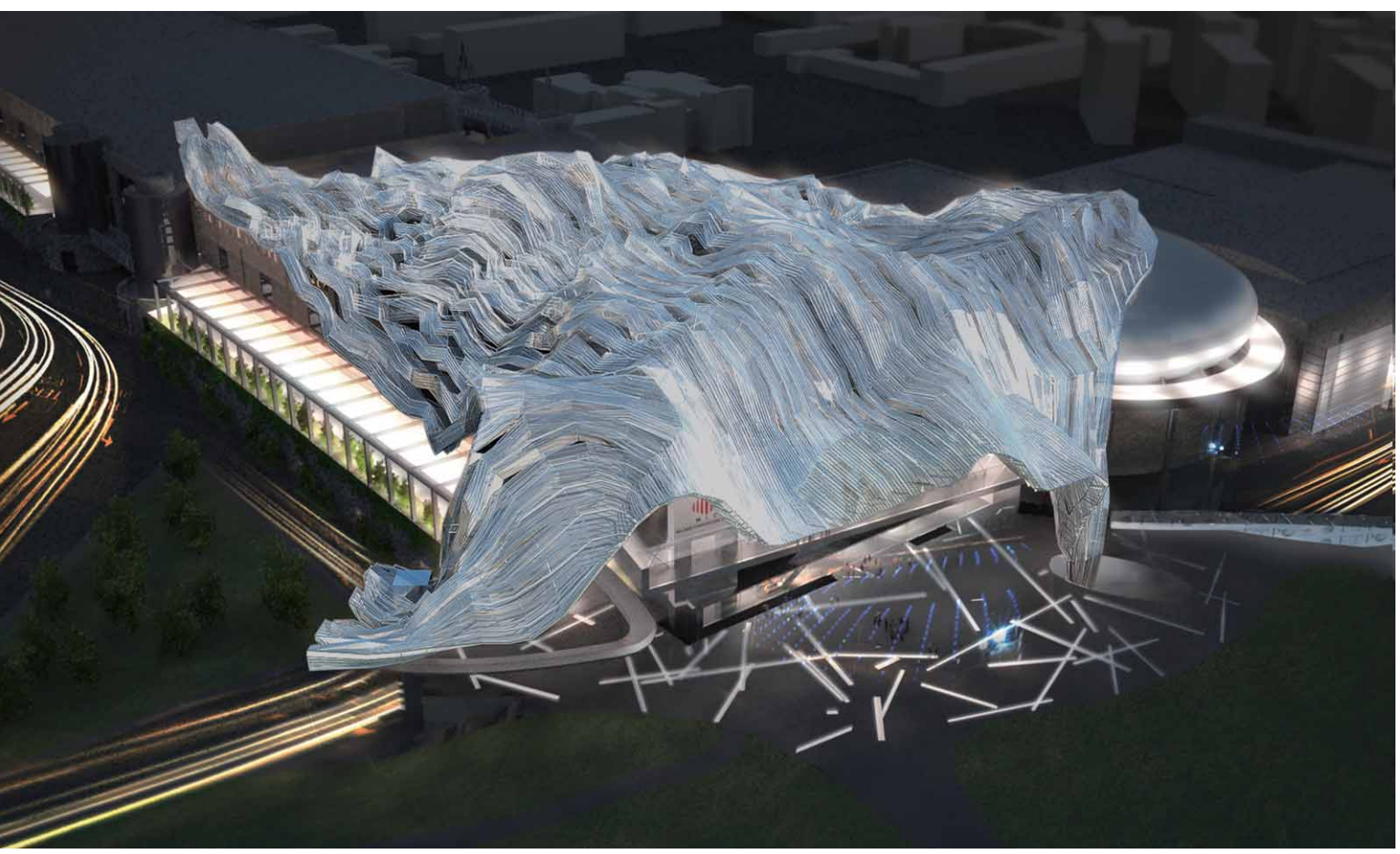
最终，整个展览区将作为一座繁忙的大桥展示其原始潜力：披着绿荫的 800 米城市凉亭将城市中心和世博区连接起来，而且，它与正在建设中的新波特洛北区城市生活绿洲的联系更加紧密。

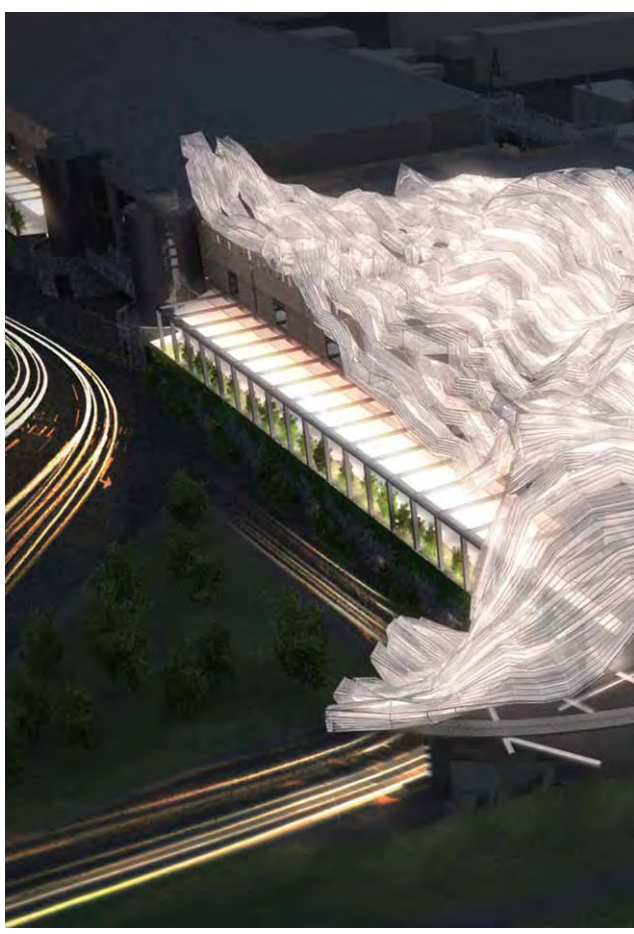
新挑战究竟应该采用什么样的重建形式？有着高低不同的三个锥形大厅且能够 180 度俯瞰壮观的城市生活全景的一种金属与玻璃主体拼接的建筑形式，将改变延续至今的旧建筑破落的屋顶。一个巨大的正方体取代了旧屋顶，紧邻着的是“飘”在现有柱冠上令人惊奇的星状会堂。

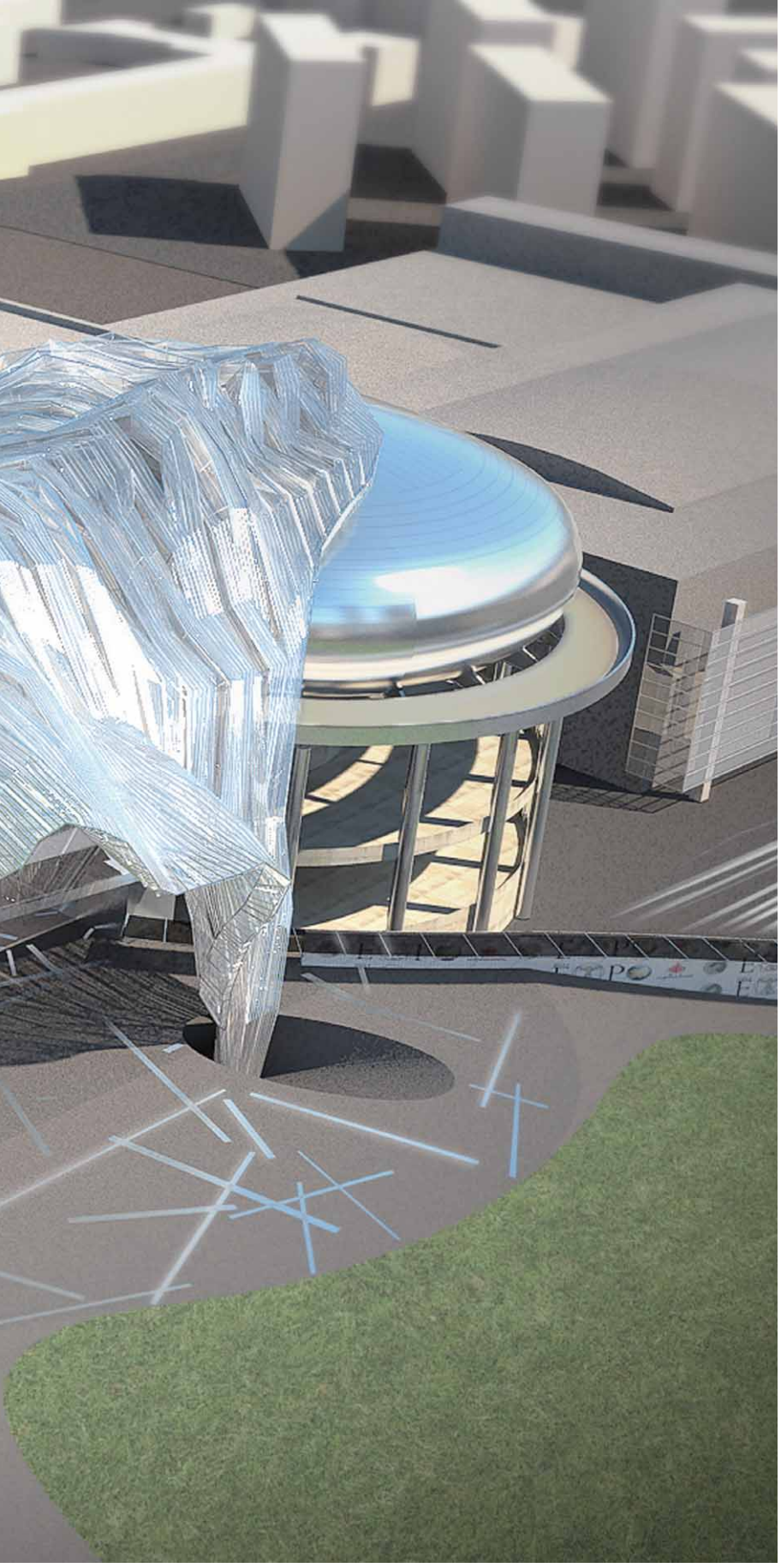
为了符合抗震标准，对建筑体采取了满加固：用一个银色的通风“彗星”把新的楼顶和侧翼连同老建筑的楼顶包裹成一个整体，从而形成一个新的建筑形体。这个特殊的新形体与整座楼牢牢地黏合在一起。

这将是一个醒目的地标。一束束光线从密实的中心涟漪般散开，拖着一条 200 多米的长尾巴。这颗“彗星”，注定要成为一个标志和城市生活的话题，它的横向延伸与摩天大楼的高度不相上下。









SKIN FEATURES

A silvery airy comet surmounts and embraces the new building head together with part of the flanks and roof of the building, transforming it into a rare new creature yet remaining coherent with the overall complex.

表皮特点

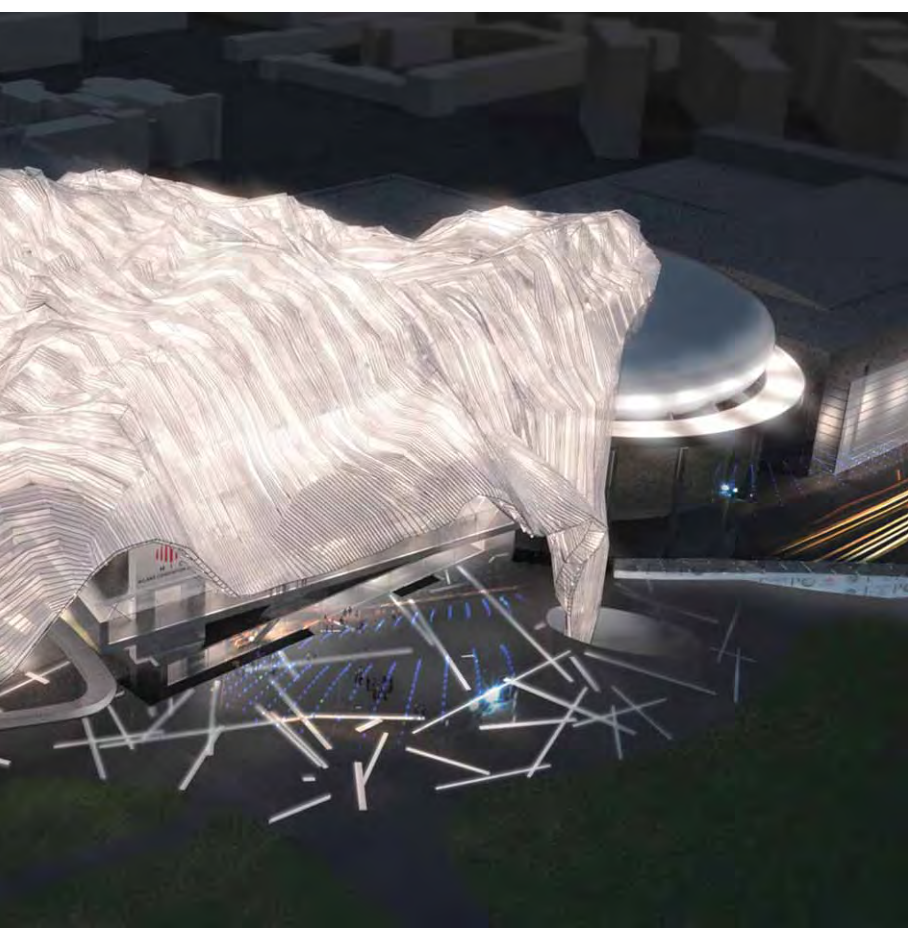
一个银色的通风“彗星”把新的楼顶和侧翼连同老建筑的楼顶包裹成一个整体，从而形成一个新的建筑形体。

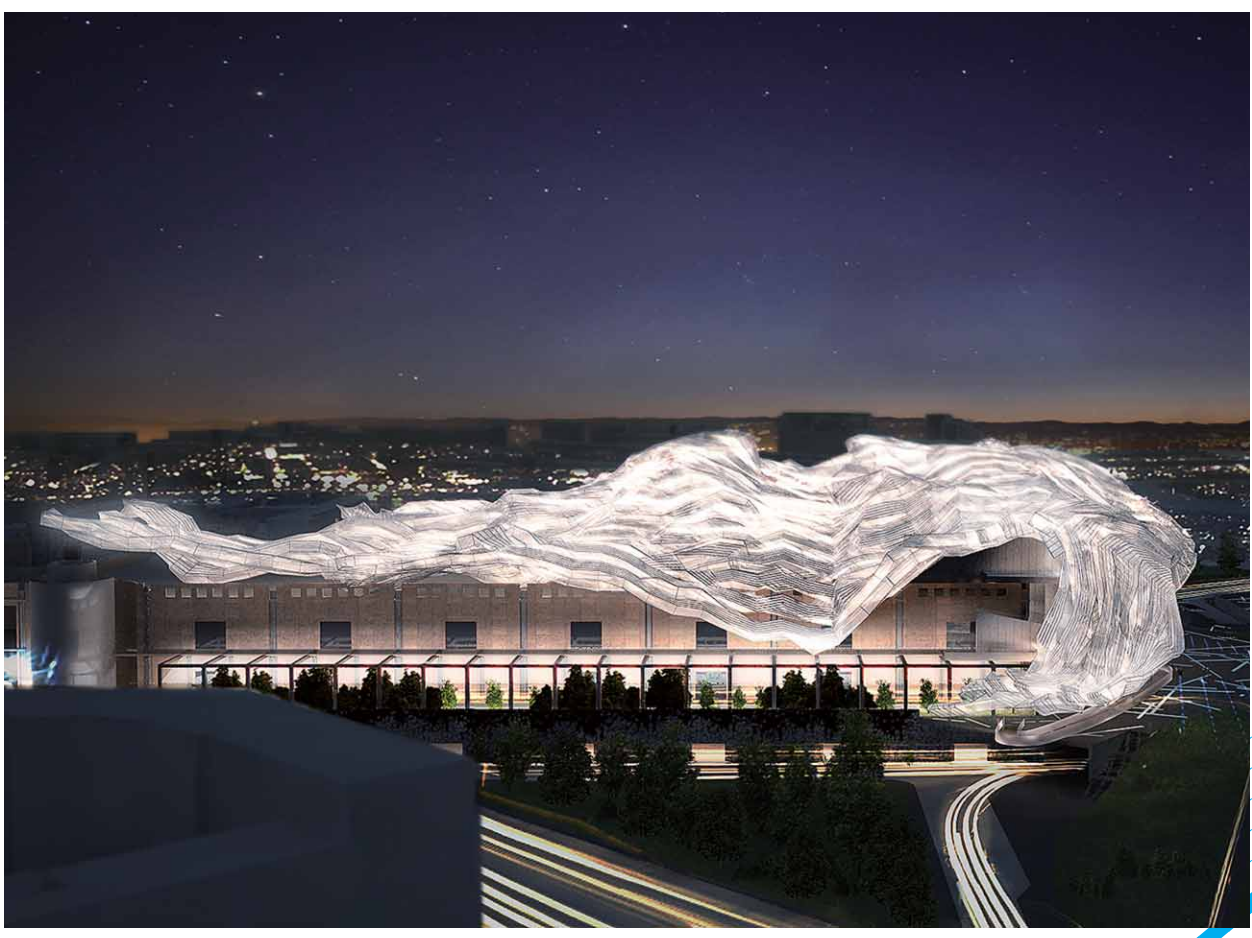
MATERIAL

The Comet is the fruit of lengthy research by Mario Bellini Architect(s) starting with the figurative idea and realized with the innovative assembly of materials. It is designed to comprise a total of 8,000 m of luminescent rays (up to 200 m long) which will ripple out from a denser nucleus to form a tail.

材料

“彗星”是建筑师马里奥贝利尼经过漫长的研究后取得的成果，它开始于意象，由创新组件所实现，组件的材料包括总长达 8 000 米的光纤（单根长 200 米），光线从密实的中心散开，形成一条尾巴。



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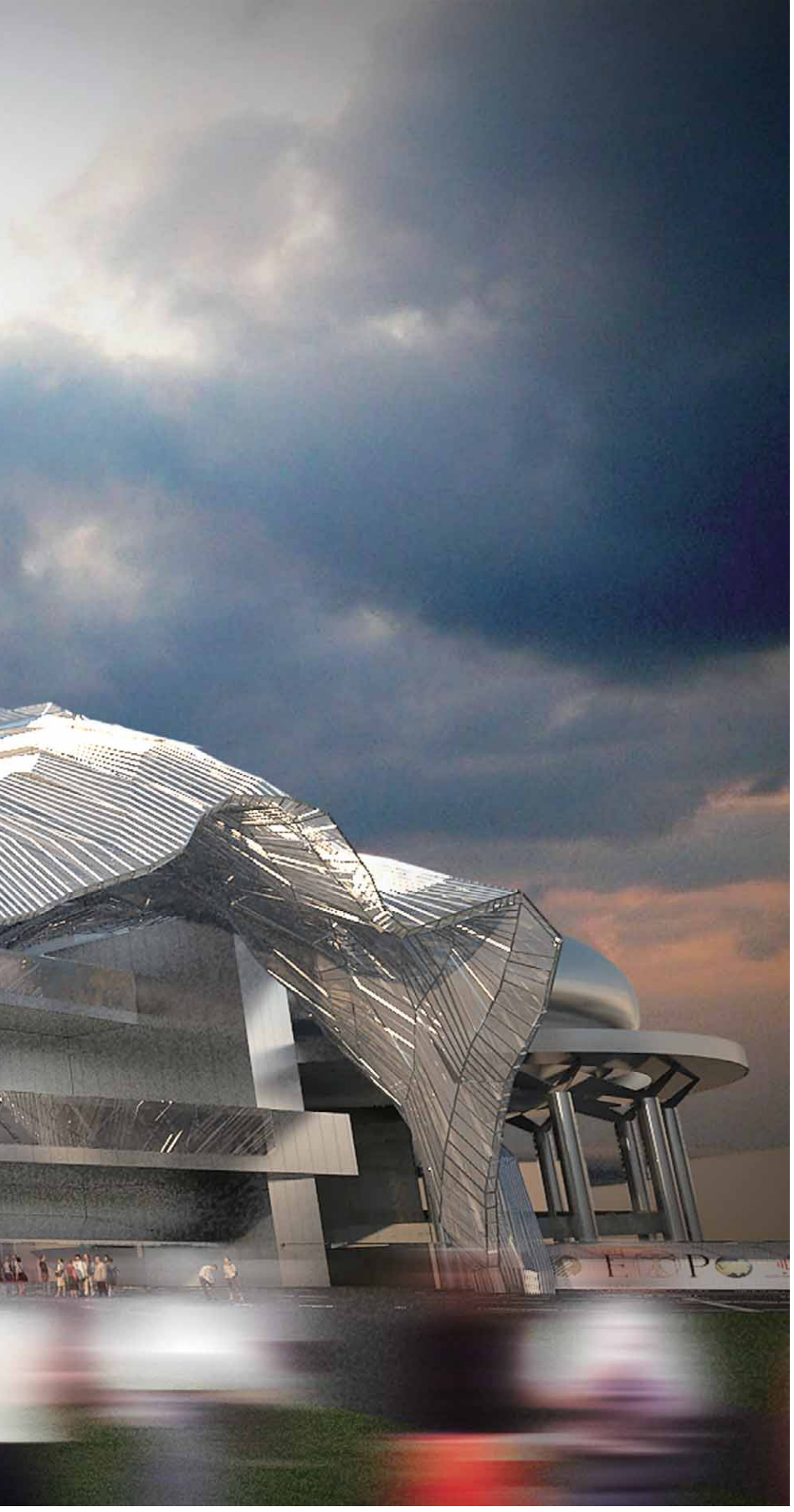
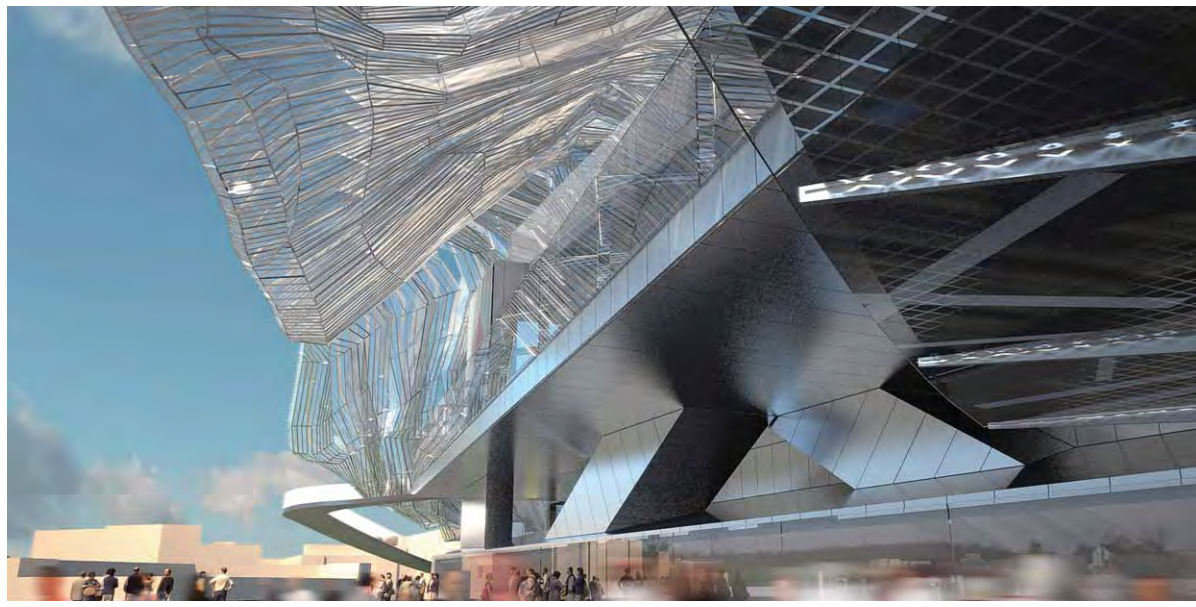
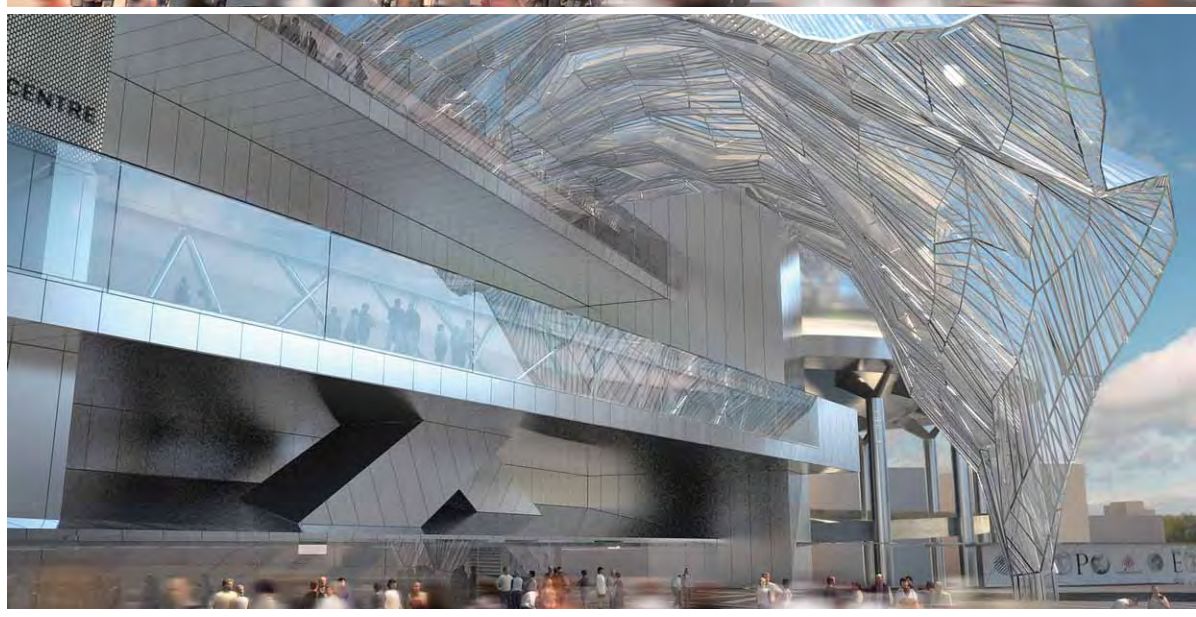






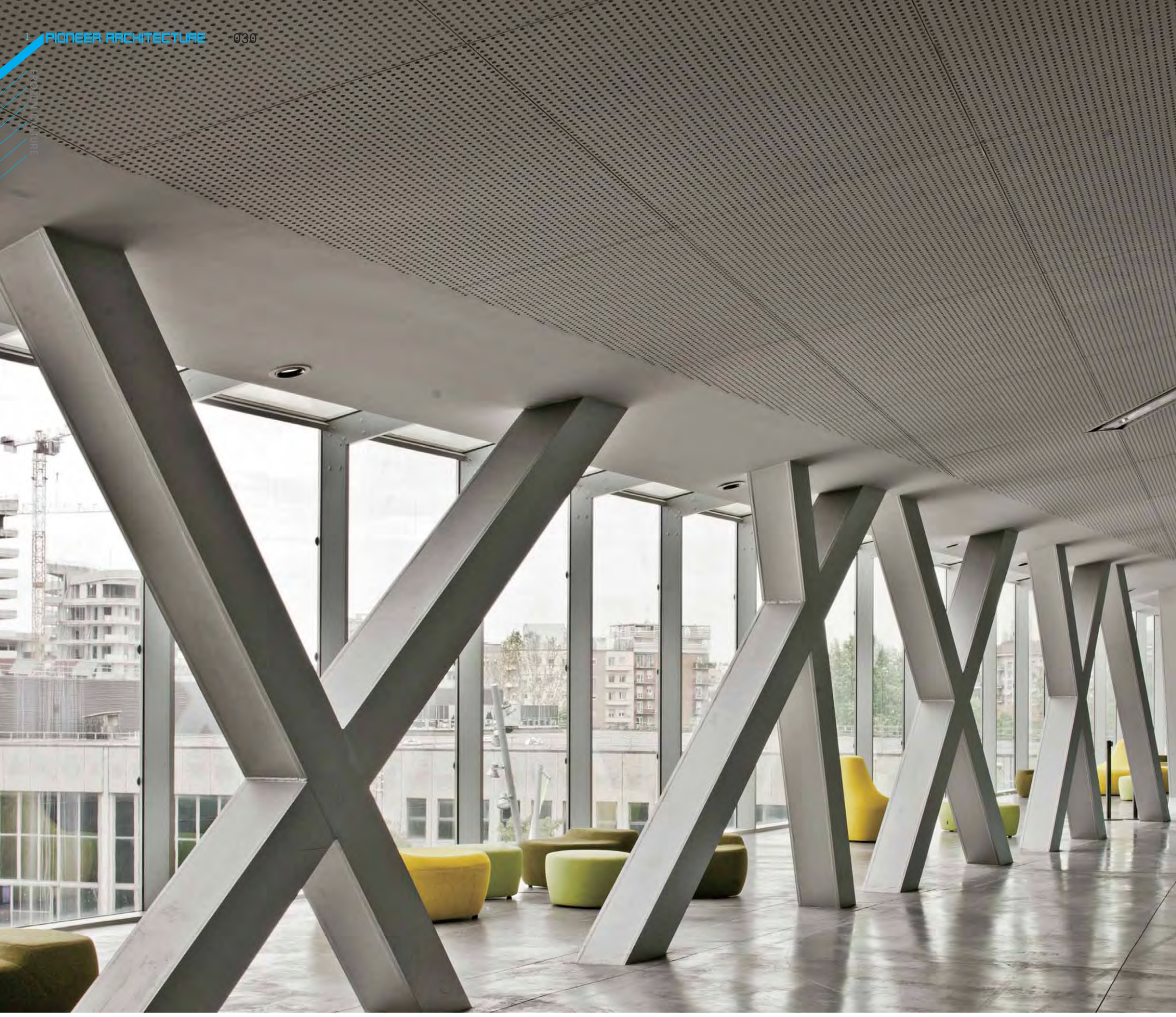
The Comet: Details and Materials

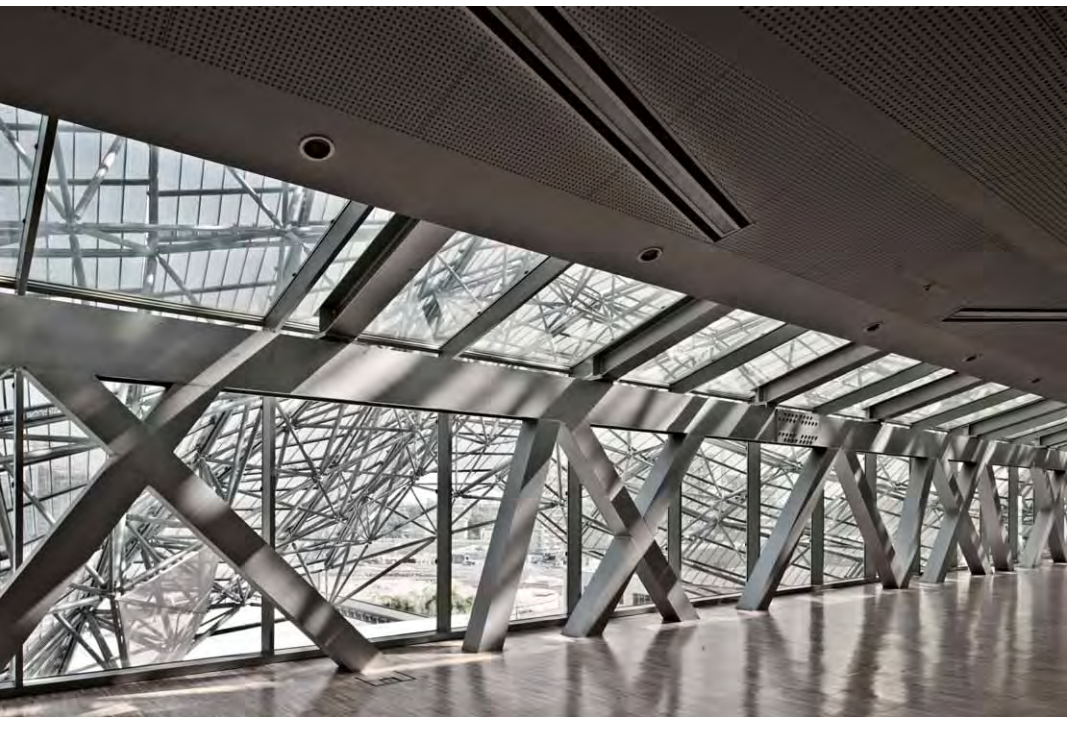
- Each ray is composed of 4 ribbons side by side, pre-formed sections of ultrathin microperforated aluminium, anodised silver (making the entire structure even lighter and semitransparent).

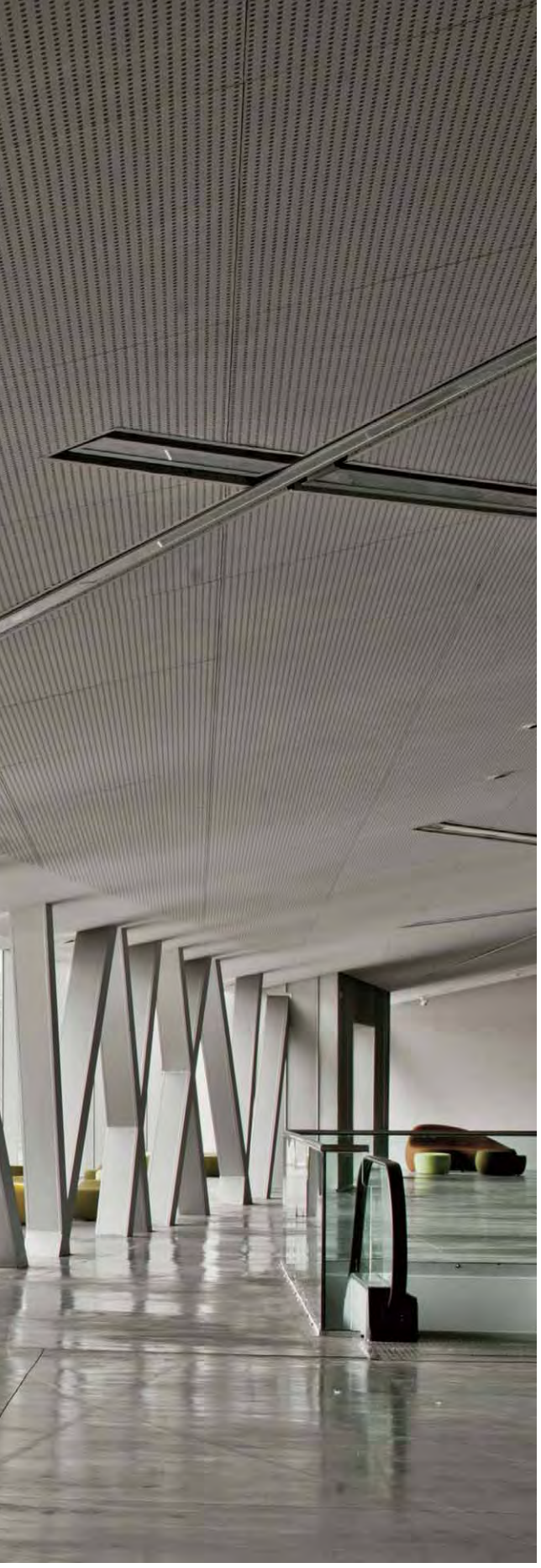
- Each ray is supported by lightweight three-dimensional reticular steel structures along the centre of which run 8,000 m of channelled lighting (in microprism finish extruded transparent polycarbonate tubes) produced by low-energy LED lights (only 1 Watt per metre).

- Along each section, it is possible to insert a photovoltaic panel (composed of thin layers of amorphous silicon), light sensitive even in the absence of sunshine, as is often the case in Milan. Each metre can generate 25 Watts.

In theory, if the entire Comet was covered with photovoltaic panels in this way, 800,000 Watts could be generated. But in order to light up the Comet, at zero cost, it will be sufficient to install 400 m of photovoltaic panels. All of these materials can be recycled.







“彗星”：细节和材料

- 每束光纤都由 4 根条形纤线并列组成，预先形成的超薄微孔铝合金和电镀银色使整个建筑更轻盈且呈半透明状。

- 光纤由轻型三维网状钢结构支撑，沿中心散发出 8 000 米的光束，（在微棱镜的透明聚碳酸酯管内）光束由节能 LED 灯（每米 1 瓦特）产生。

- 每一组光纤都可以接入一个由非晶硅薄膜层组成有光伏面板，这样，即使在阴天时仍会有光感应，而阴天在米兰很常见。每米可以生成 25 瓦特电量。

在理论上，假如整个“彗星”都以这种方式铺满太阳能光伏板，将可以生成 80 万瓦特的电量。不过，为了照亮“彗星”，在零成本的情况下，它将足够安装 400 米的太阳能光伏板。所有材料都可以回收利用。