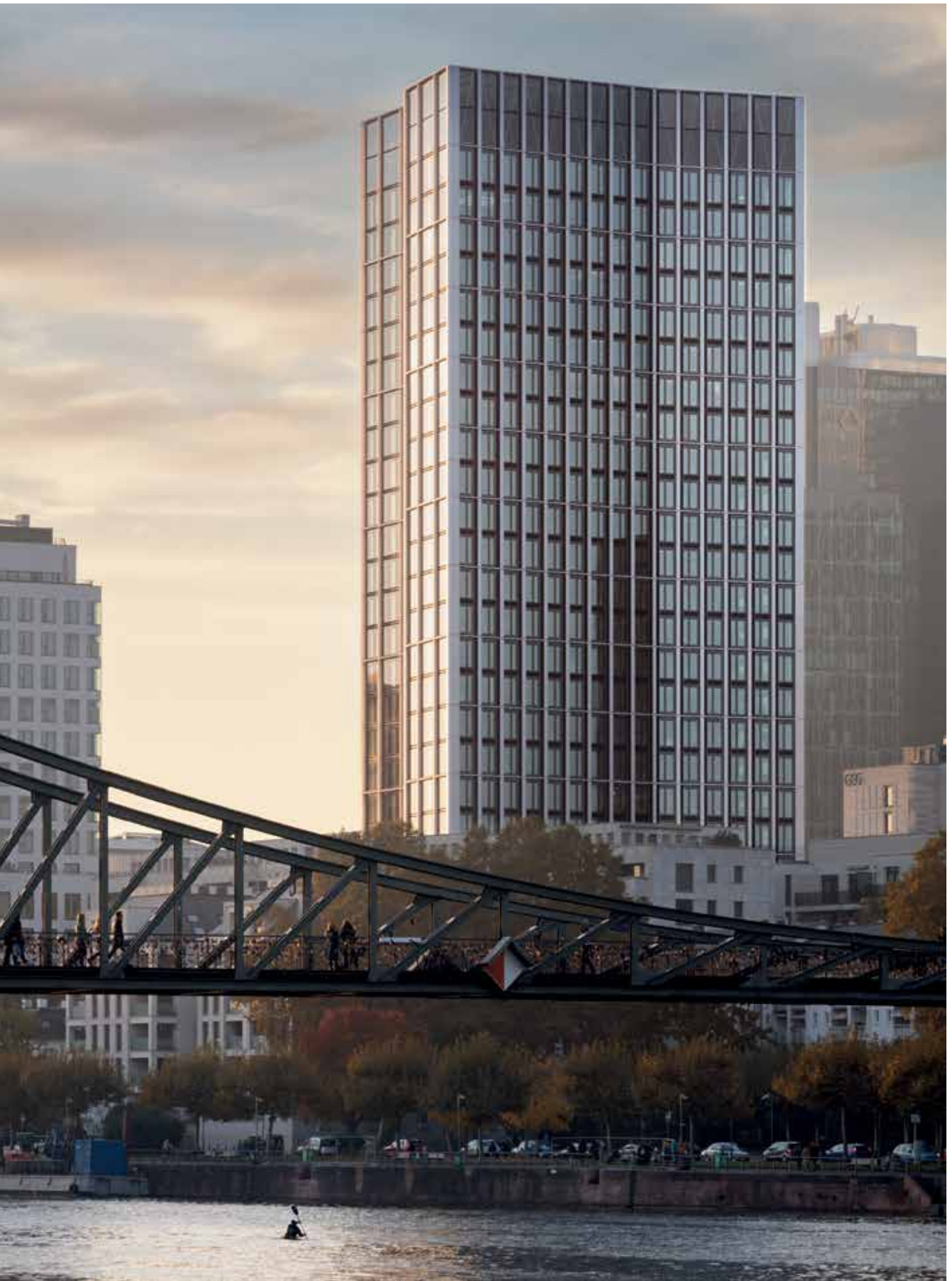
Competence

云端之上
Above the clouds

摩天大楼
High-rises

KSP ENGEL



目录
Content

摩天大楼的未来会是怎样的?

Does the high-rise have a future?

太大、太重、太缺乏灵活性:据称,恐龙之所以灭绝,是因为它们无法适应变化的生存环境。对于被一些批评家称为“建筑界的恐龙”的高楼,情况是否也类似?
首先需要指出的是,摩天大楼是一种相对较新的现象。其建造得以实现,是得益于多项现有发明相结合:首先是钢铁,自19世纪初以来,工程师们就利用它建造出越来越大胆的桥梁。到了19世纪末,混凝土应运而生。这种由沙子、水泥、砾石和水制成的“人造石”,一旦凝固,便具有极高的强度和稳定性。但真正的突破在于人们发现,混凝土在受热和受冷时,其膨胀和收缩的方式与钢完全相同。自此,这两种材料便组成了成功的搭档。然而,在建造大胆的穹顶结构、宽阔的工业厂房和优雅的桥梁之外,若要建造摩天大楼,必须先确保其交通便利。毕竟,没有人会徒步走楼梯上到第十二层。解决方案便是电梯的发明——美国人奥蒂斯(Otis)于1861年为此申请了专利。

Too large, too heavy, too inflexible: Ostensibly, the dinosaurs died out because they were not able to adapt to the changes in their environment. Is something similar true of high-rises, which some critics consider to be the “dinosaurs of architecture”?
Let’s start at the beginning: Skyscrapers are a recent phenomenon. Building them became possible thanks to several inventions that emerged previously. First, there was steel, which engineers had started using from the early 19th century for ever more daring bridge structures. Then, towards the end of the century, came concrete, that artificial stone consisting of sand, cement, gravel, and water, which, once hardened, was extremely rigid and stable. The real breakthrough for concrete came with the discovery that it expands and contracts in heat and in the cold exactly the same way as does steel. Since then, the two materials have formed a highly successful tandem as reinforced concrete. But before people began designing audacious domes, huge industrial halls, elegant bridges, and even high-rises, they needed to ensure such structures would be accessible. No one gladly climbs the stairs to the 12th floor, for example. The solution was found in 1853 when Elisha Otis invented the “safety elevator”, which he patented eight years later.


APIANO

酒店和摩天大楼前的新广场
New plaza in front of hotel and high-rise

面向公众的一层、绿化屋顶、通过混合用途提升城市价值：位于法兰克福（美因河畔）的“Canyon”办公楼

Public ground floor, greened roof, urban value added through mixed usages: the Canyon office high-rise in Frankfurt/Main

剩下的便是历史了：从1880年左右芝加哥最早的摩天大楼，到纽约的克莱斯勒大厦和洛克菲勒中心等装饰艺术风格的地标，二战后，摩天大楼风靡全球，也传到了欧洲。自1960年起，美因河畔法兰克福逐渐发展成为“美因哈顿”；自那时起，银行大楼便比大教堂的塔楼还要高耸。而如今呢？2000年席卷中国和阿拉伯世界的“更快、更高、更远”的狂热早已发生转变：除了象征意义之外，当今对摩天大楼建设的投资更多是基于理性考量。成本预算和建筑规模要求制定复杂的投资策略。在密切关注材料成本和劳动力市场变化方面，需要可靠的合作伙伴。人们常提到的“可持续性”绝不能仅停留在绿色外墙和能源效率层面。它涉及使用功能的灵活性、建筑结构的耐久性——以及恰当的设计。那些将可持续性视为高层建筑规划内在价值的人，才真正理解了关键所在，并确保了所谓“恐龙”的生存。

The rest is history: from the very first skyscrapers in Chicago around 1880 to Art Deco icons such as the Chrysler Building and the Rockefeller Center in New York. Then, from World War II the high-rise conquered the world, including Europe. Frankfurt/Main evolved as of 1960 into “Mainhattan”, and since then the bank high-rises have dwarfed the cathedral spire. And today? The euphoria of “faster, higher, further” that gripped China and the Middle East in 2000 has given way to something new: Alongside prestige, investments in high-rise construction now prioritize rational considerations. Budgets and building volumes make complex investment strategies necessary, and reliable partners are needed when the emphasis is on keeping close track of changes in the costs of materials and the labor market. In such a context, the term “sustainability” must mean much more than green façades and energy-efficient operations. It must include flexible usages, durable structures, and an appropriate design. Anyone who construes sustainability as the “core value” of high-rise planning will thus ensure that these purported dinosaurs have a long life ahead of them.

高层建筑施工领域的专业能力
Expertise in High-Rise Design & Construction

在过去的30年里，KSP Engel公司在国内外完成了约50个高层建筑项目——包括新建、功能转换和翻新工程。我们以负责任、富有创造力和目标导向的方式，将摩天大楼的传统引领向一个恰如其分的未来：在阿尔及尔，我们建成了非洲大陆最高的建筑，它既是大清真寺的宣礼塔，同时也兼具办公楼、博物馆和观景塔的功能。在柏林，我们建造了德国首批多功能混合用途混合式高层建筑之一。在众多建筑项目中，我们不断探索创新解决方案：独特的平面布局和悬挑式立面确保了最佳采光和用地效率；而采用木材、钢材或混凝土的结构，则分别提供了最节约资源的解决方案。我们在高层建筑设计中采用的综合性规划方法，要求我们深入了解针对具体建筑进行合理施工所需的技术和物流条件。这意味着，我们不仅要关注设计和施工阶段的成本效益，还要着眼于长期运营的成本效益。因此，灵活性——包括为建筑未来用途的调整预留空间——始终是我们设计理念的重要组成部分。

In the last 30 years, KSP Engel has realized about 50 high-rises inside and outside Germany – new builds, conversions, and modernizations. Responsibly, inventively, and with a clear focus, we execute projects that are guiding the tradition of high-rises into a fitting future: In Algiers we designed the highest building in Africa, which doubles up as the minaret of the Grand Mosque and also serves as an office and museum building with a viewing platform. In Berlin, we masterminded one of the first German “hybrid high-rises” with mixed usages. Many of our buildings test innovative solutions: Unusual footprints and protruding façades ensure optimal lighting and use of the site, while timber, steel, or concrete structures deliver the respective solution that spares the most resources. Our complex approach to planning high-rises calls for a good knowledge of the technological and logistical options for the most appropriate structure for the tower. This means concentrating on cost-efficient planning and construction and on long-term operations. Part of our approach always hinges on creating designs that are flexible to allow for future changes in usage.

我们通过自身开展的、风格迥异的改造项目进一步深化了这一专业知识：在汉堡，我们对物流企业汉堡南航（Hamburg Süd）的前总部进行了战后现代主义风格的文物保护性翻新，在保留原有建筑结构的基础上进行了改造；而在恩内佩塔尔，我们对多玛（Dorma）公司的总部进行了拆除至承重骨架的工程，并进行了包含加层在内的全面重新设计。为了最大限度地满足业主的需求，我们与工程师、专业规划师和专家们建立了互信互助的合作关系。

We have deepened our know-how through our own wide range of conversion projects: In Hamburg, at the former head office of logistics corporation Hamburg Süd we modernized a heritage-listed, post-war Modernist build and retained as much of the existing property as possible; in Ennepetal, at the head office of the Dorma corporation we opted to pare a building back to its load-bearing skeleton, completely redesign it, and add stories to it. In order to optimally realize the developer's goals, KSP Engel works closely with external colleagues such as engineers, specialist planners, and other experts.

通过设计
与技术实现创新：慕尼黑“Tridea”木结构混合建筑的虚拟工作模型

Innovation through structure and technology: Virtual working model of the Tridea timber-hybrid house in Munich

未来的高层建筑——从模拟到项目落地，涵盖模型、渲染图及施工阶段：城市感与开放性、创新的建造方式与能源效率、用途的灵活性、既有建筑的保护。

High-rise construction of tomorrow – from simulation to realized project, as a model, a rendering, and a building: Urbanity and openness, alternative construction methods and energy efficiency, flexible usages, preserving old builds.

在高层建筑领域，我们的工作主要基于以下四个核心理念：
1. 城市高层建筑：通过功能混合或底层楼层的公共开放，高层建筑成为其所处城市不可或缺的一部分。这确保了其获得广泛认可并形成独特的城市身份认同。
2. 能源效率与技术创新：必须从规划初期就将一套完整的能源方案纳入考量。这样可以长期优化运营成本，既确保建筑的耐久性，又能最大限度地减少其碳足迹。
3. 结构与材料：内部结构合理，外部兼具力量感与美感——规划越灵活，使用时的适应性就越强。KSP Engel 始终着眼长远。使用耐久性强的材料，能带来极高的认同感。
4. 通过功能转换实现可持续性——从长远角度思考高层建筑开发

基于我们在既有建筑方面的亲身经验，我们深知：建筑规划的远见卓识越强，其使用效果就越持久、越灵活。这样，我们既能保护环境，又能强化该地块的独特身份。

Four approaches are key to our high-rise designs:
1. The urban high-rise. The tower becomes an integral part of the city where it stands thanks to a mixture of functions or a publicly accessible podium. This enhances its acceptance and identity.
2. Energy efficiency and technical innovation: A coherent energy concept needs to be factored into the plans from day one. That way, operational costs can be permanently optimized, which ensures longevity while minimizing the building's carbon footprint.
3. Structure and materiality: a logical structure on the inside, power and aesthetics on the outside. The more flexible the planning, the more diverse the potential for adapting to new uses. KSP Engel plans for the long term, and the use of durable materials provides a strong point of identification.
4. Sustainability through new uses – taking account of the long-term high-rise trends. Our own experience with existing builds teaches us that the more far-sighted the planning, the more durable and flexible the tower's successful use. This helps to spare the environment and strengthen the high-rise's identity.

城市摩天大楼: 为城市创造附加值。

The urban high-rise: Added value for the city.

摩天大楼作为城市的“皇冠”，需要在城市空间中拥有坚实的基础。这取决于是否能实现充满活力的混合用途，使建筑向周边环境敞开：吸引人的外部设计、宽敞的大堂、从地下室延伸至低层的公共功能——当建筑与城市相互交融时，房产的认同感便会随之提升。我们众多的高层建筑项目都采用了混合用途设计，将工作、生活、居住和休闲融为一体。通过这种方式，我们的建筑将其附加值回馈给城市及其社会。

The tower’s urban crown needs a solid podium in the urban space. This requires a vibrant mix of usages, opening the building up to the immediate vicinity. It calls for an appealing external appearance, spacious lobbies, and public functions in the basement and on the first few floors – because when the building dovetails with the city, people are better able to identify with it. Many of our high-rise projects boast “hybrid” uses and combine work, private life, homes, and leisure time. In this way, they share their added value with the city and society.

MainTor WinX，法兰克福/美因河畔
MainTor WinX, Frankfurt/Main

业主 Client
GEG Development GmbH

建筑面积 GFA
63.025 m²

总容积 GV
243.100 m³

楼层 Storeys
28

高度 Height
110 m

比赛 Competition
11/2009, 一等奖 1st prize

竣工 Completion
2020

奖项 Awards
DGNB铂金认证
GSBC Platinum certification,
ICONIC Awards 2021
Innovative Architecture – Winner

带屋顶露台的员工餐厅
Staff restaurant with roof terrace

高110米的WinX大厦是位于法兰克福老城区、银行区和美因河畔之间的新城区的核心地标。所谓“MainTor”地块的整体开发基于KSP Engel事务所制定的总体规划。该城市街区与历史街区相衔接，直接沿用现有街道布局，并通过办公、商业和住宅的混合布局，为周边环境提供了恰如其分的补充。在总共11栋建筑中，有4栋由KSP Engel事务所设计。位于核心位置的WinX大厦既是该区域的垂直地标，也是整个区域的中心。大堂内设有带顶棚且向公众开放的广场，为各种意想不到的相遇提供了空间——不仅能与在此生活和工作的人们相遇，还能与展出的艺术作品产生互动。

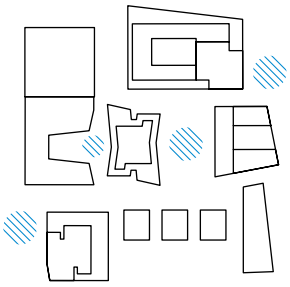
Rising to 110 meters, the WINX Tower forms the heart of a new quarter linking Frankfurt's Old Town, the CBD, and the riverside. The “MainTor-Areal” quarter is based on the masterplan developed by KSP Engel. The urban quarter interfaces with the historical surroundings, directly follows the existing line of the street, and supplements it meaningfully with a mix of offices, stores, and apartments. Four of the total of 11 buildings were designed by KSP Engel – the central WINX Tower acts as the neighborhood's vertical calling card: The covered plaza of its foyer encourages encounters not only with the people who live and work here but also with art. On show is a piece by renowned artist Chiharu Shiota, an installation featuring several boat hulls wrapped in red and white yarn that references Frankfurt's mercantile history.

这位著名日本艺术家盐田千春的装置作品由多艘船只组成，船身缠绕着红白相间的纱线。该作品呼应了这座位于美因河畔的贸易城市的历史。

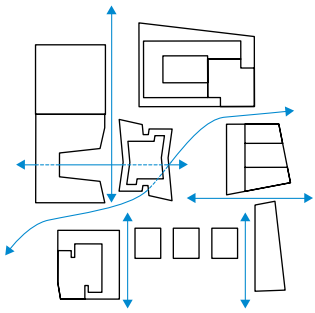
The installation by famous artist Chiharu Shiota consists of several boat hulls wrapped in red and white yarn. It references Frankfurt's mercantile history.

在造型和美学上，这座塔楼为法兰克福的天际线增添了新的亮点。立面独特的褶皱设计使这一城市地标极具辨识度。醒目的X形平面布局源于对内部功能的深入思考以及优化整体工作氛围的愿景：自然采光与通透感、城市景观与城市联通性、便捷的动线以及舒适的室内环境，这些都是所有办公楼层的显著特征——整栋大楼的工作区域均实现双侧采光。每层楼可划分为最多四个面积各为400平方米的独立单元。功能空间的高灵活性进一步提升了其使用体验。每个办公室的室内环境均可个性化调节：温度通过集供暖与制冷功能于一体的天花板进行调控，光线可通过集成式遮阳和防眩光装置进行调节——而空气则通过可开启的通风窗，以最经典的方式进入建筑内部。

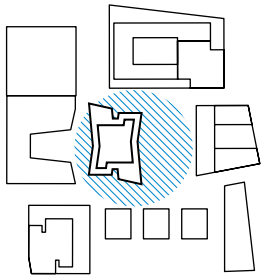
The tower's shape and aesthetics create a new highlight in Frankfurt's skyline, with the striking folds of the façade augmenting its unmistakable appearance. The eye-catching, x-shaped ground plan results from advancing the internal functions and striving to optimize the entire working atmosphere: The office floors, all of which enjoy light from two sides, benefit from daylight and transparency, views out over and links to the city, and a pleasant ambiance, but also keep everything close at hand. Each story can be divided into up to four units of 400 square meters. At the same time, the high flexibility of the functional rooms underscores their qualities. In each office, the ambient climate can be set individually, the temperature regulated by the combined heating and cooling ceiling slab, and light adjusted by the integrated sun and glare protection, while air enters the building in classic fashion through ventilation wings that can be opened.



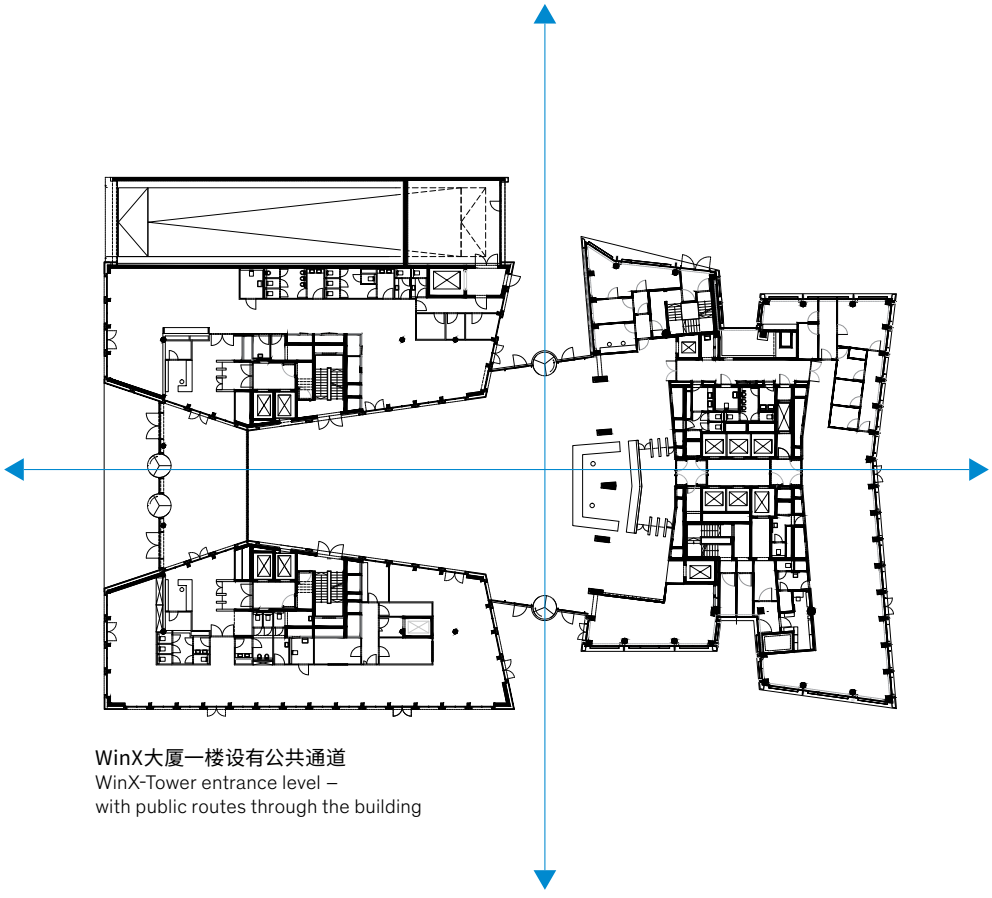
城市空间，设计
Urban spaces, proposal



构思、草图
Pathways, proposal



位于中心广场的独立建筑，设计方案
Stand-alone on the main plaza, proposal



WinX大厦一楼设有公共通道
WinX-Tower entrance level –
with public routes through the building

PalaisQuartier/Nextower, 法兰克福/美因河畔 PalaisQuartier/Nextower, Frankfurt/Main

●

业主 Client
PalaisQuartier GmbH & Co. KG

建筑面积 GFA
47.700 m²

总容积 GV
185.800 m³

楼层 Storeys
34

高度 Height
135 m

比赛 Competition
10/2002, 一等奖 1st prize

竣工 Completion
04/2010

奖项 Awards
DGNB 黄金证书
GSBC Gold certification,
2010年度最佳摩天大楼奖
Best Tall Building Award 2010

帕莱斯区 (PalaisQuartier) 的开放式城市空间
Open urban spaces in the “Palaisquartier”

PalaisQuartier由共计四个建筑单元组成，是2002年一项国际竞赛获胜方案的成果。它紧邻Hauptwache广场，坐落于繁华的法兰克福市中心核心地带，并在城市规划上与该区域紧密融合。PalaisQuartier由135米高的Nextower办公塔楼、96米高的酒店、面向主要购物街的MyZeil购物中心，以及经过符合文物保护标准修复的巴洛克风格冯·图恩-塔克西斯家族宫殿组成。这些摩天大楼自信地与西侧银行区的天际线形成鲜明对比。该建筑群作为城市地标而具有高度辨识度的原因，在于其雕塑般的摩天大楼形态以及外立面上采用的哑光铝板。

The “Palaisquartier” project is an ensemble encompassing four building wings – and was the winning entry in the international competition in 2002. It lies in the immediate vicinity of Hauptwache, in the heart of Frankfurt’s vibrant downtown, and interlocks with the design of the urban fabric. PalaisQuartier consists of the 135-meter-high “Nextower” office high-rise, a 96-meter-high hotel, the “MyZeil” mall facing onto the main pedestrian shopping precinct, and the heritage-listed and modernized Baroque townhouse built by the Thurn und Taxis family. The high-rises confidently create a counterpoint to the CBD skyline to the west. The Nextower’s sculpted shape ensures the ensemble is unmistakable as an urban landmark, an aspect supported by the use of matt aluminum panels as façade cladding.

充满活力的社区：Nextower大堂
Vibrant quarter: the Nextower lobby

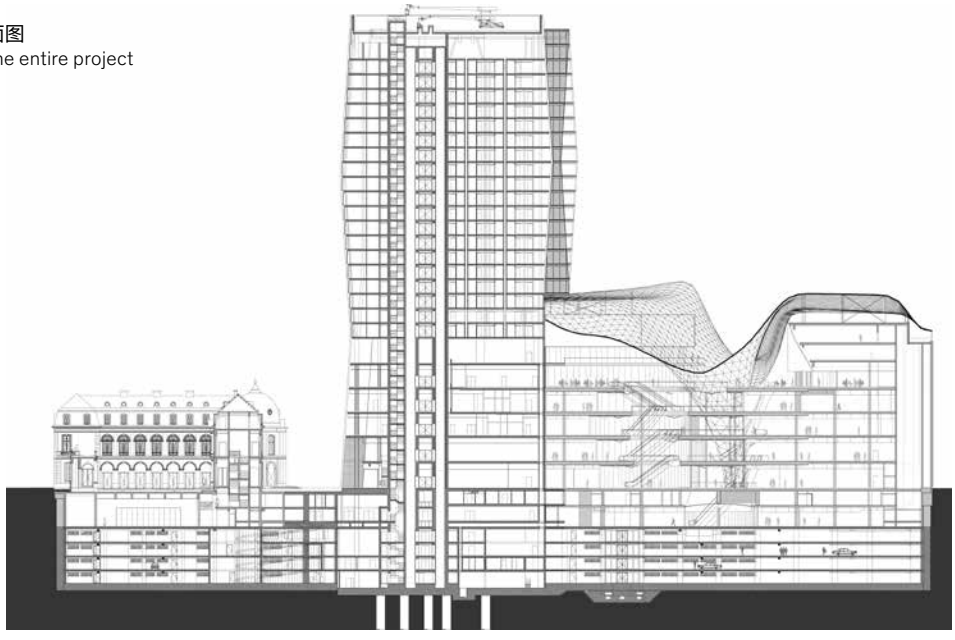
Nextower大楼共34层，是法兰克福PalaisQuartier区的最高建筑。其立面结构多次呈现醒目的折角设计，灵感源自先锋艺术家康斯坦丁·布朗库西的艺术作品，为内部空间营造出丰富多变的平面布局，并提供了多种多样的开放式办公空间设计。众多共享办公空间与精心打造的“新工作”氛围，既呼应了新街区的多元融合特质，又将其延伸至塔楼内部。因此，工作与交流场所、室内与室外空间之间形成了多维度的互联。无论是需要专注静思，还是进行小组合作，抑或是在非正式交谈中轻松相聚，这里都能满足需求——休息时，漫步市区更是一大享受。KSP Engel 设计了一套能源方案，其中一半能源来自可持续资源：该方案结合了地热能、全面的能量回收以及建筑构件的温度调节。室温、照明和遮阳系统均通过传感器进行控制。自然通风则通过窗户实现。

With its 34 stories, Nextower marks the highpoint of the PalaisQuartier in Frankfurt. The façade with its multiple folds was inspired by the sculptures of avant-garde artist Constantin Brancusi and creates exciting changes in the internal ground plan as well as a broad variety of open-plan office layouts. The countless co-working spaces and ingenious New-Work ambiance reflect the new quarter’s mixed uses and transfer them into the tower. Work and communication zones, internal and outside spaces are thus frequently connected, allowing calm, concentrated work in privacy, group meetings, or casual informal chats. During breaks, staff can enjoy strolling round town. KSP Engel deployed an energy concept that relies half on sustainable resources, combining geothermal heat, consistent energy recovery, and careful conditioning of the building components. Ambient temperature, lighting, and sun protection are all sensor-controlled, while windows provide natural ventilation.

城市附加值：虽然Palais和MyZeil向公众开放，但新落成的摩天大楼凭借其令人印象深刻的外观，成为城市中一个鲜明的地标，并与现有的高层建筑相互呼应。

Urban added value: While the Palais and MyZeil are open to the public, the new towers with their striking appearance create a strong symbol of identification and interact with the existing high-rises.

整个项目的横截面图
Elevated view of the entire project



Upper West, 柏林
Upper West, Berlin

●

业主 Client
Strabag Real Estate GmbH

建筑面积 GFA
67.000 m²

总容积 GV
609.200 m³

楼层 Storeys
35

高度 Height
119 m

草案起草人 Designed by
LANGHOF® und and
KSP ENGEL

竣工 Completion
07/2017

奖项 Awards
DGNB 黄金证书
GSBC Gold precertification,
2018年FIABCI金奖
FIABCI Prix d'Excellence in Gold
2018

Motel One 的餐饮服务
Hospitality – Motel One

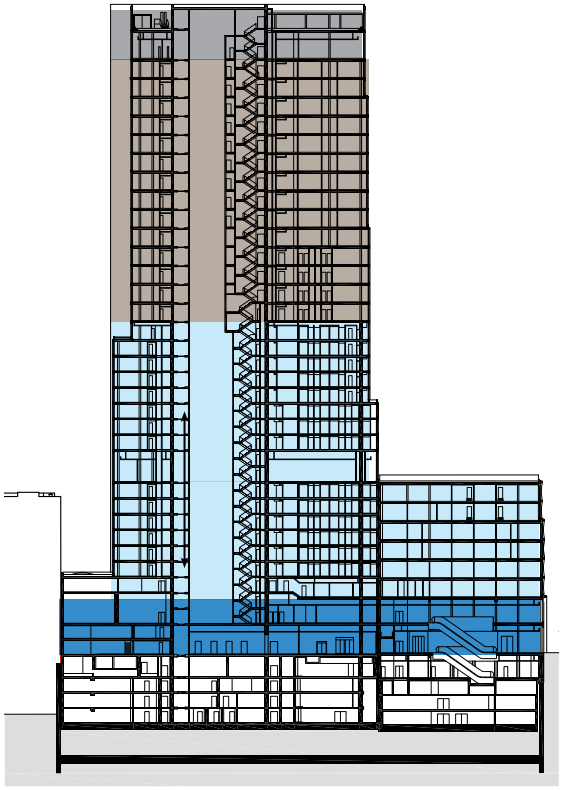
办公室还是公寓?抑或两者兼而有之!在欧洲,多功能高层建筑长期以来都属于特例。然而,在充满活力的市中心城区,建造混合型高层建筑正日益成为一种趋势。这样一来,建筑得以得到极佳的利用,全天候充满活力,并作为充满生机的城市构建模块融入周边社区。位于首都柏林最显眼地段之一、紧邻凯撒威廉纪念教堂的"上西区"(Upper West)项目,便展示了如何实现这一目标。作为德国首批混合功能高层建筑之一,这座35层的建筑将酒店、办公空间和餐饮设施融于一体。在相连的一栋横向建筑中,该建筑还拥有另外八层,其中设有办公空间,底层区域则为商铺。

Office or apartment? Or both! In Europe, for many years high-rises with mixed functions were the exception, but in urban neighborhoods with vibrant downtown areas these kinds of "hybrid" high-rises seem an obvious choice. The location means the buildings are optimally used and filled with life 24/7, and as a result they function as lively, integrated parts of the urban fabric. A prime example is the Upper West project in one of the highest-profile locations in the German capital Berlin, right next to the famed Kaiser Wilhelm Memorial Church. As one of Germany's first hybrid towers, the 35-story high-rise features a hotel, offices, and hospitality all under a single roof. In the adjacent block, with its additional eight stories, there are offices, as well as retail outlets in the ground floor areas.

柏林凯撒·威廉纪念教堂旁的上西区
Upper West: located directly next to Berlin's famed Kaiser Wilhelm Memorial Church

“上西区”(Upper West)建筑那极具标志性的形态,宛如周边环境中的地标。从低层立方体基座出发,随着高度的增加,建筑逐渐演变为愈发开阔的雕塑感形态。不规则的阶梯式设计突出了其修长的垂直感。在选择立面材料时,美学与功能性是决定性因素。塔楼外立面采用整层高的铝制面板包裹,其细腻的粉末涂层仿佛与立面柔和的曲线相互呼应,并将其延伸开来。
在结构、物流和经济方面寻求最佳解决方案是一项挑战。必须整合不同的功能,并满足众多法律要求和标准。由于酒店作为租户从一开始就已确定,因此其具体需求被纳入了规划之中。580间客房分布在17层楼中。十楼设有早餐层,从这里可以通往毗邻办公楼的屋顶露台——客房视野开阔!

The striking shape of Upper West ensures it functions as a great local landmark. The tower rises up from the podium cube with the lower floors, and its shape becomes more sculpted the higher it goes, with irregular setbacks serving to underscore its slender vertical thrust. Aesthetics and functionality determined the choice of façade material; hence, the tower is clad in story-high aluminum panels with a fine powder coating that seems to enhance and emulate the building's soft curves. One particular challenge was finding an optimal structural, logical, and economic solution – and integrating different functions while complying with countless statutory requirements and norms. From the outset, the hotel was a confirmed tenant, and its specific needs thus factored into the plans: 580 rooms for guests spread across 17 floors, with the breakfast level located on the 10th floor. There is also a roof terrace leading to the adjacent office block.



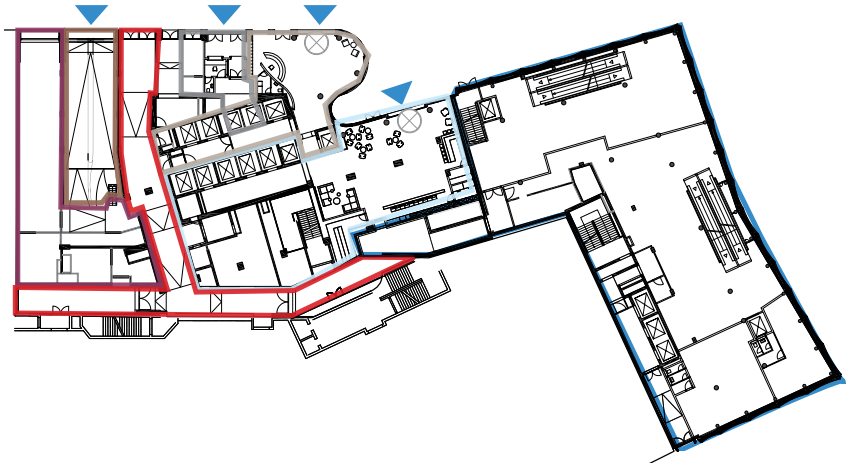
混合式摩天大楼的剖面图
Elevated view of the hybrid high-rise

Der neuartige Nutzungsmix des urbanen Hochhauses mit seinem großzügigen Sockelbereich ist im Grundriss und Schnitt besonders deutlich zu sehen: integrativ, urban und weitsichtig von Planungsbeginn an.

The innovative usage mix of the urban high-rise with its spacious podium can be very clearly seen from the ground plan and elevation: integrative, urban and far-sighted from the very start of planning.

用途
Usages

- 零售层（一楼）、地下层及二楼
  Retail GF, UF +1st floor
- 酒店 1–18 层
  Hotel 1st–18th floor
- 19–32层办公室
  Office 19th–32nd floor
- 33楼餐饮区
  Gastronomy 33rd floor
- 送货
  Delivery
- 地下停车场出入口
  Underground garage entry and exit
- 公共通道
  public passage



入口层平面图
Ground plan, entrance level

结构与材质：内在的逻辑结构——外在的力量与美感。

Structure and materiality: Logical structure inside, power and aesthetics on the outside.

由于其规模庞大，高层建筑是供许多人使用的建筑。这种高强度使用给规划师带来了关键挑战。为了让穿行于高层建筑的过程显得舒适且自然，规划阶段从一开始就考虑了未来动线的内在逻辑。其动线布局——从字面意义上说——也应在视觉上易于理解，因此照明和动线设计需相应规划。此外，建筑整体还需具备坚固的结构特性。在此方面同样需要做出决策：哪些结构功能应由高层建筑核心承担，哪些可以转移到外立面？随之而来的还有材料选择的问题——这也意味着成本问题。KSP Engel 始终着眼于整体规划。

Owing to their size, high-rises are structures used by many people, so planners face key challenges deriving from this heavy use. The inner logic of future movement within the building is a key element of planning to ensure circulation through the high-rise is easy and self-explanatory. Circulation must also be visually persuasive: Lighting and signage offer guidance. Moreover, the structure most be robust overall, and here, too, decisions need to be taken: What structural tasks must be performed by the high-rise core (the shaft) and what can be assigned to the façade? This prompts questions of the materials used, which also means questions of costs. KSP Engel keeps all of the planning firmly in focus.

深圳生物制药企业
Bio Pharma Enterprise, Shenzhen

●

业主 Client
Shenzhen Pingshan District Industrial Investment Service Co., Ltd.

建筑面积 GFA total
672.425 m²

高度 Height
205 m

比赛 Competition
09/2018, 一等奖 1st prize

开工 Start of construction
2019

竣工 Completion
2025

从湖边眺望校园
View to the campus by lakeside

在深圳郊区的坪山区，占地约11公顷的新生物技术与创新园区已建成。除酒店、公寓和零售设施外，该园区还为生物医学和医疗技术领域的初创企业提供了创业与发展的空间。该园区坐落于一个带湖泊的公园旁，建筑形态从低矮的有机式布局逐渐过渡为多层城市建筑结构。三座高度分别为100米、154米和205米的高层建筑，成为新社区的标志性地标。生物制药企业加速器的交通动线分为两个层面：一楼（0层）专供公交车和汽车通行，行人则通过位于其上一层（+1层）的天桥通行。该园区由KSP Engel建筑事务所与重庆市政府及中国房地产企业万科合作设计，其方案于2018年荣获一等奖。

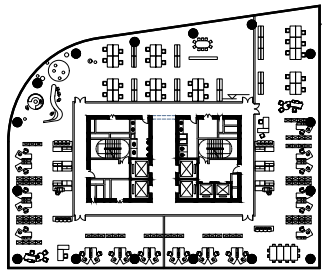
The new biotechnology and innovation campus was built on a roughly 11-hectare site in the district of Pingshan on Shenzhen's city limits. Alongside hotels, apartments, and retail, it provides space for establishing and developing start-ups in the fields of biomedicine and medical technology. Located by a lakeside park, the campus starts from a low, organic development and grows into a multi-story urban complex. Its three towers are 100, 154, and 205 meters high respectively and serve to accentuate the cornerstones of the new neighborhood. Access to the Bio-Pharmaceutical Enterprise Accelerator is at two levels: The ground floor (Level 0) is intended for bus and road traffic, while there is a skywalk dedicated to pedestrians one level above (Level +1). The design for the campus created by KSP Engel in cooperation with the city of Chongqing and Chinese real estate corporation Vanke won first prize in the 2018 competition.

通过我们可持续的开放空间与绿化方案，将打造一个绿色校园，实现建筑与景观之间的自然过渡。

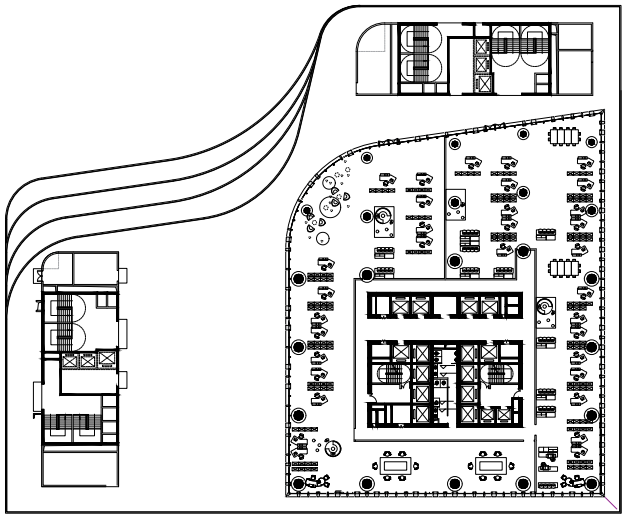
Our sustainable open-space and greening concept results in a leafy campus that forms a fluid transition between the architecture and the landscape.

外立面设计方案旨在体现校园内不同建筑类型和功能。面向公园的无定形建筑采用水平环绕的窗带设计，而其余建筑则以垂直分隔的外立面为特色。金属与玻璃构成的明暗元素交替，赋予了外立面独特的韵律感。在高层建筑中，浅色的壁柱将三至四层在视觉上整合在一起，突出了塔楼的垂直感。该立面采用模块化设计，预制构件在现场进行组装。这种主要见于超高层塔楼的交通布局——即中央交通核心从底部的12部电梯组逐渐过渡到顶部的4部电梯组，并辅以服务电梯——是这座205米高塔楼的另一大特色。

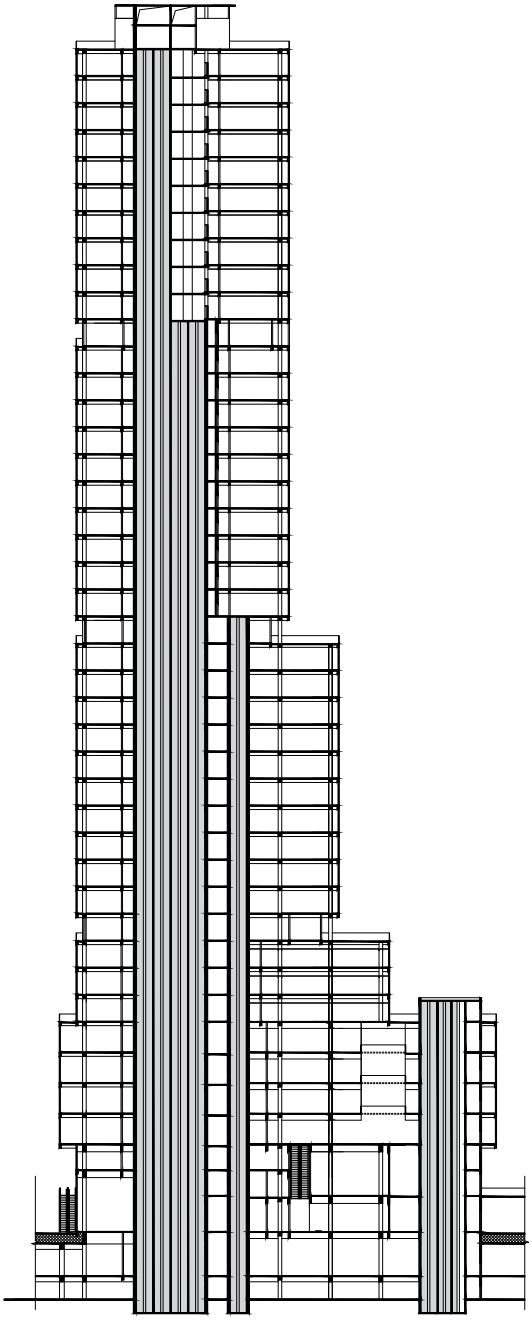
The façade concept is designed to reflect the different types of building and usages on the campus. While the amorphous buildings facing the park feature horizontal strips of windows, the façades of the other buildings are more vertically structured. They have a rhythmic appearance created by the alternation of light and dark elements made of metal and glass. In the high-rise buildings, bright pilasters function to meld three to four stories visually and emphasize the vertical thrust of the towers. The façade was designed as a modular structure, with the prefabricated elements then assembled on site. Another special aspect of the 205-meter-high tower: It boasts a central access core that starts with 12 elevator groups that are reduced higher up to a set of four as well as supplementary service lifts.



办公大楼34–42层的平面图
Ground plan office tower 34–42nd floor



办公大楼8层的平面图
Ground plan office tower 8th floor



剪辑
Section

电梯轿厢
Elevator core

多玛总部，恩内佩塔尔
Dorma headquarters, Ennepetal

●

业主 Client
DORMA GmbH & Co.KG

建筑面积 GFA
7.940 m²

总容积 GV
31.057 m³

高度 Height
36,40 m

比赛 Competition
11/2001, 一等奖 1st prize

竣工 Completion
06/2004

Bestandsbau mit transparentem Aufsatz
Model: Old build with transparent top

位于北莱茵-威斯特法伦州恩内佩塔尔的Dorma公司总部，是在2004年赢得设计竞赛后，通过对一栋建于20世纪60年代、原为六层高的洗净混凝土建筑进行彻底翻新而建成的。与早先的设想相反，KSP Engel建筑事务所决定不进行拆除，而是通过提出对现有建筑进行彻底改造的方案说服了业主。因此，该建筑的结构主体得以保留，并被还原为纯粹的混凝土骨架。在内部，各空间通过自由布局进行了彻底的重新规划。洗净混凝土构件被全玻璃面板所取代，赋予建筑开放通透的视觉效果，并确保了工作区域的最佳采光。这座拥有中央交通核心的建筑被加建为七层完整楼层，用于办公用途。

The Dorma corporate HQ in Ennepetal in Central Germany is the result of KSP winning the design competition in 2004 to thoroughly modernize the old build, originally a six-story 1960s washed-concrete structure. Counter to initial ideas, KSP Engel resolved not to demolish it, winning over the developers with a plan for a complete transformation. The pure concrete skeleton as the load-bearing spine was retained, and on the inside rooms could be planned anew and assigned as desired. The washed-concrete panels were replaced by entirely glass panels, lending the building transparency and providing the workstations with optimal light. The building and its central access core were expanded to seven full stories for office use.

加冕仪式的正面视图
Elevated view of the façade with the added crown

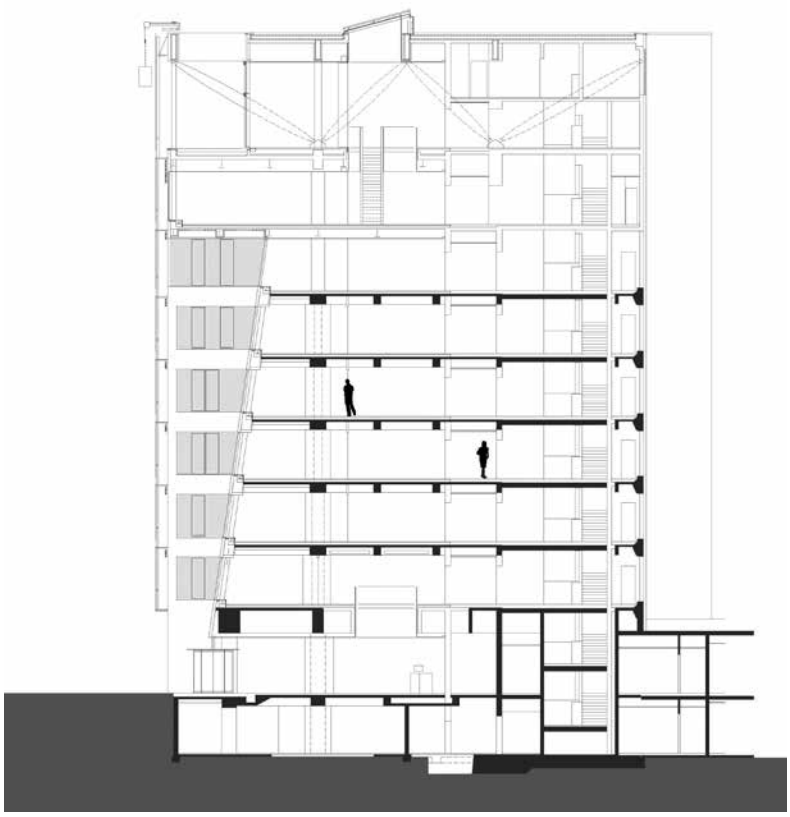
在对现有建筑进行改造时，还增建了这座摩天大楼醒目的屋顶结构。新增楼层由一个远眺可见的钢结构悬挂支撑，该结构除了发挥结构功能外，还将公司徽标——一顶王冠——的轮廓融入了建筑的顶部设计之中。就这样，KSP Engel将这座具有坚实历史底蕴的既有建筑，转变为一座极具魅力的、永不过时的“企业建筑”。

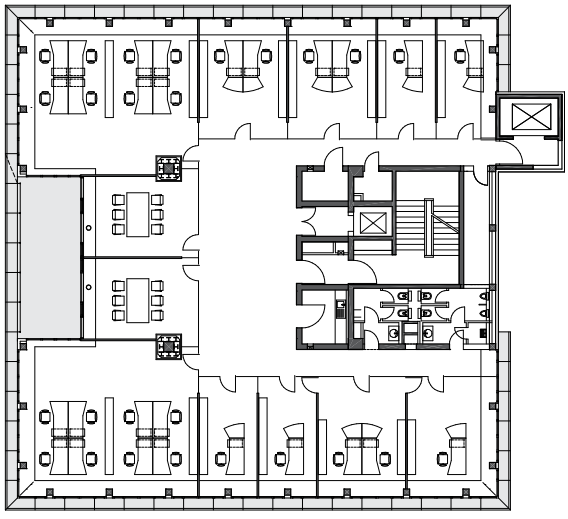
In the restructuring of the old build, a striking new high-rise roof structure was added. The new stories are suspended from a steel loadbearing structure that can be seen from afar and which not only has a structural function but also transposes the silhouette of the corporate logo (a crown) onto the top of the building. KSP Engel thus transformed an old build with a robust historical core into timeless, highly appealing “corporate architecture”.

通透的过道，开放式楼梯
Transparent paths through the building, open staircases

新增加的塔楼上部楼层悬挂于顶部的钢制冠顶之下，该冠顶以其醒目的冠形设计而著称。内部的办公区域可灵活分隔。

Drawn elevation: The new stories added in the tower are suspended from the added steel crown with its striking crown shape. The office zones inside can be subdivided flexibly.





办公楼层平面图
Ground plan: Office story

大清真寺，阿尔及尔
Minaret of the Great Mosque, Algiers

●

业主 Client
ANARGEMA

建筑面积 GFA total
358.200 m²

楼层 Storeys
38

高度 Height
265 m

比赛 Competition
2008, 一等奖 1st prize

开工 Start of construction
2011

竣工 Completion
2020

奖项Awards
2021年国际建筑奖、2021年阿尔及利亚国家建筑奖、2022年国际高层建筑奖提名、2023年ICONIC奖“创新建筑”类别获奖
International Architecture Award 2021, National Architecture Award of Algeria 2021, Nomination International High-Rise Award 2022 ICONIC Award 2023 Winner

天空大堂的露天楼梯
Freestanding staircase in the sky lobby

这座高265米的宣礼塔是位于阿尔及尔湾畔、以大清真寺为中心的宗教文化区的垂直锚点。作为一座修长的塔楼，该宣礼塔借鉴了历史原型，并对其进行了彻底的当代诠释。四座角塔呈十字形，由钢梁支撑，直耸云霄，高度贯穿整栋建筑。这种结构使得在横向支撑所留出的楼层中，能够打造出四周均采用玻璃幕墙的开放式大厅（天空大堂）。塔楼中心没有任何内部结构和支撑柱，因此游客可以毫无阻碍地欣赏周围的风景。这种对于此规模的高层建筑而言极为罕见的通透感及其开放的空间布局，从一开始就是该设计的核心要素。

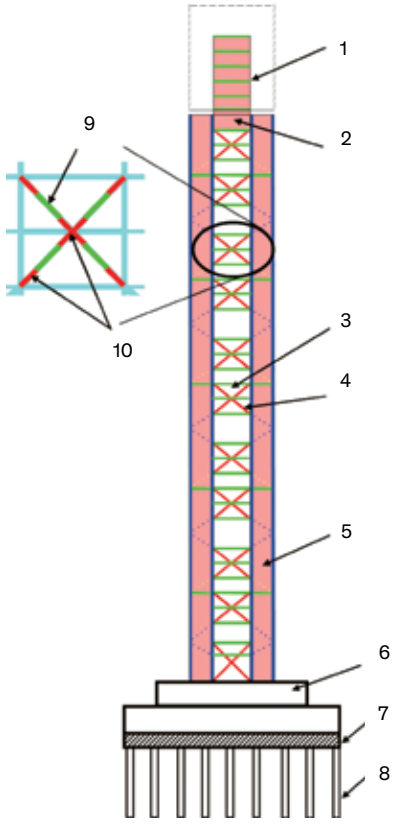
The 265-meter-high minaret forms the vertical anchor of a religious and cultural quarter around the Great Mosque in the Bay of Algiers. As a slender tower, the minaret relies on historical models, albeit with a coherent contemporary interpretation. Four corner towers with cruciform steel beam bracing thrust up into the sky to support the entire height of the tower. This structure enables those stories without bracing to feature open halls with wraparound glass façades (sky lobbies), while the heart of the minaret is free of all installations and supports, meaning visitors can enjoy a clear view of the surroundings. The unusual transparency for a high-rise on this scale and the open space planning were core elements of the design from the very outset.

抗震设计：建筑的四个角落设有核心筒，它们通过加固用的斜撑相互连接。基础由地坪板和桩基组成。

Earthquake-proof: The minaret's core is located in the four corners of the building. These are interconnected by bracing diagonal struts. The foundations are made up of a base slab and pile foundations.

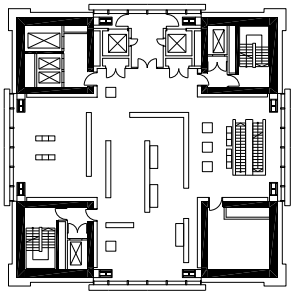
塔楼与立面的结构布局同时也是一种象征性形式，呼应了伊斯兰教的五大支柱：立面上通过材料的变化，可以辨识出五个楼层单元，每个单元包含五层，标准层高均为5.50米。这些单元外覆着装饰简约的格栅结构，该结构同时兼具遮阳功能。总共五个观景层（空中大堂）的玻璃部分在视觉上与装饰区域形成了鲜明对比。对于业主而言，耐久性这一主题起着决定性作用。这既涉及所使用的建筑材料，也涉及每个建筑构件的抗震结构设计。为了建造这座纤细而优雅的“宣礼塔”（其宽高比约为1:10），KSP-Engel与参与项目的Krebs+Kiefer工程团队进行了密切合作。这也促成了将四个角塔的结构设计与交通动线规划整合在一起的决策。

The tower and façade also function as symbolic forms for the “Five Pillars of Islam”. Five sets of five stories, each of which is 5.50 meters high, can be discerned by the changes in façade material. They are clad in restrained ornamental lattices with shading elements, and between these zones with their ornamental note, there are visually distinct glass sections for the total of five viewing levels (the sky lobbies). The topic of permanence was very important to the client, in terms of both the materials used and the earthquake-proof structure of each construction component. To construct the minaret as a slender and elegant high-rise tower (the ratio of width to height is approx. 1:10), KSP Engel worked closely with the expert engineers from Krebs und Kiefer. This led to the decision to bundle the load-bearing and access structures in the four corner towers.

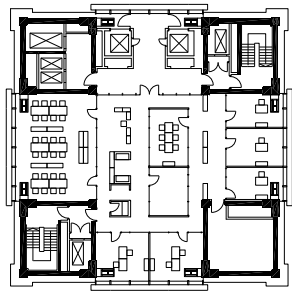


米纳雷特摩天大楼的施工图
Construction drawing for the minaret high-rise

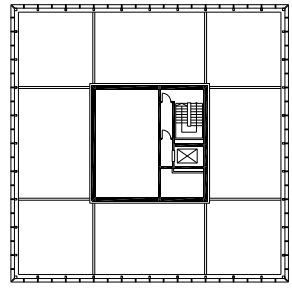
1	苏马塔楼 (E) Soummah tower (E)
2	连接墙 (LD构件) Coupling walls (LD elements)
3	连接梁 (钢筋混凝土) Coupling beams (reinf. concrete)
4	立面斜撑 (钢制) Facade diagonals (steel)
5	核心 (联合体) Cores (composite)
6	地下室墙壁 Base level walls
7	底板 Floor lab
8	巴雷特 Barrettes
9	耗散部件 Dissipative elements
10	弹性部件 Elastic elements



博物馆7楼平面图
Museum 7th floor plan



35楼办公室平面图
Office 35th floor plan



41层观景台平面图
Observation deck 41st floor plan

能源效率与创新：高层建筑需要一套行之有效的能源方案。

Energy efficiency and innovation: The high-rise needs a coherent energy concept.

不仅建筑施工本身需要能源，建筑物的运营同样需要能源。在此背景下，负责任的规划意味着：具有前瞻性的思考。因此，能源效率和技术创新是KSP Engel所有高层建筑规划中不可或缺的组成部分。早在项目的早期规划阶段，我们便会融入一套行之有效的能源方案，该方案在经年累月的长期使用中已证明其可靠性。通过这种方式，既能优化成本，又能确保建筑的长期成功。因此，除了坚固的结构、灵活的使用方案以及为所在区域带来的城市附加值之外，能源效率是未来成功建造高层建筑的又一关键要素。

Energy is a factor not only in the construction of a building, but also in its operation. Planning responsibly therefore means thinking ahead, so energy efficiency and technological innovation are crucial elements of all KSP Engel high-rise planning. At the early stage of a project, we therefore integrate a coherent energy concept into the planning that will remain valid during the building's long-term operation. This means costs can be optimized and the building's enduring success assured. Energy efficiency – alongside a robust structure, a flexible usage concept, and urban added value at the respective location – is therefore another central element of the successful high-rise architecture of tomorrow.

中央商务大厦，法兰克福/美因河畔
Central Business Tower, Frankfurt/Main

●

业主 Client
Helaba (Landesbank Hessen-Thüringen)

建筑面积 GFA
114.500 m²

高度 Height
205 m

比赛 Competition
02/2001, 一等奖 1st prize

竣工Completion
2028

奖项Awards
力争获得LEED铂金级认证
LEED Platinum certification aimed for

通道及入口区域一瞥
View into the arcade in the entrance zone

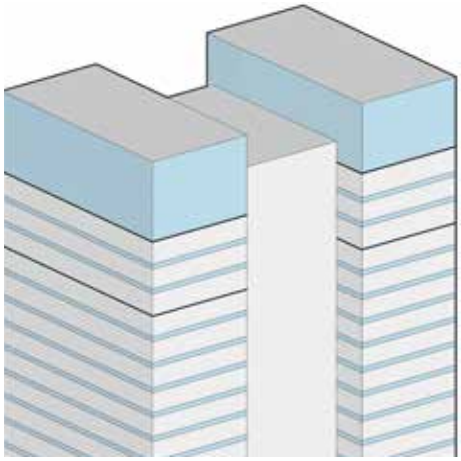
这座位于法兰克福金融区中心、高205米的摩天大楼树立了新标杆：其高能效外立面不仅节省了能源和设备能耗，更被设计为一座垂直太阳能发电站。各楼层楼板高度处及塔顶均安装有光伏组件。通过这些组件，太阳能被储存并输送到运营系统中，以辅助建筑的能源供应。由于高层楼层日照充足，其发电效率尤为显著。中央商务大厦（Central Business Tower）以其基座建筑——一座经过翻新的、属于“创业时代”的受保护历史建筑——面向城市开放，并提供公共服务功能。该摩天大楼的设计由两座纤细且略微错位的塔楼组成，内部设有灵活的办公区域和开放式办公空间。

The 205-meter-high tower in Frankfurt's CBD sets new standards: The highly efficient façade not only saves energy and equipment but also functions as a vertical solar farm: Photovoltaic modules are positioned outside the ceiling slabs and in the crown. They store solar energy and feed it into the operating system, thus contributing to the energy supply. The impact is especially efficient given the high solar irradiation on the upper floors. The podium of the Central Business Tower, a modernized heritage building from the later 19th century, opens out to the city and provides new public and cultural functions. The high-rise design features two slender halves, positioned at a slight angle to each other and incorporating flexible office areas and open-space zones.

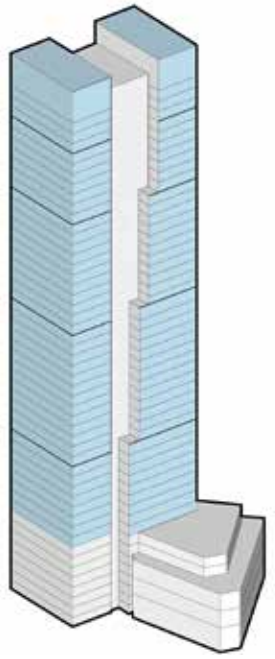
屋顶露台：云端小憩
Roof terrace: Taking a break above the clouds

在新中央商务大厦的周边城市空间中，一座规模宏大的基座区域将其稳稳锚定，并将这座新文艺复兴风格的历史建筑融入其中。通过这种方式，地点、环境与时代被融入当前的使用功能之中——建筑群中风格各异的组成部分并存，并与城市展开一场共同的对话。世界文化博物馆将作为重要租户入驻入口建筑的错层楼层。因此，文化已成为项目不可或缺的组成部分。“在高层建筑中设置公共设施，是进一步提高市中心密度并振兴市中心的良好解决方案，”尤尔根·恩格尔就此强调道。早在2001年，KSP Engel事务所就曾赢得赫拉巴银行（黑森-图林根州立银行）的高层建筑设计竞赛。在2022年获得建筑许可后，建筑师们根据新的框架条件调整了设计方案，除了内部的办公空间布局外，还特别针对当前需求进一步完善了创新的能源方案。

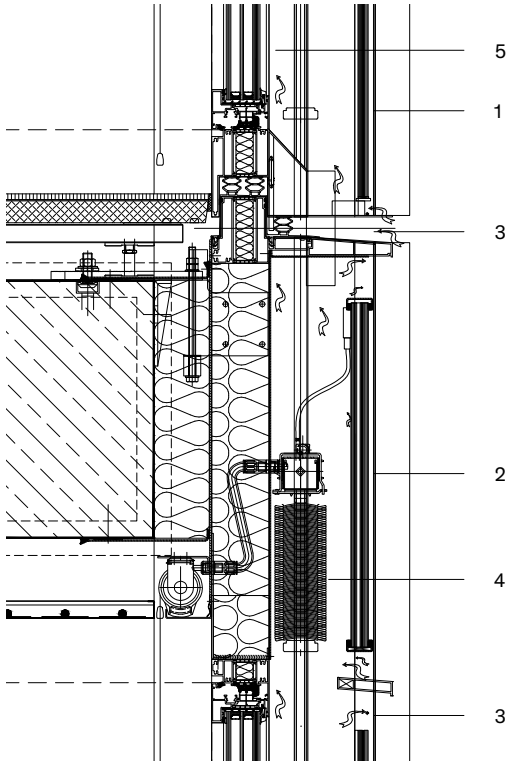
The new Central Business Tower is embedded in its immediate urban surroundings by an extensive podium zone that integrates the historical Neo-Renaissance building. Place, context, and time are thus incorporated into the current use, so the different elements of the ensemble exist alongside one another and enter into a joint dialog with the urban fabric. The Weltkulturen-museum will be a key tenant in the staggered story of the entrance building, making culture an integral part of the whole. “Public uses in high-rises are a great solution for enhancing densities and life in downtown areas,” Jürgen Engel comments in this context. As early as 2001, KSP Engel won the high-rise competition for Helaba (Landesbank Hessen-Thuringia). After building approval was granted in 2022, KSP Engel adapted the plans to meet the new conditions and advanced not only the office worlds inside but above all the innovative energy concept in light of new needs.



光伏电池的详细视图
Detailed view of the photovoltaic elements



光伏组件作为建筑立面的有机组成部分
Photovoltaic elements integrated into the façade



箱式窗结构
Casement window construction

1	防撞玻璃、防坠落玻、低氧化铁玻璃 Impact pane, fall-protecting glazing, low iron glass
2	晶体光伏电池，集成于天花板顶部，并采用平面印刷工艺 crystalline PV-element, integrated in ceiling head and fully filled printed
3	光伏组件的独立后部通风 separate ventilation of the PV modules
4	防风、一体式百叶卷帘 wind-protected, integrated venetian blind
5	三层中空玻璃，防坠落 triple insulated glazing, fall-protected

德国证券交易所，埃施博恩
Deutsche Börse, Eschborn

●

业主 Client
Lang und Groß Projektentwicklung

建筑面积 GFA
78.000 m²

高度 Height
87 m

比赛 Competition
2008, 一等奖 1st prize

竣工 Completion
06/2010

奖项 Awards
LEED铂金级
LEED Platinum certification,
2012年欧洲建筑奖 “能源与建筑”奖，2013年绿色建筑奖 Europäischer Architekturpreis 2012 Energie + Architektur, Anerkennung Green Building Award 2013

位于埃施博恩的德国证券交易所 “立方体” 大楼
Cube of the Deutsche Börse building in Eschborn

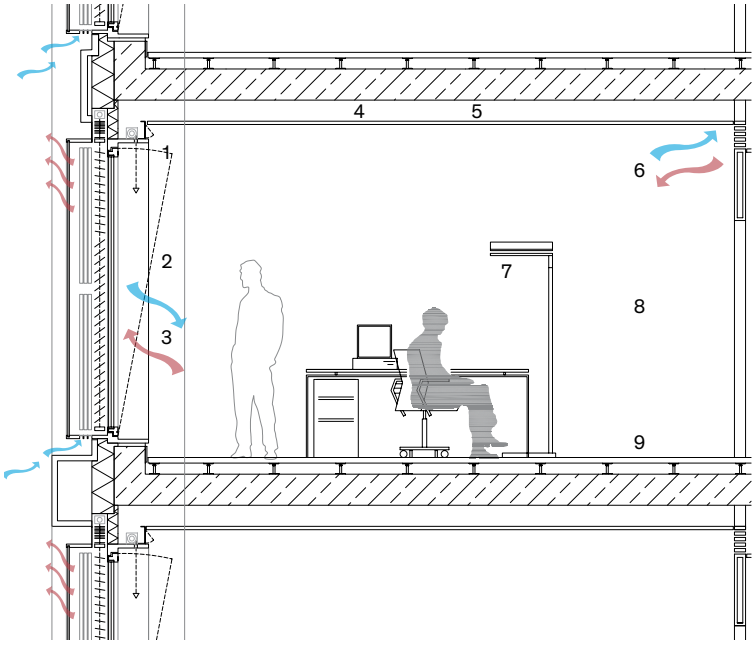
位于法兰克福附近埃施博恩的德国证券交易所总部，仅经过两年的规划和施工，于2010年竣工。这座醒目的立方体建筑高21层，建筑面积达78,000平方米，可容纳约2,400个工作岗位。KSP Engel凭借其可持续建筑理念，获得了美国绿色建筑委员会（USGBC）最高级别“LEED铂金级”认证。该建筑是德国首座获此殊荣的建筑。其核心与交流枢纽是高83米的入口大厅。办公楼层中两座相对而立的L形建筑体通过八座桥梁和十条连廊相互连接。交流区域的开放性和通透性让人们能够充分体验建筑的魅力，并为思想和信息的交流营造了愉悦的氛围。

The Deutsche Börse head office in Eschborn outside Frankfurt was commissioned in 2010 after only two years of planning and construction: The striking 21-story cube offers 78,000 sqm of floor area and thus space for about 2,400 workstations. Thanks to KSP Engel’s sustainable building concept, it was awarded LEED in Platinum by the US Green Building Council – the highest such accolade, which the Deutsche Börse was the first building in Germany to receive. The 83-meter-high entrance hall forms the heart and communicative center. The office floors in the two juxtaposed L-shaped sections of the building are linked by eight airbridges and ten walkways. The openness and transparency of the meeting zones allow users to experience the building’s qualities and encourage people to swap ideas and information.

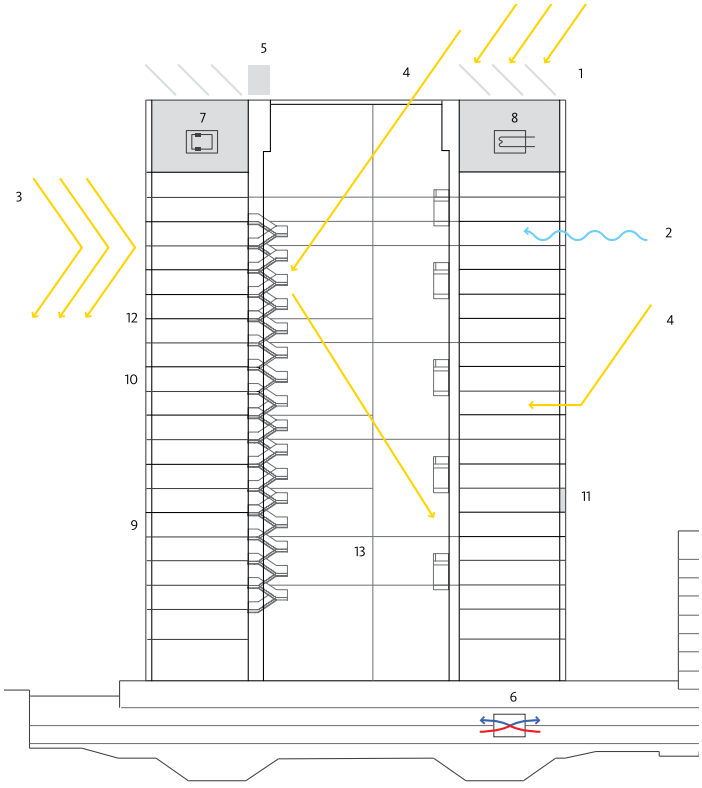
带有箱式窗户构件的外立面
Façade with coffer window elements

作为一座“绿色建筑”，该建筑采用了最先进的技术来最大限度地降低能耗。两套楼内生物气热电联产机组可满足60%的用电需求。此外，还配备了高效率的热回收系统、用于遮阳和照明的智能楼宇自动化系统，以及满足热水需求的太阳能系统。制冷则通过热电冷联产系统产生。为满足这些要求，KSP Engel 在一个综合规划过程中与专业规划师们进行了密切合作。

As a green building, it relies on ultramodern technology to minimize energy consumption. Two inhouse biogas combined heat and power units provide 60 percent of the power. There is a highly efficient heat reclamation system, intelligent building automation for the sun protection and lighting, and a solar plant supplying hot water, while the building is cooled by the combined power, heat, and cooling unit. To fulfill all the requirements, KSP Engel drew on the support of specialist planners in an integral planning process.



1 防眩光卷帘 Anti-dazzle blind
2 通过百叶窗上部的光线引导，实现自然光的优化利用 Optimum use of daylight through light guidance in the upper section of the Venetian blind
3 通过开度受限的旋转平开窗实现舒适通风 Natural ventilation by means of limited span tilt-and-turn wing
4 作为供暖/制冷天花板的悬挂式金属天花板Suspended metal heating and cooling ceiling
5 钢筋混凝土平板楼板 Reinforced concrete floor
6 机械新风/排风系统 Mechanical ventilation system
7 立式台灯，带自然光感应和运动传感器 Upright lamps, dependent on daylight with motion sensor
8 隔间办公室 Cell office
9 纺织面层，双层底板 Textile cover, raised floor



1 太阳能集热器 Solar panels
2 自然通风 Natural ventilation
3 外部遮阳装置Exterior sun protection
4 自然采光（中庭）Natural lighting (atrium)
5 两座热电联产电站 Two combined heat and power plants
6 热回收率：80% Heat recovery: 80%
7 制冷机 cooling machine
8 燃气冷凝锅炉（生物气）Gas condensing boilers (biogas)
9 可持续建筑材料 Sustainable building materials
10 高效的隔热 Efficient heat insulation
11 带三层玻璃的箱式窗户Triple-glazing double window units
12 被动式防晒，玻璃面积占比低（40%）Passive sun protection, low proportion (40%) of glass
13 Kubus，其A/V比为<0.1，达到最佳水平 Cube boasts optimum surface area to volume ratio <0.1

WestendDuo, 法兰克福/美因河畔
WestendDuo, Frankfurt/Main

●

业主 Client
Hochtief Projektentwicklung GmbH

建筑面积 GFA
50.690 m²

总容积 GV
128.120 m³

楼层 Storeys
25

高度 Height
96 m

比赛 Competition
11/2001, 一等奖 1st prize

竣工 Completion
12/2006

奖项 Awards
国际摩天大楼奖
International High-Rise Award
2008,
可持续发展特别奖
Special prize for sustainability

一瞥玄关
View into the foyer

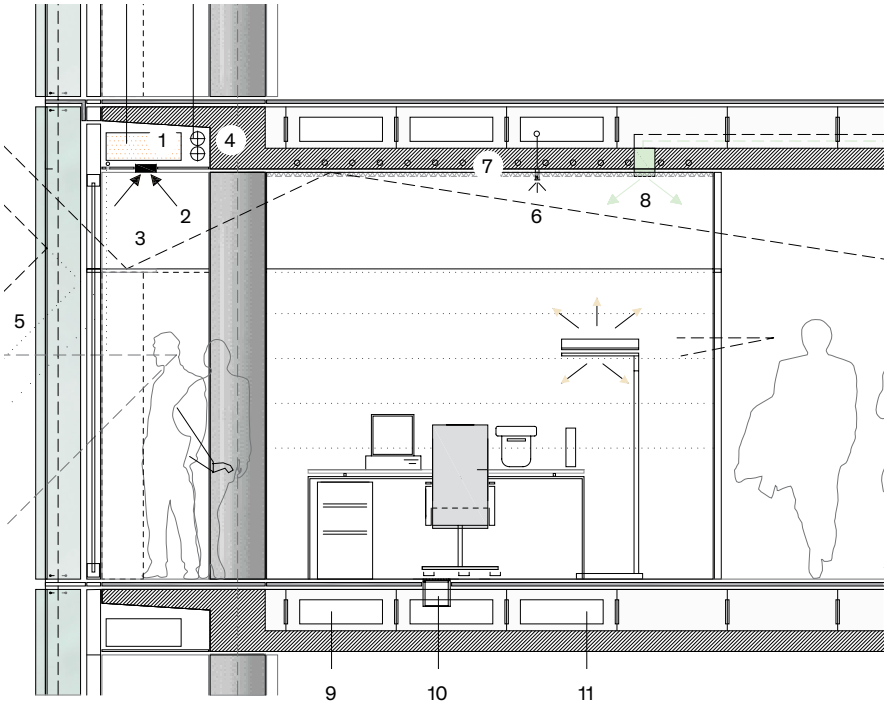
WestendDuo那两座线条修长的双塔楼，其玻璃幕墙呈柔和的弧线，矗立在法兰克福市中心，紧邻银行区和老歌剧院。该项目源于2001年KSP Engel与结构工程师团队共同赢得的一项设计竞赛。这一令评委会信服的技术与结构方案，从一开始就成为规划的核心部分：一种折叠式楼板结构——悬吊天花板与上方的楼板结构仿佛合二为一——使得在96米这一规定的最大建筑高度限制下，最终实现了比最初规划多出两层的建筑规模。这种折叠结构同时提高了结构承载力：在材料消耗较少的情况下，实现了长达12米的无柱跨度空间。

The slender twin towers of the WestendDuo with their softly curved glass façades are located in downtown Frankfurt directly next to the CBD and Alte Oper. The project was based on a competition that KSP Engel won together with structural engineers in 2001, with the technical and structural concept that won over the jury forming a core element of the planning from the outset: A “folded” ceiling structure with suspended ceilings and a floor slab above them are slid into each other, as it were. This meant one more floor could be built than originally envisaged without exceeding the maximum height of 96 meters. The fold also strengthened the load-bearing system, meaning support-free spans of up to 12 meters are possible with reduced material inputs.

Doppelfassade mit Lüftungsboxen aus Aluminium
Dual façade with aluminum ventilation boxes

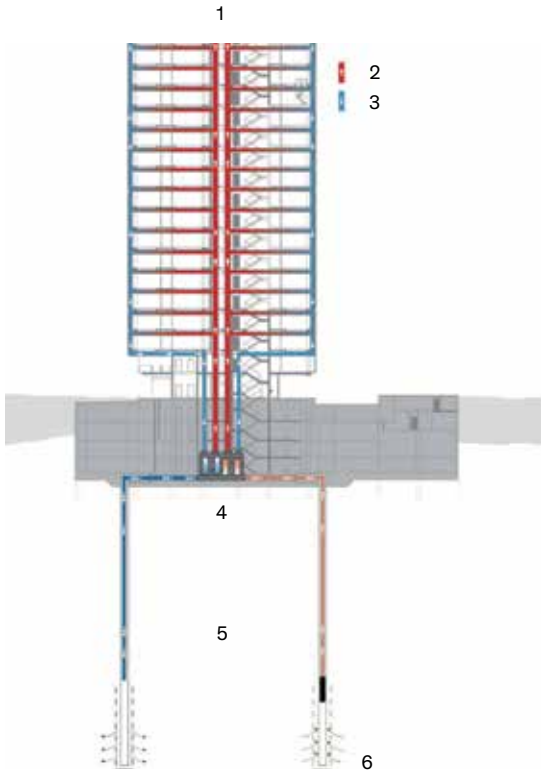
WestendDuo 致力于实现低能耗。其核心要素是各楼层由地热供能的空调天花板。通过可开启的窗扇实现的自然通风，确保了舒适且个性化的室内环境。双层幕墙在冬季最大限度地减少了热量损失，在夏季则确保室内温度保持舒适。2008年，WestendDuo在德国建筑博物馆（DAM）举办的国际摩天大楼奖评选中荣获了可持续发展特别奖。这座双塔建筑群由一座五层高的横向建筑体连接，将两座摩天大楼之间的空间有机地融合在一起。其中，一楼的公共空间在法兰克福的摩天大楼中堪称创新之举——其内的餐厅和酒吧不仅为周边城市空间注入了活力，也使建筑与周边环境紧密融合。

The WestendDuo is designed for low energy consumption. The key element here is the heating/cooling ceiling in each of the stories, powered by geothermal energy. Natural ventilation from opening casement windows guarantees a pleasant, personalized ambient climate, while the double façades minimize heat loss in winter and cool the rooms in summer. In the International High-Rise Award bestowed by Deutsches Architekturmuseum DAM, the WestendDuo received a special mention for “sustainability” in 2008. The dual complex is rounded out by a five-story block embracing the ground between the twin high-rises. An innovation for a Frankfurt skyscraper is the public ground floor with restaurants and bars that animate the surrounding urban space and give the location strong local roots.



办公楼某层的剖面图
Elevation of an office floor

1 排气环路 Exit air
2 玻璃剑 Glass
3 光线偏转 Redirection of light
4 热能毯的热量分布 Allocation thermoactive ceiling
5 计算机控制的玻璃百叶片 Computerised sunscreen between glass panes
6 喷淋装置 Sprinkler
7 热能毯 Thermoactive ceiling
8 进风 Supply air
9 大电流 High voltage current
10 地埋式油箱 Floor box
11 计算机技术 IT



地热能的利用
Use of geothermal energy

1 用于调节温度的供暖/制冷天花板 Thermo active ceilings for temperature adjustment
2 供暖/制冷去程 Flow heating/cooling
3 供暖/制冷回水 Return heating/cooling
4 可逆式热泵 Reversible heat pump
5 过滤段长度约为 85–140 米 Filter distance: 85–140 m
6 输送泵 Feed pump

通过功能转换实现可持续性：高层建筑开发必须着眼于长远。

Permanence through new uses: High-rise advances must factor in the long term.

KSP Engel在高层建筑领域数十年的规划经验体现在项目设计理念中：未来的高层建筑必须在规划阶段就确保其在整个使用过程中能够展现出坚固、开放和灵活的特性。这一点不仅适用于新建项目，也深刻影响着我们处理既有建筑的方式。基于我们的专业知识，并与业主密切协商后进行的深入分析往往表明：只要采取适当的措施，现有建筑结构就可以得到保留、改造和继续利用。在此过程中，除了成本效益外，还必须考虑对已使用材料的保留——即所谓的“灰色能源”。这些材料的再利用可以减少建筑物的生态足迹，并表明负责任的规划方法在高层建筑领域同样行之有效。

KSP Engel’s decades of experience planning high-rises is visible in how projects are conceptualized: Tomorrow’s high-rises need to be designed so that they remain robust and flexible in the course of their use. This applies not only to our new builds, but also to how we approach old build conversions: A thorough expert analysis in close consultation with the client often reveals that the existing building substance can be preserved, given new uses, and thus used going forward if the right steps are taken. The focus here is on both cost efficiencies and preserving existing construction materials, the building’s “grey energy”. Ongoing use of the building lowers the project’s ecological footprint and shows that responsible planning methods make sense in high-rise construction too.

汉堡南航/TRIIIO，汉堡
Hamburg Süd/TRIIO, Hamburg

●

业主 Client
Hamburg Südamerikanische Dampfschifffahrts-Gesellschaft KG

总容积 GFA
29.000 m²

总容积 GV
107.700 m³

楼层 Storeys
15

高度 Height
55 m

开工 Start of construction
08/2014

竣工 Completion
06/2016

奖项 Award
汉堡BDA奖 BDA Preis Hamburg, 一等奖 1st prize 2018

一瞥门厅
View into the foyer

这家国际物流企业汉堡南航(Hamburg Süd)的总部大楼共13层，是汉堡市中心威利·勃兰特大街(原东-西大街)上最引人注目的建筑之一。KSP Engel公司于2016年对这座由凯撒·皮瑙(Cäsar Pinnau)设计、建于1964年的摩天大楼进行了翻新。对现有建筑结构的调查表明，其结构坚固且灵活，在很大程度上可以继续使用，只需进行基础加固即可。通过更换建筑内部的所有楼宇技术系统，所有工作场所的基础设施均符合当前的要求。那座双层、气派的入口大厅，以其晚期现代主义风格的休息室般氛围，被精心翻新，成为室内设计的一颗明珠。

The head office of international logistics corporation Hamburg Süd with its 13 office stories is one of the landmarks on Willy Brandt Strasse (formerly: Ost West Strasse) in downtown Hamburg. Designed in 1964 by Cäsar Pinnau, in 2016 KSP Engel modernized the high-rise. A study of the existing substance revealed the structure to be robust and flexible and the majority of it reusable as long as it was given a fundamental makeover. All of the internal facilities technology was replaced, and now all workstations rely on ultra-modern infrastructure. The grand two-story entrance with its lounge-like late Modernist feel has been revamped to create an interior design gem.


HAMBURG SÜD

新窗扇的特写照片
Detailed view of the new casement windows

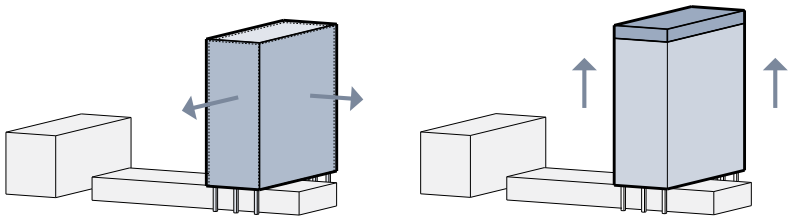
带防撞玻璃和轻金属窗框的箱式窗外观
View of the coffer windows complete with impact pane and light metal frame

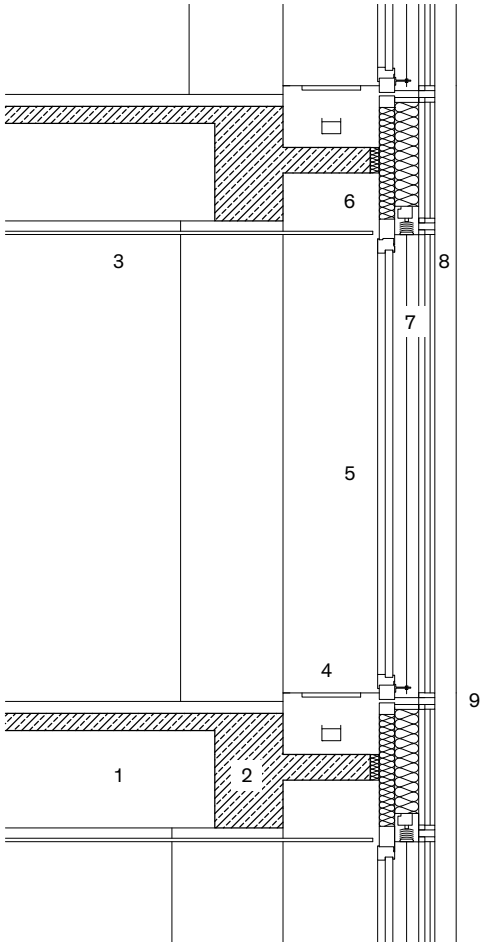
外立面的翻新工程也严格遵循了文物保护原则，在深入研究历史建筑材料的基础上进行。KSP Engel 设计公司摒弃了单层玻璃方案，转而采用带集成遮阳系统的双层幕墙结构。这样既满足了节能的要求，又兼顾了文物保护的需求。因此，除了大面积面板采用绿色调外，悬挂式玻璃幕墙的精细结构这一建筑特色也得以保留。

The outer skin was renewed to heritage requirements after a careful examination of the historical building materials: Single glazing gave way to KSP Engel's purpose-developed dual-shell façade with integrated sun protection, meaning energy efficiency could go hand in hand with the building's heritage listing. Thus, not only the green tone of the large-format panels but also the refined subdivisions of the glass curtain façade were upheld as key features of the building.

外立面的翻新以及增建一层，使得建筑体量有所扩大。不过，建筑整体的优雅气质得以保留。

Renewal of the facades and the addition of a new story led to a larger building volume, yet the elegant overall impression was upheld.





Detailschnitt Fassade (Innen nach Außen)
Detailed section of the façade (Inside to outside)

1 立面详细剖面图（由内向外 Cavity floor
2 钢筋混凝土（肋板）楼板 Reinforced concrete (ribbed) ceiling
3 斜坡覆盖层 Suspended ceiling
4 地暖对流器 Floor convector
5 带三层中空玻璃的窗扇（可开启） Window casement with triple pane insulating glazing (openable)
6 百叶帘 Venetian blind
7 冲击盘 Impact pane
8 窗框铝合金型材 Window frame aluminium profiles
9 护墙板（位于楼板高度处） Parapet plate (at the level of the floor slabs)

法兰克福/美因河畔，帕克维尤160号
160 ParkView, Frankfurt/Main

●

业主 Client
RFR Holding, Hines und Revcap

总容积 GFA
19.400 m² 居住 Residential
13.500 m² 酒店 Hotel
7.900 m² 地下停车场
Underground parking

住宅单元 Apartements
130

酒店客房 Hotelrooms
150

楼层 Storeys
27/20

高度 Height
96 m / 73 m

开工 Start of construction
2017

改造前的既有建筑
Old build prior to conversion

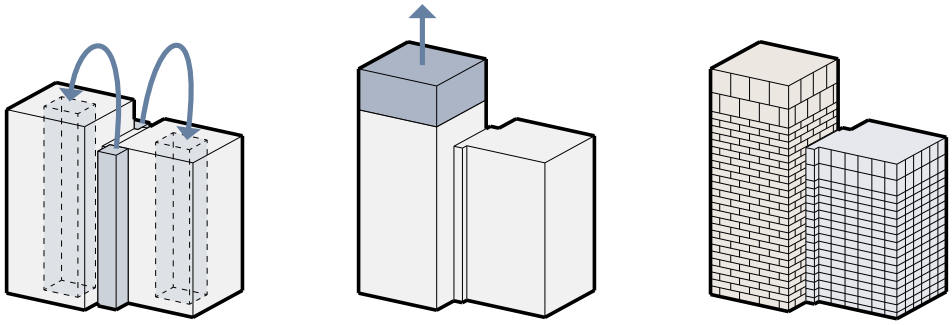
这是一个为城市带来巨大附加值的复兴项目：位于法兰克福格吕内堡公园（Grüneburgpark）附近、紧邻热门住宅区的一对旧办公塔楼将焕发新生。从立面设计上即可辨别出它们分别作为酒店塔楼和住宅塔楼的功能。这座27层的住宅塔楼通过通透的立面向周边环境敞开。环绕建筑转角处的连通式露台，赋予了这座塔楼充满动感的外部造型。130套采用开放式户型的产权公寓，户型从两居室到面积超过100平方米的家庭公寓一应俱全。20层高的酒店塔楼外立面采用深色轻金属板包裹。此次改造还包括全新的内部动线设计：原先位于外部的楼梯间被改造成阳台，而新的电梯核心区则位于塔楼内部。

A revitalization project of immense value to the city: Two former office towers close to a popular residential neighborhood on the edge of Frankfurt's Grüneburgpark will be given new uses. The façade design reveals their respective functions as a hotel and as apartments, with the 27-story residential tower boasting a transparent façade that opens out onto its surroundings, complete with loggias that wrap around the corners to create a dynamic feel. The 130 open-plan condominiums range from two-room apartments to family flats of over 100 square meters in size. The 20-story hotel tower, meanwhile, boasts a façade of dark panels made of lightweight metal and has gained two new entrances in the makeover. The former outside staircases are now balconies, and the new elevator shafts are inside the towers.

KSP Engel 规划将现有高层建筑拆除至钢筋混凝土框架结构的承重结构。该承重结构在很大程度上得以保留，并作为基座建筑和塔楼全面重建的基础框架。除了为新用途配套相应的基础设施以及调整新的空间布局和平面图外，建筑服务系统和消防设施也将从根本上进行更新。此外，在改造之初，就致力于将这些建筑与周边住宅区实现持久的融合。

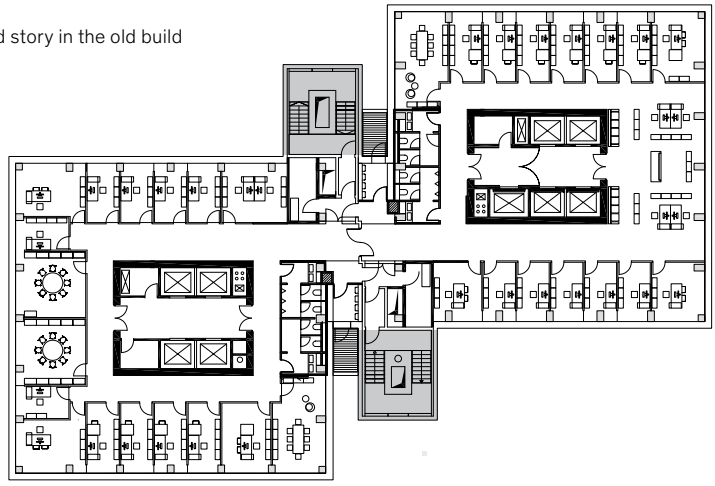
KSP Engel reduced the existing high-rises to their reinforced concrete skeletons. This way, their load-bearing structures could be largely retained and served as the spine for a completely new podium and towers. In addition to the relevant infrastructure for the new uses, new subdivisions and ground plans, the facilities and fire protection technology have been completed replaced. Moreover, the new uses also focused from the outset on integrating the towers into the surrounding residential district.

一瞥未来起居室之一的景象
View of one of the future homes

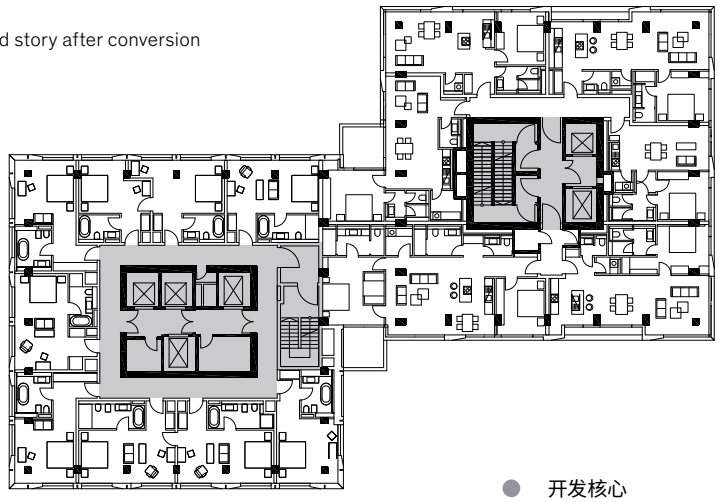


用途变更流程图
Plan for the conversion

现有标准楼层平面图
Ground plan of the standard story in the old build



改造后标准楼层的平面图
Ground plan of the standard story after conversion



开发核心
Service core

阿尔内·雅各布森之家，汉堡
Arne Jacobsen Haus, Hamburg

●

业主 Client
AJH GmbH
(MATRIX Immobilien GmbH)

既有建筑的建筑师
Architects of existing building
Arne Jacobsen & Otto Weitling

建筑面积 GFA
49.860 m²

高度 Height
44 m

竣工 Completion
2027

奖项 Awards
力争获得LEED铂金级认证
LEED Platinum aimed for

翻新前的阿恩·雅各布森大楼
Arne Jacobsen Building prior to modernization

建筑师阿恩·雅各布森是经典现代主义最重要的代表人物之一。位于汉堡市北区的原“汉堡电力公司”（HEW）大楼由四座错落有致的高层玻璃幕墙建筑组成，即便在竣工50多年后，仍充分彰显了雅各布森卓越的设计造诣。建筑的外立面与室内设计均经过精心的整体规划，细节之处相互协调统一。KSP Engel事务所高度重视将这座建于1968年的后现代主义建筑作为一件整体艺术品加以保护，并在与当地文物保护部门密切协商的基础上对其进行进一步改造。因此，尽管为了适应现代办公模式进行了诸多调整——包括设置开放式办公区和吸引人的共享办公空间（雅各布森曾在此建造过独立办公室隔间）——KSP Engel在改造过程中仍保留了该建筑独具一格的美学风格。

Architect Arne Jacobsen is one of the most important representatives of Classical Modernism. Over 50 years after turnkey, the former “HEW Building” with its four staggered high-rise slabs in Hamburg’s City-Nord still exhibits outstanding design qualities. The façades and interior were designed and calibrated down to the smallest details. KSP Engel aspired to retain the Late Modernist building dating from 1968 as a gesamtkunstwerk and further develop it in consultation with the local heritage office. Despite countless adjustments to reflect modern working methods, with open-plan offices and attractive co-working-spaces (Jacobsen relied on cell offices throughout), KSP Engel has thus preserved the unmistakable aesthetic of the original building.

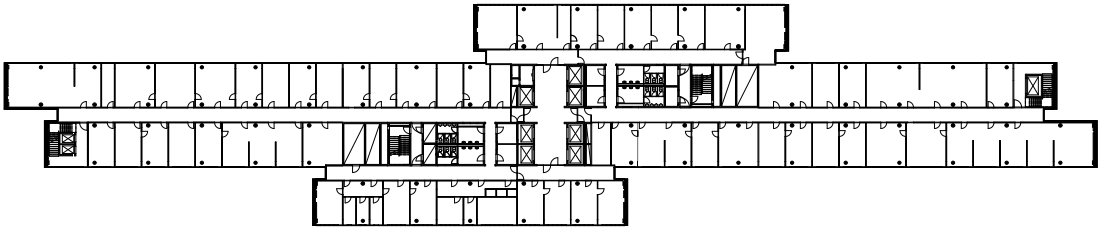
尤尔根·恩格尔(Jürgen Engel)如此描述他的设计理念:“建筑内部应明亮、通透、开阔且视觉上通透。我们将提升工作环境质量——包括通过新的采光设计和内部遮阳系统——其设计灵感源自阿恩·雅各布森(Arne Jacobsen)本人最初构思但从未付诸实施的系统。这座受文物保护的标志性建筑的建筑魅力,未来将更加鲜明地展现在人们面前。”尽管建筑将进行符合当代需求的新用途改造,但现有结构将尽可能得到保留——例如在设有半公共会议区的新校园楼层中。而立面的深色玻璃面板则将全部更换,但建筑的原始外观仍将得以保留。

Jürgen Engel describes his design approach as follows: “The idea is for the building to be bright, open and visually translucent on the inside. We want to enhance the quality of the workstations, including with new lighting and internal sun protection – in line with the original system Arne Jacobsen himself developed but which was never realized. The architectural qualities of this heritage-listed icon will be all the more tangible going forward.” Despite it accommodating new, modern use, as much of the old substance as possible will be preserved, for example in the new “campus story” with its semi-public conference area. By contrast, the façade's dark glass panels will be completely replaced – without this changing the original appearance.

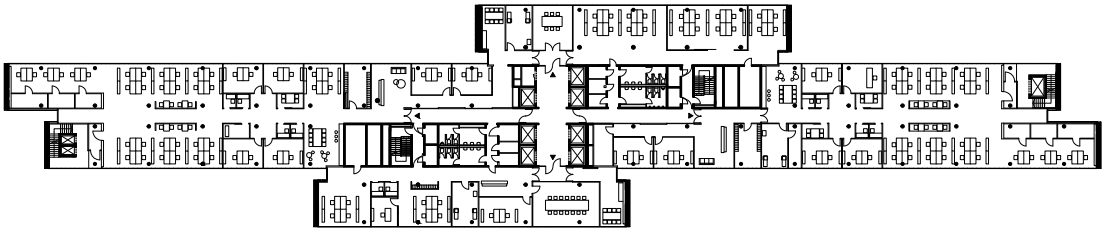
位于所谓“校园楼层”的公共区域,保留了建筑建成时期(20世纪60年代)的原有风貌。

The shared functions in the building located on the campus story retain the feel of the early days of the building back in the 1960s.

办公楼层内部一瞥，设计图
View of an office floor, proposal



现有标准楼层平面图
Ground plan of the standard story in the old build



标准楼层平面图，设计稿
Ground plan of the standard story, proposal

其他建筑
Other buildings

阿斯特拉塔
汉堡

业主 Client
29. Verwaltungsgesellschaft DWI Grundbesitz mbH
总容积 GFA 19.030 m²
比赛 Competition 07/2004, 一等奖 1st prize
竣工 Completion 11/2007

SAP
埃施博恩

业主 Client
Groß & Partner GmbH mit OFB Projektentwicklungs GmbH
总容积 GFA 11.780 m²
竣工 Completion 06/2018
奖项 Awards
LEED金级认证 LEED Gold certification,
2020年ICONIC大奖——获奖者 ICONIC Awards 2020 – Winner

Canyon ML23
法兰克福/美因河畔

业主 Client
CV Real Estate AG
总容积 GFA 38.310 m²
竣工 Completion 2027
奖项 Awards
力争获得LEED铂金级认证
LEED Platinum certificate aimed for

火车站广场2号
纽伦堡

业主 Client
Sontowski & Partner
总容积 GFA 12.000 m²
比赛 Competition 2024,一等奖 1st prize
奖项 Awards
力争获得DGNB金级认证
GSBC Gold certification aimed for

Solid Home
法兰克福/美因河畔

业主 Client
Bauwerk Capital GmbH & Co. KG + Red Square GmbH
总容积 GFA 30.180 m²
比赛 Competition 04/2015, 一等奖 1st prize
竣工 Completion 2021

FLOW
法兰克福/美因河畔

业主 Client
Europa-Center AG
总容积 GFA 59.250 m²
竣工 Completion 2023
奖项 Awards
DGNB金级认证证书 GSBC Gold certification

联系方式、网站信息
Contact, imprint

KSP ENGEL International GmbH
KSP ENGEL (Shanghai) Ltd.

柏林 Berlin
T: +49(0)30.88 92 04-0
berlin@ksp-engel.com

布伦瑞克 Braunschweig
T: +49(0)531.6 80 13-0
braunschweig@ksp-engel.com

法兰克福 Frankfurt/Main
T: +49(0)69.94 43 94-0
frankfurt@ksp-engel.com

汉堡 Hamburg
T: +49(0)40.52 47 369-00
hamburg@ksp-engel.com

慕尼黑 München
T: +49(0)89.54 88 47-0
muenchen@ksp-engel.com

北京 Beijing
T: +86(0)10.65 90-78 70
beijing@ksp–architekten.net

深圳 Shenzhen
T: +86(0)755.86 54-73 83
shenzhen@ksp–architekten.net

KSP ENGEL, Public Relations + Marketing
pr@ksp-engel.com

图片来源
Image credits

bloomimages 7, 10, 61-62, 67, 69 Marcus Bredt 2, 9, 14-16, 29-30, 50, 57, 69, 70 hiepler, brunier, 1, 22-24 Carsten Brügmann 68 Klaus Frahm 56, 58 Ben Kuhlmann 20 KSP ENGEL GmbH 10, 17, 21, 25, 28, 31-32, 35-37, 39, 45, 49, 53, 59-60, 63, 67, 69 rendertaxi 42-44 Stefan Schilling 33-34 Play-time 6 Adrian Schulz 68, 69 Eibe Sönnecken 18, 21 Jochen Stüber 64-66 Jean-Luc Valentin 5, 19, 46-48, 51-52 Zinedine Zebar 38

ksp-engel.com