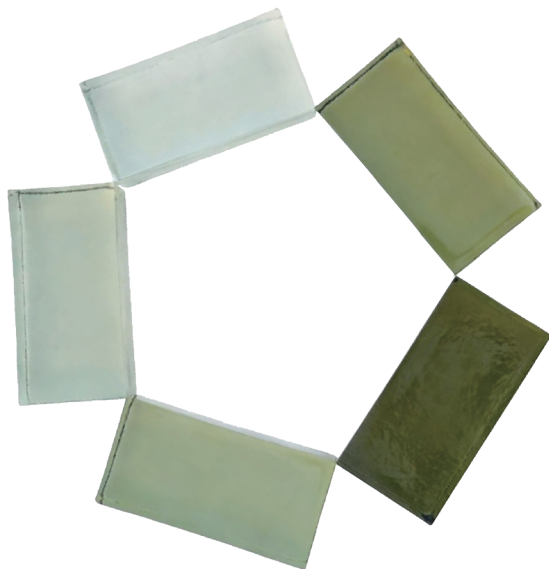


泥晶玻璃 ReSilt Vitro™

材料洞察与应用手册

Material Insights & Applications



Future Minerals
Urban Metabolism:
Transforming Silt into Glass

上海设计周
SHANGHAI
DESIGN
WEEK

SUSTAINABLE PRACTICE
CENTER 可持续
实践
中心



#Sustainable

我们脚下的城市，既是文明的摇篮，也是一座巨大的代谢体。每一次的呼吸吐纳，都伴随着资源的消耗与废物的产生。然而，在循环的法则中，终点亦是起点。被遗忘的，正等待被唤醒；被废弃的，蕴藏着新生的密码。

The city beneath our feet is both the cradle of civilization and a colossal metabolic entity. With every breath it takes, resources are consumed and waste is generated. Yet, in the cycle of renewal, every end is a new beginning. What has been forgotten awaits awakening; what has been discarded holds the code for rebirth.



01 序章
Prologue

未来矿产：城市代谢的“点泥成晶”
Future Minerals: Urban Metabolism—
Transforming Sludge into Glass

02 材料诞生
Origin

设计驱动——从洞察到系统
Design-Driven—From Insight to System

科技驱动——废弃物的新生
Technology-Driven—The Rebirth of Waste

03 材料解析
Material

工艺类别
Technique Categories

色彩与质感系列
Color & Texture Series

04 场景
Scenario

展览应用
Curation & Exhibition

产品应用
Product

05 团队与合作
**Team &
Collaboration**

关于我们
About Us

合作生态
Collaborative Ecosystem

01 Prologue

序章

- 未来矿产：城市代谢的“点泥成晶”

Future Minerals: Urban Metabolism—Transforming Sludge into Glass

未来矿产 Future Minerals 城市代谢的“点泥成晶” Urban Metabolism Transforming Sludge into Glass

我们将目光投向城市代谢的终端——那些源自千家万户，曾被视为负担的污泥。

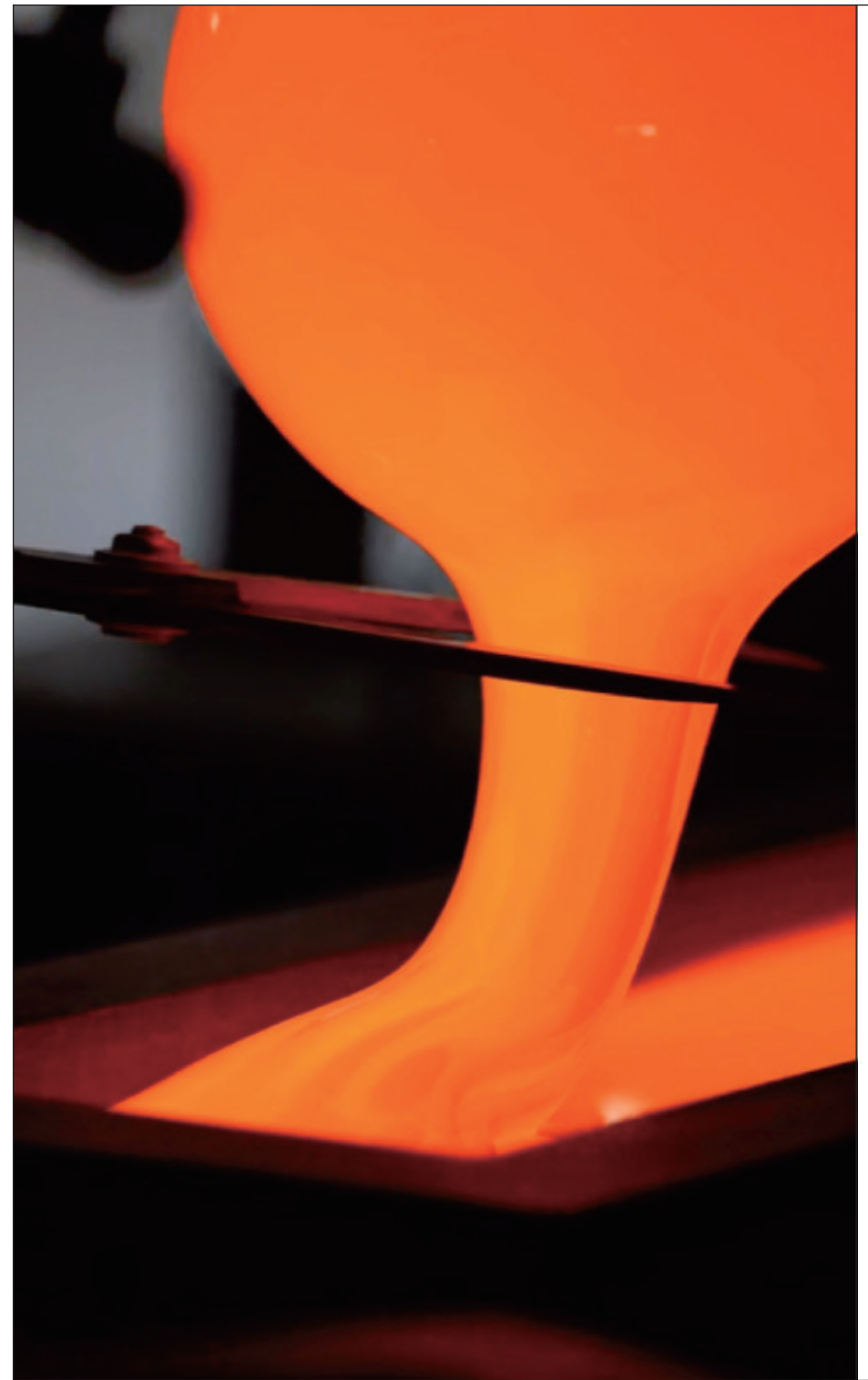
在“城市物质代谢”的复杂命题里，我们将“污泥”视作为城市代谢的未来矿产之一，通过设计+科技的双重赋能，将上海城市污水处理废弃物转化为泥晶玻璃，完成从环境负担到被重新看见的材料语言的价值跃升。

ReSilt Vitro™ 是我们发掘的第一座“城市矿山”——是探索城市废弃物转化为未来资产的第一个实践案例。

We turn our attention to the endpoints of urban metabolism—the sewage sludge, once viewed as a burden.

Within the complex equation of "urban material metabolism," we recognize sludge as one of the future mineral resources of city metabolism. Through the dual empowerment of design and technology, we transform Shanghai's wastewater treatment waste into silt-glass, completing a value leap from environmental burden to a newly visible material language.

ReSilt Vitro™ is our first excavated "urban mine"—our first practical case of converting urban waste into future assets.



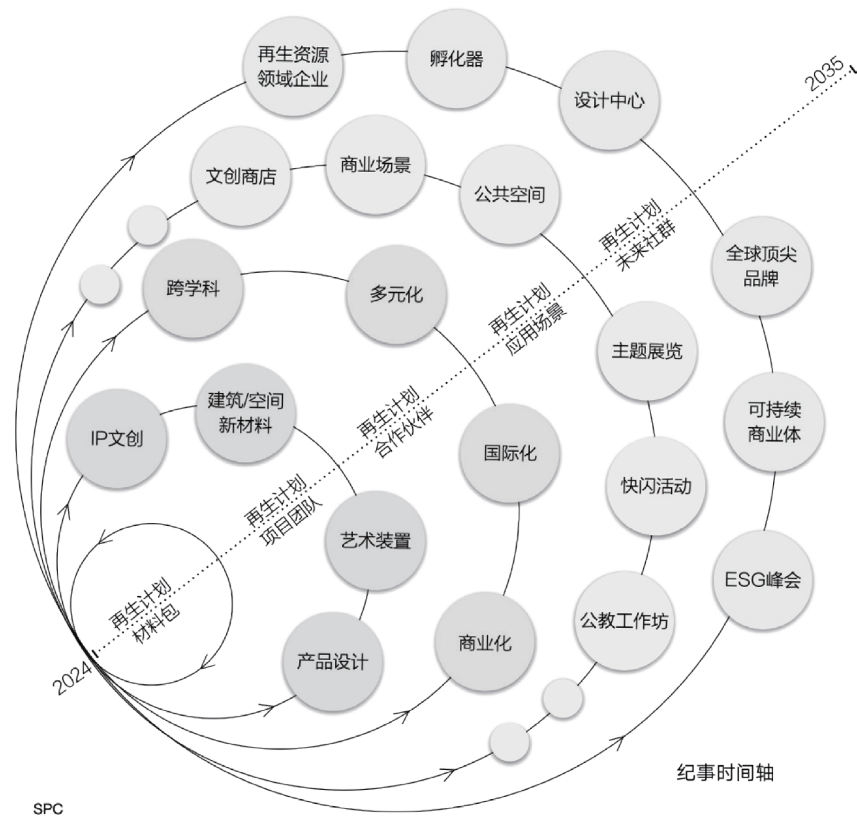
02 Origin

材料诞生

- 设计驱动——从洞察到系统
Design-Driven—From Insight to System
- 科技驱动——废弃物的新生
Technology-Driven—The Rebirth of Waste

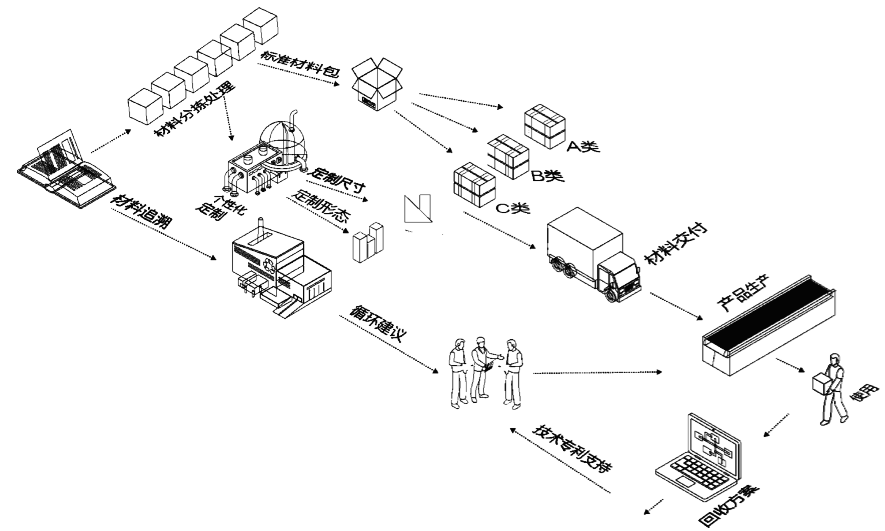
设计驱动 从洞察到系统 Design-Driven: From Insight to System

SPC再生材料包系统：
SPC Regenerative Material Package System:

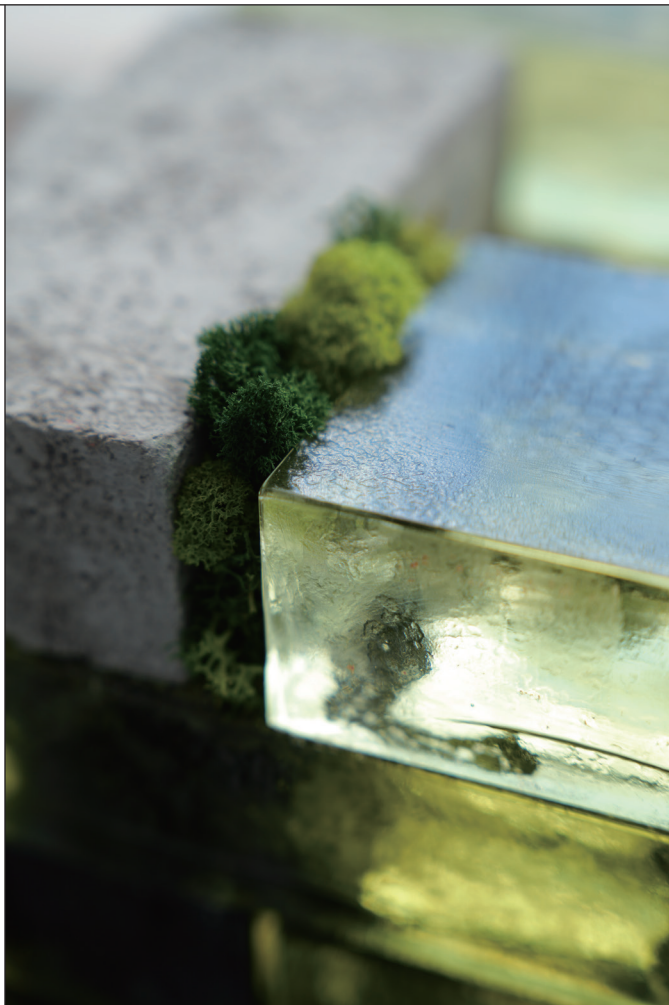


再生材料包系统通过"物质重生 + 创意赋能"的模式，构建材料、设计师、企业、品牌多方共生的可持续发展生态圈。

The Regenerative Material Package system builds an eco-circle of mutual prosperity among materials, designers, enterprises, and brands through "material regeneration + creative empowerment."

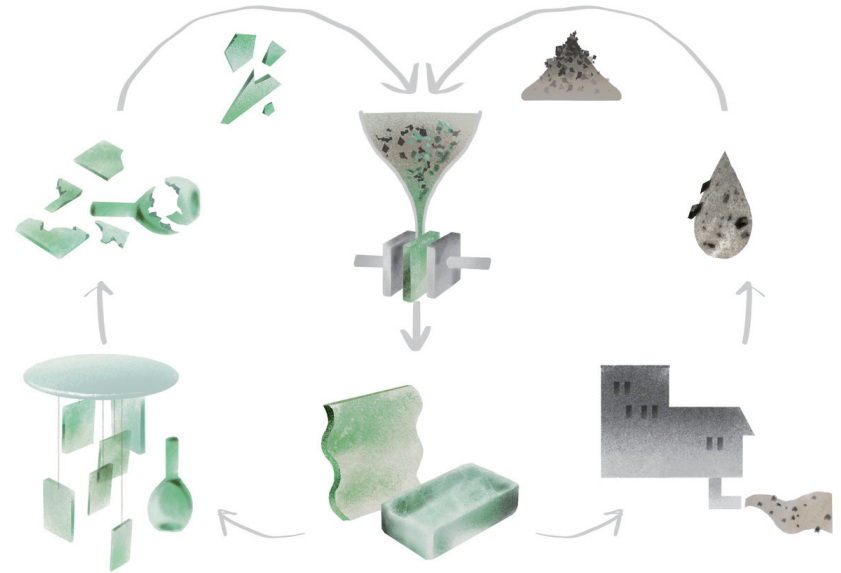


- ① 溯源档案
Source tracking
- ② 标准化指南
Standardized guidelines
- ③ 个性化定制
Customization
- ④ 创作周期陪伴
Creative cycle support
- ⑤ 可持续解决方案
Sustainable solutions



作为平台型材料，为设计师、品牌方提供一个充满想象空间的创作基底，从而最终实现赋能于生活中的日常，实现城市生态环境的有机融合与可持续发展。

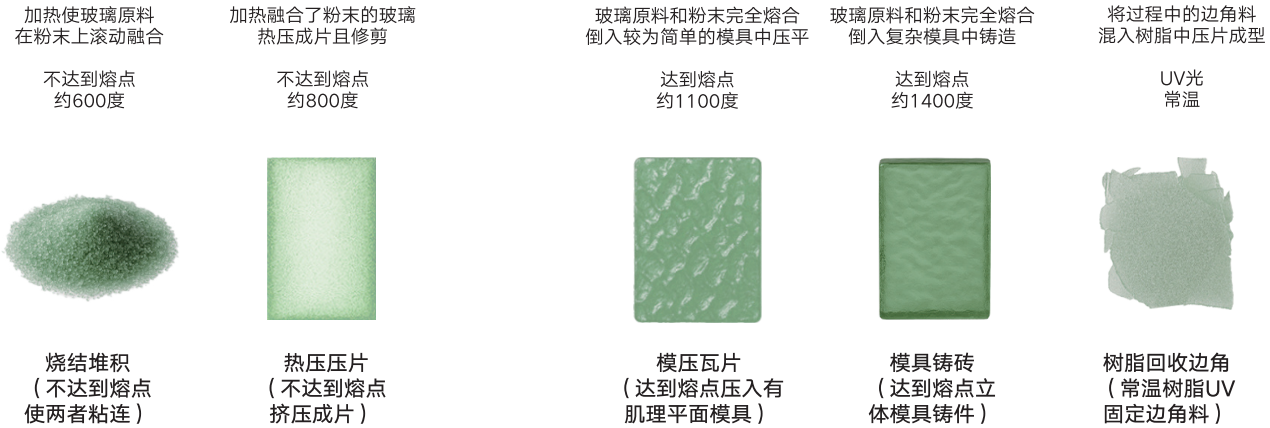
As platform-type materials, they provide designers and brands with a creative foundation full of imaginative possibilities, and in this broader sense ultimately enabling everyday applications that organically integrate with urban ecosystems for sustainable development.



泥晶玻璃可持续系统以城市污泥为原料，通过玻璃化工艺实现无害化处理与再生设计，形成模块化产品，循环应用于建筑与日常生活场景，减少污染与资源消耗。

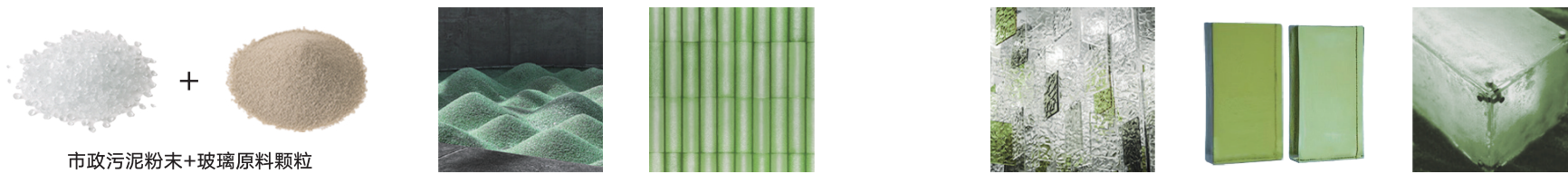
The ReSilt Vitro™ Sustainable System transforms urban sludge into safe, modular materials through vitrification, enabling circular design applications in architecture and daily use while reducing pollution and resource consumption.

泥晶玻璃模块化系统 ReSilt Vitro™ Modular system



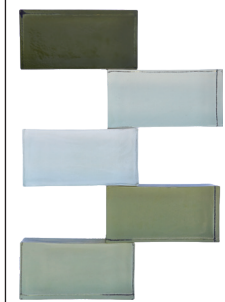
再利用升级改造

材料降解后的二次升级改造



泥晶玻璃模块化系统以市政污泥粉末与玻璃颗粒为原料，经铸造、破碎、水碎等工艺生成多种形态（砖块、碎块、薄片、粉末），可用于组装、吹制、色料等，实现多样化应用与循环再生。

The ReSilt Vitro™ Sustainable System transforms urban sludge into safe, modular materials through vitrification, enabling circular design applications in architecture and daily use while reducing pollution and resource consumption.



科技驱动 废弃物的新生 Technology-Drive The Rebirth of Waste

坚实的科技基石 A Solid Technological Foundation

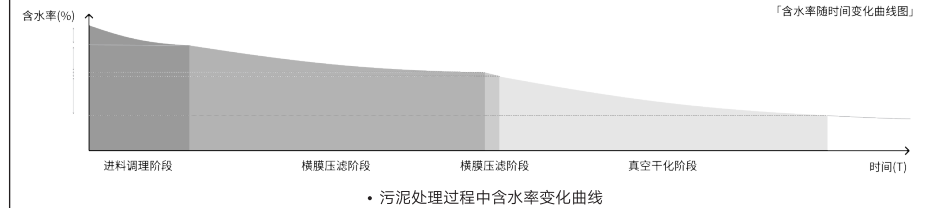
由上海城投水务（集团）有限公司提供上海城市污泥，上海复洁科技股份有限公司进行城市污泥脱水干化处理，其国际领先的“低温真空脱水干化一体化技术”为后续污泥无害化资源化奠定了良好的预处理基础。

Shanghai Chengtou Water Group Co., Ltd. provides urban sludge from Shanghai, while Shanghai CEO Technology Co., Ltd. handles the dewatering and drying treatment of the urban sludge. Their internationally leading "low-temperature vacuum integrated dewatering and drying technology" establishes an excellent pretreatment foundation for subsequent harmless and resource-oriented utilization of sludge.

产学研的创新聚变 Innovation Fusion through Industry-Academia-Research Collaboration

联合科研院所、企业组建技术创新团队，共同开发了“污泥焚烧灰渣玻璃化”技术，解决了灰渣重金属安全固化与玻璃产品性能稳定等核心难题。

By forming a technological innovation team that brings together research institutions and enterprises, we have jointly developed the "sludge incineration ash vitrification" technology, successfully addressing core challenges such as the safe solidification of heavy metals in ash residues and the performance stability of glass products.



污泥经进料调理、隔膜压滤以及真空热干化等过程处理后，滤饼中的水分已得到充分的脱除，污泥量大大减少，最大限度实现污泥的减量化。经过脱水干化后，污泥含水率降至30%以下，基本达到污泥减量化和稳定化的要求，同时为后续进一步无害化和资源化创造了条件。

After undergoing feed filtration, membrane press filtration, and vacuum thermal drying, the moisture in the filter cake is effectively removed, resulting in a significant reduction of sludge volume and achieving maximum minimization. Following dehydration and drying, the sludge moisture content is reduced to below 30%, essentially meeting the requirements for sludge minimization and harmless treatment, while also creating favorable conditions for subsequent resource recovery.



泥晶玻璃ReSilt Vitro™ 由上海城投水务（集团）有限公司提供上海城市污泥，经上海设计周可持续实践中心与上海复洁科技股份有限公司共同研发。

ReSilt Vitro™ embodies an innovative "Design + Technology" collaboration. Developed by Shanghai Design Week's Sustainable Practice Center and Shanghai CEO Technology Co., Ltd. with sludge provided by Shanghai Chengtou Water Group Co., Ltd.

城市污泥提供：



共同研发：



03 Material



这抹独特的绿色，并非来自人工染料，而是城市自身的‘胎记’。城市污泥累积了很多元素，其中的铁元素在玻璃中呈现出了独特的锈绿色。

This unique shade of green does not come from artificial dyes, but is the city's own "birthmark." Urban sludge accumulates various elements, and the iron within manifests as a distinct rusty green hue in the glass.

*通过添加不同比例的污泥，产生了颜色的渐变。

By adding varying proportions of sludge, a gradation of color is produced.

材料解析

- 工艺类别
Technique Categories
- 色彩与质感系列
Color & Texture Series

工艺类别 Technique Categories

热玻璃工艺 Hot Glass

吹制 Blown Glass

通过吹管蘸取玻璃液吹塑成形
Shaping molten glass by inflating it through a blowpipe.

压铸 Cast Glass

将玻璃液倒入模具中，使其成形
Pouring molten glass into molds to achieve desired forms.

暖玻璃工艺 Warm Glass

热弯玻璃 Glass Bending

使玻璃在炉内受热软化后弯曲成特定形状
Softening glass in a kiln and bending it into specific shapes.

热熔玻璃 Slumping

玻璃在炉内软化下垂，形成特定造型
Allowing softened glass to sag under gravity within a kiln to form designs.

色釉玻璃 Enameled Glass

在软化的玻璃上应用釉料
Applying enamel coatings to softened glass surfaces.

冷玻璃工艺 Cold Glass

喷砂 Sandblasting

利用砂粒喷射在玻璃表面形成磨砂效果
Creating frosted effects by propelling abrasive particles onto the glass surface.

彩绘 Painting

在玻璃表面绘制图案
Decorating glass surfaces with painted patterns.

切割 Cutting

使用工具对玻璃进行刻画和雕刻
Incising or carving designs using specialized tools.

化学蚀刻 Chemical Etching

利用化学药剂腐蚀玻璃表面形成图案
Corroding glass surfaces with chemical agents to produce patterns.

镶嵌 Mosaic

将不同形状、颜色的小块玻璃拼接组合
Assembling small pieces of colored/textured glass into composite artworks.

色彩与质感系列 Color and Texture Collection

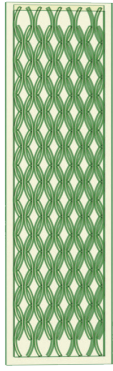
泥晶玻璃纹样&配色系统 ReSilt Vitro™ Pattern & Color System

几何菱格 Geometric Rhombus



菱形单元等距铺陈，叠加上清晰几何秩序。
Rhombus units arranged in sequence, layering a clear geometric order.

网目菱纹 Mesh Rhombus



网状肌理层层推进，构成紧凑克制的时间节奏。
Interlaced grids advance in layers, forming a compact and restrained spatial rhythm.

连瓣纹 Linked Petals



椭圆瓣片首尾相续，曲线延展为链状的连续肌理。
Elliptical segments join end to end, curves extending into a continuous chain-like texture.

细格栅 Fine Grid



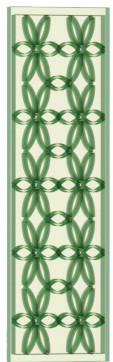
细线格栅层层分割，透明与留白塑造通透的界面。
Thin lattice lines divide in succession, transparency and void shaping a permeable surface.

联锁编织 Interlocking Weave



灵感源自传统钱纹，交叉与回转构成连绵的结构隐喻。
Inspired by traditional coin motifs, crossings and turns suggest enduring structural metaphors.

盘长连结 Endless Knot



灵感源自盘长意象，单元互扣，展现循环延展的逻辑。
Inspired by the endless knot motif, units interlock to articulate a logic of cyclical extension.

04 Scenario

场景

- 展览应用
Curation & Exhibition
- 产品应用
Product

基于ReSilt Vitro™ 模块化系统的核心优势在于叙事性与可持续性的统一，对于展览展馆作为传递前瞻理念的理想载体的叙事需求，我们致力于打造像展品一样的展陈材料。

Leveraging the core strengths of the ReSilt Vitro™ Modular System—the unity of narrative and sustainability—we are committed to creating exhibition materials that function like artifacts, ideally suited for conveying forward-thinking ideas in exhibition spaces.

泥晶玻璃于 2025世界设计之都大会（WDCC2025） 首发首展

「设计之都」十五周年展——生城未来

The 15th Anniversary Exhibition of Shanghai, City of Design: An Ever-Evolving Future

展览共呈现4个核心展项，通过“溯源-解析-链接”的递进式叙事线索共同构建“生城未来”的完整图景。

其中「循环之基」板块Foundation of Circulation中泥晶玻璃以模块化系统的展览形态进行首展。

The exhibition presents four core installations, collectively constructing a holistic vision of "An Ever-Evolving Future" through a progressive narrative: Tracing Origins → Analytical Insights → Future Connections.

Within the Foundation of Circulation section, ReSilt Vitro™ premiered as a modular exhibition system.



每一块砖，都曾是城市肌体的一部分，如今，它们被设计重塑，成为讲述未来的基石。

在“城市物质代谢”的复杂命题里，我们将“污泥”视作城市污水代谢的未来矿产，它不再是环境的负担，而是有待重塑的资源载体。泥晶玻璃ReSilt Vitro™ 由上海城投水务（集团）有限公司提供上海城市污泥，经上海设计周可持续实践中心与上海复洁科技股份有限公司共同研发，实现「设计+科技」的创新实践，将城市污水处理废弃物资源化利用加工为泥晶玻璃，成为被重新看见的材料语言。这种由城市“代谢物”构成的结构，将用于展示上海最前沿的产业成果。以城市最基础的物质循环为基底，托举起代表未来的产业蓝图。这正是“生城”理念的具象化——循序渐进，渐入未来。

Every brick was once part of the city's body; now, reshaped by design, they become cornerstones narrating the future.

Within the complex proposition of "urban material metabolism," we perceive "sludge" as a future mineral resource of the city's water metabolism—no longer an environmental burden, but a resource carrier awaiting transformation. ReSilt Vitro™ embodies an innovative "Design + Technology" collaboration. Developed by Shanghai Design Week's Sustainable Practice Center and Shanghai CEO Technology Co., Ltd. with sludge provided by Shanghai Chengtuo Water Group Co., Ltd. This sludge glass transforms urban wastewater treatment waste into a renewed material language. By transforming urban wastewater treatment waste into crystallized sludge glass through resource utilization, it becomes a material language made visible anew. This structure, composed of the city's "metabolites," will showcase Shanghai's most cutting-edge industrial achievements. Grounded in the city's most fundamental material cycles, it elevates the industrial blueprint representing our future.

04	像素之矩		Pixel Matrix	
	展台模仿芯片方形基板，用砖模块呈现逻辑、秩序与数据流动感，呼应半导体电路布局。		The booth mimics a chip's square substrate. Brick modules form logic, order, and data flow, echoing semiconductor circuitry.	
	生命螺旋		Life Spiral	
	设计源自DNA双螺旋，通过玻璃砖旋转堆叠，呈现向上攀升的生命动感，象征基因与科技突破。		Inspired by DNA, glass bricks are stacked in a rotating form, creating upward dynamic vitality, symbolizing genes and biotech innovation.	
	神经元之塔		Neuron Tower	
	以泥晶玻璃的深浅变化呈现高低错落的“节点”，象征神经元连接、数据流与学习过程。		Uses mud crystal glass shades to form staggered "nodes," symbolizing neural connections, data flow, and learning.	
	信号之波		Signal Wave	
	将无形的电子信号与电磁波，以流动的波形与通透玻璃艺术化呈现。		Presents intangible electronic signals and electromagnetic waves as flowing waveforms.	
	凯旋之势		Victorious Momentum	
	以1983国产桑塔纳为灵感，像素风勾勒车型的轮廓，致敬中国汽车工业现代化历程。		Inspired by the 1983 domestic Santana, pixel style outlines the car, paying tribute to China's automotive modernization.	

啮合线		Meshing Line	
设计源自于精密机械的核心一齿轮传动。由9组长短I形精确咬合，构建工业美感与稳定力量。		Inspired by gear transmission, nine interlocking I-shapes create industrial aesthetics and stable strength.	
地球心跳		Earth's Heartbeat	
像素心象征无限的生命力，体现了新能源及绿色低碳以科技的力量对地球的守护。		Pixel-style heart symbolizes boundless vitality, reflecting how renewable energy and green technology protect the planet.	
原子之韧		Atomic Tenacity	
设计灵感来自石墨烯、碳纤维的化学结构，展示材料的精确性及高质量发展韧性。		Inspired by graphene and carbon fiber structures, showcasing material precision and resilience in high-quality development.	
松间照		Pine Illumination	
模块化玻璃砖错层堆叠，形成流动“S”形态—上海时尚出品标志性符号。		Staggered modular glass bricks form a fluid "S" shape—a signature of Shanghai fashion products.	
显示器		Display	
具象电脑显示器形态，呈现云-边-端三层架构，将软件与信息服务业的高效协同具象化。		Based on a computer monitor shape, presents the cloud-edge-end architecture and materializes efficient software-information collaboration.	

产品应用 Product

ReSilt Vitro™ 的独特性在于其“城市矿产”的出身与高端定制潜力。这使其能够跨越不同市场领域，为产品注入独特的文化附加值。

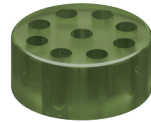
ReSilt Vitro™ stands out for its urban mineral origin and high-end bespoke potential. This enables it to bridge diverse market segments and categories, infusing products with a distinctive layer of cultural value.

Product 01

泥晶煤球 ReSilt Vitro™ Briquette

源自上海的生活记忆，以泥晶玻璃重塑蜂窝煤的温度与形态。

Rooted in the living memories of Shanghai, the warmth and form of honeycomb coal are reinterpreted through ReSilt Vitro™.

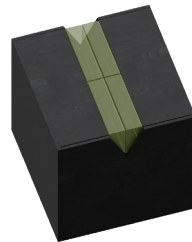


Product 02

Bund 墩

源自上海的城市脉动，以泥晶玻璃重塑废弃物的质感与社交温度。

Born from the rhythm of Shanghai, ReSilt Vitro™ reshapes the texture of waste into the warmth of social interaction.



持续开发中
Under development

泥晶煤球 ReSilt Vitro™ Briquette

蜂窝煤在上海乃至全国城市生活中扮演了至关重要的角色，被视为家庭的“家什”，是维系日常饮食的基础，体现了“民以食为天”的生存智慧。在1980年代之前，“生煤炉”是上海寻常人家清晨的第一件事，煤炉点燃时弄堂里弥漫的浓烟伴随着晨雾，成为一代人深刻的城市记忆。

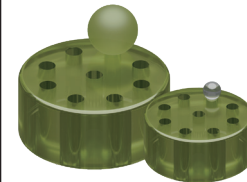
Honeycomb briquettes once played a crucial role in daily life in Shanghai and other Chinese cities. As an essential household fuel, they sustained everyday cooking and reflected the belief that “food is the first necessity of the people.” Before the 1980s, the smoke rising from morning coal stoves drifting through the alleyways became a vivid urban memory for a generation.

产品以城市污水处理系统产生的污泥为原料，经高温熔融转化为泥晶玻璃（ReSilt Vitro™）。这一过程让曾经的环境负担成为可持续的设计材料，实现了“从废弃到新生”的转化。

The product is made from sludge generated by the city's wastewater treatment system, which is transformed into ReSilt Vitro™ glass through high-temperature melting. This process turns a former environmental burden into a sustainable design material, realizing the transformation ‘from waste to rebirth.

每一个孔洞都被重新定义为“功能接口”，可嵌入香插、试管、烛台等配件，使其从单一形态转化为多功能桌面摆件，在记忆与当下之间建立起新的连接。泥晶煤球不再燃烧，却以另一种方式延续了生活的温度。

Each hole is redefined as a ‘functional interface,’ allowing the insertion of accessories such as incense holders, test tubes, or candle stands. This transforms it from a singular form into a multifunctional desktop object, creating a new connection between memory and the present. The ReSilt Vitro™ Briquette no longer burns, yet it continues to carry the warmth of life in a different way.

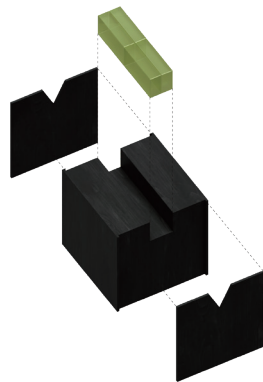


Bund 系列的设计灵感来源于城市公共空间与滨江景观中最具包容性的生活场景——“临水而坐”。它承载着上海城市滨水空间的开放姿态，也象征着人与自然、人与城市之间的流动关系。设计将现代线性体块与泥晶玻璃的材质语言相结合，创造出具有雕塑感与实用性的城市家具系统。

The design of the Bund series is inspired by the most inclusive living scene in urban public spaces and riverside landscapes—“sitting by the water.” It carries the open spirit of Shanghai’s waterfront spaces and symbolizes the fluid relationship between people and nature, as well as between people and the city. The design combines modern linear forms with the material language of ReSilt Vitro™ glass, creating a city furniture system that is both sculptural and functional.

产品以炭化木做为主体，座椅设有抽拉式的卡槽，可自由嵌入泥晶玻璃砖（ReSilt Vitro™），无需胶剂。半透明玻璃为木质注入温暖质感，让公众感受可持续材料魅力。城市废弃物与木材通过设计转化为坚实、富有故事性的城市家具，实现从废弃到新生的循环美学。

The product features a Carbonized Wood seat with pull-out slots for ReSilt Vitro™ glass bricks, adding warmth and texture while letting the public experience sustainable materials. Urban waste and wood are transformed into solid, story-rich city furniture, embodying the cycle from waste to rebirth.








Bund系列不仅是一组功能性家具，更是一种当代滨水公共空间的美学提案。它让再生材料真正回归城市现场，也让公共空间成为材料与城市共生的舞台。

The Bund series is not just a set of functional furniture, but an aesthetic proposal for contemporary waterfront public spaces. It brings recycled materials back into the urban context and transforms public spaces into a stage for the coexistence of materials and the city.

“城市矿产”系列 “Urban Mines” Series

未来我们将开发一系列具有城市IP属性的新材料，固废、回收材料视作“城市矿产”的生产前端，通过“就地资源化”实现废弃物的局部消纳与产业再利用，以设计升维废弃物的价值，打造“从城市废弃物到城市产品”的循环共生链。

The city beneath our feet is both the cradle of civilization and a colossal metabolic entity. With every breath it takes, resources are consumed and waste is generated. Yet, in the cycle of renewal, every end is a new beginning. What has been forgotten awaits awakening; what has been discarded holds the code for rebirth.

赤泥灰	氧化铝副产		持续开发中 Under development
粉煤灰	燃煤电厂副产		
草木灰	秸秆稻壳副产		
贝壳灰	海鲜壳副产		
钢渣粉	冶金炉副产		

05 Team & Collaboration

团队与合作

- 关于我们
About Us
- 合作生态
Collaborative Ecosystem

关于我们 About us



上海设计周 Shanghai Design Week

2010年，上海加入联合国教科文组织“创意城市网络”，被授予“设计之都”称号。上海设计周是由政府组织的官方设计平台，由上海市经济和信息化委员会指导，作为推进世界一流“设计之都”建设的重要抓手，旨在打造国内外原创设计的首发地、优秀设计的产业转化高地，构建多元共赢的创意设计生态圈。

In 2010, Shanghai joined the UNESCO Creative Cities Network and was awarded the title of "Creative City of Design". SHANGHAI DESIGN WEEK (SHDW) made its first debut in 2022. It is a pivotal milestone not just for an ambitious urban development initiative for Shanghai but also a testament to the vital importance that design as a new primary driver plays for the evolution and resilience of our global city. Organized and guided by the Shanghai Municipal Commission of Economy and Information Technology, SHDW will be performing as a multidisciplinary design event organizer that fosters and celebrates the industrial transformation of excellent designs and an integrated design platform that visualizes an inclusive, innovative and integrated city of Shanghai.



上海设计周可持续实践中心 Sustainable Practice Center, SPC

是上海设计周于2025年推出的专注可持续实践的平台。以开源协作、国际同频和实践力为三大核心，聚焦可持续产品研发、新材料场景化应用与行业跨界协作共创，打造全球可持续设计的试验场。

Launched in 2025, the Sustainable Practice Center (SPC) is Shanghai Design Week's dedicated platform for sustainable innovation. Anchored by open-source collaboration, global alignment, and practical execution, SPC focuses on sustainable product development, application of new materials in real-world scenarios, and cross-industry co-creation—establishing a global laboratory for sustainable design.

合作生态 Collaborative Ecosystem

我们深知，一种材料的真正价值在于被创造。ReSilt Vitro™ 是一个开放的平台型材料，我们欢迎来自全球的创作者、品牌与机构，共同探索其无限可能。

We firmly believe that a material's true value is realized in its application. ReSilt Vitro™ is an open, platform-based material, and we welcome creators, brands, and institutions from around the globe to explore its infinite possibilities together.

技术支持

Technical Support

开放基础配方与工艺参数，提供技术咨询，共同开发定制化材料，探索规模化生产方案。

We provide open-source access to basic formulas and process parameters, offer technical consultation, co-develop customized materials, and explore solutions for mass production.

CMF设计 CMF Design

邀请设计师加入色彩与质感系列开发计划，共同创造限定主题CMF系列。

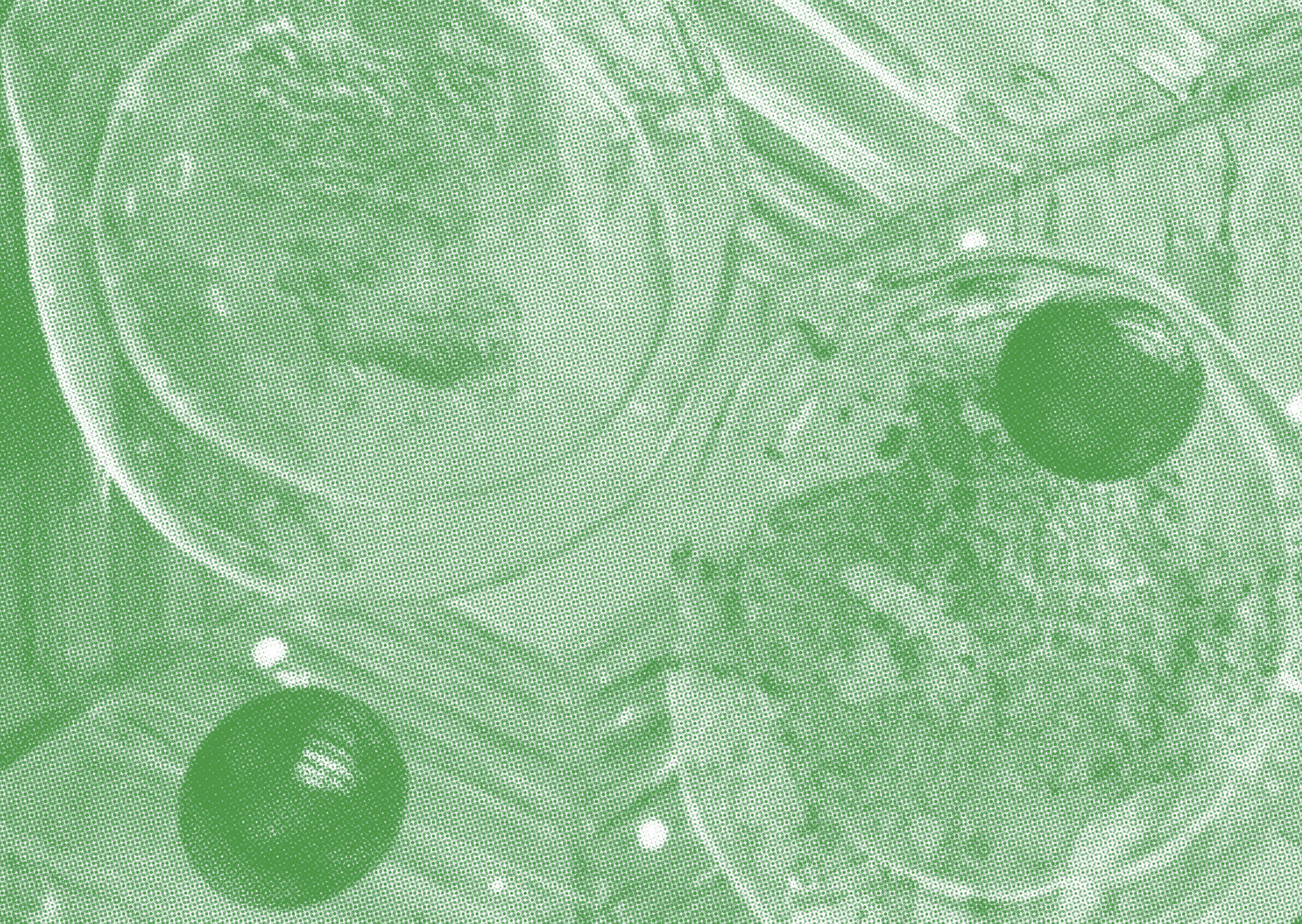
We invite designers to join our Color & Texture Series development program to co-create CMF series based on exclusive themes.

场景应用

Application Scenarios

提供标准化材料模块并支持定制，与各领域品牌共同打造引领市场的标杆产品。

We offer standardized material modules with support for customization, collaborating with brands across various fields to create market-leading, benchmark products.



✉ info@shanghaidesignweek.com

📍 上海市静安区胶州路319弄30号现所二期

