

社會復愈 X 數字再地

Social Restoration and Digital Relocalization

弄堂之

“產

· 违章建筑?
squatter structure



· 人居环境?
living environment?

· 原真生活?
original life?

· 停车?
parking?

· 老克?
old clerk?

· 公共空间?
public space?



社会复愈，数字再地 ——以大数据策略实现空间自组织

SOCIAL RESTORATION AND DIGITAL RELOCALIZATION — A BIG DATA STRATEGY FOR SPATIAL SELF-ORGANIZATION

徐磊青，言语，黄舒晴 / Leiqing XU, Yu YAN, Shuqing HUANG

项目背景

上海市徐汇区衡山路-复兴路历史文化风貌区（衡复风貌区）位于延安中路以南、重庆南路以西，面积逾7km²，是全市保护规模最大、花园式住宅分布最集中、风貌特色保存最完整的地区，堪称上海城市文脉的发源地和承载区。2016年，上海市开展“上海城市设计挑战赛”，试图通过对大数据的分析和运用，为城市中待更新地区的转型提供创新性的设计思路。衡复风貌区为此次大赛的其中一处指定片区，笔者所在的“408研究小组+”选取了这一片区展开研究。

设计构思

在城市更新的过程中，大数据的应用多与城市治理和多元主体博弈相关。已有的研究大多与城市治理相关——尽管其中多为对于还未真正实现的智慧城市的研究。相较而言，基于人类学调研方法将城市信息学维度的数据应用于多元主体博弈方面的研究则明显不足。这导致许多以城市更新为目标的数据实践未能得到深入应用。

在整体保护较为成功的上海，面对存

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摘要

本文介绍了408研究小组+在2016年“上海城市设计挑战赛”中，针对衡山路-复兴路历史文化风貌区的历史保护所提出的方案，并藉此强调了研究数据平台与使用者之间关系的重要性。该方案主张复愈而非修复，生长而非生产，提倡从多元主体角度去思考历史风貌区的原真性，推动当下风貌区的保护与更新。设计方提出架设“漫步衡复”和“弄堂之声”两大应用平台，通过将大数据融入城市治理来实现城市更新，并力图使数据参与平台与城市自组织和空间代理协调配合，形成可以持续发挥效用的共同体。

关键词

大数据；多元主体；自组织；城市更新；空间代理

ABSTRACT

This article introduces Team 408+'s design for the protection of the Hengshan Road-Fuxing Road Historical and Cultural Area in the 2016 Shanghai Urban Design Challenge, with the aim to emphasize the significance of the relationship between data platforms and their users. In promoting the historical and cultural protection, the design advocates remediation with spatial self-organization rather than restoration with physical development, and encourages multi-stakeholders' participation. This project also proposes two mobile applications, "Wandering in Heng-Fu" and "Voice of Alleys," to apply big data into urban management and to establish sustainable communities by harmonizing big data platforms with urban self-organization development and spatial management.

KEY WORDS

Big Data; Multiple Stakeholders; Self-organization; Urban Regeneration; Spatial Agency

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项目地址:

上海市徐汇区

项目面积:7.75km²**项目委托:**

上海市规划和国土资源管理局

城市设计:

408研究小组+

项目负责人:

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排版: 言语、黄舒晴、邱班中

项目时间:

2016年8-12月

LOCATION:

Xuhui District, Shanghai

AREA (SIZE):7.75 km²**CLIENT:**

Shanghai Municipal Bureau of Planning and Land Resources Administration

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Team 408+

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DESIGN PERIOD:

August ~ December, 2016

量的风貌区保护与更新这一问题，就地原封不动地保存未必一定是正确的。一方面，由于多元主体协商机制尚未完善，渐进式更新推进受限，产权整合和变更成为了居民自组织城市更新和城市治理的巨大阻碍；另一方面，尽管土地招拍挂制度形成的经济杠杆使得政府可以大批量地整合地权，但往往会导致驱离式的拆迁和暴力式的增容。

在幅员辽阔而又发展迅速的中国，风貌区保护与古城更新呈现出“魔幻现实主

义”：“地王”的区位与落后的生活服务配套设施不符、“求拆”与迫迁的情况并存、违建设施清除与自发性改造交锋。衡复风貌区占据典型的地王区位，继续强调就地原封不动地保存最终会陷入居民过不好、开发商拆不动、保护实践学者也陷入道德困境的怪圈。

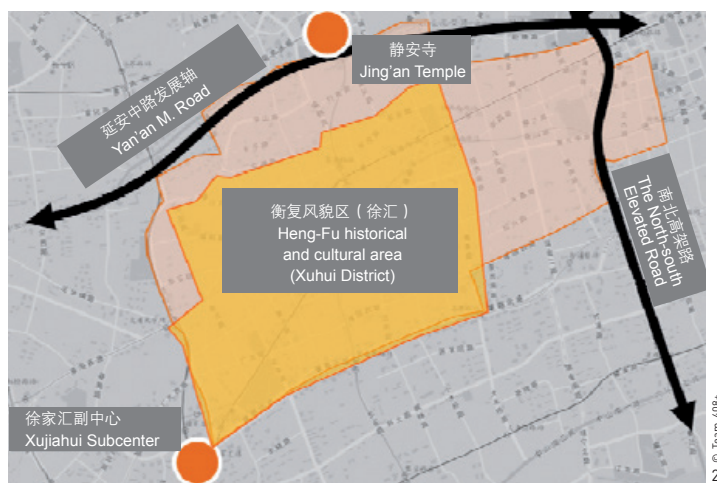
因此，我们提倡复愈而非修复，生长而非生产。只有以多元主体为出发点去思考原真性，才会得出兼顾城市风貌、文化与空间

衡

SUSTAINABLE

復

RENAISSANCE



2. 衡复风貌区区位图
 3. 里弄现状和存在问题
 4. “生长的空间”与“生产的空间”
2. Location of the Heng-Fu District
 3. Existing conditions of the alleys in Shanghai
 4. “Growing space” and “produced space”

正义的解决方案，使最终被保留下来的社会文化焕发新的生命力。

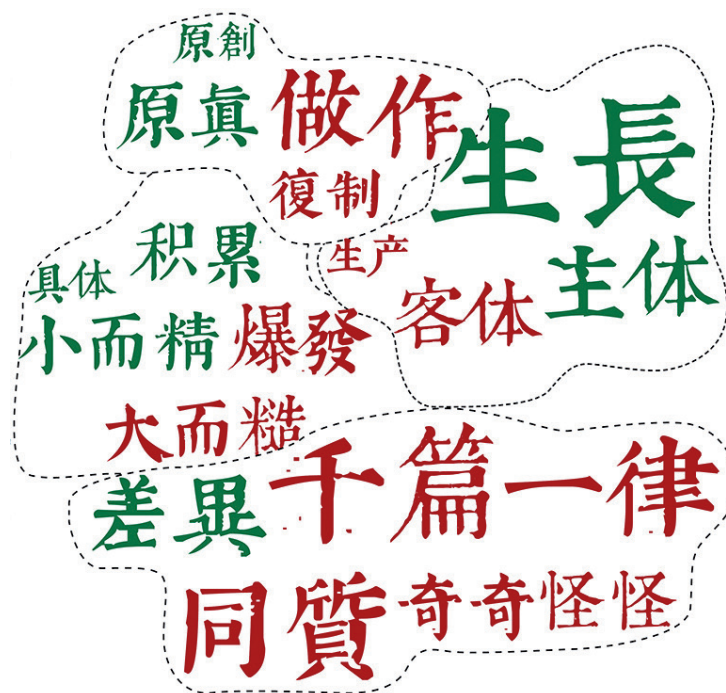
同时，那些由数据支撑的结构主义实践，如何介入颇具后结构主义语境的多元主体博弈、产权落实中，并在城市治理时避免空间鸿沟、数据鸿沟乃至算法歧视（即由数据分析导致的不公正评价）是另一个亟须明确的问题。而共享平台的出现使缩小其中由数据鸿沟所造成的差异成为可能。目前，我们已经为衡复风貌区建立数据资料库，并面向公众开放。在未来，如果多方力量能够在透明的讨论机制下联结共生，例如在PPP模式（政府和社会资本合作）下完成对社会-空间的营造，那么这些数据将切实助力城市治理。

城市需要经过累积和生长来形成自组织并完成空间实践。如果把以上问题综合起来思考，我们最终将探索出一条居民自组织的渐进式城市更新之路、一种通过数据平台上下结合的方式，以及一个多方合作的社群网络。

数据处理

在本方案中，通过赋予数据不同的权重并进行叠加，可以得出改造意愿与优先级、社区公共空间及人居环境评价等信息。结合第六次全国人口普查数据加以计算，可以得到地块中与人口特性和空间特性相关的数据，二者经过加权计算后即可获得社区地块的综合评价。

例如，社区公共空间微更新的优先级主要依据其空间筛选评分、人因导向综合改造评价及社区公共空间方差值三个数据计算得出。其中，空间筛选评分主要由历史建筑数量、绿地率、文娱/文创/邻里中心数量、空间比例、可达性、人口密度6项指标计算获得；人因导向综合改造评价由人群特征分数和居住条件分数两部分构成，可以通过赋予二者不同的权重来调整优先级；而社区公共空间方差值则代表着不同区域中，影响空间筛选评分的六大要素的离散程度，方差越大，表示该空间通过改善最短板项目而获得整体显



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著提升的可能性越大。

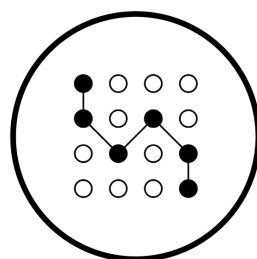
此外，根据空间句法理论，通过对小型公共空间周边的居住建筑、绿地等元素进行加权处理，即可获得亟待改造的公共空间的范围。而通过大数据分析及权重计算，亦可获得步行/骑行环境综合评级、建筑屋顶改造必要性评价等信息。

在制定规划策略和公共政策的过程中，公平是一大重要议题。然而，历史风貌区的特殊性和社区主体的多元性，使得这一议题更加棘手。我们或许可以预见，在人工智能占领所有学科之后，数据和信息上的公平才会是最首要的公平。因此应当保证利用专业而严谨的预处理和计算，将大数据信息如实呈现在数据平台上，以供公众按需取用经过适当可视化的数据。

平台架构

我们计划开发两款应用平台——“漫步衡复”和“弄堂之声”。“漫步衡复”服务于衡复风貌区游客，以提供旅游资讯为主。“弄堂之声”则旨在为衡复风貌区原住民提供信息沟通平台及申请改造建设的渠道。

经过数据处理获得的改造优先级数据将被主要运用于“弄堂之声”平台中的“自宅报建”和“公共设施”版块，为居民选取新建和改造目标提供参考，同时也为审核报批的政府部门提供批复和指导依据。而作为信息点（POI）数据之一的空间评价数据，则为“弄堂之声”平台中“便民查询”“社区活动”及“公共设施”下的“社区项目”“片区项目”版块，以及“漫步衡复”平台提供支持，包括通过网络分析计算优化路径选择等，主要将数据信息转化为可供使用者获取的社区资讯。



数据策略
Digital Toolbox



社会数据流
social data flow



文化数据流
cultural data flow



人的规划
human program



居住环境
living conditions



公共事件
public events



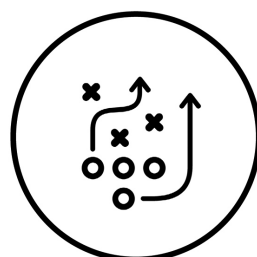
空间经济
spatial economy



综合评价
overall assessment



空间结构
spatial structure



社会-空间策略
Socio-Spatial Toolbox



屋顶改造
housetop regeneration



楼梯加建
staircase rebuild



直梯加建
elevator rebuild



运动设施
sports facility



厨卫加建
kitchen and bath rebuild



停车楼
parking structure



自行车道
bicycle path



道路标识
signage



自行车导览
bicycle guide



电子导览
E-guide



生活博物馆
living museum



社区旅游
community tour



PPP平台
platform for Public-Private Partnership



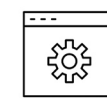
透明机制
transparent mechanism



资源共享
resource sharing



空间自治
self-organized space management



空间代理
spatial agency



社区数据云
data cloud for community



整体提升
integral improvement



在地文创
local cultural creation



微改造
miniature regeneration

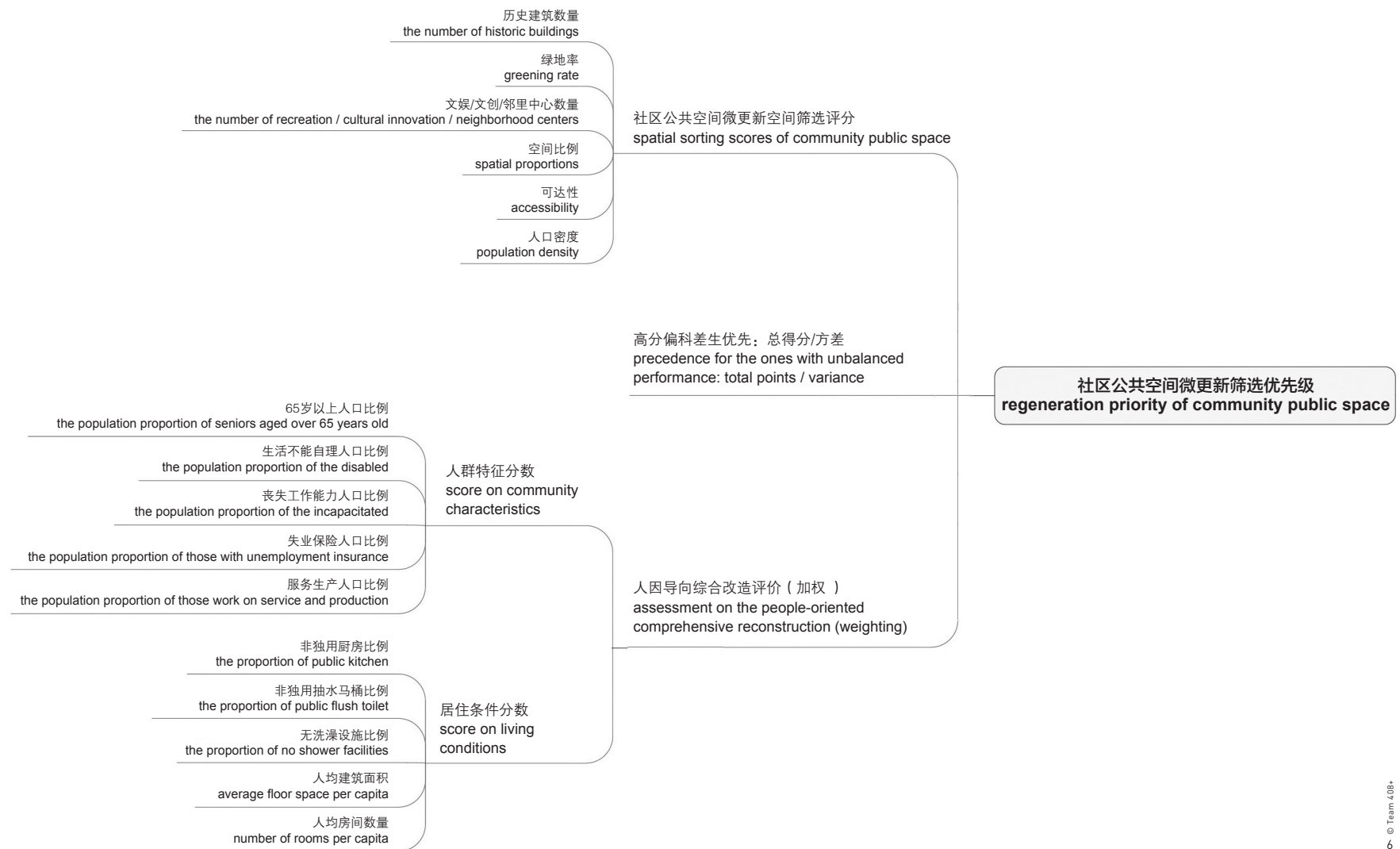


定位地图
location map



场所营造
space making





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5. 数据策略与空间策略
6. 数据处理
5. Data and spatial strategies
6. Data processing

我们建议由政府或社会组织提供大数据，专业团队架设应用程序共享平台、处理数据，并给出专业性建议和建设方案，最终由衡复风貌区社区自组织等多方力量完成改造和建设。在这种模式下，很可能会派生出新的公共服务产品与空间产品，抑或是新的社会-空间关系。在数据赋权的前提下，行动网络的社会关系将经历再生产与再组构，通过应用程序平台这一实践途径，数据被赋予针对规划核心问题的行动力，并衍生出将新的关系重新投射到建成环境的相关实践之中。

结语

此次尝试意在突破原有的大数据研究范式，厘清从数据研究迈向社会-空间实践的难点与可行性，并提出以数据促进自组织更新、技术赋权社会民主、自下而上地影响规划实践的新途径。这意味着大数据以科学谨慎又颇具批判性行动主义的角色，参与到城市更新乃至规划的核心过程之中。我们期待实现技术变革对人类的赋权，亦试图借助数据唤起规划师和设计师对自身角色定位和空间潜力的重新思考。**LAF**

Background

The historical and cultural area of Hengshan Road-Fuxing Road (Heng-Fu for short) in Xuhui District, Shanghai is located at the south of Middle Yan'an Road and the west of South Chongqing Road, covering of an area of over 7 km². It is regarded as the core cultural area in the city for being the largest historical area with the most densely distributed garden houses and the best-preserved historic features. In 2016, the Shanghai Urban Design Challenge was

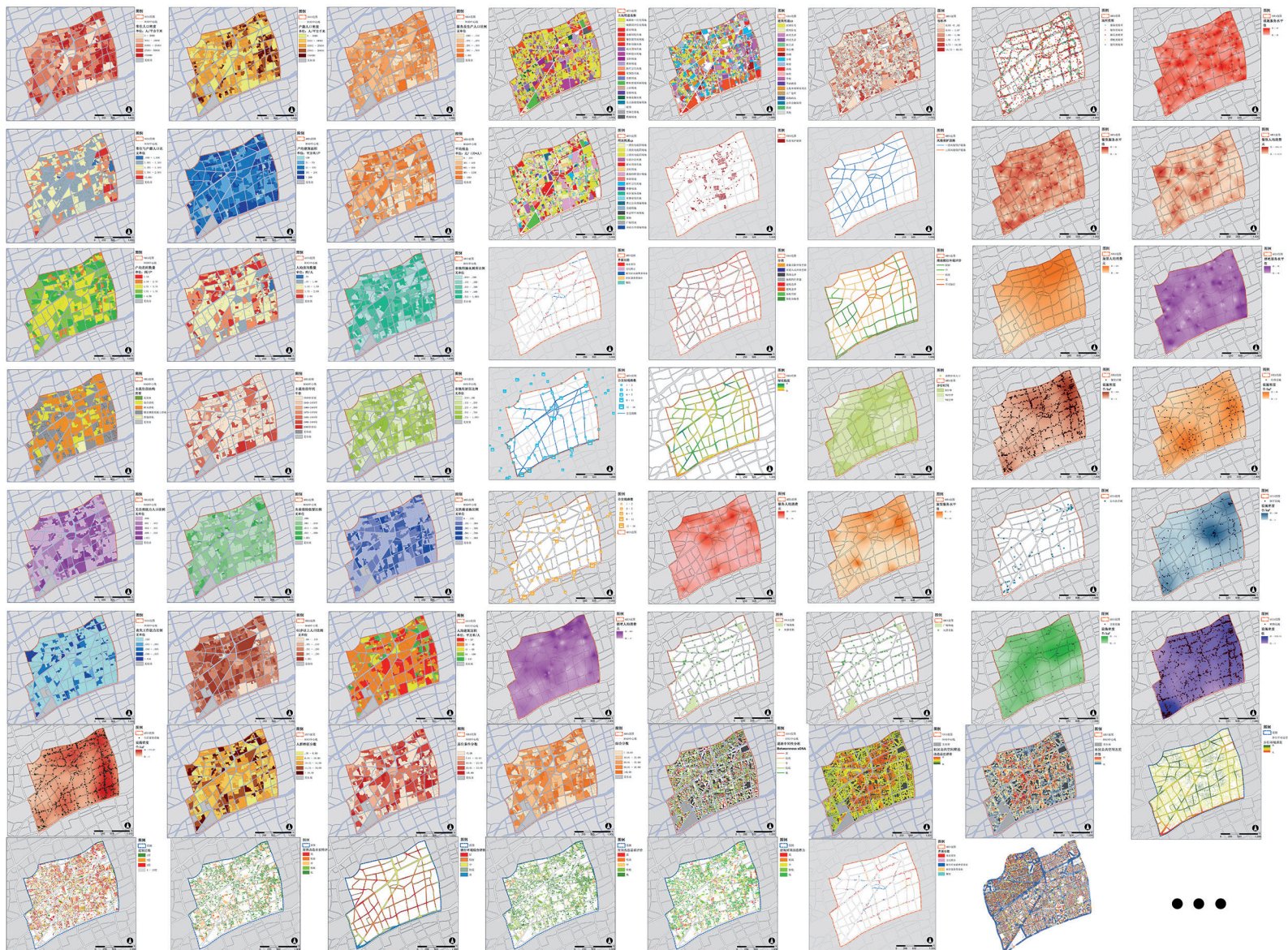
held to stimulate innovative design ideas for urban renewal with the application of big data. Team 408+ proposed their research on the Heng-Fu area, one of the study cases in the competition.

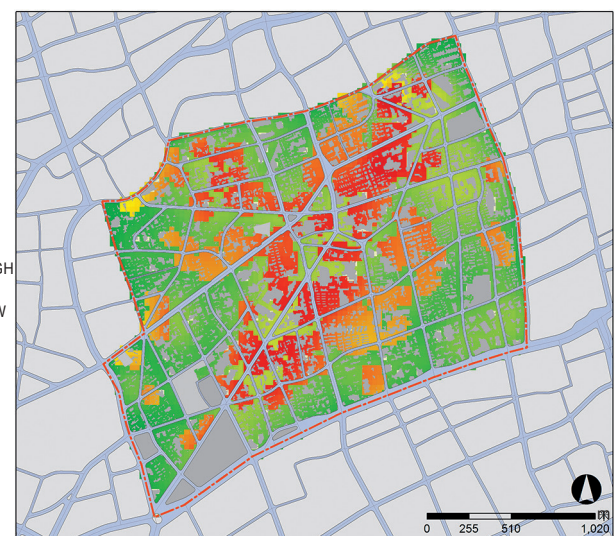
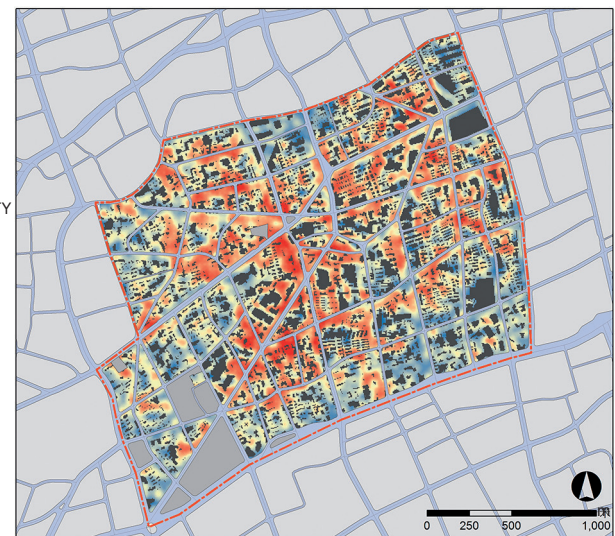
Concept

In the process of urban renewal, the big data is often applied to assist urban management and to balance the interests of multiple stakeholders. The most current researches focus on the former,

7. 大数据可视化
8. 基于社区中心性对社区公共空间进行挑选, 得到的在不同目的、不同价值的情况下, 对公共空间改造优先级的图示。

7. Big data visualization
8. Processed priorities of open space based on different purposes and value orientations after selecting community public spaces according to community centrality.

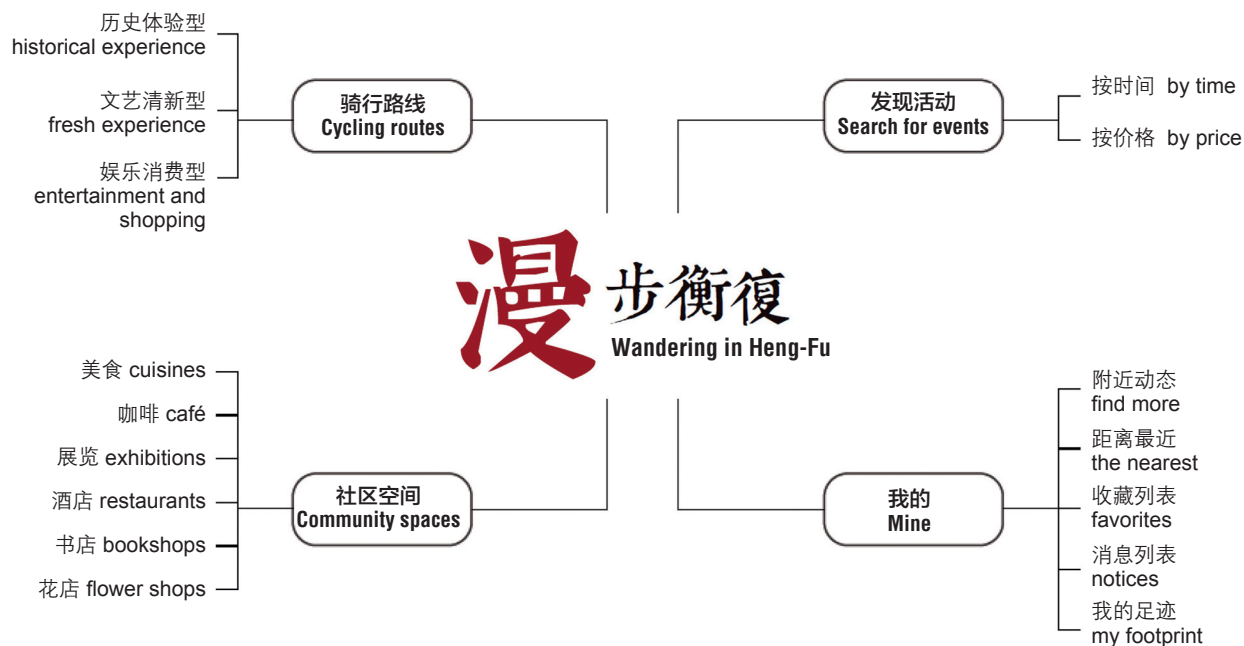




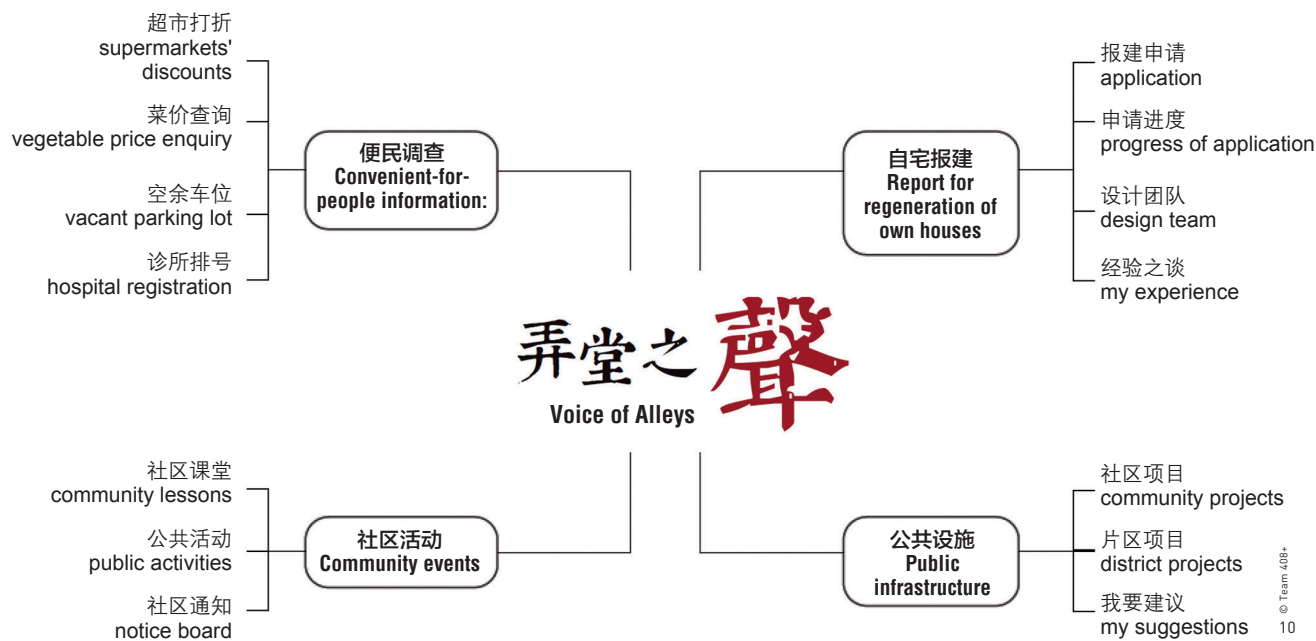
though a majority of which concern on the management of “smart cities,” a vision not yet achieved. However, few studies have addressed how urban information can be applied in the latter through anthropological research. As a result, many urban renewal practices based on big data could not essentially contribute to the issues on urban management.

Shanghai, a city with sound overall heritage protection, has to face the issue of the protection of the historical areas with no changes that is not necessarily correct.

On the one hand, the incomplete negotiation mechanism for multiple stakeholders has been an obstacle for the integration and transfer of property which is the key to urban self-organization and -remediation in incremental urban renewal. On the other hand, although the transfer system of the right to use of land resources, including bidding, auction, listing, and agreement, allows the government to consolidate landownership, it often leads to forced resettlement and an unhealthy increase of floor area ratio.



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China is vast in territory and rapid in development, where the fact of historical protection and urban renewal is a kind of magical realism: the development of top-bidding land parcel lacks supporting infrastructure updates; some neighborhoods are urgently requested for resettlement while some are being forced eviction; and the demolition of squatter structures coexists with self-organized regeneration. Being a typical top-bidding land parcel, the Heng-Fu area cannot be protected through a completely untouched way, otherwise which would not contribute to the improvement of living standards, the promotion of urban renewal, or the research of heritage conservation at all.

Therefore, we advocate remediation with spatial self-organization rather than restoration with physical development. Only with multiple stakeholders' participation, could we get solutions that take into account the city's identity, history and culture, and spatial justice in order to create a greater vitality of the preserved social culture.

Meanwhile, other problems arise, including how could the structuralism practices supported by data-based research contribute to the multi-stakeholder participation and property ownership clarification which are featured with post-structuralism, and how could it help avoid spatial gaps, data gaps, and even algorithmic discrimination (unjust evaluations caused by mathematical analysis) in urban management. Fortunately, the emergence of the sharing platforms makes it possible to narrow down the information discrepancy resulted from digital gaps. At present, a database of the Heng-Fu area has been established and is open for public use. We expect a more efficient data-based promotion of urban management with multi-stakeholder participation through a transparent mechanism, such as the socio-spatial

development through a Public-Private-Partnership.

Cities need to realize self-organization with more practices and better development. Taking a comprehensive consideration of the city as whole, we will be able to develop an incremental way of urban renewal for community management, data platforms to bridge the gap between authorizations and citizens, as well as a collaborative network community.

Data Processing

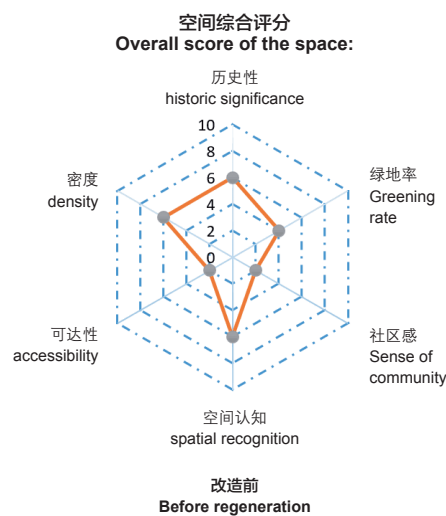
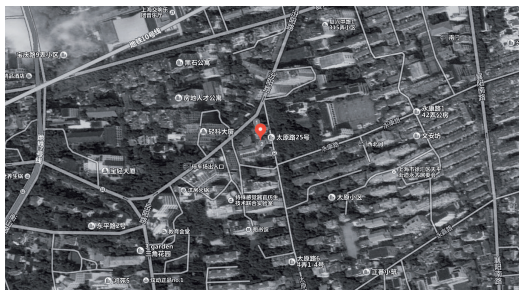
The willingness and priority of urban renewal, as well as the quality of community public space and living environments, can be evaluated with data weights. Accordingly, an overall evaluation value of a community can be generated from a weighted calculation of the data about the population and spatial characteristics, sourced from the sixth national census.

For example, the priority of the micro-regeneration of community public space can be identified with spatial evaluation score, people-oriented assessment, and the variance of the calculated results about community public space. Respectively, 1) the spatial evaluation score is mainly based on 6 factors: the number of historic buildings, greening rate, the number of recreational spaces / cultural and innovational spaces / neighborhood centers, spatial proportion, accessibility, and population density; 2) the people-oriented assessment is based on the scores on both the population characteristics and living conditions, and the regeneration priority can be identified with various weights; 3) the variance of the calculated result about community public space represents the discrete degree of the mentioned 6 factors in different regions. The larger the value



9. “漫步衡复”架构
10. “弄堂之声”架构
11. “漫步衡复”页面展示
12. “弄堂之声”页面展示

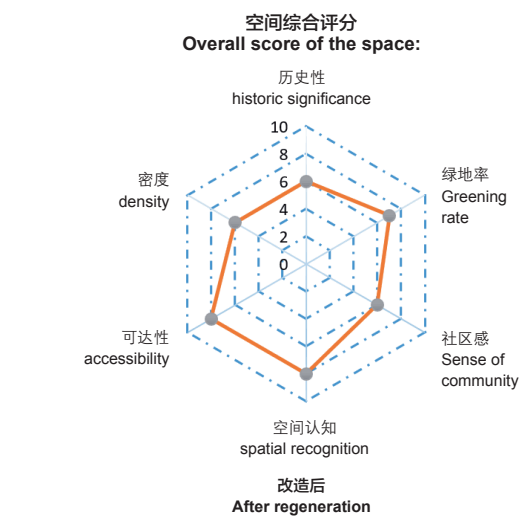
9. Framework of the "Wandering in Heng-Fu"
10. Framework of the "Voice of Alleys"
11. Mobile pages of the "Wandering in Heng-Fu"
12. Mobile pages of the "Voice of Alleys"



评价: 空间利用率低, 可达性较差, 缺乏绿色空间。
Evaluation: Low utilization of space; low accessibility to space; and lack of green spaces.

推荐改造策略: 适当扩建, 增设电梯方便老年人群出入, 增设屋顶绿化以及休闲座椅, 营造社区氛围。

Recommend regeneration strategies: Proper extension of buildings; adding elevators for the aged; adding roof gardens and seats.



住户信息: 普通上班族
Information of the house-owner: Office staff

可定义功能: 住户共享社区活动空间
Proposed function: Shared activity space for the community

门牌号: 太原路 56 弄 1-4 号
House number: No. 1-4, Alley 56, Taiyuan Road

is, the more possibly the space can be improved.

In addition, according to the theory of Spatial Syntax, the boundaries of the public space which need to be urgently improved can be identified with weights concerning its surrounding residential buildings and green spaces. Moreover, the information such as the overall rating of the walking / cycling environment and the necessity evaluation of the rooftop rebuild can also be generated by big data analysis and weighted calculations.

Due to the distinctiveness of the historical areas and the participation of multiple stakeholders, it becomes more difficult to achieve spatial justice, which is important in formulating planning strategies and public policies. Predictably, the justice on data and information will be the primary equitable agenda when artificial intelligence becomes more prevalent. Therefore, the professional and rigorous pretreatment and computing of the big data should be guaranteed to accurately present the results and to ensure the big data visualization could efficiently serve the public through open data media.

Framework of Public Data

In this project, we proposed two applications — “Wandering in Heng-Fu,” which serves tourists by providing travel information about the Heng-Fu area, and “Voice of Alleys,” which is an interaction and communication platform to the local dwellers, and a channel for construction or rebuild application.

The sections of “Self-Construction” and “Public Facilities” in the “Voice of Alleys” publish the information of the regeneration priorities which inform the local residents’ self-construction and -regeneration, and also help the governments approve the applications.

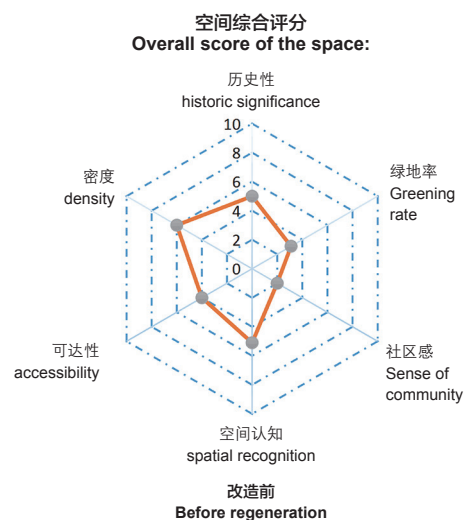
Meanwhile, as part of the Point of Interest (POI) data, the spatial evaluation information supports both of the two applications by providing various services, such as the optimized touring routes and community news.

Ideally, the big data should be provided by the authorities and social organizations, and be processed and shared by open platforms (including mobile applications) which are operated by professional teams with the capability to provide practicable advices; eventually the construction and renewal can be implemented by the community organizations in the Heng-Fu area. In this way, new types of public services, spatial products, and socio-spatial relationship might be created. The network of social relationships will be reproduced and reorganized through the application of big data. Thus, we are able to address the issue concerning urban planning with the assistance of mobile application platforms, which will lead related practices to establish new social relationships in the built environment.

Conclusion

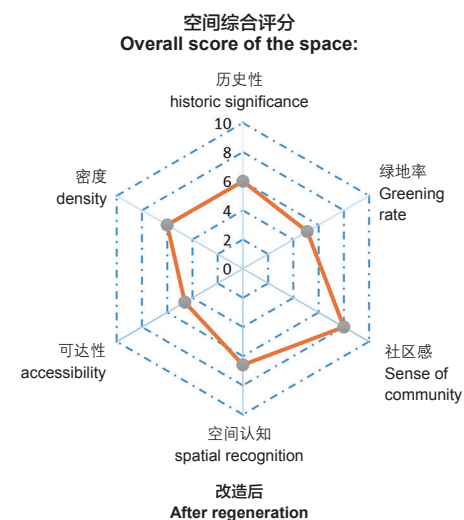
In this project, the design attempts to break through the traditional paradigms of big data research, to identify the difficulties and to seek for the possibilities of translating data analysis into socio-spatial practices. It also puts forward some new approaches to promote self-organized urban renewal and regeneration with big data, to improve social democracy with information and intelligence technologies, and to enhance citizens' rights on planning practices, in which big data offers scientific and critical supports. It is expected that with the technological innovation, urban planners and designers can better understand their roles and the potentials of spatial regeneration with the help from big data. **LAF**

13. “弄堂之声”中的供选改造建议
13. Suggested regeneration strategies generated by the “Voice of Alleys”



评价：街道较为拥挤，空间利用率低，街道缺乏停留性。
Evaluation: Crowded street with low utilization of space and lack of space to rest.

推荐改造策略：建筑外立面改造，视觉效果上拓宽街道；增设连接屋顶的交通空间，以提升交通功能和社交功能；屋顶改造。
Recommend regeneration strategies: The openness of the streets is improved through facade design; adding transport space linking the roofs to improve transporting and social functions; rooftop remodeling.



住户信息：居委会工作人员
Information of the house-owner: A staff member of neighborhood committee

可定义功能：公共社区活动空间
Proposed function: Public space for community activity

门牌号：襄阳南路285号
House number: NO. 285, South Xiangyang Road