



#### **schmidt hammer lassen architects**

SHL建筑事务所于1986年创立于丹麦，现已发展成为一个150多人的团队，是斯堪的纳维亚地区最富盛名的建筑事务所之一。公司目前在奥胡斯、哥本哈根、伦敦、上海和新加坡设有办公室。公司的合伙人团队成员有驻地丹麦的Morten Schmidt、Bjarne Hammer、John F. Lassen、Kim Holst Jensen、Kristian Lars Ahlmark以及驻地上海的Chris Hardie和Rong Lu。公司还拥有富有活力、具备全球视野的合伙协理人及协理人团队。公司的日常运营管理由首席执行官Bente Damgaard女士负责。主要项目有哥本哈根皇家图书馆、ARoS博物馆等，中国项目包括上海世博“绿谷”、宁波市图书馆新馆等。

## THE CRYSTAL 水晶大楼

Nykredit的新总部大楼——水晶大楼，坐落于原总部大楼的西北方向。新建筑在广场上独立地伫立着，它看起来是透明、闪耀的几何形体，立于一点和一条线上，像广场上的一个轻盈的水晶体。

从建筑外形和规模来看，水晶大楼构建了一个城市与海港之间建筑的过渡，且与周边的建筑相协调。它的南面参照Elefanhuset的三角形顶端设计，形成了建筑主要入口。从建筑下方Puggards和Hambros街道拐角处的走廊上即可以清晰地看到海港和Nykredit的总部大楼——水晶体。大楼的内部设计以功能性、便捷性和高效性为主导。在建筑的标准层内，两个中庭之间以“Z”字形连接，这样能保证所有办公室获得良好的光照，并欣赏到窗外景观。该设计使得内部空间开放，并能根据实际情况灵活调整以分隔出办公室及会议室。这座大楼主要由一个放置于建筑玻璃幕墙内侧的菱形建筑系统支撑，它的功能不仅是建筑元素，还为整栋大楼减少了柱子的数量。

大楼外层的多面体玻璃反射出周围的环境，而双层幕墙同时作为集成遮阳屏幕，让建筑适应不断变化的日照条件。此外，建筑的外采光系统还包括一个精巧的丝网印刷设计，以减弱太阳光照，同时也使海港的区域环境更富有生气。

广场的特别之处在于一个能反射阳光和满天浮云的大型水池。水晶大楼和“云朵”水池的设计与周围景观和谐互动；并与古代和现代艺术博物馆的传统建筑风格，以及为新建筑提供布景的海港区，形成了微妙的关联。

#### **广场和建筑——一个雕塑的概念**

在设计早期，设计团队和景观设计公司SLA有过多次会议。他们认为新建筑不应该在广场上或者在广场旁边，但实际上建筑就是在广场上的。最终我们与SLA的设计人员决定：“与其设计一个专注于艺术形式

The extension to Nykredit consists of a new building – the Crystal – sited northwest of the existing Nykredit premises. Freestanding on the site, it reads as a transparent, geometrical, glazed form which, resting only on a single point and a single line, floats as a visually light, crystalline structure above the plaza.

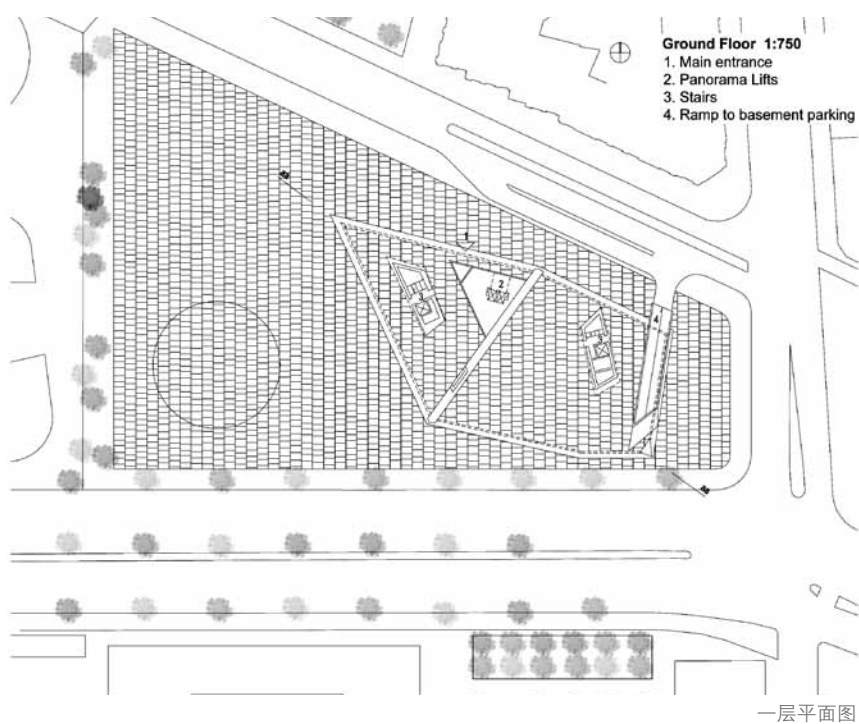
In terms of both form and scale, the building is intermediate between the city and the harbour, and harmonises with neighbouring buildings. On the southern side it rises with reference to the Elefanhuset's gable apex and creates space for the main entrance. From the corner of Puggardsgade and Hambrosgade there is passage under the building and a clear view out towards Nykredit's head office building, called the Glass Cube, and the harbour. The interior of the building is constrained by the demands of functionality, flexibility and efficiency. The typical floor plan is disposed in a Z-shape around two atria, which ensures that all workstations are well lit and enjoy a view. The disposition of the plan allows the accommodation of open plan, separate offices or meeting rooms. The building is primarily supported by a rhombic construction system placed immediately inside the façade. The system functions both as an architectural element while also allowing the building to dispense with pillars.

The building's multi-faceted glass façade reflects both daylight and the immediate surroundings, but the double-glazing also features an integrated sun screen that allows the building to adapt to changing light conditions. In addition, the outer glazing system includes a subtle silk print design that both mitigates solar ingress and will also enliven the ambience of the harbour area.

The piazza features a large water pool which reflects the sun and the clouds moving across the sky. The Crystal and the Cloud are designed to interact with their surroundings, offering a subtle connection between the formal architecture of the Glyptotek Museum of Ancient and Modern Art, and the waterfront area which forms the setting for the new building.

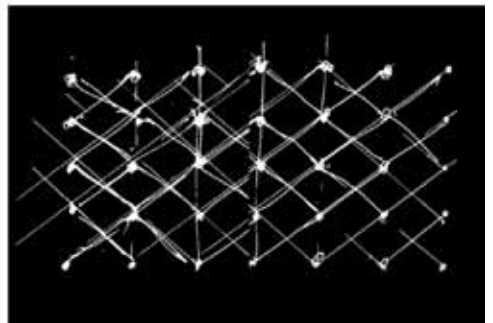
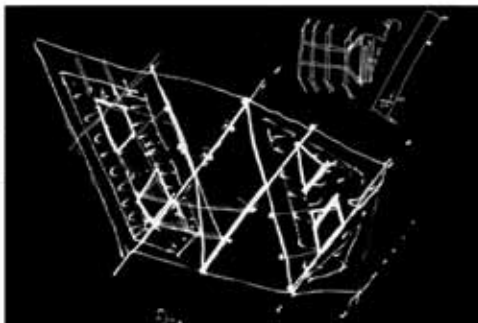
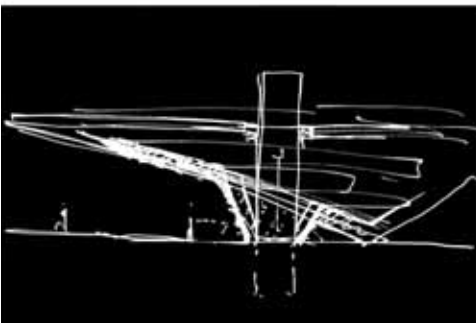
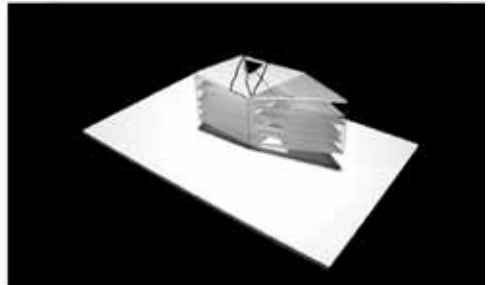
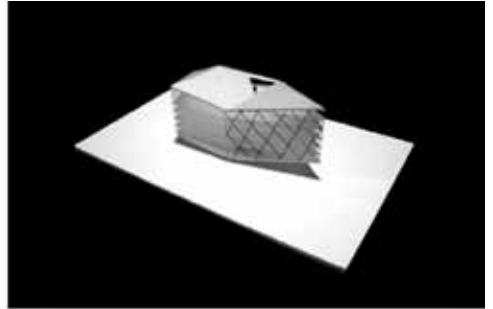
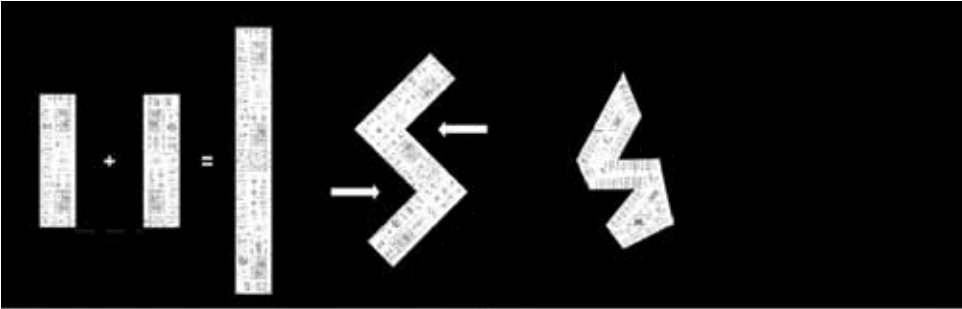
#### **Square and building – one sculptural concept**

Very early in the process the team had meetings with the landscape architect Stig L. Andersson (SLA) who had been commissioned to design the square as a setting for the new building. They agreed that the building should not be in the square or on the square or next to the square but in fact on top of or above the square. This was a hitherto unexplored approach: “We were inspired by a vision Nykredit had about creating a city square with a large sculpture on it. But in the workshops we had with SLA, we decided that instead of making a square or

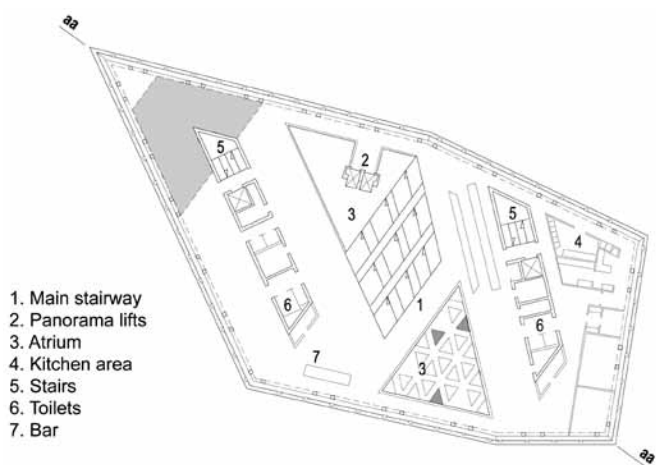


客户: Nykredit  
 建筑面积: 6 850m<sup>2</sup>  
 设计/建成: 2006年/2010年  
 建筑设计: schmidt hammer lassen architects  
 工程师: Grontmij I Carl Bro A/S, Buro Happold  
 咨询单位: Alectia  
 景观设计: Stig L. Andersson ( SLA )

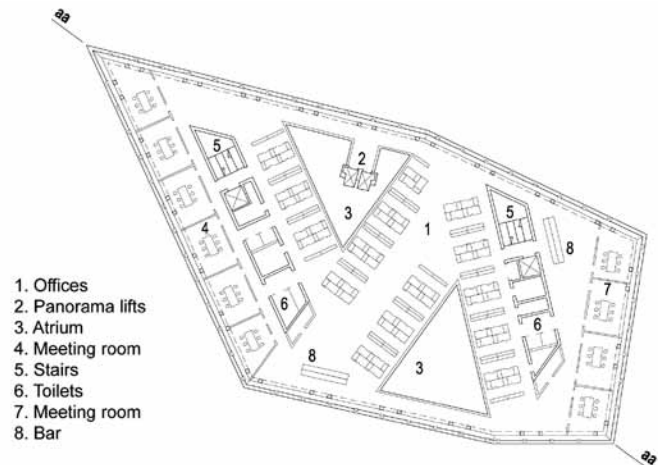




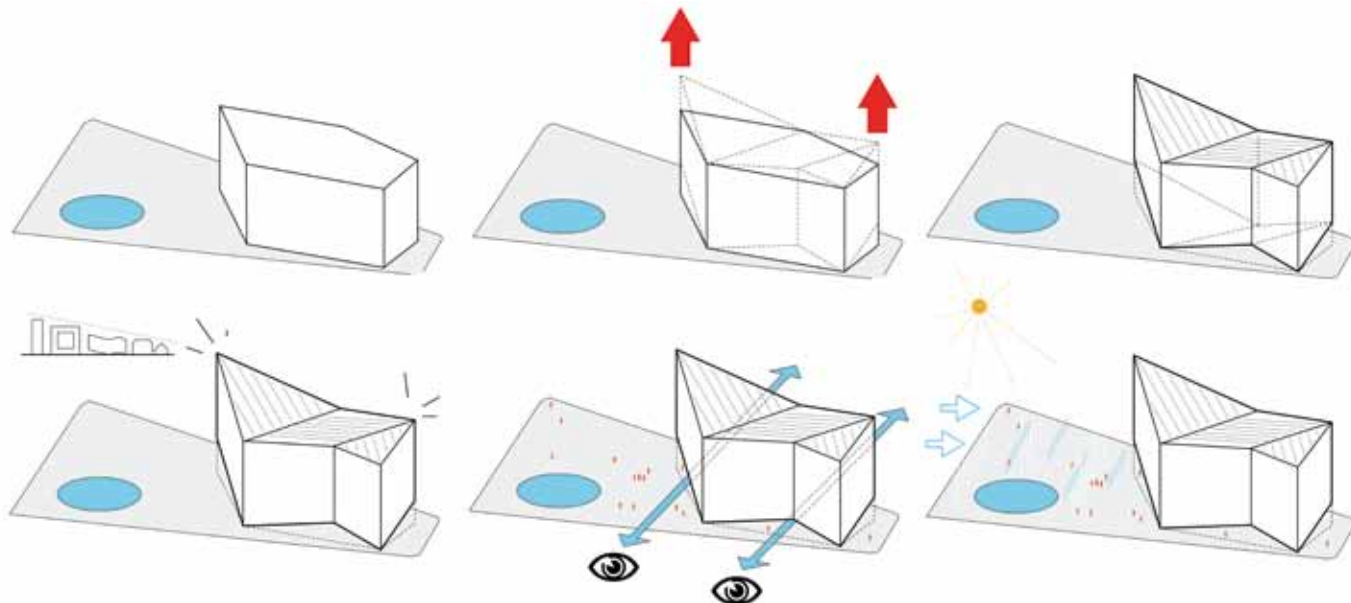




二层平面图



三层平面图



的广场或空间，还不如将建筑与广场作为一个统一的形式合并在一起——没有广场就没有建筑，没有建筑就没有广场。这个想法很少被研究，而它成为了我们参数化设计过程中一个重要的参数。” schmidt hammer lassen architects (SHL建筑事务所) 的高级合伙人Kim Holst Jensen解释道。

### 新兴的水晶体

在如何将建筑放置在广场这一问题上，设计团队非常认真考虑了各种情况的后果，包括建筑是不是放在广场的中间以使游客可以从建筑下通行。最终，确定了三种建筑形状：三角形、水晶体和水滴形状。每个形状都有自己的特质，并有着一些共同的品质。

建筑开始渐渐成型。带着传统城市建筑体块的思维，设计团队设定了下一组参数；不同于典型的建筑体块，我们的建筑不应该吞并整个场地，公众应该能够在建筑下方行走穿行，并且能够直接行走到建筑的心脏。因此，建筑师从模型的角落开始入手——将其掀起上翻。雕塑的外观开始成型，掀起上翻的角部使建筑看上去“盘旋”于地面上。水晶体的迷人空间和几何形象很快地突显出来，并灵活地应对着额外的建筑参数和系统。就这样，建筑师有了一个矩阵，这个矩阵可以按照他们想要的方式进行操作。水晶体从每个角度看都是一个雕塑——建筑没有通常的背立面，而底部有角度的部位在顶部被镜像。

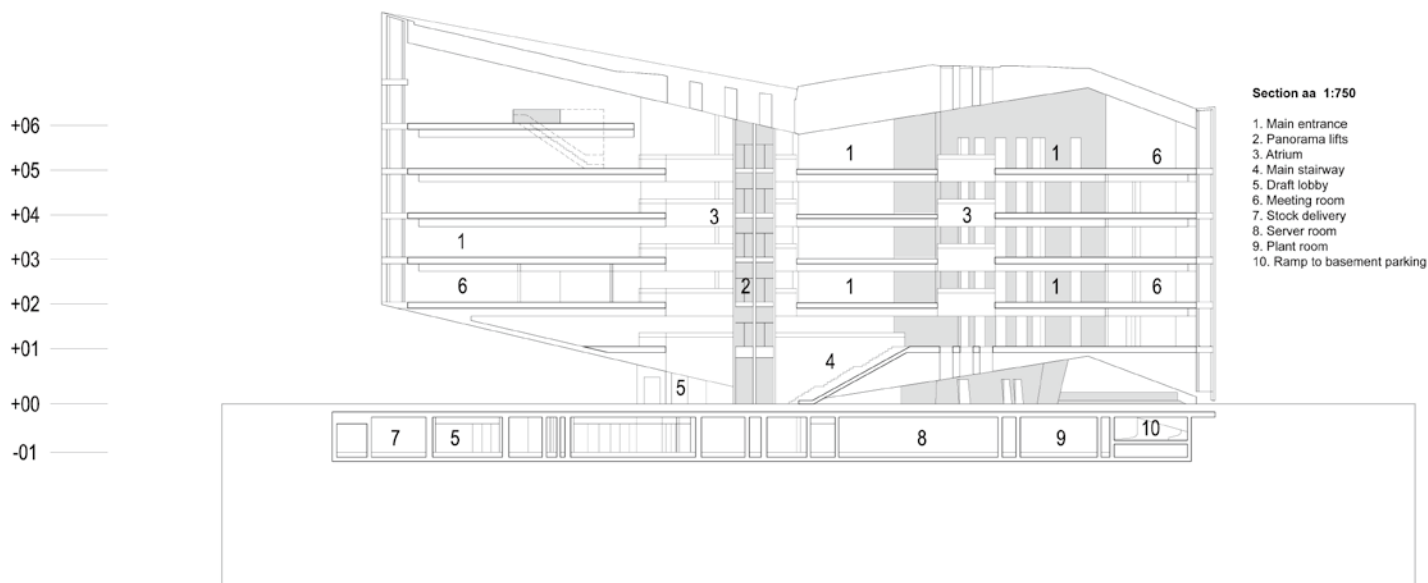
a space dedicated to art, the building and square should together coalesce as a unified form: No building without the square – no square without the building. This has seldom been explored and it became a key parameter in our parametric design process,” explains Senior partner in Schmidt hammer lassen Kim Holst Jensen.

### The emerging crystal

The team took their decision to place the building above the square very seriously: What would this entail? Should the building for instance be placed in the middle of the square and enable passage through and under the building?

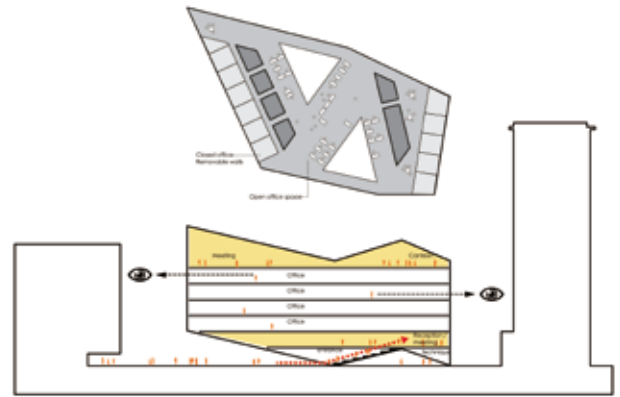
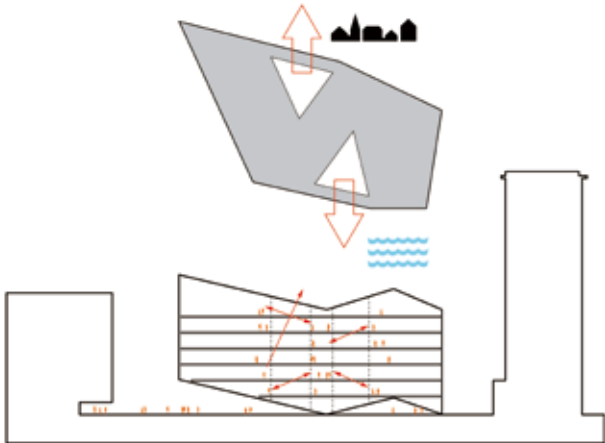
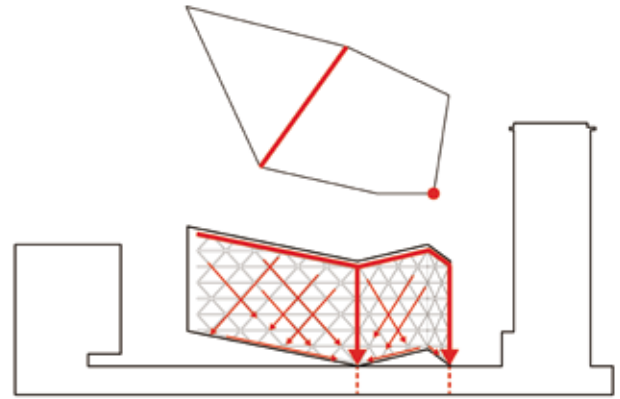
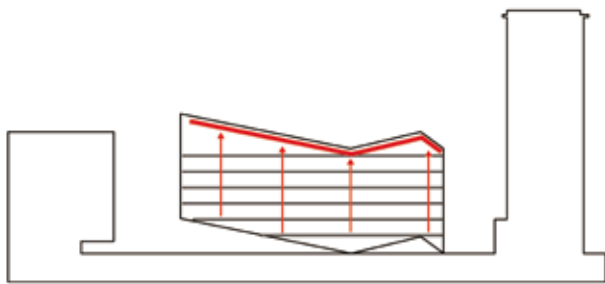
“Instead of diagrammatizing we went to great lengths to work in and identify spatial models” explains Kim HolstJensen. “What kind of shape do we have here? What’s the advantage of this model compared to the others? Finally we ended up with three shapes; the triangle, the crystal and the drop. Each had its own qualities and they also shared some.”

The building was now beginning to take shape. With the traditional city block in mind the group formulated the next set of parameters; unlike a typical block, the building should not absorb the whole site, and the public should be able to pass underneath the block and also walk right into the heart of the scheme. So the architects started tugging at the corners of the models – upward. The sculptural appearance took form and the corner-tugging began to make the building ‘hover’ above the ground. It soon became evident that the crystalline form had fascinating spatial and geometric perspectives and responded flexibly to additional parameters and systems. Suddenly, the architects a matrix that could be manipulated in the direction they wanted it. The Crystal was to become a sculpture from every angle: the building had no rear façade as such and the angled shape at the bottom was mirrored at the top.



剖面图

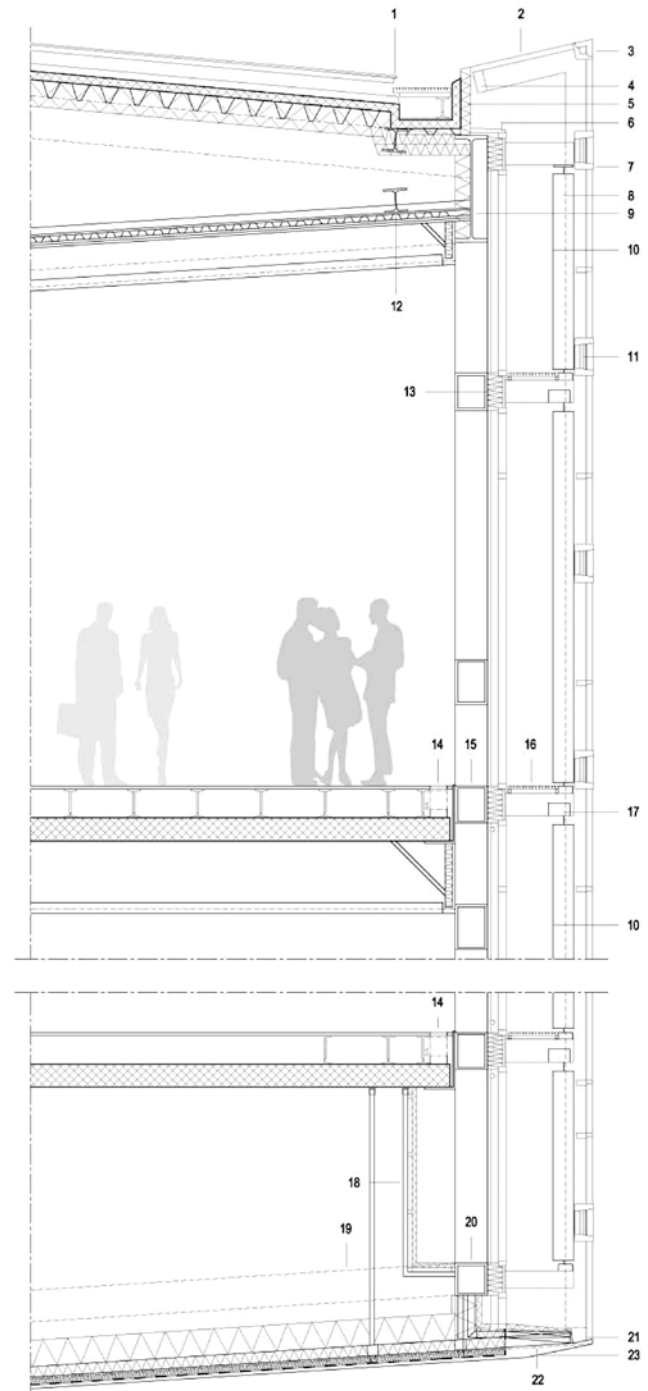






### 建筑可持续性

这幢透明的办公大楼设计项目采用了完整的环保策略，超低能耗仅为 $70\text{kW} \cdot \text{h}/\text{m}^2$ ，低于当时的欧洲能源法规25%。楼顶由高效能光电板覆盖，每年能产生 $8\text{万kW} \cdot \text{h}$ 的能源。除此之外，三层的内部玻璃墙能够极其有效地保温，这就使得耗电 $U$ 值保持在仅 $0.7\text{W} \cdot \text{h}/\text{m}^2$ 。高透明的大厦加上精巧的丝印外墙玻璃形成了一个阳光屏障的作用，为所有员工提供温和且多用途的工作环境。整个设计还组合了一个夜间冷却系统，自然通风可通过双层玻璃幕墙和中庭天窗排出，使得内部温度保持最佳。洗手间采集雨水作为灰水二次利用；近处的海水则作为大楼提供额外的冷却作用。



- |                                                                                                                                                |                                            |
|------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| 1 Roof construction / gutter                                                                                                                   | 1 屋面构造/排水口                                 |
| 2 Glass roof, 13% slope                                                                                                                        | 2 玻璃屋面，坡度13度                               |
| 3 Top edge façade, silicone joint / Façade structure, following the façade slope                                                               | 3 顶端外立面，硅胶接缝/沿外立面坡度方向的外立面结构                |
| 4 Steel bracket                                                                                                                                | 4 钢支架                                      |
| 5 Insulated façade panel                                                                                                                       | 5 隔热外墙面板                                   |
| 6 Insulated façade panel / Inner façade insulated panel at brackets                                                                            | 6 隔热外墙面板/支架处外墙内部隔热面板                       |
| 7 Horizontal profile                                                                                                                           | 7 水平框架                                     |
| 8 Blinds                                                                                                                                       | 8 百叶窗                                      |
| 9 Steel profile                                                                                                                                | 9 钢框架                                      |
| 10 Fixed glare control                                                                                                                         | 10 固定式眩光控制器                                |
| 11 Air-intake opening                                                                                                                          | 11 进风口                                     |
| 12 Steel substructure of roof                                                                                                                  | 12 屋面下部钢结构                                 |
| 13 Inner bracket                                                                                                                               | 13 内支架                                     |
| 14 Steel panel                                                                                                                                 | 14 钢护板                                     |
| 15 Horizontal steel profile                                                                                                                    | 15 水平钢框架                                   |
| 16 Insulation: Carrying profile, Support, Maintenance grill, Inner bracket, Canted metal sheet with integrated rail for glare control lamellas | 16 隔热组件：连接框架、支撑部分、保护支架、内支架、带有整合轨的金属斜片以控制眩光 |
| 17 Blinds wheel: façade illumination, Bracket                                                                                                  | 17 百叶窗调节：外立面照明、支架                          |
| 18 Insulated façade panel                                                                                                                      | 18 隔热面板                                    |
| 19 Steel structure                                                                                                                             | 19 钢结构                                     |
| 20 Angular steel profile                                                                                                                       | 20 角部钢结构                                   |
| 21 Integrated gutter                                                                                                                           | 21 整合排水槽                                   |
| 22 Substructure for underside cladding                                                                                                         | 22 下侧覆盖层底部构造                               |
| 23 Cladding                                                                                                                                    | 23 外包层                                     |



### Sustainability

The design team has brought a holistic approach to the environmental strategy underlying the project. The scheme manages to combine a completely transparent office building with an exceptionally low energy-consumption at 70 kWh per square metre, which means that the building consumes 25 percent less energy than the existing energy legislation at the time. The roof is covered with highly efficient photovoltaic panels generating 80,000 kWh per year. In addition, the triple-layered inner glass façade provides extremely effective thermal insulation, with a U-value of only 0.7 Wh per square metre. The highly transparent building with a subtle silk-printed design on the outer glass façade functioning as a sunscreen creates a harmonious and versatile working environment for all employees. The scheme operates a night-time cooling strategy where natural ventilation is introduced through the double façade and extracted through the atrium skylights, maintaining optimum internal temperatures. Rainwater run-off is collected to be used as grey water for toilet facilities throughout the building, while sea water provides additional cooling for the building. **AT**

