上海大型公共绿地的未来
WHAT IS NEXT FOR LARGE PUBLIC GREEN SPACES IN SHANGHAI?

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摘要

大量的人口和有限的土地对上海未来的发展提出了前所未有的挑战。

填海造陆工程以牺牲栖息地为代价创造了更多的土地。然而这些吹填出来的土地自然条件恶劣，在成陆多年后仍不适宜居住。无论是海岸带还是新填出的土地都有待长期的恢复和修复。

为了控制城市无限蔓延并保护农业用地，对建成区域进行城市更新在近些年来备受重视。这类项目受到当前需求、历史保护、现状基础设施、用地性质、政治等多重因素的影响，需要全面整合设计才能取得成功。

在公共项目中，公众参与的缺乏往往导致政治诉求变成决定设计的主导因素。这可能致使设计偏离最佳的专业解决方案。那么，景观设计师如何能够影响决策过程以使其更加合理？

关键词

海岸保护；自然演替；修复；城市更新；绿色基础设施；公众意识

ABSTRACT

Large population and land shortage bring Shanghai unique challenges on future development.

Ocean landfill has created more lands at the cost of losing habitats. The harsh conditions of the reclaimed land, however, make them still difficult places to live, even many years after being filled in. Long-term restoration and remediation are needed both along the shoreline and in reclaimed land areas.

Urban regeneration of developed areas has gained more attention in recent years, as a way to control urban sprawl and preserve agricultural land. Such projects face complex mixture of current needs, historic preservation, constraints from existing infrastructure, land uses, and political issues. Strong design integration helps to enable the success of these projects.

Lacking public engagement in the decision-making process for public projects often results in political agendas becoming the driving force of the design direction. As this direction can deviate from the best professional solutions, how can landscape architects influence the decision-making process for the better?

KEY WORDS

Coastal Protection; Succession; Remediation; Urban Regeneration; Green Infrastructure; Public Awareness

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上海，这个中国曾经的经济和工业基地，再次成为了东亚重要的国际城市之一。作为中国国民生产总值和年纳税额最高的城市，上海繁荣的经济吸引了来自中国其它省市及世界各地的人们。

寻找更多空间

上海位于长江三角洲的中心，是中国人口最稠密和经济最发达的地区之一，也是中国人口密度最高（常驻人口2 400万）而土地面积却最小（6 340km^2）的直辖市。有限的空间和持续增长的人口之间的矛盾长期困扰着上海。到哪里去寻找更多的空间？人们将注意力投向了农田和大海。

遵照上海市第十个五年计划（2001~2005），9个卫星城自2001年起已陆续投入建设。大部分卫星城建在原有农田之上，而其中最大的卫星城——临港新城，总面积为315.6km^2，其中133.3km^{2}建在了填东海而成的土地上。

几十年的填海造陆工程导致海岸栖息地大量丧失。而这些吹填出来的土地，却因其自然条件恶劣而在成陆多年后仍未能驱动产业理想发展。无论是海岸带还是新填出的土地都有待长期的恢复和修复。

临港新城的最近一次填海在2002年新城总体规划获得政府批准后开始。新城45%的面积来自于这个中国最大的填海工程。很多地方在填海前曾是海岸湿地栖息地，成陆后亦一度维持其候鸟栖息地功能，但它们在2002年新一轮的填海工程开始后不久即被清理，以便为新城建设做准备，导致这里的栖息地遭到大规模破坏。

海岸景观的演替

在2015年针对临港新城中央546hm^{2}的绿环公园举办的设计竞赛中，Sasaki 提出了一系列长远的策略来帮助基地以及整个临港新

1. 设计将土壤和水体修复作为临港绿环公园绿色基础设施的一部分来考虑，以保证公园在长时间内有效地发挥作用。
2. 临港绿环公园北部春景效果图

1. Soil and water remediation was taken as part of the green infrastructure at Lingang Green Ring Park to ensure its long term performance.
2. North of Lingang Green Ring Park in the spring

城加速演替并恢复沿海栖息地，以最终创造一处适宜人类活动和野生动物栖息的地方。

绿环公园的面积相当于纽约中央公园的1.6倍。这个巨大的公园对地区生态系统健康和城市区域价值都将起到至关重要的作用。具体来说，就是将影响整个新城及周边地区的水质、土壤肥力、植物群落、栖息地价值、休闲机会、教育意义，以及文化演变。因此，公园设计必须从一个更广泛的背景出发，考虑整个临港新城所面临的环境和社会问题，将公园作为全面提升这块填海而成的土地价值的催化剂。

公园现状体现了填海工程及新城规划带来的一系列问题。盐碱土和栖息地丧失导致陆地自形成伊始即成为荒原，而松散的总体规划则进一步加剧了这一问题。虽然政府在填海和城市基础设施建设中投入了巨大财力，然而这里至今仍然是一个海风呼啸、人口稀少的地方，无论植物还是人类都难以在这里生活，进一步阻碍了新城的人口增长和经济发展。

我们的主要策略包括建立海岸防护系统和修复盐碱土、创造完整的生态网络、治理雨洪、建立防风措施、收集风能作为动力、创造本地居民及来访者的目的地等，以提高新城的整体宜居性 （图1）。

设计的空间构成理念 —— “ 风中的涟漪 ”呼应了以上策略。它从基地的自然特征元素 —— 水和风出发，由运河、道路系统和散置于其间的“ 功能泡 ”来创造多样的体验。微风吹过，城市核心区的水面上泛起层层涟漪，涟漪之间的区域可以提供各种活动功能；当涟漪渐渐泛开，舒展的空间勾画出沿海岸分布的大尺度景观，帮助土壤和水体脱盐并保护海岸线，同时连接起周边社区与当地的休闲网络及野生动物栖息地，将人们的生活、工作、游乐与区域的大生态网络交织在一起 （图2）。

这个宏伟的愿景与新城的开发时序相扣，将加速新城区域的演替。由于西侧两区段的土壤修复工程已经开始，并且已种植了大量的树木以服务周边社区，故而其设计重点在于加强公园的使用功能并改善其维护策略。在场地的其余部分，由于土地仍较贫瘠荒芜，设计引入农业和畜牧业来帮助改良土壤，使植被群落逐渐演替，最终将在周边区块的开发启动时成为森林。公园以外的大面积湿地也将被整合到排盐机制当中，同时继续发挥其缓冲带的功能，以阻挡海水入侵并减弱风暴和海浪的影响。

公园不同区块中交错的演替进程将造就非常多样的景观，森林、树阵、花园、草坪、灌丛、草甸、农田、湿地、水体都将在基地上呈现 （图3）。如此多样的景观将提升新城的栖息地价值并丰富人们的游览体验。随着物质环境的持续改善，越来越多的人也会愿意到临港新城来工作和生活。

不出所料，当地政府对是否采取如此大胆的设计方案非常犹豫。加上近两年政府领导频频更换，绿环公园项目进展缓慢。随着中国对生态环境的日益重视，希望临港新城有朝一日能成为大型海岸景观恢复和演替的先锋。

2

重新关注城市

由于近年来中央政府对有限的农业用地面积进行严格把控，而且上海的开发用地在城市总用地中已经占比过高，城市建设者们开始将目光投向建成区域。上海市的“ 十三五 ”规划明确指出，从2020年起，上海将开始缩减其总建设用地规模。

无论是在城市腹地还是滨水区，城市更新由此获得了越来越多的关注。与世界上

许多城市一样，城市更新类项目面临当前需要、历史保护、现状基础设施、用地性质、政治等多重复杂因素的影响。全面整合设计是取得成功的关键。

与许多滨水城市类似，在21世纪初重工业开始逐渐撤离之前，上海的滨水区曾是城市生活的中心，连绵的码头和工业区星罗棋布。现在，一些更基本的现代城市功能（如办公、商业、住宅以及休闲等功能）正逐渐进驻滨水区。

滨水区转型的一个出色案例是徐汇滨江地区，它经历了由机场和工业基地到上海顶级商务区和深受欢迎的公共文化目的地的华丽蜕变。Sasaki曾负责一处夹在高密度开发用地之间的9hm^{2}跑道公园的景观设计，将一条历史性的机场跑道转化为供周边人群休闲放松的城市公共绿地。

虽然政府在复兴城市滨水区方面也做出了巨大努力，但很多滨水公园的质量与上海作为一个正在上升的国际大都市的地位很不

3. 不同景观类型的演替过程及相关野生动物栖息地

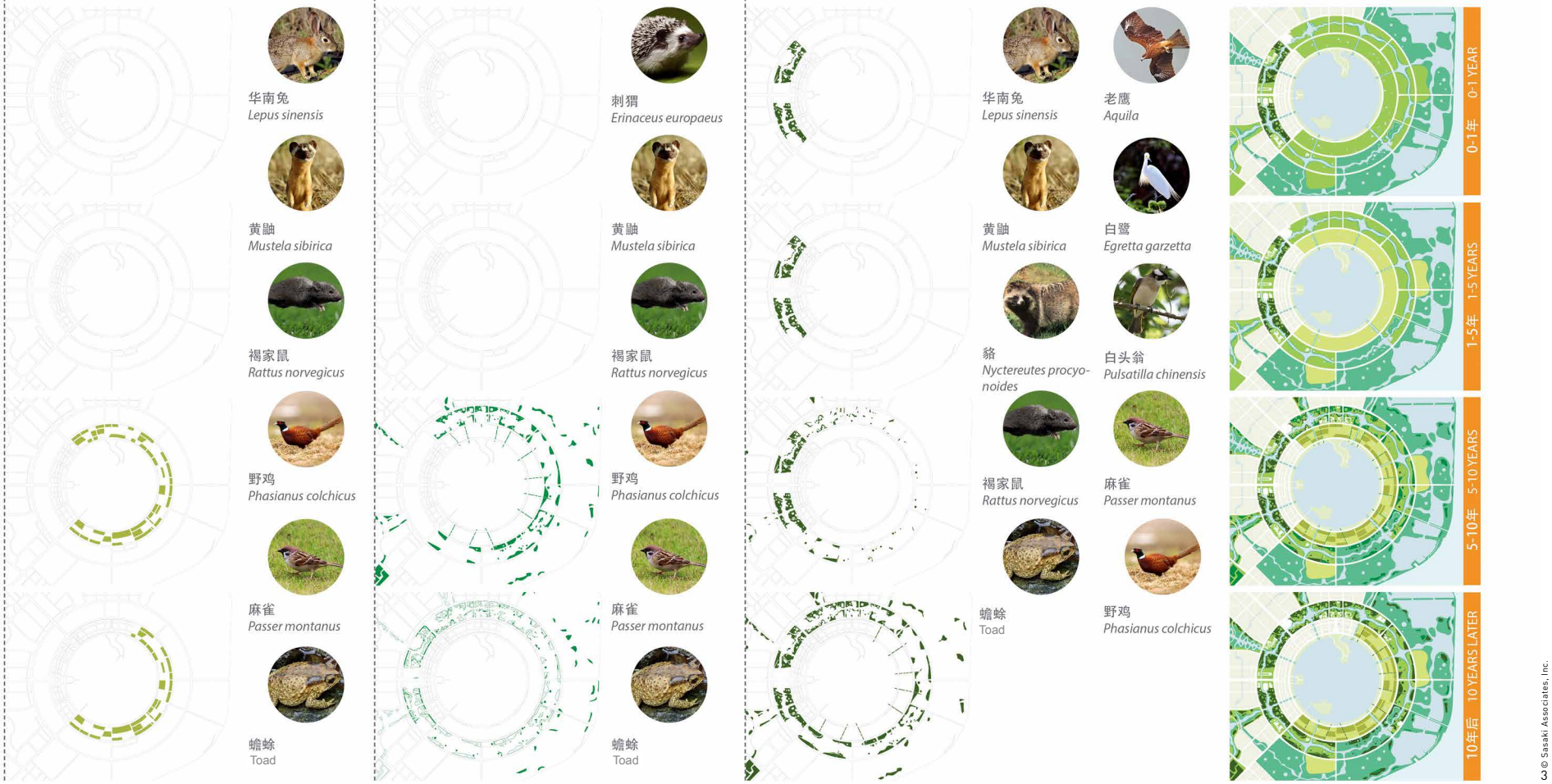
3. Succession of different landscape types and corresponding wildlife habitats

相称。在黄浦江沿岸的所有滨水公园中，关注水质问题和栖息地价值的公园屈指可数，能够有效加强城市和江河之间联系的更是少之又少，很多公园由于功能不完善且距使用者较远而遭到冷落。一些公园设计仍然遵从着“多种树”这方“万灵药”。若想将上海打造为全球领先的城市，则亟需在作为其城市前沿的滨水区引入更高层次的综合性设计考量。

上海是一座水质型缺水城市。黄浦江上游的水质属IV类，而其入海水质达到劣V类。上游农田中溢出的氮、磷以及建设区域排放出的含有水银、汽油、氨氮的工业废水和城市雨水持续地污染着河流水质。被硬质挡墙主宰的河岸未能发挥出应有的净化和蓄洪功能，充斥着千篇一律的常绿植物和观赏植物的滨水公园只能提供价值有限的栖息地。

水质污染对鱼类造成了直接影响，导致鱼类品种和数量急剧减少。自20世纪60年代至今，黄浦江中鱼的品种减少了40~50种。水质恶化、鱼群减少、沿岸植物群落单一造成食物和饮水污染、栖息地缺乏，加之过多的人为干涉，对候鸟种群构成了极大威胁。总的来说，滨水区的生态环境质量不容乐观。

上海虽然以滨水大都市著称，但很多滨水区的现状却令人汗颜：在很多沿河的城市街道上很难看到水，尤其是在市中心。在防汛需求和人类天然的亲水愿望之间寻求平衡是人们必须面对的长期挑战。全球气候变化导致洪水频发、水位持续走高，而上海的软



土地基却在不断下沉。在20世纪30年代，人们可以由外滩的马路直接走到黄浦江边的码头；而今天，一道三米高的防汛墙却横亘于都市与河流之间。虽然滨水区经历了数次改造，但河流的可视性问题却一直未能得到有效解决。在很多滨水街道上，人们可以看到对岸的高楼大厦，但却看不到河流本身。

以位于黄浦江东岸的半岛 —— 陆家嘴为例，自20世纪90年代初开始，其逐渐发展成为上海新的金融区。陆家嘴的飞速发展虽然造就了令人瞩目的滨水天际线，但其自身的公共空间品质却一直不尽人意。区域内虽有几个滨水公园，但单一的功能使其缺乏活力，不同的开发主体分段、陆续建设导致彼此之间缺乏联系和整体性。不仅如此，江堤和防汛墙进一步阻挡了人们的通江视线和亲水活动。

城市与江河的重逢

继围绕2010年上海世博会的大型建设之后，黄浦江滨水绿道项目于2016年启动，该项目试图将所有滨水区串联成一个连续的系统。Sasaki的设计理念 ——“ 城市与江河的重逢 ”不仅仅为长2.5km的陆家嘴滨水区提供了几条连续的滨水步道，更重要的是，它解决了滨水城市所面临的主要问题，包括还江于民、为城市腹地注入活力、恢复水体生态功能、彰显文化遗产等，在上海最显要的位置创造了一处中心公共空间，推动了高品质的城市生活 （图4）。

在设计过程中，我们收集了众多来自公园使用者以及公园与周边地块的利益相关方的意见，调查了高峰期及非高峰期公园的人流量，向业主、利益相关方和各政府机构进行了多次汇报，以创造一个既有远见又切合实际的方案，提高这一中心公共开放空间的质量。

这个整体性设计策略包括由三条沿江走廊和11条连接城市与黄浦江的通江门户和视线走廊组成的空间框架，并在其中嵌入了为不同年龄段的人群设计的多种功能空间。三条走廊 —— 亲水走廊、全景走廊和城市走廊构成了连续的沿江休闲廊道系统，在不同标高处创造全方位的滨水体验，为欣赏这座国际大都市的过去、现在与未来提供了独一无二的机会 （图5）。城市街道尽端的11条通江门户和视线走廊从视觉上和空间上将水岸空间与城市肌理相交织，加强了城市与滨江区的连接，同时为城市腹地注入新的活力。

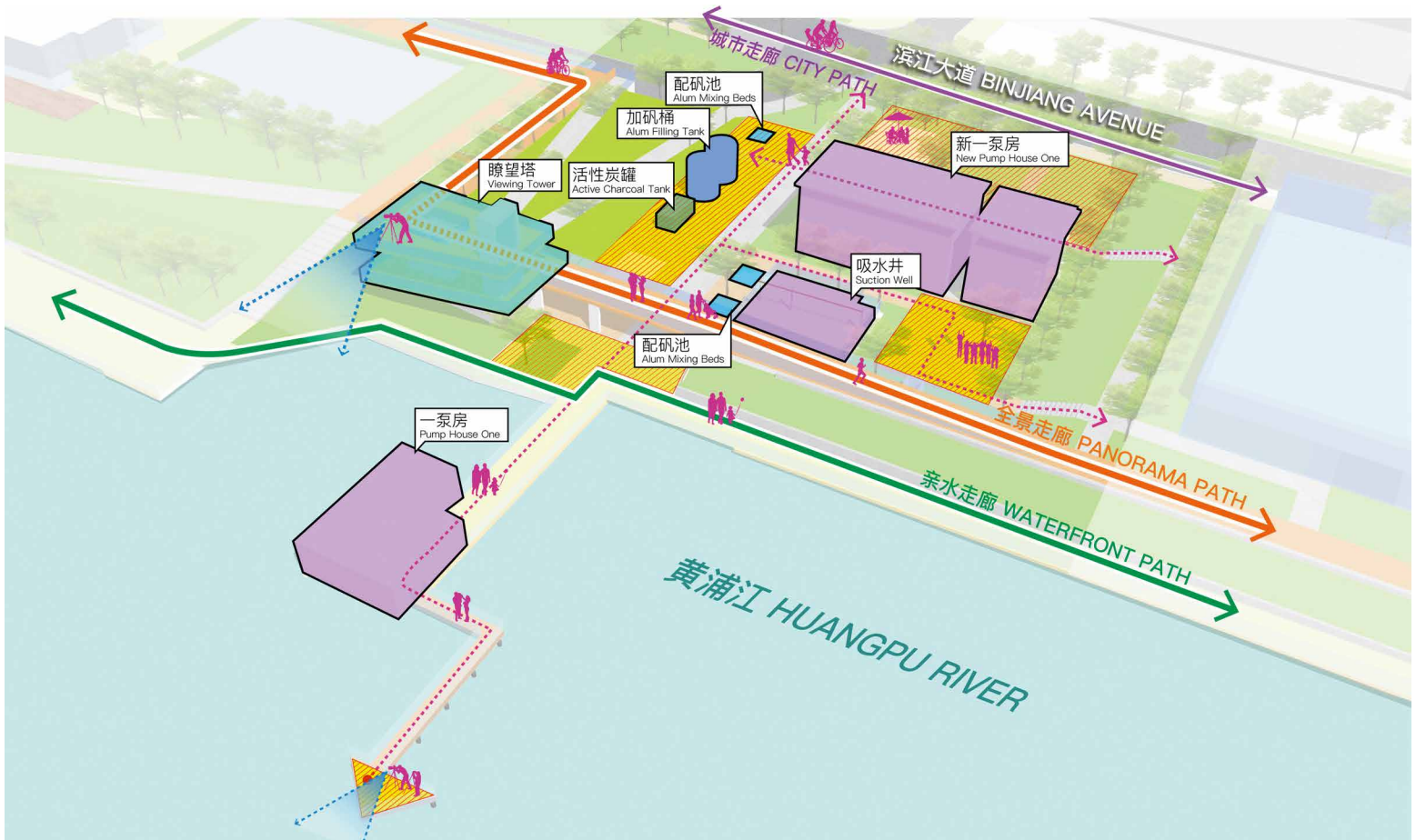
设计方案还提出保护和修复滨水区的工业遗迹，以彰显黄浦江作为重要工业走廊的往昔，并结合基地现状、未来用途及历史文脉制定生态策略 （图6）。综合性雨水管理系统与江岸改造措施相结合，在吸引人们来到江畔的同时改善水质并恢复沿岸栖息地。借助本地植物的配植和景观类型的组合，方案倡导可持续的长三角本土景观并进一步突出整体设计思想。

陆家嘴滨江带是黄浦江东岸的一个重要节点。在充分尊重现状环境的基础上，Sasaki的设计方案将休闲、文化、教育和生态修复融入到这个上海的缩影之中。透过这扇窗，人们可以看到这座魅力之城的全景 （图7～9）。

虽然设计方法富有远见、设计方案紧密结合了现状基地条件、设计过程与各利益相关方密切合作，但该方案仍然由于不明原因而中途搁浅。几个月后，基地中出现了与现

4. “城市与江河的重逢”概念图解
5. 空间框架强调沿河方向以及与城市之间的联系。

4. Design concept diagram of Reunion of the City and the River
5. Spatial framework highlights the connections both along the river and with the city.



6. 功能图解：由现状水厂改造而成的水厂博物馆将展现1930年以来浦东地区的饮用水的制作过程。它将成为浦东工业历史教育的重要目的地。

6. Program diagram: Proposed Water Works Museum converted from existing facility will showcase how the drinking water in Pudong was produced since the 1930s and become an important educational destination of the industrial age of Pudong.

状城市肌理和滨水区毫无联系的曲折小径与观赏植物。据说现有的滨江大道也将密植树木。结果不免令人疑惑，在这样一个关键性的公共景观中，到底是什么在主宰着设计决策？

探讨生态、文化、创新

《上海市城市总体规划（2017-2035）》提出了将上海建设成为卓越的全球城市——一个创新之城、人文之城、生态之城的目标。这个规划反映了上海长期以来的前瞻性文化，也呼唤要用大胆探索的创造性手法来设计高质量的场所。由于先进的大型公共绿地会为当地生态带来巨大裨益，且因具有公共性质和灵活性而充满潜力，故而其将在实现这一宏伟愿景的过程中担当非常重要的角色。

Sasaki的上海世博文化公园（189hm^2）设计方案是对大型公共绿地如何帮助上海成为一个值得尊敬的全球城市的探索。作为设计竞赛的优胜方案之一，该设计突出表现了这一城市中心大型滨水绿地独特的生态、文化、创新底蕴，由此创造出一个独具魅力的目的地，并向上海人民献礼（图10）。

作为黄浦江西岸的视觉焦点，浦东的这片土地在过去数百年间经历了由滩涂湿地到农田水网再到沿江工业基地的变迁。2010年，上海世博会的举办标志着基地在后工业时代的重生。2017年春，上海市政府决定将该区域再次改建为世博文化公园。

连接黄浦江与东侧开放空间带的生态主轴统领着公园的空间设计。景观框架沿生态主轴建立，连通水岸与城市以及黄浦江两岸。在此框架之上叠加基地自身的景观特征，展示基地的多重历史。4大主题廊道和7个特色区域通过丰富多彩的活动和经年变化的季相创造吸引不同人群的多样化体验，以创造多元活力聚集地，体现上海公平与开放的文化（图11）。

由于基地前身为工业棕地，土壤和地下水曾受到重金属和有机溶剂的污染。在举办世博会之前，园区内的重度污染土壤被移除，但中轻度污染土壤及地下水至今未经治理。Sasaki的方案把修复基地放在了首要位置，希望创建一个绿色基础设施和技术的试验田（图12）。设计将一系列功能性景观与空间体验相结合，治理土壤污染、地下水污染、管理雨洪，并处理污水。同时，方案还引入多种植物群落以创造各类栖息地，不仅丰富了使用体验，而且在城市中心创造了一处重要的生态斑块。

为了呼应上海世博会“城市，让生活更美好”的主题，设计希望能创造代表上海当

代城市文化生活的新品牌：黄浦江岸线上的文化地标。黄浦江两岸的文化资源将通过慢行网络串联成文化艺术游线 （图13）；来自世界各地的适生植物和长三角本土植物将汇聚在公园中，形成一座以上海市花白玉兰为特色的广义的“世博林”。

作为世博精神的另一种表现形式，公园还旨在展示最前沿的创新设计。“灵感绿廊”使整个公园成为一个舞台。它串联起世博会保留场馆、由工业厂房改造而成的秀场以及创意温室，为科技教育、设计展示、文化交流提供了灵活多样的室内外场地 （图14～17）。

业主方对此设计的反馈集中在植物修复棕地的成本和耗时上。虽然研究表明去除基地污染大约需要10年时间 —— 对如此重大的项目来说并不算漫长，但来自政府的压力使得业主急于在这片荒芜的土地上立刻培育出成熟的森林，就像那些只花几个月时间就建造完毕的公园一样。他们宁愿花费大量财力将受污染的土壤运送到其他地方，也不愿意借助自然的力量在基地上慢慢修复，仅仅是因为前者的效果更加立竿见影。这与纽约市的决策者们对待弗莱士河公园修复计划的态度形成了强烈反差。弗莱士河公园修复计划于2008年开始，将历时30年。

7

谁应该决策公共空间?

城市大型公共绿地对改善当地生态环境和提高人居生活质量大有裨益。设计恰当的公共绿地可以提升生态价值、创造休闲教育目的地、并弘扬当地文化。那么谁应该决定公共绿地的未来？

作为公共空间的最终使用者，当地公众

7. 陆家嘴西路门户将城市肌理延伸至黄浦江，打开通向江对岸外滩历史建筑群的精彩视野。
8. 由丰和路门户顶部望向浦西的透视图

7. Proposed West Lujiazui Gateway, extending the city fabric to Huangpu River, offers a spectacular view to the historic Bund on the other side of the river.
8. Perspective from the top of proposed Fenghe Road Gateway

8

9. 由线性雨水花园、莲花池和人工湿地组成的雨洪管理系统可以改善水质并营造沿岸的鸟类栖息地。

9. Linear rain gardens, a lily pond, and a constructed wetland contribute to a comprehensive stormwater management system that will improve water quality and create bird habitats along the shoreline.

的使用后评价对公共空间的成功与否起着至关重要的作用。作为纳税人，公众也有权决定如何使用他们所缴纳的税赋。西方国家常见的方式是在设计过程中召开市民会议，吸纳公众与利益相关方参与意见和决策，这一举措将有效促进项目的实施。

虽然上海的一些重大公共项目已经开始开展网络公众调查，然而决策系统仍然被自上而下的方式所主宰。政治因素常常主导着设计方向。在很多情况下，这种决策往往脱离了最佳的设计判断；短期效益常常碾压长远考量。这种现象导致城市错失借助大型公共景观项目创造更大的生态、文化和社会效益的机会。景观设计师如何能够更好地影响决策是值得所有专业设计人员深思的问题。

另一方面，提升公众对景观多重价值的认识对项目的成功也至关重要。例如，多种树并不是解决所有生态问题的万灵药，必须根据基地的具体情况“量体裁衣”。我们遇到过很多这样的情况：大型公共绿地的设计评审根本没有邀请专业的生态学家参与。这一现象本身就体现了组织者对于生态学在此类项目中重要性的忽视。景观项目需要考虑更多线上或线下的深层教育活动和项目推广，来促进公众理解哪些要素可以帮助项目实现其环境和社会目标。

前面的路还很长。随着上海持续向全球化城市迈进，希望这里的大型公共绿地也能跟上步伐，勇于开拓符合时代要求的前沿理念和设计。**LAF**

9 © Sasaki Associates, Inc.

Shanghai, the once economic and industrial base of China, has emerged again as one of the leading international cities in East Asia. With the highest Gross Domestic Product (GDP), and the largest annual tax contributions among all cities in the country, the prosperous economy in Shanghai has attracted people from all over China and abroad.

Looking for More Space

Located in the center of the Yangtze Delta, one of the most populous and developed regions in China, people in Shanghai are facing dilemmas of limited space and constantly increasing population. With over 24 million permanent residents, Shanghai has the biggest population density but smallest land area (6,340 square kilometers) among four municipalities directly managed by the central government. Where can more space for development be found? In recent years, people have turned their attention to the agricultural land and the ocean.

Since 2001, following the Tenth Five-Year Plan of Shanghai, nine satellite cities were quickly put into construction. Many were built from agricultural lands, and the biggest one — Lingang New City, with a total area of 315.6 km^2, was erected from the 133.3 km^2 landfill into the East China Sea.

Decades of landfill has created more land areas at the cost of coastal habitat destruction. The reclaimed land, however, has struggled to propel the desired development for many years due to its harsh conditions. Long-term restoration and remediation efforts are needed both along the shoreline and in reclaimed land areas.

The latest landfill in Lingang New City started in 2002, after the Lingang New City Master Plan was approved by the local government. 45% of the New City was built on the largest reclaimed land area in China. Having been coastal wetland habitat for wildlife prior to being filled in for the New City, the reclaimed land was, for a time, a habitat for migratory birds. However, this was soon cleared for possible development — and the habitat was significantly compromised.

Succession of Coastal Landscape

During the design competition in 2015 for the 546 hectares Green Ring Park inlaid in the Lingang New City, Sasaki proposed a series of long-term strategies to help the site and the larger new city to accelerate its succession and restore the coastal habitats along the shoreline. Ultimately, the goal was to make it a welcome place for both people and wildlife.

Being 1.6 times the size of New York City's Central Park, this extensive park plays a critical role to the health of the local ecosystem and the value of the urban districts in the area. In more

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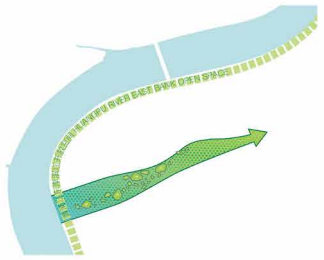
10. 上海世博文化公园鸟瞰图
11. 上海世博文化公园设计框架

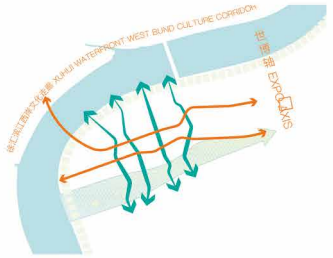
10. Bird's eye view of Shanghai EXPO Cultural Park
11. Design framework of Shanghai EXPO Cultural Park

生态主轴 SPINE



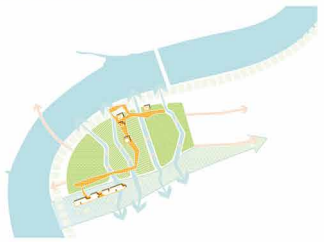
连接黄浦江与开放空间带
CONNECT RIVER WITH THE OPEN SPACE CORRIDOR

景观框架 FRAMEWORK



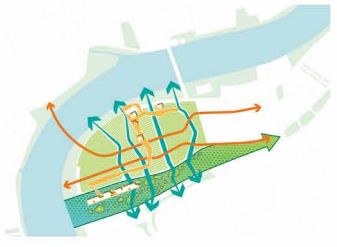
连通水岸与城市
LINK THE WATERFRONT AND CITY

特色区域 FEATURES



承载城市记忆与当代生活
ENGAGE THE CITY MEMORY WITH MODERN LIFE

景观组织 ORGANIZATION



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detail, the park will impact the water quality, soil fertility, plant community, habitat value, recreational opportunities, educational importance, and cultural transformation of the entire new city and beyond. With this in mind, the design of the park had to start with a much broader context including the environmental and social issues the entire Lingang New City was facing, and to treat the park as a catalyst for holistic improvement of this reclaimed land.

The current condition of the park site shows all issues resulted from land reclamation and the new city master plan. Soil salinity and habitat loss led to the barren landscape, while the spreading master plan exacerbated the problem. Although huge investments had been made on the landfill and city infrastructure, it is still a very windy site — a harsh environment for plants or people to live. These conditions impeded the population growth and economic development of this new city.

Our major strategies included building coastal protection system and remediating saline soil, creating complete ecological network, remediating stormwater, harvesting wind energy for power while building wind protection, and creating destinations for local residents and visitors. All these strategies would contribute to the overall livability of the New City (Fig. 1).

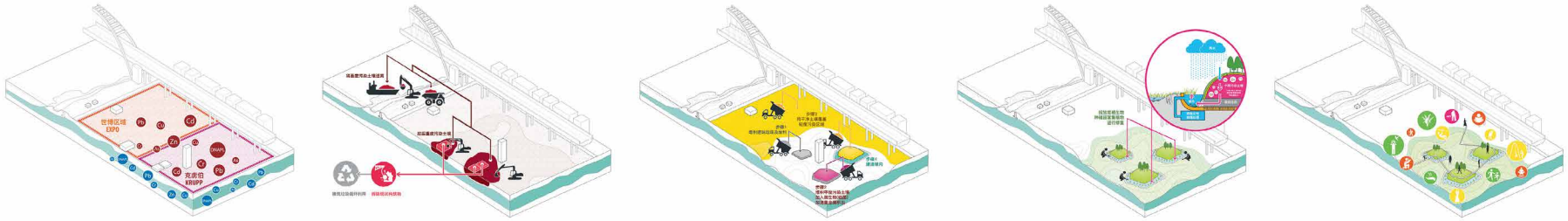
The spatial design composition, Ripples in the Breeze, corresponds to the above strategies — taking cues from natural characters of the site: water and wind, and creating diverse experiences through canals and path systems anchored by program "bubbles." Where layers of "ripples" are originated by wind near the urban core, multiple program spaces are formed along; where "ripples" spread out, the extending gestures delineate large-scale landscapes near the ocean, supporting soil and water desalination as well as coastal protection, linking adjacent communities with local recreational network and wildlife habitats, weaving people's life, work, and joy into the larger regional ecosystem (Fig. 2).

It is a grand vision coupled with the development phasing which will accelerate the succession of the new city. At the two western segments, where soil remediation had started and large quantity of trees had been planted to serve the adjacent developments, the plan is to focus on promoting park uses and improving maintenance strategies. At the rest of the site which remains barren, the plan is to introduce agricultural and pastoral practices for remediating soil over time, eventually making the plant communities succeed into a forest when developments start around. Large areas of wetland beyond the park site will be incorporated in the desalination process while continuing its function as a buffer to prevent sea water seepage and to attenuate big storms and waves.

Staggered stages of succession at different segments of the park will result in a very diverse landscape, with forest, tree groves, gardens, lawn, thickets, meadow, agriculture field, wetland, and water bodies distributed across the site (Fig. 3). This diversity enriches the habitat value and user experience in the new city. As the physical environment constantly improves, more people will be willing to work and live in Lingang New City.

Unsurprisingly, the local government was hesitant to taking as bold a direction as was proposed. This hesitation paired with frequent leadership changes in the past few years resulted in very little movement on the Green Ring Park. As the attention

土壤复育
SOIL REMEDIATION



1 污染风险评估
RISK ASSESSMENT

2 挖掘并运走重污染土壤
CARRY AWAY

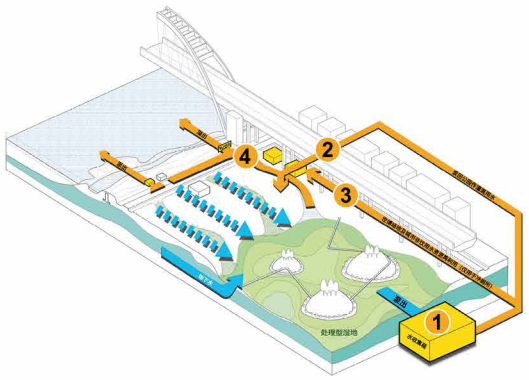
3 堆积污染土并覆盖新土
ACCUMULATION AND CAPPING

4 植物修复
PHYTOREMEDIATION

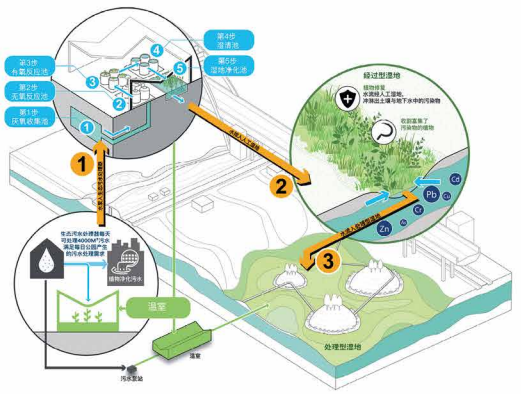
5 安全与活力并存
APPLY PROGRAM

地下水治理
GROUNDWATER REMEDIATION

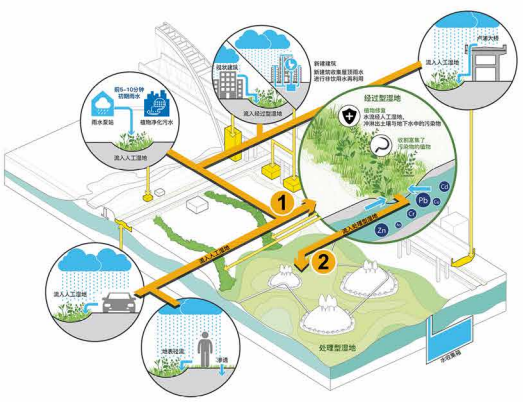
19.1公顷的人工湿地每年可吸收地下水中重金属污染物分别为：铜（CU）22,006克，铅（PB）16,141克，镉（CD）1063,440克，锌（ZN）20,817克，锰（MN）99,703克。



污水处理
SEWAGE TREATMENT



雨洪管理
STORMWATER MANAGEMENT



to the ecological condition of China continues to grow, we hope Lingang New City will eventually be seen as a pioneer in large coastal landscape restoration and succession.

Refocusing on the City

With tighter control from the central government on the limited agricultural land in the country, and already oversized development in the metropolitan area, Shanghai has started to look at existing developed areas for opportunities. According to the city's Thirteenth Five-Year Plan, Shanghai will start to shrink its total development area from 2020.

As a result, urban regeneration has gained more and more attention, both inland and along the rivers. Challenging as in other cities of the world, urban regeneration projects face a complex mixture of current needs, historic preservation, constraints from existing infrastructure, land uses, and political issues. Strong design integration is crucial to the success of these projects.

Similar to other waterfront cities in the world, Shanghai's waterfront had been the center of the city life and was dominated by industrial uses and ports until the beginning of the 21st century when heavy industries started to move away. Now, more essential urban uses such as office, commercial, and residential development, as well as recreational programs are gradually returning to the waterfront.

A great example for such revival is Xuhui Riverfront Area, which has experienced a major transformation from airport and industrial base into one of

12. 绿色基础设施和技术的试验田——上海作为国际化都市，在世博公园利用创新理念治理场地污染，将为未来城市建设树立典范。
13. 黄浦江岸线上的新文化艺术地标——利用慢行系统串联起黄浦江两岸文化资源，形成两岸互动，打造最能代表上海城市文化生活的新名片。

12. Test bed for green infrastructure and technology — Shanghai, as an international city, uses a series of creative strategies to treat the contamination in Houtan which will pioneer strategies for future urban development.
13. Arts and culture destination on the Huangpu River — Linking the cultural destinations on west bank and east bank of Huangpu River to form an arts and culture route that represents a new brand for Shanghai's cultural life today.

the most high-end office and commercial development clusters as well as a popular public destination in the city. Sasaki has engaged in the landscape design of the nine-hectare Runway Park inlaid among high density developments — transforming a historic runway into a public green space for recreation and respite from surrounding city.

Despite all efforts made in revitalizing city's waterfronts, the qualities of many riverfront parks are not complimenting Shanghai's growing status as an international city. Among all riverfront parks along Huangpu River, only a few addressed the water quality issue or habitat value, fewer provided improvement on the connections between city and river, and many are not popular due to lack of programs or adjacency to users. Some park designs are still following the simplistic panacea of planting more trees. With Shanghai's goal of becoming a remarkable global city, the redesign of its waterfront, the city's frontage, requires a much higher

大型文化艺术活动
LARGE CULTURE & ART EVENTS

东西岸互动文化艺术游线/
大型文化艺术季
CULTURAL AND ART ROUTE BETWEEN EAST AND WEST BUND / LARGE CULTURE AND ART FESTIVAL

13

level of comprehensive thinking.

Shanghai is a city with pollution-induced water shortage. Water in the Huangpu River is rated at level 4 at upstream, and worse than level 5 at the mouth of the river. Excess nitrogen and phosphorus from upstream farmland and discharge of industrial wastewater, and urban runoff containing mercury, petroleum, ammonia, and nitrogen from the developed area are constantly contributing to the problem. Riverbanks dominated by hard edges offer no mitigation of the water, and riverfront parks filled with evergreen and ornamental species in the same planting structure provide little habitat value.

Fish population has directly suffered from polluted water with a significant decrease in both quality and number of species. Since the 1960s, 40 ~ 50 fish species have disappeared from the Huangpu River. Combined issues of the deteriorated water quality, reduced fish population, and monotonous plant communities along the river have resulted in contaminated sources of food and drinking water as well as lack of proper habitats for various bird species, along with too much human intervention, threatening the migratory bird population. All told, the overall ecological quality of the riverfront is not very optimistic.

Known as a waterfront metropolis, the reality of the riverfront in many parts of Shanghai is a bit embarrassing. It is hard to see rivers from city streets, especially at the city center. The conflict between the need for flood control and the natural drive to access water poses a constant challenge. Global climate changes have resulted in ever bigger flood events and higher water levels, while the soft clay ground in Shanghai constantly settles. In the 1930s, people used to walk directly from the streets in Bund to the docks in Huangpu River. Today, a three-meter high flood wall isolates the river from the city. Although the waterfront has experienced many rounds of renovation, an issue of visibility remains. On many riverfront streets, people can see the towers on the other side of the river, but never the river itself.

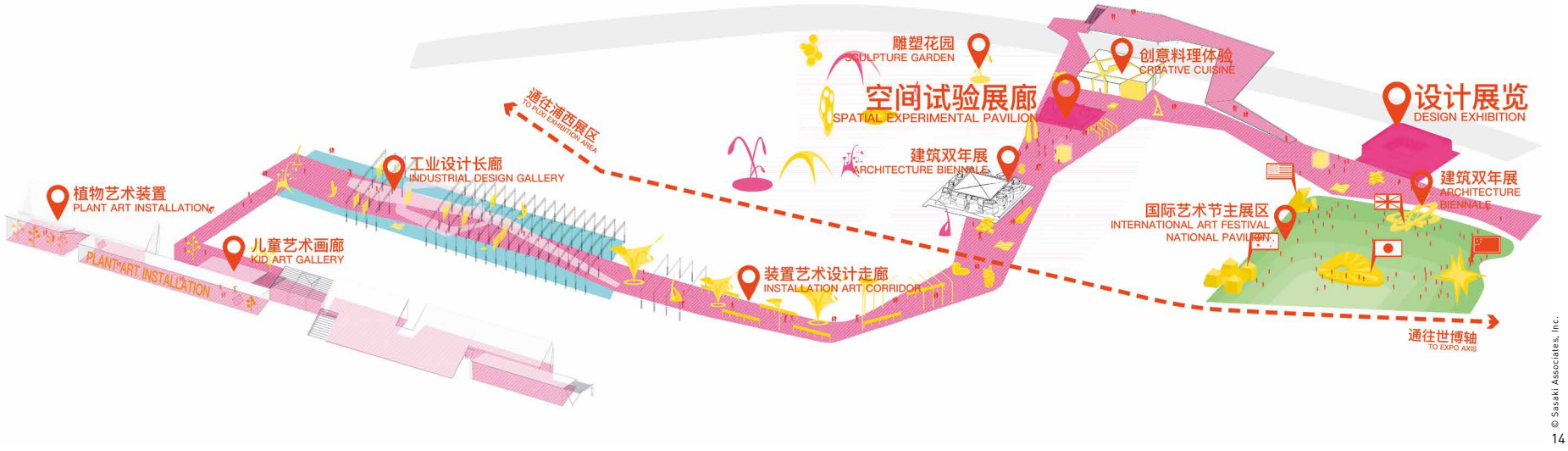
For example, Lujiazui, a peninsula on the eastern bank of Huangpu River, has been developed as a new financial district in Shanghai since the early 1990s. Although its rapid development led to the construction of its world-renowned skyline that towers over the waterfront, it hasn't always made allowances for quality public spaces. While it is home to several parks, homogenized programs suffocated energy, and uncoordinated developments by different stakeholders over the years have resulted in a lack of connection and consistency. These issues are compounded by levee and flood wall systems that block both visual and physical access to the riverfront.

Reunion of the City and the River

Following the big push around the 2010 Shanghai EXPO, the Huangpu Riverfront Greenway project was initiated in 2016 to link all waterfront areas into a continuous system. With a design scheme dubbed "Reunion of the City and the River," Sasaki's plan for the 2.5-km-long Lujiazui Riverfront was not only to create a few continuous pathways along the river, but, more importantly, to address larger issues in the waterfront city. These issues included returning the

14. 展示最前沿创新设计的窗口——灵感绿廊穿梭于整个公园，为展示前沿设计创意、体验最新科技成果、促进多元文化交流提供灵活多用的室内外场地。
15. 具有生态修复功能的湿地岛屿在城市中心创造了宝贵的栖息地以及教育、游览和休闲场所。

14. Window to the latest innovative ideas — The inspiration corridor traverses the entire park, providing flexible indoor and outdoor platforms for education on technology, exhibition of design, and cultural exchange.
15. The eco-remediation function enables the wetland and islands to become a precious habitat and a spot for education, sightseeing, and recreation in the center of the metropolis.



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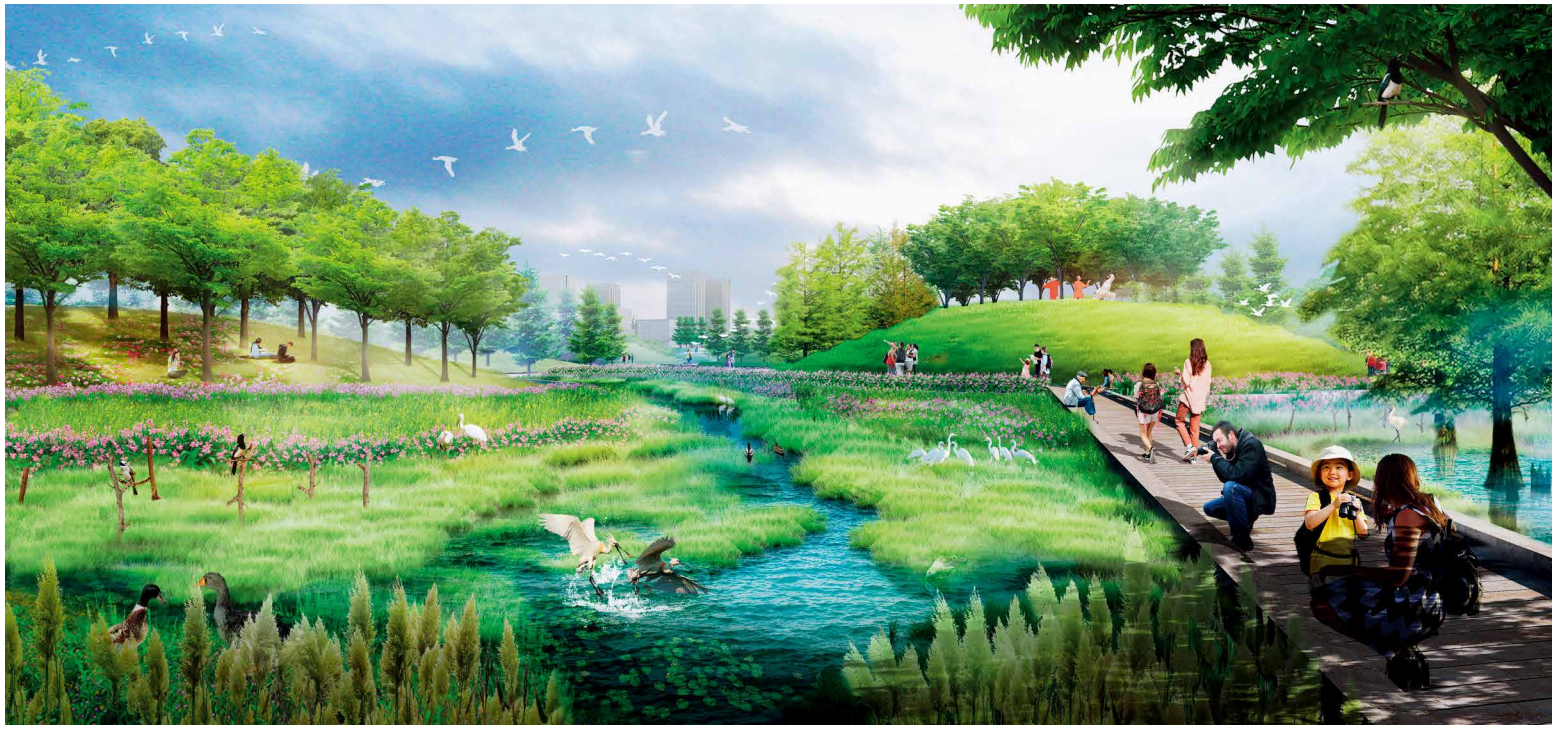

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riverfront to the public, injecting more energy into the inland parcels, restoring its ecological functions, celebrating its cultural heritages, and creating a central public space in the most prominent location of Shanghai. We envisioned the site as a catalyst for high-quality urban life (Fig. 4).

During the design process, we interviewed many park users and stakeholders of the site and surrounding developments, surveyed site foot traffic at peak and off-peak hours, and made multiple presentations to the clients, stakeholders and various government agencies in order to produce a visionary yet pragmatic plan to improve the quality of this central public open space.

A holistic design strategy comprises a spatial framework of three paths stretching along the river and eleven gateways and viewing corridors linking the city and the river, integrated with diverse programs and spaces designed for all ages. The three paths — Waterfront Path, Panorama Path, and City Path — create a continuous recreational system along the river, allowing people at this unique location to enjoy a full spectrum of experiences at different levels of the waterfront — the most splendid past, present, and future of this international metropolis (Fig. 5). The gateways and viewing corridors extending the urban streets visually and physically weave the river into the city fabric, bringing stronger connections with the riverfront as well as offering new energies to this urban district.

The river's history as a vital industrial corridor was celebrated by preserving and restoring selected artifacts near the waterfront. The plan's ecological design strategy integrates existing site conditions with future uses and historic context (Fig. 6). A comprehensive stormwater management system integrated with riverbank enhancement measures will improve water quality and restore habitats along the shoreline while drawing more people to the riverfront. Assisted by native plant species and diverse landscape types, the plan will promote a sustainable and local landscape for the Yangtze River Delta and complement the overall design.

The Lujiazui Riverfront is a critical link in the Huangpu River East Bund. With much respect to the existing context, Sasaki's design scheme incorporates elements of recreation, culture, education, and eco-restoration into this concentrated microcosm of Shanghai, creating a window through which visitors can view a distilled image of the city's rich and unique culture (Fig. 7 ~ 9).

Despite a visionary approach, close integration with existing site conditions, and collaboration with multiple stakeholders, the design was suspended midway for unknown reasons. Months later, meandering paths with ornamental plants were found on site, showing no clear relationship with the

existing urban fabric or riverbanks. It is said that the existing riverfront street will be all covered and planted with thousands of trees on the top. Sometimes it is quite confusing what drives the design decisions for such critical public landscapes.

Pioneering in Resiliency, Culture, and Creativity

Shanghai's 2035 Master Plan sets up goals for Shanghai to become an excellent global city, one of creativity, humanity, and resiliency. The plan reflects the city's engrained culture of forward thinking, and calls for bold exploration of creative approaches in making high quality places. Large state-of-the-art public green spaces will play a very important role in achieving such a grand vision, given their endless potential coming from sizeable impact on the local ecology, its public attributes and flexibility.

Sasaki's design scheme for the 189-hectare Shanghai EXPO Cultural Park was an exploration and statement on how large public green spaces can contribute to a reputable global city in the making. As one of the two finalists in an international design competition, Sasaki's proposed park celebrates the unique ecological, cultural, and innovative contexts of this largest riverfront green space in the city center that will create a unique destination — a gift for the people of Shanghai to enjoy (Fig. 10).

As a visual focal point from the west bank of the Huangpu River, this land in the Pudong District has evolved over the decades: from natural wetland, to farmland with an expansive canal system, to a base for heavy industry. The opening of the 2010 Shanghai EXPO represents yet another new chapter of the site's history and symbolized the beginning of the site's post-industrial rebirth. In the Spring of 2017, the City of Shanghai decided to transform this site once again — this time, into the EXPO Cultural Park.

The park is aligned along an ecological spine that connects the Huangpu River with the open space corridor on the east. The landscape framework for the park then builds upon this spine, linking the riverfront and the city, and the east and west banks of the Huangpu River with vernacular features interpreting varied history of the site. Four themed corridors and seven distinct zones form an engaging and varied experience through the park with unique programs paired with the seasonality to create an activity hub for diverse user groups, reflecting Shanghai's culture of equity and openness (Fig. 11).

With its recent history as an industrial brownfield, the soil and groundwater on site is contaminated by heavy metals and organic solvents. Heavily contaminated soil was removed prior to the 2010 EXPO, while less contaminated soil and groundwater were left untreated. The top priority in Sasaki's design is to create a test bed for green infrastructure and technology to remediate the site (Fig. 12). The design scheme adapts working landscapes into spatial experience, including soil and groundwater remediation, stormwater management, and sewage treatment. Diverse plant communities are introduced not only to increase the user's experience, but also to build a variety of wildlife habitats and serve as a valuable ecological patch in the heart of the city.

Embracing the EXPO's slogan, "better city, better life," the design aims to create a new brand that represents the urban cultural life of present-day Shanghai: an arts and culture destination on the Huangpu River. Cultural destinations on both banks of the Huangpu River are linked into an arts and culture route (Fig. 13); both international and

16. 秀场悬桥利用原有工业厂房的结构框架，创造出上海最具特色的时装节秀场和大型艺术装置展示场所。
17. 世博会遗留下来的高架步道将被改造成为俯瞰公园的文化走廊。4个保留的国家馆及周边景观将承载全新的活动并呼应建筑的文化背景。

16. The Iron-Age Showroom is proposed to be Shanghai's most featured fashion stage and exhibition place for large-scale art installations.
17. The elevated walkway from EXPO is renovated as a cultural corridor overlooking the park, while four country pavilions are repurposed with surrounding landscape supporting the new program and cultural background of each building.

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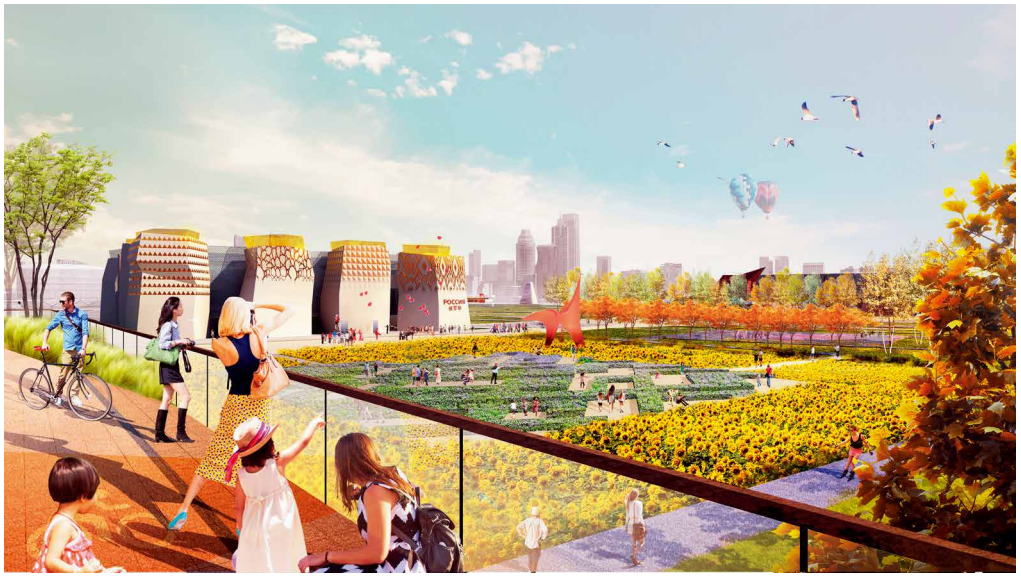
local plants are proposed in the park to create an "EXPO Forest" highlighted by Magnolias, Shanghai's city flower.

As another expression of the EXPO spirit, the park is also designed to be the window to the latest innovative ideas. The "Inspiration Corridor" essentially transforms the entire park into a stage. It connects the preserved pavilions, a showroom converted from a factory building, and an innovative living greenhouse — providing flexible indoor and outdoor platforms for technology education, design exhibition, and cultural exchange, and serving as the primary gathering space for the city of Shanghai (Fig. 14 ~ 17).

The design feedback from the client was focused on the cost and duration of the phytoremediation process. Although research shows that it may take approximately 10 years to clean up the site — a short wait for such a significant project — there is a desire to see a mature forest growing on this barren site immediately, partially due to the pressure from the government. Many parks in Shanghai were built in just a few months. They would rather spend large amount of money shipping all the contaminated soil offsite, in lieu of borrowing nature's power to remediate it onsite over time, simply because it is faster. This is in stark contrast to how decision makers in New York City reacted to the reclamation plan of Fresh Kill Park, a 30-year process initiated in 2008.



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What Should Determine the Public Spaces?

Large public green spaces in a city create huge impact on the local ecology and life quality. Well-designed spaces can enhance the ecological value, create recreational and educational destinations, and promote local culture. Who shall be the one making decisions on the future of such public green spaces?

As the ultimate users of the spaces, the local public plays a very important role in the success of such spaces. Tax payers should also have every right to decide where to spend their tax money. In Western countries, holding public meetings during the design process is a common way to involve the public as well as engage stakeholders whose support could greatly expedite the project.

Although some online platforms have started public surveys on a few major public projects in Shanghai, the decision making processes in China are still dominated by the top-down procedure. Political agendas often become the driving force in forming the design direction, which in many cases deviates from the best professional judgement; instant need often overrides the long term vision. This can lead to missed opportunities to create a much bigger ecological, cultural, and social impact through these large public landscape projects. How can landscape architects better influence the decision making process is a question worthy of consideration from all professionals.

What is more, improving public awareness in China of the multiple values of the landscape is as critical to the success of a project; for example, planting more trees is not a panacea for all ecological issues, but rather the solution must arise from the specific site conditions. We have seen in many cases a lack of professional ecologists invited to review the design of large public green spaces, which indicates the organizer's ignorance of the importance of the ecology in such projects. More in-depth educational programs and project promotions online or in physical forms need to be considered in landscape projects to help the public understand what is involved in achieving the environmental and social goal of a project.

There is still a long way to go. With Shanghai growing into a truly global city, we hope its large public green spaces could catch up on its pioneering vision and design. **LAF**