

Form3
design & research

Architecture is a field on which we must take some risks.
if you want to invade a new field you must face the unknown.

(Eng. Sergio Musmeci)

Selected Works 2022-2023

About FORME

非木建筑设计研究室 (FORME) 由Diego Paiusco先生和 Claudio Milanesi 先生于2019年共同创立, 是一家立足于中国杭州的建筑设计研究室。多元化的团队由不同文化背景的建筑师、工程师、室内设计师和研发人员所组成, 主从规划设计、建筑设计、室内设计以及工程技术研发等业务, 坚信高质量的项目依托于多学科融合与严格的施工控制, 其细节经久不衰。

非木提供规划、建筑、室内和产品设计, 及工程咨询、项目管理服务, 不断扩大的项目实践分布于欧洲与亚洲。在中国市场运营的五年中, 非木已与若干全球知名的建筑工作室合作, 值得一提的是, 其中三个工作室都获得了著名的普利兹克建筑奖。同时, 我们卓越的设计能力也得到了市场的认可, 已经完成建设的项目包括泰瑞机器全球总部 (杭州)、浙江康静医院升级改造项目等。

非木通过“设计+研究”并行的方式探索新的设计语言。我们认为, 建筑形式不仅是设计师兼收并蓄的结果, 也是各种环境、社会文化和工程因素在建筑应用上的体现。

材料研究实验室位于非木工作室的一楼, 也是创意开始的地方。实验室的材料库为我们的研究人员提供了广泛的素材, 开展包括建筑混凝土饰面效果设计、环保型配合比设计、性能测试以及样品和建筑模型的制作等活动。从理论构想到实践实验, 我们的创作者尊重材料的本质, 不断地研究解决方案, 以应对当代建筑的新问题。

Founded in 2019 by Diego Paiusco and Claudio Milanesi, FORME is a Design & Research studio based in China and in Italy. The team is composed of architects, engineers, interior designers and creators with different cultural backgrounds, operating within the fields of architecture, interior, urbanism, research and development. FORME insists that high-quality projects rely on the integration of multidisciplinary and strict construction control, with details designed to last over time.

FORME offers from master planning, urbanism, architecture, interior and product design, to engineering consulting and project management services, with the burgeoning portfolio ranging from Europe to Asia. FORME has already collaborated with several globally acclaimed studios during its five years of operation in the architecture field. Notably, three of these studios have been honored with the prestigious Pritzker Architecture Prize. At same time, Our design excellence is recognized by the market, completed projects include Tederic Headquarters in Hangzhou, Comgin Hospital Renovation etc.

FORME explores new design language through the parallel approach of “Design+Research”. We believe that architectural form is not only the result of the designer's eclectic decisions, but the architectural expression of various environmental, socio-cultural and engineering factors.

The research laboratory, located on the ground floor of the FORME studio, is where the creative process begins. The laboratory's materials library offers a wide range imputes to our researchers, who carry out activities such as architectural concrete surface design, environmentally friendly mix design and performance testing, up to the production of samples and Projects scale models. From theoretical conception to practical experiments, our creators respect the essence of the material and constantly research solutions to address the new problems of contemporary architecture.

FORME3 Co., LTD

N.61 Quandong, 85 Shuguang Rd., Xihu Dist, Hangzhou

杭州非木建筑工程管理有限公司

杭州市西湖区曙光路85号泉东区61幢

+86 131 2381 8231
info@forme3.com

Founders



Diego Paiusco & Claudio Milanesi

Diego Paiusco 和 Claudio Milanesi 于2019年在杭州成立工作室。

两位创始人都毕业于意大利土木工程专业, 对艺术和设计充满热情。他们先是在材料研究领域积累了丰富经验, 后又参与大型建筑项目增进了建筑学专业的理解。Claudio Milanesi 通过在多伦多大学材料科学系的一段重要经历开始了他在材料创新领域的研究之旅, 而 Diego Paiusco 在职业生涯之初就致力于欧美大型路桥项目的设计和监管, 度过了其重要的积累时期。

2016年, 两人都参与了普利兹克奖得主伦佐·皮亚诺在中国的第一个项目: 杭州天目里。

Diego Paiusco and Claudio Milanesi founded their office in Hangzhou in 2019.

Both graduated in Civil Engineering in Italy with a passion for art and design, they have cultivated experiences first in research and then in the field of design in the architecture field working in important firms Projects. Claudio Milanesi began his research journey in the field of innovation through an important experience at the Department of Materials Sciences at the University of Toronto, while Diego Paiusco at the beginning of his career dedicated himself to the design and monitoring of large infrastructures working between Europe and America.

In 2016, both participated at the first project in China of Pritzker prize-winning architect Renzo Piano's RPBW studio: The Tianmuli Complex in Hangzhou.

“Re-build the Identity of the Future City.”

“重塑未来城市的身份。”



Work Method



非木的工作方法源于建筑设计和工程设计两大领域之间的跨学科联系。与一般流程不同的是，我们将两个学科与项目目标联系起来，始终寻求两种方法互相作用的最优化方案。通过这种方法，我们能够提供一个全面的服务，从对设计创意的全面了解到深入探讨如何实践和实施。

我们坚信，在施工过程中不应该陷入“闭塞”，每个单位都只关注自己的工作，会造成信息缺失和设计冲突，导致问题只能在施工现场解决。反之，建筑、工程和其他相关专业的融合互补，才可以创建一个集成式项目流程，从而实现项目的品质最优，能应对时间的考验。

因此，对设计问题的拆解决、与客户的良好关系、不受局限的设计理解、畅意的交流沟通以及舒适的工作环境是工作室运作的基础。其中，实验室——工作室的研发空间，代表一种基本工具：一个专门用于研发和物理实验、创建小型视觉样板和三维实体模型的空间。非木利用信息技术和数字化领域的最新技术、三维模型、VR动画和 BIM 分析的数字技术，研究和处理复杂建筑的几何形态问题。

不局限于项目的规模，我们始终通过学习不同规模和不同类型的项目，寻求适应和改进。基于不同市场需求来追求高品质、耐久性和生态可持续性一直是工作室遵循的基本原则。

为了实现该目标，工作室持续不断地进行实践、现场培训以及直接应对建筑中的实际问题，旨在学习控制实施过程中的转变。非木认为，建筑的实现非常重要，将其委托给施工过程经验欠缺的设计师，盲目地依赖理论方案往往不能解决实际问题。

FORME working method arises from the interdisciplinary approach of connection between the two main aspects of design: architecture and engineering. Unlike the normal process, we direct both disciplines to the objectives of the project, always seeking maximum optimization between the two ways and methods of approaching the design problem. This method allows you to create a complete service, which starts from the perfect understanding of the idea up to questioning in depth about how to realize it in reality.

We strongly believe that the construction process should not be tackled in "watertight compartments", where each part deals only with what it is responsible for, creating information losses and design interferences to be solved in situ with improvised solutions. Conversely, thanks to the fusion of architecture, engineering and other complementary disciplines, it is possible to harmoniously create integrated project procedures to achieve the best quality projects, characterized by details designed to last over time.

The presence of the laboratory, the studio's research space, consequently represents a basic tool, a space dedicated to scientific and physical experimentation, to the creation of small VMUs and 3D models. FORME exploits the latest technologies in the IT and digitalization fields, for the creation of 3D models, VR animations, and BIM analysis is able to study and process complex and parametric geometries.

The method does not preclude project dimensions but seeks to adapt and improve by learning from different scales and project types. The search for quality, durability and eco-sustainability, by adapting to different markets, remains the basic principle on which the studio approaches its daily life.

The continuous practice, the training on-site, and the interest in direct contact with the real problems of the construction represent the continuous exercise that the office carries out in order to achieve the objectives of the work trying to control its transformation during the process realization. FORME believes that architecture and its socio-cultural implications are too important to be managed by designers who do not have a deep knowledge of construction processes, blindly relying on theoretical solutions that often do not meet to the real situation.

Ethics, Respect and Sustainability

我们时刻提醒自己，从空间功能及文化角度，我们所做的工作对社会至关重要。因此，非木不仅必须秉持高度的职业道德精神，还要仔细审查当代全球性的问题，以及我们所处的行业是如何作用其中的。我们坚信，每一个项目和合作都必须保持对当前问题适当的谦逊和尊重，将项目从单纯的美学探究转化为有效的沟通工具。

具有生态和能源意识的设计是保护和尊重我们生活的家园的基本方面。因此，我们的工作旨在通过综合型方案解决存在的环境问题，减少施工过程中排放的二氧化碳、使用可再生资源 and 能源、限制水和能源消耗、使用可回收原材料等。因此，可持续发展是指导工作室研究和创新活动的关键主题。

我们认为，传统模式的“规划”，即绿色空间和自然仅仅只有观赏价值，已经发生了变化。须重新评估人与自然之间的平衡，而规划本身也须随之展开和发展。大自然应该被视为一种手段，当设计与人类活动相协调时，就能充分利用它来改善我们的世界。

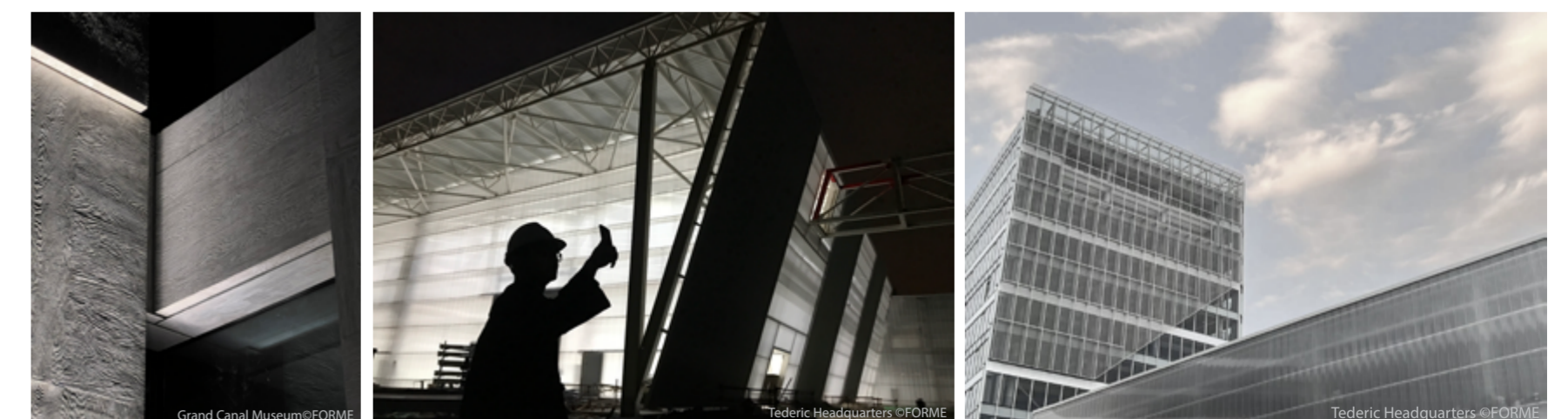
通过我们的项目，我们努力向从客户、制造商到机构的各个层面传达共同努力改善现状的必要性，并通过提供设计解决方案以贡献我们的微薄之力，比如：赫尔佐格和德梅隆工作室设计的中国京杭大运河博物院二期项目，其混凝土配合比中运用的可回收型原材料；在伦佐皮亚诺工作室设计的杭州天目里综合体中所用的水性产品；或在泰瑞机器全球总部的外立面设计中所使用的可降低二氧化碳排放量的预制系统和模块化设计。

We consistently remind ourselves of the significant responsibility that our work entails towards society from the cultural and usability aspects of the designed spaces. As a result, our firm is compelled not only to operate with the utmost professional ethics but also to scrutinize and investigate the current issues in the world and how our sector is implicated. We firmly believe that every project and collaboration must demonstrate the appropriate level of modesty and respect towards current issues, transforming the project from a mere aesthetic exercise into an effective communication tool.

An ecologically and energetically conscious design represents a fundamental aspect for the protection and respect of the places in which we live. Our work therefore aims to combat the environmental problems affecting our planet through a holistic approach that touches on issues such as the reduction of CO2 emitted during the construction process, the use of renewable resources and energy, limiting water and energy consumption, the use of zero km and/or recycled raw materials, etc. The sustainability is therefore the key topic that guides the studio's research and innovation activity.

We believe that the traditional paradigms of "old planning," in which green spaces and nature were viewed solely for their ornamental value, have evolved. The balance between humanity and nature must be reevaluated, and planning must evolve accordingly. Impactful construction solutions and excessively complex details are extemporaneous compared to today's socio-environmental needs.

With our projects, we try to convey at all levels, from the customer to the manufacturer up to the institutions, the need for a joint effort in improving the current situation and to give our modest contribution by devising solutions in this direction as for example: the use of recycling material in the concrete mix design, as in the case of the Grand Canal Museum by the Herzog & de Meuron, the use of solutions with water-based products, such as Tianmuli Complex by the RPBW, or the reduction of the CO2 emitted through use of prefabrication systems, modular design, such as the facades of the Tederic New Headquarters.



Research Topic: Concrete

不同类型的混凝土是工作室目前最核心的研究课题，工作室创始人从学术生涯便开始了对该材料的研究。在过去的 100 年里，这一材料一直是建筑界的主角，如今却成为环境领域饱含争议的话题。因此，在这一领域寻求创新，不仅是我们在进行专业咨询时通常要求的技术/美学目的，也代表了工作室为推进设计领域进步和改善我们周围环境所给予的社会价值。

我们采用跨学科的方法研究混凝土的各项特点：从化学成分、机械性能、可行性等，到建筑的表现意义、对社会和环境的影响等。随着时间的推移，我们的研究意义和目标不断演变和扩展。基于本课题，项目研究包括以下研究方法：

- 设计理解
- 可行性研究
- 样品测试
- 设计
- 碳减排策略
- 视觉样板的制作
- 品控流程
- 现场管理

基于创始人个人职业生涯的土木工程项目积累，并不断地钻研建筑、艺术、哲学等领域的知识，工作室对于项目的“设计理解”也得到了充分拓展。这使我们能够提出和实施定制化的解决方案，以解决当代建筑中最复杂的问题。工作室目前的研究课题为：

- 低碳可持续混凝土配合比的设计
- 混凝土配合比设计的数字化和优化，以减少浪费
- 美学及功能学角度的饰面效果创新

Concrete, in its different typologies and functions, currently represents the studio's largest research topic which the founders have been studying since their academic career. This material, protagonist of the construction world for the last 100 years, is today the source of great discussions in the environmental field. The search for innovation in this area therefore goes beyond the technical/aesthetic purposes that are normally requested of us in carrying out specialized consultancy, but also represents the social contribution that the studio offers to improve the world of design and the environment that surrounds us.

Our interdisciplinary approach studies concrete in all aspects that characterize it: from chemical composition, mechanical properties, workability, etc. up to the expressive meanings in architecture, the impact on society and the environment. Over the years, the meaning of the research and its objectives have broadened and deepened. Based on this study, in the project approach we can define the following research method:

Design understanding

- Feasibility studies
- Test campaign
- Design
- CO2 reduction strategy
- Creation of Visual Mockup (VMU)
- Quality and control procedures
- Site supervision

The engineering knowledge, typical of the founders' personal career, was expanded by continuously studying architecture, art and philosophy; training the "design understanding", the strong skill of the studio, which allows us to achieve the customization necessary to resolve the most complex problems of contemporary architecture. The current research topics of the studio are:

- Design of eco-sustainable mixtures with low CO2 emissions
- Digitalization and optimization of the use of concrete with consequent reduction in waste
- Design of innovative surfaces from an aesthetic and functional point of view

Identity and Education

我们坚信教育和知识传播的重要性。因此，我们致力于实施建筑/施工领域的培训。通过这些举措，实现提高发建筑行业的质量和安全水平的目标，培养与时俱进的技术人员，以随时应对建筑行业的新需求。与此同时，培训还能让我们更好地了解社会动态以及我们希望通过建筑来解决的问题。

此外，我们深入了解客户文化相关的方方面面，协助客户找到其本身的“身份特征”，在此基础上进行塑造，并在合作过程中给予他们最大的支持。

文化意味着对其自身身份的认可 and 重视，亦不能与“个性”这一概念混淆。

We strongly believe in the importance of education and the dissemination of knowledge. This is why we are seriously committed to creating training programs in the construction/architectural field. Through these initiatives, we aim to improve the level of quality and safety in the construction sector of developing countries, creating technicians who are always up-to-date and ready to respond to the new demands of our sector. At the same time, training allows us to better understand the social dynamics and issues that we aim to solve with our architecture.

We also try to help our clients shape and, in some cases, discover aspects of their identity, trying to deeply understand the aspects linked to culture, comforting them in the collaboration process.

Culture means besides recognizing and valuing one's identity, an aspect that must not be misinterpreted with the concept of individuality.





前比亚乔地区城市更新
/Ex Piaggio Areas Urban Renewal
Finale Ligure - Italy



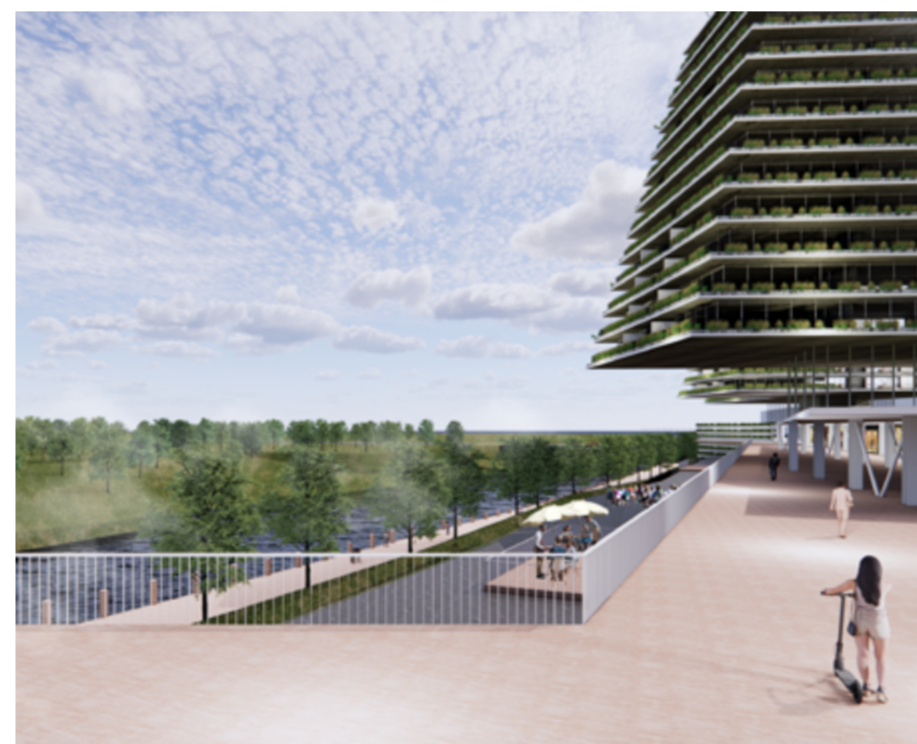
临安城市客厅/LinAn City Lobby
Hangzhou - China



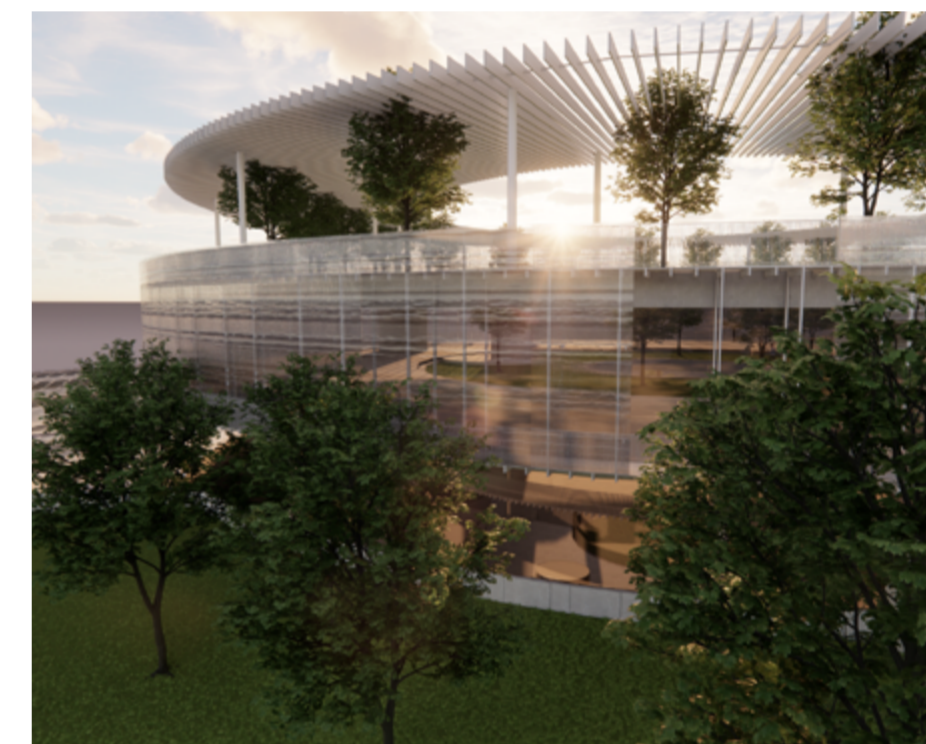
四维生态植物工厂/4D Bios Plants Factory
Hangzhou - China



泰瑞机器全球总部/Tederic Headquarters
Hangzhou - China



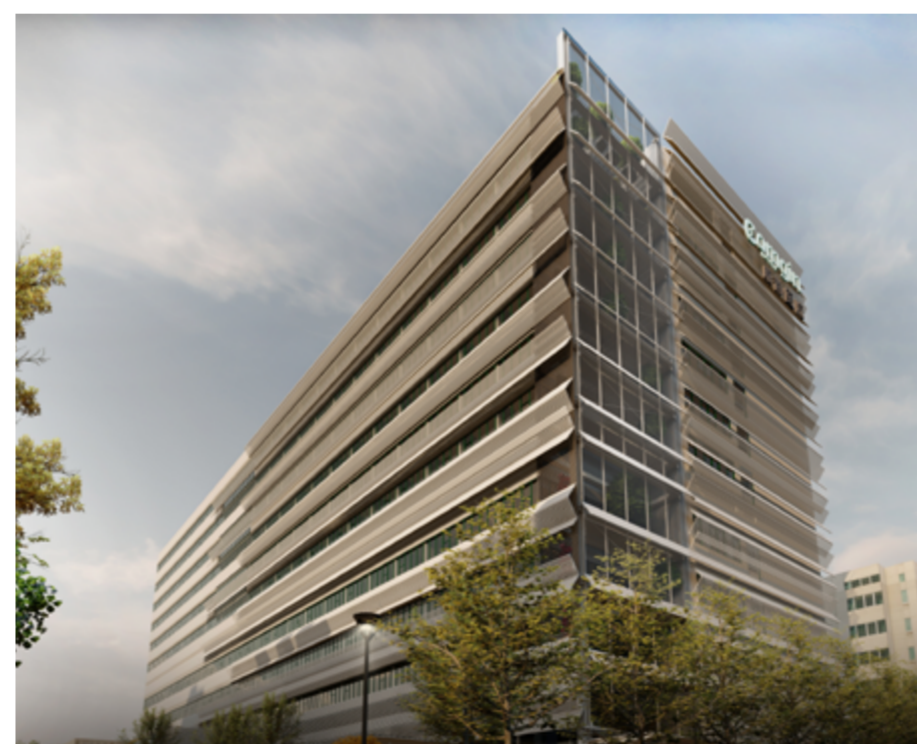
泰瑞桐乡工业园区/Tederic Tongxiang Factory
Jiaxing - China



菲仕新生产基地/Physis New Production Base
Ningbo - China



浙中新能源汽车城市广场/Newenergy Car-City Square
Jinhua - China



康静医院改造/Comgin Hospital Renovation
Hangzhou - China



月下餐厅/Villa Moon Restaurant
Hangzhou - China



中国京杭大运河博物院二期/Grand Canal Museum
Hangzhou - China
Design by Herzog & de Meuron



上海真如境剧院/ZHEN RU JING No. 6 Theatre
Shanghai - China
Design by Beijing Institute of Residential Building Design & Research



泰瑞机器全球总部/Tederic Headquarters
Hangzhou - China
Design by FORME



董希文纪念馆/Dong Xiwen Museum
Shaoxing - China
Design by Linxi Dong



郑州清德实业产业孵化园/DSQW Headquarters
Zhengzhou - China
Design by Neri&Hu Design and Research



杭州天目里-红桥修复/OoEli-Red Bridge Repair
Hangzhou - China
Design by Renzo Piano Building Workshop



杭州凤起潮鸣/Phoenix Mansion
Hangzhou - China
Design by Z+T Studio



西安欧亚学院景观改造/Xi'an Eurasia University
XiAn-China
Design by Z+T Studio



杭州天目里/OoEli (Tianmulu)
Hangzhou - China
Design by Renzo Piano Building Workshop

前比亚乔地区城市更新(意大利) Ex Piaggio Areas Urban Renewal (Italy)

意大利 萨沃纳省 菲纳莱利古雷市镇
Finale Ligure, Savona Province, Italy

2023

Type
Urban Design

Scope of Work
Main Designer

Surface
Land - 40,000 sqm
Usable Area - 58,500 sqm

Piaggio Aero Industries S.p.a工业区重建项目位于意大利菲纳莱利古雷,是更为复杂的城市重新规划项目的一部分,除该工业区本身地块,还囊括周边区域地块以及从西侧通往城市的道路重组。

非木工作室的研究任务是对该区域进行升级改造,旨在为闲置的社区注入了新的活力,提高当地居民的生活质量,吸引新的经济活动,新的投资,创造就业机会,刺激当地经济发展。

该项目专注于满足当地社区的需求,规划设计增加了绿色空间和公园区域,促进当地动植物的活跃和生态平衡,并为居民提供休闲和聚会的空间。

因此,规划设计的主题是“景观”,综合多学科研究,以景观的文化维度为基本要素,促进社区集体身份的重塑。设计的主题为“河上风景”,将原先被认为使用受限的空间转化为可利用的公共空间。“沿海地带”由景观绿化、道路和广场空间组成,“绿色的流线穿过整个项目区域,根据不同区域的特征呈现不同的倾斜度”。此外,“绿色纽带”旨在保证前工业区与卡普拉佐帕之间新的环境关系,以及与城市和周边区域的便利性和连接性。

另一个重要的目标是工业遗产文化的保护和活化,通过重新赋予文化监管局清单所列的周边建筑及风电塔筒新的艺术价值,创造现代和历史的完美交融。

The project for the urban renewal of the Area Ex Piaggio Aero Industries S.p.a. industrial areas, located in the municipality of Finale Ligure, Italy, is part of a more complex urban redevelopment project which will involve, in addition to the areas in question, the adjacent parts of the city and the reorganization of the access roads to the town from the western side.

The design main purpose aimed at urban regeneration of the territory through at the transformation of the area, currently abandoned and degraded, into an active urban space, improving the resident's life quality, attracting new activities, new investments, creating jobs opportunities and stimulating local economic development.

The renewal, focused on local community needs, was designed through the creation of green spaces and parks, encouraging the presence of local flora and fauna, contributing to the ecological balance of the area, and offering leisure and aggregation spaces for residents.

Therefore, the "landscape" is theme chosen for the Project, developed in a multidisciplinary way adopting the principle that the cultural dimension of the landscape is a fundamental element in contributing to the construction of the community's collective identity. The main aspects developed concern "the view over the river", previously perceived as a physical limit, to be transformed into a usable space and an integral part of the public park space, the "coast" to be structured with green areas, paths, and public squares, the green as a "fluid" that crosses the entire project area taking on different declinations in relation to the characteristics of the different areas, "the mending green" aimed at guaranteeing new environmental relationships between the former industrial area, the Caprazoppa promontory and the sea, the accessibility and the road connections with the existing city and the district.

Another essential objective is the preservation of the cultural and historical aspects, linked to the production site, through the reconversion and valorization of the historical buildings and of the Wind Tunnel, creating a combination of modernity and tradition.



Site photo - Ex Piaggio area



Finale Marina



Finale Borgo



Finale Pia

LIGURIA-PONENTE



CONFINE AREE DI INTERVENTO

IDROLOGIA DELL'AREA DI INTERVENTO

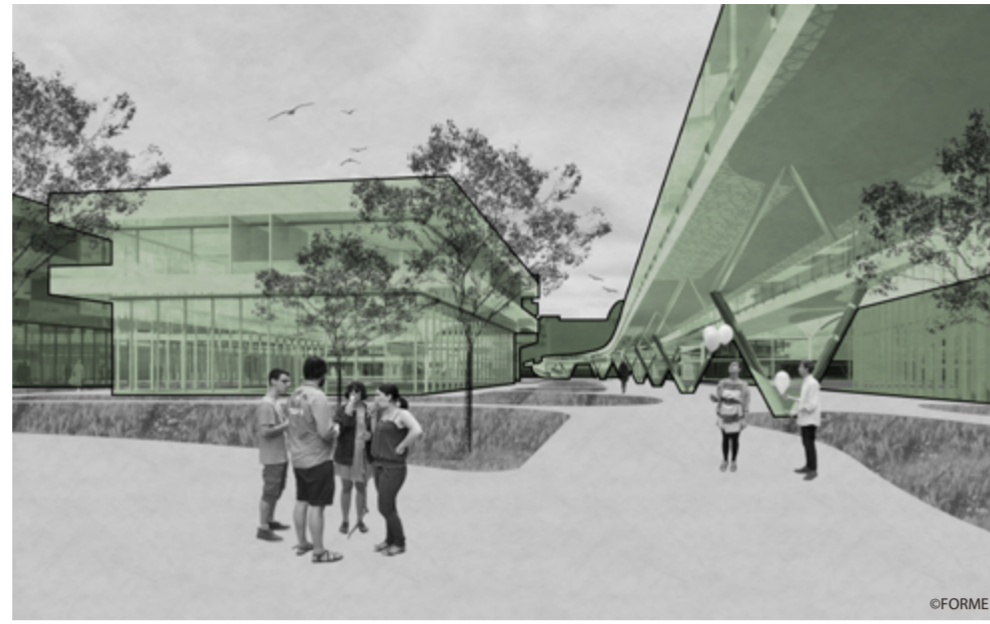
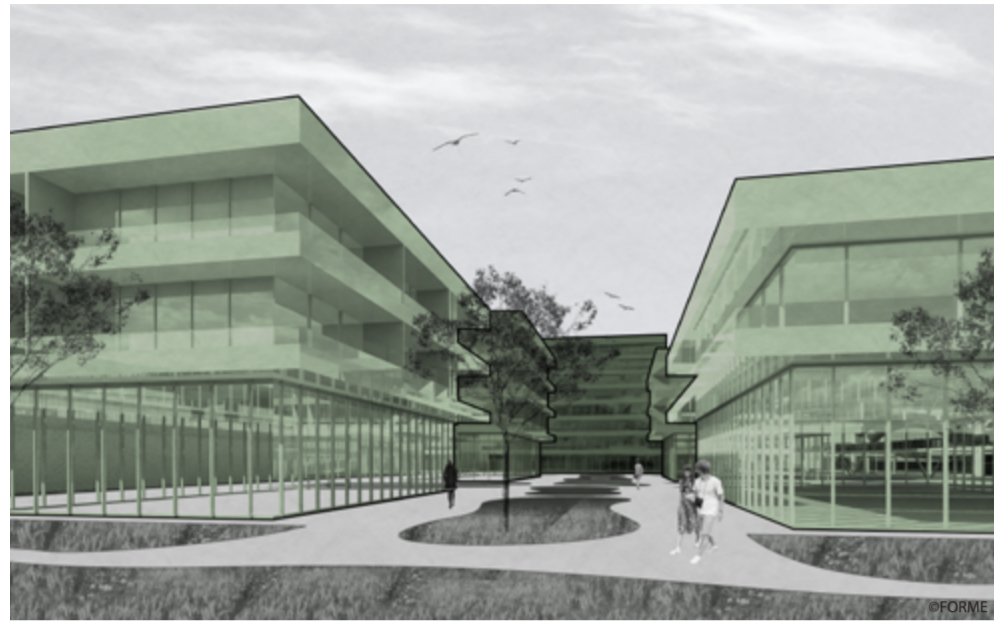


ANALISI DEL VERDE

SISTEMA DELLA VIABILITÀ



Preserving industrial buildings of historical architectural value and reorganizing their functions and spaces to redefine a new life for them.



总体规划

总体规划的理念源于该项目的中心主题，强调了对闲置场地区进行城市重新规划，最大限度地减少改造作业对自然的影响，从而有利于项目在人类活动与环境保护之间达成平衡。景观代表了整个总体规划发展的理念：

城市景观：考虑该区域的功能和与周边地区的完美融合。

自然景观：我们将本地块项目视为周边山川、溪流、海洋之间的重新连接（绿色纽带），多样化的城市绿化、都市公园、私人绿化和屋顶花园，运用三维的设计手法，多层次多角度地展现出城市的多面性特点。

文化与记忆景观：保护具有历史价值的工业建筑，重组功能和空间，为其注入新的生命力，建立新的生活方式。

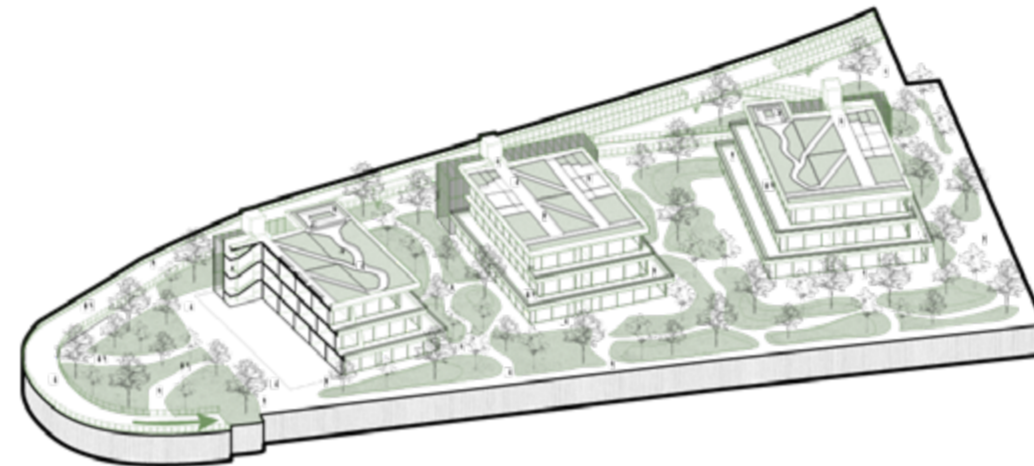
Masterplan

The idea of the master plan arises from the central theme of the project which underlines the importance of an urban redevelopment intervention of a former abandoned area which minimizes the speculative aspects of the intervention in favor of a project capable of guaranteeing the right balance between the activity human and the environment. The landscape represents the idea on which the entire master plan is developed:

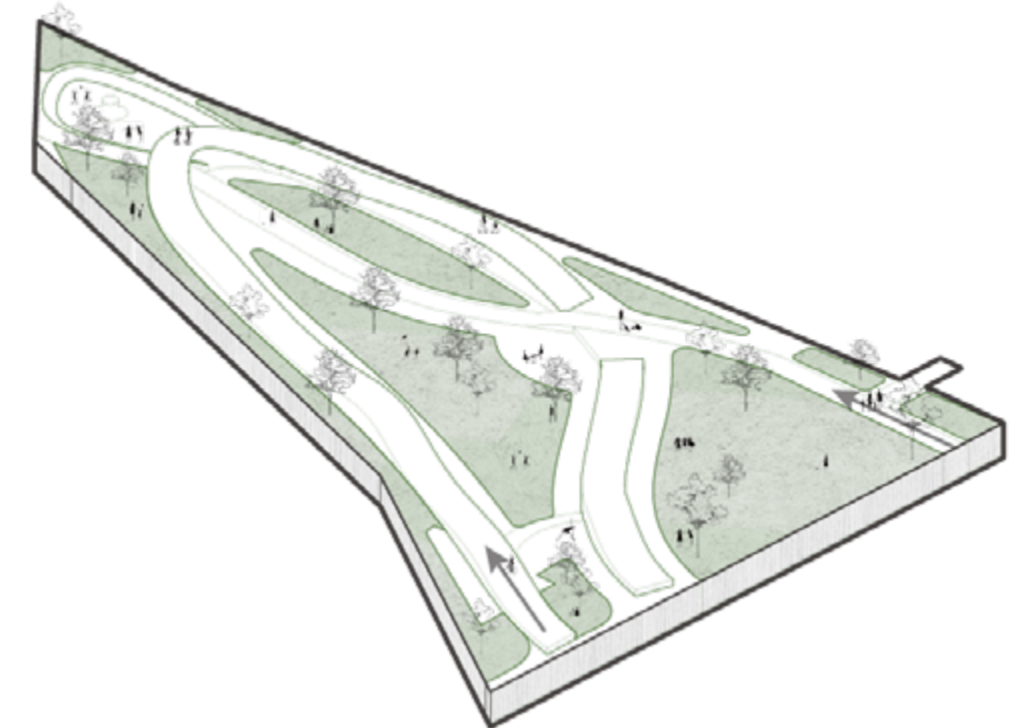
Urban landscape: Which enhances the functions of the spaces and the connections of the district in perfect harmony with the surrounding area.

Natural landscape: Developing the intervention as an environmental mending (green belt) between the mountain, the stream and the sea, through the organization of a diversifying greenery, filter functions between the roads and the site, urban park, private greenery and garden roofs; creating a three-dimensional continuity capable of taking into consideration the different users experiences (three-dimensional design approach).

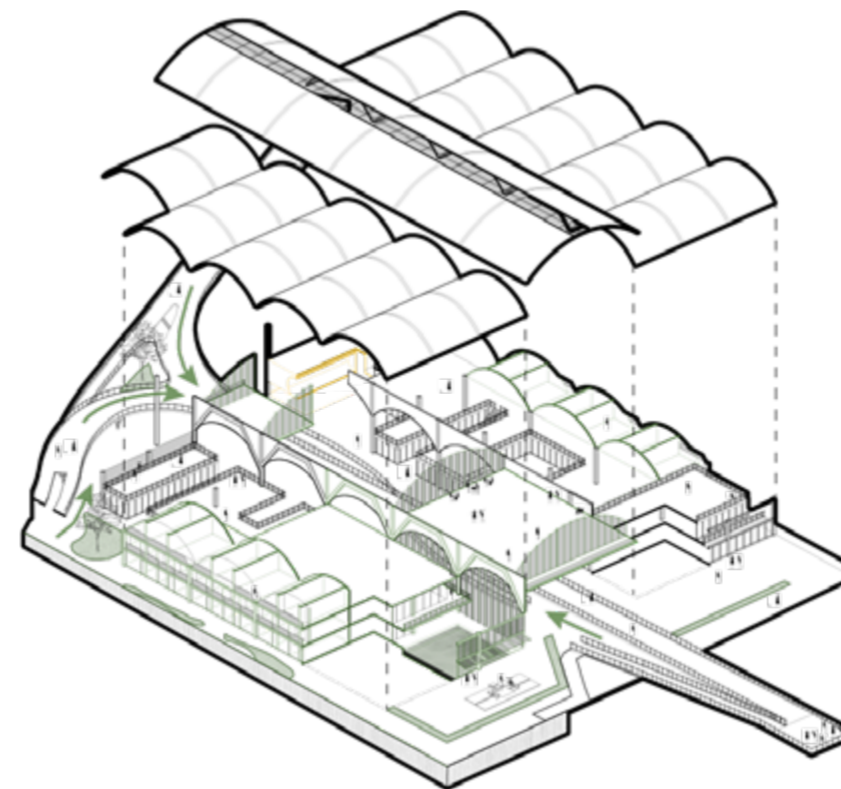
Cultural and memory landscape: Preserving former industrial buildings, having historical-architectural value and reorganizing their functions and spaces to redefine for them a new life.



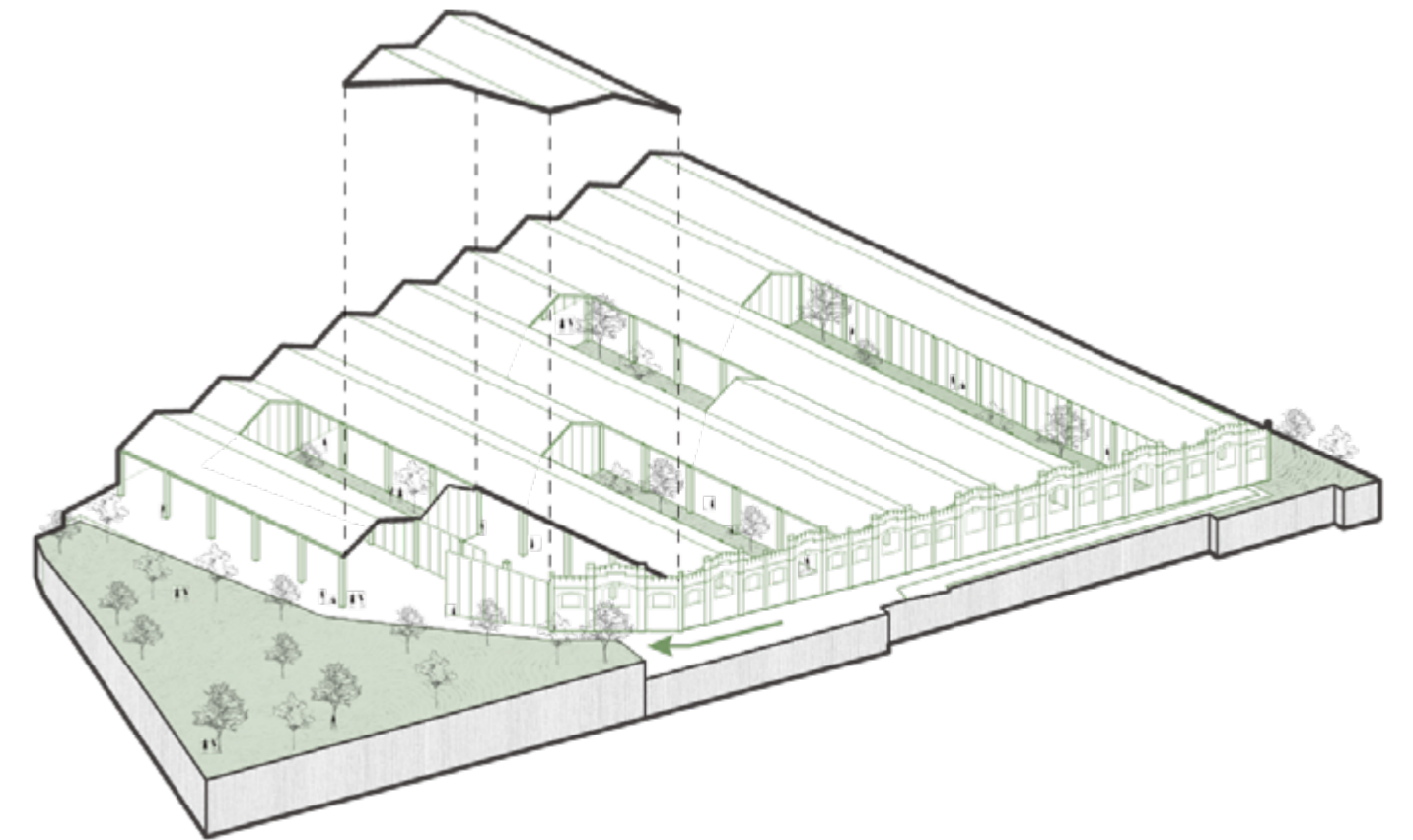
RESIDENZE FRONTE MARE



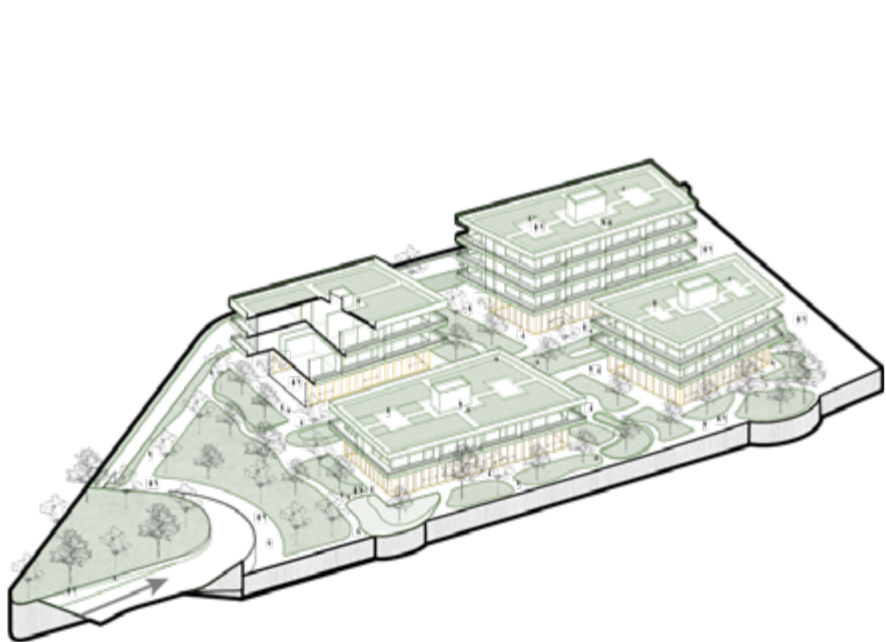
PARCO DEL TORRENTE PORÀ



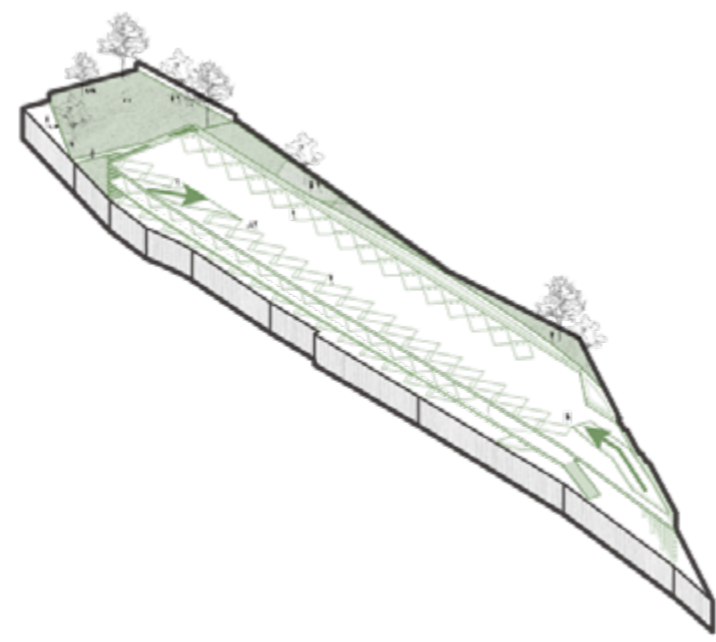
PLANIVOLUMETRICO DI PROGETTO



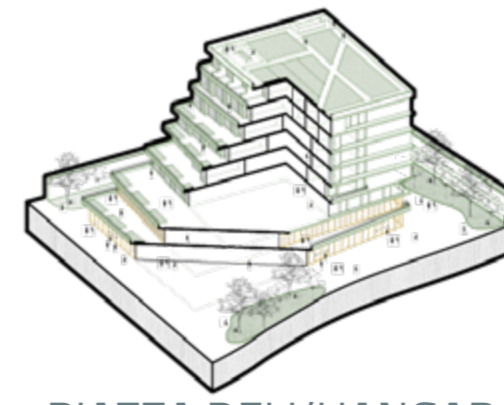
OFFICINE FINALMARINA



COMPLESSO CAPRAZOPPA



PARCHEGGIO MULTIPIANO E AREA CAMPER



PIAZZA DELL'HANGAR

基于卡拉佐帕海角午后的光影特点，建筑物的朝向和功能分布都以最优的方式利用了自然光。

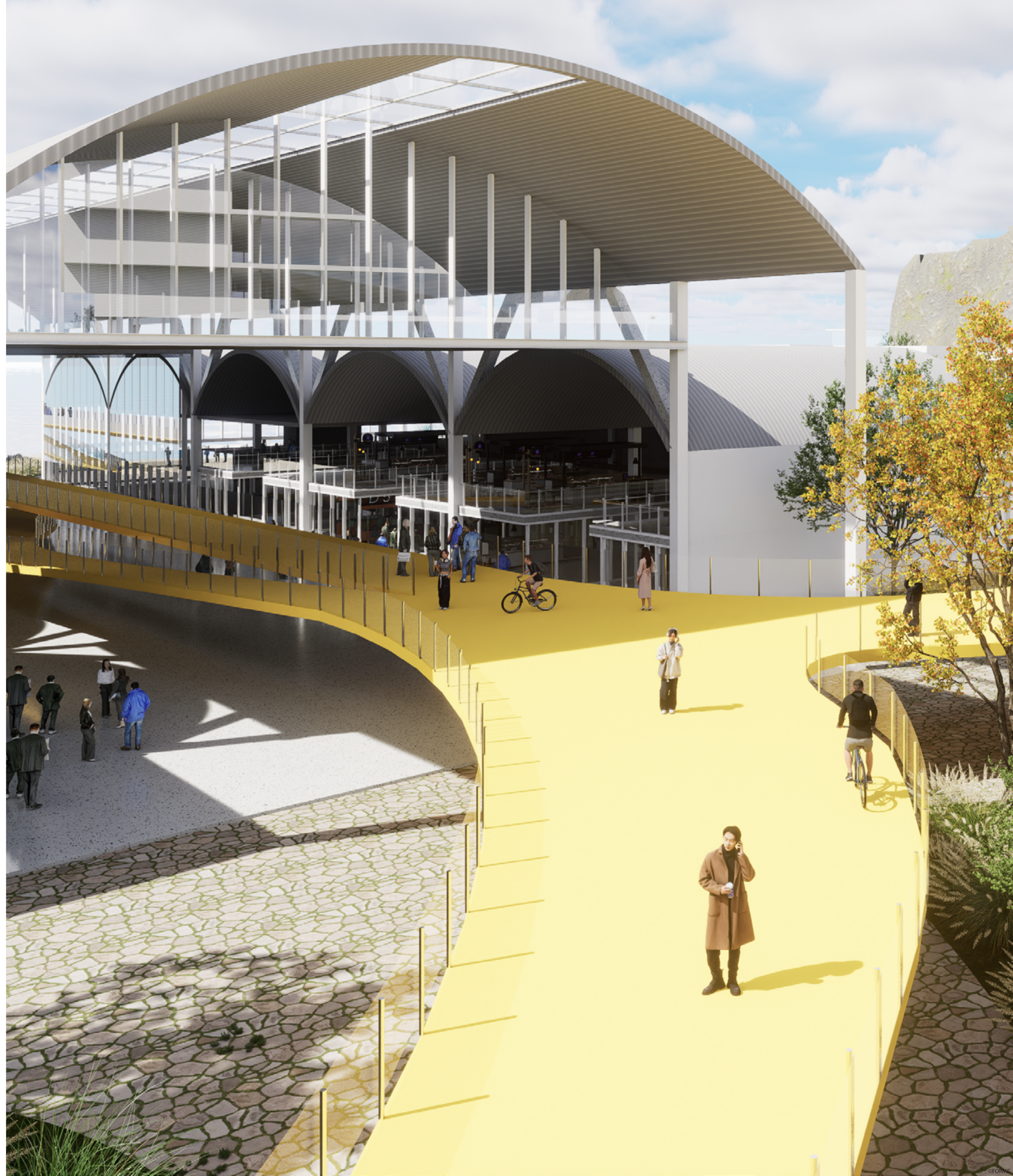
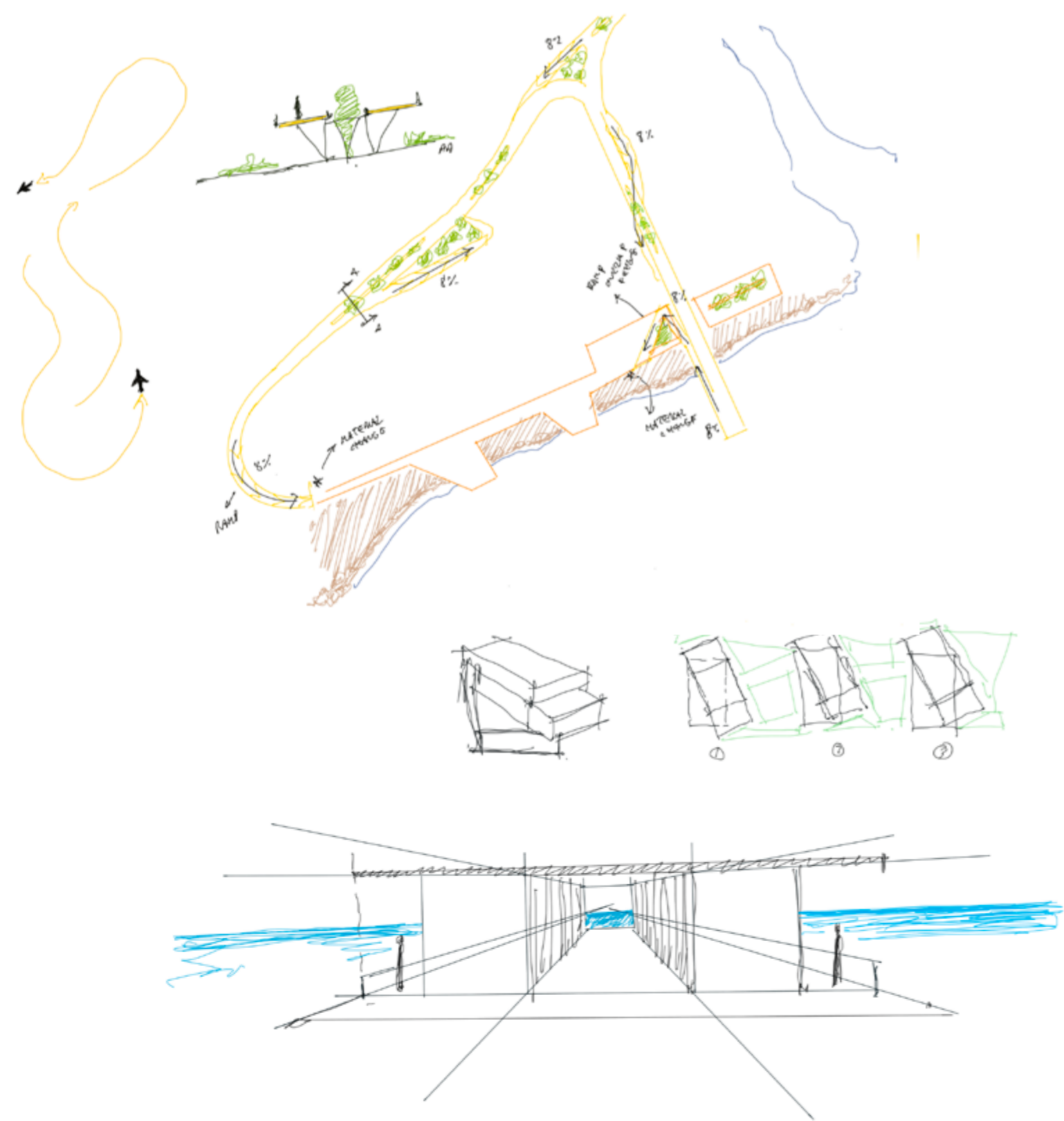
新的自行车步道唤起我们对古代奥里利亚路的记忆，成为寻找项目身份的象征，它的线条让人联想到飞机的航行轨迹，“飞机”贯穿项目，穿过城市共享空间的中央区域，延伸、消逝于海滨港口，在城市天际线中创造了一道亮丽的风景线。

景观的文化维度是构建社区集体身份的基本要素，重新规划后，原来无用的河流融入场地，成为一个共享公共区域。通过公共广场、绿化、自行车与行人的联系，重建了卡拉佐帕海角、河流于海洋等景观元素之间的自然融合。

The buildings orientation and the functions distribution were designed to optimize solar exposure, considering the shading of the Caprazoppa promontory, which projects over the area in the afternoon hours.

The new pedestrian cycle, which highlights the memory of the position of the ancient Aurelia Road, becomes the symbol of the project's identity, its lines remind the trajectory of the flying seaplanes, which cross the Project until crossing the Hangar's central span, conceived as an urban sharing space, gets lost in the new pier stretched out into the sea, which creates a new view of the city skyline.

The river, today perceived as a physical limit, is transformed into a usable space and an integral part of public space. The project reconstructs the natural connection between the landscape elements through public squares, cycle-pedestrian connections and greenery.



临安城市客厅 LinAn City Lobby - Hangzhou

中国 浙江省 杭州市临安区

LinAn District, Hangzhou, Zhejiang Province, China

2023

Type
Urban Design

Scope of Work
Main Designer

Surface
Land - 15,417 sqm
Usable Area - 490,771 sqm

如何重建大自然与人类之间的平衡?这应该是当代城市规划概念设计中最受关注的问题。

未来的新城市规划设计无疑不能再将自然仅仅视为装饰和美化城市的元素。自然是科技、医学和人类生存之必需,因此,新城市规划和建筑的研究导向为:创建人与自然之间新的平衡。

基于这些考虑,临安科技新城的概念研究了当代最新绿色城市构建理论,特别是受加拿大哥伦比亚大学林学院教授“3-30-300”理论的启发,每个窗户外能看到3棵树,每个社区30%的绿化率,距最近的公园或绿地300米,本规划概念旨在建立城市化与绿色空间共存的基础。

新的城市化将在部分湖泊的入水口上兴起,这对当前的环境状况是一个相当大的干预,因为新的社区将打断山与湖之间原有的联系。基于这一观察,我们的设计方法正是将建筑设计为一条“绿色走廊”,连接山体和湖泊,保证建筑和绿化生态的融合,保留生物多样性特点。

较高建筑单体的主要功能为办公,其特点是在建筑外立面利用原生态植被,打造垂直绿化的立面风格。沿湖建筑较为低矮,主要用于展览、文化和体育馆,这些建筑形态,让人联想到湖泊枯水季才显露出来的石头;最高的塔楼名为“蜻蜓塔”,灵感来源蜻蜓这样一种娇小和具生态敏感性的昆虫,象征着一种希望,一种人与大自然和平共处的美好希冀。

How to rebuild a new equilibrium between nature and man? This is probably the most topical question about the new urban planning concept design problems.

Future new city design surely can no longer see nature only as an element of urban decoration, city beautification. Nature becomes technology, medicine and necessity for man's survival, consequently the planning and architecture of new cities becomes research in this direction: the creation of a new balance between humans and nature.

On the basis of these considerations, the concept of LinAn's new city of technology study the most contemporary theories of green cities, in particular, inspired at the rule 3-30-300 by Professor Cecil Konijnendijk, according to which at least 3 trees must be seen from each window, at least 30% of the area must be shaded by trees and the nearest green space must be at a maximum distance of 300 meters.

The urbanization, which will lie on a dry up lake area represents a quite strong intervention for the environment, as the new urban area will interrupts the pre-existing connection between the mountain and the lake. Based on this observation, our design approach was integrating the building design with a large "green belt" connecting the mountain and the lake, aim to guaranteeing the correct level of biodiversity.

The taller buildings, mainly used as offices, are mostly characterized by green facades, created using native vegetation. They differ from the lakefront buildings, which are lower and mainly used for exhibition, cultural and sports centers. The design of these buildings provocatively recalls the large boulders that emerge naturally during the lake drying up phase. While the shape of tallest tower, called the "dragonfly tower", is inspired by this particularly delicate and sensitive lake area insect, which represents the symbol of hope for a correct coexistence between human and nature.





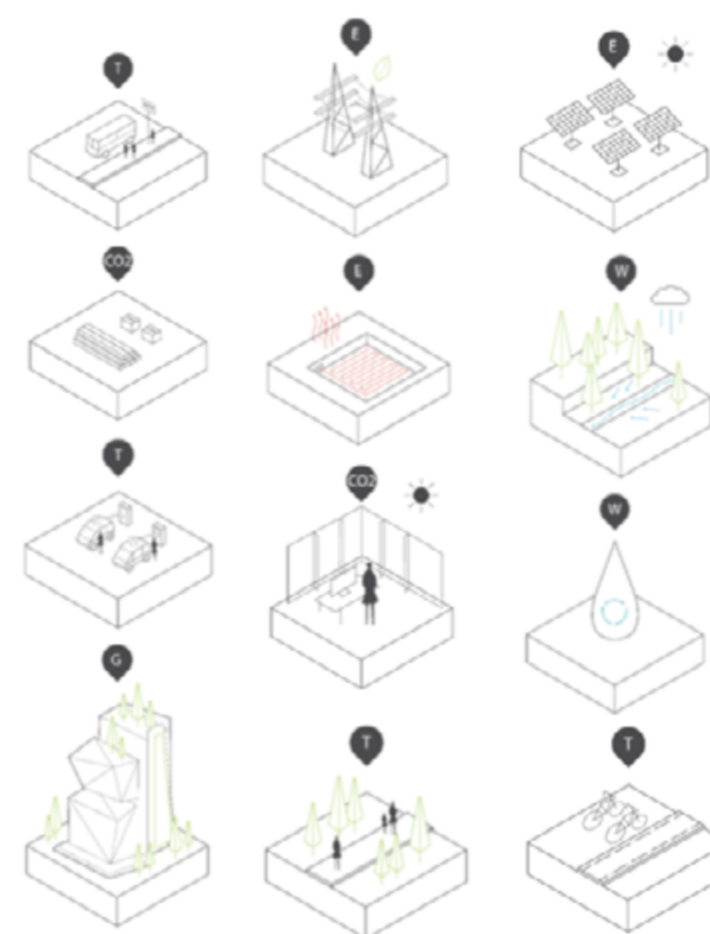
It is unequivocal that human influence has warmed the atmosphere, ocean and land.

UN Climate Report 2022



Innovation is the introduction of new systems and criteria in the city concept, we imagined as a new equilibrium between nature and human.

创新是在城市概念中引入新的体系和评判标准, 我们将其想象为人类与自然之间的新平衡。



基于创新城市的概念, 我们的目标是设计一座城市, 在这座城市中, 能源需求百分之百可以自给自足, 自然资源的使用得到控制, 对环境的影响降到最低。为此, 我们从以下几个方面着手, 多维度、多手法地实现这一目标:

可再生能源: 整个能源生产系统以太阳能, 风能和地热能为基础。

环境: 连接湖泊和山脉的绿化带, 丰富物种的多样性; 城市绿化概念, 以降低空气中的二氧化碳含量和温度; 垂直农场, 旨在“零距离”生产粮食。

交通: 一个完善的基础设施系统, 满足人们使用绿色公共出行交通设施的需求, 自行车绿道与人行道将城市的所有功能分区相连接。

节约水资源: 雨水收集、废水处理和回收、减少用水量并将其利用至空调和自然冷却系统。

再循环文化: 分析建筑施工过程, 最大限度的使用再循环材料, 优化模块化和预制化的建筑体系, 加强城市消耗品的回收与管理。

On the base of the innovation city concept, we aimed at designing a city in which its energetic needs are 100% self-produced, the exploitation of natural resources is controlled and the environment impact is minimized. This has been achieved through a holistic approach by working on different aspects:

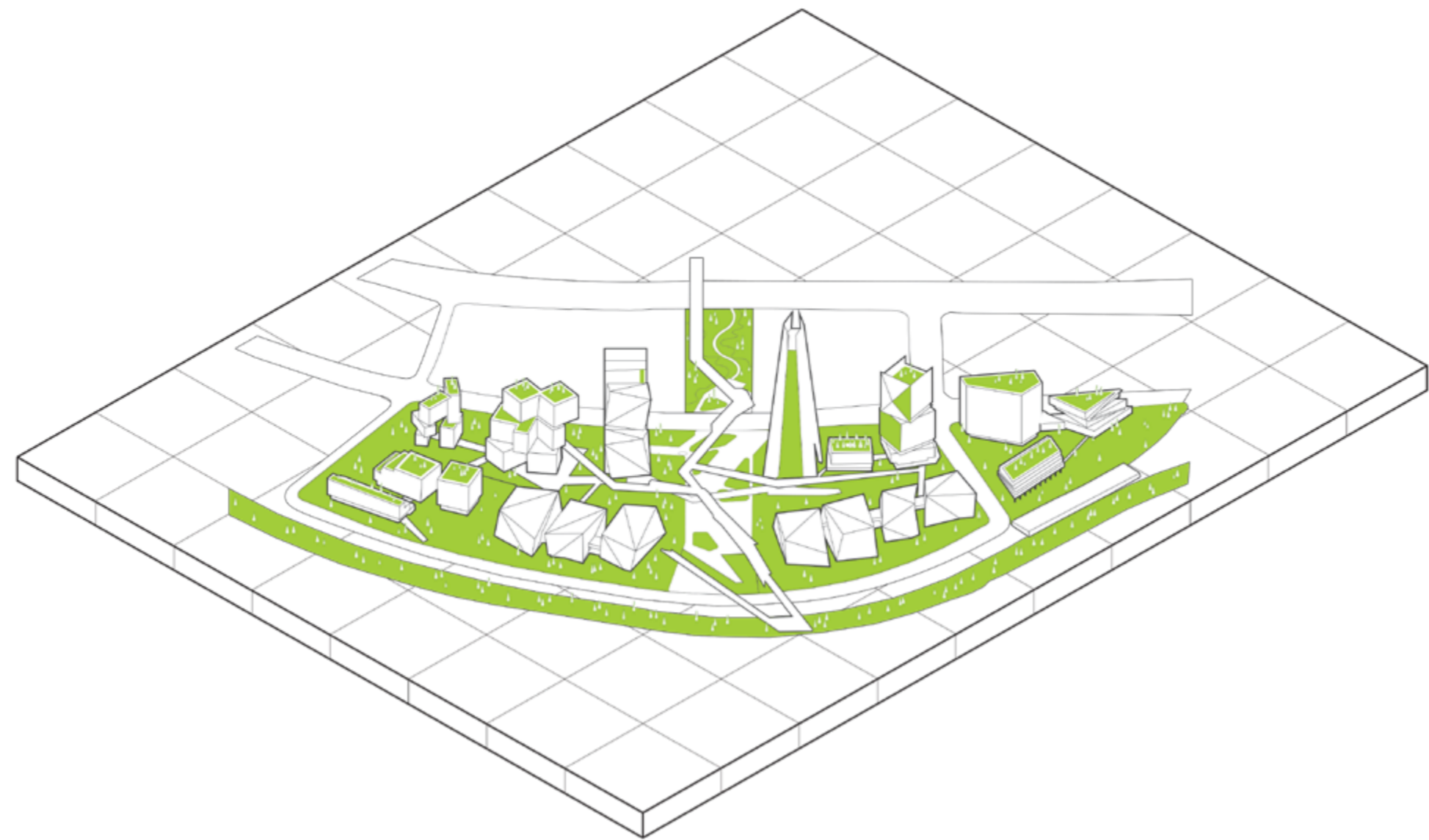
Renewable energies: the entire energy production system is based on solar, wind and geothermal energies.

Environment: the green belt connecting the lake and the mountain, in order to promote biodiversity, the urban green in order to naturally purify the air and mitigate the temperature, the vertical farms aiming to produce 0km food.

Mobility: an organized infrastructure system that allows users to easily take advantage of the public mobility services, cycle and pedestrian connection routes able to connect every function of the city.

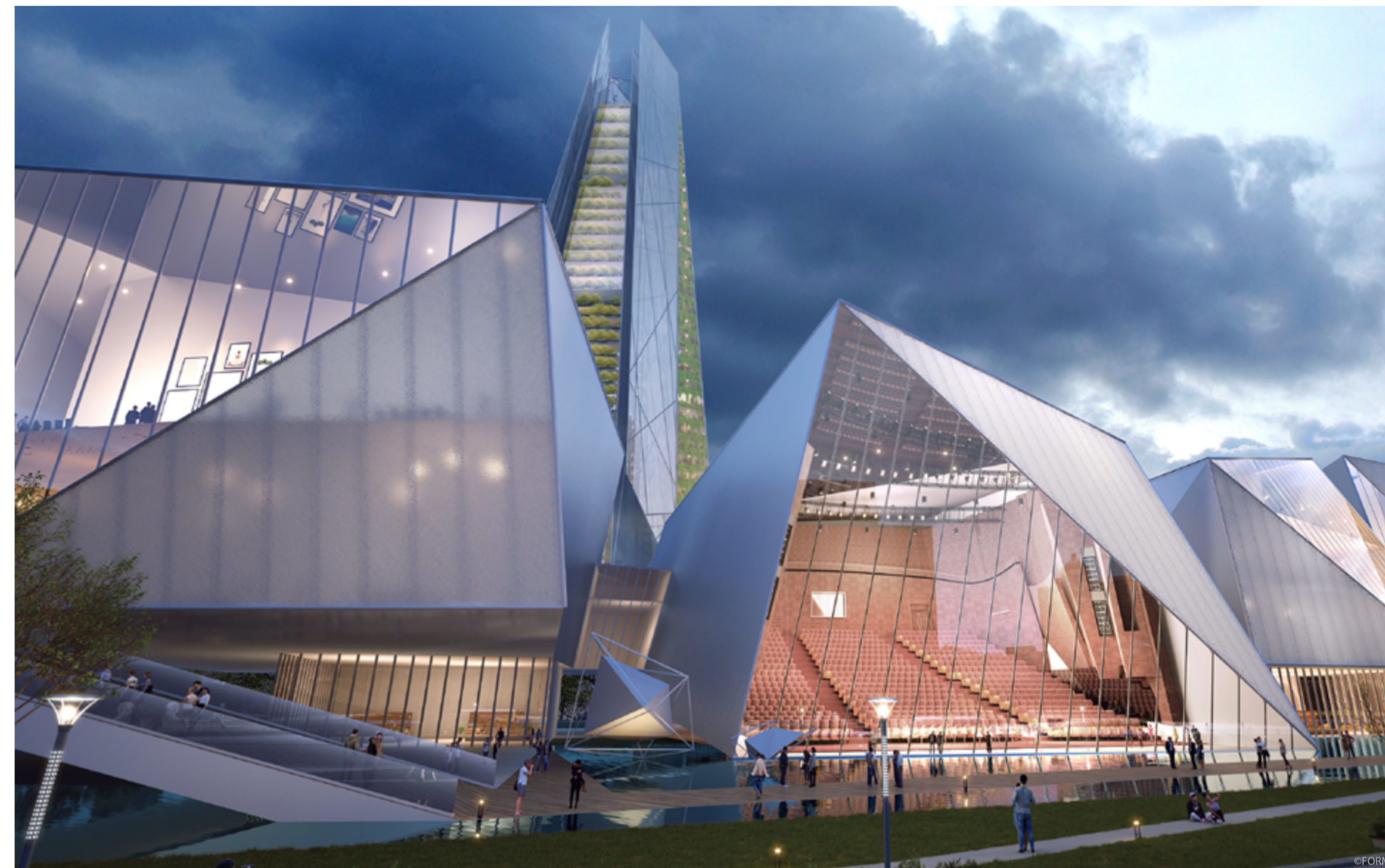
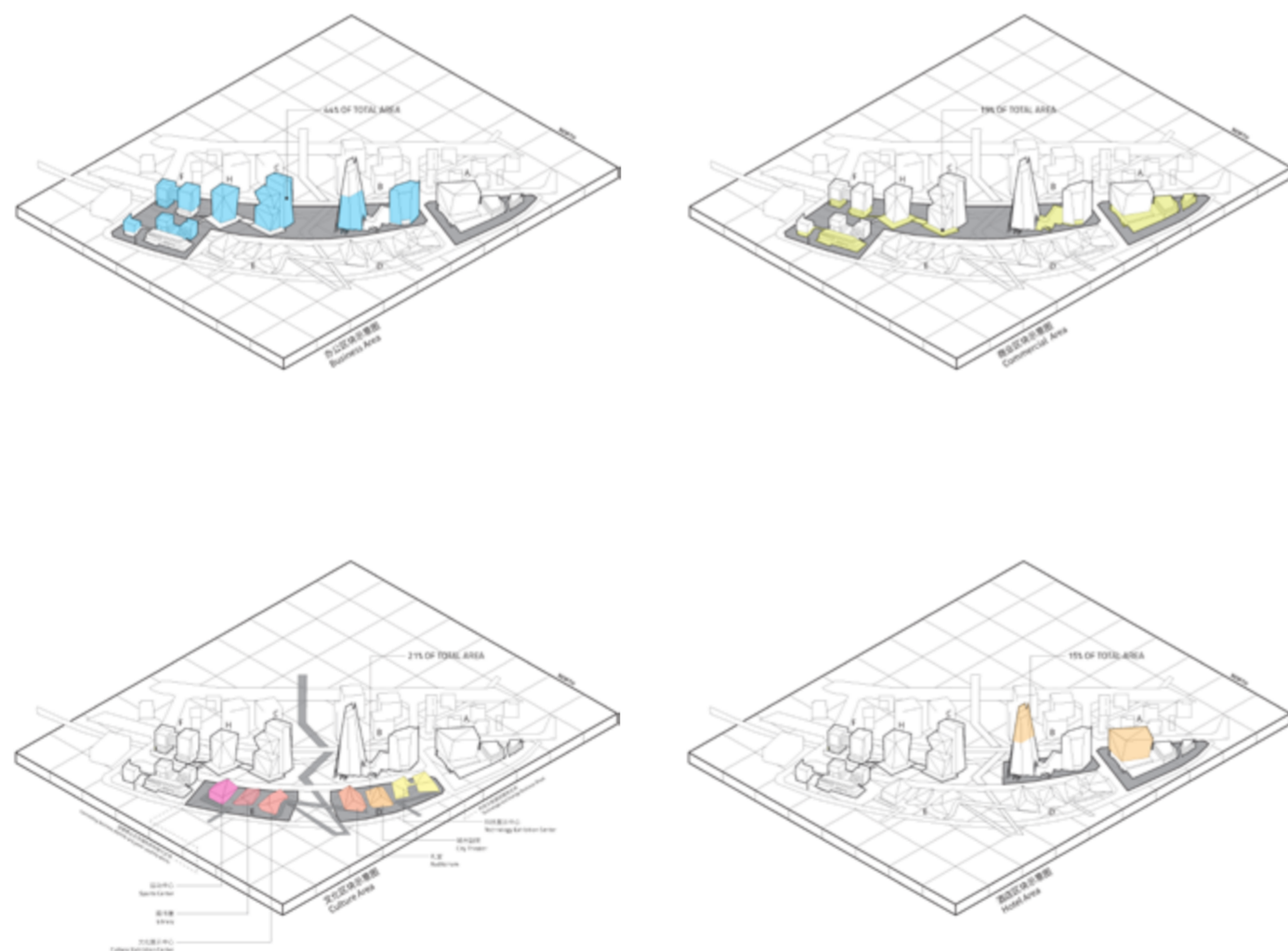
Minimization of water consumption: the collection of rainwater, the treatment and recycling of wastewater, the reduction of water consumption and its exploitation as a natural air conditioning and cooling system.

Recycling culture: analysis of building construction systems maximizing the usage of recycled materials, prefabrication and modular systems, management and recycling of city consumables.



在全球范围内,城市产生的二氧化碳约占总量的75%。有鉴于此,生态可持续设计是满足社会需求的。

Worldwide, cities generate about 75% of CO2. Considering this data, eco-sustainable design is the way to respond to the needs of the global community.



四维生态植物工厂

4D BIOS PLANTS FACTORY DESIGN

中国 浙江省 杭州市萧山区
Xiaoshan District, Hangzhou, Zhejiang Province, China

2023

Type
Urban Design

Scope of Work
Main Designer

Surface
Land - 22,144 sqm
Usable Area - 8,633 sqm

草莓是四维生态的企业象征,草莓具有抗炎和抗肿瘤的特性,富含维生素C,还对心血管疾病有一定的功效。草莓象征着企业理念、健康和生态可持续发展;项目致力于将其核心理念在展览和生产空间中得到最大程度的体现。

此外,草莓在该项目中还可以被解读为一种农业技术创新的象征。通过从可再生能源中获取解决方案,让农业生产在全球得以良性运作和智能受控,且不再受限于气候条件。

此项目旨在尊重当地天然的环境价值,从其根源——杭州地区的传统文化中汲取生命力。

展览长廊作为项目单体间的线性连接元素,就像植物根茎将果实与土地连接起来一样,沿着展览路线活动的人们便是植物生命力的呈现。中央建筑将作为一个观光中心,游客置身于此能够与项目的不同功能区进行互动,触手可及之处也能享受商业活动带来的便利。

植物工厂是现代设施农业发展的高级阶段,集生物技术、工程技术和系统管理于一体,使农业生产从自然生态束缚中脱离出来,按计划周年性进行植物产品生产。设计的植物工厂通过物联网技术实现了全面互联、深度集成和分析,优化了生产流程。

The strawberry represents the 4D Bios corporate symbol, a special fruit with its anti-inflammatory and anti-tumor characteristics, rich in vitamin C and also recognized for its benefits against cardiovascular diseases. The strawberry as a symbol of the Project's idea, health and eco-sustainability. Central part of the project, finding the maximum expression in the building dedicated to its production and exhibition.

Furthermore, the strawberry can also be interpreted in the project as the hope symbol in the technological innovation of agriculture, through solutions that draw energy from renewable sources and allow the birth and control of agricultural production in every corner of the planet and addressing every climatic condition.

Thus, the project, respectful of the great environmental value of the localization area, draws its vital energy from its roots, from the culture and tradition of the Hangzhou area.

The exhibition gallery takes on the further function of a linear connecting element between the Project and the territory to which it is inserted, as well as the plant connecting its fruits to the ground. The lifeblood of the plant is represented by the people who walk along the exhibition route. The central building serves as an attraction center, where visitors will be able to interact with the different functions of the project and can easily connect with the commercial area.

The plants factory, characterized by artificial controlled operation, represent the most advanced stage of developments in agriculture. Covering biological systems management, engineering management, and IoT management, plant factory can produce the planned crop products all year long, with short growth cycles. The designed plant factory, through IoT technology, has reach a comprehensive interconnection, deeper integration and analysis, that has optimized the production process.



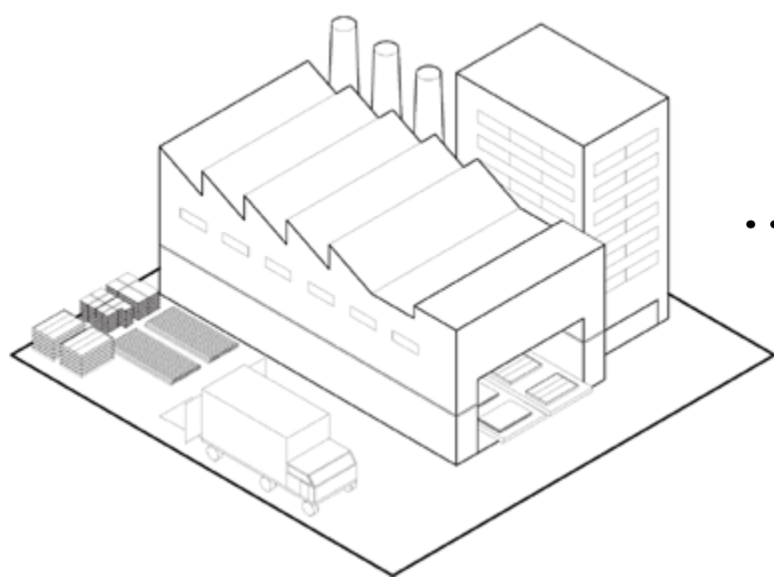




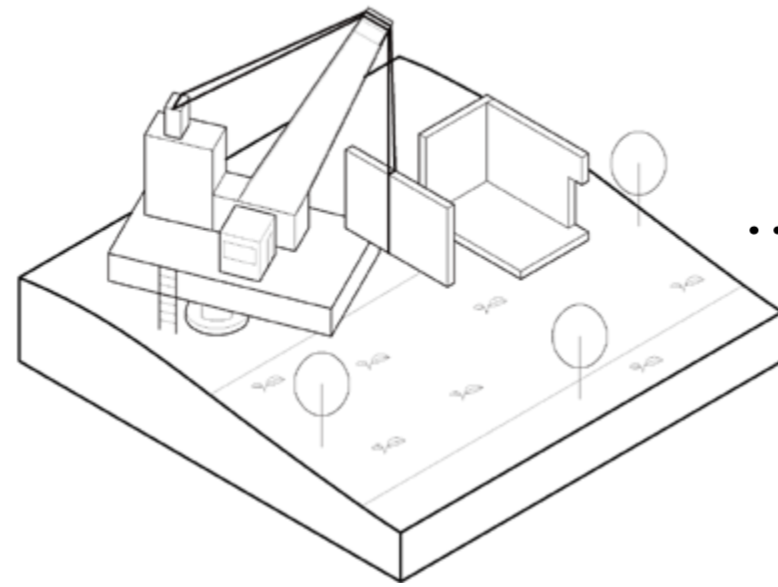
农业文化
AGRICULTURAL CULTURE



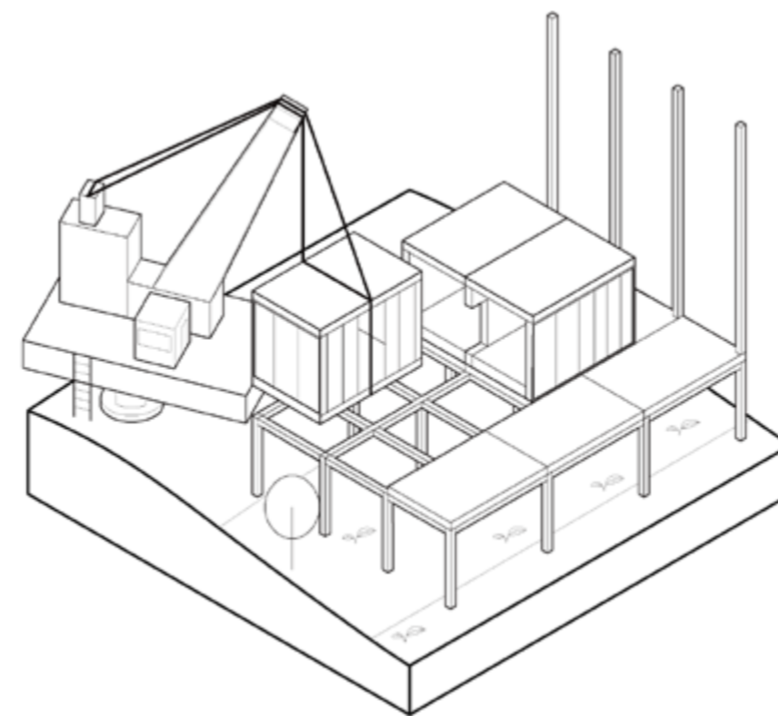
尊重自然
RESPECT NATURE



工厂生产
MANUFACTURE



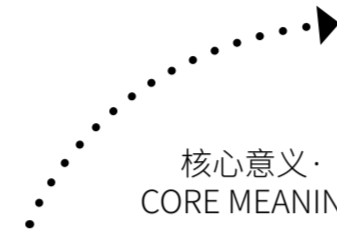
车间组装
UNIT ASSEMBLY



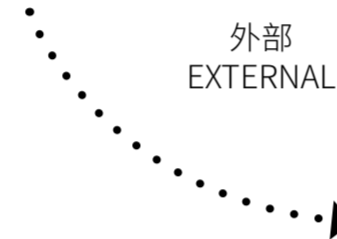
现场安装
UNIT CONFIGURATION



减少对环境的影响
REDUCE IMPACT



核心意义·
CORE MEANING

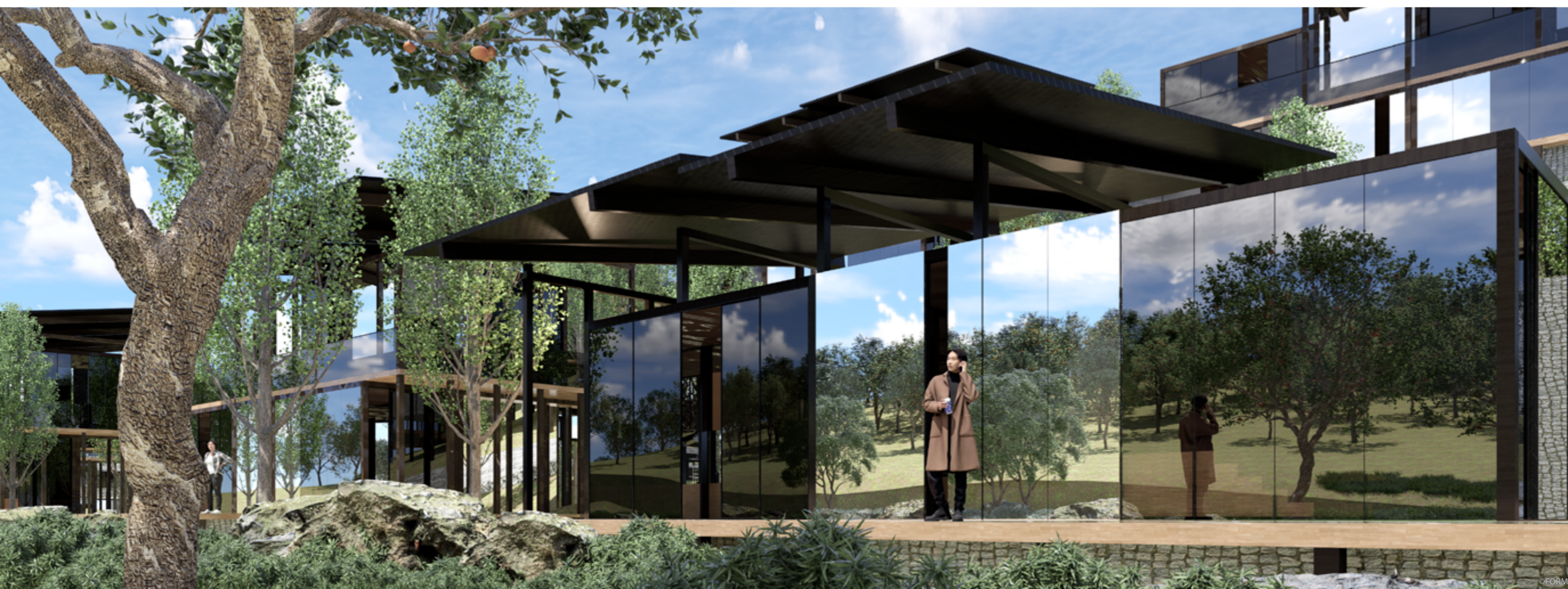


外部
EXTERNAL

保护植被 建筑抬升
AVOID EXISTING TREES LIFTING UP

融入自然的的选材
SELECTION OF MATERIAL MERGE WITH NATURE





泰瑞机器全球总部 Tederic Headquarters

中国 浙江省 杭州市钱塘新区
Qiantang New District, Hangzhou, Zhejiang Province, China

2019 - 2023

Type
Headquarters

Scope of Work
Main Designer
Project Management

Surface
Land - 33,335 sqm
Usable Area - 75,119 sqm

泰瑞机器全球总部项目位于杭州钱塘区。该项目旨在打造区域标志性建筑，体现了泰瑞机器作为全球最具创新性注塑机解决方案提供商之一的文化科技型企业的特色。

非木设计的泰瑞机器全球总部，以“将机械制造的工业文化与杭州的创新科技社区相联系”为目标，为员工创造有温度、有尊重感的工作环境，并树立更好的品牌形象。

生态“智能绿色”，泰瑞机器全球总部项目的设计理念符合低碳、生态可持续建筑的主流诉求。“绿色环保”理念贯穿了整个项目，从概念设计时期，便通过对建筑朝向和布局的研究，主要立面朝向东西面，减少向南侧区域，辅以绿化覆土屋面及外立面遮阳系统，即使在最炎热的夏季也能实现建筑的相对降温。

减少二氧化碳的排放也是客户非常关注的一个主题。对这一观念的践行不仅体现在我们对项目的技术选择上，在不断与泰瑞机器进行沟通和探讨，绿色的概念也延伸至智能电动注塑机工厂。建筑外立面幕墙的选择是单元式幕墙，在工厂进行生产后到施工现场仅需进行板块拼装，从而将施工现场的活动和排放降至最低。

有关项目配色的选择上，并非设计师单纯的美观选择，更多的是基于色彩和表面材质的特点，反射太阳辐射达到降低能耗的目的。

项目中厂房功能的建筑在设计上尽可能地利用自然光线，以最大限度地降低用电量，所配备的下沉花园和水景不仅能将自然光线引入地下车库，更重要的是在潮湿的夏季促进内外空气的流动和交换。

Tederic Headquarters and production base is located in Hangzhou, China. Ideated with the target of being a landmark project for the area development, the urbanization reflects the high-tech culture that identifies Tederic Machinery as one of the most innovative injection molding machine solution providers in the world.

Forme has designed the Tederic Headquarters in accordance with the vision aims to connect the industrial culture of mechanical engineering with the innovation science communities in Hangzhou, bound to create a friendly and respectful working environment for employees.

Tederic Headquarters meets the main requirements of low carbon eco-sustainable architecture, the approach to the green philosophy starts from the definition of the concept where the orientation and layout of the buildings have been designed by exposing the major areas of the facade respectively to the east and west and reducing the areas facing south. This, combined with the presence of green roofs and a facade solar shading system, allows the temperature of the building to be lowered in the most extreme summer periods.

The CO2 reduction target, a theme very important for our client, extends not only to the technical choices of the project but, thanks to the experience sharing with Tederic team, the green concept has been extended to the smart factory, where low consumption electrical injection molding machine will be produced. The facade of all buildings are conceived as the conjunction of units and modules, produced in the factory and only installed on-site, minimizing the activities and emissions of the construction site.

The project is characterized by chromatic tone not dictated only by aesthetic choice, but more by the characteristics of colors and surfaces that are more able to reflect the solar radiation avoiding overheating, saving energy.

The production site exploits the sunlight hours to minimize the needs of electricity, while the garden, designed in different levels, not only allows natural light to filter into the parking areas but helps to balance a microclimate of the project in the more humid summer periods.





设计灵感 INSPIRATION

项目的设计灵感源自近十年间更新迭代的创新技术，即电动技术的诞生和发展。

电池、电线及开关等元件，将自然资源转变为交通、健康、工业等人类赖以生存之必需。项目生产基地的设计理念便源自于此，形体及光影效果如一颗电池，给予能量，产生运动，推动生命。

The inspiration comes from one of the innovations that have changed the history of the last 10 years: the birth and development of electric motor technology.

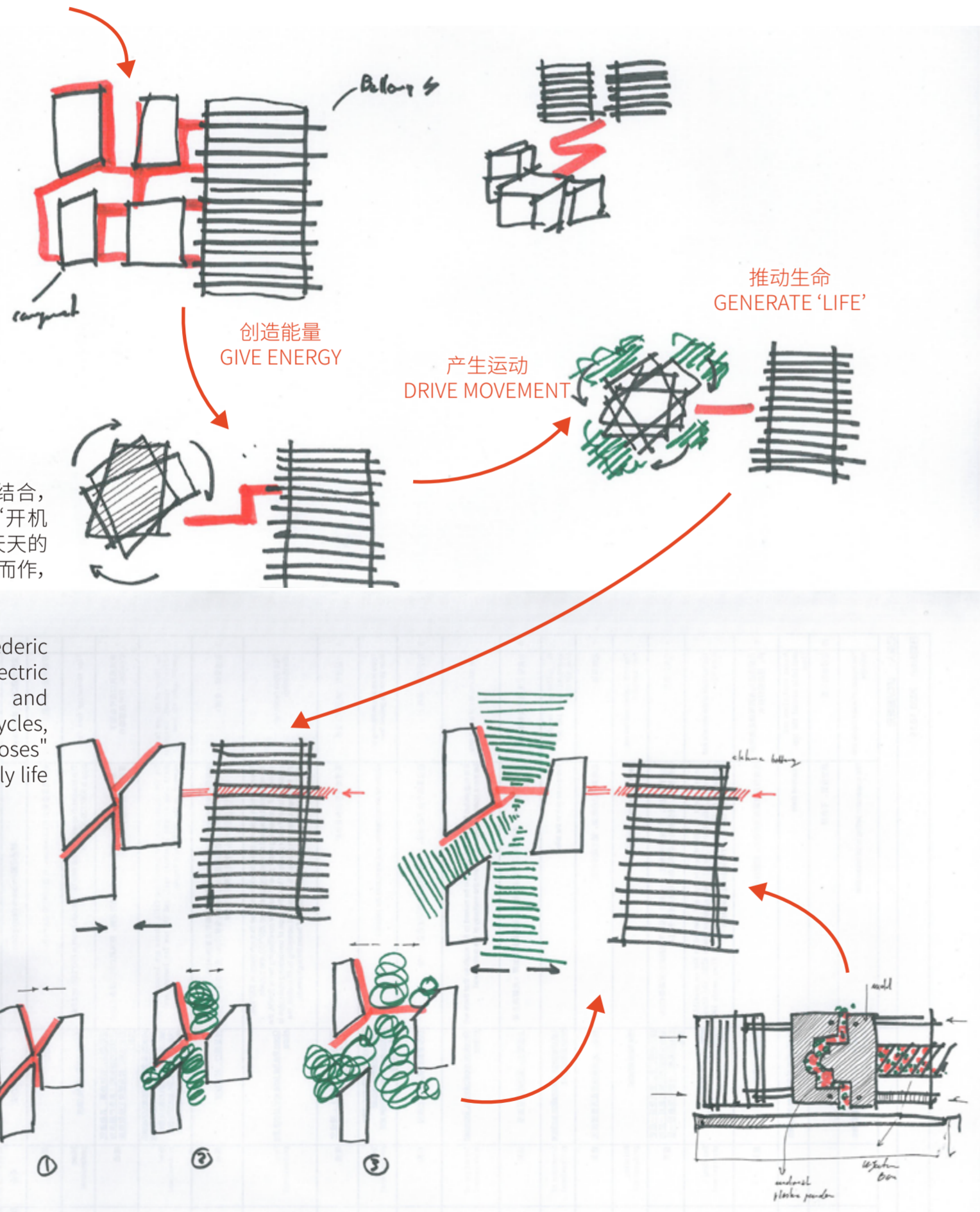
Battery and its components, cables and connection sockets, work with renewable energy to transform something, for transport, for health or for industrial production.

该理念与泰瑞的企业DNA相结合，犹如电机在其运行周期中的“开机和关机”，泰瑞总部也在其一天天的生命周期中与城市同步，日出而作，日落而息。

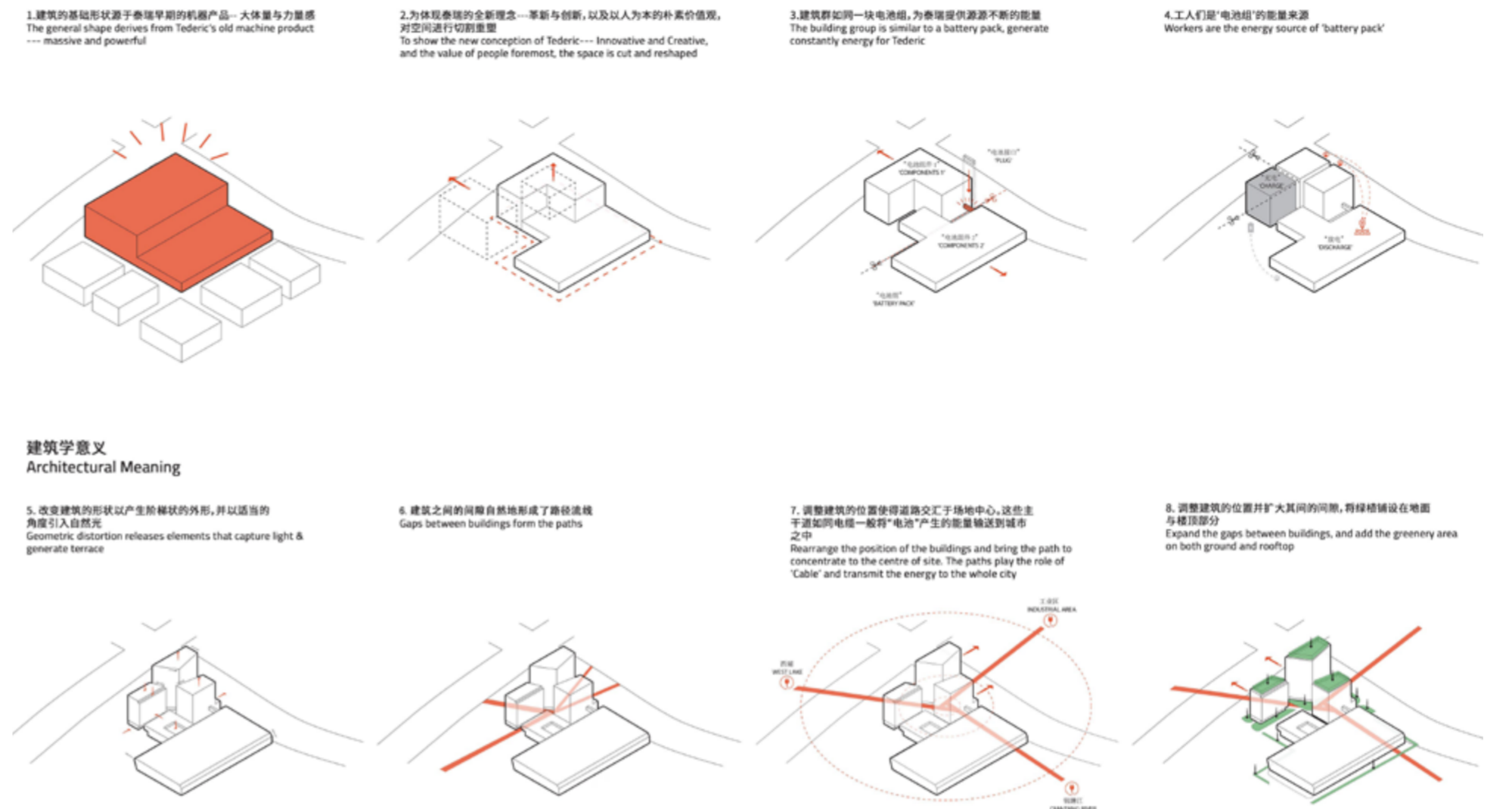
This concept joins the Tederic DNA, just as a mold of an electric injection machine "opens and closes" in its production cycles, so the project "opens and closes" with the city through the daily life cycle of the Headquarters.

当然，这些运动并非偶然，它的发生遵循其诞生的城市背景和方向。

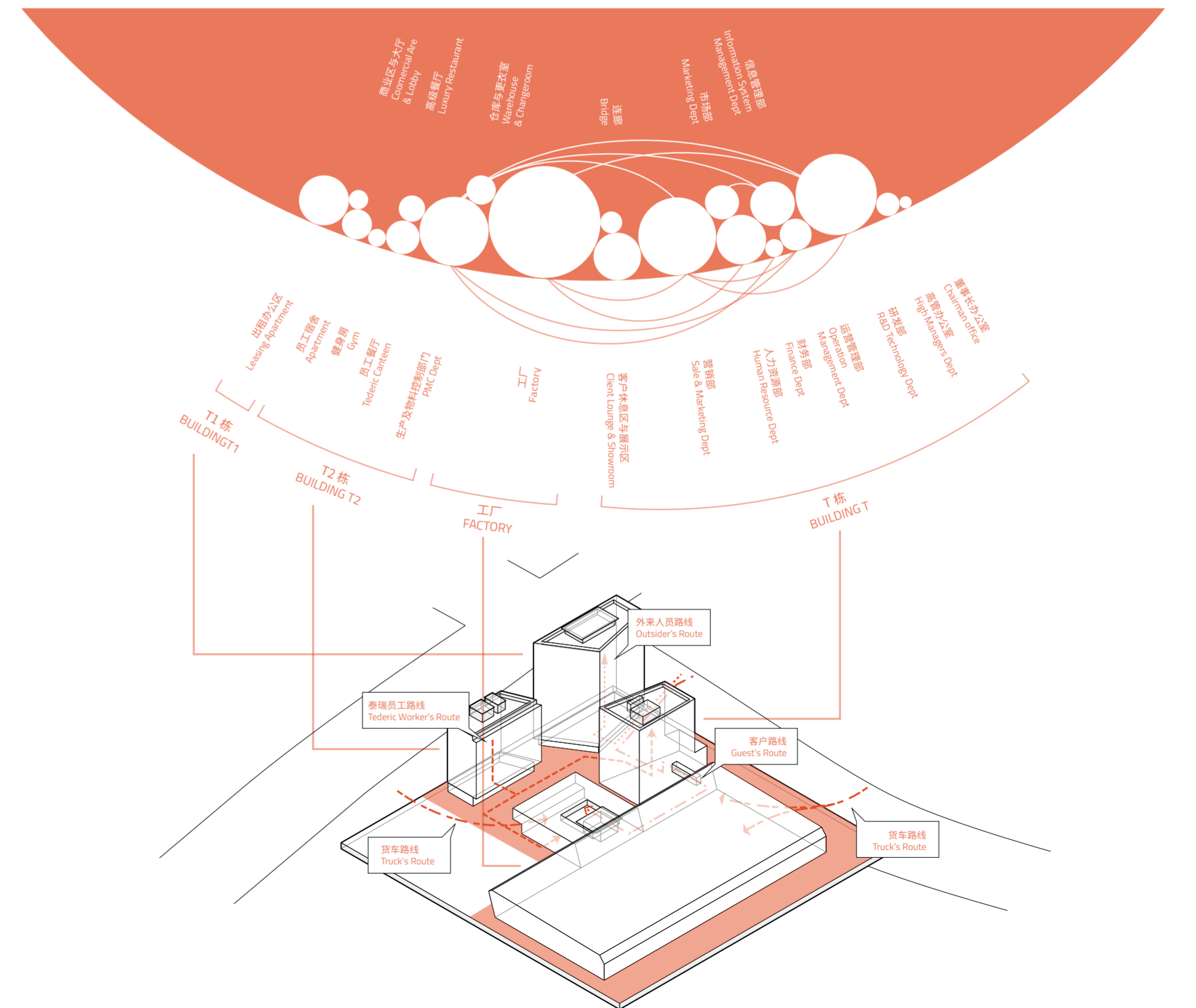
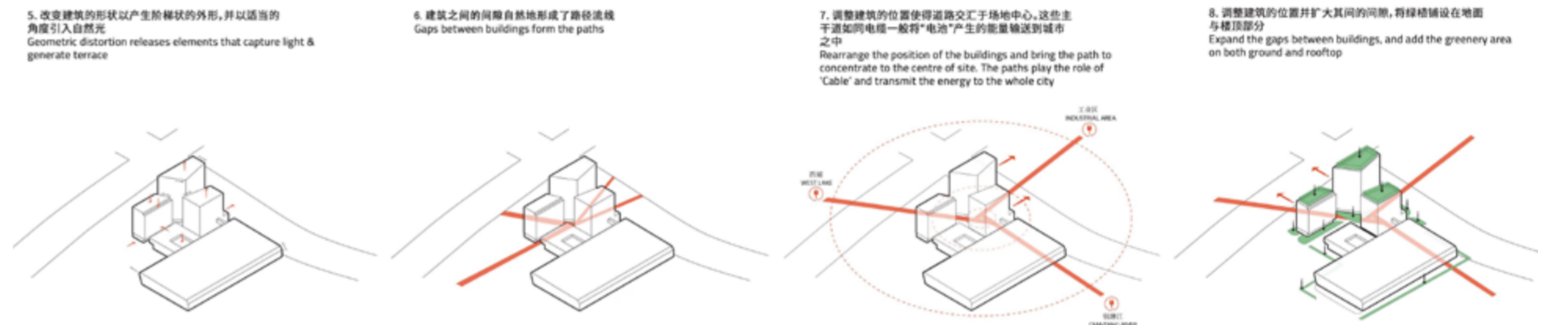
But this movement is not accidental, it takes place following the directions of the urban context in which it was born.



灵感之源-电力注塑机
INSPIRATION SOURCE
---ELECTRICAL INJECTION
MACHINE



建筑学意义 Architectural Meaning



建筑线条的活力，与周边总体规划的线条相映成趣，充分体现了该项目与周边保持持续对话和联系的意愿。项目给人留下了开放路径和公共休闲的空间，将项目转变为一个城市元素，传达和讲述着泰瑞的文化及发展历程。

总图上建筑轮廓和线条的切割设计，延伸连接着杭州的核心地带，以不同的尺度与城市相连，象征着西湖、钱塘江所在的周边工业区之间的联系，而这也是品牌根源所在。

泰瑞机器全球总部内有4 栋建筑，进行了公共区域和相对私密空间的结合：T1楼和 T2楼分别为 17 层和 11 层，首层均为项目和周边提供配套设施，南北向纵向分布，形成了一个自然的城市广场，供人们聚会和休息，不仅服务于泰瑞的人员，更是服务于周边区域，打破先前所有活动只能沿街边发展的局面。

两座建筑的核心筒均为毛面清水混凝土，具不同的功能特征。项目最高的建筑T1楼为办公功能，而 T2 楼则设有泰瑞员工食堂、健身房和公寓；高科技感的外立面上，布置了绿植阳台，赋予建筑更加生动活泼的氛围。

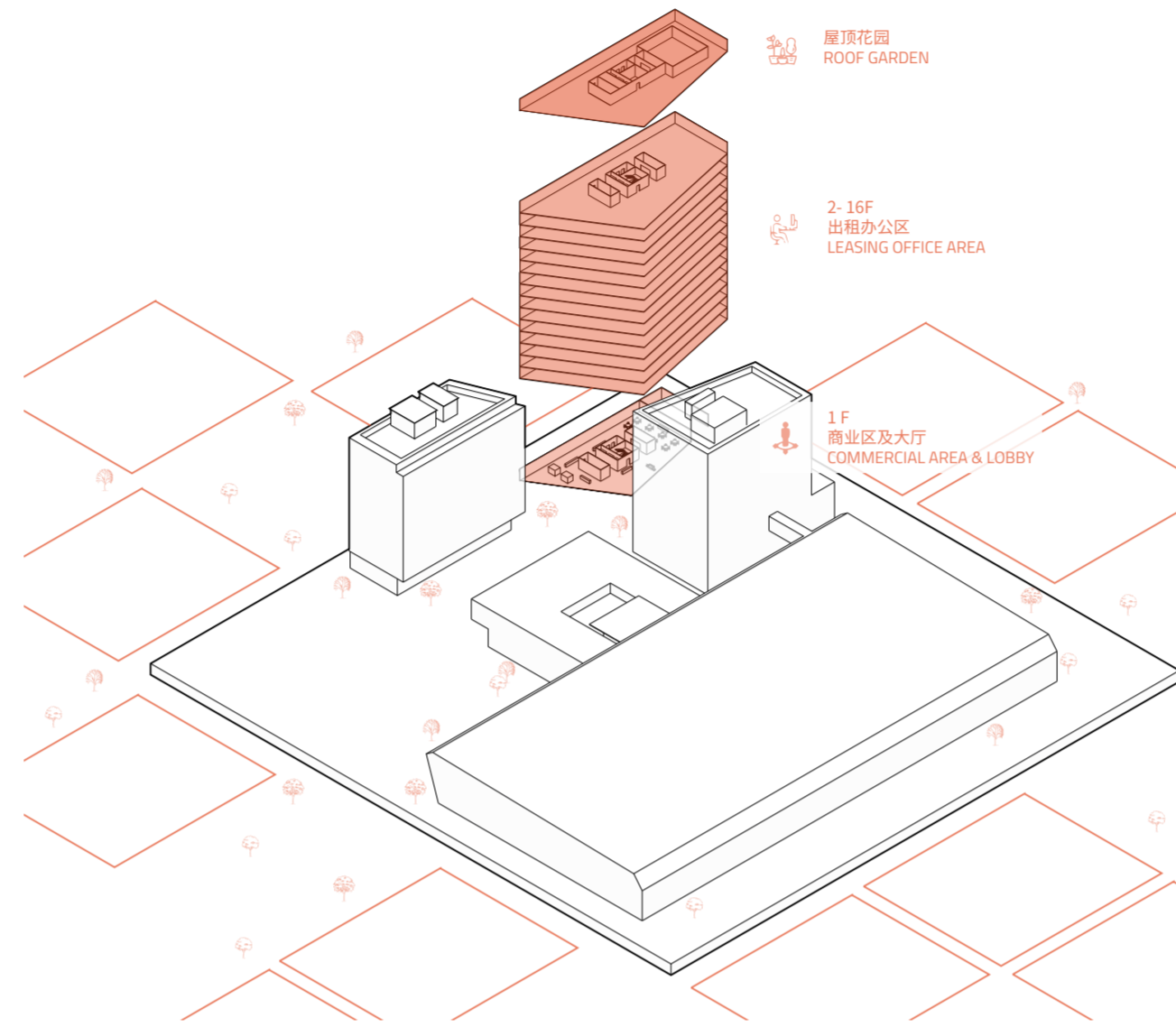
The dynamism of the stylistic lines of the buildings, which are reflected with continuity in the lines that characterize the master plan, fully describes the objective of the project to create and maintain continuous dialogue and connection with the surrounding city. The project leaves the public the freedom to be crossed and experienced in its public spaces as an urban element that wants to communicate and tell the culture of Tederic and its history.

The lines and the cuts that characterize the masterplan takes inspiration by the connection to the Hangzhou main points of interest, looking at the city in a different scale. Symbolically representing the connection with the west lake area, the Qiantang River, and the surrounding industrial area, where the history of the brand has found its roots.

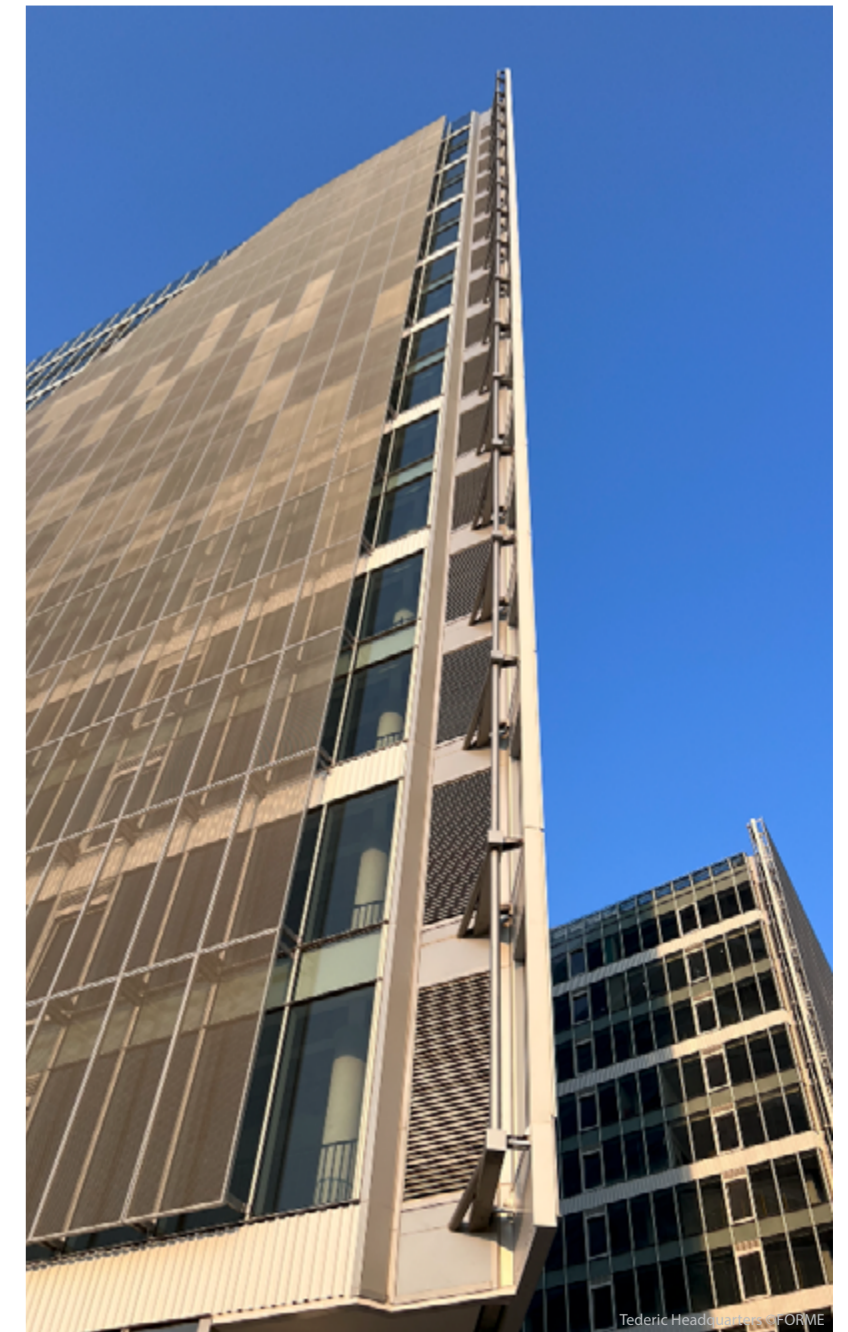
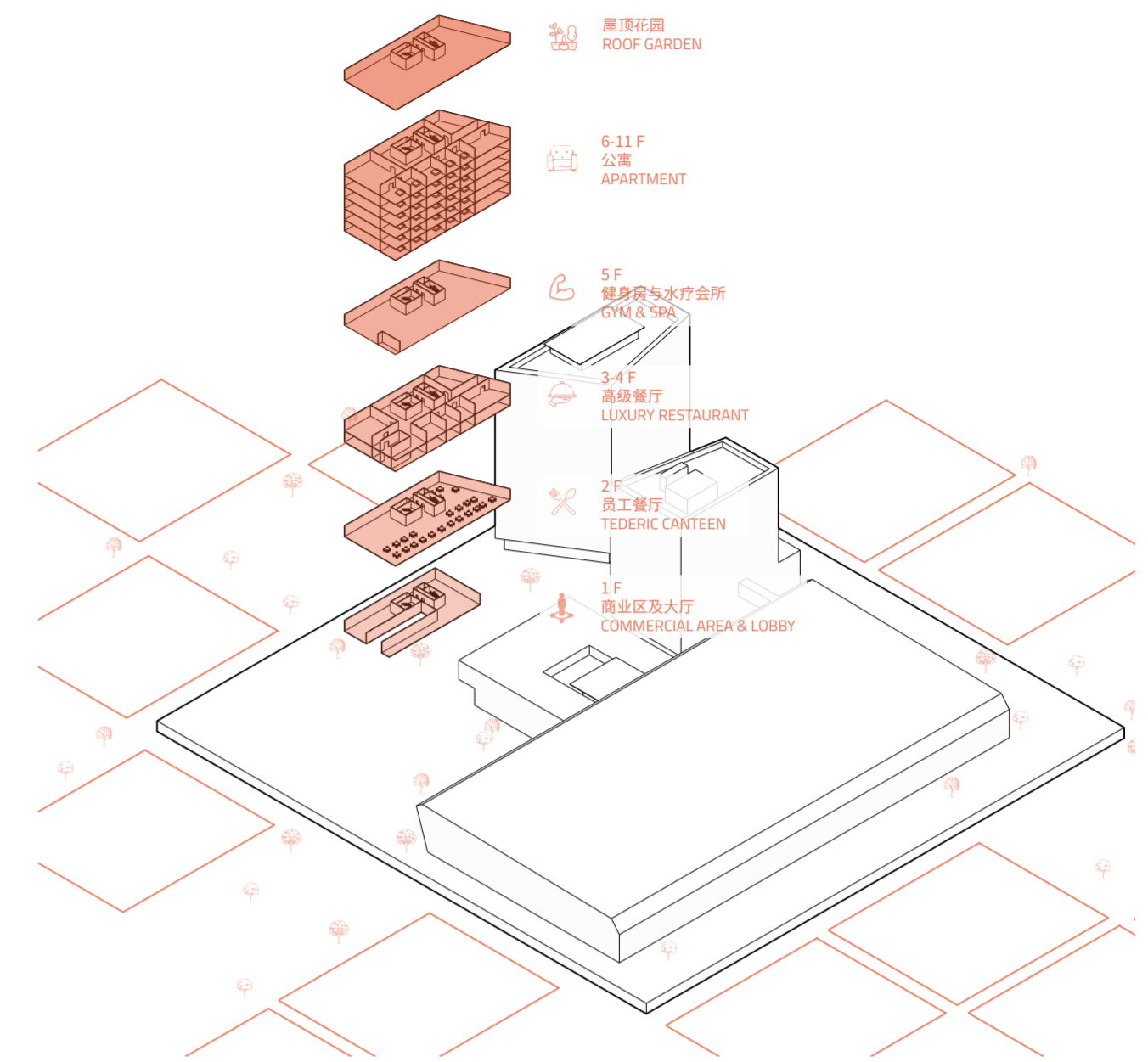
The design for Tederic Headquarters connects 4 buildings with a mix of public and private functions. The buildings T1 and T2 with 17 and 11 stories respectively, house the basic commercial services to support the project and the neighborhood on the ground floor, developed along the south-north direction, creating a natural urban square for sharing and rest, a point of reference not only for the employees of Tederic but for the city which along the project don't create limits to the human activity.

In the upper floors connected by cores in chiseled exposed concrete, the two buildings differ in the program, with the tallest building of the project intended for offices, while the T2 building has a canteen dedicated to Tederic employees, a gym area and 6 floors of apartments that enliven the high-tech facade with planters.

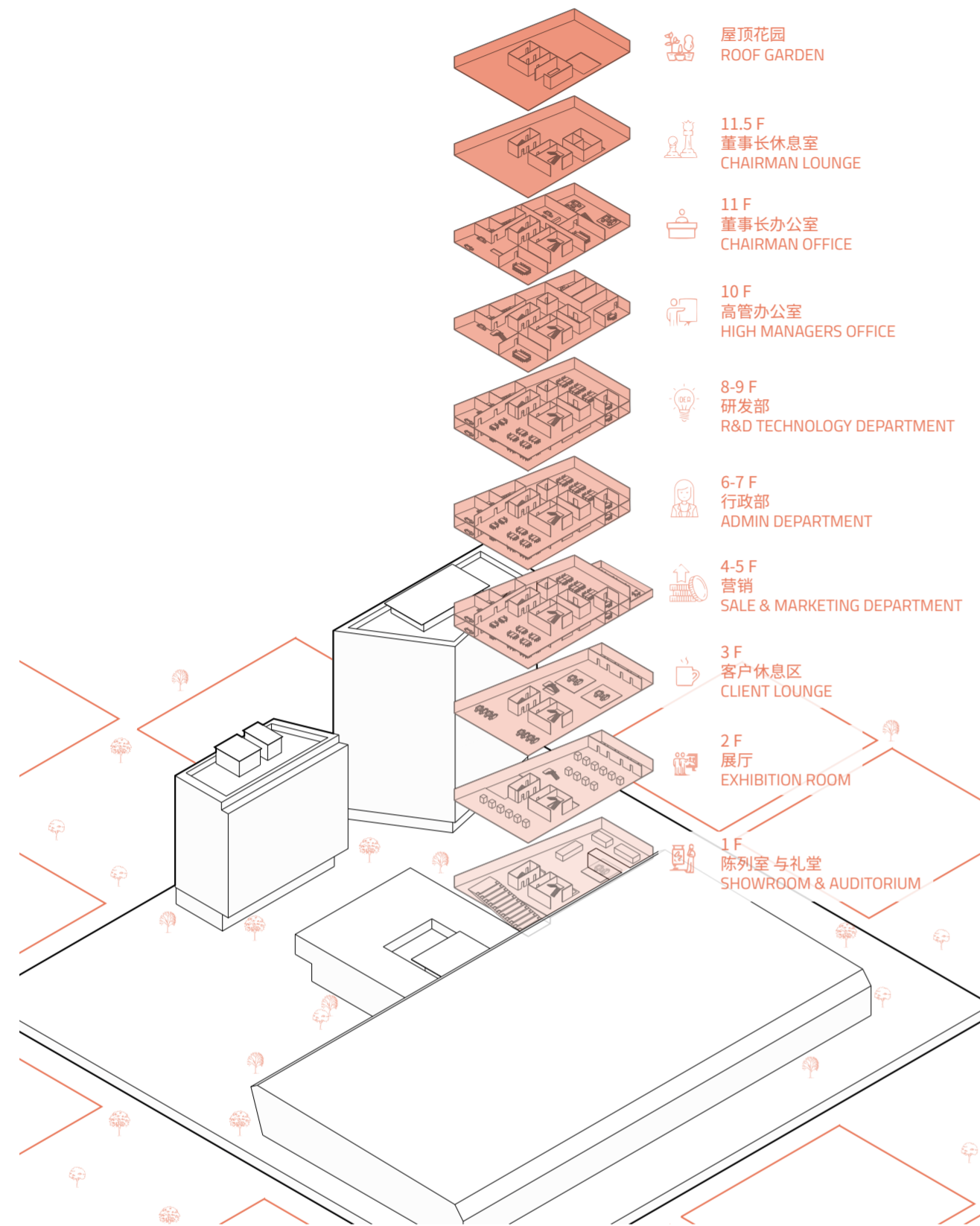
T1 楼 BUILDING T1



T2 楼 BUILDING T2



T楼 BUILDING T



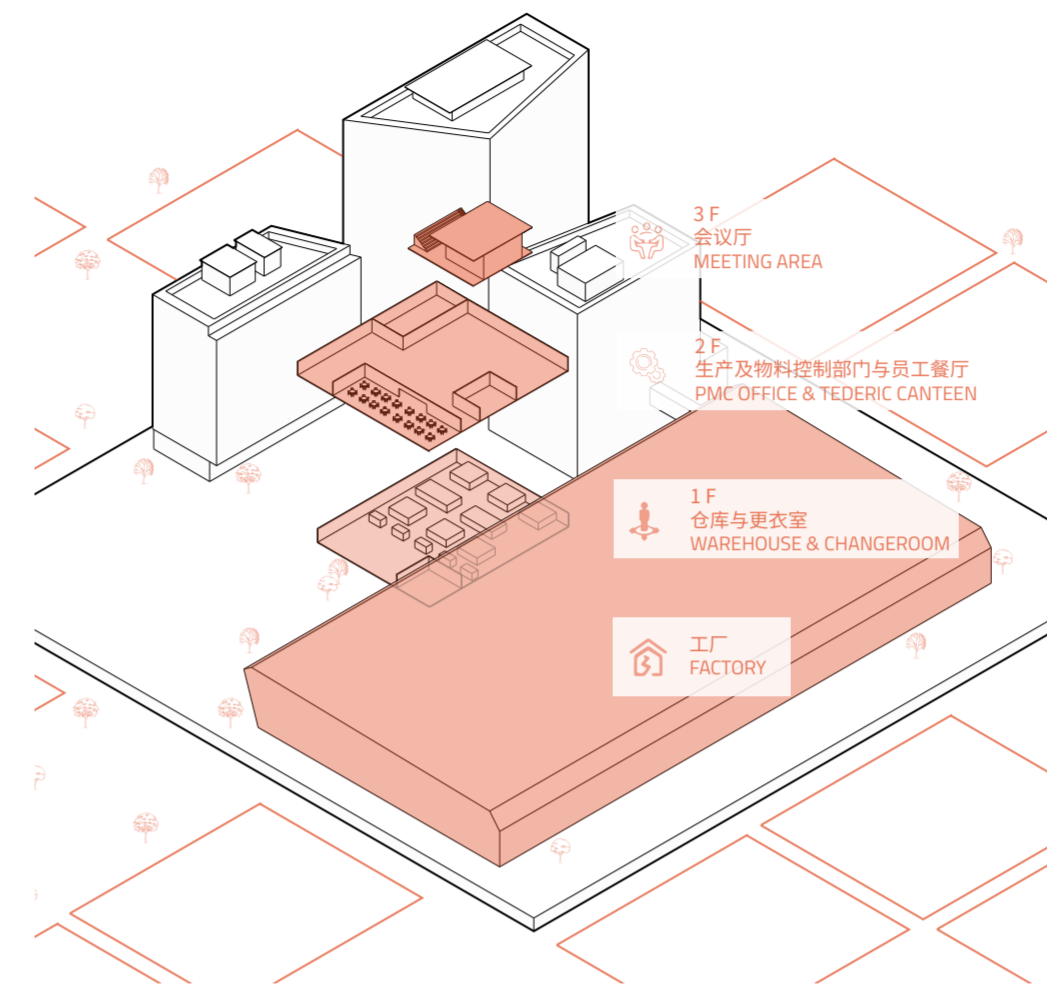
在总体规划中，T楼靠近地块东侧，通过一座明亮的泰瑞橙色连廊，与厂房相衔接，也是景观设计中描述的“线条”的延续。

这座11层楼的建筑是泰瑞的总部大楼，外形轮廓按照客户的功能要求进行设计，就像一件量身定做的西装。下面三层为企业展厅，除了展现泰瑞企业对德国制造的文化理念，还设有专门的接待区域，以及为整个项目提供研讨和团体活动场地的礼堂。顶层为高层管理办公，同另外两栋大楼一样，秉持生态可持续发展的理念，本栋建筑也设有屋顶花园。

Building T, moves eastwards in the masterplan, approaching the expressive building dedicated to the production, at it connected by a bright orange bridge, an imaginary continuation of the lines described in the landscape design.

The building, characterized by 11 stories represents the Tederic's operational center, where the shape of the building follows the client's functional requirements like a tailored suit. The first 3 floors dedicated to the exhibition space, in addition to talking about the German culture, has a business lounge to welcome customers and visitors. The interconnected auditorium is serving the whole project for seminars and events. The top floors, dedicated to the high management, enjoy the benefits of a roof garden which is also present in the other two buildings contribute to the thermal insulation of the buildings.

智能工厂 SMART FACTORY

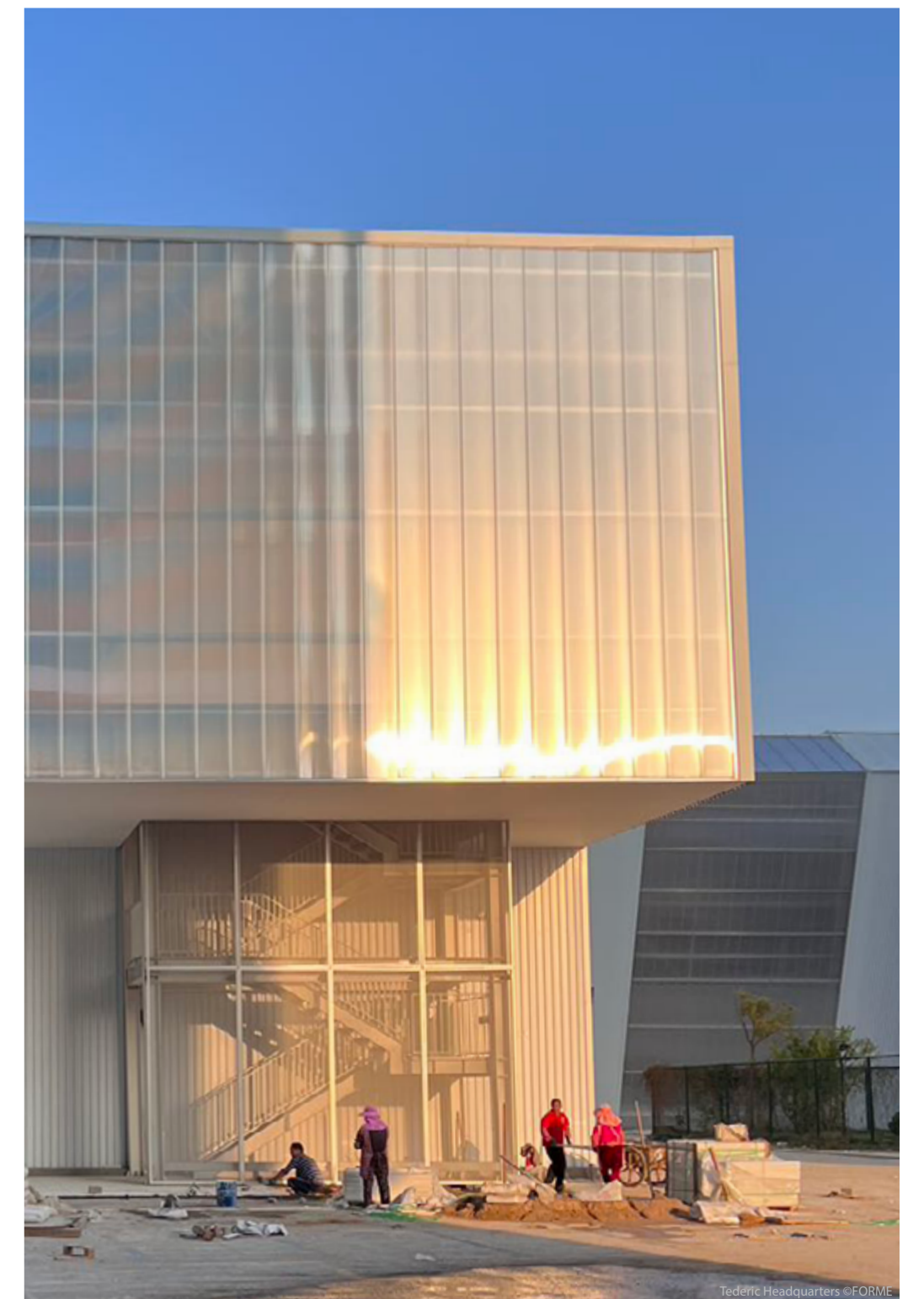


位于项目东区的生产车间，致力于开发泰瑞最环保和最前端的产品装配线。工厂的建筑风格独特，立面材料的使用也别具特色。这座与众不同的建筑介于展厅和传统工厂概念之间，是工业建筑寻求新表达形式的极致探索。

钢构的设计和优化，降低了用钢量，缩短了安装周期，从而降低了成本。厂房内侧设有参观通道，可供管理人员监控厂区生产或外部人员参观。顶部窗户的设计，促进空气的流动；采用聚碳酸酯等透明材料，以最大化利用自然光。

The production center, dedicated to the development of Tederic's most eco-sustainable and innovative product line, located in the eastern part of the site, is represented by an unusual building both in terms of style and in the use of facade materials. The nature of this building is a mix between an exhibition space and a traditional factory. The design seeks the extreme limit of the search for new forms of expression in industrial architecture.

The steel structure is designed and optimized to minimize the weight, reducing installation timing and construction cost. The factory welcomes balconies with internal exhibition passages that can be used by managers and visitors to control the production or visit the factory from the top, without directly access to the production area. The openings are designed to facilitate the natural air convective motions and transparent materials such as polycarbonate, maximization of the use of natural light.



泰瑞机器全球总部 - 室内

Tederic Headquarters - INTERIOR

中国 浙江省 杭州市钱塘新区

Qiantang New District, Hangzhou, Zhejiang Province, China

2019 - 2023

Type
Headquarters

Scope of Work
Main Designer
Project Management

Surface
Land - 33,335 sqm
Usable Area - 15,922 sqm

泰瑞机器全球总部是公司品牌形象的实体延伸，代表着公司的科技与创新。新总部旨在通过开放式友好的工作环境，传递给所有泰瑞员工协作和创新的精神。

开放式的工作空间、大量的集会/会议区域，包括带有可入座的阶梯式露台和休闲区、室外互动空间、创意会议室和便利设施，使员工可以通过多种方式进行交流与沟通。

泰瑞专注于技术创新和生态可持续发展，由此引导室内设计以此理念为出发点。裸顶设计彰显功能性和高科技风格，犹如展现机器零件一般展示建筑构件。表面没有过多的修饰而是通过极致的技术研究保证了工作环境的舒适性。核心筒部分采用清水混凝土，对其表面进行凿毛处理，从而达到吸音的效果，而地板和饰面材料则根据其耐用性和低二氧化碳排放量的性能等方面进行选择。

室内设计围绕“透明感”展开。不同楼层的空间经过多次讨论后按照工作流程进行划分，每个部门在保留其风格独特性的同时又与其他部门有序相连。空间布局遵循开放式空间的理念，仔细研究了靠近大楼玻璃幕墙的工位布局，旨在确保工作环境的最大舒适度。

客户文化——作为一家有温度的民营企业，泰瑞不仅关注工作场所的效率，也关注员工的福利和健康。这些价值观通过一些温馨设计进行传递，如供应当地产品的食堂，健身区域以及位于T2楼的公寓。T楼主要用于办公，在前三层的室内空间中，通过展厅、礼堂和会议区，向人们展示了品牌的使命、愿景和历史，旨在建立泰瑞和社会之间的联系。

Tederic Headquarters has become the physical extension of the company's branding, representing the company's technology and innovation. The new headquarter meant to foster collaboration and the culture of innovation for all of Tederic's employees through an open and friendly working environment.

Open workspaces, numerous gathering/meeting areas, including a terraced meeting space with bleacher seating and "living rooms", outdoor collaboration spaces, creative conference rooms and amenities, allow employees to connect in a multitude way.

Tederic is focuses on technological innovation and eco-sustainability, from these aspects, the basis of the design approach of its interior spaces arises. The functional and high-tech style strips the false ceilings to show the systems as the mechanical components of the building. The surfaces are left "bare", but rigorous is the research of the technical aspects and details that guarantee the comfort of a workspace. The central cores of the buildings, in exposed concrete, are chiseled to create a sound-absorbing surfaces, avoiding noises echoing. Furthermore, floors and high-end finishes are selected for their performance in terms of durability and low CO2 emissions.

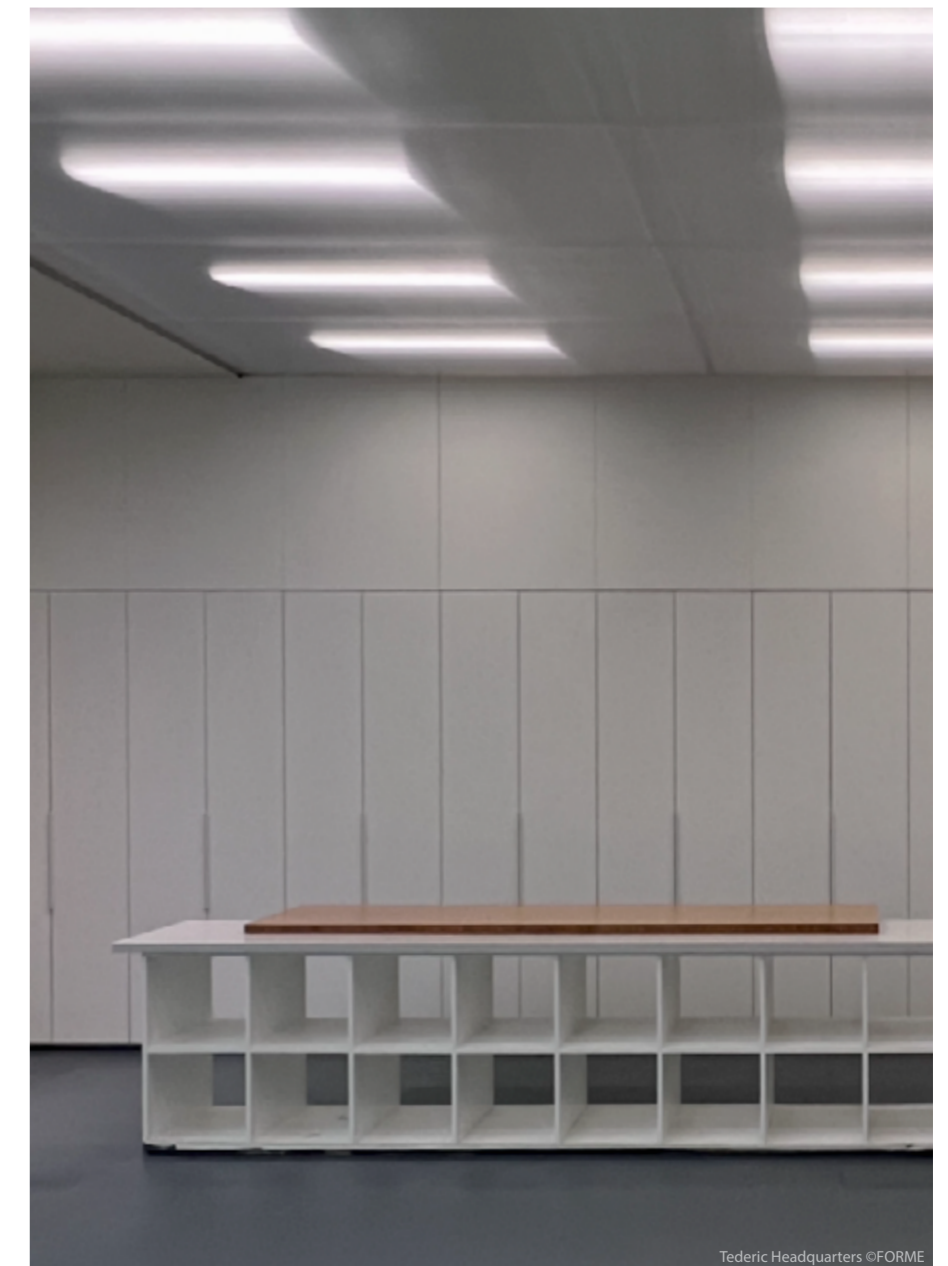
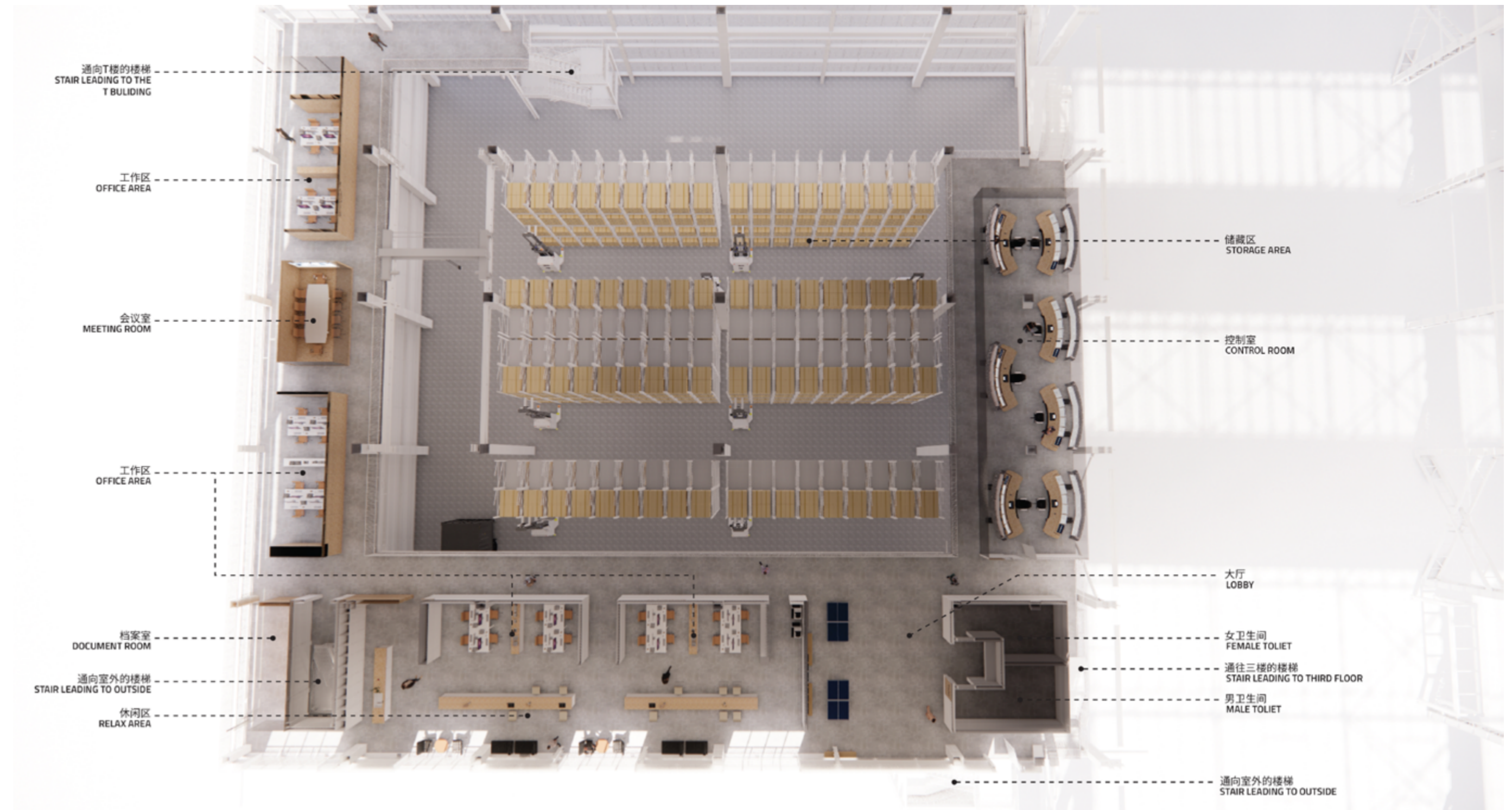
Transparency, the theme of the architectural project, returns and dialogues with the choices of the interior, through ceiling in polycarbonate and satin-finish walls. The working spaces are divided following a well-thought order related to the workflows, every single department aim to maintaining its individuality but at the same time being connected with others. The layout of the space follows the idea of the open space and is designed to ensure maximum comfort at the workstations, carefully studying the arrangement of the desks close to the glass facades of the building.

As a family company Tederic is concerned not only with the efficiency of the workplace but also about well-being and health. These values are transmitted by dedicated areas such as the canteen, offering food created by 0km local products, areas dedicated to physical exercise and the welcoming design of the apartments located in the T2 building. The T building, mainly dedicated to offices and exhibition spaces, tells through its internal spaces, the mission, the vision and the history of the brand.



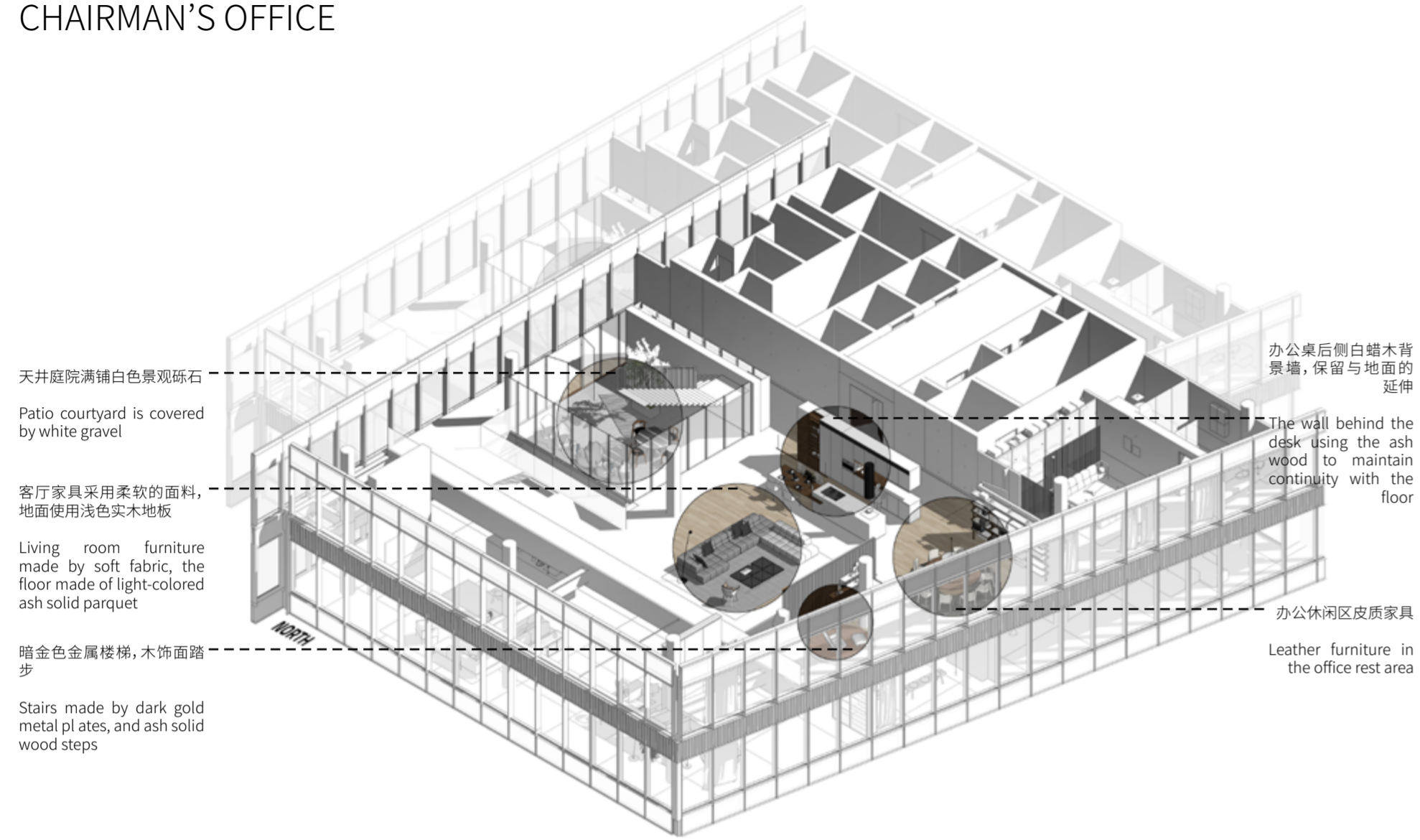
仓库生产办公室

WAREHOUSE AND PMC OFFICE



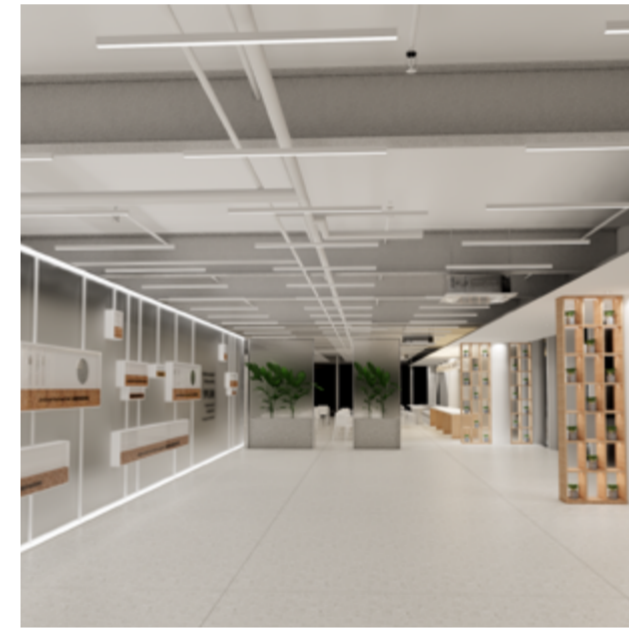
董事长办公室

CHAIRMAN'S OFFICE



其他

OTHERS



泰瑞大型一体化智能制造基地 Tederic Tongxiang Factory

中国 浙江省 桐乡市
Tongxiang, Zhejiang Province, China

2021 - 2023

Type
Industrial park

Scope of Work
Main Designer

Surface
land - 164,666 sqm
Usable Area - 250,000 sqm

位于桐乡市的泰瑞大型一体化智能制造基地是全球最大的注塑机和压铸生产工厂之一。

业主，泰瑞机器股份有限公司，正在逐步扩大其在全球市场的影响力。品牌本身对于绿色生产和节能减排有着自己的理解和应答。设计师希望透过项目的设计概念，精准协助业主展现其品牌理念和可持续发展观。

项目占地247亩，其中工厂区域，设计师最大化利用工厂屋面，打造屋顶光伏电站，实现内部能源的自供给。在卸货和出货区域，结合光伏板的设计，设计了光伏板雨棚，这不仅提高了上料和装运区的舒适度，同时也增加了10%的光伏板面积。共计4500块光伏板，每年可为泰瑞提供100GWh的绿色电能。

建筑体块分离所带来的空间扩大提供了更大的自然采光面。工厂屋顶的设计并未采用大量的照明系统，而是在立面上采用标高3米的玻璃幕墙采光，结合内推式设计避免西晒和眩光问题。

泰瑞机器作为注塑机的知名品牌，小型机和大型机生产线的跨度要求根据不同的机型生产要求进行划分，并配备了不同规格的行车。其中第三跨配备了重型300吨行车，故北侧立面完全以玻璃幕墙的设计，将行车转化为装饰元素，展示其生产活动。

为了给企业员工创造一个舒适的工作场所，两个大体块建筑之间的连接空间被一分为二：一个绿化区和一个精心规划的换班期间的休息场所。

办公空间位于二楼，通过景观电梯将大厅和材料实验室相连接。此外，大楼还设有绿色屋顶实现保温节能功能。

The new production base of Tederic Company, located in Tongxiang City, is one of the world's largest injection molding and die-casting production factories.

The owner, Tederic, is gradually expanding its influence in the global market. The brand itself has its own understanding and special attention to green production, energy saving, and emission reduction. The design aim to help the owner to transmit, through architecture, its brand values and the spirit of sustainable development.

The project covers an area of 164666 m2. The production site has a dual function as, thanks to a photovoltaic farm created on the roof, it will also be used for the massive production of renewable energy. Also in the unloading and shipping area has been created a photovoltaic panel canopy. This not only improves the comfort of the feeding and shipping area, but also increases the area of photovoltaic panels by 10%. A total of 4,500 photovoltaic panel provide Tederic with 100GWh of green electricity annually.

The increased surface area from the separation of the building blocks provides more freedom for natural lighting. Instead of installing a large amount of roof lighting systems, the factory uses a glass curtain wall system, combined with a recessed technique to avoid problems with western sun exposure and glare.

The production efficiency of the small injection molding machines and the span of the large machines are divided according to different production lines according to the different needs and are equipped with overhead cranes of different sizes. The massive 300-ton overhead crane, placed on the third main span, turns into a decorative element, since it's easily visible due to the fully glazed curtain wall on the north side.

In order to create a pleasant workplace for employees, the connecting space between the two large volumes is divided into a green area and an organized rest area, specifically designed for short breaks between shifts.

The office space is located on the second floor and is connected to the lobby and material laboratory through a panoramic elevator. In addition, the building also has a green roof to reduce heat loss and consumption.

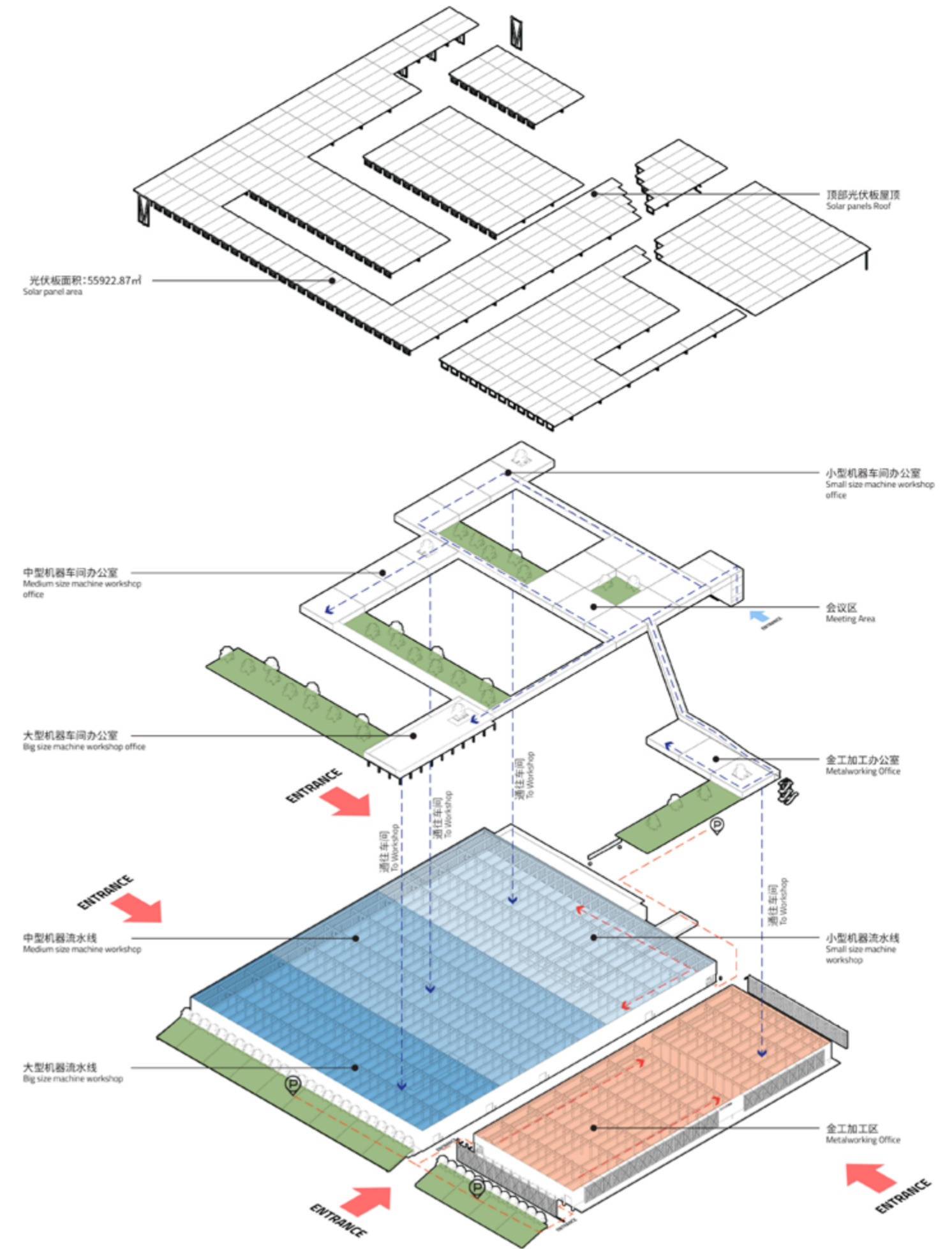
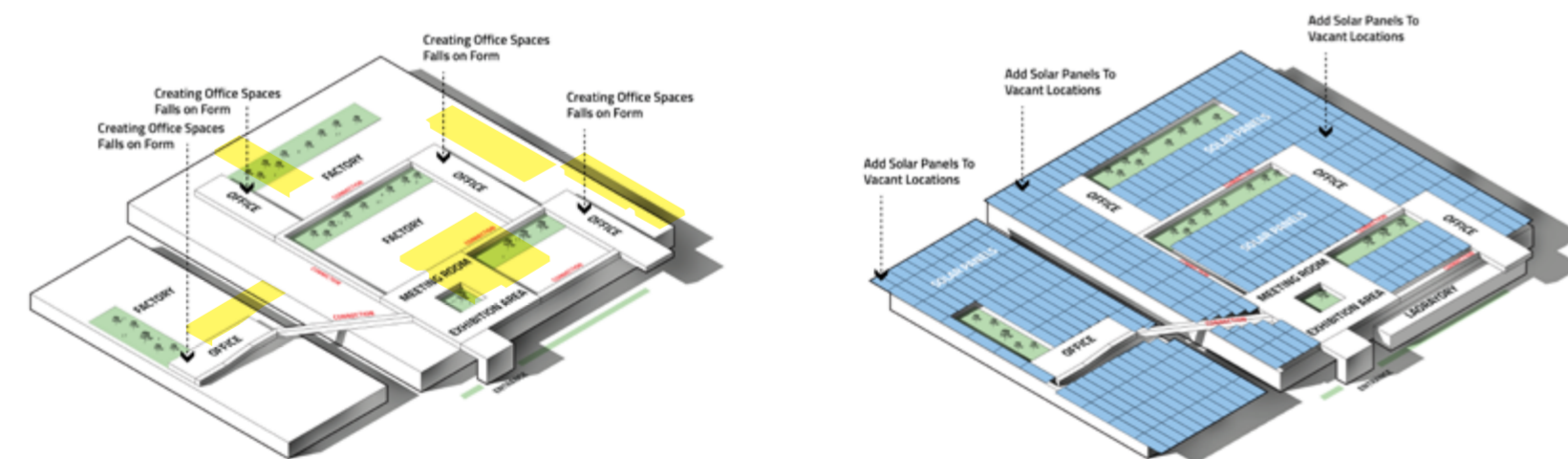
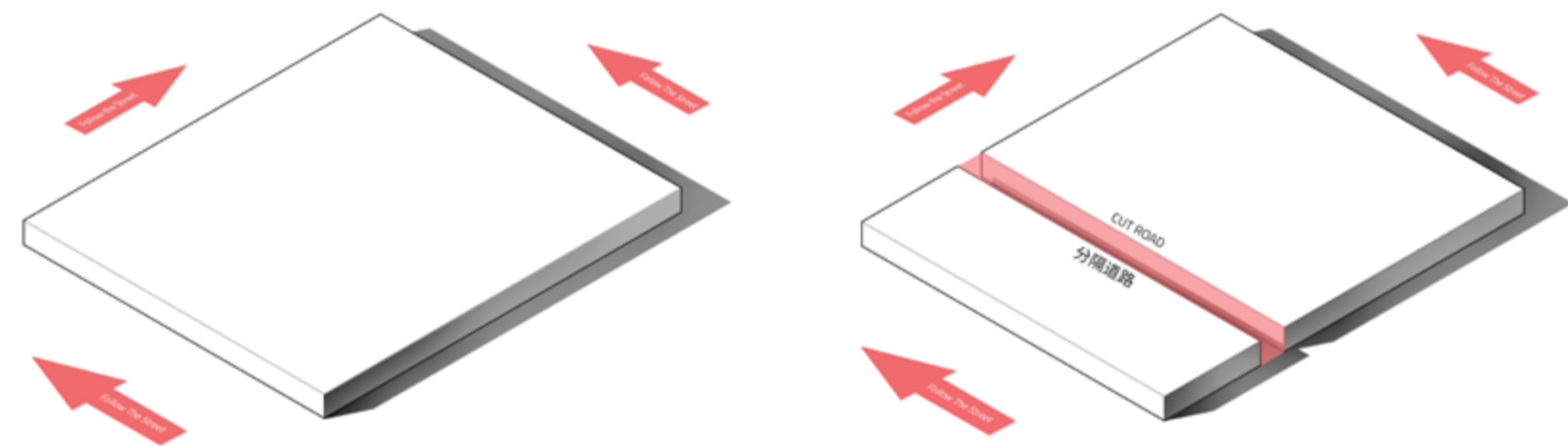


现场的生产内容分为两部分，加工金属部件的金加工车间以及进行成品组装的组装车间。

两个生产区的工作时间和工作条件(温度、湿度、清洁度要求)有很大差异。为了最大限度地利用内外风压进行通风和利用自然光线采光，区别于传统的一体式厂房，设计师选择将生产布置在两个独立的厂房中。由此实现了合理的被动式通风降温条件，减少了机械通风，降低了能耗。

The production lines of the production base have been divided into two parts: the metal processing workshop and the finished products assembly workshop.

There are significant differences in working hours and working conditions (temperature, humidity, cleanliness requirements) between the two production areas. In order to use the natural ventilation of the convective motions and natural lighting, the FORME opted not to use the traditional single factory building that includes all production content but instead divided the production content into two independent factories. This resulted in reasonable passive ventilation and cooling conditions, reduced mechanical ventilation, and allow a lower energy consumption.

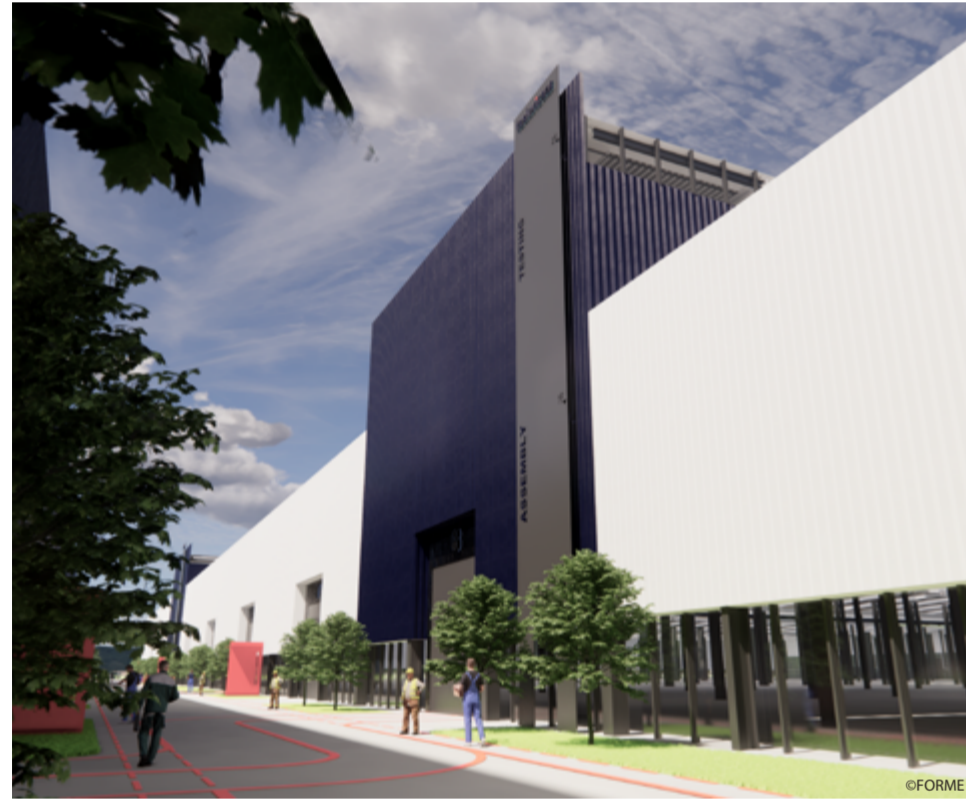


结合周边的交通布局，两个厂区都呈南北走向(南进北出)。

清晰的场地功能划分、厂房规划和合理的生产布局能够保证物料的顺畅流动，最大程度缩短生产流线，有助于现场管理和提升生产效率。

The two factory blocks are arranged south-north (entering from the south and exiting from the north) in conjunction with the layout of the surrounding main and secondary roads.

Clear site function division and reasonable production layout can ensure smooth material flow, reduce unnecessary handling, and improve on-site management transparency and production efficiency.

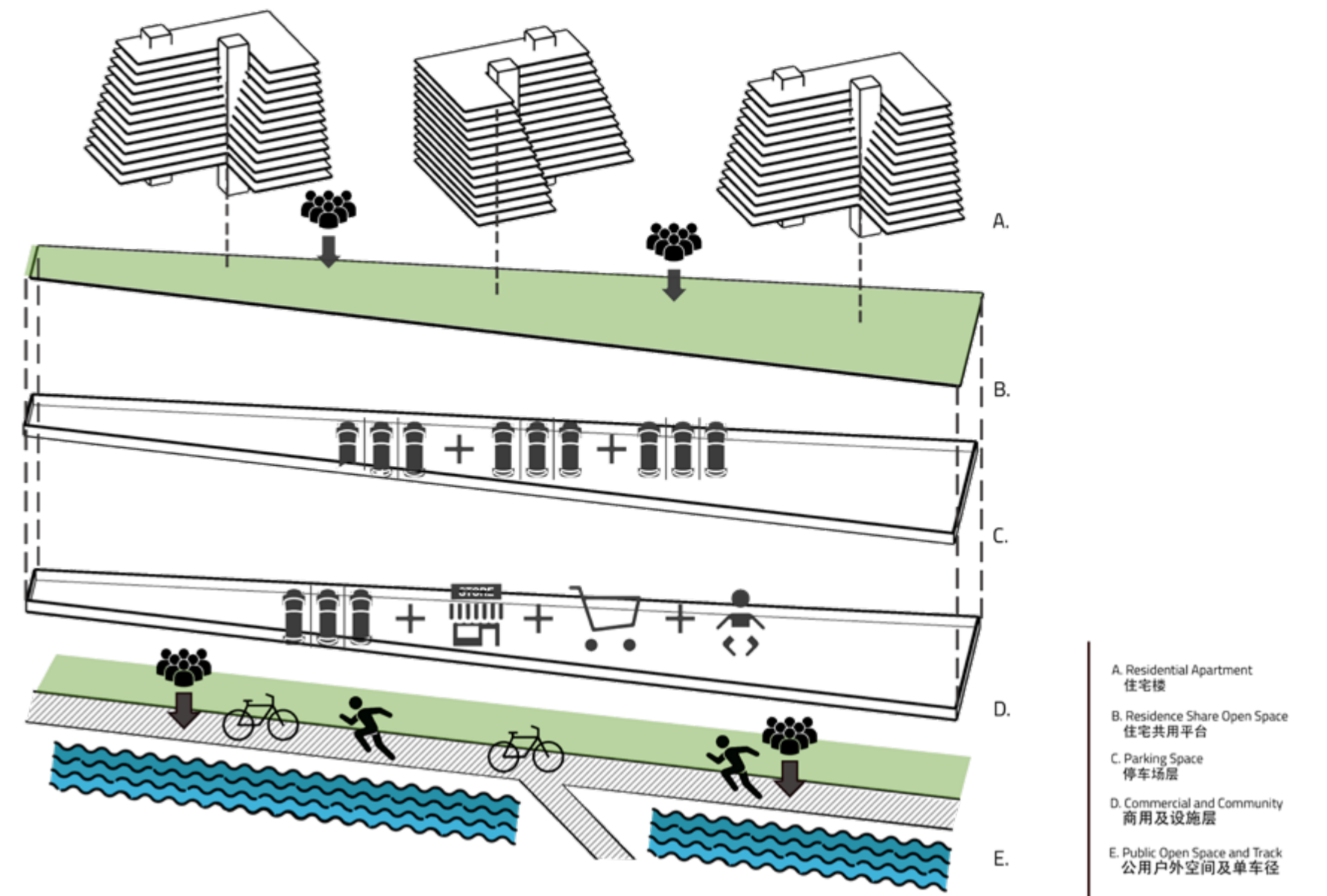
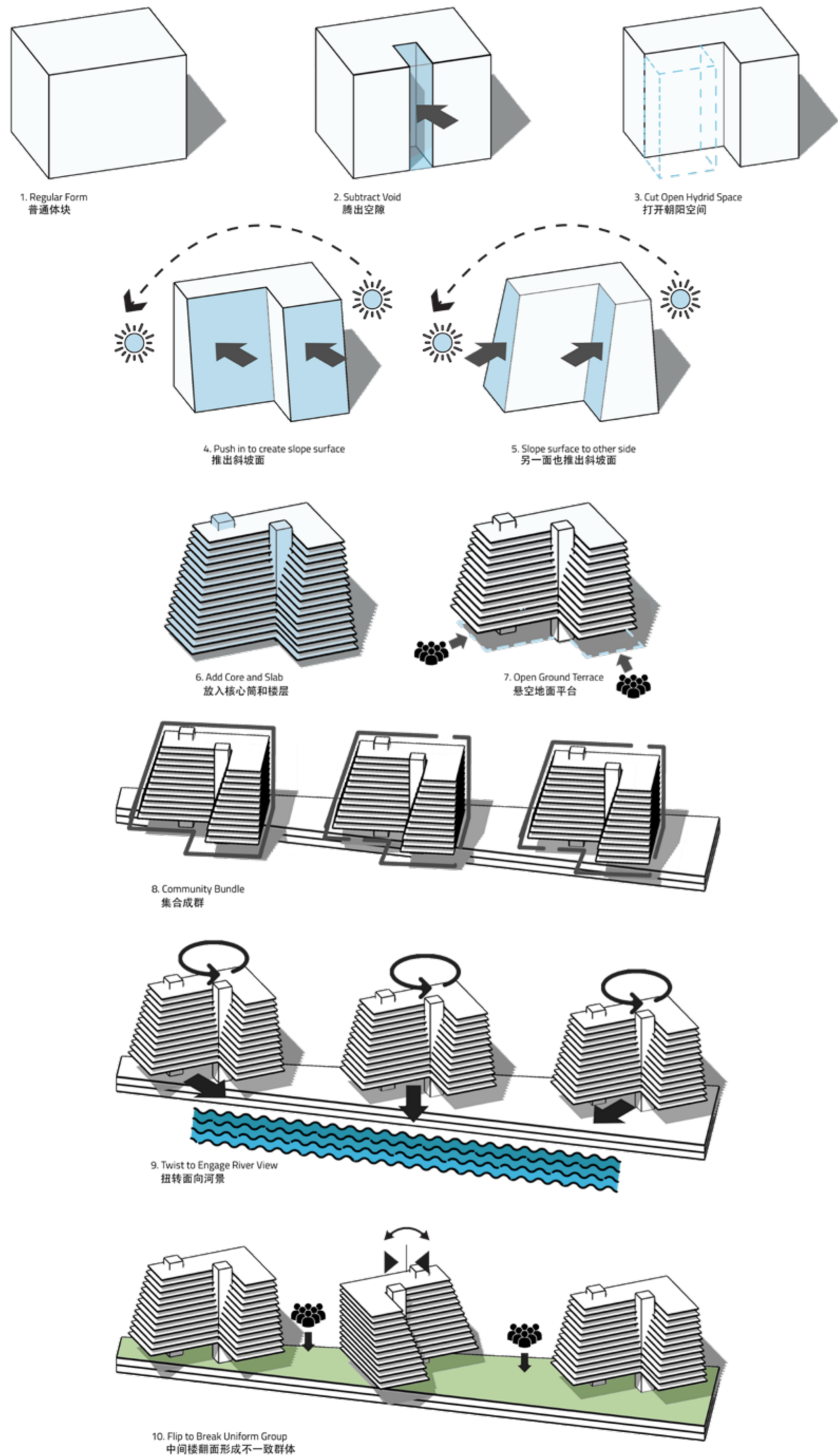


鉴于内部空间规模庞大，需通过连廊和人行道来进行连接。这些过道连廊以泰瑞橙着色，易于识别并且紧急出入口相连。

总体规划和建筑布局旨在与城市肌理和周边环境实现最佳融合。

Given the grand scale of the interior space, it is necessary to organize passages through bridges and walkways. These passages are painted in Tederic deep orange for easy identification and also connect to the main emergency exits.

The masterplan and buildings layout were designed to best integrate with the urban fabric and the surrounding environment.



工厂的设计旨在满足泰瑞的生产需求，同时兼顾项目质量和员工的体验感，因此办公区配备了休闲区和景观花园。

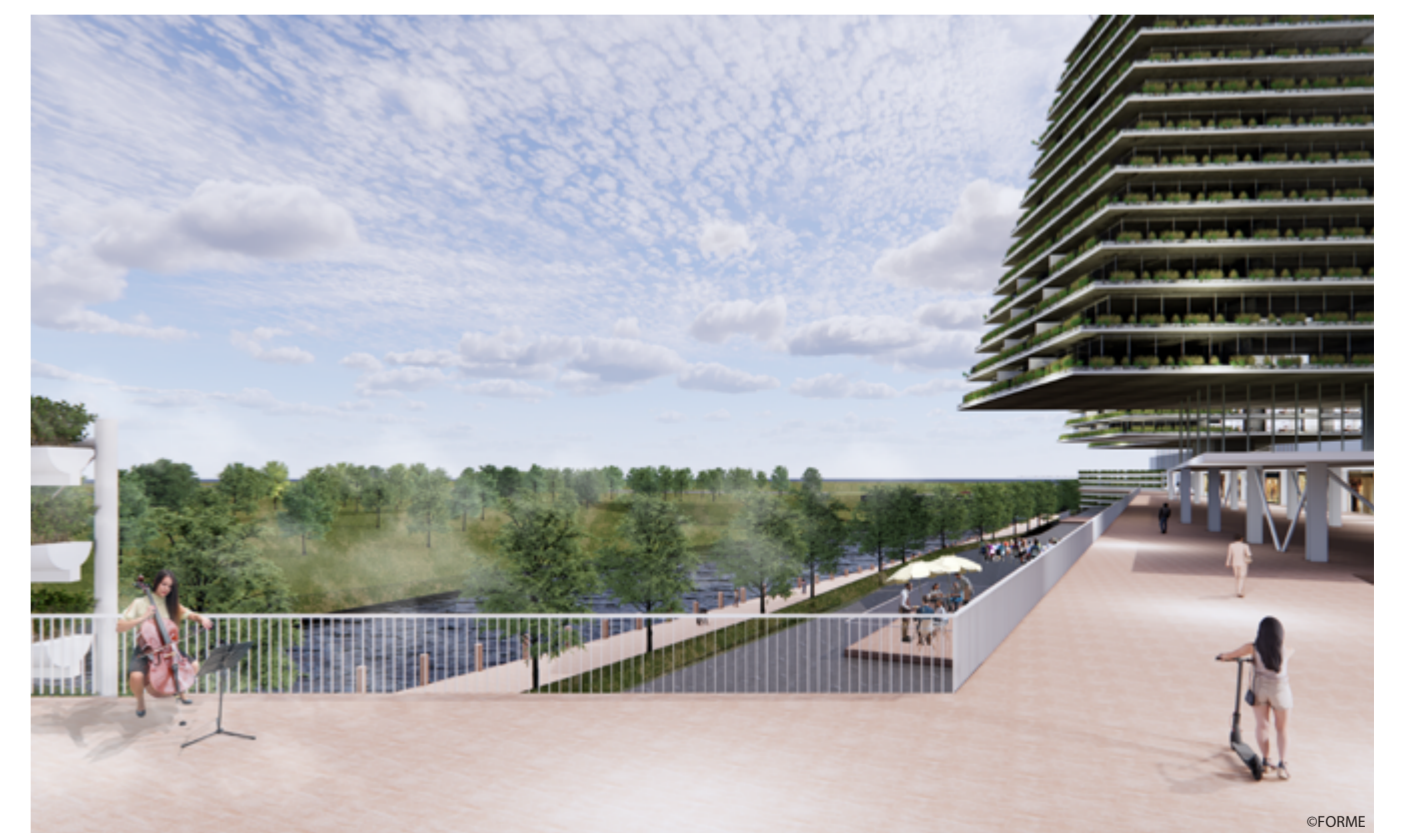
工业区通过“沿河而居”的概念与周边社区进行文化碰撞与交流，在这里，人与水之间的关系是城市本身的文化所带来的。

住宿区并非传统意义上的“宿舍”，而是一种新型的住房形式，通过人行道和自行车道和配套上去给沿河地区注入新的活力，同时也是一种新的社会住房模式的实验。

The volumes are designed to meet Tederic's technical needs, but at the same time takes care of the quality of the project and of the well-being of people who will work in it, equipping the offices with relax areas and gardens.

The industrial area communicates with the community, through the concept of "living the river", exalting the relationship between man and water that is inherent in the culture of the city itself.

The residential building is not conceived as a classic "dormitory", but as a a new model of social housing. The designed landscape, represents a territorial renewal project, exploiting the area along the river through pedestrian and cycle paths, activities and shops.



菲仕新生产基地(北仑)

Physis New Production Base in Beilun

中国 浙江省 宁波市北仑区 装备产业园
Beilun District, Ningbo, Zhejiang Province, China

2020 - 2023

Type
Industrial park

Scope of Work
Consulting on Design Developmet and Design Management

Main Designer
Roberto Pellino Architect

Surface
Land - 69,000 sqm
Usable Area - 43,000 sqm

菲仕新生产基地位于宁波市的工业中心，采用经典的工业生产基地布局，包括中央接待广场和办公楼，项目的大部分将用于工业生产和仓库功能。尽管该项目在功能上是传统的，但其功能形式却呈现出独特之处。

在生产区，我们尝试了一种更具创新性的平行六面体工厂形式，将空间的功能更加的自然化。因此，建筑发生了改变，其线条遵循地块的自然轮廓，使“工厂”成为一个巨大的景观建筑。

作为一个缩影的工作空间——办公室的中心部分采用了不同的风格策略，其形式是从客户的产品特征中直接获取的灵感。项目的主题是电动机上缠绕的线条所形成的漩涡。这些形态不仅仅是产品的表象，还承载着菲仕电机品牌内在的意义：生态可持续性和绿色能源世界。

新型设计的目的是创造一个对使用者的工作体验和效率有积极影响的环境。设计策略主要集中在三个方面：社会联系和会议空间、工作空间与自然的联系以及便利的可达性。入口广场上的水景和众多绿色露台、人行通道和休闲区，都有助于营造出一个健康、相互联系的工作场所环境，让人们体会到小社区的乐趣感。

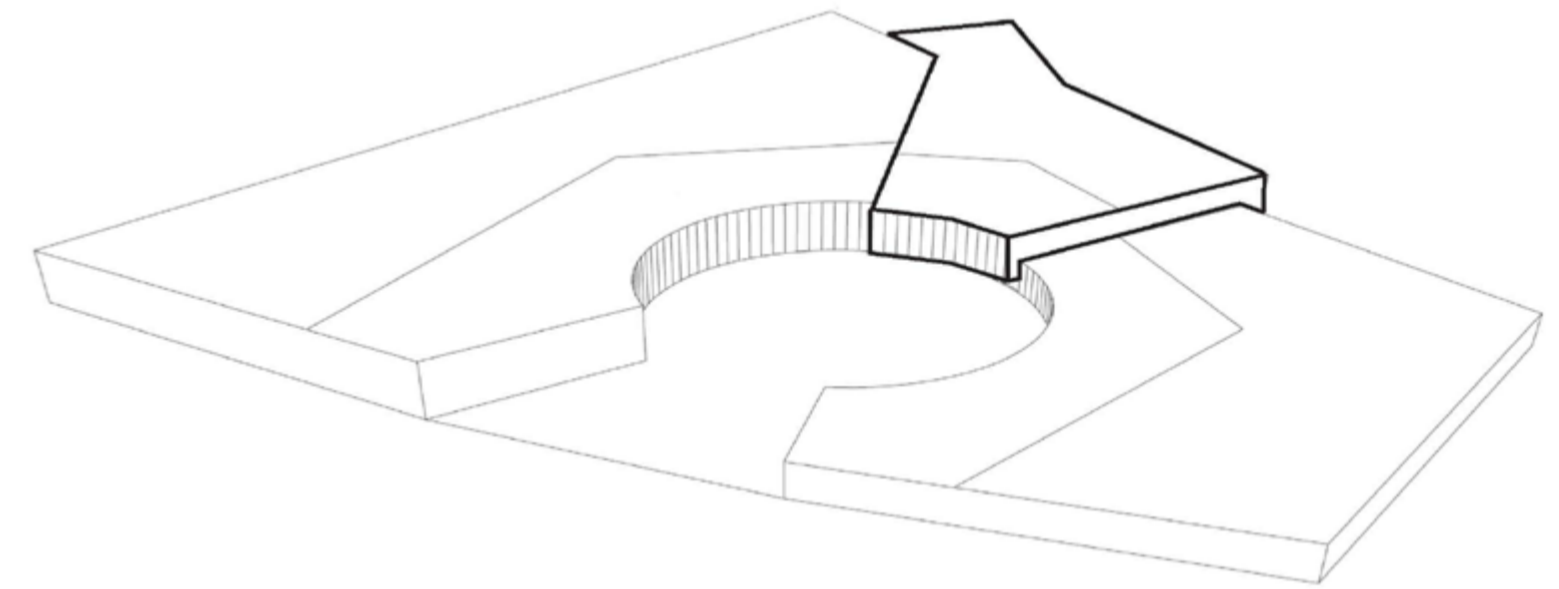
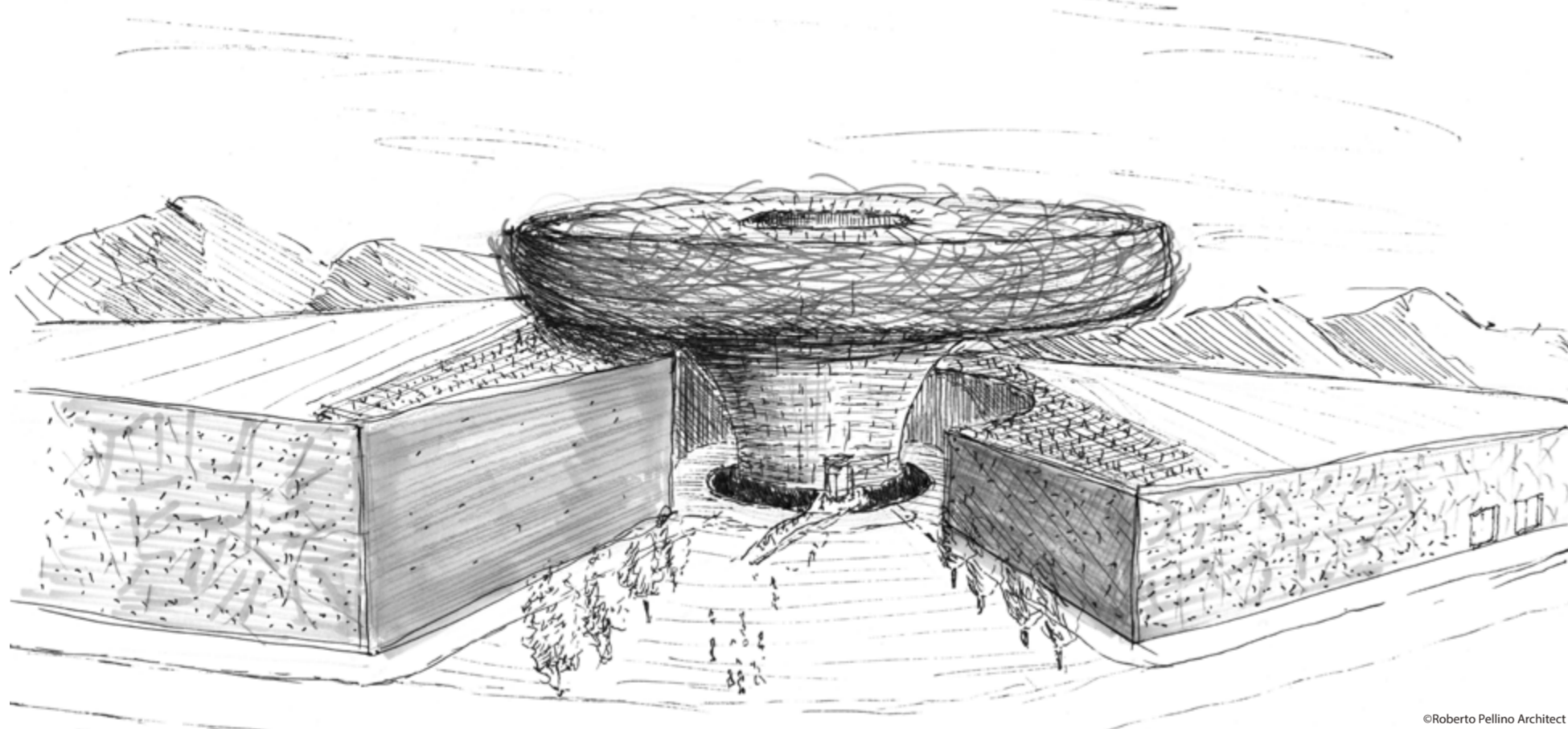
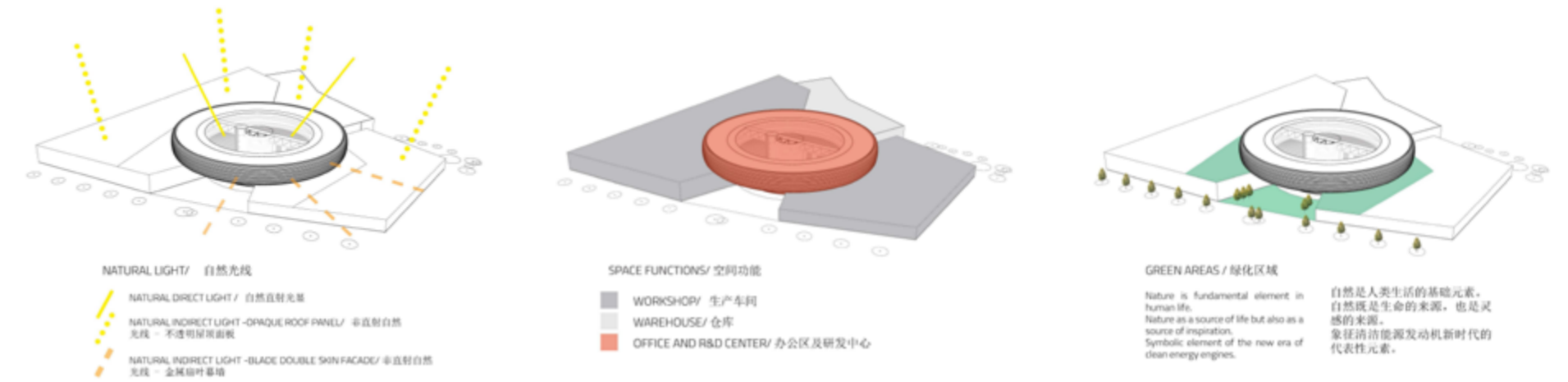
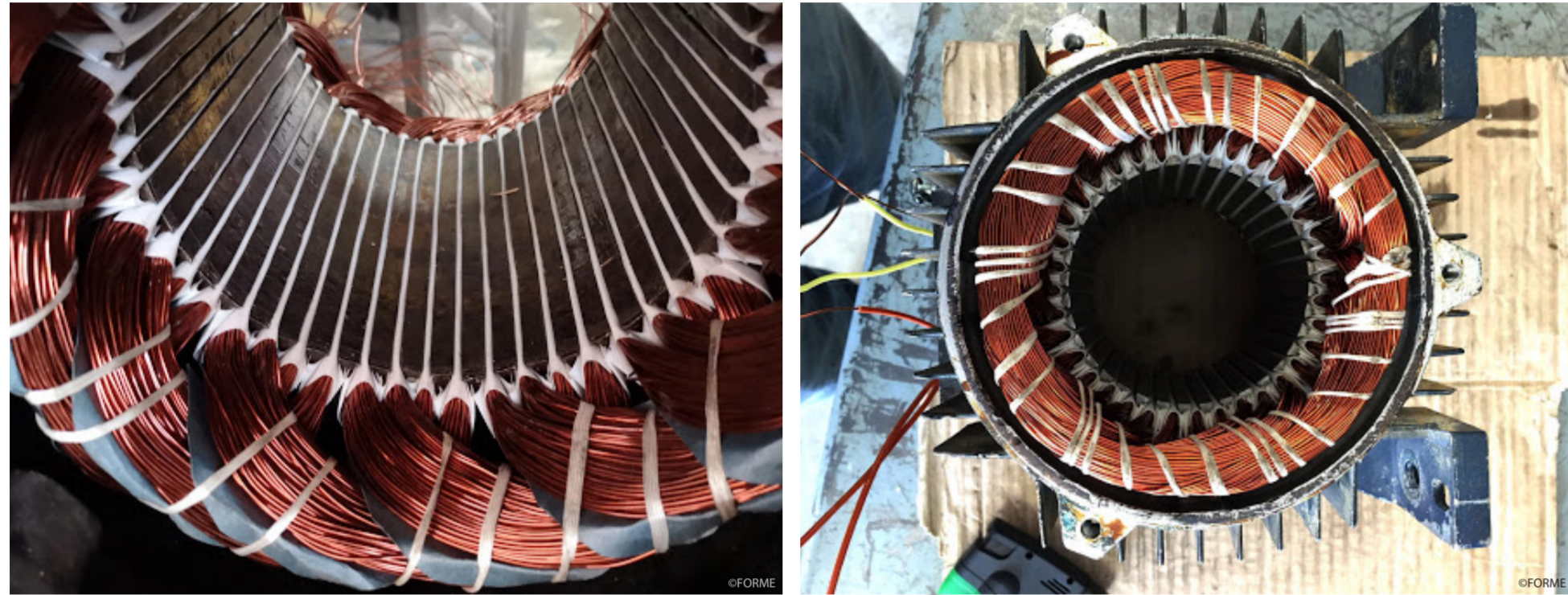
Located in the industrial center of Ningbo city, the new Physis production base, features a classic industrial production site layout, including a frontal reception square, and an office building towering above the large buildings dedicated to industrial production and warehouse functions. Although the program appears to be functionally classic, the form's representation is interesting and connected to the functions itself.

The production area experiments a more innovative form comparing the classic functional parallelepiped factory by combining the space's function with a more natural character. Consequently, the buildings change, the lines follow the natural profile of the landscape, and the factory becomes a massive element that rises as a projection of the land.

Workspace as a microcosm——The central part of the offices follows a different stylistic strategy, finding its forms from direct inspiration at customer's identity through its products. The shapes of the windings and the circularity of the rotors of the electric motors become the guidelines of the project. But the shape doesn't just stop at the representation of the mere product but takes on the intrinsic meaning of the Physis brand linked to eco-sustainability and the world of green energy.

This new design approach has allowed us to create an environment with a positive impact on the performance of the Project's users. The design strategy was focused on three main aspects: social connection and meeting spaces, contact between the work space and nature and facilitated accessibility. The presence of the entrance square with water and numerous green terraces, the pedestrian connections, the relax areas, contribute to creating the image of a healthy, interconnected workplace, enjoyed by a small community.





缠绕的线条成漩涡状，这个设计不仅能用于控制室内光线，也使幕墙极具独特色彩。

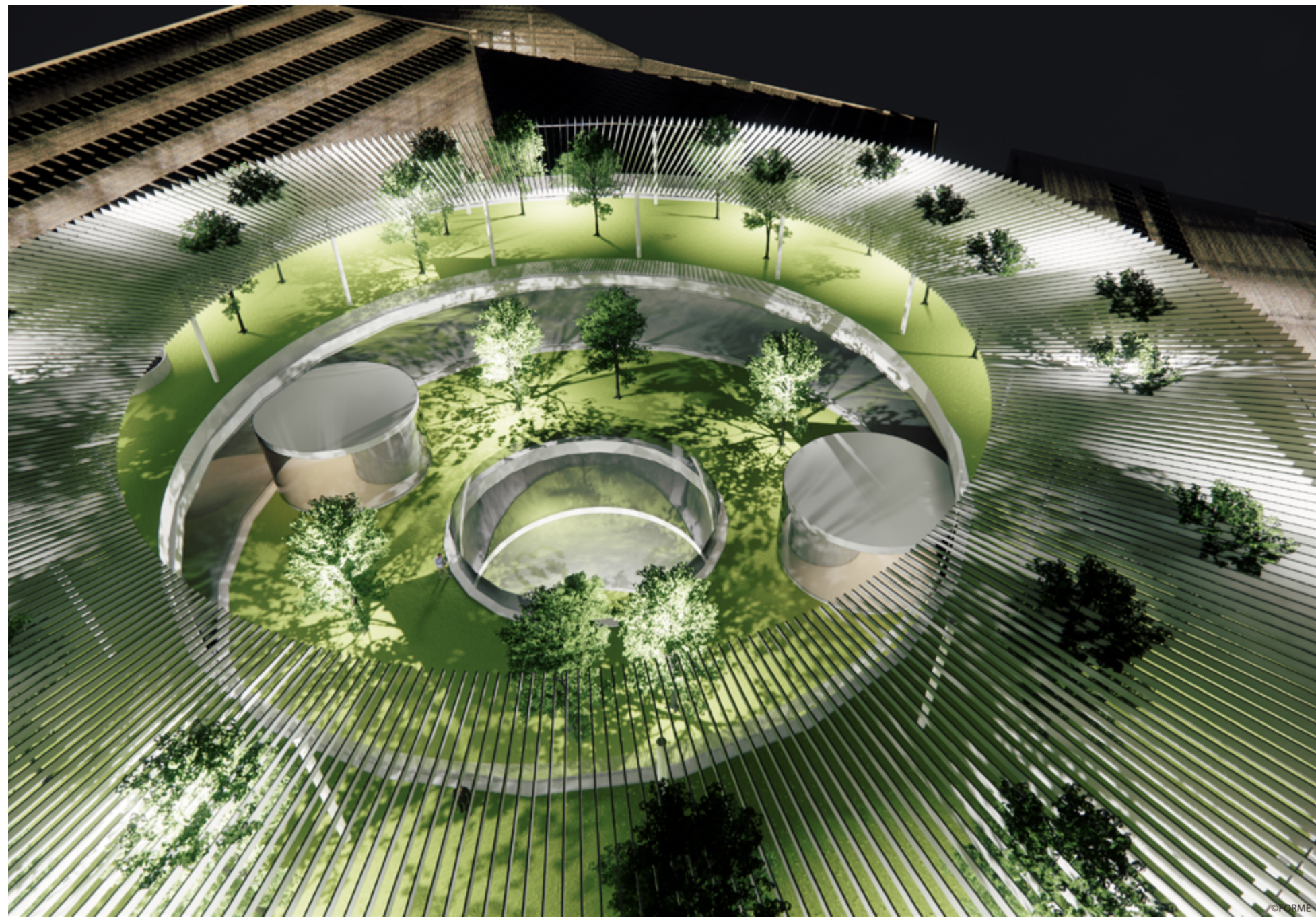
The shapes of the rotors are represented, in the office tower, by a whirlwind of circular lines, of thin bands that allow you to control the sunlight and characterize the facade.

生产车间是机电一体化伟大工程的发源地，其外形宛如粗糙的石头，象征着发动机的坚固性和可靠性。

设计仓库的意图是使其成为两个车间之间的连接。就像钟表的机械装置一样，建筑完美地结合在一起，并作为一个完整的系统运行。

The production is carried out in the lower and massive buildings that surrounds the office tower, while the warehouse is located in the east side. The shape recalls the rough stone that symbolizes the work and accuracy to obtain the solidity and reliability of the engines.

The warehouse is designed as a connection between the two production areas. Like a clock mechanism, the buildings integrate perfectly and work as a single functional system.

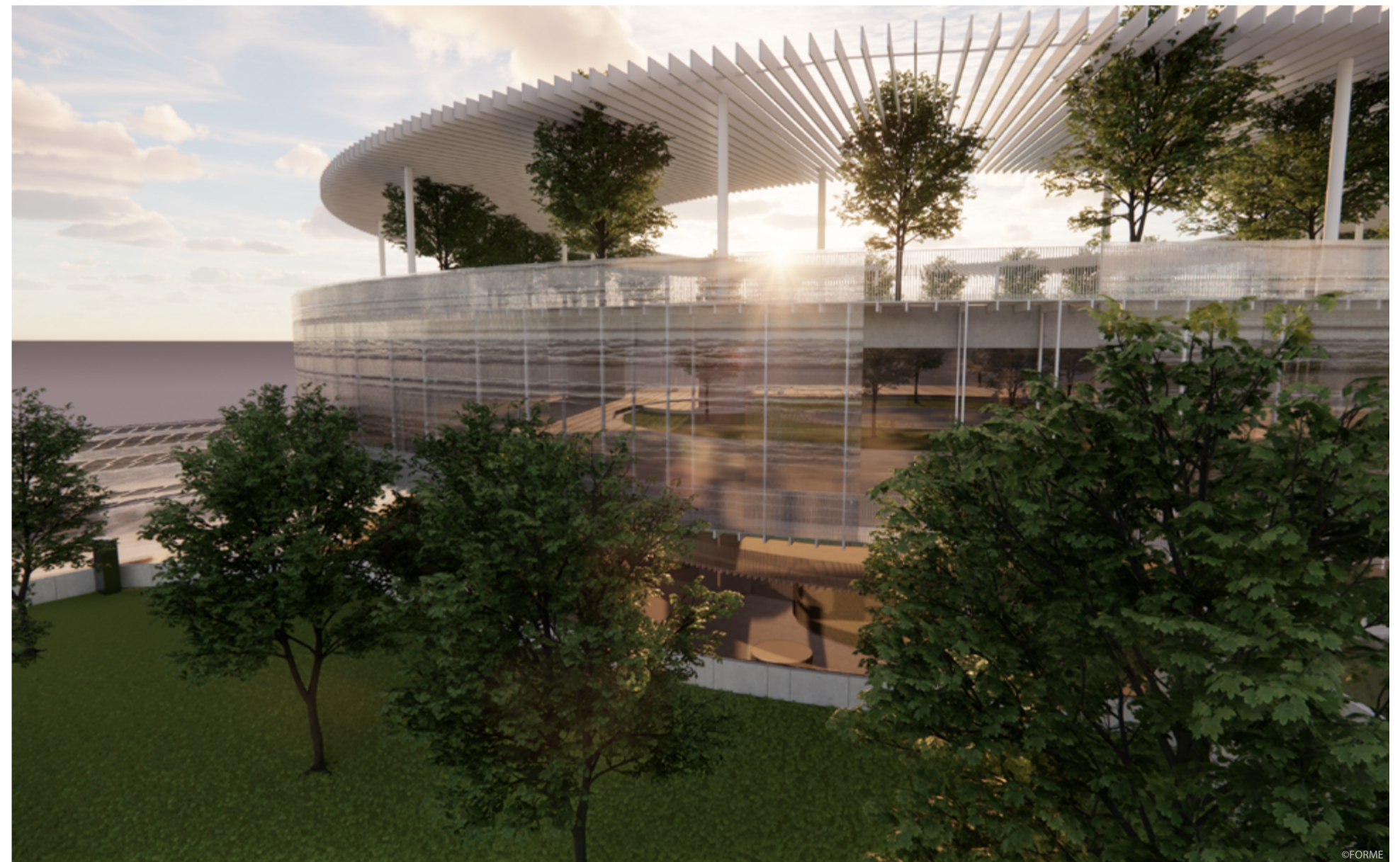
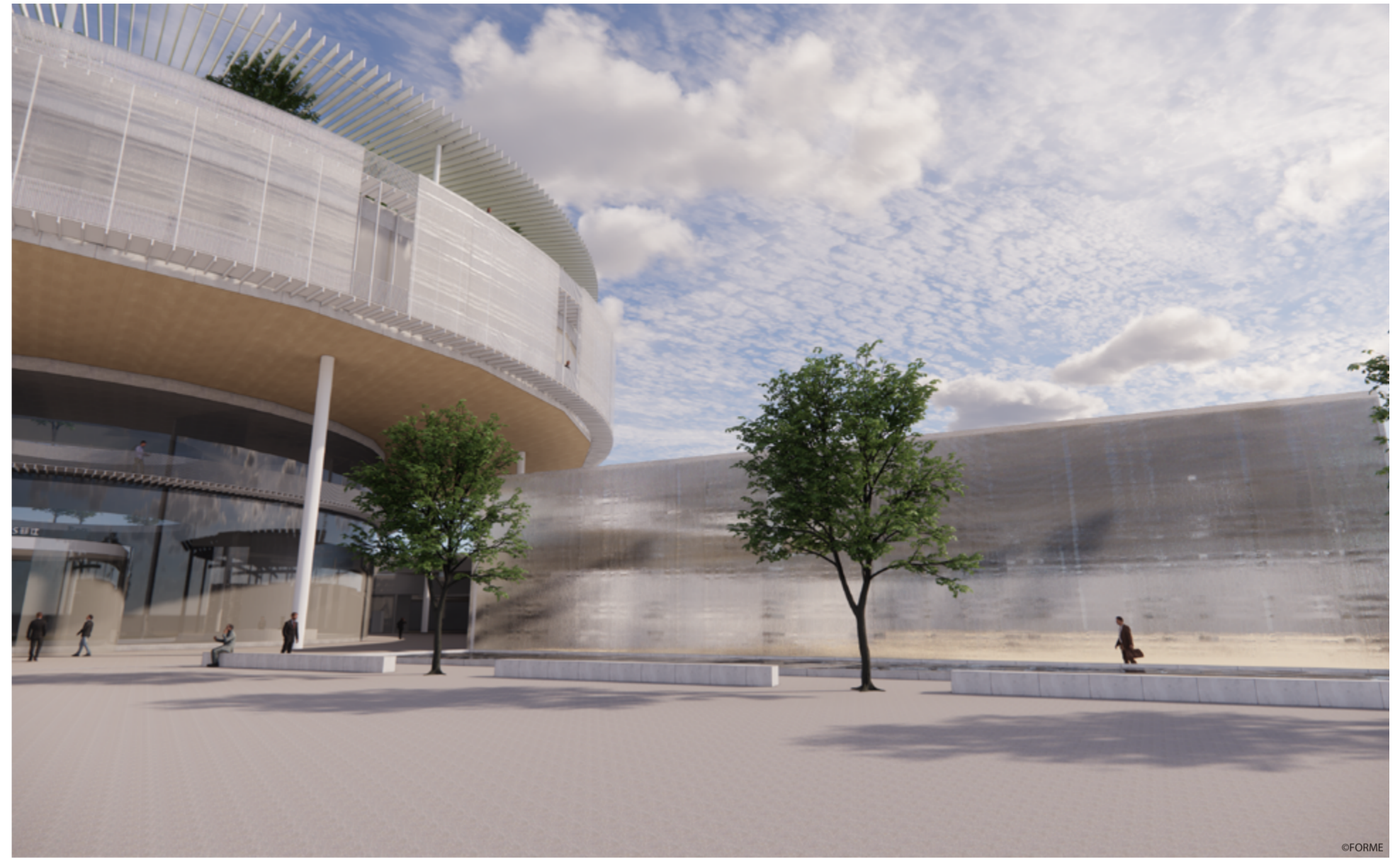
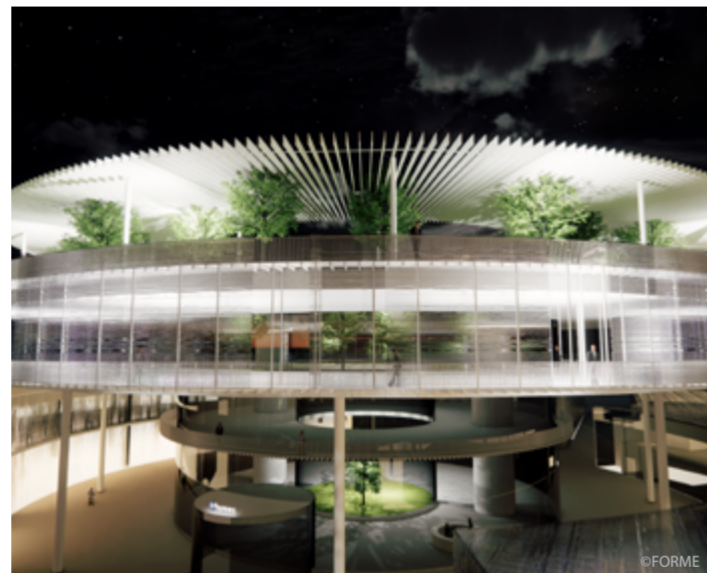
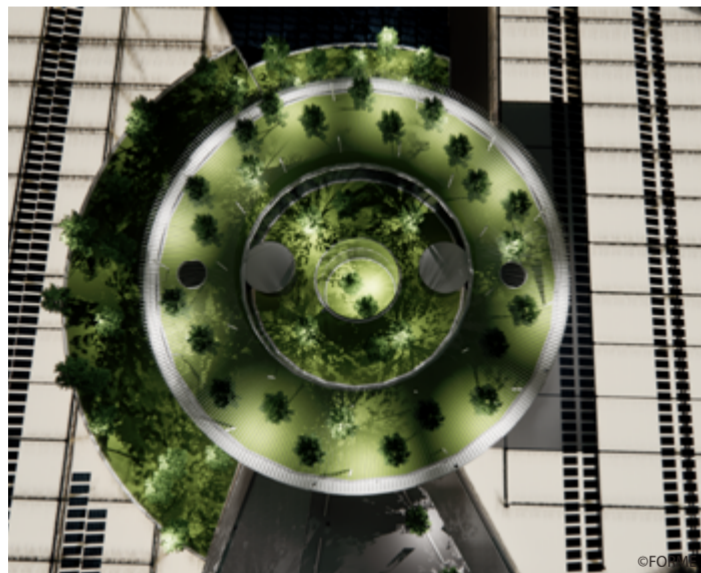


非传统屋顶的设计，镂空透视的屋面弱化了建筑结构的存在，在俯视视角下更像一个同心圆形花园，其中心便是大堂。

屋顶材质采用聚碳酸酯，并根据能源需求在一部分的屋顶上设计了太阳能光伏板系统。

The pattern of the rooftop's blades, in addition to shading the roof-top garden, creates a loss of perception of the building, which in the view of the area looks like a large concentric central garden that connects all the spaces up to the lobby.

The rooftop garden is characterized by skylight polycarbonate and, in according with the energy demands, a part of the roof is equipped by photovoltaic panel system.



浙中新能源汽车城市广场 Jinhua Newenergy Car City Square

中国 浙江省 金华市
Jinhua, Zhejiang Province, China

2022

Type
Commercial complex

Scope of Work
Main Designer

Surface
Land - 63,540 sqm
Usable Area - 123,901 sqm

近年来,中国在电动汽车创新领域已处于领先地位,而这也是概念设计的起点。

“浙中新能源汽车城市广场”项目位于金华市汽车文化区,是未来生态可持续城市新概念具体化的实验范例。

项目的出发点是实现常规商业空间的思维重构,不是单纯的增加建筑体量,而是更加注重道路、空间、光线和能源效率的融合。

该项目涉及了建筑和汽车技术的一个共同主题:“能量是如何转换的?摩擦力是如何被影响的?”

在汽车领域,我们经常听到空气动力系数(Cx),这是提高车辆总体性能的一个要点。我们尝试将这一理念应用到建筑设计中,设计出鼓励人们穿行的空间,将功能与用户的舒适体验相结合。

针对这一问题,我们将项目在参数化建筑的数字文化中进行了实验和研究,模拟人体通过气体物质时产生的运动,并尝试建立空间模型,充分利于人体工程学,提升空间体验感。

为削弱项目使用者的疲惫感体验,设计不仅采用最常见的自然采光和通风技术,并且通过分析心理学特点,在建筑及细部轮廓上采用可实现心理放松的元素。

In recent years, China has shown itself to be a leader in the electric car innovation sector, aspect that was the starting point in the development of the Project.

Located in the current automobile culture district of the city of Jinhua, the new innovation center of the auto industry represents an example of concrete experimentation of the new concept of an eco-sustainable city of the future.

The design process starts with a total reanalysis and redefinition of the standard logic of the commercial space seen as a large massive volume organized in adjacent blocks, but focusing more on the importance of paths, spaces, light and energy efficiency.

The project touches on a common theme between architecture and automotive technology: "How does a body pass through a substance? How does friction affect?"

In the automotive world we often hear about the aerodynamic coefficient Cx, a fundamental aspect in improving the general performance of a vehicle. We have tried to apply this concept in architecture by designing spaces that encourage people to pass through them, combining the function with a comfortable experience for the user.

With regard to this issue, the project experiments and researches languages in the digital culture of parametric architecture, simulating the movements created by a body passing through a gaseous substance and trying to model spaces in order to favour ergonomics and the experience of use of the space.

The aim is to reduce the project user's sense of tiredness, exploiting not only the most common techniques of natural light and ventilation but by analyzing the languages of shapes that best play a relaxing role in human psychology.

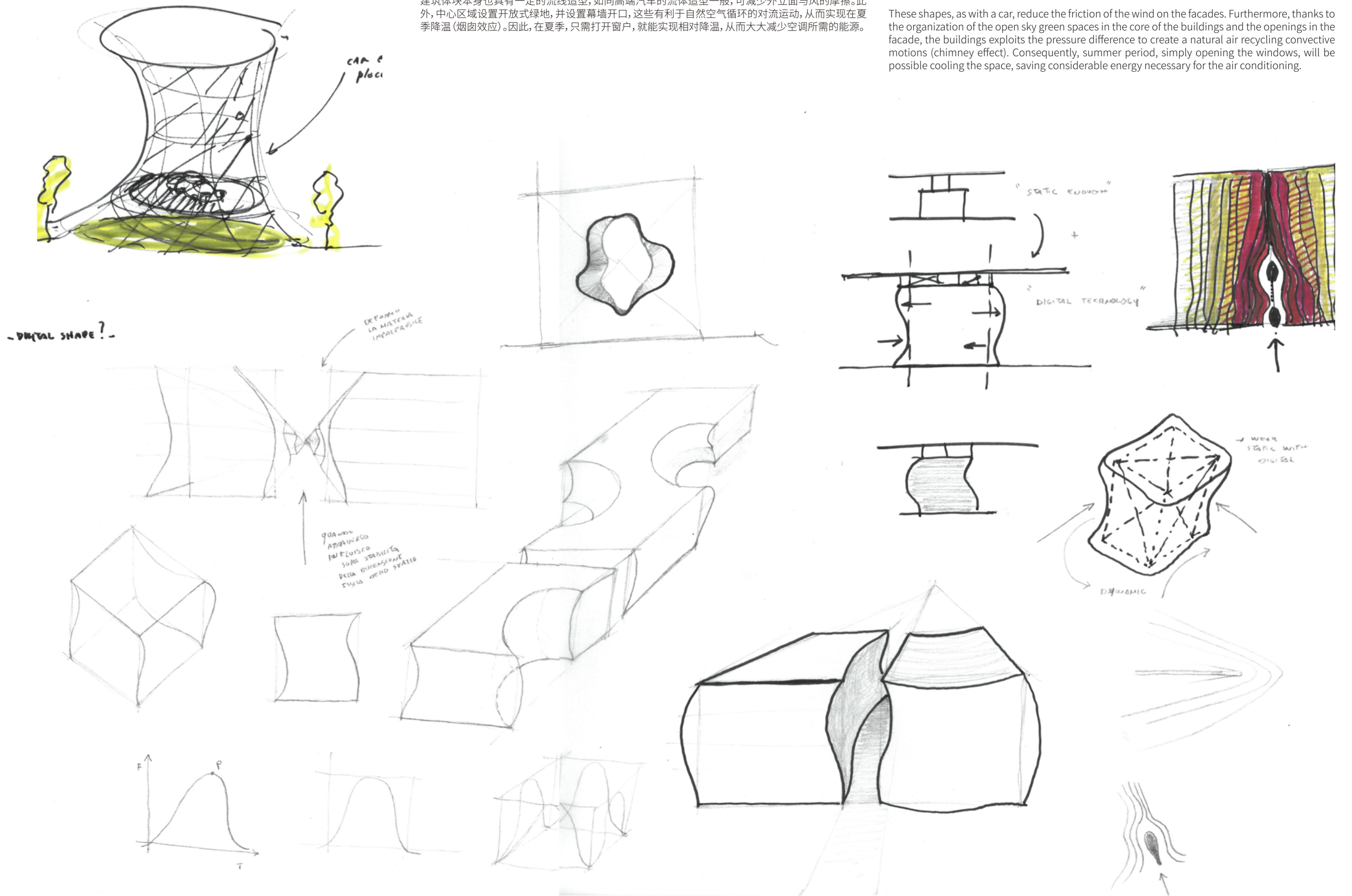


建筑的设计灵感直接来源于电机内部产生的磁场线条。

建筑体块本身也具有一定的流线造型,如同高端汽车的流体造型一般,可减少外立面与风的摩擦。此外,中心区域设置开放式绿地,并设置幕墙开口,这些有利于自然空气循环的对流运动,从而实现在夏季降温(烟囱效应)。因此,在夏季,只需打开窗户,就能实现相对降温,从而大大减少空调所需的能源。

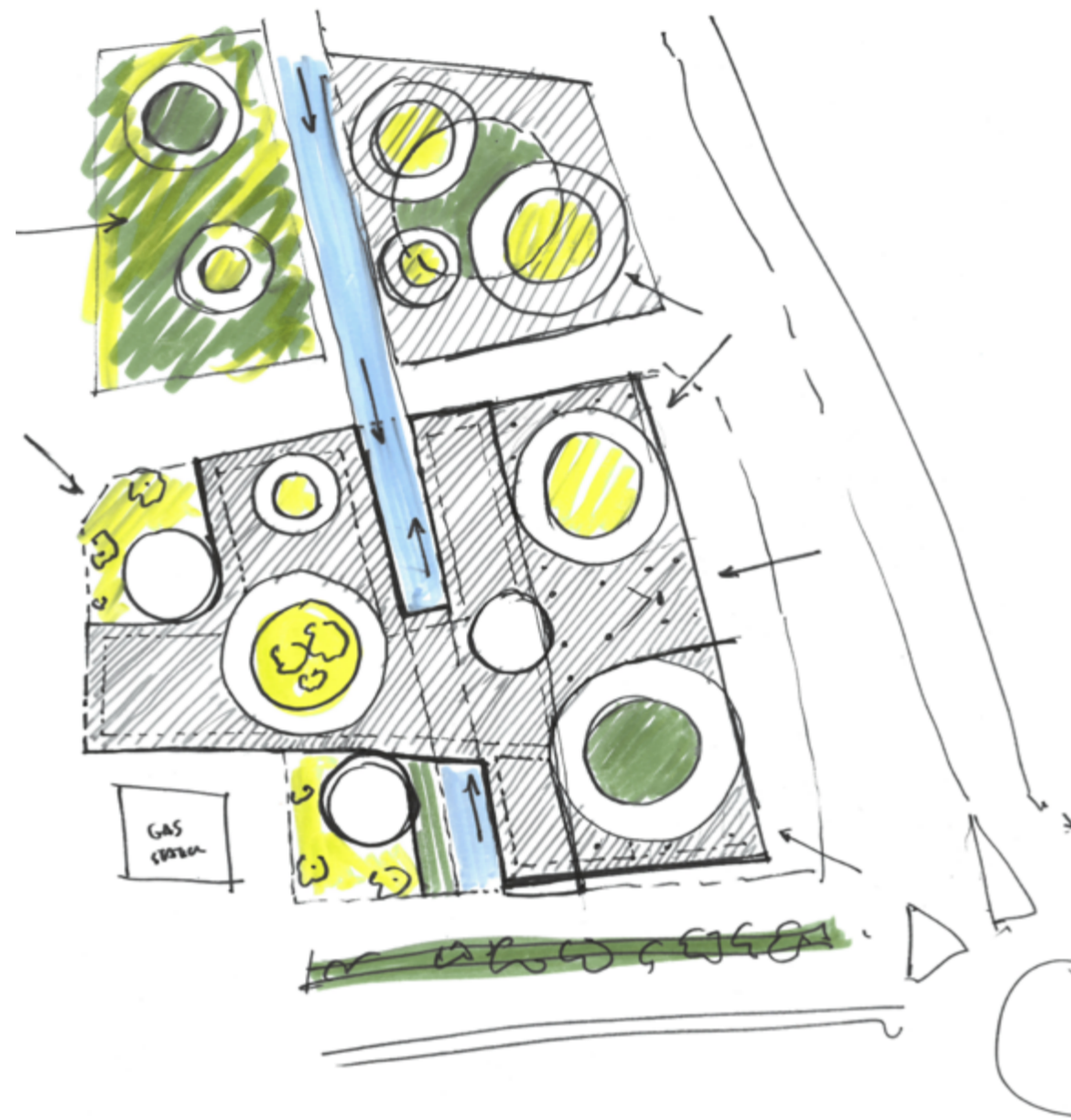
Directly inspired by the lines of the magnetic fields that are generated inside an electric motor, the languages of the main buildings are born.

These shapes, as with a car, reduce the friction of the wind on the facades. Furthermore, thanks to the organization of the open sky green spaces in the core of the buildings and the openings in the facade, the buildings exploits the pressure difference to create a natural air recycling convective motions (chimney effect). Consequently, summer period, simply opening the windows, will be possible cooling the space, saving considerable energy necessary for the air conditioning.



一个多功能、完全灵活的空间,是项目的舞台和中心:通道可以涵盖新车型展示台的功能,也可以作为试驾专用场地、展览空间、摄影和商业布景等。

The elevated driveway becomes a multifunctional and totally flexible space, the stage and the attractive center of the project. In fact, it can cover the function of space dedicated to the exhibition of new models, or a place dedicated to driving test, an exhibition space, a set for photo shoots and commercial videos...etc.

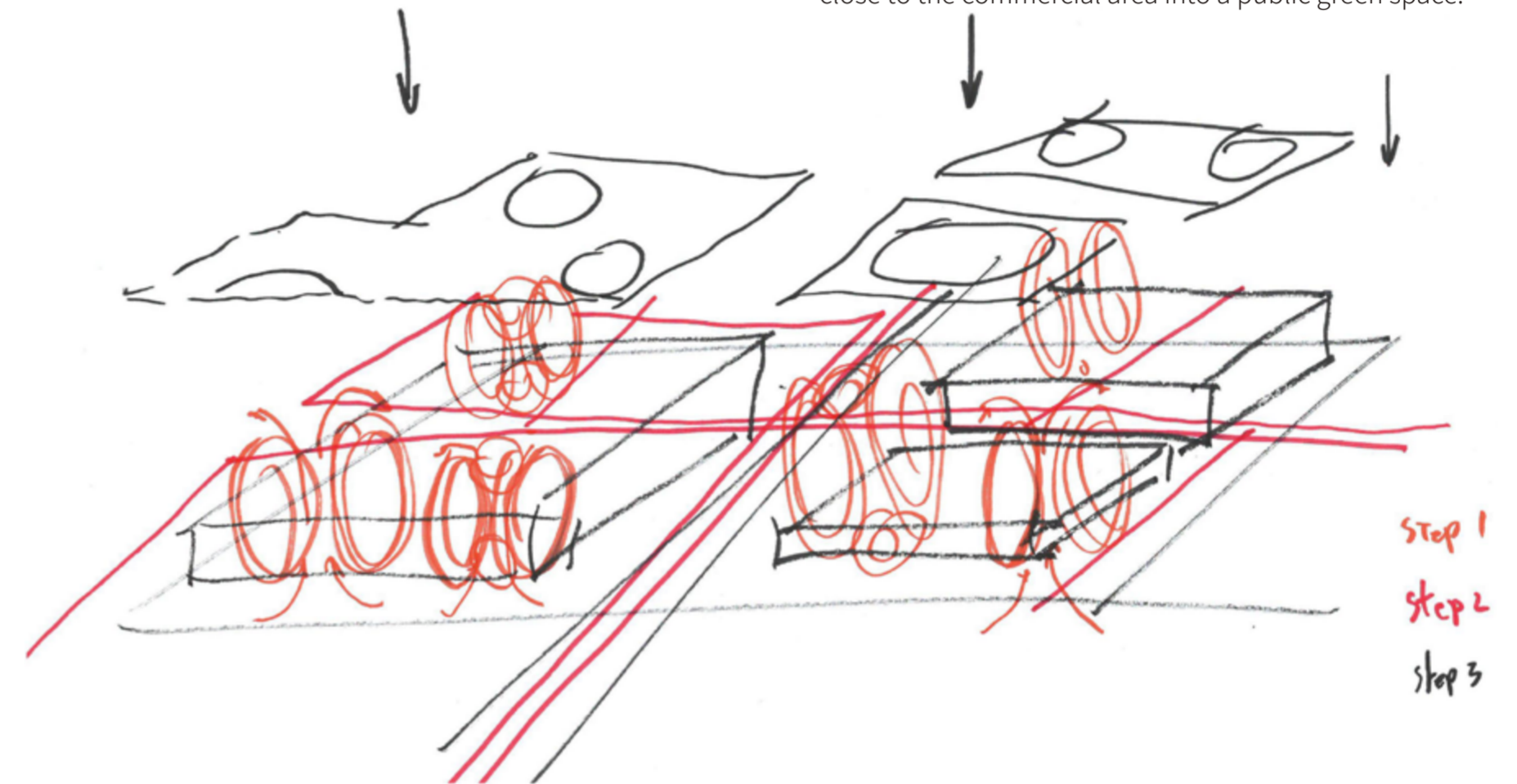


展览中心和项目的其他功能区通过使用光伏板搭建的大型遮阳屋顶相互连接,保证了项目日常使用所需的能源。

“绿色屋顶”,大大增加了屋顶的保温隔热能力,控制建筑的能耗,并将毗邻商业区的大片区域打造成了公共绿地。

The exhibition centers and the other function of the Project are organized and connected to each other through the large sunshades roof created using photovoltaic panels, which will guarantee the self-sustaining energy necessary for the daily use of the project.

Energy consumption is controlled thanks to the green roofs of the buildings which transform the large space close to the commercial area into a public green space.





浙江康静医院升级改造

Comgin Zhejiang Hospital Renovation

中国 浙江省 杭州市拱墅区
Gongshu District, Hangzhou, Zhejiang Province, China

在设计过程中, 建筑师常常因其个性和身份而形成其强烈的建筑风格, 引导建筑解决方案和风格。然而, 在这个具体的项目中: 改造一家主要为老年病人服务的医院, 设计意图发生了变化, 不再是为了客户或者个人喜爱, 而是为了他人、为社会、甚至是为城市。

本着这种精神, 在设计项目时寻求的目标不是吸引人, 而是能够传递宁静和舒适的设计。

首先, 非木从工程技术角度对大楼进行研究: 通过分析大楼目前随时间而产生的一系列问题, 优先解决结构型病理问题。第二种更具实验性的方法则是研究空间的使用者——养老病人, 因为病人住院时间长, 需要创造一个更类似于家庭氛围, 而不是普通公立医院的环境。

该项目还旨在通过建立明确的路线和完全的人流分离来提高服务质量。人流分离从室外的专用交通路线和通道开始, 一直延伸到内部人流通道。路线系统从确定各种人流类型开始, 这些用户可如下简单区分: 住院病人、门诊病人、急诊病人、医院工作人员、来访者、物资运输。要解决这种分流问题, 既要确定各种类型人员的专用楼层, 又要创建完全独立的连接点。

提升改造工作是在不拆除主要原始结构和不影响日常运作的前提下展开, 通过局部干预实现的, 主要包括四个部分: 外部花园, 重新设计时考虑了人流的划分, 改善了项目与城市之间的联系; 一层大厅, 作为医院的入口, 可供从外面进入医院的人使用, 主要用于门诊、急诊、药房和小商铺; 住院楼层, 对病房和公共区域进行了仔细研究, 以最大限度地提高舒适度, 并注意使用易于消毒的材料; 位于大楼顶层的商务休息室和管理办公室同样注重舒适性, 创造宽敞的空间和绿色露台。

康静医院在全国范围内尝试走一条更具创新性的道路, 不拘泥于过去几十年来医疗保健规划所使用的常规解决方案, 而是通过创造一个更有个性的舒适场所来改善所提供的服务。

During the design process, the architect sometimes represents an eclectic figure with a very strong personality, who influences design solutions and styles with his own decisions and taste. In this specific case, the renovation of a hospital, intended mostly for elderly patients, the roles changes. Design is no longer designed to please oneself or the client, but must be designed for others, for society, for the city.

With this spirit, FORME has approached the project, seeking an objective, not a design capable of attracting, but a design capable of transmitting serenity and comfort.

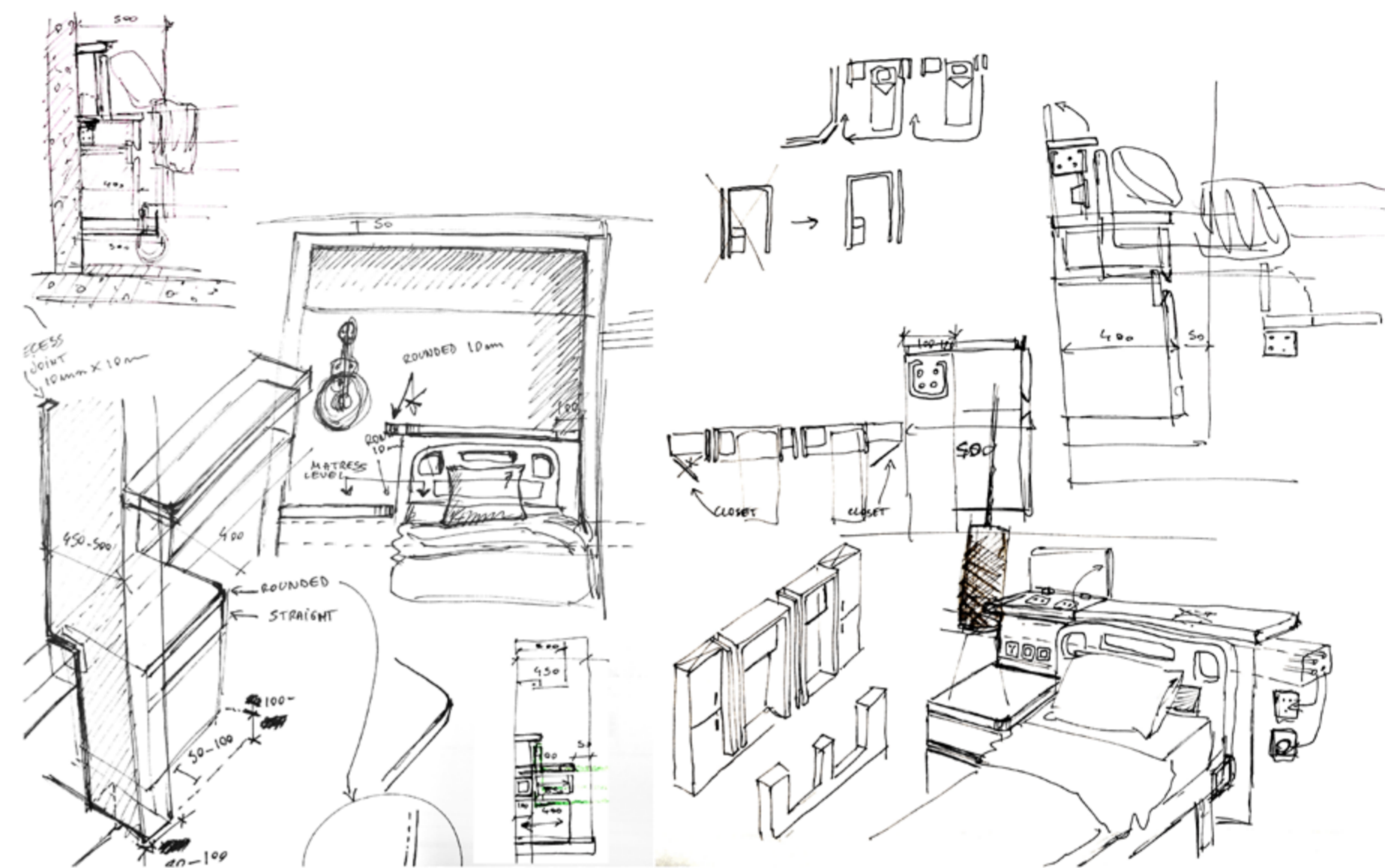
As an initial approach FORME decide to study the building with an engineering and technical attitude: through analyzing the existing problems of the building, deteriorated over time, giving priority to the resolution of the pathologies of the structure. A second more experimental approach was to study the users of the space, the patients, realizing that the long hospitalization times required the creation of an environment closer to the reception of a home than to a public health environment.

The Project also aimed to improve the quality of the service offered by establishing a clear hierarchy of routes and a complete separation of flows. The separation begins from outdoor via dedicated transit routes and accesses and continues in the internal flows. A first schematization in the route system starts from the identification of the various types of users who can be briefly described as follows: inpatients, outpatients, emergency, hospital staff, visitors, materials transportation. This differentiation is resolved both with the identification of levels dedicated to the various types of flows and with the creation of completely separate connection nodes.

The renovation was carried out by intervening locally, without ever interrupting the operation of the structure, and involved 4 main parts: the external garden, which was redesigned thinking about the division of flows, improving the connection between the project and the city; the ground floor, which coincides with the access point to the hospital for those coming from outside, has been dedicated to outpatients, the emergency, pharmacy and small refreshment points; the inpatients floors, for which a careful study of the patient's room and common areas was carried out, in order to maximize comfort, taking care to use easily sanitized materials; the business lounge and management offices, located on the top floor of the building, also focus on comfort are characterized by large spaces and a green terrace.

Comgin Hospital, on the national scene, seeks to follow an innovative direction, which does not take refuge in the usual solutions used in past decades for healthcare planning, but seeks to improve the service offered by creating a comfortable place with greater personality.





空间轮廓专为病人良好的体验感而设计。房间被定义为一个私密、宜人的空间，色彩和材料的选择营造“家”的氛围感，提供最大的舒适度。

In shape and space, the room dedicated to patients is conceived as private and welcoming with a selection of colors and materials that recall "home" and offer maximum comfort.



公共区域的设计给予空间多功能可能，可以适应院方所需的不同活动类型空间。

The common areas are designed as multifunctional and adaptable to the different activities of the structure.



月下餐厅

Villa Moon Restaurant

中国 浙江省 杭州市拱墅区

Gongshu District, Hangzhou Province, Zhejiang, China

月下Villa Moon的品牌诞生于业主简单而又浪漫的梦想，希望创造一个有美食，美景，美酒，还有三五好友在旁，可以从繁忙的生活中抽身，享受到另一种人生的独立空间。在交流中，业主多次提及唐代诗人李白的一首《月下独酌》中描绘的场景。受此启发，概念围绕“月”这一元素展开。非木从中国园林建筑中选取各种元素，月亮门，窗花，格栅，并选用能贴合中式建筑韵味的现代材料，包含了混凝土，长虹玻璃，超白玻璃和黑色钢制边框的组合等，根据实际需求，打造出了一个运用现代手法演绎的富有中式精神的项目。

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设计延续的平衡

项目位于大兜路历史街区，街区最南侧为浙江省重点保护建筑香积寺，自2009年起，以香积寺为起点，整个街区都逐步进行了改造，并且最大程度上保留了具有中国传统江南建筑的外观。

在这样一种充满文化和历史沉淀的街区内，建立一个展现业主风格的建筑改造项目是具有挑战性的。

整个历史街区，从南向北呈现出一种由“中而古”到“中而新”的趋势。而以历史街区为中心，辐射发展，周边建筑又以现代建筑为主。而项目位于历史街区的北部，面朝丽水路，在感官上是现代和传统的分界线。因此，我们将建筑划分为两面，一侧面向历史街区内部道路，保留传统建筑的粉墙黛瓦，一侧面向丽水路，进行现代手法处理，融合餐厅特色和中国古建元素。

这种处理手法，不仅让项目在一众传统外立面房屋中脱颖而出，并且成为了一道连接城市商业区域和文化历史区域的桥梁。在城市空间找到了自己的定位和平衡。

中国古建的现代演绎手法

我们从最直观的建筑材料开始思考：是怎么样一种材料，能搭建起传统审美元素和现代建筑材料的桥梁？

中国的建筑和景观向来是充满野性的，生机的。中国人的审美观念里爱的不是粉墙黛瓦这种具象的美，而是“桐叶疏疏苔壁青”这种富有时间纹理的意境的美。所以我们想到的第一点就是在建筑现有的元素里，找到能代表这所房子在时间轴上存在的证据。

在进行现场考察的时候，我们发现这所房子是在居民区比较常见的框架式混凝土仿古建筑，没有典型的木结构元素。但是原有的混凝土浇筑质量较为出色，表面平整且纹理自然。在进一步移除饰面后，混凝土表面上的各种开洞，刮痕逐渐暴露。这是可能是结构上的不完美，但是在能够确保房屋结构安全的前提下，我们选择保留这些不完美，因为它们记录了这个房子用途演变的点点滴滴，正是我们寻找的时间的沉淀。

老房子的延续

中国传统建筑其实有着十分浓重的制式化的影子的，例如，建筑中对于结构的布置，又或者是窗户的长宽比例和定位都颇有讲究。因此，新结构和立面的设计是立足于这种潜在规则的。也正是因为这种潜在的秩序，让不同的设计语言得以在项目中共存。

南立面窗户的原始布置有点丢失了中国传统建筑的精神，在历史街区内显得比较突兀。为了不涉及过多的拆除和重建，在北侧立面上采用了一种极简但是百搭的设计，从内部，极简的窗框和外部的风景也为室内空间构建出了一种画布的效果。

餐厅北侧的场地是一块和历史街区共享的公共区域，然而和内部对应的也是主要的就餐区域，在和政府沟通后，也了解到以后这块区域将被设置为园区的主要出入口之一。所以在北侧幕墙，我们认为需要在室内外做出一定程度的隔断，在提供给客人安静就餐空间的同时，给园区入口处创造一个较为和谐的场景。由此，双层幕墙的概念被加入到项目中来，利用窗花的元素，在玻璃幕墙前打造了一层木制隔断。在夜晚，室外地面上也将呈现出窗花和室内灯光创造出的阴影。

Villa Moon was born from the simple but romantic dream of the owner, hoping to create a place with tasty food, beautiful scenery, delicious wine, and three or five friends. A space where people can get away from the busy life and enjoy the totally different life experience. During the Project development, the owner repeatedly mentioned the scene depicted in the poem "Drinking Alone under the Moon" by Li Bai, a poet in the Tang Dynasty. Inspired by this, the renovation revolves around the element "moon". FORME selects various elements from Chinese architecture, such as moon doors>window, grilles, creating a contrast with modern materials that can fit the charm of Chinese architecture, as for example: concrete, reeded glass, ultra-white glass and black steel frame. The result was the creation of a project full of Chinese spirit that uses modern methods to create a contrast between tradition and innovation.

Balance of Style Evolution

The project is located in the historical block of Dadou Road. The southernmost side of the block is the Xiangji Temple, a key protected building in Zhejiang Province. Since 2009, starting from the Xiangji Temple, the entire block has been gradually renovated, with interventions that allowed the cultural heritage to be adequately preserved.

In such a cultural neighborhood, create a building renovation project that reflects the owner's style was challenging.

The entire historical district shows a trend from "Chinese and ancient" to "Chinese and new" from south to north. With the historical district as the center, the development radiates, and the surrounding buildings are mainly modern buildings. The project is located in the northern part of the historic district, facing Lishui Road, which is the boundary between modern and traditional in the senses. Therefore, we divided the building into two sides, one side faces the inner road of the historic district, retaining the traditional white walls and black tiles, and the other side faces Lishui Road, integrating the characteristics of a modern restaurant with the elements of ancient Chinese architecture.

This approach not only makes the project stand out among the common houses, but also becomes a bridge connecting the city's commercial area to cultural and historical areas, founding its own harmonic positioning in the urban space.

Modern Interpretation of Traditional Chinese Building

The design process started to thinking about the material: what kind of material can build a bridge between traditional aesthetic elements and modern building materials?

Chinese architecture and landscape have always been full of wildness and vitality. What Chinese people love in their aesthetic concept is not the figurative beauty of white walls and black tiles, but the beauty of the artistic conception full of textures cause by time, such as tung leaves sparse moss and green walls. So, the first thing that came to our mind was to find an existed elements in the building which is the evidence that could represent the existence of this house on the timeline.

During the site inspection, we found that this house is a framed concrete antique building that is more common in residential areas, without typical wooden structural elements. However, the quality of the original concrete was good, with a smooth surface and a natural texture. After the removal of the existing finishing, the porous concrete surfaces and scratches were gradually exposed. These elements could in some contexts represent imperfections. After verifying that the structure was safe, we decided to keep these imperfections, as signs of the evolution of use of the house, their expressiveness transmits the historical perception of the time that we were looking for.

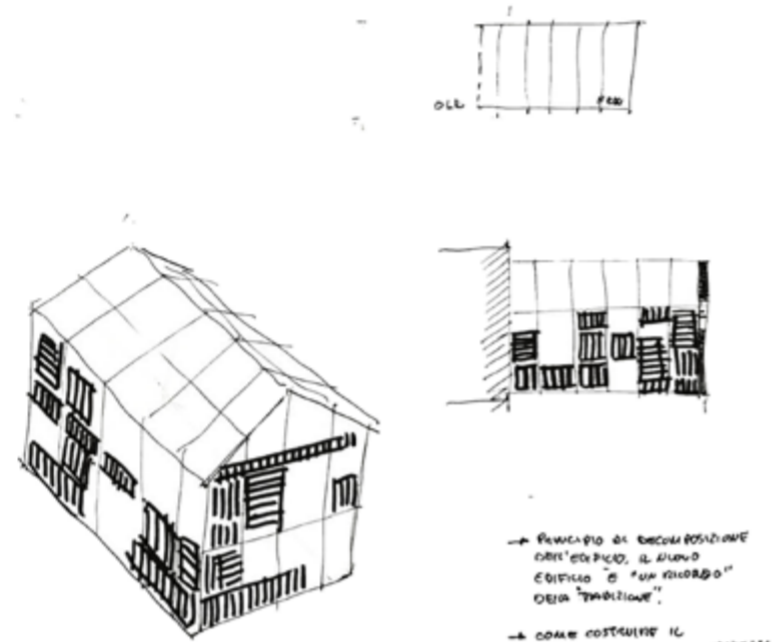
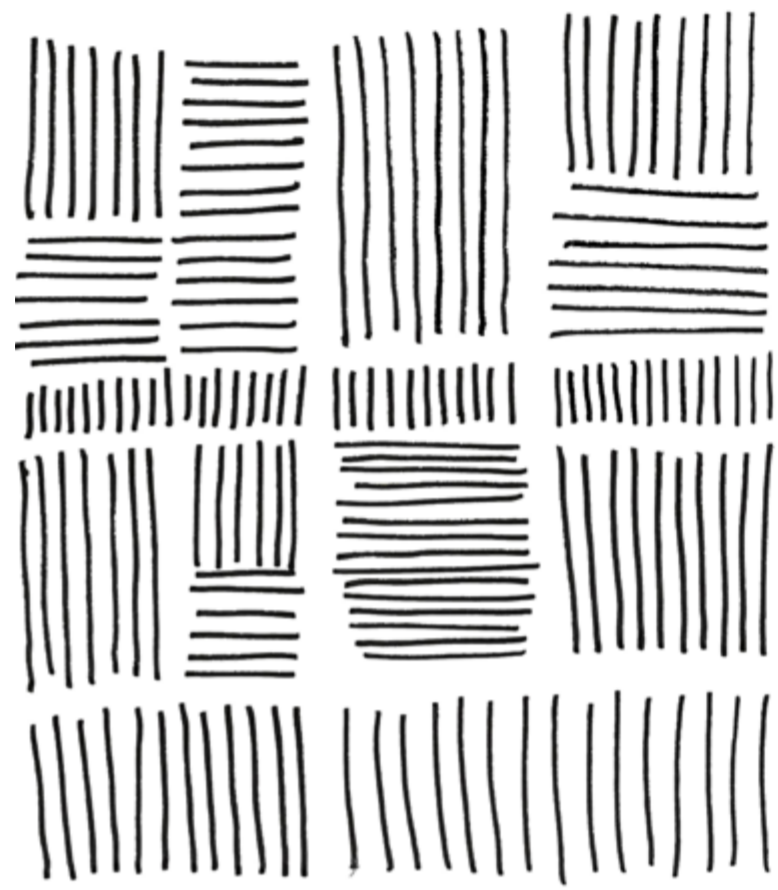
Improve of the Old House

In fact, traditional Chinese buildings are quite standardized. For example, the layout of structures, or the length width ratio and positioning of windows in buildings are quite defined. Therefore, the design of the new structure and facade is inspired on this potential rule, benefit from this potential order that different design languages can coexist.

The original layout of the windows on the south facade has been restored in accordance with the spirit of traditional Chinese architecture, quite prominent in the historic district. On the other hand, in order not to involve too much demolition and reconstruction, a minimalist and versatile design was adopted on the north facade. From the inside, the thin windows frame combined with the harmonious external landscape creates a "canva" effect for the user (perception of the windows as paintings).

On the north side of the restaurant is a public area shared with the historical district. Communicating with the local government, we also learned that this area will be set as one of the main entrances of the historical district in the future. Therefore, in the North elevation we have created a visual partition between indoor and outdoor, also as to create a more harmonious screen on the entrance of the historical district while providing quiet dining space for guests. Thus, the concept of double facade was added to the project, and a wooden partition was created in front of the glass curtain wall by using the elements of traditional Chinese window grilles. At night, the outdoor ground will also show the elegant shadows created by window grilles and indoor lights.





→ PRINCIPIO DI RECUPERO
 DELL'EDIFICIO, IL NUOVO
 EDIFICIO È "UN MORGHO"
 DELLA "TRADIZIONE".
 → COME COSTITUIRE IL
 PIANO → CON LA TRADIZIONE
 C'È IL MORGHO? E C'È IL
 C'È IL MORGHO? OMO STAFFO
 → GLI ELEMENTI IN CERNO
 SONO DI RECUPERO,
 RACCOMIARE E RICRIARE
 DA PUNTO CHE "È SOTTO"
 → "MORGH" CHE
 RISTORARE PER
 NUOVO PROGETTO
 IL "MORGH IN CERNO"
 DI CACCIA DI RICERCA
 PER C'È IN UN MORGHO

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Villa Moon Restaurant ©SALOME STUDIO



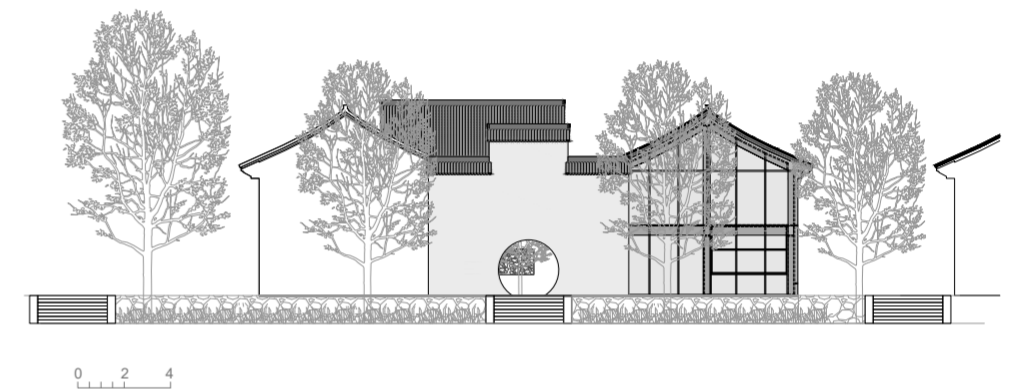
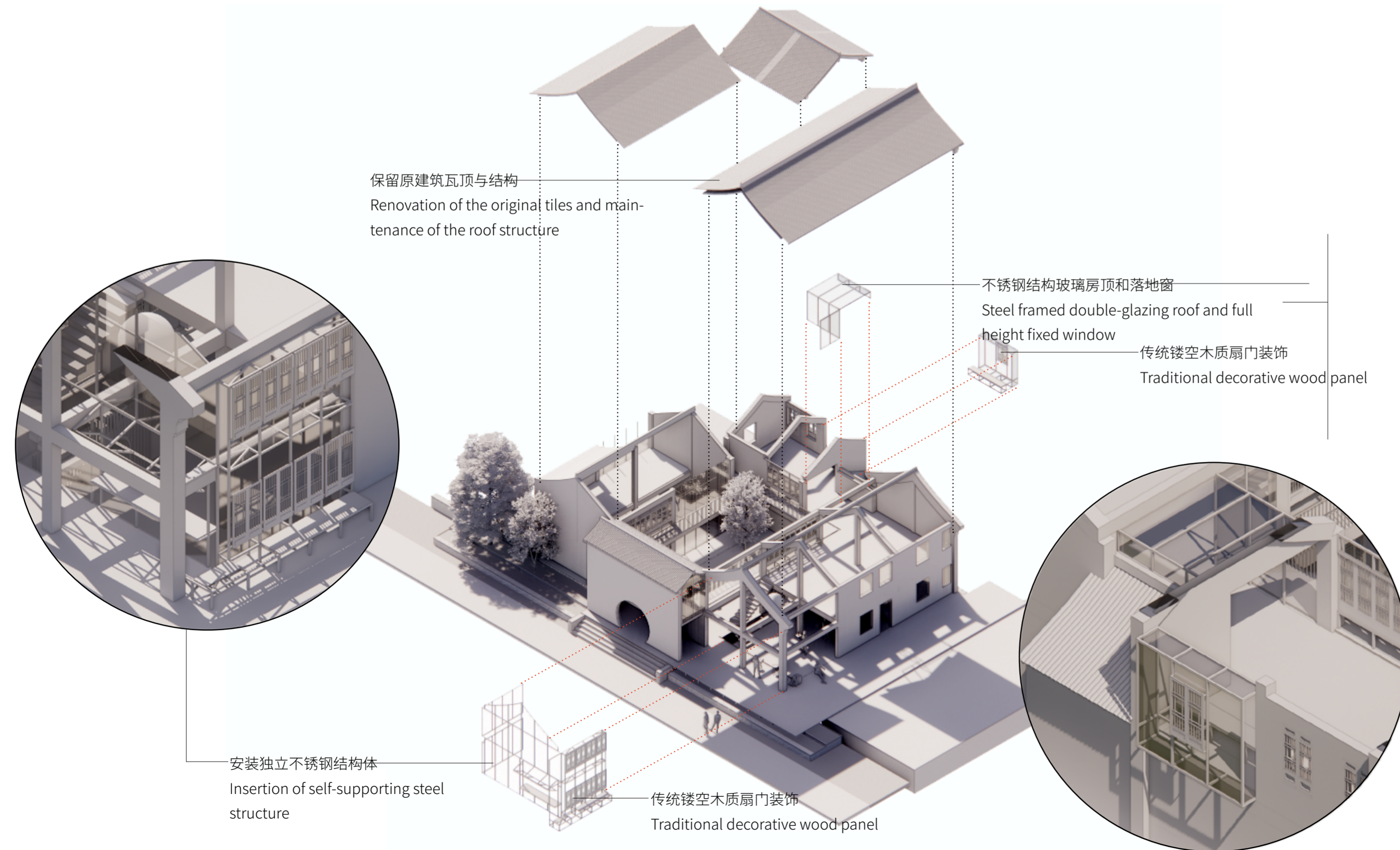
Villa Moon Restaurant ©FORME



Villa Moon Restaurant ©SALOME STUDIO



Villa Moon Restaurant ©FORME

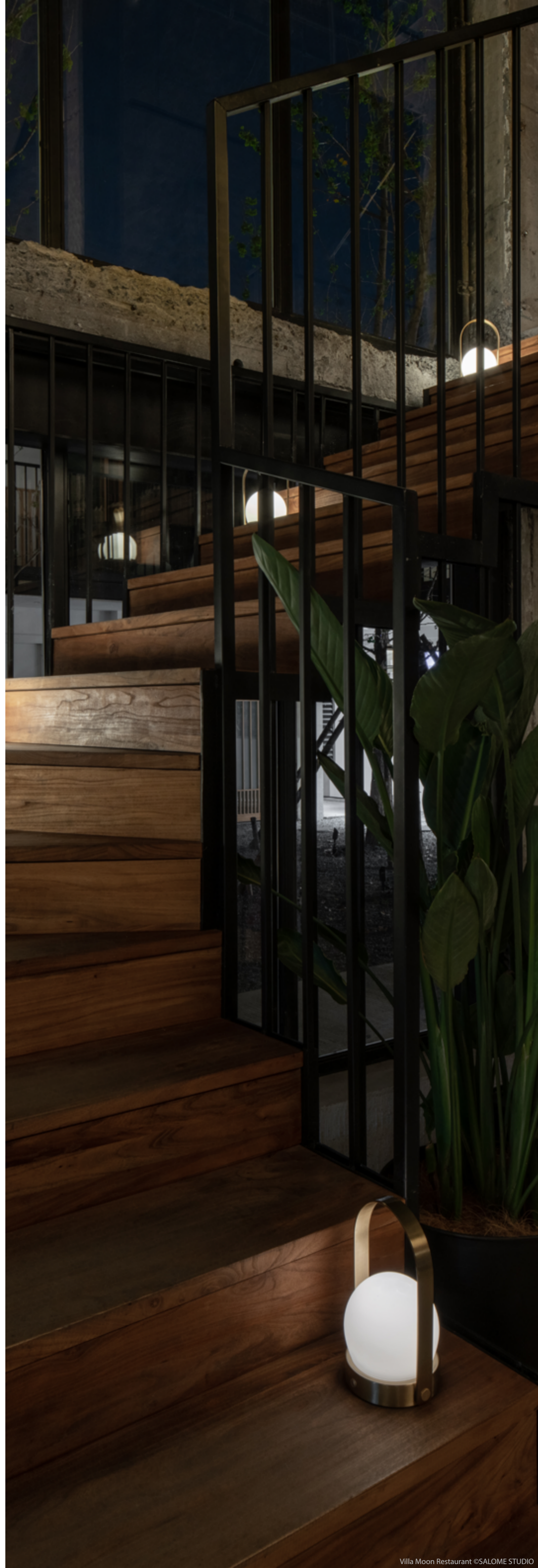


室内和装饰的材料选择遵循一个标准，就是体现材料的自然纹理：拉丝钢、抛光混凝土表面、石灰灰泥、不同纹理的木材和玻璃，它们的共同目的是营造一个真实而非人工的环境。

纹理灰泥的应用是为了使内部和外部铺装中所用混凝土的粗糙感保持连续性。同样，在中央庭院中选择砾石和粗糙的表面铺砌，意在创造一个与杭州景区内景观充满生命力的感觉产生联系。

The mood board inspiring the interior and soft design was born from the idea that, in this project, all the materials had to express "naturalness": brushed steel, polished concrete surfaces, lime-based plasters, wood and glass with different textures, they have the common purpose of building an authentic and not artificial environment.

The applying of brushed texture plaster is to give continuity with the rough feeling of concrete which applied in interior and the exterior paving. The same to gravel selected for the outdoor flower beds and rough surface paving in the central courtyard, and intended to create a wild landscape connecting to the Hangzhou identity.



中国京杭大运河博物院二期(暂名) Grand Canal Museum (Hangzhou)

中国浙江省 杭州市拱墅区
Gongshu District, Hangzhou, Zhejiang Province, China

客户

中国建筑第四工程局有限公司

Client

Chian Construction Fourth Engineering Division
Corp. Ltd.

设计

赫尔佐格与德梅隆

Designer

Herzog & de Meuron

中国京杭大运河博物院二期位于杭州市,由赫尔佐格和德梅隆工作室设计,地处京杭大运河南端。京杭大运河是一条连接中国南北,长达1800公里的人工运河。

大运河博物馆群位于连接大运河和杭钢河与杭州北部其他大型城市发展区的主干道上,具有举足轻重的战略地位。博物馆三面环水,一弧形建筑立面沿河展开,“在项目主题和叙述者之间创造了视觉和材料的对话”。地块东侧是一个大型山形会议中心——酒店群,体现了“前水后山”的中国古典思想,与城市和自然环境直接相关。

山形塔楼的外立面材料采用超高性能混凝土(UHCP)预制构件,与博物馆外立面呼应,完善建筑元素和细节。

Museum complex located in the city of Hangzhou, designed by the Herzog & de Meuron studio, at the southern end of the Beijing-Hangzhou Grand Canal, an 1800 km artificial linear water system that connects northern and southern China.

Located on the main artery connecting the Grand Canal and the Hanggang River to other large urban development areas in Hangzhou's north, the Grand Canal Museum Complex has a strategic pivotal position. Surrounded by water on 3 sides, a bold structure with a curved façade houses the museum and faces the river, creating a visual and material dialogue between the subject and its narrator. Anchored by a large mountain-shaped conference center-hotel complex on the east side of the plot, embodying a classic Chinese ideal of "water in the front, mountain in the back", the project is directly in relation to the city and the natural environment.

Juxtaposed to the museum facade to complete the architectural elements, the material of the "Mountain" facade will be made of prefabricated high-performance concrete (UHCP) elements.

2022-Under Construction

Scope of Work

Design and Consulting on Concrete Materials

Surface

49,800 sqm

Photo Copyright

FORME

Herzog & de Meuron





Material details ©FORME

表现力与建筑饰面效果 Expressiveness and superficial architectural effect

非木认为对概念背后的建筑思想的完美理解是其工作方法的关键点。这一阶段被称为“设计理解”，在这一阶段，我们对概念所表达的风格、意义和传递的信息进行自我提问和解答。

这其中，最重要的是找到合适的纹理深度以及表面色调的恰当比例和对比度。这些待解决问题促使工作室深入研究施工技术、板材类型、供应商等，并尝试将艺术和印刷领域的技术应用于建筑领域。

在与赫尔佐格和德梅隆工作室密切合作下，该项研究之结果不仅仅是创造了一个装饰元素，而是创造了一个“作品中的作品”，即使是一块预制挂板，也保留和传达了整个项目概念设计的初始意义。

FORME considers the perfect understanding of the architectural idea underlying the Project to be a key point of its working method. During this phase, called "Design understanding", we question ourselves about the stylistic aspects, meanings and communicative objectives that have been expressed through the concept.

Among these meanings, important for the Project was finding the right level of texture depth and the exact proportion and contrast of the surface tone. These aspects pushed the studio to further investigate the execution techniques, the type of panel, the suppliers and experiment with techniques drawn from the world of art and printing applied to construction.

The final outcome, developed in a close collaboration with Herzog & de Meuron, is the creation, not of a simple decorative element, that is an integral part of the project, but of a work within a work where even the single panel maintains all the initial meanings of the concept.



Work Process ©FORME



Material details ©FORME

几何复杂性和生态可持续性 Geometric complexity and eco-sustainability

非木作为项目技术顾问，负责有关混凝土构件相关的工程设计和解决方案，参与了对涉及预制和现浇混凝土元素相关问题的深入设计与技术分析。该项目最需要研究的目标当然是大型中央建筑“山形塔楼”的立面，其几何复杂性相当突出。

“该项目在现实中如何实施？如何在施工过程中不失去建筑概念的意义？”

针对这一问题，非木通过研究使用单一配合比完成面积约 28,550 平方米的超高性能混凝土挂板的制作，同时该配比满足两个重要要求：自然的效果和生态可持续性。这些混凝土挂板的几何形态都经过精心设计，既尊重了建筑设计的要求，又保持了与现浇混凝土一致的体量感和表达，呈现自然的饰面效果，同时不拒绝混凝土材料本身的自然缺陷，更加真实自然。

跨学科方法试图研究该项目的各个方面，特别是在中国市场上尝试以开创性的方式关注环境方面。这些挂板采用的配比中水泥含量明显降低，并用当地工业流程中的回收材料（高炉矿渣）替代，相对于同种类挂板，二氧化碳排放量可减少19%。

在该方面，结合预制技术的使用，以确切的方式来减少排放。因此不仅仅是关注建筑的能源消耗，而是从施工阶段便开始专注于生态可持续性的理念，其重要程度具有不容忽视的影响。

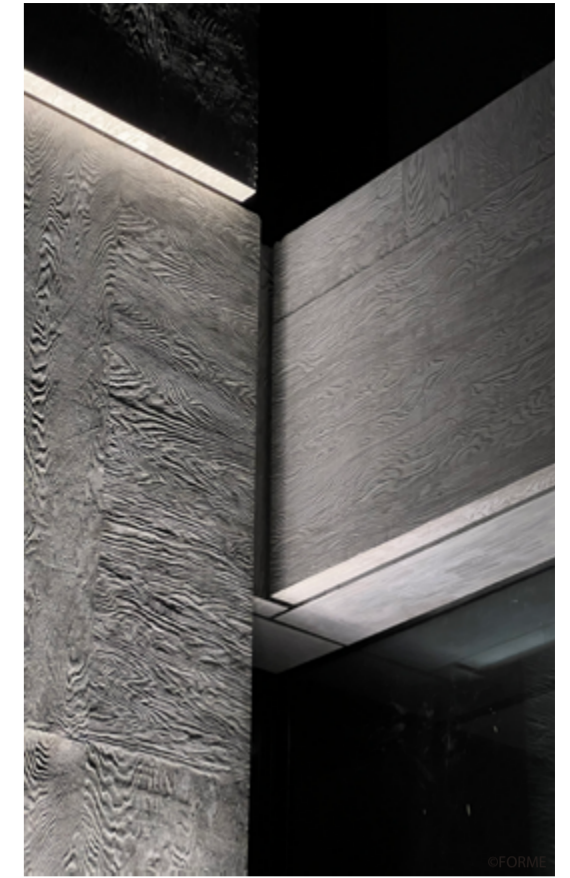
FORME has been selected as a consultant for the development of technical design and solutions regarding the architectural concrete elements of the Project, which concern both prefabricated and cast-in-situ elements. The project element that required the most study was certainly the façade of the large central building "the Mountain" characterized by notable geometric complexity.

"How to implement the project in reality? How not to lose the meaning of architecture in the engineering process?"

In response to this question, FORME sought the solution through the use of approximately 28,550 m² of UHCP (Ultra High-Performance Concrete) panels, having a mix design capable of responding to two important requirements: naturalness and eco-sustainability. The panels carefully designed in their geometry and shape, in order to respect the architectural indications and maintain the solid geometric appearance of the concrete cast on site, maintain an authentic surface, with the correct quantity of natural defects that are specific to the concrete and which make it authentic.

The interdisciplinary approach has studied all Project's aspects, in particular, in a pioneering way in Chinese market, we were also focus on the environmental aspect. The panels, made using a mix with a significant reduction in the cement replaced by recycled materials from local industrial processes (Ground Granulated Blast-Furnace Slag). In this way it was possible to reduce the CO₂ emitted during the construction process by 19%.

This aspect, together with the use of the prefabrication technique, allows a concrete approach to reducing emissions, not only therefore focused on the energy consuming of the building, but starting from the construction phases, which represent a non-negligible portion of global emissions.



上海真如境剧院 Shanghai ZHEN RU JING No. 6 Theatre

中国 上海市普陀区
Putuo District, Shanghai, China

客户

上海清水砼科技发展有限公司

Client

Shanghai Qingshui Concrete Technology Development Co., Ltd.

设计

北京市建筑设计研究院

Designer

Beijing Institute of Residential Building Design & Research Co., Ltd.

上海真如境6号地块剧院项目的特点是建筑体量的几何复杂性,这使得项目的实施尤为复杂。

最基本的一点是配合比设计的稳定性,在不同几何形状的模板系统下,配合比设计必须始终保证适当的和易性、抗振性、抗离析能力和统一的颜色。

浇筑阶段的划分和对几何形态的工程设计研究是另一个重要点,在不同浇筑阶段,通过隐藏式手法实现不同阶段间连接处的流畅度,展现混凝土建筑的恢弘体量感。

非木负责对所有这些方面进行研发,概念设计的工程化和管控流程,再加上现场检查,忠实于项目概念设计,推进项目的落地。

The project of the ZHEN RU JING No. 6 Theater is characterized by the complex geometry of the architectural volumes which made its implementation particularly complex.

A fundamental aspect is represented by the stability of the mix design, which in the different geometric situations of the formwork must always guarantee the right workability, plasticity, color stability and resistance to segregation.

The pouring phases division and the geometry engineering represent another key aspect that allows the connection points hiding between the different pouring. In this way, we managed to convey the massiveness sensation, as if the architectural elements had been molded contiguously in a single imposing pouring.

FORME was responsible for developing all these aspects, engineering the initial concept and creating the control procedures which, together with the on-site inspections, allowed the faithful realization of the project idea.

2021-2023

Scope of Work
Design and Consulting on Concrete Materials

Surface
12,189 sqm

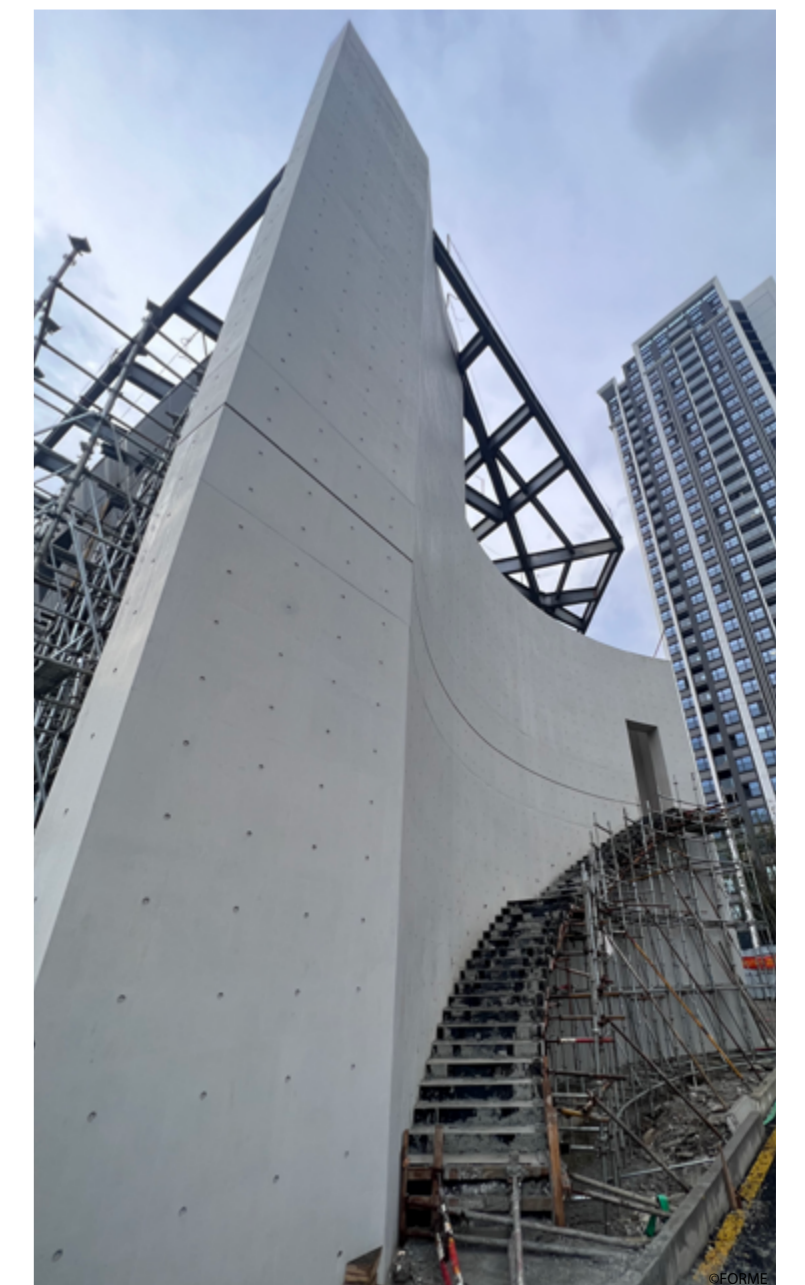
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表面的连续曲线以及对完美光滑表面的要求,代表一种很难都完美实现的双重困难,这就要求在设计阶段对细节进行深入研究,并在施工过程中采用非常严格的把控程序。

The continuous curves and the request for a perfectly smooth surface, represent a dualism difficult to combine and which requires extreme study of details in the design phase and very rigid quality control procedures during construction.



泰瑞机器全球总部 Tederic Headquarters

中国浙江省 杭州市钱塘新区
Qiantang New District, Hangzhou, Zhejiang Province, China

客户

精工工业建筑系统集团有限公司

Client

Zhejiang Precision Industry Light Steel
Construction Engineering Co., Ltd.

设计

非木

Designer

FORME

一直以来,开放式办公环境中的隔音都是室内设计专业高度关注的问题。非木设计工作室的研究旨在结合以下两个方面来解决这一问题:通过减少核心筒的装饰材料来践行经济和环境的可持续性,同时从声学角度设计具有吸音效果的自然纹理。

与亚洲传统的混凝土建筑不同的是,该项目将追求混凝土完美的细节放在了次要位置,转而采用简单、创新的解决方案,一个非常规的处理手法。一般市场经常出现的情况是,结构中出现的的质量问题被昂贵而重手笔的饰面所掩盖。从生态可持续发展的角度出发,我们选择对结构施工过程进行严格的质量控制,以便能够实现结构的自然展现,从而最大限度地减少饰面工程量,为客户节省成本,保护环境。

The acoustic soundproofing as a problem in the design of "open space" offices is a much-discussed topic in the interior design world. The FORME studio's research aims to combine two important aspects: economic and environmental sustainability, reducing the use of decoration surfaces, and the creation of a natural texture having an acoustic absorbent function.

The Project places the search for the perfection of details in the background in favor of simple and innovative solutions that approach the project in a different way comparing what traditionally happens in the construction works in Asia. In this context, in fact, it often happens that the recurring quality problems of the structure are covered by expensive and impactful finishes. From an eco-sustainability perspective, we have instead chosen to apply rigorous quality control to the structure construction process so as to be able to expose it directly and thus minimize finishing work, saving our client money and protecting the environment.

2022-2023

Scope of Work
Design and Consulting on Concrete Materials

Surface
10,600 sqm

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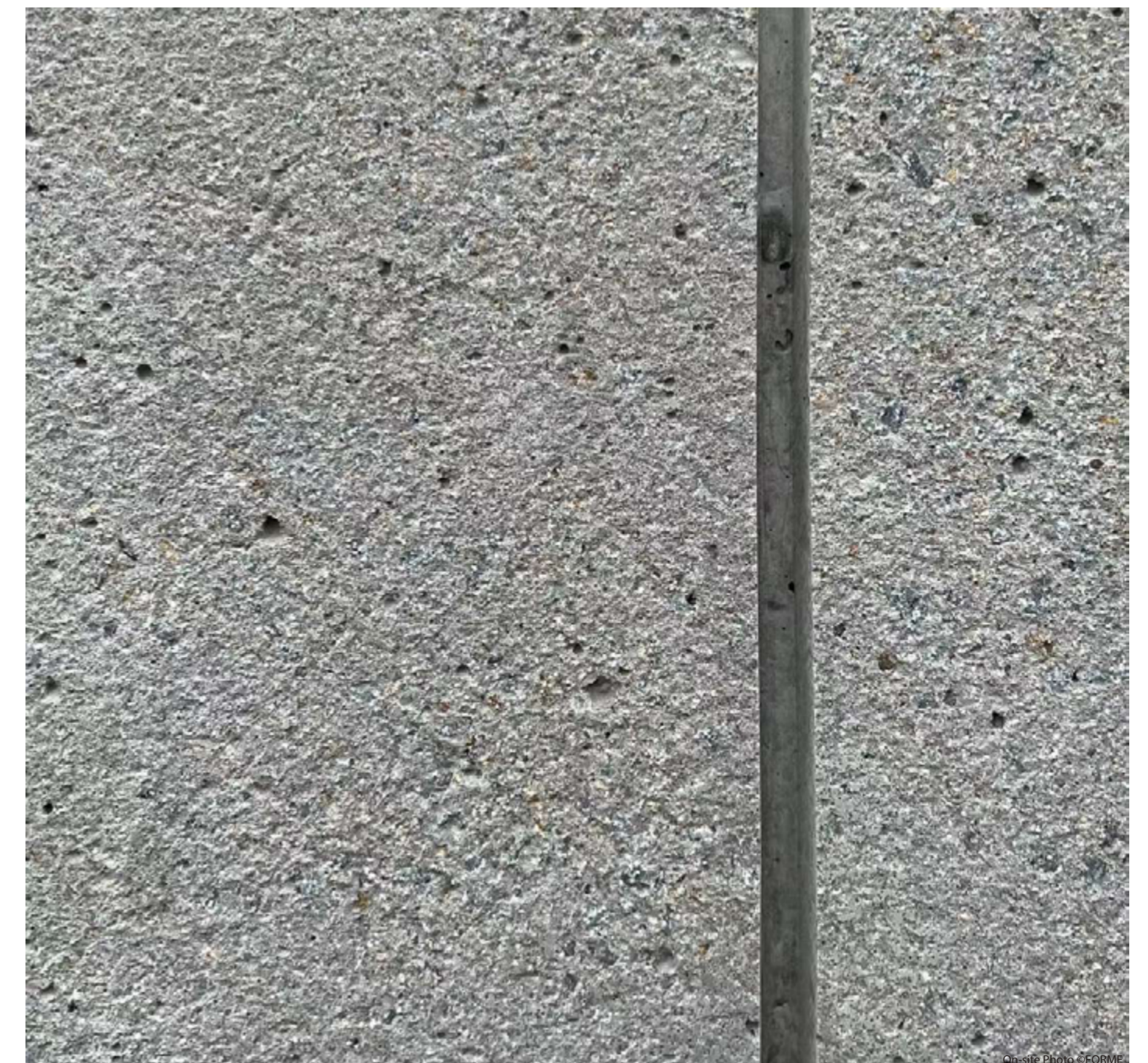
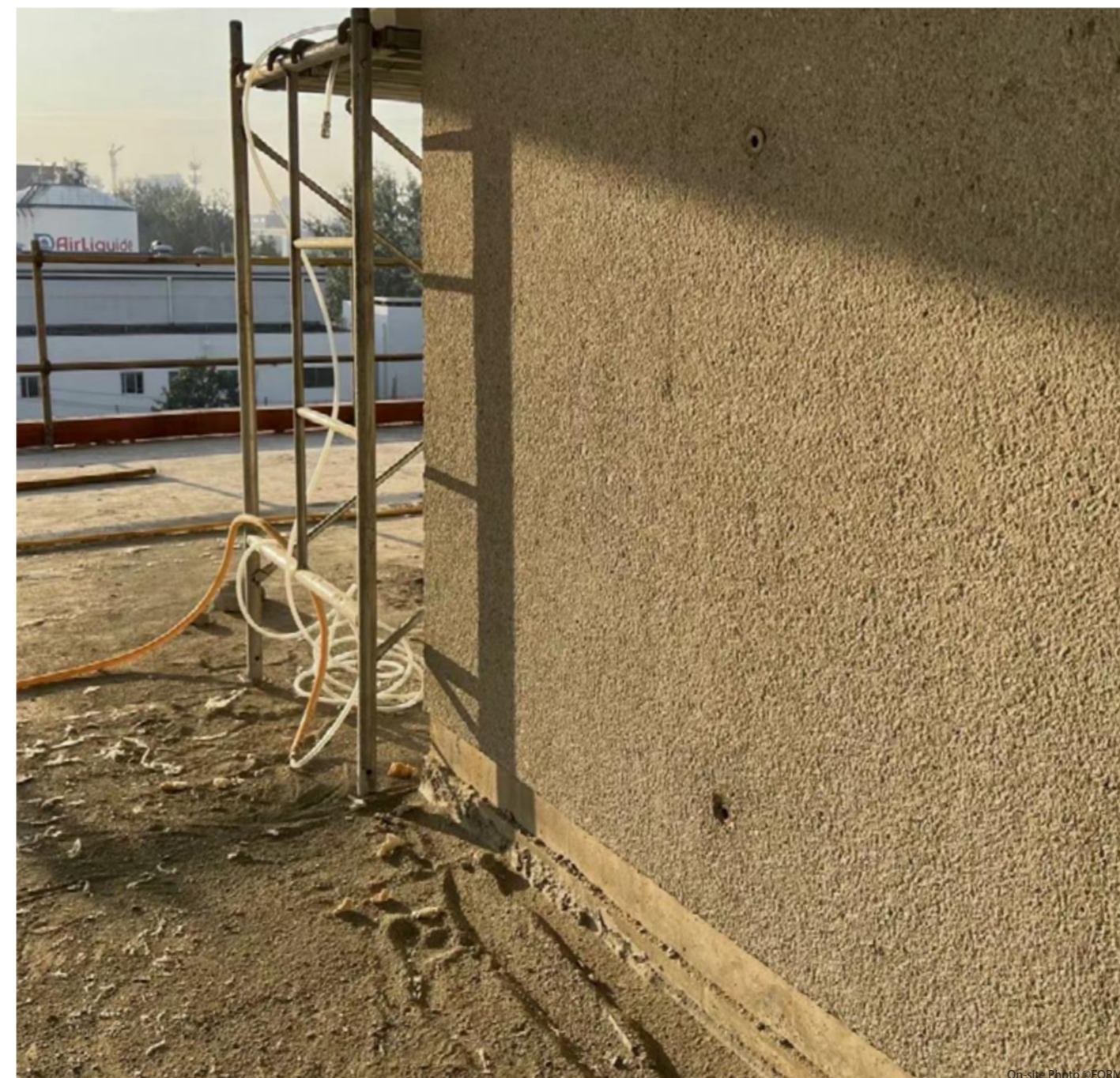
粗糙表面的声学研究 Rough surfaces acoustics

基于声学的基本概念,光滑表面的声能反射系数比较大,到达“光滑”介质表面的声波很大程度上被反射。这是开放式办公室出现回声和舒适度低等问题从声学角度进行分析的原因。相反,在“粗糙”表面,声波的空气振动比较容易转化为介质的振动,声能出现吸收和扩散现象。

具体分析本项目,对光滑表面的核心筒进行凿毛处理,将光滑介质转化为多孔表面介质。因此,经处理的核心筒表面能够增强声能的吸收,声波的空气振动比较容易转化为介质的振动并通过摩擦转化为热能耗散掉,类似织物消音的效果。

Considering the basic acoustics notions, it is well known that when the sound wave hits a "smooth" surface the reflection will be almost specular. This aspect is the physical cause of some acoustic issues of echo and low comfort level that are perceived in spaces designed as "open spaces" or "open offices". On the other hand, in the case of "rough" surfaces there is an absorption or partial diffuse reflection of the sound wave. Soundproofing therefore depends on several factors such as: reflection, absorption and transmission.

In the specific case of the Project, the chiseling treatment of the concrete surface transforms the structural core of the buildings into an element with high porosity characteristics. The surface treated in this way is therefore able to guarantee sound absorption thanks to the phenomenon of acoustic energy dissipation by friction between the air and the surfaces of the pores, simulating the behavior of a fabric.



董希文纪念馆

Dong Xiwen Museum

中国浙江省 绍兴市柯桥区
Keqiao District, Shaoxing, Zhejiang Province, China

客户

鲁易建设集团有限公司

Client

LuYi Construction Co.,Ltd.

设计

董林希

Designer

Linxi Dong

针对本项目，主要是研究位于绍兴的画家董希文纪念馆的外墙饰面效果。董希文因其 1953 年的作品《开国大典》而闻名于世，该纪念馆位于画家的故乡绍兴。轮廓分明的白色混凝土凿毛饰面是长期研究的主题，旨在以一种非直观但感性的方式去重现油画画布的自然肌理感，与此同时也综合考虑了纪念馆几何形态的规则性特点。研究重点是在配合比设计的基础上选用当地材料：砾石、沙子、水泥；配比设计以及对离析现象的控制尤为关键，以便机凿处理时呈现均匀、深浅适度的毛面效果，呈现出画布一样的质感体验。

饰面效果研究的最终成果是在与项目建筑设计师，画家孙子董林希先生合作下完成的。研究进入第二阶段，将机凿混凝土表面与意大利传统外墙涂料相结合，完美再现混凝土的表现力。最后，通过对防止雨水滴挂及渗透的节点研究完成项目研究的整个阶段。为了将接缝减少到最少，我们对建筑体量进行了分析，使用膨胀性外加剂实现了这一目标。这种外加剂的用量适当，可以补偿混凝土的自然湿度收缩，从而获得无伸缩缝的连续表面。

Research aimed at studying the external surfaces of the Museum dedicated to the painter Dong Xiwen, best known for his 1953 work "The Founding Ceremony of the Nation". The Museum is located in Shaoxing, hometown of the famous painter. The chiseled white concrete surface was the subject of long stylistic research aimed at creating, in a non-objective but perceptive way, the primed canvas naturalness, normally used for oil painting, but at the same time combining the surface effect with the regular volume of the museum's architectural project. The study was focused on the choice of local materials at the base of the concrete mix: gravel, sand, cement; on their correct proportion and on the control of segregation, so that the mechanical blows of the tool scratched only what was necessary to show the intent of the design effect, as regular as the canvas texture.

The final outcome was developed in close collaboration with Linxi Dong, Project's architect and nephew of the famous painter. In the second phase we took care of combining the surface of the chiseled concrete with hydrated lime-based plasters, made with the traditional Italian method, capable of perfectly recreating the expressive effect of the concrete. The study was then completed by the development of construction details aimed at eliminating rainwater drips and humidity penetration. The analysis of the architectural volume was carried out in order to reduce the presence of joints to a minimum, an objective which was achieved thanks to the use of an expansive admixture which, dosed in the right quantity, made it possible to compensate the natural hygrometric shrinkage of the concrete, obtaining a continuous surface without cracks.

2021-2023

Scope of Work
Design and Consulting on Concrete Materials

Surface
2,600 sqm

Photo Copyright
FORME
Linxi Dong / Aron Lorincz Ateliers





郑州清德实业产业孵化园 Zhengzhou DQSW Headquarters

中国河南省 郑州市郑东新区
Zhengdong New District, Zhengzhou, HeNan Province, China

客户	设计
郑州清德实业有限公司	如恩设计研究室
Client	Designer
Zhengzhou Qingde Industrial Co.,Ltd	Neri&Hu Design and Research

由如恩设计研究室设计的郑州清德实业产业孵化园总部综合体项目，以其复杂的几何线条、大量混凝土的使用以及其复杂的外观效果而具独创性。

“如何在如此大体量项目中保持稳定的施工质量?如何降低碳排放?”

这些都是非木工作室在开展本项目研究背后需要深究的问题。研究始于深入的现场实验，从进行搅拌站可供的原材料测试开始，到与设计团队探讨设计想法。在原材料研究的同时，工作室对该项目的外观与建筑内涵展开了深入研究和解读。基于圆拱形排布的巨大建筑体量，设计师和客户特别强调：“要通过混凝土表面的质感表现出一种历史的力量感和厚重感”。

响应这些要求的解决方案是：实现缓凝混凝土表面效果的立面，这是一项非常复杂的技术，需要结合稳定的配合比设计、创新的模板系统和严格的品控流程。

The monumental DSQW Headquarters complex designed by the Neri&HU studio is characterized from a complex geometry of the volumes, the large quantity of concrete and the complexity of the surface effects.

"How can we maintain constant quality in a large project? How to reduce the impact of emissions?"

These are some questions underlying the research program conducted by the FORME studio. The research began through an in-depth on-site analysis, starting from the analysis of the 0Km materials directly available at the commissioned concrete mixing plant up to various design insights with the design team. Simultaneously with defining the mixture to be used for the project, we conducted in-depth research into the architectural meanings of the project and its surfaces. In particular, for the large external arches volume, the designer's request was particularly special: "to represent the power of history through a concrete surface".

This creative inspiration led us to create a vertical surface in deactivated concrete, a very complex technique that requires a combination of stability of the mixture, mastery in the realization of the formwork, application of rigid quality procedures and rigorous formwork removal timing control.

2021-Under Construction

Scope of Work
Design and Consulting on Concrete Materials

Surface
123,609 sqm

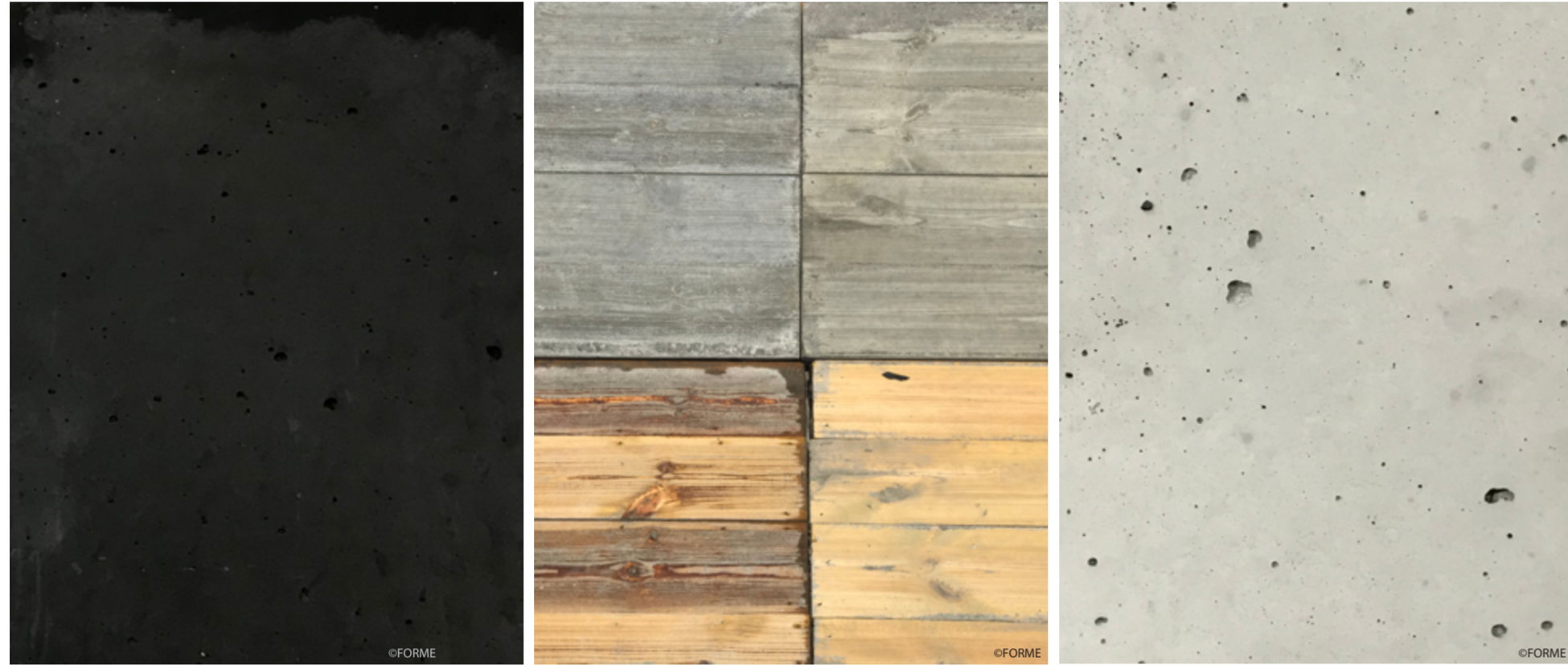
Photo Copyright
FORME
Neri&Hu Design and Research



黑色混凝土、木纹混凝土和光面混凝土 Black concrete, wood effect and smooth concrete

项目要求的其他三个饰面效果，虽然相对于缓凝效果的立面，是标准饰面混凝土，但通过确定原材料参数和施工技术来实现稳定生产和节能减排。特别是对于黑色混凝土配比研究，我们使用来自工业生产过程中的回收氧化物来替换水泥，以最大限度地减少配合比设计中水泥的用量。

The other 3 effects requested in the project, although standard compared to the request for vertical deactivation, were approached with the same methodology of emissions reduction, stability of the basic materials through the definition of control parameters, definition of the construction techniques. As regards the black concrete mix, in particular, we tried to minimize the quantity of cement in the mix and to use oxides coming from recycled material from industrial processes.

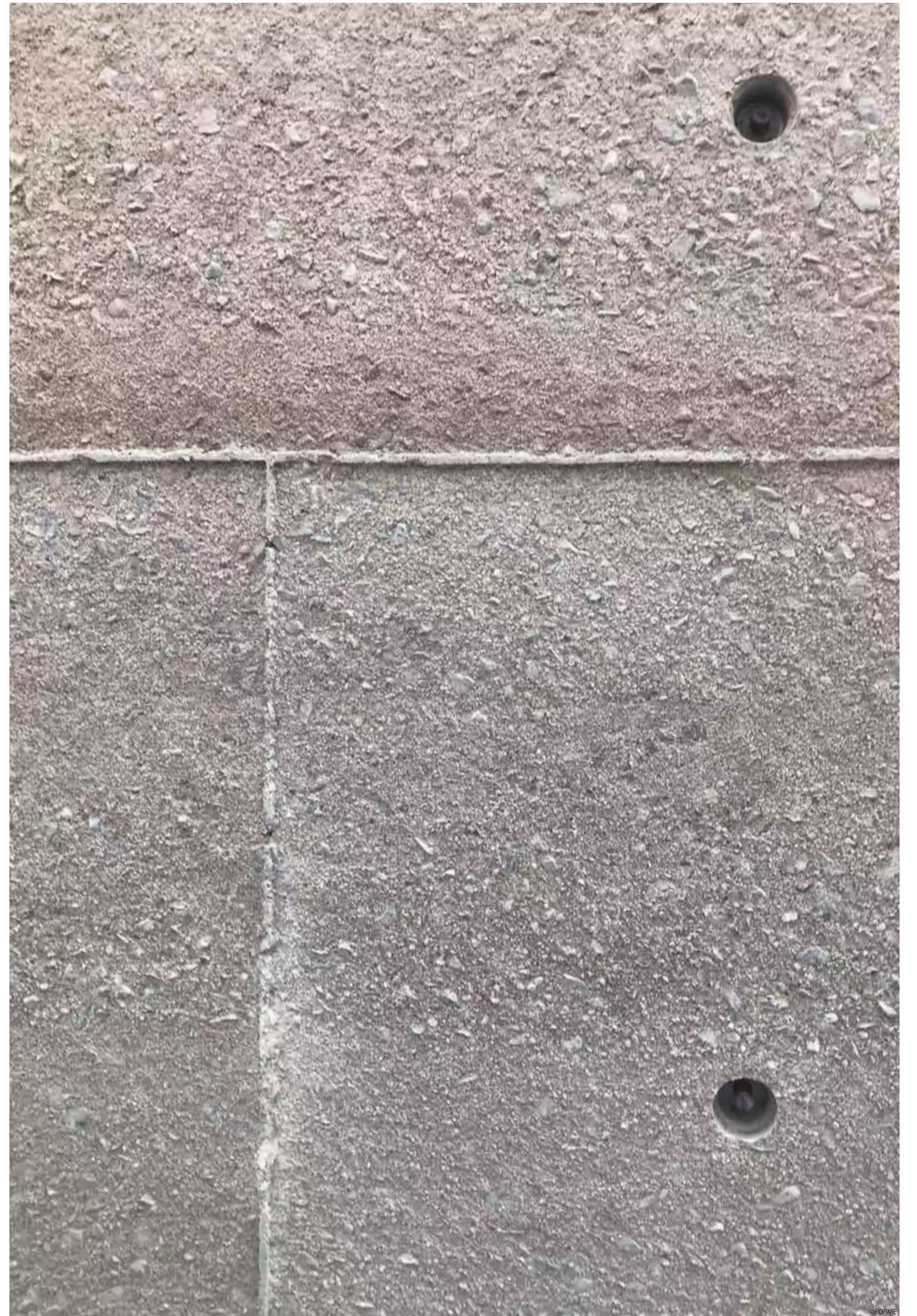


非木的目标不是像传统的施工方法那样对表面进行机凿(增加工程量、引发现场噪音和灰尘问题)，也不是使用化学产品来缓凝混凝土表面。考虑到巨大数量的化学产品可能最终无法降解，非木采用生态可持续的方法，独创拆模即成型的工艺。

经过广泛的研究，非木因此获得了吸水模板系统的专利，该系统能够实现拆模即成型的缓凝效果立面墙体，同时遵循结构设计的要求。

With a view to the eco-sustainable approach, we have worked to create a formwork capable of realizing the desired surface effect directly upon its opening. In this way it would have been possible to avoid the creation of dust from chiseling or mechanical sandblasting of the huge project's surface and to avoid pouring into the ground of any acids that could have been used to roughen the surface after its realization.

After extensive research, we have patented an absorbent formwork system capable of realizing the effect of vertical deactivation and rough surface in compliance with structural regulatory requirements.



天目里-红桥修复 OoEli-Red Bridge Repair

中国浙江省 杭州市西湖区
Xihu District, Hangzhou, Zhejiang Province, China

客户

慧展科技(杭州)有限公司

Client

Huizhan Technology (Hangzhou) Co., Ltd.

设计

伦佐·皮亚诺建筑工作室

Designer

Renzo Piano Building Workshop

非木工作室创始人的意大利背景无疑赋予了其对于建筑作品耐久性和可维护性的敏锐感知能力。

因此,工作室可以通过拆解施工流程及问题“调查分析”的方式来解决影响建筑效果的混凝土病理问题,找准其成因并进行自然修复。

The Italian cultural background of the FORME's founders has certainly positively influenced the studio regarding the sensitivity of the architectural work, its durability, maintenance and restoration.

The firm is able to solve the pathologies that sometimes afflict the architectural works' concrete, through procedures for issues identification, intervention definition and future maintenance methodologies to prevent the pathology from recurring. All non-invasive methods that guarantee a natural final outcome, bringing the architecture back to their original appearance before the onset of the pathology itself.

2022

Scope of Work
Design and Consulting on Concrete Materials

Surface
360 sqm

Photo Copyright
FORME





在伦佐·皮亚诺工作室的这一修复项目案例中，桥梁震动导致减震支座区的混凝土出现开裂、破口和脱落。找到具体成因，非木工作室便从技术角度组织和全过程主导了受损混凝土的修复。

修复和维保是保护建筑项目的基本逻辑，避免问题恶化，并预测拆除或重建阶段可能对环境产生的负面影响。

In the specific case of the Project by RPBW, the vibrations of the bridge in the support area had caused cracks and detachments of the fair faced concrete walls. Once the specific causes had been identified, FORME studio organized and conducted, in all phases, the repair and restoration actions of the damaged parts.

Restoration and maintenance are fundamental aspects in the logic of safeguarding a project, avoiding the worsening of pathologies and avoiding demolition and reconstruction that have a negative impact on respect for the environment.

杭州 凤起潮鸣 Hangzhou Phoenix Mansion

中国浙江省 杭州市拱墅区
Gongshu District, Hangzhou, Zhejiang Province, China

客户

杭州绿城凤起置业有限公司

Client

Hangzhou Greentown Fengqi Real Estate Co., LTD

设计

张唐景观

Designer

Z+T Studio

凤起潮鸣居住社区的景观概念来自“月与潮汐”的运动。

社区里面的场地、水景、互动艺术装置全部与受月球影响的潮汐变化有关，功能分区根据光影变化进行设计。非木工作室负责处理混凝土地坪部分的技术问题，尝试通过地坪级配的研究，延伸艺术创作的理念，以完成张唐景观工作室的效果期许。

深浅有度的三种灰色进行逻辑搭配，深入研究再生水泥和骨料的配比和取消氧化物的使用，完美践行了生态可持续发展的原则。

表面进行恰到好处的研磨处理，能够最大程度地实现设计师所想要的饰面效果，同时兼顾安全防滑的功能性需求。

The project is inspired by the tidal movements caused by the moon.

The water features and art installations within the Phoenix Mansion community are all linked to this phenomenon. The multifunctional areas are designed based on sunlight and shadow. FORME studio was responsible for dealing with the technical design of the concrete paving, trying to fully embrace the indications of the Z+T studio through develop the idea of an artistic work starting from the mix design of the flooring.

The 3 colors in three shades of gray, in perfect eco-sustainable logic, were created without the use of oxides, but through in-depth research into the combination of different cements and recycled aggregates.

The surface requires a correct level of polishing capable of best expressing the surface effect requested by the designer, but at the same time being safe and non-slip.

2020

Scope of Work
Design and Consulting on Concrete Materials

Surface
800 sqm

Photo Copyright
FORME
Z+T Studio
Lu Bing



景观设计师提出的其中一项要求是在夜间,通过景观灯光和夜色,地坪能够呈现出自然的反射效果。针对该项需求,非木工作室同样采用废物回收逻辑,筛选了保温瓶内胆废料和工业隔热材料废料,进行二次利用,作为骨料应用至混凝土中。

One of the designer's requests was the possibility of having natural reflections on the surface scattered throughout the texture of the flooring. FORME has also exploited the logic of recycling, adding reflective aggregates obtained from waste of the thermos' insulating materials industry.



西安欧亚学院景观改造 Xi'an Eurasia University Landscape Renovation

中国陕西省 西安市长安区
ChangAn District, Xi'an, Shanxi Province, China

客户	设计
西安欧亚学院	张唐景观
Client	Designer
Eurasia University	Z+T Studio

张唐景观设计的西安欧亚学院景观改造项目，旨在在具教育、学术氛围的空间内将功能与自然触感结合起来。

为实现这一目标，FORME与张唐的设计师协同合作，共同探讨了缓凝混凝土表面的解决方案，内部骨料的局部裸露，有利于增强地坪表面的耐磨性和耐久性，这也是广场功能或者人员密集型场地地坪需要考虑的重点问题。

地坪几何板块需遵循建筑主体的轮廓特征，对于伸缩缝设置随即成为项目一大难点，呈现出拼缝的不连续性和板块的不规则性。通过对地坪级配材料的选择和对颜色的测试，旨在获得与设计语言相匹配的天然质感；水基保护剂的应用，也减少了地坪清洗过程中水的渗透。

The landscape renovation project of the Eurasia University in Xi an designed by the Z+T studio is redefining a space having educational functions and must therefore combine functional aspects with the contact with nature.

In favor of this direction, FORME has developed in a close cooperation with the designer, the solution of deactivated concrete surface. The partial exposure of the aggregates favors the resistance and durability of the surface an important and priority aspect in squares and in places affected by intense pedestrian traffic.

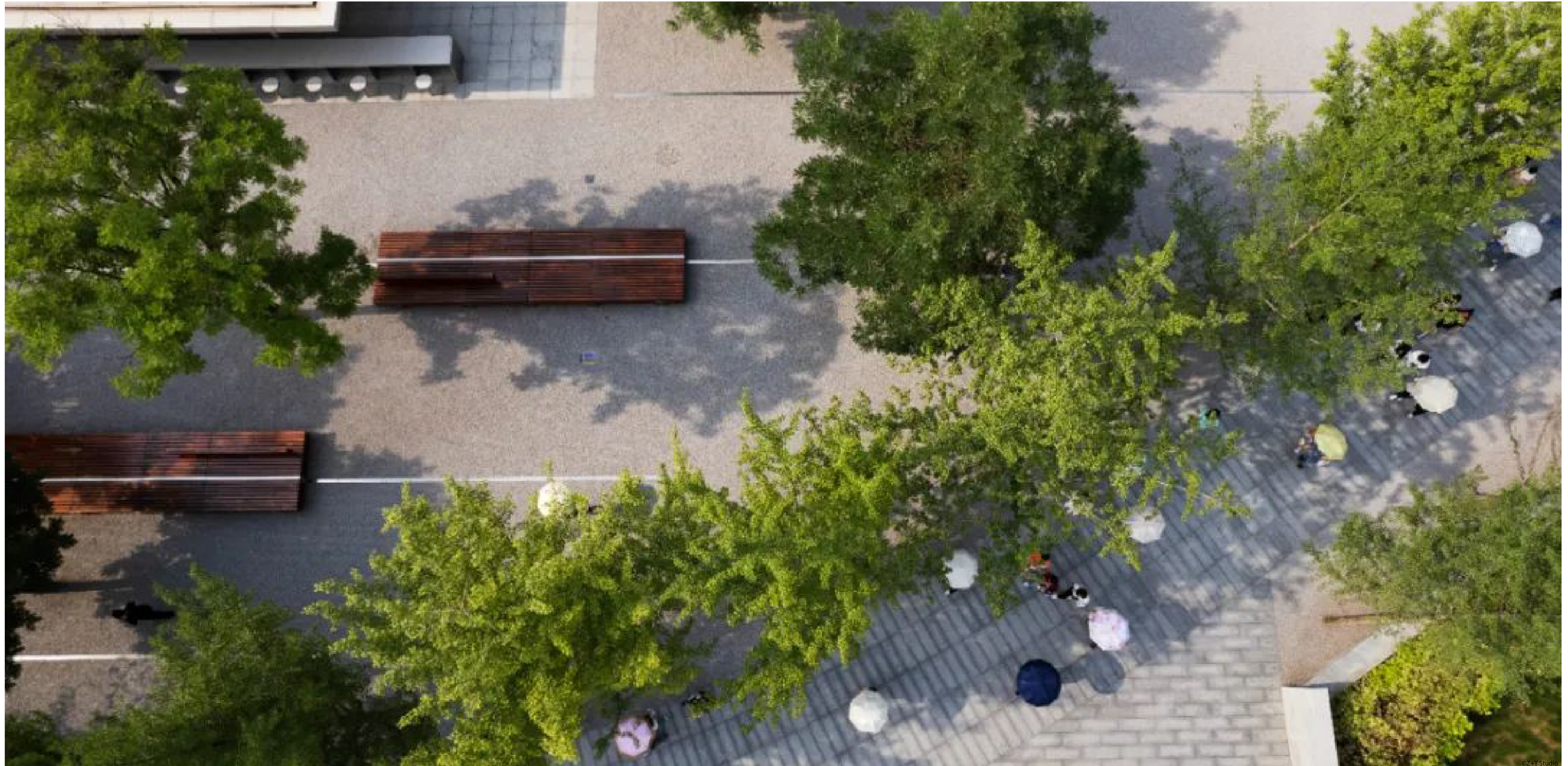
The geometry of the floor, which follows the lines of the main buildings, is characterized by a complex distribution of the expansion joints, which become a decorative element, with broken lines and concave and convex angles. The different colors combinations, obtained with the careful calibration of mixture component, have the aim of obtaining the effect of a natural surface by combining with the design languages of the surrounding buildings. The exposure, obtained with water-based agents, has been carefully calibrated in order to reduce water consumption during washing.

2020-2021

Scope of Work
Design and Consulting on Concrete Materials

Surface
630 sqm

Photo Copyright
FORME
Z+T Studio





杭州 天目里

The OōEli complex (Hangzhou)

中国浙江省 杭州市西湖区
Xihu District, Hangzhou, Zhejiang Province, China

客户

Dottor Group、慧展科技(杭州)有限公司

Client

Dottor Group S.p.a. and Huizhan Technology (Hangzhou) Co., Ltd.

设计

伦佐·皮亚诺建筑工作室

Designer

Renzo Piano Building Workshop

伦佐·皮亚诺工作室设计的杭州天目里项目，其重点在于追求细节品质和表面的自然观感，应用最新施工技术，以保证项目完美的耐久性。从为保证清水混凝土墙体施工品质的咨询开始，到确保室外地坪的完美外观，再到面层效果的维保方案，该项目（45000平方米）为非木工作室在现浇混凝土领域的研究提供了巨大的经验支持。从原材料筛选、混凝土配比、几何形态及支模品控、各专业冲突的解决到设计的方方面面，甚至包括外部环境条件的监控和混凝土的浇筑及振捣，整个项目周期都进行了多维度、持续性的严格把控。

“我们如何在建筑质量与混凝土自然外观之间找到恰到好处的平衡点？”通过将精湛的工艺与材料研究领域的最新技术相结合，我们找到了答案。整个过程从原材料、混凝土配方、模具的几何形状及结构质量、干扰的解决到设计的各个层面都有严格的控制程序，持续到环境条件的控制和混凝土的浇筑与振动。非木工作室的地坪设计、纹理设计和融合设计反映了设计师对获得自然表面的诉求，并通过暖灰色调来削弱人工的痕迹。尽管现场浇筑了大量混凝土，但在可持续性方面仍做出了努力。例如在表面缓凝方法和施工工艺，基于水基阻燃剂的使用和表面凝固时间的精确计算——这一方面保证了设计的独特性并减少了水资源的浪费。

The search for details quality and the surfaces naturalness, combined with the latest technologies, in order to guarantee quality and durability, are the basic features of the project "The OoEli Complex" in Hangzhou, designed by the RPBW studio of architect Renzo Piano. The assignment received by FORME, which initially concerned the consultancy for the construction of the exposed concrete walls (45000 m2), was then extended to all the concrete elements of the Project, representing a great research opportunity for the studio in the field of cast-in-situ concrete. The main areas of study concerned the engineering of the architectural project, the details design, the definition of pouring methods, the design of formwork and mixtures for obtaining natural surfaces.

What is the right compromise between architectural quality and the naturalness of concrete surfaces? The answer was found by combining great craftsmanship with the latest structural and material chemistry technologies. Quality control procedures have covered the entire process since the beginning, with a strict selection of raw materials and a systematic control of the concrete mixture, the formwork geometry and construction quality, the resolution of structural interferences and all design aspects, up to the vibration times and environmental conditions control during castings and curing. The flooring, texture and mix design designed by the FORME studio reflects the designer's requests in obtaining a natural surface with an effect deactivated by warm gray tones. Despite the large quantity of concrete cast on site, sustainability aspects focused on the surface deactivation methodology and construction techniques, based on the use of water-based retardant and the careful calculation of the surface setting time, an aspect that guarantees the uniqueness of the design and reduces the quantity of washing wasting water.

2019-2021

Scope of Work
Design and Consulting on Concrete Materials

Surface
66,000 sqm

Photo Copyright
FORME
TRACEIMAGE



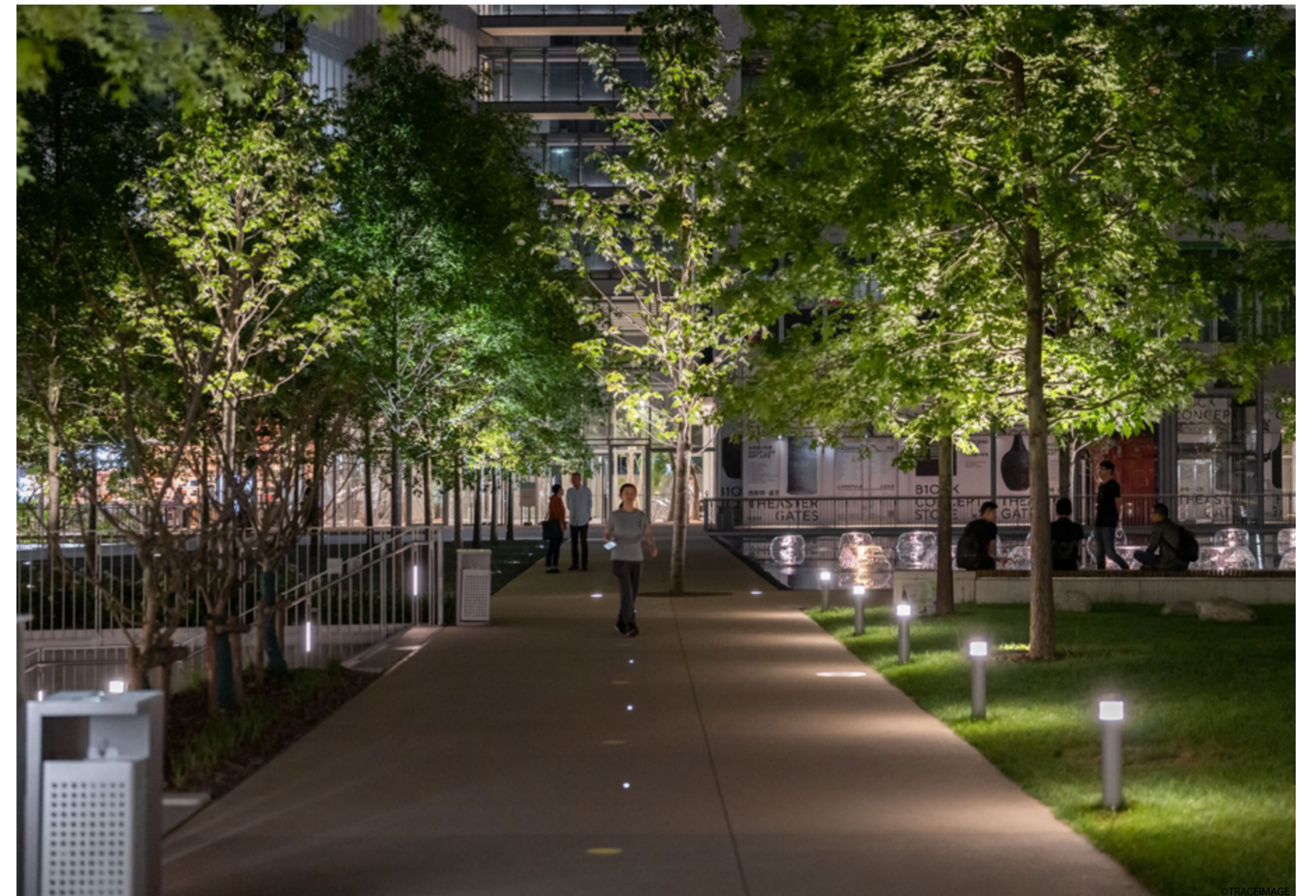


为了实现面积约22000平方的混凝土景观地坪，我们研发了一种新型“暖棕色”微露圆形骨料效果的地坪。表面质感和纹路的设计充分满足建筑师的要求，因此也将这一效果运用至坡道、踏步、侧石等区域。

混凝土浇筑量很大，因而生态可持续性目标主要集中在表面缓凝剂和施工技术上，水基乙二醇化剂的使用和表面缓凝时间的精准计算，不仅保证了饰面效果的独特性，也减少了清洗工艺过程中所需的用水量。

For the external concrete pavement (22000 m²) we have designed a special mixture tending to the "terra d'ombra" color with a soft exposure of the rounded river origin aggregates. The texture thus created fully satisfied the designer's requests, who decided to adopt it for several other concrete elements of the Project (ramps, stairs, kerb stones, etc.).

Despite the large amount of cast-in-situ concrete, the eco-sustainability objectives, were focused on the surface deactivation methodology and construction techniques, realized through the use of water-based glycate agents and the careful calculation of the surface setting time, an aspect that guarantees the design uniqueness and reduces the water amount needed for washing.



PROJECT LIST 2019-2023

Project Name	Program	Area	Year
Comgin Hospital Renovation	Hospital	Hangzhou	2019 - 2023
Accommodation Facility Lighting design	Hotel	Yunnan	2019
Tederic Headquarters	Headquarters	Hangzhou	2019 - 2023
Chinapals 2020 exhibition pavilion	Exhibition Pavilion	Shanghai	2020
Xigu conference hall	Conference hall	Fuyang	2020
NT-250 space	Exhibition Pavilion	Hangzhou	2020
Physis New Production Base in Zhuzhou	Production Base	Zhuzhou	2020 - 2022
Physis New Production Base in Beilun	Production Base	Zhuzhou	2020 - 2023
Exhibition Pavilion CPE2020	Exhibition Pavilion	Ningbo	2020
Exhibition Pavilion DMP2020	Exhibition Pavilion	Shenzhen	2020
Lishui House	Hotel	Lishui	2020 - 2021
Tederic HQ interior design	Offices	Hangzhou	2021 - 2023
Tederic HQ landscape design	Landscape	Hangzhou	2021 - 2023
Chinapals 2021 exhibition pavilion	Exhibition Pavilion	Shenzhen	2021
Maison de Yuzu	Baker	Hangzhou	2021
Villa Moon	Restaurant	Hangzhou	2021 - 2022
Tederic Tongxiang Factory	Production Base	Tongxiang	2021 - 2023
Italian Famhouse Renovation	Villa	Brescia (Italy)	2022 - on going
Allied 1611	Headquarters	Deqing	2022
Orient Cable Headquarters	Headquarters	Ningbo	2022 - 2023
Comgin Hospital Business Lounge	Business Lounge	Hangzhou	2022 - 2023
The cage	Restaurant	Yiwu	2022 - 2023
FORME office	Offices	Hangzhou	2022 - 2023
Xiaoshan Villa	Villa	Hangzhou	2023 - on going
Newenergy Car-City Square	Exhibition Centre	Jinhua	2022 - 2023
Novoledo Building Renovation	Residential	Vicenza (Italy)	2022
Linan City Lobby	Urbanization	Hangzhou	2022 - 2023
Tederic Europe Production Base	Production Base	Leiria (Portugal)	2023
Ningbo Moto Pub	Restaurant/Pub	Ningbo	2023
Ex Piaggio Areas Urban Renewal	Urbanization	Finale Ligure (Italy)	2023

PROJECT LIST 2019-2023

Project Name	Research Object	Area	Year
OoEli (Tianmuli)	Architectural concrete structures	Hangzhou	2019 - 2021
Sixfort	Architectural concrete walls	Hangzhou	2019
City Gate	Architectural concrete structures	Shenzhen	2019
OoEli (Tianmuli)	Outdoor architectural concrete landscape	Hangzhou	2020
GOA lobby paving	Indoor paving	Hangzhou	2020
Phoenix Mansion	Outdoor architectural concrete terrazzo	Hangzhou	2020
Eurasia University	Outdoor architectural concrete landscape	Xi'an	2021 - 2022
Zizaigu Village	Outdoor architectural concrete landscape	Qianxian	2021
Greentown HQ landscape VMU	Outdoor architectural concrete terrazzo	Hangzhou	2021
Tederic Headquarters	Architectural concrete structures	Hangzhou	2021 - 2022
Zizaigu Village Theater	Architectural concrete structures	Qianxian	2021
DQSW Headquarters	Architectural concrete structures	Zhengzhou	2021
Zhen Ru Jing no. 6 Theatre	Architectural concrete structures	Shanghai	2021 - 2023
Dong Xiwen Museum	Architectural concrete walls	Shaoxing	2021 - 2022
Tianmuli Art concrete	Architectural concrete Repairs	Hangzhou	2021 - 2022
Beilong Lake	Architectural concrete terrazzo façade panels	Zhengzhou	2021
Hill D2-8 plot item	Outdoor architectural concrete terrazzo	Shanghai	2021
Yuelai Park	Outdoor architectural concrete landscape	Chongqing	2022 - on going
Grand Canal Museum	Architectural concrete façade panels and Cast-in-situ	Hangzhou	2022 - on going
OoEli Red Bridge	Architectural concrete Repairs	Hangzhou	2022
Tederic Headquarters Repairs	Architectural concrete Repairs	Hangzhou	2022 - 2023
Physis New Production Base in Beilun	Architectural concrete structures	Ningbo	2023 - on going

FORME, 2023

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We would like to remember all team members, collaborators, clients, friends, and our families.

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FORME3 Co., LTD

N.61 Quanddong, 85 Shuguang Rd., Xihu Dist, Hangzhou

杭州非木建筑工程管理有限公司
杭州市西湖区曙光路85号泉东区61幢

FORME
design & research

FORME3 Co., LTD

N.61 Quandong, 85 Shuguang Rd., Xihu Dist, Hangzhou

杭州非木建筑工程管理有限公司

杭州市西湖区曙光路85号泉东区61幢

+86 131 2381 8231
info@forme3.com