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PEYZAJ MİMARLARI ODASI
UCTEA CHAMBER OF LANDSCAPE ARCHITECTS

IFLA
INTERNATIONAL FEDERATION
OF LANDSCAPE ARCHITECTS

IFLA 60TH
WORLD CONGRESS

CODE RED
FOR EARTH

04-06 SEPTEMBER 2024
İSTANBUL-TÜRKİYE

ABSTRACT BOOK
SHORT ORAL PRESENTATIONS

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The 60th IFLA World Congress, held in the vibrant city of Istanbul under the theme "Code Red for Earth," has been a resounding success. As President of the **International Federation of Landscape Architects**, it fills me with immense pride to witness the culmination of years of dedicated work by the **UCTEA Chamber of Turkish Landscape Architects (CTLA)** in bringing together this global gathering of landscape architecture professionals, academics, and students.

With its urgent theme, this IFLA World Congress has underscored the critical role our profession plays in addressing the unprecedented environmental challenges facing our planet. The impressive number of submissions—770 in total, resulting in 366 accepted abstracts and 53 design projects—speaks volumes about the commitment and passion within our global community to contribute to a more sustainable and resilient future.

The Congress theme, **"Code Red for Earth,"** resonated throughout the diverse program, encompassing seven thematic tracks that explored crucial aspects of our profession's response to the climate crisis. From codifying the eco-emergency and fostering global solidarity to promoting sustainable communities, embracing diversity and inclusion, and harnessing the power of digital innovation, the 60th IFLA World Congress has provided a platform for in-depth discussions and knowledge sharing. The nine special roundtable sessions, brought the power of collaboration with the United Nations and its affiliated agencies, international sister organizations in the built environment and local stakeholders to debate the importance of landscape to address the most pressing issues globally.

I extend my sincere gratitude to the **UCTEA Chamber of Turkish Landscape Architects**, especially President Barış Işık and Organizing Committee Chair Yasin Otuzoğlu, for their exceptional leadership and dedication in hosting this landmark event. The tireless efforts of the various committees, sponsors, and volunteers have ensured a seamless and enriching experience for all participants.

The success of this Congress lies not only in the quality of the academic discourse but also in the spirit of collaboration and camaraderie that has permeated the event. The connections forged and the ideas exchanged in Istanbul will undoubtedly inspire and empower landscape architects worldwide to continue pushing the boundaries of our profession in service of a healthier planet.

As we move forward, let us carry the momentum and insights gained from this Congress to amplify our collective impact. The "Code Red for Earth" demands urgent action, and landscape architects, with their unique expertise and perspective, are uniquely positioned to lead the way towards a more sustainable and equitable future for all.

Sincerely,

Dr Bruno Marques

President, International Federation of Landscape Architects

The **60th IFLA World Congress**, hosted by the **UCTEA Chamber of Turkish Landscape Architects**, was held in **Istanbul, Türkiye**, from **September 4-6, 2024**, under the theme **"Code Red for Earth."** This theme highlighted the urgent need for collective action to address the environmental crises facing our planet. It also underscored the critical role that landscape architecture can play in advancing sustainability and resilience for future generations.

The Congress covered a broad range of pressing issues through **seven thematic tracks**, each focusing on a different facet of landscape architecture's contribution to addressing global challenges:

1. **Codifying Code Red: Eco-Emergency, Global Solidarity**
2. **Sustaining Life: Protection, Mitigation & Management**
3. **Cultivating Resilience: Sustainable & Resilient Communities**
4. **Acting for All: Diversity, Equity & Inclusion**
5. **Engaging with the Digital: Innovation, Technology & Big Data**
6. **Projecting the Process: Monitoring, Assessment & Applications**
7. **Building Bridges, Breaking Barriers: Education & Practice**

These tracks reflect the core concerns of landscape architecture today, and the proceedings book compiles the diverse range of **366 accepted abstracts** and **53 design projects** that were submitted from **770 total submissions**. The Congress itself attracted **860 participants** from **52 countries**, creating a vibrant platform for academic and professional exchange.

The Congress owes its success to the collective efforts of the **Organising Committee**, including the Programme Committee and its supporting commissions, as well as the teams managing finance, sponsorship, marketing, and communications. Their unwavering commitment, detailed planning, and collaborative spirit were instrumental in bringing this prestigious event to life.

A special note of thanks is due to the **IFLA Executive Committee**, whose guidance and support were invaluable throughout the Congress's planning and execution, as well as the **students and volunteers**, particularly the **PMOGenç members**, who played a crucial role in ensuring the smooth operation of the event.

In addition to the academic and professional presentations, the Congress was supported by **sponsors** and **expo participants**. Their support was essential to the success of the event, reflecting the diverse sectors within the landscape architecture profession.

The Congress was enriched by a series of **social activities**, including the **Welcome Cocktail** on the first evening, the **Gala Event** on the second evening, as well as the **Walk & Talks** during the pre-congress tours and the **technical excursions** following the Congress. These activities allowed participants to engage with the theme of the Congress in an interactive manner, forging valuable connections and deepening their understanding of the profession's role in global sustainability.

We extend our heartfelt gratitude to all the committees, participants, sponsors, and volunteers whose contributions made the **60th IFLA World Congress** a truly memorable and impactful event. The collective effort of everyone involved has highlighted the power of collaboration in addressing the pressing environmental challenges we face today.

Sincerely,

BARIŞ IŞIK
PRESIDENT, CHAMBER OF TURKISH LANDSCAPE ARCHITECTS

The **60th IFLA World Congress**, held in **Istanbul** under the theme "**Code Red for Earth**," represents the culmination of years of meticulous preparation, unwavering dedication, and extensive collaboration. As the **Chair of the Organising Committee** and **former President of the Chamber of Turkish Landscape Architects (CTLA)**, it is my privilege to highlight the remarkable contributions of the committees and individuals who have worked tirelessly to bring this congress to life.

From the very beginning, the organisation was structured to ensure that every aspect of the congress was addressed with precision and foresight. The **Executive Organising Committee (EOC)** and the **Organising Committee (OC)**, composed of distinguished professionals and leaders from CTLA, oversaw the overall framework of the congress, laying the foundation for a seamless and meaningful event. The collaborative efforts of the **Programme Committee (PC)**, **Finance and Sponsorship Committee (FSC)**, and **Marketing and Communications Committee (MCC)** were crucial in achieving our goals.

A special acknowledgment goes to the **Programme Committee**, whose leadership and subcommittees played a key role in developing the congress's theme and structure. The **Call for Abstracts and Reviews Committee** carried out a rigorous peer-review process, ensuring that each submission adhered to the highest academic and professional standards. This process led to the acceptance of **366 abstracts** and **53 design projects** from a total of **770 submissions**. These impressive numbers reflect the global landscape architecture community's enthusiasm and commitment to addressing pressing environmental challenges.

The **Student Charrette and Competitions Committees** provided platforms for creative exchange and innovation among students, further enriching the congress experience.
I would also like to express my deep appreciation for the tireless efforts of the **Finance and Sponsorship Committee** and the **Marketing and Communications Committee**. Their dedication ensured the **financial sustainability** of the congress and its **successful outreach** to a global audience.

Additionally, I would like to extend a special thank you to the **IFLA ExCo Congress Planning Team**, whose guidance and strategic support were invaluable throughout the planning process. Their contributions helped ensure that this congress would be an outstanding success.

Equally, the dedication and enthusiasm of the **PMOGenç members**, our volunteer students, deserve recognition. Their passion and commitment have played an essential role in the organisation of this congress, and their efforts have been truly invaluable.

This congress is the result of **collective excellence**, embodying the spirit of **unity** and **shared purpose** that defines our profession. On behalf of the Organising Committee, I extend my heartfelt gratitude to every committee member, reviewer, sponsor, volunteer, and collaborator whose contributions have made the **60th IFLA World Congress** a landmark event.

Together, we amplify our call for urgent action—**Code Red for Earth** is not just a theme, but a **global responsibility** that we must embrace.

Sincerely,

YASİN OTUZOĞLU
CHAIR, IFLA 2024 ORGANISING COMMITTEE
PAST PRESIDENT, CHAMBER OF TURKISH LANDSCAPE ARCHITECTS (CTLA)

CODE RED FOR EARTH

The 60th World Congress of the International Federation of Landscape Architecture (IFLA), hosted by the UCTEA Chamber of Turkish Landscape Architects, will be held in Istanbul between 4-6 September 2024 with the theme "Code Red for Earth".

The IFLA World Congress is the most important annual event for the Landscape Architecture profession and the IFLA community. The World Congress offers professional development and networking opportunities for practitioners, entrepreneurs, educators, researchers, students, journalists, as well as anyone interested in the impact of landscape architecture on our society, economy, and culture. It is also an international event where challenges in education as well as current trends and issues in professional practice are discussed and answers to all problems are sought.

Herein, the 2024 IFLA 60th World Congress calls for humankind to take urgent action to prevent the worst impacts of environmental crises. Acknowledging human responsibility, the Congress invites policymakers, professionals, scientists, and individuals on stage to establish discourse and a course for the Earth’s future.

International Federation of Landscape Architects (IFLA)

A truly global federation, IFLA currently represents 77 national associations from Africa, the Americas, Europe, Asia Pacific and the Middle East. Our mission as landscape architects is to create globally sustainable and balanced living environments for the benefit of humanity worldwide.

IFLA officially represents the world body of landscape architects through its member associations and regions and in both governmental and non-governmental organizations, such as the UN, UNESCO, UIA, etc. IFLA is a not-for-profit, non-political, non-governmental organization.

The mission is to promote the landscape architecture profession within a collaborative partnership of the allied built-environment professions, demanding the highest standards of education, training, research and professional practice, and providing leadership and stewardship in all matters.

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The Chamber of Turkish Landscape Architects (CTLA)

The Chamber of Turkish Landscape Architects (CTLA) is a public institution, established on 13/05/1994 with the decision of the 33rd General Assembly of the Union of Chambers of Turkish Engineers and Architects (UCTEA).

Organizing Landscape Architecture in Turkiye started with the "Landscape Architecture Association," CTLA's predecessor organization, which was first established in Ankara in 1966. Today, CTLA, with its headquarters in Ankara, continues its activities with 6 branches, 15 provinces, and 2 district representatives.

The Chamber of Landscape Architects is the only professional organization that gathers within its organization Landscape Architects who are legally authorized to practice their profession and art within the borders of Turkiye and who are engaged in professional activities.

The IFLA 60th World Congress is organized this year by the Turkish Chamber of Landscape Architects, the official representative of Turkiye in the IFLA European region.

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- Call for Abstracts & Reviews
- Student Charrette (Workshop)
- Competitions & Awards

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SHORT ORAL PRESENTATIONS

Codifying Code Red: Eco-Emergency, Global Solidarity

A dynamic evaluation framework for ecological networks adapting to urbanization

Hao Li, Zhicheng Liu
School of Landscape Architecture, Beijing Forestry University, Beijing, China

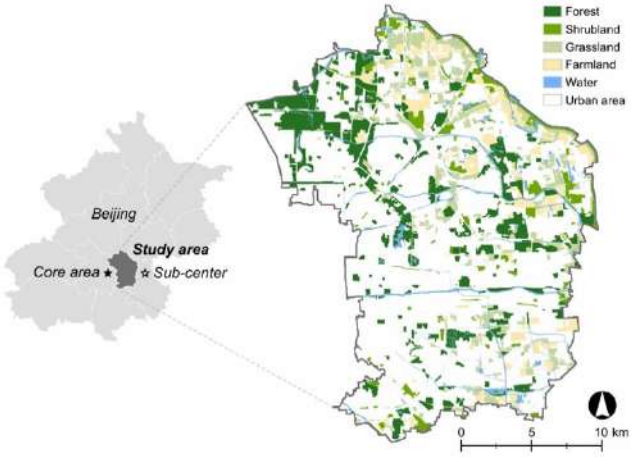
Habitat loss due to urban sprawl is considered to be a major cause of biodiversity decline worldwide. Urbanization leads to fragmentation, converting natural ecosystems into small fragments with complex shapes and affecting landscape connectivity. Landscape connectivity means “the degree to which the landscape facilitates or impedes species movement among resource patches” and depends on the spatial pattern of the landscape. A complete ecological network can reduce the impact of landscape fragmentation on biodiversity, thus promoting the conservation of biodiversity. Given the conflict between urbanization and ecological planning, the establishment of complete urban ecological networks has become a focal point of landscape architecture.

Chaoyang District in Beijing is facing the challenge of transformational development due to excessive urbanization. Taking this district as the study area, this study assessed the environmental impact of different development scenarios on landscape connectivity indices and explored the most relevant strategies for important green space patches by combining ecological network modeling (Graphab) and scenario simulation techniques (FLUS model). The results show that under the urban expansion scenario, the probability of connectivity (PC) decreases by 59.7%, while under the master plan scenario, it increases by 102.1%. Even under the ideal ecological scenario, the ecological network structure of the region faces structural problems. Patches and corridors with high delta probabilities of connectivity (dPC) are concentrated in the north, with no effective connection between the north and south. Finally, planning strategies and priorities for important patches under different urban development goals are proposed through a strategy matrix. These strategies are (i) the construction priority strategy, where green space has high ecological potential; (ii) the opportunity land strategy, where green space can be transformed into urban construction land to ensure land resources for urban economic development but, at the same time, optimize the ecological network structure; and (iii) the conservation priority strategy, which protects green spaces facing high ecological threats.

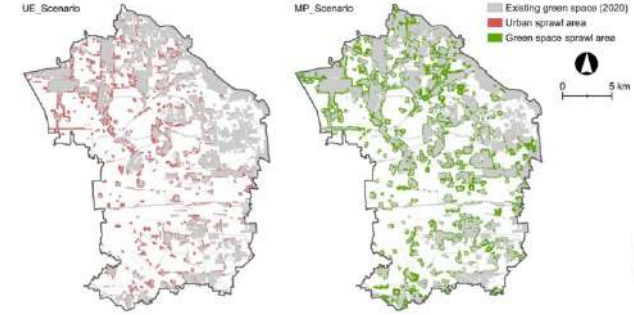
In general, we enriched the identification and evaluation framework of patches in the ecological network, aiming to seek a balance between urban development and ecological protection in the future, especially for cities in transition or with strong urban and ecological contradictions. Our method provides technical support and theoretical reference for governments to formulate detailed ecological management policies for promotion, construction, and protection.

Keywords: ecological network, landscape and urban planning, landscape connectivity, scenario simulation, graph theory

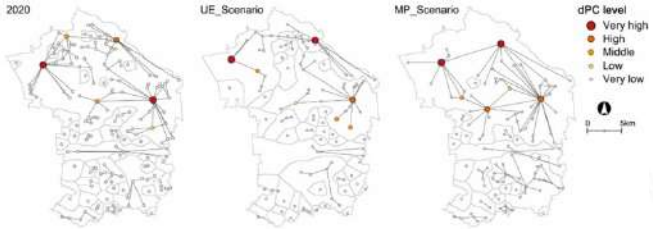
Location of the study area



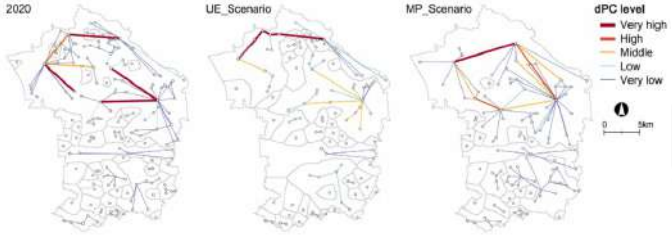
Simulation of urban sprawl (in red) under UE_Scenario and green space sprawl (in green) under MP_Scenario



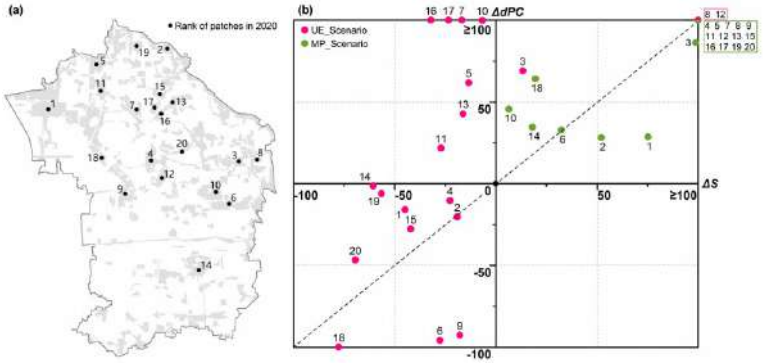
dPC level of patches in 2020 and under two scenarios



dPC level of corridors in 2020 and under two scenarios



Top 20 dPC index patches and strategy quadrant diagram



(a) Top 20 dPC index patches in the ecological network of Chaoyang District in 2020; (b) strategy quadrant diagram of patches based on ecological impacts under two scenarios.

Ravine reclamation: Thinking beyond immediate economic benefits

Devayani Pranav Upasani[1]
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It can be said that soils are one of the fundamental resources for the survival of life on Earth. However, despite being the basis of all terrestrial life, they are many times undervalued (Blanco-Canqui, & Lal, 2008a). Land degradation is considered to be one of the most severe global environmental challenges and has numerous ecological, social, and economic consequences (Eswaran, Lal & Reich, 2001; Pani & Carling, 2012). Presently more than 75 percent of earth's land areas are substantially degraded, undermining the well-being of 3.2 billion people (https://www.unccd.int/).

Of the various forms of land degradation, soil erosion is one of the most significant concerns. Considering the fact that formation of about 2 cm of topsoil can take up to a few centuries to form (https://www.fao.org.), fertile soil can be considered a non-renewable on an anthropogenic time scale (Eswaran, Lal & Reich, 2001). Furthermore, the process of soil erosion constitutes the loss of another finite resource i.e., freshwater. The impact of accelerated soil erosion is mostly not limited to the immediate surroundings but extends beyond to ecosystems and societies away from the local sites of degradation.

Ravine landscapes represent one of the most severely degraded forms caused by water erosion exhibit extreme terrain deformation along with severe on-site and off-site implications forming highly vulnerable and degraded socio-ecological systems and represent an environmental threat to predominantly agricultural countries like India

The total area under ravine formation in the country at around 4 million hectares (Pani & Mohapatra,2011; Dey et al, 2018 and maximum ravine formations seen in the states of Uttar Pradesh, Madhya Pradesh, Gujarat, and Rajasthan.

There have been multiple attempts to arrest ravine erosion by Government and semi-Government agencies, NGOs, local communities and individuals along with multiple research papers discussing various aspects of ravines formation and reclamation. This highlights the existing interest in both practice and research focusing on ravine lands.

However, the issue of ravine formation and increment still persists in the country and is of a great concern to the country's development: a threat to both the ecology as well as the socio-economy of the region.

A considerable section of the research and experiments focus on understanding of the ecological and thus economic impact of ravine reclamation on ravine socio-ecological system. However, a dearth is seen in studies focusing on sustained livelihoods which is a key to ensure the continued ecological and thus economic and social resurgence.

The paper is based on the hypothesis that understanding livelihood resilience can be considered as a primary tool for creation of a robust ravine reclamation program and policy focusing on continued and wholistic regeneration of the degraded ravines ecosystems.

The paper intends to do the same through a critical review of the existing literature on ravine reclamation primarily in the Indian context.

Keywords: Ravine, ecological & socioeconomic degradation, livelihood resilience

How does blue-green space mitigate water hazards in shallow mountains

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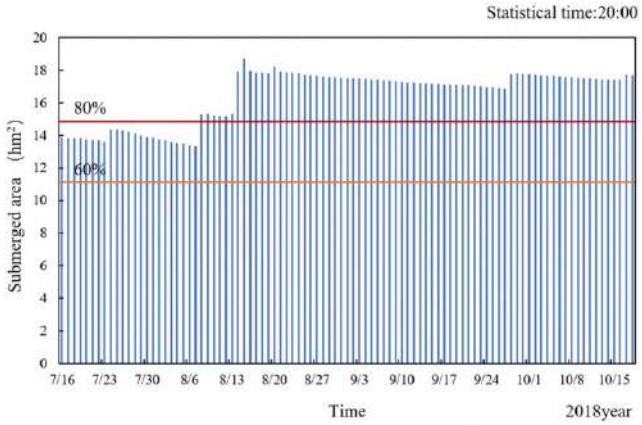
Flood disasters, among the most severe natural catastrophes worldwide, significantly impact the safe function of cities. In recent years, urban expansion to contend with limited construction land and spatial requirements has led to integrating more shallow mountainous areas into urban development. Particularly during the planning phase, the absence of systematic and reasonable spatial control may result in issues such as extensive land development and the occupation of water bodies and rivers in shallow mountainous areas, significantly heightening the likelihood of geological hazards and flooding risks for cities. This study focuses on Qi Yun Mountain Park in Qinhuangdao, Hebei, China, spanning 137.1 hectares. With three existing ditches and municipal drainage culverts, the park faces substantial runoff pressure from the surrounding 235.75 hectares of land. Situated in a shallow mountainous areas with a semi-humid climate featuring frequent summer rainfall, the park faces threats of heavy rain and floods, notably on the eastern side, where over 1,500 residents and a 33.8-hectare residential zone are at risk of flooding and habitat fragmentation.
Over the past five years, monitoring, sampling, and field surveys have been conducted at the park to assess the adaptability and effectiveness of blue-green spaces in shallow mountainous areas in response to flood disasters and waterborne ecological pollution. The research delves into three key areas:(1） examining the performance of Low Impact Development (LID) facilities under various rainfall scenarios at the park, utilizing SWMM and MIKE21 models to simulate hydrological processes pre- and post-park construction, with field data used for model calibration. Findings indicate that installing LID facilities positively impacts construction in shallow mountainous areas, reducing peak runoff rates, delaying peak flow times, and decreasing runoff volume and ratios of runoff-to-rainfall. Additionally, they effectively collect rainwater, enhancing the site's landscape water systems. (2) Investigating the scientific determination of LID facility layouts based on the topography, rainfall-runoff characteristics, and landform attributes of shallow mountainous areas. Genetic algorithms (NSGA-II) were employed to select runoff peak reduction rates, costs, and land area as optimization objectives. The EWM-TOPSIS and VCWM-TOPSIS methodologies ranked LID facilities' optimized results and layouts, narrowing down 7 trillion possibilities to the top 100 optimal solutions. (3) Exploring the impact of rainfall on the water quality of a well-maintained urban park artificial lake. The study observed that rainfall eliminates insecticides sprayed on trees during maintenance, subsequently entering the artificial lake through surface runoff, posing threats to water ecology and visitor health. Focusing on lambda-cyhalothrin, one of the most common and hazardous insecticides in forestry, the study established and validated a two-dimensional advection-dispersion model for water pollutants using measured rainfall data. The study revealed that with increased rainfall intensity, pollutant concentrations accumulate following second- or first-order equation curves. After rainfall of varying intensity, the recovery time for artificial lakes contaminated with lambda-cyhalothrin exceeded 720 hours. While the human health risk assessment value of lambda-cyhalothrin remained below the harm threshold, it posed a substantial ecological risk to aquatic life.

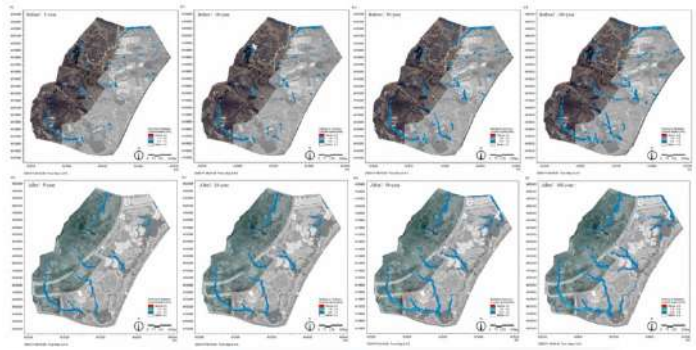
Keywords: Shallow mountainous areas, Stormwater management, Water ecological management, Genetic algorithm, Model simulation prediction

1.Distribution of submerged area of landscape water system in the study area

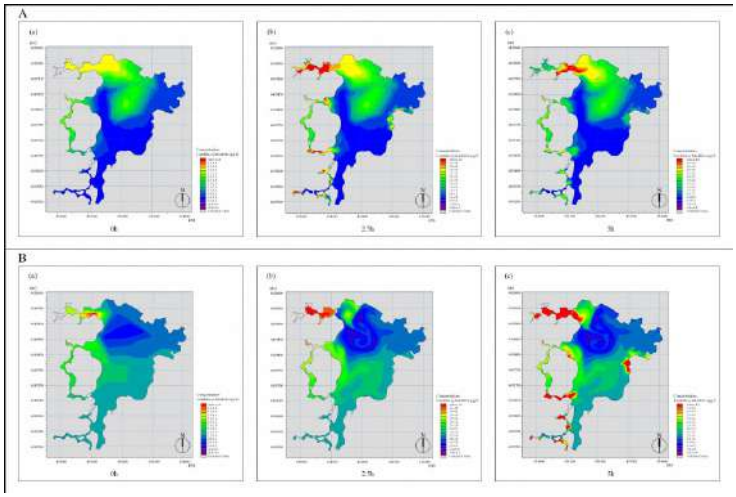
2.Histogram of inundation area of landscape water system in the study area



3.The maximum flow rate of stormwater runoff before and after park construction under the condition of 5,10,50and 100 years of rainfall



4.Spatial and temporal distribution of pesticides under moderate and heavy rain conditions



Open Green Spaces In Disaster-Resistant Cities

Sait Ersin Özbadem[1], ESRA Kiliç[2]
[1]Sait Ersin Özbadem
[2]Esra KILIÇ

Unplanned urban development not based on ecological principles reduces cities' resilience to disasters. Urban planning disregarding the natural dynamics of cities creates irreversible effects with the occurrence of the first disaster. In the earthquakes centered around Kahramanmaraş on 06.02.2023, it was observed that qualified agricultural lands and water basin protection zones were opened up for construction in affected provinces. In the urban renewal or restructuring of a city, the suitability of construction areas cannot be determined solely by conducting soil studies. Without conducting a landscape character analysis of the city to be built, disasters are inevitable. Incorrect planning not only harms the natural structure of the city but also hinders any intervention after a disaster. Wrong site selections not only impede search and rescue efforts after a disaster but also complicate emergency evacuations during earthquakes.

Open green spaces are the most important social areas where we escape from the hustle and bustle of urban life and engage in recreational activities. With natural disasters, the purposes of open green spaces have changed. Open green spaces have been used not only for functions such as playgrounds, sports, and relaxation but also as emergency gathering, living, and disaster coordination points. Without open and green space systems, disasters will become much more devastating. Vital actions such as gathering, sheltering, establishing aid networks, and evacuation would become more difficult.

The earthquake centered around Kahramanmaraş left deep psychological scars on people. This situation caused people to not enter their homes for a long time after the earthquake. People preferred to stay in tents rather than structural enclosed spaces. At this point, open green spaces came to the forefront for the entire city. In Gaziantep, nearly 100 open green spaces were actively used for sheltering and providing food and supplies. Additionally, citizens tried to shelter in smaller parks with their own means. Insufficient infrastructure problems were encountered in the use of open green spaces after the disaster.

Looking at the cities in disaster areas where we suffered intense losses, unfortunately, it was observed that no ecological-based planning was done. Consequently, the extent of material and spiritual destruction has been recorded as the largest of the past century.

In this context, urban planning should be based on ecological principles, and unauthorized use of land parcels should not be allowed. The boundaries of natural formations should be determined, and buffer zones should be created. The city should be considered as a whole, and open green space usage should be adjusted to disaster scenarios by foreseeing possible situations before and after disasters.

Keywords: Disaster, Earthquake, City, Park

Rehabilitation of landfills in thessaloniki: from landscape destruction to recovery

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Landfills are vital to public health, society and the environment, with considerable impact on the landscape. The locations of landfills tend to be marginalized, degraded areas on the outskirts of a city. Due to their size, they have a local and supra-local character. This is a factor that should be considered when designing their rehabilitation and integration into the environmental, social and cultural landscape of the wider area in which they are located. Indeed, landfill rehabilitation should not be seen as a purely technical or engineering challenge, but rather as an opportunity to upgrade the social and environmental value at a local and regional scale. By reclaiming and redefining the use of such sites, landfills can be transformed into parks, green spaces, or other development projects that can benefit the community. It is thus obvious that landfill rehabilitation should not be seen as an expenditure, but rather as an investment towards a sustainable future for urban areas.
In Greece, landfills take the form of either uncontrolled or controlled waste disposal sites, while in recent years there has been a rise in the development of sanitary landfills. Here, we present two applied examples of landfill rehabilitation in Thermi (80.000m2) and Derveni (132.000m2), located in the outskirts of the city of Thessaloniki (northern Greece), which today are used as environmental parks by the citizens. The implemented rehabilitation scheme in each site, was designed to comply with the relevant provisions of the EU Waste Framework Directive 75/442/EEC and the Greek regulation defined in the Joint Ministerial Decision 114218/1997 "Establishment of a framework of specifications and general waste management programs". In addition, the evolution of their aftercare over the years was based on the aforementioned framework. Both sites demonstrate successful case studies, where the rehabilitation was not treated solely on a technical level but was analyzed and designed according to environmental and socio-cultural criteria, factoring-in the character of the landscape and its uses. Ultimately, these spaces were upgraded as locations of great value for the quality of life in a city with limited open spaces and were integrated in the environmental units of Thessaloniki.

Keywords: Landfill rehabilitation, wasteland reclamation, environmental park

Fostering solidarity through dissolving boundaries

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Landscape architecture has the unique capacity to address planning and design issues across multiple scales and traverse geographical boundaries. This special attribute allows landscape to serve as a solidifying field that draws people together in order to solve regional and global problems that cannot be addressed by individual jurisdictions alone. In my paper, I attempt to examine the idea of 'boundary' in the geographical and landscape architectural tradition, and explore the different productive ways in which boundaries and edges can be turned into some of the most productive zones, both ecologically and culturally speaking. With a focus on Asian cities, different types of boundaries are mapped and analysed, including national and regional boundaries, urban-rural edges, land-water edges, and other conceptual and imaginary boundaries that define communities and locales. Finally, the paper takes on the Hong Kong-Shenzhen border as its core case study. Through tracing the historical evolution of this boundary that embodies a number of changing political, cultural, and ecological conditions, the paper critically reviews the current government's plan to now develop this former 'frontier area' restricted from development in the colonial era, and looks into the many different alternative proposals put forward by non-governmental bodies including professional institutions, students and academics, and environmental and community groups. Arising from this analysis, the author proposes to consider cities as continuous and living cultural and ecological networks, and thereby argues for the need to employ 'landscape approaches' to dissolve conventional understandings of boundaries in order to come up with creative solutions that may foster solidarity in tackling some of the most urgent crises of the contemporary world.

Keywords: Boundaries, edges, Hong Kong-Shenzhen border, networks, crisis

Golf Course Renovation Under the Goal of Carbon Neutrality

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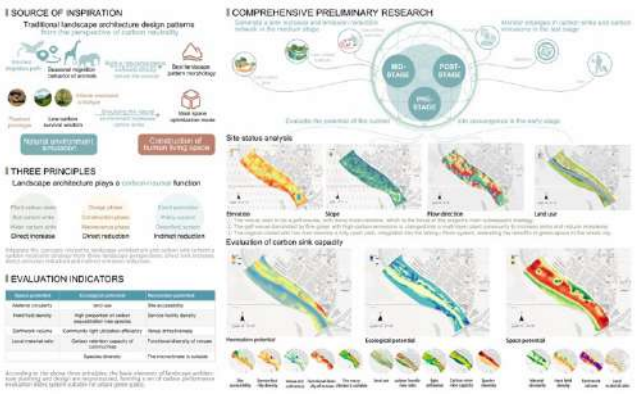
Under China's urban renewal policy, large cities, such as Beijing, are gradually transforming informal green spaces into urban parks, with their own ecological value ignored. Golf courses, for example, cover up to 90% of their area with greenery, but as an artificial recreational green space, golf courses do not provide a positive habitat for creatures other than humans. In addition, the high amount of CO_2 produced by high-maintenance lawns also contributes to climate change. Therefore, it is necessary to transform the low-value golf course with a small number of people into an urban park with multi-subject services such as flora and fauna. However, most of the current cases of golf courses being converted into urban parks are mainly completely overturned and rebuilt, which will further cause a large amount of CO_2 emissions. And the earthwork and construction waste generated during the construction process will also encroach on the habitat of animals and plants for the second time. Therefore, this project constructed a full-cycle renovation guide, and explored the optimal solution to balance the ecological and recreational properties of golf courses through the control of carbon sinks and carbon emissions in the whole process of golf course design and construction. In order to balance the carbon sink and recreational value of the golf course after renovation, a low-efficiency golf course along the Wenyu River in Beijing, China was selected for experimental exploration, and a low-carbon guidance for the full-cycle renovation of golf courses was constructed.

In the first stage, a carbon performance evaluation index system was constructed to evaluate the carbon sink, carbon emission and recreation potential of golf courses transformed into urban parks, which was used as the theoretical basis for the full-cycle transformation. In the second stage, low-carbon habitats will be constructed by making full use of the original terrain features such as golf course bunkers, fairways, and greens. It also learnt the original inspiration of the minimum consumption of animal migration in nature and the increase of sinks in natural peatlands and forest slopes, constructed a variety of habitat models, compared and simulated the proportion of carbon sequestration and carbon emissions, so as to obtain the optimal solution and maintain the long-term effect of the carbon sequestration capacity of the habitat system through strategies such as community thinning. It also arranged activity nodes according to the carbon emission intensity generated by different activities, so as to form a connection with the urban greenway system.In the third stage, the management, operator and user are involved. According to the preliminary assessment and mid-term construction, draw a statistical map of the change of the sink and discharge, supervise the sink and discharge situation by division, track the recycling and sustainable use of high-carbon emission materials. It can also realize the global dissemination of low-carbon concepts through popular science interaction.

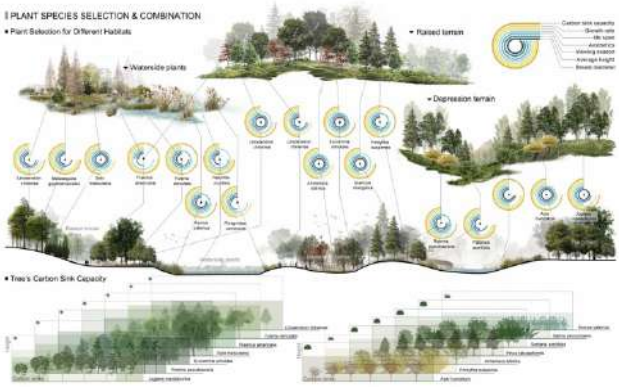
The renovated golf course will play a role in radiating surrounding area, directly or indirectly driving the surrounding areas of the city to continue to complete the task of carbon emission dissipation.

Keywords: Carbon neutrality, Full-cycle, Golf course, urban park, renovation

carbon performance evaluation index system and evaluation



different types of low-carbon habitats



master plan

Analysis of urban elastic coupling difference and its driving factors

Xiaomin Luo, Ran Chen, Yi Xingjian, Jing Zhao, Xueqi Yao
Beijing Forestry University

"BACKGROUND: With increasing global warming and extreme weather, many cities around the world are exposed to climate risks such as floods, droughts, sea level rise, heat island effects, and natural disasters such as earthquakes and landslides. Since 1980, natural disasters have cost the world more than $3.7 trillion, killed more than 2.4 million people, and increased overall losses by more than 800%. At the same time, the increase of population and the acceleration of urbanization make the scale of cities continue to expand, and the complexity and vulnerability of cities also increase. As the center of economy and society, city is the concentrated embodiment of various interests and conflicts. Cities are often hit by financial crises, energy crises, public health crises, terrorism and so on. Over the past decade, terrorist conflicts have averaged 10,000 a year. Instability in these cities has serious implications for global solidarity.
PURPOSE: Urban resilience has received more attention in recent years, with some cities incorporating the creation of resilient cities into their master planning objectives, based on the Rockefeller Foundation's Resilience Assessment Framework and London's Risk Management and Resilience Enhancement Program.
The study of urban resilience has important theoretical significance and practical value, which can help cities improve their ability to cope with various risks and shocks and realize sustainable development and better life of cities.
METHODS: China's urban resilience construction has made some progress, but still faces challenges. Many cities still have a large shortage of emergency response capabilities such as disasters. The construction of Chengdu-Chongqing economic Circle is an important part of the Belt and Road Initiative, and it is one of the most important and ecologically fragile urban agglomerations in China. Therefore, this paper first takes Chengdu-Chongqing economic circle as an example to discuss the coordination relationship among the four elastic subsystems of multi-dimensional cities and analyzes the linkage coordination degree of the elastic subsystems by using entropy-weighted TOPSIS model and linkage coordination degree model. The random forest model is used to quantify the contribution rate of the index to the coupling coordination of urban resilience. Through scientific data support to optimize the planning and development direction of each city.
DISCUSSION: This study presents an emerging interdisciplinary approach to assessing urban resilience and analyzing the contribution of urban indicators to resilience. The research on Chengdu-Chongqing urban agglomeration will soon be published in ecological indicators and will contribute guiding significance to the improvement of the resilience of Chengdu-Chongqing urban agglomeration. This proves that the method has high reliability in assessing the urban elastic change and the contribution of drivers. Therefore, we collected tens of thousands of pieces of data from all cities in China to assess resilience and quantify the contribution rate of indicators for the entire Chinese city. This has great practical significance for China's urban planning and even policy making. Similarly, this method can be extended to any region in the world, so that planners can gain a deep understanding of the characteristics of a city and efficiently build urban resilience."

Keywords: urban resilience; The elasticity of subsystems; Coupling fit degree; Entropy weight topsis method; Chengdu-chongqing economic circle

Larissa: An Example of how Urbanization led to Environmental Degradation

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Urbanization refers to the process by which an increasing proportion of a population lives in urban areas, leading to the growth and expansion of cities. It involves the movement of people from rural areas to urban centers in search of better economic opportunities, improved living standards, and access to services and amenities. Urbanization is driven by factors such as industrialization, globalization, and demographic changes. Theoretical and empirical evidence argues that urbanization brings both opportunities and challenges. It can stimulate economic growth, innovation, and cultural exchange, but it also leads to issues such as overcrowding, pollution, inadequate infrastructure, and social inequality. Managing urbanization effectively requires urban planning, infrastructure development, and sustainable land use policies to create livable, inclusive, and resilient cities.

Larissa, a major Greek city situated in the central part of Greece, is a characteristic case study of how urbanization took place in Greece. The city concentrated the population of the wider area, which increased the needs for infrastructure and other related urban functions. The city expanded by implementing a public plan that it cannot currently manage and not taking into account the very important natural resource that passes through the city, namely the Pineios river. As a result the ecological or environmental degradation and the impact of the current climate crise seems to be inevitable. Focusing on the methodology, the paper uses census data to analyze how the phenomenon of urbanization took place in the city, and exploits real geographical data to describe how the ecological or environmental degradation increases through the reduction of available common/open spaces due to the lack of public money.

Keywords: Environmental Degradation, Greece, Urban Planning, Urbanization

SHORT ORAL PRESENTATIONS

Sustaining Life: Protection, Mitigation & Management

Ecosystem service recreational value assessment of Forest Park, Saint Louis

Yixin Jiang
Yixin Jiang, TBG Partners, San Antonio, USA

Forest Park, one of the largest urban park is shouldering significant opportunities for visitors. The park serves as a playscape for visitors as well as nonhuman creatures and delivers unlimited experiential educational opportunities for generations. Consisting of 1300 acres, Forest Park as a tremendous ecosystem contains native old-growth forest habitat, forests and woodlands, tall grass prairies, savannas, wetlands and two miles of reconstructed river system. Until today, it provides significant ecological services such as rainwater retention and filtration, carbon sequestration and plant pollination for all human and non-human creatures.

Under the background of urbanization process and raising awareness of health benefits, Forest Park is being debated as a core site for outdoor recreation. This study provides consideration and estimation on ecosystems recreational use monetary values that Forest Park can generate each year by dividing sections to various sport and landscape ecosystems, which can be referred for future value orientation towards environmental preservation and management policies.

Ecosystem service value refers to the benefits accruing to humans from nature. According to Millennium Ecosystem Assessment, ecosystem services include four major categories: provisioning, regulation and maintenance, cultural services and life supporting services. Recreational services belong to cultural services, indicates recreational functions provided by recreational environments ecosystem context, including nonmaterial recreation and tourist activities people implement on site.

Based on identification of recreational activities taking place in Forest Park including sports such as walking, running, driving, cycling, boating and yoga, temporary outdoor visiting such as camping, picnic, photography, and sightseeing. In addition, special provisions of facilities including golf carts, ice rink, tennis court and baseball fields etc. which are managed with labor to create recreational opportunities and visible economic contributions. Therefore, recognizing and transferring invisible service values to visible numbers is helpful to explore the sustainable development of resources and economy to raise human awareness of environmental resource protection.

Major methodologies used include: (1) quantitative research: Literatures use direct or replace market price approach, contingency valuation method, production cost method etc. to measure recreation service value. Travel cost method (TCM, individual) and consumer surplus method were most used. (2) Remote sensing satellite image and GIS as basic demographic data collection method (3) Sociological research methods including observational, interviewing, questionnaire.

Recreational service is abstract as a non-material value. Therefore, method of alternative market pricing is a popular concept of valuing recreational non-market goods. TCM represents travel cost method, which implies the price that was paid by visitors to physically travel to the recreational site and the value of site existence. Through the survey, hot spots where people usually spend more time can be identified

for further recreational service analysis and planning. TCM as an effective method can also provide useful information on tracking people's travel preference and behavior habits across the site which has a positive assistance to optimize visitors' experience satisfaction. Among various habitats in Forest Park, grassland is expected to have greater values comparing to other ecosystems as it shoulders more recreation activities has a close relation with neighborhood resource scarcity and regional conditions.

Keywords: Ecosystem Service, Ecosystem Service Value, Forest Park, Urban Park, Heritage Conservation

Biodiversity and Sustainability in Cities: The Role of Landscape Architects

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Today, people around the world are increasingly choosing to live in cities. However, as a consequence of this preference, biodiversity loss in urban environments is increasingly being reported. Biodiversity loss can have a negative impact on the quality of human life in an urbanizing world and on the sustainable conservation of the urban environment. Global research shows that the abundance and richness of fauna in urban environments largely depend on the spatial patterns of different urban vegetation patches such as urban forests, woodlands, parks, and gardens. Therefore, integrating strategic green infrastructure elements such as urban parks, urban forests, protected areas, and green belts can contribute to biodiversity conservation by improving the functionality of urban ecosystems. It is vital for ecosystem health and human well-being that cities conserve and enhance biodiversity.

Urban parks are an important part of the urban landscape and provide important spaces for the conservation of the natural environment, social interaction, and physical activity. However, it is common to neglect biodiversity in park design. Floristic diversity contributes significantly to parks' biodiversity, increasing ecosystems' resilience. Therefore, it is important to consider floristic diversity and use local plant species in urban park designs. The importance of biodiversity in the creation of sustainable cities is increasing. Cities should protect and promote biodiversity to benefit from ecosystem services. These services include improving air and water quality, climate regulation, and reducing the impacts of natural disasters. Therefore, sustainable urban planning should include strategies to protect and maintain biodiversity. This study focuses on the critical role of biodiversity in designing urban parks and creating sustainable cities. Since the concept of sustainability involves the effective utilization of natural and cultural resources, the concept of ecological planning becomes an integral part of urban planning. From this point of view, landscape architects should take an active role in the creation of sustainable cities and urban spaces where ecological and economic relations are at the forefront.

Keywords: Biodiversity, Sustainable Cities, Ecological Planning

Rethinking planning through ecosystem services in the Mexican Caribbean

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[3]Independant landscape architect firm. BIOPOLIS

Mexico is ranked as one of the countries with the highest biodiversity in the world. Mexico's biological megadiversity constitutes a privilege and a potential for the country's sustainable development, and it also represents a responsibility to our society and the world. The Mexican Caribbean is an internationally renowned vacation site because it holds a great cultural heritage and various biosphere reserves. However, its management and conservation require solid knowledge and the development of capacities for its management (Sarukhan & et al., 2017). The importance of management to guarantee the sustainability of ecosystems and their services requires an integration into territorial planning (Avendaño Leadem, Cedeño_Montoya, & Arroyo-Zeledón, 2020).

This abstract resumes an interdisciplinary consultatory hosted by the Deutsche Gesellschaft für Internationale Zusammenarbeit GIZ in partnership with Tulum's local government to evaluate ecosystem services ES as the baseline to design guidelines for the local administration through Nature-Based Solutions NbS in a multi-scale approach for this Mayan prehispanic town.

There were some challenges at different scales of approach. Through the evaluation of ES and their vulnerability, it was defined at a landscape level the priorities for conservation, mitigation, and restoration of the municipality of Tulum. The Mayan train began its construction in the middle of the Mexican peninsula, slicing the great natural conservation areas. Therefore the approach reached the shoreline to compare what the GIS information provided versus the state of conservation it presumably is. The ecological continuity was lost due to the urban fragmentation; turtle nesting areas were surrounded by either residence complexes or five-star hotels; cenotes (underwater sinkholes with permanent water) were in private areas, at risk of construction and pollution; and seascapes were neglected due to locals, by having only one way into the beach.

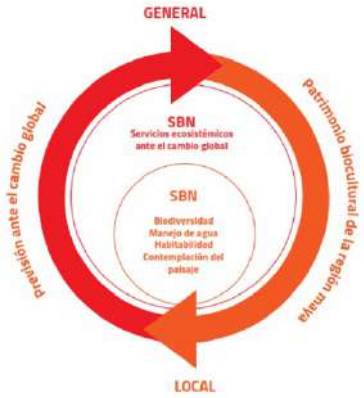
Some other challenges were faced in the livable space, either in the urban area of Tulum, the smaller villages, or at the naturescapes. The NbS approach was applied providing 4 main themes to work on. Biodiversity and its ecological continuity, water management, livability at the open spaces (regional and urban), and coastal landscape contemplation.

The design guidelines focused on preserving the cultural heritage of the Mayan houses and its activities to promote the connection between species (especially the jaguar migration area), the preservation of the Caribbean beauty, and the change of paradigm

that looks out to let the jungle grow in the city, so the local government and new developments don't destroy to rebuild.

Keywords: biodiversity, conservation, management, urban and territorial planning, cultural heritage.

Nature Based Solutions Scheme



Nature-Based Solutions approach at a multiscale approach.

Assessment of Regional Ecosystem Health in Beijing under Multi-objective Scenarios

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A healthy regional ecosystem can continuously provide ecosystem services, which is the foundation for achieving sustainable urban development. Therefore, how to plan and coordinate urban land use from a healthy perspective has become a key research topic in the field of landscape architecture and urban planning. Taking Beijing as an example, a regional ecosystem health assessment framework is constructed, including physical and functional health evaluations of the ecosystem. Based on land use types in 2010 and 2020, the CA Markov PLUS model is used to predict four target scenarios of natural development, rapid development, ecological protection, and forest construction in 2030, and to explore new methods for healthier urban planning under these four scenarios. The results show that compared with the health status in 2020, the regional ecosystem health assessment results of Beijing's rapid development scenario show a negative value, while other scenarios show a good growth trend, with the forest construction scenario showing the most significant growth. Adhering to ecological priority, green development, and intensive development of construction land, as well as strengthening forest construction, can significantly improve the health status of regional ecosystems.

Keywords: Landscape architectur, Regional ecosystem health, Multi objective scenarios, Predictive simulation,Beijing

Cultural Heritage Protection from the Perspective of Landscape Architecture

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Cultural heritage is the wealth left by history to humanity. It is a cultural relic with historical, artistic, and scientific value and a traditional culture closely related to people's life and inherited from generation to generation. China has a significant cultural heritage with rich types that need to be protected and utilized urgently. Currently, the research on protecting and continuing cultural heritage primarily focus on architecture and urban planning. It needs to include relevant theories and research from the perspective of landscape architecture. From the perspective of landscape architecture, this paper describes how designers from different regions and cultural backgrounds interpret and evaluate heritage when facing different types of cultural heritage. Explore the cultural and social values of different types of heritage, and protect and continue the heritage using the landscape approach, to provide a new direction for future cultural heritage protection and contribute to international cultural heritage protection.

Keywords: cultural heritage, landscape architecture, heritage protection, heritage value

Agricultural Landscape Aesthetics of Olana Historic Site

Earth Art of Lorsch Monastery

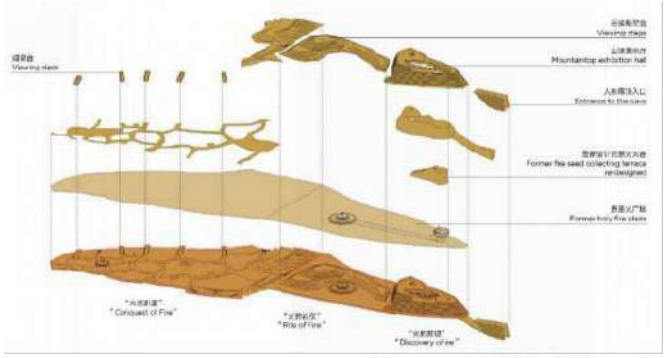
Integration of Tewa Compound Greenway with Nature and History

Land art of "white spray" in Owens Lake

Landscape ecological restoration of Mediterranean Club at Cross Cape

Low-impact development of Algaida salt marsh

Narrative Culture Experience Landscape Design of Xihoudu Relics Holy Fire Park



Narrative Route of Montreal Royal Hill Park

Protection of the overall style and features of the corridor of the ancient Great Wall cultural sites in Datong

Restoration of the irrigation system of Caldesdemonte vegetable orchard

Evaluation of cultural heritage protection benefits based on landscape perception

Yu Cheng, Huasong Mao, Changyu Zhang, Lingna Zhu
Department of Landscape Architecture, Chongqing University, Chongqing, China

Cultural heritage, as a core carrier of national identity and local memory, has an essential role in inheriting culture and spirit from generation to generation. However, the perception of the value and significance of cultural heritage is affected by changes of the surrounding environment and the implementation of conservation measures. At the same time, although the rise of social media has provided new opportunities for the development of research on the landscape perception of cultural heritage, the existing research generally focusses on the results of landscape perception, such as city image and tourists' satisfaction and so on, and lacks further evaluation of protection benefits based on the results of landscape perception. Therefore, this study takes the Huguang Guild Hall Historical and Cultural Block which is the largest surviving ancient guild hall group in China that have witnessed the immigration in Chongqing as an example. And it constructs a set of evaluation method for the protection benefits based on the analysis of the landscape perception through the social media text data, including common landscape elements and core cultural themes of landscape perception through content analysis and network semantic analysis, the evaluation of various aspects by text emotion calculation, such as the building, environment and spatial structure and so on, and the correlation between the overall evaluation and various aspects' evaluation with the use of the structural equation model, which concludes the summary of the evaluation of protection benefits of historic and cultural block.

Keywords: cultural heritage, landscape perception, protection benefits, social media data, historic and cultural block

Sydney's Koala Belt to Blue-Green Grid: Governance issues

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[2]Total Environment Centre

Sydney's unique city morphology is that it is circumnavigated by its two largest rivers - the Hawkesbury-Nepean River (Deerubbin) and the Georges River (Toggerai), this also acts as Sydney's Koala Belt, however, urban sprawl is threatening to break through this belt in South West Sydney around Appin.
Sydney's aspirational Blue Green Grid Plan, dovetails neatly with the species requirements of both Koalas and human habitability, we briefly outline this match. A spatial format that allows Sydney's green spaces to grow and consolidate in a co-ordinated and contiguous fashion. However, we look beyond the riparian, to other lines in the landscape from which to build green ribbons: including roads, trains, bikes tracks, etc.
We then investigate the governance structures in place to promote these lines, as the contiguous spatial consequences that are our goal, are often incidental to their intent. Of these we analyze to the degree they either encourage or discourage green ribbons: such as road reserves, active transport links, vegetated riparian zones, foreshore reserve setbacks and even the negative ones especially the Rural Boundary Clearing Code.
We then look at these governing bodies and the possibilities of reinforcing the successful ones, or flipping the more destructive tools. Using this analysis we assess how to integrate these disparate governance tools and agencies into one that can embed a green ribbon ethos across them all. As part of this process, I will outline the success so far and steps that have been achieved through by the Total Environment Centre and Save Sydney's Koalas in achieving these aims.

Keywords: Sydney, Urban Sprawl, Koala, Blue-Green Grid, Governance

Environmental Compliance of Turkish Coal-Fired Thermal Power Plants: Legislation Perspective

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Countries should generate electricity to boost economic development and enhance citizens' social welfare. In Turkey, recent energy policies have prioritized energy production based on domestic coal resources. This aims to meet increasing electricity demand and reduce dependency on imports. These policies are supported by legal regulations such as Law No. 6446 on the Electricity Market Law, enacted in 2013. Law No. 6446 aims to ensure electricity provision to consumers that is sufficient, high-quality, continuous, cost-effective, and environmentally compatible.
Coal-Fired Thermal Power Plants (CTPP), considered significant investment projects and its coal mines, have critical environmental impacts at national level. Therefore, efforts are made to control environmental effects through legal measures. As stated above, Law No. 6446 emphasizes environmental compliance. However, there is no specific law in Turkish Legislation regarding coal, while there are laws regarding renewable energy, nuclear power, natural gas, oil, etc. Thus, legal ambiguities and various incentives provided to investors loosen environmental compliance. CTPP cause environmental damage and can be subject to lawsuits. This study examines the environmental compliance of CTPP planned to be opened in accordance with Law No. 6446 from the perspectives of (1) legislation and (2) state council decisions. Firstly, existing (1) laws and regulations regarding with coal have been identified. Laws ensuring environmental control of CTPP are included under the Environmental Legislation category. State council decisions (2) are crucial to understanding the compliance of investments with legislation. Case examples that were the subject of the 6th Chamber of the Council of State were examined in the context of environmental compliance. Ultimately, the reasons for the lawsuits have been evaluated under five main headings:
• Urgent Expropriation Practices (non-statutory to Expropriation Law): Large energy investments deemed to be in the public interest are often subject to lawsuits, especially for urgent expropriation, due to their status as special-purpose laws. This restricts property rights.
• Non-Agricultural Use of Agricultural Lands (non-statutory to Soil Protection Regulation):
It is known that the places where mines originate are mostly first-degree agricultural lands, areas to be protected and forest areas that require special protection. There is a priority problem between nature protection and energy investments.
• Positive and Not Required EIA Decisions (non-statutory to EIA Regulation: While EIA decisions are crucial for environmental protection, they have been transformed into a tool that enables faster implementation of CTPP projects. Projects falling below certain numerical thresholds are completely exempted.
• Changes in Environmental Plan (non-statutory to Zoning Law): CTPP decisions do not comply with plan integrity, thereby failing to provide a holistic assessment of the air,

water, and soil.
• Obstruction Participation Rights (non-statutory to Environmental Law): Non-compliance with environmental legislation.
In conclusion, to ensure environmental compliance of policies based on domestic coal resources for electricity generation in Turkey, existing legal regulations need to be updated, and environmental impacts need to be more effectively controlled.

Keywords: Coal-Fired Thermal Power Plants, Environmental Compliance, Legislation, State Council Decisions

Conservation, Landscape Enhancement of Agricultural Heritage Site: with VR Technology

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Agricultural heritage is currently a trending topic in the field of international heritage studies. As a specific heritage category, agricultural heritage is outlined as a specific type of heritage consisting of farmers' lives, production practices and agricultural activities. As a unique and dynamic heritage, community participation has been recognised as one of the elements that cannot be ignored, and which forms an essential part of the content of agricultural heritage. The Haizhu high bed-low ditch traditional agroecosystem is one of the China National Important Agricultural Heritage Sites (China-NIAHS), located in Guangzhou of Guangdong Province in China. The Haizhu high bed-low ditch agroecosystem is a kind of agricultural production system with regional characteristics created and developed by local villagers over the centuries, taking full advantage of the natural conditions of high temperatures, abundant rainfall and a dense water network. The system includes dike, artificial canal, water gate, high bed and low ditch, crop planting, livestock and poultry breeding, and aquaculture.

As the inheritors and guardians of agricultural cultural heritage, the main position of local residents cannot be neglected, and their participation is the key to the conservation of local agricultural heritage and the enhancement and optimisation of agricultural landscapes. Therefore, based on the perspective of community participation, this paper takes the Haizhu high bed-low ditch traditional agroecosystem as the research case site, and takes local residents as the main object of investigation, and conducts a questionnaire survey and eye-tracking survey with VR technology on them. In recent years, eye-tracking technology has become an effective method to study landscape preference and public perception, which can accurately identify people's preference for relevant elements (e.g. farmland, water bodies, buildings, etc.).

According to the types and values of heritage, the current status of heritage conservation, and the existing landscape types in the protected areas, we quantified the landscape elements and selected 60 villagers, tourists, and experts to conduct experimental tests, comprehensively exploring the local community's perception and preference of agricultural landscapes. Combining the special background of the heritage site, based on the landscape preferences of the community residents, the conservation core area and development buffer zone will be divided, so as to make the tourism development process more sustainable, efficient and convenient, and to

provide reference for subsequent research scholars.

Meanwhile, in the highly urbanised Guangdong–Hong Kong–Macao Greater Bay Area in China, how to effectively protect and pass on agricultural elements in urban areas is a tough challenge with certain innovative value. By exploring the characteristics of agricultural heritage in the Greater Bay Area, we will explore the sustainable development strategy of agricultural heritage tourism, thus promoting the cultural revitalisation of the Greater Bay Area.

Keywords: agticultural heritage site, high bed-low ditch agroecosystem, VR technology, community participation, landscape perception

Experimental equipment, VR headset modelling PICO 4 Pro (2 units)

Experimental procedures (experimenters and software)

The Haizhu high bed-low ditch traditional agroecosystem

The Haizhu high bed-low ditch traditional agroecosystem

Soil and Water Bioengineering as NBS for Urban regeneration

Paola Sangalli
European Federation of Soil and Water Bioengineering, Sangalli Coronel y Asociados S.L.

Habitat, in ecology, is understood as the place where the appropriate conditions exist for an organism, species, animal, or plant community to live. In urban planning, it is understood as the built space where man lives. Joining both definitions, the habitat of the human being should be the built space where THE APPROPRIATE CONDITIONS are given to carry out our life, in all its phases.
But our cities are far from this definition. Increasing urbanization affects not only our habitat but also natural habitats and endangers our well-being as well as having negative consequences for the conservation of biodiversity and ecosystems. For some years now, the EU has been proposing the application of Nature Based Solutions (NBS) as a tool to restore urban ecosystems and recover the necessary Biodiversity. Nature-based solutions are solutions inspired and supported by nature that aim the r ecosystem services to respond to various societal challenges such as climate change, food security or disaster response.
Within the NBS, Soil and Water Bioengineering (SWB) offers proven solutions to build and restore urban rivers, deep slopes and landslides, water Phyto depuration, and urban afforestation. According to the European Federation of Soil and Water Bioengineering (EFIB), Soil and Water Bioengineering is a specific discipline that combines technology and biology in which native plants and plant communities are used as living building materials to solve erosion and conservation problems, contributing to the regeneration of degraded ecosystems due to natural or anthropic causes, to regenerate the dynamics of ecological and geomorphological processes and to the recovery of Biodiversity. SWB as a discipline has demonstrated its capacity to restore several ecosystems: dunes, coast, lakes, rivers, lineal infrastructures, queries...and also in urban area.
In the presentation, we will present selected and concrete projects in urban rivers and urban parks to let know to the landscape architects this important tool to improve our urban habitat.

Keywords: Soil and Water Bioengineering, ecological restoration, Mitigation, Biodiversity recovery, Nature Based Solutions

Artia river Irun Spain

Restauration of the Artía Channel with Soil and Water Bioengineering

Avda. Vitoria Gasteiz, Vitoria Gasteiz

Green Infrastructure inside the Cyti, Example of Vitoria Gasteiz, Spain

Ecological sustainable development planning and protection of grassland-volcanic geological landscape

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[Background] The grassland region of Inner Mongolia in northern China has a dry climate, sensitive land and fragile ecology, and relatively low population density and human activity intensity. Rapid urbanization has made this vast region also face an ecological crisis. The post-epidemic era can be said to be a new era of tourism. The influx of tourists into these areas has a huge boost to the local economy, but at the same time, the high intensity of human activities will bring strong ecological instability to these vulnerable areas. The weak environmental carrying capacity and slow ecological resilience of these areas make them more in need of sustainable protection and management methods to meet the needs of economic development and seek sustainable ecological and economic life.

[Objective] The Ulanhada volcanic cluster is located in the agricultural and pastoral ecotone region of the central Inner Mongolia Plateau. It was approved as a national geopark at the end of 2020. Covering an area of about 400 square kilometers, it is the only Holocene volcanic eruption geological and geomorphic remains in the northern part of the Inner Mongolia Plateau. This paper (1) evaluates the development status of the study area, and studies the synergistic development of heritage-settlements through historical statistical data such as (2) eco-heritage resource evaluation zoning and (3) landscape pattern evolution and industrial development.

[Methods] The index system of sustainable development of grassland volcanic geological settlements was constructed from the aspects of resource value, sustainable conditions, ecological quality and service management. Carry out eco-heritage resource evaluation, and make protection and management zoning according to the evaluation grade ; Arcgis is used to study the structure of steppe volcanic landscape, analyze its temporal and spatial differences, and compare the development and change of urban settlements. Combining the theories of environment carrying capacity, lifecycle and other theories as well as historical statistical data, this paper studies the sustainable development of the grassland volcano through the qualitative and quantitative methods, and provides a basis for the protection and planning of the grassland volcano geology.

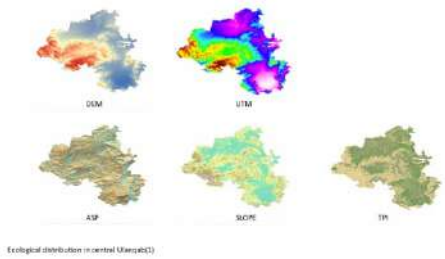
[Results] This region is an underdeveloped border area with an economy mainly based on animal husbandry and agriculture, a fragile natural ecological environment, serious grassland degradation caused by overgrazing, tourism development and unreasonable route planning aggravated the degradation of the surrounding grassland. The research results showed that the ecological fragmentation in this region was serious; The overall

planning of volcanic ecotourism is weak, the resource development is unreasonable, and the integration and development with other tourism resources are lacking. The unbalanced construction of facilities causes damage to the surrounding environment; The linkage development degree between tourist destination and settlement is low.

[Discussion] In ecologically fragile areas, economic development is often slow, and geological heritage tourism is an opportunity for economic development in this area. Balancing ecological stability and economic development is a necessary means for sustainable development in this area. This paper puts forward the strategy of "resource area-settlement extension service group collaborative planning" to provide reference for local healthy development.

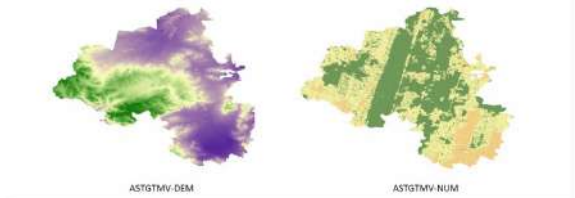
Keywords: Landscape patterns, grassland ecology, industrial linkage, resource evaluation, sustainable development

Ecological distribution in central Ulanqab(1)



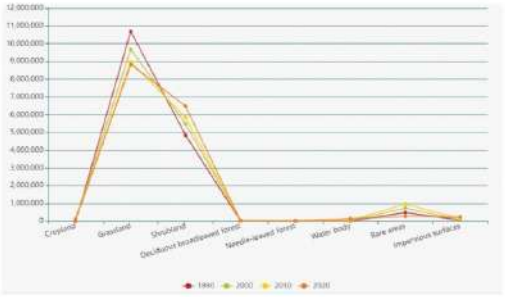
Ecological distribution in central Ulanqab(1)

Ecological distribution in central Ulanqab(2)



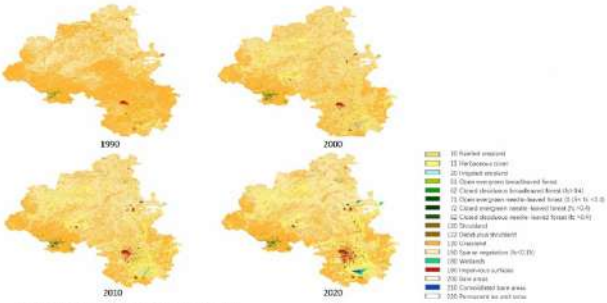
Ecological distribution in central Ulanqab(2)

Land use change in central Ulanqab from 1990 to 2020



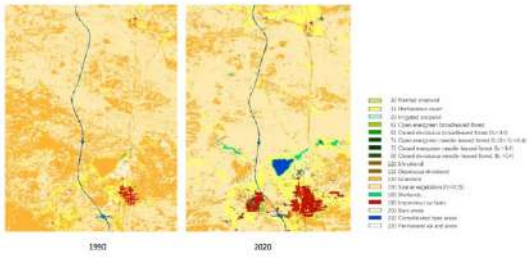
Main data changes of land use in central Ulanqab from 1990 to 2020

Land use change in central Ulanqab from 1990 to 2020



Land use change in central Ulanqab from 1990 to 2020

Land use in Hada Grassland volcanic Group area 1990 and 2020



Land use in Hada Grassland volcanic Group area 1990 and 2020

Volcanic distribution

Volcanic distribution

Main data changes of land use in central Ulanqab from 1990 to 2020

	1990	2000	2010	2020
Cropland	6067	66383	84958	111514
Grassland	10691001	9670070	8971913	8828560
Shrubland	4844747	5478627	5845444	6475231
Deciduous broadleaved fore	24768	30346	31611	32141
Needle-leaved forest	5734	26696	27639	29351
Water body	4774	36585	50690	126976
Bare areas	483411	732838	957923	268072
Impervious surfaces	53166	72122	143199	241822

Country (Türkiye) Land Management Based on Conservation Policies

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In planned development programs in our country, evaluations on the legal and administrative dimension of protected area use are made within the framework of 5-year development perspectives. In terms of our country's protected area policies, it is of utmost importance to examine the changing planning practices within the framework of mining, energy structures, touristic and recreational constructions and other usage demands, which are among the developing sectors, within the legal and administrative context.
In addition to the different protection statuses protected by national laws, other protected area statuses that we are under obligation under international conventions, the country's development programs and legal texts enacted one after another pose a great danger and risk to land use. On a global scale, the United Nations and the World Conservation Union have focused on protecting and restoring the sustainable use of ecosystems by protecting wildlife, managing forests sustainably, combating desertification, rehabilitating degraded lands and halting the loss of biodiversity in line with the Sustainable Development Goals.
The natural resources of the country and the genetic pools of living life such as sensitive and critically important habitats, endangered ecosystems and species at risk of extinction are indispensable elements for the continuation of human life. Protected Areas, which predominantly harbor these resources, should be evaluated with a landscape-based and ecologically-based rational planning approach that addresses the country's space with a holistic approach. It will then be possible to establish land management on the basis of sustainable conservation and utilization decisions.
This study discusses the steps to integrate the ecologically based landscape planning methodology, which deals with the country's geography with a conservation-oriented approach and considers the whole country space with a holistic approach, not only the values within the boundaries of protected areas, into the country's spatial planning practice, but also presents the country's land management with a conservation philosophy.

Keywords: Landscape Planning, Ecological Planning, Land Management, Spatial Planning Staging, Turkey

Utilizing the Historic Urban Landscape Approach for Heritage Trees Conservation

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The Sacred Yang tree (Dipterocarpus alatus) stands as an emblem of significant cultural and historical importance within the landscape of Chiang Mai Old City, tracing its roots back to the year 1796 AD. However, recent investigations conducted in 2022 have unveiled a discernible decline in the health of this revered tree, a decline attributed, in part, to alterations in the surrounding landscape. In response to this pressing concern, a comprehensive conservation program for the Sacred Yang tree was initiated, by utilizing the principles of the Historic Urban Landscape (HUL) approach, as advocated by UNESCO. This conservation initiative employs comprehensive surveys of natural, cultural, and human resources to foster consensus through participatory planning and stakeholder consultations on safeguarding the trees' values. The HUL approach offers insights into areas of heritage sensitivity that necessitate careful consideration in project planning, design, and implementation. Inventory and scientific data bolster community awareness and improve management practices. Engaging citizens and the business sector fosters ownership and garners support for conservation efforts. Evaluating the economic value of heritage trees elucidates their multiple benefits, strengthens justifications for public funding, and enhances the prestige and value of property development. Preserving the site's conditions is crucial for the survival of heritage trees in urban environments. Addressing sentimental and emotional responses to tree loss requires adept public relations strategies. Enhancing heritage tree conservation entails transgenerational urban forestry, precise arboricultural practices, and collaborative efforts between government agencies and citizens. By utilizing the HUL approach, conservation practices for heritage trees are refined to safeguard and manage the entire area's tangible and intangible attributes, considering holistic values and ensuring the preservation of Chiang Mai's cultural and natural heritage for future generations.

Keywords: Historic Urban Landscape Approach, Heritage Trees, Conservation, Lanna Culture, Chiang Mai

Examination of Ecosystem Services: A Case Study of Amasya University

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Following the Industrial Revolution, the advancement of technology led to an increase in population and urbanization due to the growing phenomenon of rural to urban migration. Consequently, cities experienced development under unplanned and inadequate infrastructure conditions, resulting in an increase in urbanization rates and a decrease in green areas due to factors such as construction of residential areas, roads, etc. However, the open green spaces within cities provide numerous ecosystem services such as reducing the heat island effect, storing carbon dioxide, purifying air, preventing surface runoff of rainwater, enriching soil, and offering recreational opportunities for users.
In this study, the concept of university campuses, considered as small urban models, has been examined. The aim of the study is to evaluate the regulatory ecosystem services provided by the tree cover in the Amasya University Dominance Campus in the central district of Amasya province, such as air quality, energy savings, and carbon storage. In this context, the i-Tree Canopy model, a web-based tool, has been used to classify the land and tree cover in a specific area. Within the scope of the study, 28 different plant species were identified in the campus area covering 53.129,79 m2 through on-site observations. These included 16 deciduous trees and shrubs, 7 evergreen trees and shrubs, and 5 shrubs. Within the boundaries of the study area, 3500 random points were designated, and the land cover represented by each point was classified into five categories: (1) tree/shrub (tree and tall shrub vegetation), (2) grass/herbaceous plants (areas covered with herbaceous vegetation), (3) soil/bare ground (areas with little or no vegetation cover), (4) impervious buildings, and (5) impervious roads. According to these categories, the annual amount of carbon sequestered by the campus's tree-shrub cover, the amount of CO2, and the economic contribution provided by them have been calculated. The results of the study show that the low tree cover on the campus is a limiting factor in terms of regulatory ecosystem services. Based on the results obtained in the study, recommendations have been made towards achieving a sustainable campus.

Keywords: Open green spaces, Carbon amount, i-Tree Canopy, Amasya University Hakimiyet Campus, Amasya

Soundscape research and strategy discussion based on cultural perspective

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The rapid development of urbanization has brought more development opportunities, but it has also formed different degrees of impact on the environment and culture. Sound is a medium of dialogue between man and history, man and environment, and the acoustic environment is an important part of the integrity of the traditional cultural environment. However, people pay less attention to the acoustic environment, and the historical areas generally face the problems of acoustic environment pollution, the loss of acoustic landscape authenticity, and the loss of characteristic acoustic elements. In this paper, the historical district of Lama Temple is selected as the research object, and from the perspective of cultural memory, the perceived intensity and spatial distribution of the acoustic elements and the overall acoustic environment of the place are measured and analyzed through acoustic walking and GIS soundscape mapping. After in-depth analysis, strategies for sensing, protecting, creating and improving the acoustic landscape of the historical cultural district are proposed. It is found that the soundscape in the historical area is diversified, including natural landscape sound, cultural belief sound and social life sound, but the characteristic culture and city life sound elements are lost. The perception of social sound, natural sound and cultural sound decreased successively, and the preference of tourists to natural sound and cultural sound was stronger than water sound. The acoustic environment map reflects that noise mostly comes from social sound, and plays a negative role in the perception of cultural sound and natural sound. Through characteristic sound restoration, noise shielding, soundscape map construction and sound environment protection planning, we hope to promote the revitalization of soundscape heritage and the sustainable development of historic districts, so that people can perceive space and understand culture in a more comprehensive and vivid way.

Keywords: Soundscape,Sound walk,Cultural memory,Protection mechanism

Wastescapes as landscapes of care: From wasteland to landscape

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[2]Department of Civil, Building and Environmental Engineering, University of Naples Federico II, Naples, Italy

Wastelands are meant to store human waste or dispose of no longer-needed material. Are wastelands toxic? Can these 'lands' be restored safely as public spaces? In the past, they were open dump sites close to settlements, in the landscape, or on the outskirts of a city. Mixed waste ended up at these places, and its "digestion" produced biogas and leachate, released respectively in the atmosphere and into soil and water. Environmental and health issues of people working or living close to these sites have challenged communities to find better solutions for waste management. Wastelands have developed from open dump sites to sustainable landfills. Sorting of waste has reduced the amount of garbage ending in landfills. Recycling provides material for industry, and separating organic waste (and hazardous waste, e.g. batteries) has significantly reduced leachate and biogas. As settlements have been growing, wastelands have become part of them. Turning wastelands into landscapes of care will be dealt with through case studies and both qualitative and quantitative research.

Keywords: wasteland, wastescape, landfill, landscape of care, circular economy

'Landscapes: memories of cities'

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City, landscape, memory, culture and identity are intertwined concepts and each includes the other. Cities and landscapes are important carriers and mirrors of these culture; they both bear the traces of the past and shape the future. Cities form a whole with their geographical locations which constitute their unique landscapes, spatial identities, their pasts, their experiences, and their cultures that have been distilled from all of these, reaching the present day and sustained. Would it be possible to talk about cities today if all these experiences, memories and emotions were not stored in the memory, held somewhere in the mind, if memories were not written down and forgotten? What is the role of landscape in this accumulation that has been transferred to the present day through senses, writings, discourses, artifacts and visual resources? What does landscape mean for the individuals and societies living in it? What does landscape mean for the individuals and societies living in it?
In this research, in which answers to these questions are sought, first of all, a deep conceptual research of landscape will be made. With this research, which is shaped by qualitative methods, it is aimed to investigate the role that past landscapes play and should play in our future.
As a result of the study, it was revealed that there is an inseparable bond between people, society, culture and landscape, and most importantly, people's sense of identity and belonging is the greatest need. In this context, the common denominator of all these is the human dependence to the landscape.

Keywords: landscape, memory, society, culture, identity

SHORT ORAL PRESENTATIONS

Cultivating Resilience: Sustainable & Resilient

The resilient landscape of a community

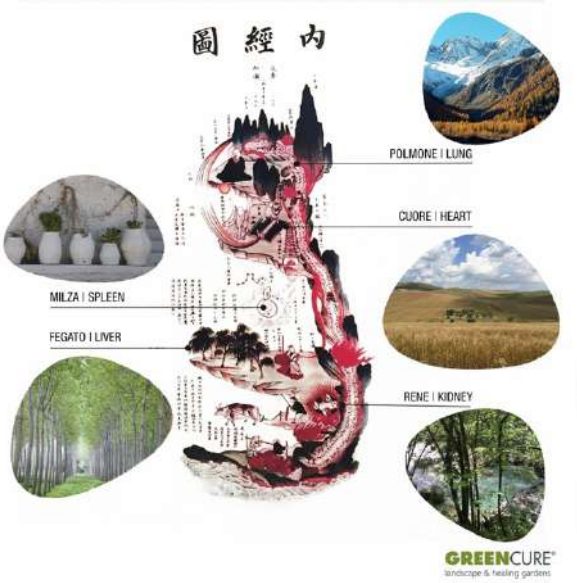
Marilena Baggio
GREENCURE Landscape & Healing gardens, Milan. Italy

In Italy recently we have witnessed an acceleration on natural disasters. This panorama is creating emotional insecurity and social unease.
How can we re-inhabit land by turning obstacles into opportunities for the future? Can landscape become the foundation for a resilient community, or rather become itself a resilient landscape?
Landscape is the SPACE of LIFE.
According to holistic thinking, man is a landscape and landscape is a body acting as MAN'S HABITATION. In traditional cultures there has always been a relationship between man and nature, as a place that generates both illness and care.
Landscape as a metaphor for healing the body/spirit is well described by Huang Di in the Neijing Suwen, which, in the design of an embryo, depicts the five classic landscapes, each one represented by an organ and an element, that make up the mosaic of the natural world.
Italian landscape is a rather narrow space, yet rich in cultural and micro landscapes, which are the result of intense and uninterrupted human occupation.
In this continuous mutation it is the physical city that forms the place for RELATIONSHIPS in URBAN SPACE. Revolutions and movements start within a network, but occupy the streets where citizens give the territory and cities its physical geography.
The first acts to accomplish for a resilient landscape, are to: OBSERVE, LISTEN and open a DIALOGUE; as a doctor does with a patient; in order to read the traces and memories of a place, welcoming its moral and social wounds.
Emotional safety exists if man perceives and acts according to a good image of the environment. The image varies according to the location, where the followings are recognizable: a centre to refer to, a path to take, in a place defined by spatial boundaries.
A community becomes resilient if it lives dinamically, creating places with a WELLBEING culture.
We need to rethink urban planning starting from landscape as a structural aspect of the city.
It is an interdisciplinary project that requires a MISSION, a DIRECTION and the use of survival tools.
Promoting good practices for landscape goes through affirming the importance of intervening on a landscape as an "organism" in continuous evolution.
It is therefore necessary to revive something ancient, so that the landscape returns to being a form of communication between individuals and natural space. ".... a country means not being alone, knowing that in the people, in the plants, in the earth there is something of yours, that even when you are not there, it remains to wait for you." Cesare Pavese writes in The Moon and the Bonfires.
This gives rise to open questions about how man can live in spaces that generate

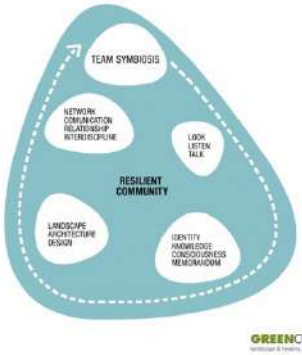
wellbeing, which defines them in their completeness, because talking about landscape means addressing architectural, social, environmental, spiritual and health issues.
In this idea of a resilient landscape, is there room for a New Humanism?
It is possible that a new landscape vision of a resilient community will help to answer the question: "How will we live together?"

Keywords: WELLBEING, RESILIENCE, SUSTAINABILITY, RELATIONSHIP, IDENTITY

Resilient landscape_Chinese traditional relation between landscape and body



Resilient landscape_Resilient community



Urban Agriculture as a landscape approach for sustainable urban planning

Yu Huan, Steffen Nijhuis, Nico Tillie
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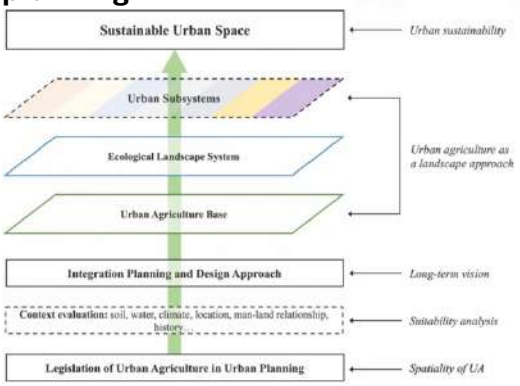
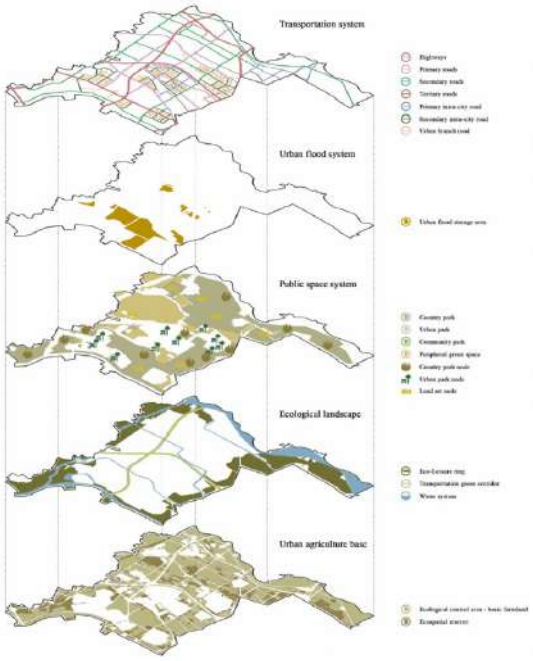
Cities serve as both political and economic hubs. Sustainable development has long been acknowledged as being crucial to the well-being of the environment, people, and society. In order to improve the current state of spatial affairs and attain long-term resilience, humanity is looking for reliable and sustainable urban planning approaches. Urban agriculture has received a lot of attention in recent years as an enduring and pervasive kind of landscape. Although the contribution of urban agriculture has been well documented in many studies on economic, social and ecological aspects, there has been not much discussion of its practical value as a spatial tool. Also the potential of urban agriculture as a landscape approach remains underdeveloped. This paper aims to explore the potential of urban agriculture as a landscape approach for sustainable urban planning and design. Songzhuang in Beijing serves as a case study and demonstrates the relationship between urban agriculture and landscape approach from practice to research. The study's findings demonstrate how a landscape approach focusing on urban agriculture may strengthen the bond between people and their surroundings and increase spatial sustainability by a theoretical framework. Furthermore, urban spaces based on urban agriculture can be the basis and driving force for many urban transformation initiatives.

Keywords: urban agriculture, landscape approach, sustainable urban planning, spatial base

Conceptual framework of embedding urban agriculture into sustainable urban planning



Urban agriculture base and layers upon in Songzhuang Planning



Daily Behavior of Urban Village: A Case Study in Guangzhou

Minzhi Li, Chunxi Zhu, Wei Tan, Tong Wang, Shanshan Ran
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China's urbanization journey represents a nuanced and intricate evolution, marked by notable advancements in recent years. As evidenced by the seventh population census, the urbanization rate of China's permanent residents has surged to 63.89%. By the conclusion of 2018, the comprehensive renovation area known as the "three old" districts in Guangzhou encompassed an expansive 590km2, with aged villages constituting 54% of this area. Central to the revitalization efforts within urban villages is the enhancement of public space. These spaces, often characterized by dense clusters of buildings, play a pivotal role in facilitating neighborhood interactions, social engagements, and commercial activities. However, they frequently exhibit features typified by multifarious functions, substandard quality, and haphazard distribution.

This paper endeavors to probe into the replicable and sustainable transformation modalities of public spaces within urban villages, aimed at ameliorating the overall livability of these environments. Emphasizing the primacy of resident needs and daily life perspectives, the study seeks to preserve autonomous social structures while fostering innovative community models.

The study case is Yuangang Village, situated in Guangzhou's Tianhe District, spanning an area of 18.1 hectares. Employing a multifaceted methodological approach encompassing moving line observations, semi-structured interviews, and Public Space-Public Life surveys (PSPL), the research delves into residents' daily routines and the utilization of public spaces within Yuangang Village, serving as the foundation for crafting subsequent spatial transformation models.

Through investigation and observation, it becomes apparent that beyond commonplace activities like socializing, resting, and shopping, the act of clothes drying emerges as a significant aspect reflecting the fabric of public life and communication. A cultural juxtaposition between East and West becomes evident in attitudes towards clothes drying, with East Asian cultures favoring natural drying methods while Western counterparts tend towards mechanical dryers, beliving public drying less socially acceptable. Notably, despite the availability of dryers, residents express a preference for natural drying, underscoring the influence of divergent social norms and behaviors. Guangzhou has typical subtropical monsoon climate with high temperature and high humidity. In order to fully dry clothes, residents are more inclined to dry them outdoors. There are few well-ventilated and well-lit Spaces in urban villages, which are mostly public spaces. Trying to reconcile the contradiction between this need and reality precisely constitutes the significance and value of the research topic.

Employing spatial narrative theory as a conceptual framework, this study intertwines

objects, spaces, and people to elucidate the intrinsic connection between clothes-drying behaviors and public spaces. Envisaging a participatory design process, a landscape design scheme is proposed to address drying-related challenges, effectively mitigating the encroachment of drying activities on public spaces while reinvigorating their multifunctional capacities. This endeavor serves as a beacon for sustainable renewal models within urban villages, underscoring the practical significance of studying public space transformations. Identifying prevalent issues, devising replicable strategies, and formulating tailored urban renewal guidelines stand poised to elevate the quality of public spaces within urban villages, thereby fostering a more livable urban environment and enhancing the overall urban fabric.

Keywords: Spatial narration, Urban renewal, Urban village, Public space

Doing urban home gardening: Ways of operating

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This article traces the routines, connections and interactions of urban home gardening practices, arguing that the urban home garden is a naturecultural network – that is, a hybrid entity arising through the participation, relationship, interaction and actions of all those we would conventionally call natural and cultural entities – while the practice of urban home gardening per se is a practice of everyday life. The purpose here is to delineate performances and highlight their anthropological and cultural dimensions based – on a theoretical level – on Bruno Latour's Natureculture and Actor Network Theory, Michel de Certeau's Theory of Everyday Life and Joan Tronto's Ethics of Care. This research adopts a mixed method approach which in terms of research tools includes the mapping of urban home gardens in the city of Volos with the use of digital media, semi-structured in-depth interviews of a non-probability sample of gardeners/ gardens and observations made by the researcher during her visits to garden spaces of the sample. The sample, chosen through a process of stratified purposive sampling, consists of 16 gardens presenting a spatial distribution within the reseach area. This allowed for the study of characteristics and typologies of the urban home gardening in different areas of the city of Volos.
Through gardeners' speech, the active network of a series of active agents – human, non-human, material, immaterial – who affect the ways of operating in urban home gardening is highlighted and who are shaping the role and importance of urban home gardening in the city, everyday life and the food culture of urban dwellers. As such, they connect the urban to the rural, forming individual and social identities, keeping alive memories and habits of other eras, but also territorialising co-existences of care and co-vulnerability within the city.

Keywords: Urban home gardening, Natureculture, Everyday Practices, Care

A Agroecological Farm Model: Adaptive Re-Use with Nature-Based Solutions

Nuran Altun, Gokce Koparal Oral, Özge Demirci Tokat, Sena Sığırcı, Güleser Mehmetoğlu, Şule Uzunca, Burak Okan, Gerçek Annaniyazov
Landscape Architect, Kardelen Peyzaj Planlama Ins. San. Tic. Ltd. Sti., İzmir, Turkey

The project area, located in the immediate vicinity of the city and under pressure from development, possesses high ecological value due to its natural potential. Spanning 4,500 hectares, it encompasses fields used for agriculture, forests, olive groves, protected flora and fauna, and water features like streams and irrigation ponds. Additionally, it includes abandoned barns, which hold significant cultural value as they were once used for animal husbandry but have become derelict over time, hindering their sustainability.

The conceptual design of the project is grounded in nature-based solutions, focusing on ecosystem preservation, restoration, and improved land management practices. It emphasizes sustainable food production and efficient water use by advocating a transition from conventional agriculture to more sustainable methods like regenerative agriculture and agroforestry. By planning crop rotations to increase soil carbon content, reducing chemical fertilizers and herbicides, and preventing uncontrolled and continuous tillage, the project aims to promote agroecological practices that maintain soil health and ecosystem harmony.

The project envisions creating an integrated and participatory ecosystem that fosters a beneficial relationship between the traditional rural production culture and the contemporary lifestyle of the urban culture. It strives to revitalize and develop both its surroundings and itself, nurturing a collective memory while upholding values of interaction, sharing, communication, and collaborative production. The goal is to build a holistic ecosystem that fosters opportunities for engagement, collaboration, and communication, emphasizing the harmonious coexistence of traditional rural production culture with modern living and urban influences.

Under the framework of adaptive re-use of the built area, existing abandoned structures such as barns, warehouses, and paddocks are repurposed and redesigned to serve the new ecosystem as spaces oriented towards health, tourism, education, and sports. At the heart of the design area, there are spaces symbolizing agricultural heritage, including a farming and agriculture museum, alongside areas focused on culture, art, and gastronomy. Other scattered structures in the area have been transformed into spaces primarily adapted for functions such as education, health, agricultural production and processing, with workshops and gathering areas included.

The project bridges the gap between rural and urban life through the concept of Agro-Eco Tourism, integrating Agrotourism and Eco-Tourism. This hybrid approach aims to create a collective consciousness that prioritizes sustainable practices for preserving natural resources, sustaining the well-being of local communities and valuing knowledge, expertise sharing, and access to healthy and nutritious food. It further promotes environmental awareness and cultural appreciation. The social sustainability of this collective consciousness relies on a responsible management model that

strengthens consumer-producer relationships, fosters a circular and solidarity-based economy, and establishes effective management mechanisms at national and international levels.

Keywords: Agro-Ecology, Adaptive Re-use, Regenerative Agriculture

Cultivating creative climate resilience, three projects from Northern England

Simon John Ward
AtkinsRealis - UK Professional Practice

This paper looks at three significant climate resilience projects in the north of England one coastal, one estuarine and one located at the confluence of two rivers in a Pennine town. A combination of artistry and Engineering has delivered exceptional outcomes which have protected thousands of properties and businesses from devastating sea and storm born flood events, with creative and uplifting designs which celebrate their unique locations with distinctive and engaging responses.

The author is a Landscape Architect and urban designer who has played a key role in ensuring that the proposals were landscape and place led interventions, which delivered robust and beautiful solutions for threatened communities in a sustainable way, promoting human health and wellbeing as well as improved biodiversity.

This 15 minute presentation will spend 5 minutes on each project using a series of stunning photographs to summarise the problem the solutions and the key outcomes. Between them the projects have garnered significant national award recognition including Dezeen, Institute of Civil Engineers and The Landscape Institute, as well as other regional and local awards.

Keywords: Creative Climate Resilience Flood Defences

Fairhaven general image of promenade

Completed image of Fairhaven promenade

Fairhaven overview

Image of completed estuarine defence at Fairhaven North west England

Fairhaven slipway image

Completed image of Fairhaven estaurine defence project

Morecambe Promenade coastal defences

Completed image of promenade detail

Morecambe Promenade coastal defences

Completed image of project step access detail

Morecambe Promenade coastal defences

Morecambe aerial view

Mytholmroyd

Mytholmroyd project image of gardens and riverside walk

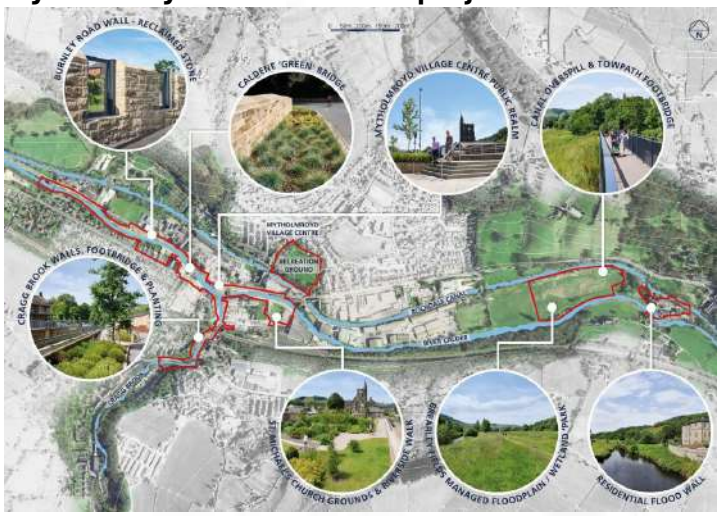
Mytholmroyd Flood defence project

Mytholmroyd new riverside meadows

Mytholmroyd Flood defence project

Mytholmroyd general shot green bridge

Mytholmroyd Flood defence project



Mytholmroyd Masterplan

Stream Daylighting: The Lost Streams of Ankara

Ozge Idali Ozden
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Urban morphological transformations are guided by urban infrastructures. Throughout the 20th century, urban streams disappeared from city landscapes due to infrastructure interventions. Worldwide urban practices involved channelizing and culverting small streams, transforming them into sewage lines. However, these small streams have a crucial role since they feed the entire river basin. Today, countries face water scarcity, water pollution, and floods as a result of climate change and urbanization. Redirecting the river into a concrete channel, severing its connection with the soil, has resulted in significant decreases in groundwater levels. Furthermore, it has detached natural landscape elements within the city and prompted urban sprawl into rural areas.

A shift towards nature-based engineering and design solutions has gained momentum to make cities more resilience. Stream daylighting is one way to approach this by reopening the covered streams in cities worldwide for water security and energy saving. Stream daylighting projects serve a variety of purposes, including flood prevention, transitioning to decentralized sewage systems, optimizing treatment facilities, enhancing human-nature interaction, and promoting biodiversity and groundwater. Worldwide examples of stream daylighting have been examined in the context of urban landscape ecology and economics.

The streams, which played a vital role in Ankara's early settlement, have now disappeared. The capital has grappled with flooding and infrastructure challenges, exacerbated by rapid urbanization and unearned income. This study delves into the historical relationship between infrastructure and lost urban streams throughout the history of the republic. The analysis draws from city maps and various reports from the State Hydraulic Works and the Municipality. It culminates in the unveiling of the map of disappeared streams of Ankara, covering a 100 km^2 area within the city center.

Accompanied by the city's macro-form, the gradual disappearance of streams over the years was visualized and supported by diagrams. Furthermore, potential sites for stream daylighting were identified, outlining three landscape typologies for Ankara.

Keywords: Ankara, urban, infrastructure, stream daylighting, lost streams

The LATENT LAYER of The LANDSCAPE: PLANT BIOACOUSTICS

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Considering human history, the vital harmony between human and nature has continued its continuity uninterruptedly until quite recent times. How attached people are to their lives in nature can be observed concretely through the tribal societies that have survived to this day and their ongoing rituals. However, when viewed from today, it can be seen that the results of many human-oriented destructive actions stem from the disconnection in the human-nature interactional network. The teachings of Shamanism, with their role as information transmitters that emphasize the unity between human and nature, mention the existence of an auditory layer. In Shamanic teachings, this auditory layer involves the integration of plants (especially beech and pine species) into social life. The acceptance of the same auditory layer in the contemporary scientific approach is the bioacoustic phenomenon, which occurs when plant organisms perceive and emit certain sounds in their own audible frequency ranges. So, how has this human-plant communication, which is today called as plant bioacoustics but has a much older roots, undergone a transformation in modern times? In this scope, the aim of the study is to examine the evolution of plant acoustics, which is poised to become a significant datum in human-nature communication today, from shamanic teachings to the present day. In line with this goal, it is aimed to investigate the formal and functional role of the auditory layer present in Shamanic rituals and to determine chronologically for what purposes plant acoustics are used in today's technology. In this context, in the study, the literature data on bioacoustic rituals in Shamanism will be examined concurrently with current experimental studies aimed at obtaining plant acoustic frequencies, and the potential of this auditory layer that how can be as a guide in repairing of human-nature interaction will be discussed.

Keywords: plant bioacoustics, auditory landscape, nature-based rituals, human-nature relationship, Shamanism

Traditional Water Adaptive Rural Stormwater Resilience Study

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Global climate change is leading to an increasing in the frequency and intensity of extreme precipitation events.Traditional water-adapted villages have accumulated rich historical and practical experiences in the process of development, and have formed water adaptation patterns with regional characteristics. These are various works focusing not enough on the historical logic of traditional water-adapted villages and the practical utility of assessing the resilience of rainfall in the context of disaster change.Revealing the water adaptation patterns of traditional water-adapted villages and evaluating their practical utility in today's disaster context are of great practical significance for the enhancement of regional rainfall resilience. Putian Xinghua Plain, located in the southeast coast of China, is a small coastal plain formed by the interaction of long-term stream impact and tidal top support, as well as artificial reclamation, with obvious characteristics of rural water adaptation. The study takes the Xinghua Plain in Putian as an example, and analyzes the hydrologically oriented development history and rural water adaptation patterns of the study area through relevant historical materials. On the basis of analyzing the overall local water adaptation characteristics of the study area, typical traditional water-adapted villages in the region are selected, and the SWMM rainfall model and UAV tilt camera 3D modeling are used to further quantify the rainfall resilience of traditional water-adapted villages with the superimposition of modern infrastructures. The results show that: (1) the villages in Xinghua Plain of Putian have formed a "two categories and five types" water adaptation pattern in the process of living with water, which is concentrated in the spatial morphology of village site selection, settlement layout, and the relationship with water. (2) The traditional water adaptation mode superimposed on modern infrastructure has good rainfall resilience. (3) The dense river network of Putian Xinghua Plain and its supporting water conservancy projects have formed an effective joint drainage and control mechanism.

Keywords: stormwater resilience,countryside,water adaptation,models,assessment

"Weaving a communal narrative" Community agency through spatial activation

Sophie Graefin Von Maltzan
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Using willow as a medium, socially engaged environmental artist and landscape architecture tutor Sophie von Maltzan conducted several spatial and social activation projects with communities in Dublin's parks from 2017- 2023.
The resulting 7-15 willow installations vary in size from 1m x 1m to 30 m long and up to 7m height. They are designed and built in loose and spontaneous collaborations between various community groups and independent community members.
Primary school children, Landscape Architecture and Art students as well as resident groups, neighbours and passers-by work together over a week. The installations then stay in place for months, sometimes turning into living sculptures.
Building the willow structures is an effective and creative way to empower audiences to become agents of change and give civic space local and personal meanings beyond the often anonymous design and atmosphere of open green spaces in Dublin.
Von Maltzan has documented and analysed the process through photography, film making, sketching, writing and has curated an exhibition about it at the Royal institute of Architects, Dublin. She would like to reflect on her conclusions at the IFLA conference..
Weaving site-specific installations into grounds, these projects offer a tool to negotiate the environmental, climate and ecological emergency as well the current socio-economic crisis at a micro-scale. They explore how artistic and creative performative practices based on participative design can disrupt the normative aesthetics of civic spaces.
It is an environmental call to action, demonstrating how the immediate environment can be "renewed" and "re-explored" by the community itself and with a minimal carbon footprint. The willow structures are sculptures, play-elements, landmarks, and viewpoints.

The building process is open: no cordoning off of the site is required; no watchman; no warning signs needed. Everyone is invited to participate via social media and posters. Von Maltzan arrives with a load of willow and they morph into installations over a week. No prior knowledge is required to weave. Trial and error is the best way of learning it.
.

They add recreational value to neighbourhood parks, encouraging people to relax and play close to home, as well as to work with a native plant as a creative material. The process of weaving and constructing with willow is playful and therapeutic. Participants and passersby talk and tell stories while they work or observe. Von Maltzan documents this symbiosis of weaving place based structures and communal narrative through various subjective methods.

The Great Willow Weave can be regarded as an activist project as well as socially engaged art practice. It challenges the conventional coding of a public park. Temporarily changing the nature of the public realm, it questions the often prescribed ways city functions.
The projects act as inspiration for other communities to construct amateur- built willow structures in their own neighbourhoods. The willow installations built in Summer 2023 on the grounds of the Irish Museum of Modern Art in Dublin have begun to root and the plan is to harvest l from them to expand the installation in summer 2024.

Keywords: an environmental call to action, empower audiences to become agents of change, socially engaged environmental art and landscape architecture, disrupt the normative aesthetics of civic spaces through participatory design and build

_visuals_page-0003.jpg

https://www.youtube.com/watch?v=hE5X-0D9fZI is the best film documentary to wath

Layered Memory Flow of the Landscape: The Ancient Roman Roads

sevgi Gormus, serhat cengiz, Bulent Yilmaz, Gaye Taşkan, Sıla Balta
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It is possible to understand the development of the relationship between society and natural/semi-natural landscapes through ancient roads. While these roads were initially a commercial and defense-based flow, today they are also traces that enable the flow of heritage and knowledge. In this study, we conceptualize this form of reproduction as "the layered memory flow of the landscape." On the other hand, economic experts refer to the association of heritage only with the economy as 'selling the past'. From their perspective, the commercialization of heritage can lead to the suppression of the layers of landscape that nourish an archaeological site. While we share this concern, we believe that understanding the way ancient roads marking specific periods are positioned in the landscape will increase our understanding of the cultural codes and settlement motivations of that period. We accept ancient roads and the elements formed along them as a flow of information. We wonder whether the locations of these roads and features are random or not, and how people's choices are influenced by natural conditions and natural resources. Using the possibilities provided by remote sensing and Geographical Information Systems in today's conditions, we investigate the relationship between the temporal stratification of ancient trade routes and elements and landscape in Malatya province. We adopted temporal stratification as the basis of the "layered memory flow of the landscape." Landscape memory has components such as genetic, physical, functional, cultural and information. It is emphasized by experts that the evaluation of landscape stratification through these components is also necessary in the spatial planning of rural areas. This study can provide a basis for clarifying the complex nature of bio-cultural landscapes, which are currently inadequate, raising awareness of their importance and improving their conservation potential. In this context, the study aims to understand the landscape characteristics of ancient Roman roads in a geography with high topographical variability through graph similarity analysis. Especially Malatya being a military and border settlement of the Roman Empire, it is important to understand the trade and defense criteria that are effective in the selection of road routes. We think that understanding the landscape characteristics through historical layers will make it easier to understand the layered memory flow of the landscape and the unity of power established with the place.

Keywords: Landscape Memory, Rural Areas, Ancient Roads, Turkey

Greening Cities for Prosperity: The Economic Imperative of Ecological-Oriented Development

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In the realm of urban planning, the choices we make in shaping our cities have far-reaching implications for the environment, society, and economy. The conventional Car-Oriented model, with its sprawling highways and car-centric infrastructure, has long been the default approach to urban development. However, this model's legacy of environmental degradation, including increased carbon emissions, air pollution, habitat destruction, and resource depletion, underscores the urgent need for a more sustainable alternative.

Enter the Transit-Oriented Development (TOD) model, offering a promising shift towards compact, mixed-use developments centred around transit hubs. TOD not only promotes walkability and reduces car dependency but also enhances public transportation systems, fostering social connectivity and economic vibrancy. While TOD represents progress over Car-Oriented development, it falls short of addressing the broader ecological and sustainability challenges that cities face in the 21st century.

In stark contrast, the Ecological-Oriented development (EOD) model emerges as a visionary and comprehensive approach to urban planning. By championing green infrastructure, biodiversity conservation, and sustainable land use practices, Ecological-Oriented development seamlessly integrates nature into the urban fabric, nurturing resilient and liveable communities. This model not only mitigates environmental harm but also elevates social well-being and drives economic prosperity.

Public landscapes, such as parks and squares, streets, riversides, serve as vital community hubs where residents gather for recreation, socialization, and cultural events. These green spaces are more than just aesthetically pleasing; they are catalysts for community engagement, cultural enrichment, and economic stimulation. Proximity to well-maintained public green spaces can enhance property values in surrounding areas, attract tourists and residents, generate revenue from events and recreational activities, create job opportunities in landscaping and event planning, reduce healthcare costs through improved public health outcomes, and attract businesses and investment to the area. For instance, historical cities like Hangzhou's West Lake in China, London's River Thames in the United Kingdom exemplify how natural landscapes can revitalize urban environments, fostering a sense of belonging and unity among residents while bolstering local businesses and stimulating economic activity.
In the pursuit of sustainable urban development, achieving the UN Sustainable Development Goals (SDGs) is paramount. The EOD model aligns closely with these global goals by championing sustainable practices that prioritize environmental

conservation, social inclusivity, and economic prosperity. By integrating green infrastructure and sustainable land use practices, cities can play a pivotal role in advancing SDG 11 (Sustainable Cities and Communities), creating inclusive, safe, resilient, and economically prosperous urban environments.

The imperative for cities to embrace EOD is clear. This model not only offers a path to environmental sustainability but also promises social well-being and economic prosperity for present and future generations. By prioritizing green infrastructure and sustainable practices in urban planning, cities can pave the way towards resilient, vibrant, and inclusive urban futures that benefit both people and the planet.

Keywords: Green-Infrastructure, NBS, Adaptation, Sustainability, Resilience

Landscape Approach: Cultivating Landscape Literacy through New Models of Practice

Sonja Vangjeli[1], Sonja Vangjeli[2], Maria Catalina Picon[3], Cristina Contreras Casado[4]
[1]City of Toronto, Urban Design
[2]International Landscape Collaborative
[3]Cerros Isla
[4]Sinfranova

Young emerging landscape practitioners are finding new methods of work to address the complex contemporary challenges of rapid urbanization, climate change, and loss of biodiversity. Using collaborative, multidisciplinary approaches and diverse media from geospatial analysis, design research, writing, photography and film, they are inspiring landscape architects, other design professionals, and a broader public to take on difficult issues like climate change, biodiversity, and equity. By leveraging Landscape Architects' ability to understand complex living systems enough to communicate them simply through visual media, they make the issues at stake accessible to other disciplines, to decision-makers and to the general public, cultivating Landscape Literacy in the planning and design fields and in contemporary society. Based on the 'New Models of Practice' chapter of the recent book, Landscape Approach: From Local Communities to Territorial Systems, this panel will feature a group of emerging practicioners who lead creative forms of practices. They each explore new methods of landscape practice and allied disciplines that are influencing the production, conservation, and promotion of our built environment and natural heritage, and inspiring new models of practice and collaboration.

Faced with the difficult compound challenges of climate change, environmental degradation, unprecedented rates of urbanization, economic volatility, and phenomena like the global pandemic and the social injustices and health deficiencies it uncovered, the skills and talents of Landscape Architects are needed now more than ever. However it is often other disciplines that are called upon to lead efforts in response to these crises. Although Landscape Architects are increasingly leading larger multidisciplinary teams in urban redevelopment projects, their role is not broadly understood and appreciated as it should on issues at a global scale. Landscape Architects' skills and abilities to communicate complex problems to a variety of stakeholders of different disciplines and sectors of society are paramount in tackling the wicked problems of our time. Young practicioners and forging new alliances and developing new modes of practice attuned to the issues and tasks at hand. The young practices featured in this panel will inspire the Landscape Architecture community to have the courage to take the lead in addressing environmental issues through creative ways through practice, policy and advocacy, to build Landscape Literacy in the broader community, and make the value of Landscape Architecture broadly understood.

Keywords: Landscape Literacy, new models of practice, new methods of work, advocacy, policy

Cerros Isla Santiago, Chile Map

Map of the island hills being protected and advocated for by the non profit foundation Cerros Isla, as an example of cartography as a critical method of work and communication for advocacy and practice and to influence public debate on contentious issues like urban growth and conservation of natural heritage.

ILC Summit 2022: Ecological Approaches to City Building

Poster of International Landscape Collaborative's two day conference at the University of Toronto to gather experts from different fields and geographies to share knowledge on ecological approaches to city building to address climate crisis and urbanization issues. Notable keynote speakers Nina Marie Lister, Carolyn Woodland and Anne Spirn participated, along with 3 panels of additional international and local speakers, as well as 2 half days of field trips to local places demonstrating public advocacy and novel collaborations to built urban landscapes.

Sinfranova Workshop on Sustainable Infrastructure

Cristina Contreras presenting at a workshop, as an example of Sinfranova's method of working to share knowledge and promote multidisciplinary education on evaluation methods for sustainable infrastrucutre.

SHORT ORAL PRESENTATIONS

Acting for All: Diversity, Equity & Inclusion

Landscape Progressive-action Design: Exploration based on 2 practices

Liang LI, Xiangrong Wang, Qing Lin
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With the development of China's urbanization entering a new stage of quality improvement, the number of projects focused on urban space renewal and environmental quality improvement is increasing. This trend poses new challenges for landscape architecture design practice, including increased complexity, implementation difficulties, deeper connotations, and broader project sources. To address these challenges, it is necessary to explore more flexible and effective design approaches.

By employing two design research methods, Research into Design (RiD) and Research through Design (RtD), and drawing insights from two practical projects—the Beijing Jingzhang Railway Heritage Park and the Dashila Dream Garden Project—we propose a progressive action design model for landscape gardens. This design model follows a spiral and progressive action framework, consisting of a series of action cycles. Each cycle has specific goals and is divided into five phases: planning, design, implementation, evaluation, and optimization. Five key influencing factors should be considered throughout this process: cycle goals, resource catalysts, professional collaborators, stakeholders, and experience effectiveness.

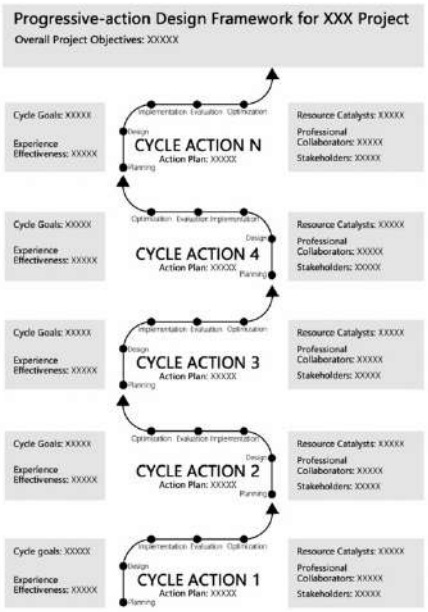
Within this framework, landscape architects should focus on four key aspects: role change, identifying catalysts, valuing evaluation, and mobilizing across borders. It is important to note that the progressive action design path does not replace the traditional design path but provides a new direction to explore when facing projects with complex conditions and difficulties in moving forward.

As China's urbanization development progresses into a new stage of quality improvement, and the number of projects focused on urban space renewal and environmental quality improvement continues to rise, landscape architecture design practice must adapt to new development trends characterized by increased complexity, greater implementation difficulty, richer connotations, and expanded project sources. This necessitates the exploration of more flexible and effective design paths. By utilizing two design research methods—Research into Design (RiD) and Research through Design (RtD)—and incorporating insights from two practice projects—the Beijing Jingzhang Railway Heritage Park and the Dashila Dream Garden Project—we propose a progressive action design model for landscape gardens. This model follows a spiral and progressive action framework, comprising a series of action cycles. Each cycle is defined by specific goals and divided into five phases: planning, design, implementation, evaluation, and optimization. Throughout this process, it is crucial to consider five key influencing factors: cycle goals, resource catalysts, professional collaborators, stakeholders, and experience effectiveness. Additionally, landscape

architects should pay attention to four key aspects: role change, identifying catalysts, valuing evaluation, and mobilizing across borders. The progressive action design path does not seek to replace the traditional design path but rather offers a new approach that can be tested when addressing projects with complex conditions and challenging progress.

Keywords: Tactical Urbanism Process Action

Progressive-action Design Framework



Progressive-action Design Framework for Beijing Dashila Dream Garden project

Progressive-action Design Framework for Jingzhang Railway Heritage Park project

Advancing seniors' equity: Climate-adaptive park planning & design for Healthy-ageing

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Climate change has emerged as a significant factor profoundly impacting public health. Moreover, climate change may exacerbate health disparities by disproportionately affecting socially disadvantaged groups such as the elderly. However, current advancements in climate change adaptation are uneven, with limited research focusing on the unique physiological and psychological needs of the elderly and their preferences.

The expanding elderly population are significant users of urban public spaces where are highly susceptible to extreme weather events. Consequently, urban public spaces are not only risk hotspots in the context of climate change but also emerge as a critical domain for innovative solutions.

To address this issue, this study focused on a typical urban public space for outdoor activities among the elderly in China—the community park. It proposed a climate data-driven design framework aimed at healthy ageing through climate-adaptive planning and design. The framework comprised field research, data processing, planning and design, and simulation evaluation.

1)In the field research, we comprehensively investigated outdoor behavior and thermal perception among the elderly in the community park, utilizing meteorological measurements, questionnaires, interviews, and activity observations. The findings indicated that the intensity and content of activities significantly influenced the elderly's thermal perception from physiological and psychological perspectives. 2)In planning and design, we systematically summarized how meteorological, physiological, social, and psychological factors interact and impact the elderly's thermal perception. This deep understanding enabled us to make effective strategies and refine designs, addressing the unique needs of the elderly in climate-adaptive community parks. 3)In the evaluation phase, we used scenario simulations to effectively assist in testing design proposals, providing evidence-based explanations for design decisions.

The framework's structure and objectives were formulated mainly for analysis, design, evaluation, and decision-making in urban landscape planning and design. It's essential to note that climate-adaptive planning and design are local, multidimensional, and flexible in practice. Compared to existing design solutions for climate change, the climate data-driven design framework is based on the current site conditions and its users. It provides specific insights through research to improve local conditions and guide climate-adaptive planning in other regions. Furthermore, this design framework not only focuses on optimizing thermal environment quality but also emphasizes the catalytic role of different thermal environments. Specifically, certain thermal environments can enhance the quality and frequency of physical activities and social interactions among the elderly, thereby promoting the health and well-being of the elderly population across physiological and psychological dimensions.

This work is a far-reaching initiative designed to promote the health and well-being of vulnerable populations through innovative urban planning and design methods, addressing the multi-faceted impacts of climate change on the environment, society, and human health.

Keywords: Thermal Perception, Community Parks, Healthy Ageing, Urban Planning and Design

Suitable dwelling growth of Geelong

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[1]Harbin Institute of Technology
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This scholarly investigation is poised to comprehensively address the pressing need for strategic planning in Geelong, a rapidly expanding city, to effectively accommodate its burgeoning population. The imperative for the city to develop sustainable and well-designed communities has become particularly acute given the substantial surge in demographic trends. The study, therefore, endeavors to delve into the intricate dynamics of urban development, aiming to create residential areas that not only meet the immediate housing demands but also contribute to the long-term viability and prosperity of the community. To commence, a meticulous demographic analysis is undertaken to not only project the expected population growth but also to discern specific regions experiencing heightened demands for housing. This foundational step sets the stage for informed decision-making in subsequent phases of the study. Leveraging cutting-edge unmanned aerial vehicle (UAV) remote sensing technology, coupled with an extensive range of multi-source, multi-dimensional spatial big data, the research meticulously evaluates the current developmental landscape of Geelong. This includes a detailed examination of existing infrastructure, land use patterns, and environmental considerations. Moving beyond the present, the study employs these insights to prognosticate the future development trajectory of Geelong. The integration of advanced spatial modeling techniques facilitates a nuanced understanding of the complex interplay between various factors influencing the suitability of areas for residential expansion. The application of the ArcGIS weight analysis method is instrumental in assessing and prioritizing potential locations based on a predefined set of criteria. This includes but is not limited to accessibility, environmental sustainability, and the existing capacity of infrastructure to support expanded residential areas. In addition to these quantitative methodologies, the study recognizes the importance of qualitative data derived from community engagement. Incorporating strategies such as surveys, focus group discussions, and participatory mapping sessions ensures that the perspectives and preferences of residents are not only acknowledged but actively integrated into the planning process. This community-centric approach enhances the robustness and inclusivity of the research, aligning proposed residential developments with the actual needs and expectations of Geelong's diverse population. The synthesis of demographic projections, ArcGIS weight analysis, and community feedback culminates in the formulation of a comprehensive residential development plan. The ArcGIS weight analysis method's ability to assign varying importance to different factors ensures a nuanced and data-driven decision-making process, elevating the rigor and reliability of the study. Urban planners and policymakers stand to benefit from the insights and guidelines provided, guiding the development of new communities in Geelong with a strategic and sustainable perspective. By fostering a built environment that aligns seamlessly with the city's growth projections, the research aims to enhance

overall livability, fostering a vibrant, resilient, and inclusive urban landscape for the growing population of Geelong. This academic endeavor, therefore, seeks not only to contribute valuable insights to the scholarly discourse on urban development but also to serve as a practical guide for the city's future growth.

Keywords: Immigrant Cities, Future residential areas planning, Participatory planning, Urban development, Sustainable development

The impact of multiple landscape features on public citywalk intensity

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Lately, a novel style of outdoor recreation known as “city walk” has become popular in historical neighborhoods. Unlike other walking activities, “City walk” is a leisurely tour of the city's history, culture, landscapes, and more. Unlike shallow check-ins at prominent locations, “city walk” immerses you in city life. Thus, manmade and natural landscape elements affect public city stroll experiences and perceived worth. There is a lack of knowledge on public city walk behaviors in Chinese cities and the hierarchy of importance of landscape features in historical neighborhoods that characterize city walk routes for explaining activity-specific use intensity and landscape values perceived by people during city walk recreation.

In this study, using Public Participation GIS (PPGIS)mapping, we invited visitors and residents of Beijing old town area to map their city walk routes in the historical neighborhoods and report the value they perceived. This raises three questions: (1) What is the spatial pattern of hot routes for city walk in historical neighborhoods of Beijing? (2) What is the spatial pattern of public perceived landscape values during their city walk? (3) How do landscape features affect to overall, visitors’and residents’ city walk use and perceived landscape value intensity?

Overall, 202 respondents participated in our study and mapped 198 routes and 1008 points. Visitors and residents were our key public categories, thus we generated their intensity maps. We used random forest to identify the contribution of landscape features to public city walk use intensity. Thus, we examined accessibility, outdoor facilities, natural features, building features and POI diversity in each 50-m radius around mapped routes. For each mapped route, we estimated the total length of nearby routes to operationalize city walk use intensity. Kernel density analysis was performed to examine public landscape values in these routes' hotspots.

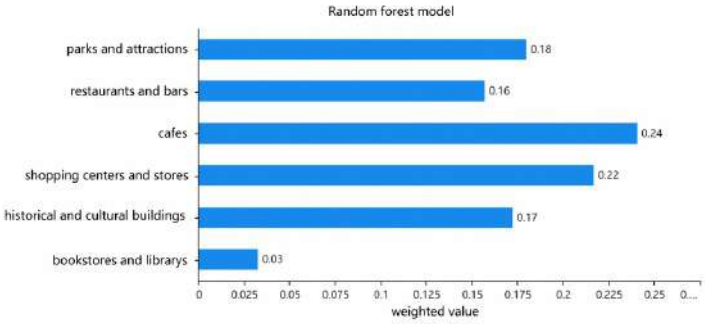
Results showed that social and natural recreation, cultural heritage value are the most perceived landscape value mapped by people. For residents, sense of place and spiritual value are also mapped frequently. City walk use intensity patterns differ for both in the west and east districts of Beijing historical neighborhood and the types of public perceived landscape values. And POI diversity, outdoor facilities（e.g. urban

furniture), building features(e.g. open street façade)were the most important landscape features that explained overall, residents', and visitors' use intensity. And the random forest result addressed that Cafes are the most important POI contributing public city walk interests. We also found differences in the importance of landscape features for city walk use intensities between visitors and residents.

Our findings add to existing studies on how built environment and landscape elements affect public walking and attitudes. This study is one of the first to examine China's new outdoor recreation concept, "city walk." Meet societal demands for outdoor leisure in historical neighborhood with our public perception and behavior insights. These findings can help urban designers promote historical neighborhood landscape characteristics and capitalize on the "city walk" trend. Our hot route city walk maps may also aid Beijing old town design in blending economic, ecological, and social goals.

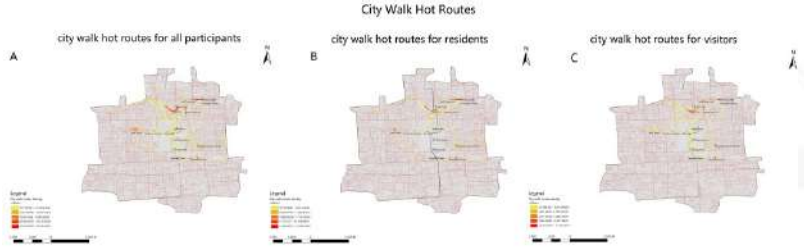
Keywords: Citywalk, Landscape features, Public participatory mapping, Histrocial neighborhood, random forest.

Result 4 Contribution of each POI to public city walk based on Radom forest



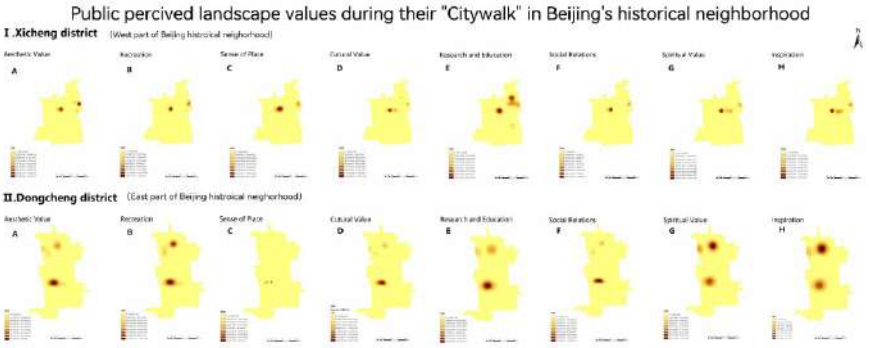
POI importance plots for public city walk hot routes.Plots were derived from random forest models (%IncMSE is the increase in mean of the error of a tree).

Result1: hot routes of public city walk in Beijing's historical neighborhood based on PPGIS



The hot routes of public city walk in Beijing's historical neighborhood neighborhood based on PPGIS, including all participants, residents and visitors

Result2: Public perceived landscape values during city walk in Beijing's historical neighborhood based on PPGIS



The hotspots of public perceived landscape values during city walk separately in west and east part of Beijing's historical neighborhood based on PPGIS

Result3: impacts of landscape features based on public city walk based on regression

Linear regression analysis results

	Non-standardized coefficient		Standardized coefficient	t	p	Covariance Diagnostics	
	B		Beta			VIF	Tolerance
Constant	-0.248	0.577	-	-0.429	0.668	-	-
Accessibility	0.054	0.065	0.041	0.839	0.323	1.264	0.791
Outdoor facilities	0.302	0.090	0.271	3.350	0.001**	2.006	0.499
Natural features	0.059	0.082	0.044	0.721	0.472	1.127	0.887
Building features	0.522	0.078	0.460	6.690	0.000**	1.441	0.694
POI diversity	0.321	0.076	0.373	4.221	0.000**	2.383	0.420
R^2				0.355			
Adjusted R^2				0.339			
F				F (5.197)=21.696,p=0.000			
				1.176			

Dependent variable: intensity of use (weaker-1, weak-2, fair-3, strong-4, stronger-5)
* p<0.05 ** p<0.01

Outdoor facilities, POI diversity and building features have significantly impact on public city walk behaviors.

Ruin, Nature and Culture: Discussions on Brownfield Aesthetic

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School of Architecture, Tsinghua University

Objectives：With industrial upgrading and urban renewal, a large number of brownfields are emerging in China, and the demand for various regeneration projects has increased dramatically. Normally, brownfields are considered as “scars” of the urban and rural environment. Because of the potential pollution and health threats, the public tends to avoid brownfield sites. It is generally believed that brownfields hurt the visual image and natural environment of urban and rural areas. However, the experience of brownfields is very unique and different from the conventional experience of natural landscapes, which led to growing wide popularity due to brownfields’ visual and cultural uniqueness. Are brownfields beautiful? This article attempts to explore this controversial issue in the context of China’s current urban and rural development, aiming to provide practical guidance for the emerging brownfield regeneration projects in China. The aesthetic paradigms in past brownfield regeneration projects are examined in combination with the characteristics of practical projects, to provide theoretical support for pollution treatment, landscape design, and industrial heritage protection in subsequent brownfield regeneration projects.
METHODS: Through literature review, case studies, and comparative studies, the article explores visitors’ experience and perception of brownfields at the visual, physical, and psychological aspects based on three dimensions of image, space, and atmosphere. Then, from three perspectives — industrial ruins, industrial nature, and industrial culture — the unique aesthetic characteristics of brownfields are analyzed. Finally to establish the aesthetic paradigm from individual experience to collective memory.
RESULTS: In the earliest stage, the public worshipped the industry in the industrial development period. In the later stage, environmental problems arose in brownfields which makes people have a sense of avoidance and fear of brownfield sites. Recently, with a large number of brownfield regeneration projects being developed, the public's mentality toward brownfields has gradually changed to acceptance and admiration. The article argues that in urban and rural setting, attention should be paid to research and application of brownfields as aesthetic objects, transforming the aesthetic potential into important resources for urban development and cultural innovation. More importantly, it’s important to regard brownfields as anchors for shaping a new landscape aesthetic paradigm adapting to the environment's sustainable development.
Discussions: Based on the research of this paper, it is important to establish an effective way to interpret the aesthetics of brownfields and provide theoretical support for the aesthetic realization of brownfield regeneration projects. Through the study of brownfield regeneration projects in China and abroad, it can form a guiding aesthetic paradigm, so that brownfield regeneration projects can be developed with ecological value, cultural value, and aesthetic value in the future.

Keywords: brownfield, aesthetics, landscape aesthetic paradigm, landscape architecture

Exploration of Methods and Applications of LLCA and PPGIS

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Humans and landscapes have always been in a process of interaction. The intense urbanization process has led to landscape changes, thus affecting human perception and behavior. Landscape is not only an objective carrier of human behaviour and perceptions, but it also serves as a social construction that links 'people' and 'places'. As a result, by understanding the landscape and its character, it is possible to better understand the changes in the landscape and their impact on human.

The purpose of this practice is to try to learn from the Local Landscape Character Assessment (LLCA) in England, take Guangzhou Higher Education Mega Center (HEMC) as a case study to conducts exploration and practice, and determine the applicability and feasibility of this method to China. Secondly, we analyze the PPGIS survey results to discuss the spatial relationship between landscape values, special places mapping and landscape character assessment. Finally, emphasize the significance of public participation in landscape planning and management.

Landscape character assessment (LCA) is a mature and systematic tool for understanding and identifying landscape character. LLCA, as an extension of LCA at the local level, combines subjective and objective aspects to comprehend landscape character and the interaction between human and landscape. In addition to dividing and identifying landscape character types and areas, it facilitates a deeper understanding of local character through enhanced public participation, thereby capturing local residents' perception and experience of the landscape. This practice draws on the methods of LLCA and utilizes PPGIS as a survey tool to conduct practice in Guangzhou Higher Education Mega Center (HEMC). Building upon the result of LCA on two scales, the Maptionnaire platform was used to investigate people's evaluation for landscape value, special place preferences and behavioral routes, to get the perception and experience information.

The findings of LCA revealed three factors that affecting the reliability of LLCA, including data quality, classification methods and public participation. Consequently, we summarize the issues encountered in this case, and attempt to propose improvement suggestions, including establishing a database, improving the method of delineating landscape character classification and regional boundaries, and increasing public participation. By overlaying the spatial data of LCA, landscape value, special places mapping and behavioral trajectories, the results of the PPGIS survey indicate that the value scores of public space landscape are relatively high, and individuals generally identify more with the landscape in their residential areas. Additionally, there is a similarity in the spatial aggregation areas of landscape value points and special places points.

Currently, China lacks a comprehensive multi-scale and hierarchical LCA method, and

public participation is not widespread. However, the implementation of LLCA in Guangzhou HEMC has demonstrated the feasibility of this method. The value of landscape lies in establishing the connection between 'people' and 'places'. With this practice, it is expected to promote a greater emphasis on landscape, as well as the perception and experience of human, and contribute to raising awareness and recognition of the value of landscape within China.

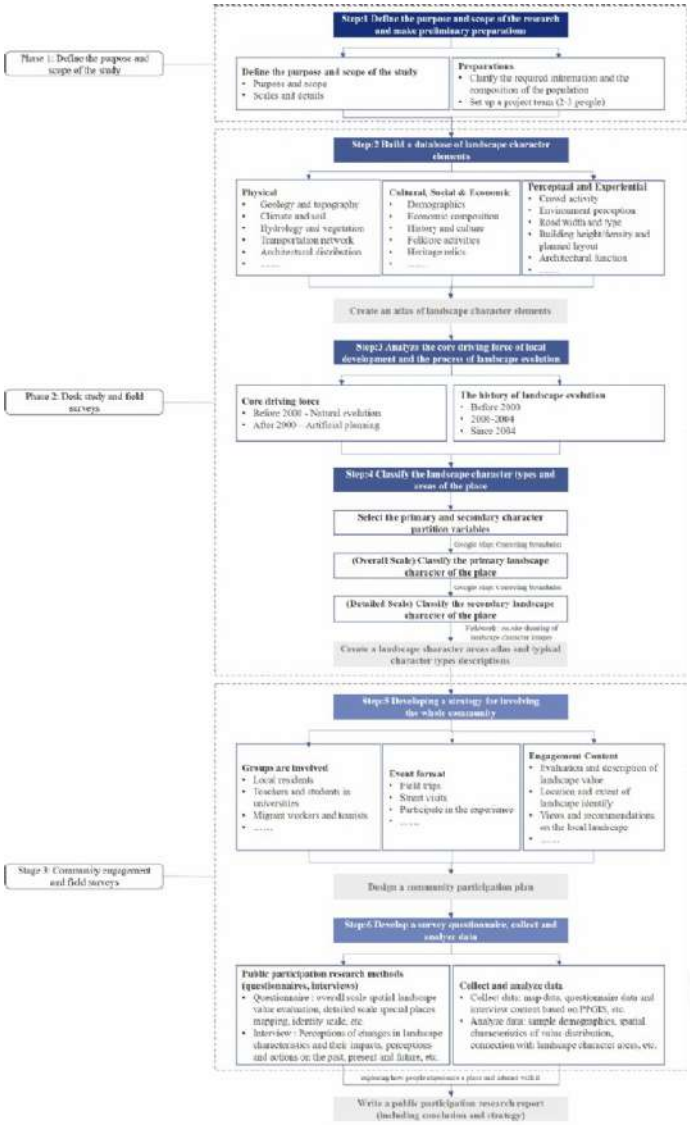
Keywords: Landscape Character Assessment, Local Landscape Character Assessment, PPGIS, landscape perception, landscape value

01 Research Scope of Guangzhou Higher Education Mega Center (HEMC)

The research scope of Guangzhou Higher Education Mega Center (HEMC)

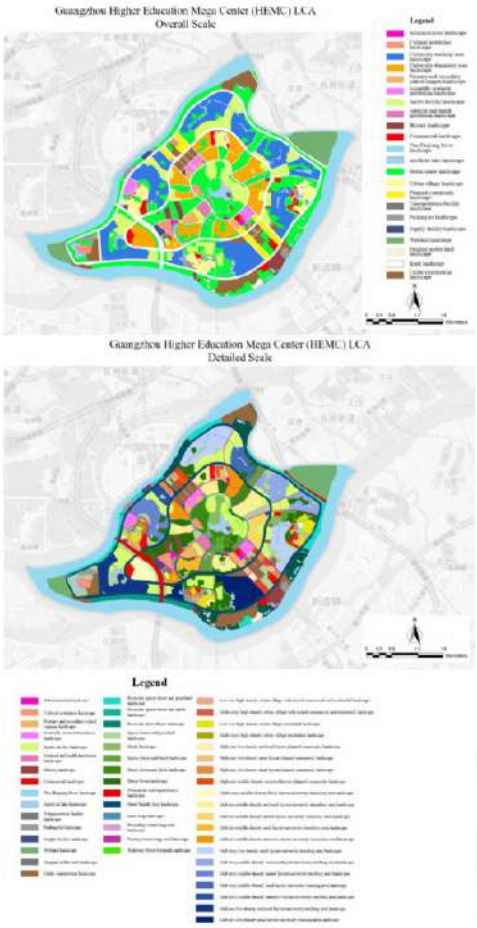
This figure shows the research scope of Guangzhou Higher Education Mega Center (HEMC), the extent of the study site is shown within the red line.

02 Research Methods and Technical Paths of LLCA and PPGIS



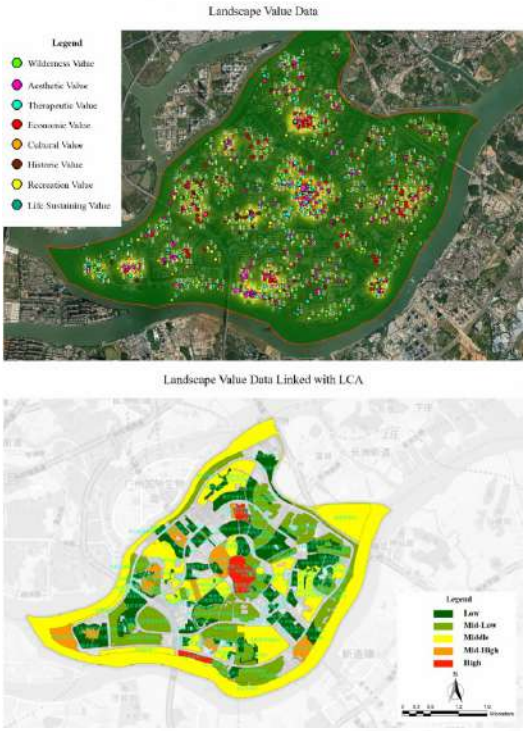
This figure shows the research methods and technical paths for applying PPGIS and LLCA in Guangzhou Higher Education Mega Center (HEMC), including three stages and six steps.

03 Guangzhou Higher Education Mega Center (HEMC) LCA



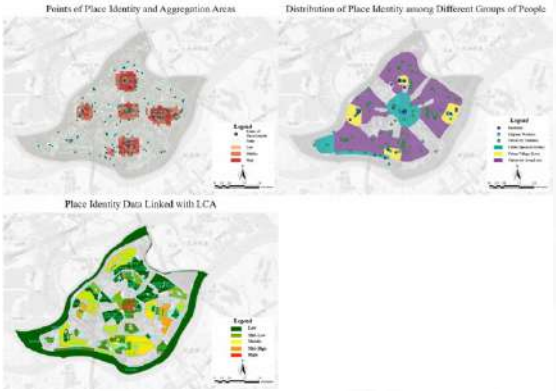
This figure shows Guangzhou Higher Education Mega Center (HEMC) LCA at two scales, including overall scale and detailed scale. The detailed scale breaks down the six types of landscapes in overall scale, including university teaching area landscape, university dormitory area landscape, green space landscape, urban village landscape, planned community landscape and road landscape.

04 Landscape Value Data and Linked with LCA



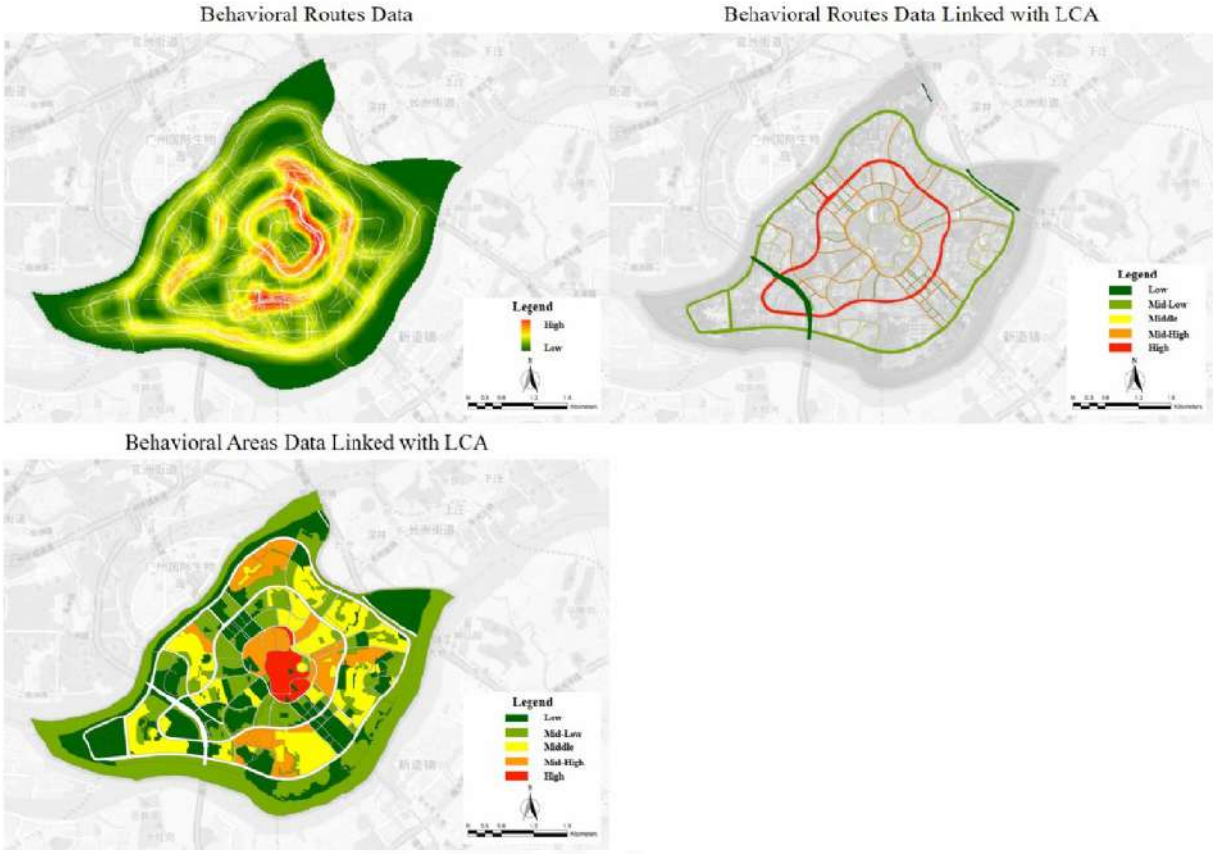
This figure includes two pictures. The figures above shows the landscape value data which is collected by Maptionnaire platform. The below one shows the result of linking landscape value data with LCA.

05 Place Identity Data and Linked with LCA



This figure includes three small pictures, the two pictures above show the points of place identity and aggregation areas which is calculated by GIS, and the other one shows the distribution of place identity among different groups of people. The below one shows the result of linking place identity data data with LCA.

06 Behavioral Routes/Areas Data and Linked with LCA



This figure includes three small pictures, the two pictures above show the behavioral routes data, and the result of linking it with LCA, the below one shows the result of linking behavioral areas data with LCA.

Assessing recreational-services in Post-COVID Beijing via social media camping data

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Recreational services or recreational ecosystem services (RESs) are the diverse recreational opportunities provided by nature to humans, which contribute to the improvement of public health and social well-being. The use of online social media is an efficient method for quantifying public perceptions of recreational ecosystem services (RESs) delivered by a given landscape. With the continuously changing demand for nature-focused outdoor recreational activities since COVID-19, camping has become the fastest-growing outdoor leisure activity in megacities and a key indicator for how people perceive and value the RESs provided by the landscape. Such unexpected changings triggered by COVID-19 have further led to an imbalance between demand and supply, which results in fierce conflicts in urban green space management. This study presents a spatial pattern analysis of how people perceive RESs in a megacity-scale case study of Beijing using geo-tagged camping notes posted on Little Red Book (LRB). We employed these camping notes in the context of a megacity to (i) map public camping behaviors patterns in urban green spaces, (ii) evaluate spatial clusters of high/low RESs, and (iii) investigate the relationship between RESs, local landscape features, and gender through correspondence analysis. Our results show that considerable spatial clustering of camping behaviors was observed in both suburban and urban green spaces. However, suburbs revealed a substantially higher RES value than central urban areas. In addition, water bodies were discovered to have remarkably low RES, while grassland and urban forests were found to have a close link with higher RES. In addition, significant gender preferences have been discovered, where female visitors prefer to camp in grassland, and male visitors favor bare ground and urbanized regions. Our findings would assist decision-makers in optimizing urban green space planning and management, adapting to fast-changing public camping demands in the context of the post-COVID-19 era. Findings also contribute to the literature by applying spatial analysis of social media data to understand public outdoor recreation activities and perceived value for megacities' green space management.

Keywords: recreational service, camping, social media, urban green spaces, public well-belling

Figure 2 Public camping behaviors in urban contexts

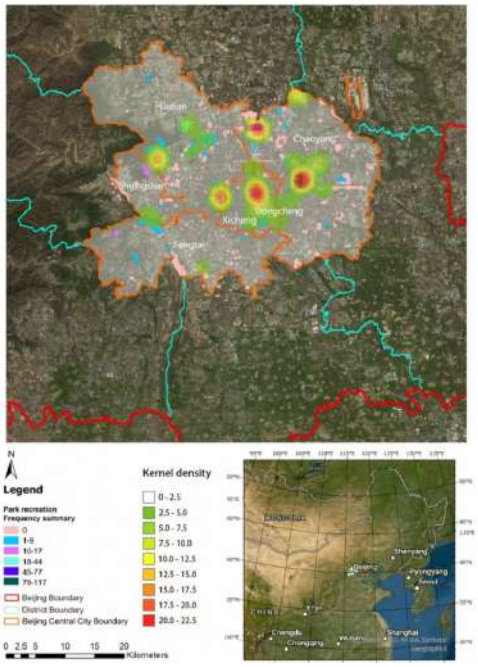


Figure 3 Perceived RES hot/cold pots across Beijing

Figure 4 Hotspots of Public perceived various RES in urban context

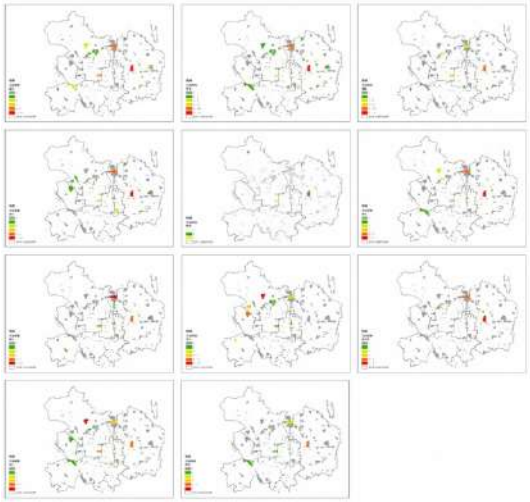


Figure 5 Relationship between public gender, perceived RES during camping and land cover

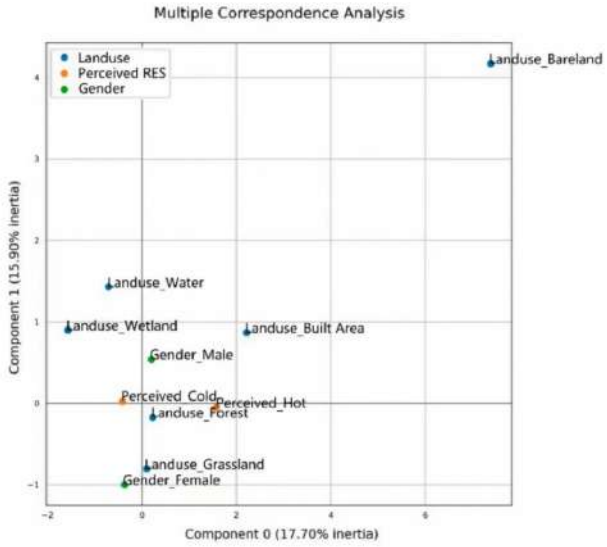
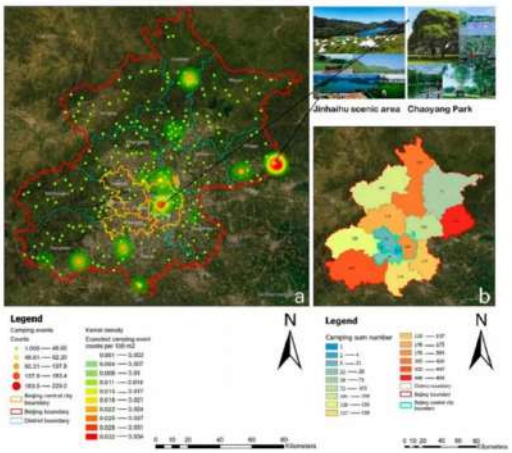


Figure1. Public camping behaviors across Beijing (urban and suburb areas)



(a) kernel density heat maps of camping notes and (b) the spatial distribution of public camping notes in Beijing.

Construction of aging-friendly streets from the perspective of street soundscape

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[Objective]
China's aging population is a growing problem, with the proportion of the elderly increasing by 8.4% over the past 20 years. Beijing is one of the cities where above problem is prominent, and Xicheng District has the third largest household population aged 60 years and above in Beijing. The elderly have higher requirements for the safety and comfort of their daily activity places. However, Xicheng District has old urban infrastructure and an urgent need for improvement of the human settlement environment, so the aging-friendly design of its streets should not be neglected. Soundscape is another important factor that affects the psychological state and activity characteristics of people in the urban street environment in addition to the visual landscape, it is important for enhancing the comfort of the street. Therefore, this study will focus on the soundscape characteristics of urban living streets and their influence on the behavioral activities of the elderly, using them as entry points for the construction of aging-friendly streets to explore effective ways of realizing the construction of extensive social equity.
[Methods]
Noise meters were used to obtain the background and maximum noise value of five living streets in Xicheng District, and record the various types of sound sources in the street with their frequency and loudness, the above information were combined with soundscape evaluation experiments to analyze the soundscape characteristics of the streets. Based on the questionnaire survey and the behavioral observation in the field, this study will summarize the types and characteristics of street elderly behavior, and further explore the influence of street soundscape characteristics on the behavioral activities of the elderly.
[Results]
The results show that among the indicators related to the noise value of the street sound, the maximum noise value of the five streets exceeds the national standard limit of 55 dB; and the difference between maximum noise value and background noise value is negatively correlated with the elderly's auditory comfort evaluation of the streetscape and the frequency of purposeless passing activities. Among all types of street sound sources, the five streets are dominated by traffic sound, accounting for 50-60%; the sounds of vendors, bicycles, and walking are negatively correlated with the elderly's evaluation of visual and auditory comfort, but the sounds of birds chirping in the natural and walking in the sounds of human activities are positively correlated with the elderly's purposeless passing and stopping activities. Meanwhile, the elderly's visual evaluation of the street is influenced by both visual landscape and soundscape, and the evaluation of the acoustic environment is same.
[Conclusion]
This study establishes the relationship between the characteristics of street

soundscape and the characteristics of behavioral patterns of the elderly in the old urban areas of mega cities in China, and explores the application points of various types of soundscape elements in the design of aging-friendly streets, which provides references for the effective reduction of sudden noise, the deployment of the proportion of street sound sources, and the construction of the dual comfort of landscape visual and auditory.

Keywords: Old city renewal,Street landscape, Aging-friendly design,Soundscape construction

Design Guidelines for Child-Friendly Rooftop Gardens in High-Density Urban Areas

Chumeng Li[1], Rui Wang[2], Yueshan Ma
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[2]University of Sheffield, The United Kingdom
[3]Henan University of Science and Technology, China

As the world's population grows and urbanisation accelerates, the density of cities is increasing dramatically. While high-density urban development improves land use efficiency and boosts economic growth, it also poses significant challenges particularly for children. Such environment reduces outdoor play spaces, present complex traffic scenarios that compromise the safety of outdoor activities, and limit opportunities for interaction with nature. The United Nations Convention on the Rights of the Child highlights the importance of addressing children's rights and well-being, which poses additional challenges for children living in high-density urban contexts. Innovative solutions to provide more public green spaces in high-density cities have become crucial. Rooftop gardens have emerged as a promising response to this challenge. However, existing research often considers rooftop gardens as an addition to ground-level urban public spaces, or only focuses on general perceptions and broad design guidelines, with little attention to the specific needs of children.

This study examines several cases of child-friendly rooftop gardens around the world and develops a set of design guidance. Firstly, it examines inherent attributes and unique characteristics from rooftop gardens which make them particularly friendly for children. It highlights the benefits of locating play areas above ground level, such as the absence of street-level traffic, which inherently increases the safety of children's free activities. In addition, rooftop gardens can support a range of activities beneficial to children by exploiting their functional characteristics. For example, rooftops on commercial and residential buildings can be designed to meet different needs, such as allotments or adventure play, providing an engaging and safe environment for children to explore.

Secondly, this study examines the design and use of these rooftop gardens and identifies core elements of child-friendly rooftop gardens. These elements include the integration of five key landscape features (water, vegetation, insects/small animals, landforms, and sand/stone), ensuring the safety of rooftop gardens for children (secure railings, soft ground surfaces, and supervised access points), enhancing the community participation of children and their families, and incorporating cultural and artistic education (art installations, cultural symbols, and educational play equipment that reflect local heritage and creativity).

Finally, the study summarises a set of guidance for child-friendly rooftop gardens that emphasis the integration of child-friendly elements through design and planning. It combines various aspects such as physical form, spatial hierarchy, placemaking and infrastructure to create optimal environments for children's play. The design provides children with flexible natural spaces that encourage exploration and creativity. The research proposes a new perspective on the design of child-friendly public green spaces

in high-density cities, ensuring that all children have access to safe, engaging and natural play environments. By addressing the unique challenges of urban density, this guidance aims to create inclusive and sustainable public green spaces that support the holistic development of children in urban environments.

Keywords: Child-friendly design, Rooftop gardens, Urban density

Logistics Transit Boxes as Micro-Mediators of Recycled Landscapes

Simin Bian, Liang Li
Beijing Forestry University

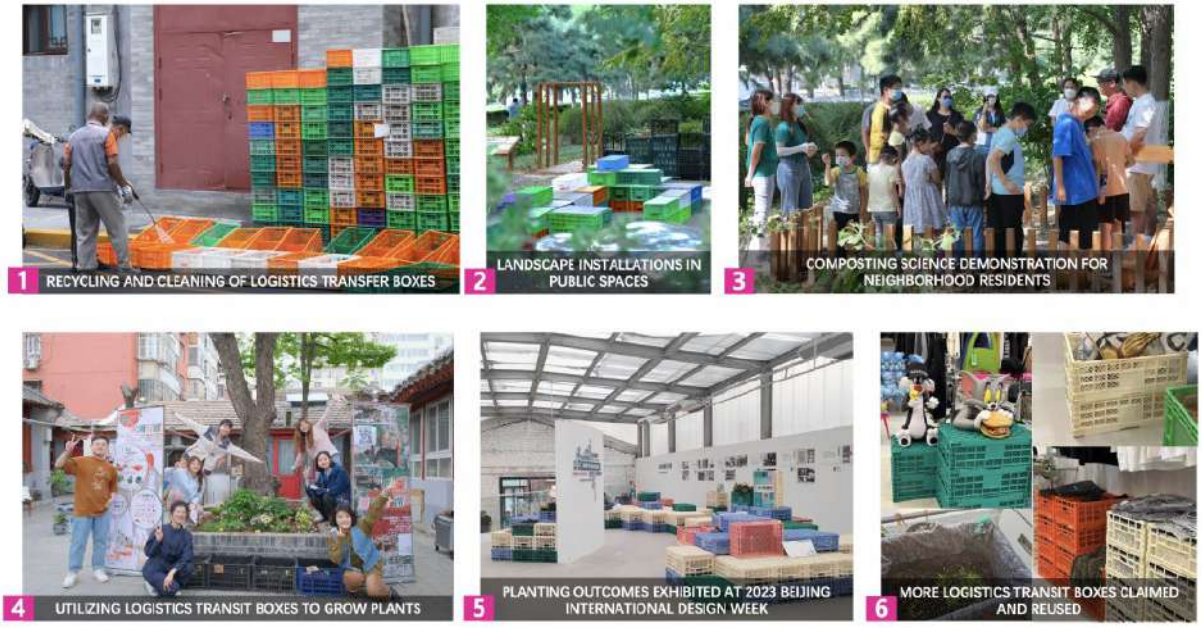
In light of the substantial depletion of Earth's resources due to the expansion of human civilization, the imperative arises for the implementation of low-carbon and regenerative strategies in landscape design. Over the past four years, our project has utilised the logistical transit boxes of vegetable markets as a medium to create recyclable landscapes. This initiative, termed the "Vegetable Box Floating Project," represents a practical exploration of low-carbon science popularization.

The specific procedural steps encompass: (1) Collaborating with the prominent Zhaoyunsheng Vegetable Market in Beijing's Jingshan Street to repurpose a substantial quantity of waste transfer boxes and organic waste from operational processes. These materials are repurposed to construct a temporary landscape installation within the public space of Huangchenggen Heritage Park. This installation serves dual functions as an organic composting demonstration site, aimed at guiding residents in participating in both the construction of the demonstration site and the advancement of organic composting practices. (2) Disseminating information on home gardening techniques utilizing the logistics transit box and guiding residents in employing logistics transit boxes for diverse forms of home gardening. (3) Showcasing the planting outcomes in logistics transit boxes at the 2023 Beijing International Design Week, leveraging the "Action Design" exhibition to garner increased attention. This step entails guiding visitors and nearby merchants to adopt logistics transit boxes for planting and other functional purposes. (4) Establishing a community and sustaining activities such as technical exchanges, horticultural planting guidance, and the exchange of insights regarding the utilization of logistics transit boxes.

Through this iterative process, the project realizes the transition of the transit boxes from their origin in the vegetable market to public spaces, subsequently reaching individual households and merchants. Simultaneously, it progressively instils the concept of green recycling life within the consciousness of the general populace.

Keywords: low carbon, flexible, public influence

Logistics Transit Boxes as Micro-Mediators of Recycled Landscapes



Landscape design: from surface to service. landscape design in crisis situations

Julie Weltzien
Gesellschaft für internationale Zusammenarbeit mbH, Bonn, Germany

Recent discussions in landscape design discuss a role shift from design as creating 'surfaces' to designing processes that incorporate all possible demands towards a solution that 'fits it all'. However, in a dramatically changing environment where transdisciplinary engagement is more than ever needed – do we still have time and the luxury to engage in long term processes that might not be timely anymore once implemented?

Problem
Crisis situations demand quick action and contextual issues are easily overlooked. Criticism towards approaches in development concern the lack of contextual holistic understanding that frequently create unintended repercussions. At the same time the profession of landscape design, a profession whose mandate is context, is greatly underrepresented in development organizations.

Objectives
Guiding questions are: how can landscape architects react to crisis situations while contextualizing to the maximum? Can we, if we regard landscape architecture as a service play a fundamental role as a profession in the developmental processes of the Global South?

METHODOLOGY:
The presentation will give a quick overview of the recent debate of the role of landscape architecture as a planning discipline.
It will then touch on recent criticism in development where context is frequently not taken enough into consideration.
Case studies from the perspective of the presenter, a practitioner in education and a project manager in a development organization will enrich the debate. Aim is to instigate a vivid discussion about the role of landscape design in crisis situation and the conflict between long-term solutions and 'quick-fix'.

Keywords: context, crisis situations, development

SHORT ORAL PRESENTATIONS
Engaging with the Digital: Innovation, Technology & Big Data

Revealing Landscape Preferences for Recreation Based on Social Media Data

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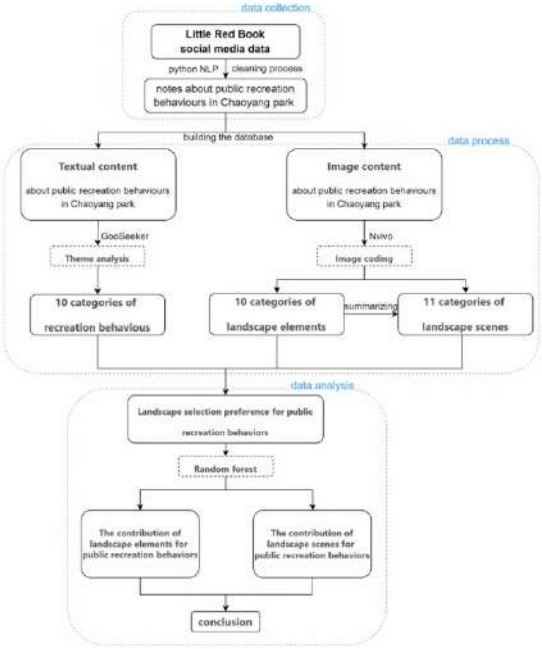
Beijing University of Civil Engineering and Architecture

The outbreak of COVID-19 has led to a sharp rise in public desires for outdoor recreation behaviours in the context of growing urbanization. Urban parks have emerged as the primary sites for residents to interact with nature, and leisure activities in parks have become a crucial aspect of citizens' daily routines. To meet the public's evolving expectations for urban green spaces, it is critical to investigate landscape preferences for recreation. This outcome will contribute to park management from the users' perspective. However,there has been little research on new modes of park use for citizens. And the specific park landscapes that people prefer for recreation remain uncertain. Meanwhile, social media data (SMD) is widely acknowledged as a potential source of public perception information. It can assist in making decisions for future urban park construction after a pandemic, when the need for green spaces changes quickly. Therefore, this study uses SMD to investigate the new usage mode of urban green space. We aim to identify landscape preferences for different recreation activities in urban parks from the public perspective. In this study, we use Chaoyang Park, the most trendy urban park in Beijing, as an example. We have developed a method to combine image and textural data through topic analysis and image coding by Nvivo. The discussion focused on the contribution of different landscape elements and scenes to the activities through the random forest. Landscape appreciation and picnicking are the most popular recreation behaviours, followed by landscape appreciation and nature experiences. In the selection of activity scenes, people prefer scenes with various landscape elements, such as multiple scenes of grass, water bodies, and built areas. Meanwhile, there are differences in the contributions of different landscape elements to different activities. The contribution of forest elements to camping and landscape appreciation is prominent. Water bodies have demonstrated significant contribution values for all types of activities simultaneously. This study uses social media data to identify changes in public demand for green space, allowing for timely adjustments to green space strategies in high-density cities, particularly after the epidemic.

Keywords: outdoor recreation behaviors, social media data, city park, urban green space;

Framework of the study



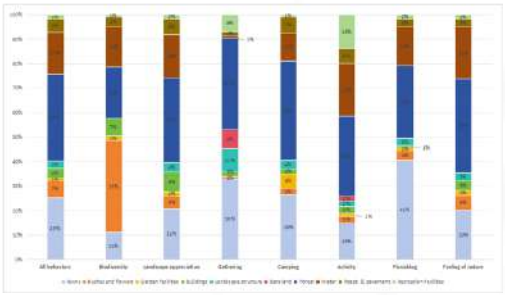
Location of Chaoyang park

Chaoyang Park is the largest urban park within Beijing's Fourth Ring Road and the most popular destination for outdoor recreation on social media.

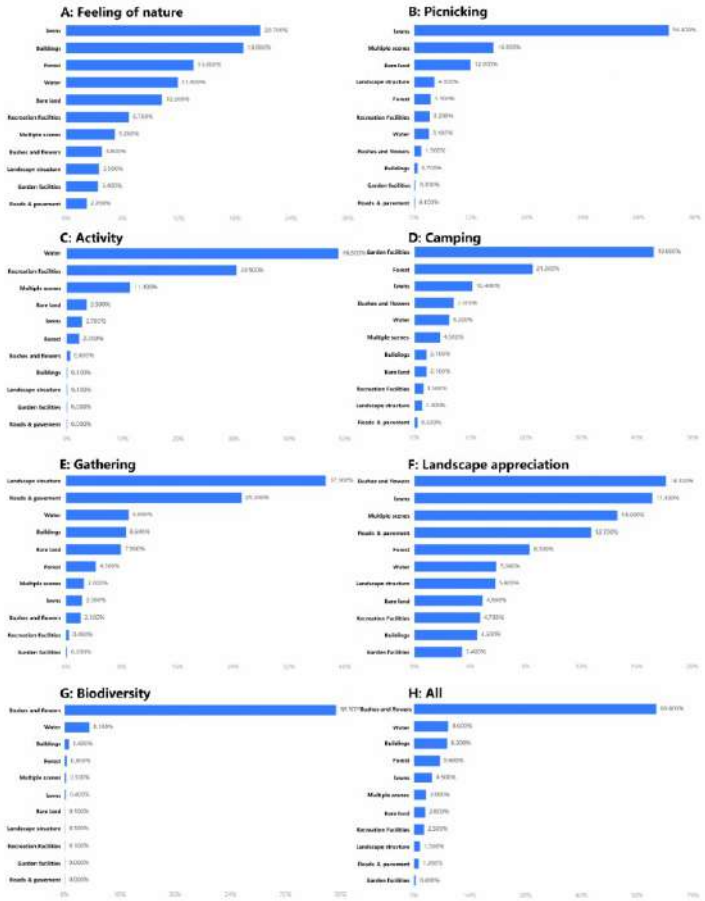
numbers of notes and photos

Month	number of notes	number of photos
February	1	1
March	11	64
April	71	349
May	183	1057
June	112	687
July	22	177
August	36	229
Total	436	2564

Descriptive statistics of landscape features and recreation behaviors



the importance of landscape scenes for all behaviors



The graphic depicts the findings of random forest analysis, which represents the importance of landscape scenes for various recreation behaviors.

Quantifies Human Perception of Riverside Spaces from Network Text Data

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Chongqing's special geographic and geomorphic conditions make the riverside public space very characteristic and gather high recreational vitality. As a famous Netflix city, Chongqing's discussion on social media has been high, and the emotions contained in a large number of social media comment texts can truly reflect the perceptions and feedbacks of the users on the environment, these information can help the researchers to correlate the recreational behaviours with the environmental elements, and to obtain the actual influence of environmental elements on the recreational behaviours in the riverside public space. Therefore, the study selected twelve public spaces with high recreational vitality along the f" "Two Rivers and Four Banks" in Chongqing, and used social media text data to construct a framework for the perception of recreational use in riverfront public spaces in mountainous cities, to obtain the specific perceptual dimensions affecting recreational use, and to analyse the importance of each dimension. The common influences on the perception of recreation in riverfront public spaces are discussed in depth, and the key influences with significant positive and negative correlations on recreation use are extracted through sentiment analysis and multivariate regression equations. The findings of the study are conducive to quantifying and mapping the recreational service capacity of riverfront public spaces in mountainous cities; comparing the actual influence of various factors on recreational use can provide an effective theoretical basis for the sustainable construction of riverfront public spaces; and proposing specific planning strategies based on the perceptual dimensions and key perceptual factors can provide a practical guide to enhance the recreational value of riverfront public spaces.

Keywords: Network text data, Perception evaluation, Riverside space, Social media data, Mountain city

"The Impact of Park Features on Sports Based on Image-Data"

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"BACKGROUND: There has been sufficient evidence that urban greening has an important contribution to residents' mental health and physical activity. These include contributions to people's cardiometabolic health benefits, reducing depression and anxiety, and promoting walking and cycling activities. However, the evidence to date is largely inconsistent with regard to green representations of urban greening. Few studies have quantitatively measured greenness perception in parks, despite the fact that park greening is an important component of urban greening. While the potential of important indicators such as eye-level greenery in park physical activity studies has been little tested, the relationship between park greening and physical activity remains largely unknown. Eye-level vegetation in a park directly reflects people's direct perception and influence on green vegetation, and has been proved to be closely related to the beauty, attraction and comfort of the park. Therefore, it is a very meaningful study to prove the correlation between greening and spatial features and crowd activities in landscape architecture planning and design.
OBJECTIVE: In order to solve the above research problems, the focus of this study is to capture the impact of perceived greenness of parks on physical activity at the level of urban greening, and to raise the following questions: How to define and measure the indicators of park greening from a horizontal perspective? What is the relationship between perceived greenness in parks and sports activities in parks? What is the influence mechanism and function of perceived greenness on sports activities in parks? This study innovatively measures the relationship between green perception and physical activity at the park level. The factors that may affect sports activities under different control variables are discussed, such as socio-demographic variables, sports categories, facility satisfaction and so on.
METHODS: Taking the public sports space of community park in the central city of Beijing as the main research object, various research methods such as literature investigation, field investigation, questionnaire survey, regression analysis and artificial intelligence technology were used. First of all, the physical exercise space in community park is investigated to explore its use status. At the same time, the characteristics of people's physical exercise behavior in community parks were investigated and analyzed, and the images and crowd activity information of 22 community parks in Beijing were collected. Secondly, combined with computer technology, image segmentation technology and binary probability unit regression model are used to explore the correlation between landscape elements and crowd activities.
CONCLUSION: After controlling for socio-demographic characteristics and other environmental factors, the study found that the human perspective of park greening was positively correlated with recreational sports activities. Using multi-source data and artificial intelligence, this study provides new insights into parks and physical activity

research. The research results will help to promote a more scientific park environment assessment, provide certain reference opinions and suggestions for the further transformation and improvement of public sports space, provide guidance and suggestions for building a more suitable park environment for physical exercise, and bring greater benefits to the health of residents."

Keywords: park greening, greenness perception, sports activities

Visual Landscape Management Strategies and Mountain Protection

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China has an extensive past, a vast land, and diverse natural environments. Man and nature have, over time, co-created varied regional landscapes with varying building practices and regional cultures. Nonetheless, rapid urbanization has devastated both the national and regional landscapes. The agricultural system and countryside dominate current regional landscape research. These landscapes have no solid connection to urbanization. However, The regional mountain landscape encompasses numerous aspects of the regional landscape system and has tight ties to urban spatial form. This study investigates methods for restoring this link in the face of urbanization. This research takes visual space as the entry point because visual space is the medium through which individuals can most easily perceive the city and is also an essential link in urban analysis. Therefore, exploring the mountain landscape's visual characteristics is of great significance.

This research proposes a visual analysis method for comprehensively analyzing urban visual characteristics to establish visual management strategies for mountainous city regional development. This type of visual analysis employs multiple digital technologies and multi-scaled studies. The proposed method could quantify visible urban spaces, so assisting in decision-making. This study utilizes GIS, LiDAR, and other digital technologies to objectively examine urban mountain visual landscapes. Quantitative analysis uses multidimensional digital models with multiple dimensions, including 2D and 3D urban models. The proposed method can quantify the optical properties of large, medium, and micro-scale urban environments, thereby revealing their inherent visual patterns. Develop an algorithm for visibility analysis with LiDAR point clouds and solid vector models. The hybrid model-based visibility method evaluates the visual impact of urban vegetation. The case of Fragrant Hills, Beijing, is selected for further investigation. The proposed method was conducted on the case to analyze the visual properties of Fragrant Hills and the urban open spaces visible in the Fragrant Hills. This research will integrate Beijing's existing planning, apply GIS and LiDAR to the visual landscape mapping of Beijing Fragrant Hills, test the practical effect of Beijing's mountain landscape protection, and ultimately optimize strategies.

Keywords: landscape architecture, regional landscape, visual landscape, cultural heritage, digitle landscape

An interconnected conceptual readingbetween practice&theory in search of a Lexicon

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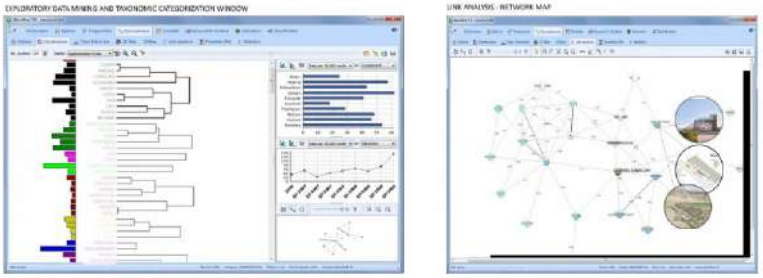
The knowledge field of landscape architecture offers us a universe of concepts that are constantly changing and evolving, in other words, having a fluid character. While this multiple field of knowledge evolves within itself, it is affected by the developments in the world of both theory and practice. However, in order to see efficient interactions, it is necessary to be able to create a bridge/portal between practice and theory, especially in conceptualisation. In this study, in order to understand the level of interaction /fluctuation between the hypothetical background of theoretical universe and the in-real discussions in the universe of practices, the speculations and operative contents of recent design projects will be analysed. We hope that we will create a network map of the relations between the ideas by comparing the both universes of Landscape Architecture. However, unlike the network maps made so far, we aim to design this conceptual atlas as a visual lexicon containing both textual and visual data.
Nonaka and Takeuchi (1995) identified four domains of knowledge in applied research situations: “tacit knowledge”, the implicit, taken-for-granted knowledge of practice; “conceptual knowledge”, which makes tacit knowledge explicit and codifies it as principles and protocols; “systematic knowledge”, which is also explicit and formally expressed, validated and integrated at the core of the discipline; and “operational knowledge”, through which systematic and conceptual knowledge are translated into different domains of practice (Deming & Swaffield, 2011). It would not be wrong to say that the knowledge universe of landscape architecture has been shaped according to the cyclical evolution between these four over time. However, it is also clear that in order to correctly construct the relations between research, practice and academia of landscape architecture, it is necessary to re-read these forms of knowledge from time to time.
The method we will follow in this research will be to perform a content analysis by reducing the conceptual content of current design projects with multi-layered language, which we have chosen as cases, to the 4 types of information mentioned. The concepts in the 4 different information pools and the relationships between them will be conceptualised and quantified using WordStat software (Content Analysis Dictionary and STATA tools). The visual equivalents of each concept, which will then be taxonomically separated in the design projects, will also be placed in this network map.
Today, the growing interest in ecological knowledge and agenda issues such as global problems and the climate crisis are strongly influencing and transforming the knowledge universe of landscape architecture. This transformation leads to a multidimensional confusion of conceptual relations in the professional field, and moreover, this situation

leads to a visible lack of axis in the fields of practice, education, and research. It is assumed that the resulting network map will systematise the fluid meta-data universe of landscape architecture on a perceptible axis and guide future research and conceptualisation.

Keywords: Data Conceptualisation, Knowledge Taxonomy, AI, Landscape Architecture, Urban Design

Figure 1



An example from WordStat Software Windows which will be used for Taxonomic Categorization, and Link Analysis for Conceptual Words of Landscape Architecture.

Figure 2.

One of the selected projects: Seddulbahir Ecological Landscape Restoration Project

Parametric-generative landscape design research based on perception survey

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OBJECTIVES: Suzhou Classical Gardens in China are renowned for their complex spatial structures, providing diverse spatial perceptions, including the commonly mentioned experience of "view changes with step movements (VCWSM)." However, with the increasing variety of contemporary landscape design, implementing VCWSM requires more than subjective experience and speculation. It demands refined, precise studies of the perception rule of VCWSM. This study focuses on the Master-of-Nets Garden to pinpoint the key factors influencing VCWSM and establishes parametric generative rules based on these factors. These rules are then applied to generate a path network for a pocket park.
METHODS: In the Master-of-Nets Garden, with the central pond as the main scene, we observed the path choices of 100 visitors at each bifurcation point and selected a typical touring route, divided into 51 distinct spaces. The midpoint of the center axis of each space was designated as the viewpoint. From December 5 to December 10, 2023, 35 participants aged 18 to 35 were recruited to tour the route twice. During the first tour, participants evaluated their preference for each space and determined if the spatial perception of VCWSM occurred. On the second tour, they wore GoPro10 sports cameras to freely identify visual points of interest. Ultimately, 34 qualified spatial perception data sets were obtained. After conducting a statistical analysis of the data, the study extracted the key factors influencing the generation of VCWSM and used them as the basis to build the parametric generation rules.
RESULTS: The survey indicated that the viewpoints where VCWSM occurs are not continuous but regularly appear at transitions between points that are in the pond and at the edge of the pond. This result suggested that VCWSM occurs when there is a change in the positional relationship between the viewpoint and the main scene. The survey also revealed that viewpoints in or at the edge of the main scene have direct visibility to the pond, while viewpoints outside the main scene may be obstructed by other landscape elements. Therefore, distance, positional relationship, and visibility of viewpoints and main scenes are key factors influencing VCWSM.
The study selected a pocket park of about 9,500 m^2 in Suzhou, with water as the central element, as the object for parametric generation. We used Grasshopper to generate viewpoints that conform to the rules and systematically connected them to form a path network. Trees were used as elements to obstruct sightlines. Ultimately, the study simulated the visual interface of each viewpoint in SketchUp and confirmed whether the design scheme produces the effect of VCWSM through perception questionnaire surveys.
CONCLUSION: Based on perception rules identified in the survey, this study develops a parametric system to generate a path network with viewpoints for a pocket park. This process demonstrates the application of classical garden spatial structure to modern

landscape design through a parametric approach, a methodology that can be adapted for the modern reinterpretation of other classical garden space designs.

Keywords: Suzhou Classical Garden, View Changes With Step Movements, Perception Survey, Parametric Generative Design.

A generative design method for 3D parks

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In the traditional landscape design of human settlements, the establishment of 3D models is an important step for designers to visually represent the spatial relationship of design elements, and it is also the basis for landscape analysis of the site. Generating beautiful and realistic landscape space quickly and effectively is a major challenge for designers. Although generative design is widely used in related fields, most of them generate 3D models through the limitation of index parameters. However, the elements of landscape design are complex and have special needs, so it is difficult to generate design from the perspective of index restriction. To address the above problems, this study proposes a generative design system for park space based on deep learning technology, which generates the design plane according to the topological relationship of landscape elements, then vectorises the information of the plane elements, generates the 3D model and synchronously fine-tunes the parameters with Grasshopper, and quickly completes the whole process from the basic conditions of the site to the analysis of the model effect. The experimental results show that: (1) the system with the help of ai assistive technology can quickly generate a spatial green space programme that meets the designer's perspective on the basis of the site conditions (2) this study carries out vectorized extraction and three-dimensionalisation based on semantic information for a variety of types of landscape design elements (3) the analysis and visualisation module constructed in this study can carry out landscape analysis of the generated three-dimensional model and generate the node effect diagrams, which allows the users to modify the design in real time according to the effect, which improves the interactivity of the system.

Keywords: generative design; GAN; 3d

SHORT ORAL PRESENTATIONS
Projecting the Process: Monitoring, Assessment & Applications

Revealing Relationship between Environmental Features Combinations and Cultural Ecosystem Benefits

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Urban green spaces have been proven to play an essential role in providing varied cultural ecosystem benefits (CEBs) related to the well-being of the urban population; this includes aiding in the framing of identity, equipping capabilities, and enabling experiences that improve mental and physical health, especially during the COVID-19 pandemic. With an increasing number of people living in cities, the demand for these CEBs is rapidly growing. Concurrently, the replacement of certain urban green spaces by lands with greater economic value is a noteworthy trend. This situation leads to the imperative question of how to optimize CEBs through design and management, given the limited availability of UGS in an urban sprawl context. However, due to the limitations of traditional statistical methods, almost no research has focused on the combinations of features on CEBs, despite their importance. This is because people's evaluation of environmental features in real life does not depend on a single physical feature. Instead, all CEBs require the engagement of human senses and brain activity to interpret information offered by the various features of ecosystem components and structures.

In this study, we employ a novel framework that combines the ability of Public Participation Geographic Information Systems (PPGIS) to yield a large amount of spatial data with the high predictive power of multiple machine learning models, aiming to address the following research questions to fill the presented knowledge gaps:

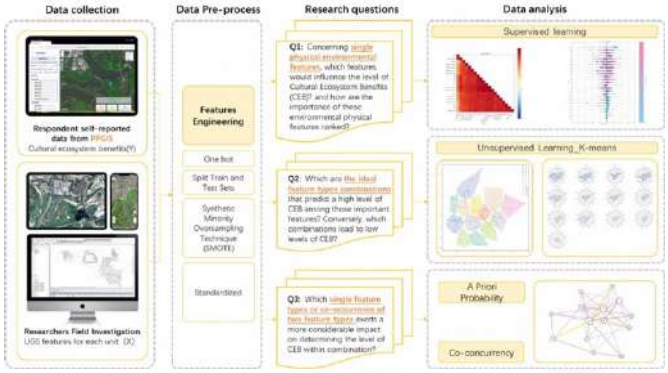
(1) Which is the optimal supervised and unsupervised machine learning model for predicting CEBs through environmental physical features on the site scale?
(2) Which features are more important for predicting CEBs based on the most suitable supervised ML model?
(3) What are the ideal feature combinations that predict a high level of CEB among those important features? Conversely, which combinations tend to lead to low levels of CEB?
(4) Within these combinations, which single feature types or pairwise feature types exert a more considerable impact?

PPGIS data was collected from 1,451 visitors of Haizhu Wetland Park in Guangzhou, the

largest urban wetland park in China, to measure their spatial CEBs. We then applied supervised and unsupervised machine learning methods to identify the most important features and the optimal feature combinations for predicting CEBs. We also used prior probability calculation and co-occurrence analysis to visualize the key feature types in different combinations. We found that aesthetically pleasing, restorative scenes that are naturally open, with water views, serene and suitable for walking or resting, were most appreciated. Our data-driven approach is objective, automatic, and scalable. The use of this workflow makes it possible to predict CEBs based on environmental physical features with high accuracy and a small amount of data at the site scale, thus providing planners and policymakers with a visualization and pre-test framework for comparing upcoming UGS design strategies, as well as for prioritizing strategic interventions. All of these would provide strong evidence for evidence-based design and scientific decision-making, so as to design and manage UGS in such a way that optimizes the CEBs they provide

Keywords: Cultural ecosystem benefits(CEB),Cultural ecosystem services(CES), Machine learning(ML),Public participation geographic information system (PPGIS),Evidence-based design

Graphic abstract



Policy-driven brownfield transformation in declining mining cities in China

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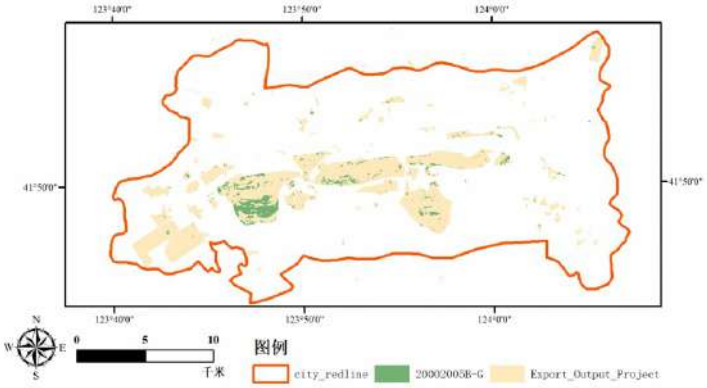
This study investigates the transformative characteristics and driving factors of brownfield sites in declining mining cities in China, with a focus on the implementation and impact of administrative policy. Taking the city of Fushun in Liaoning Province as a case study, this research is anchored in the examination of the city's first round of "General Plan for Mineral Resources of Fushun (2001-2010)" to understand the characteristics and mechanisms of brownfield regeneration in China's Declining Mining Cities under the related policy context. Through the application of ENVI's unsupervised classification method, Landsat7 ETM remote sensing data for the central urban area of Fushun from the years 2000, 2005, and 2010 were analyzed to capture the temporal shifts in urban land migration. The study identifies changes in land use by marking the increase in vegetation as an indicator of brownfield regeneration and ecological restoration success within the industrial and mining brownfield scopes. A systematic review of relevant literature facilitated the establishment of an index system for influencing factors, while principal component analysis was employed to explore the specific mechanisms affecting brownfield regeneration transformation.
The findings highlight a phased disparity in the implementation of policies aimed at brownfield regeneration and ecological restoration in mining-depleted cities. Between 2000 and 2005, a policy short term phase, 2 km^2 of brownfield was converted into green space, predominantly within large core brownfield plots. Conversely, from 2005 to 2010, in a policy long term phase, an additional 14 km^2 of brownfield underwent transformation into green spaces, with these changes not confined to large core areas but rather distributed widely across all urban brownfields. The differentiation in outcomes is attributed to the objectives and descriptive characteristics of policy phases; meanwhile, urban economic factors and temperature have been proven to have a relatively significant correlation with the phenomenon of brownfields being transformed into green spaces. This study provides critical insights into the policy-driven regeneration of brownfield sites in the context of China's declining mining cities, offering a basis for future policy formulation and implementation strategies in similar urban settings.

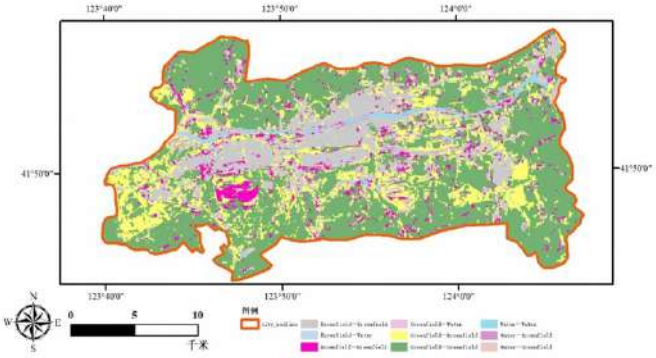
Keywords: Declining Mining Cities, Brownfield Regeneration, Remote Sensing, Socioeconomic Factors

Brownfield to Greenfield Conversion



The image illustrates the distribution of new vegetation growth within all the brownfield sites in the study area.

Urban Land Use Transition Map



The image depicts the transition of urban land use in the study area over the decade from 2001 to 2010.

Principal Component Loadings Analysis

		Principal Component	
	1	2	3
GDP(V1)	.791*	.417	.402
Total industrial output value (V2)	.762*	.383	.444
Number of industrial enterprises (V3)	-.587	-.316	-.573
Average temperature (V4)	.001	.455	-.717
Precipitation (V5)	.668	.346	-.004

Proportion of industry to GDP (V6)	-.730*	.583	.145
Number of industrial employees (V7)	.691	-.644	.035
Proportion of services to GDP (V8)	.867*	-.175	-.258
Number of service sector employees (V9)	.865*	-.406	-.088
Per capita urban road area (V10)	.899*	.372	.073

The study employs the statistical method of Principal Component Analysis to explore the socio-economic indicators that drive the transformation of brownfields into green spaces. The table displays the correlation between these indicators and the area of new green spaces within the brownfields.

Construction of ROS of river beach IGS in mountain city

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[Objective] As a special type of informal green space (IGS) with important recreational value in mountain city, river beach is one of the main space carriers for residents to carry out waterfront activities and enhance the characteristic recreational experience of mountain city, which has become a popular recreational destination in recent years. In the face of the current surge in recreational demand, there exists contradiction in the use of river beach. In order to explore the rational utilization of river beach IGSs, it is necessary to identify and classify them from the perspective of recreation opportunity.
[Methods] First, on the basis of reviewing relevant literature, this research clarifies the definition of river beach IGS in mountain city. Next, the research selects 20 spatial units of river beaches with the most concentrated recreational resources and recreational behavior in the range of two rivers and four banks in Chongqing. Based on the existing research, the environmental status of river beach and the big data of social media, the recreation opportunity index system of river beach IGS in mountain city is preliminarily established by qualitative analysis. The research conducts a field investigation of each spatial unit and sends questionnaires to recreation participants to explore the importance evaluation of environmental variables based on their personal recreation experience. Finally, this research carries out a factor analysis on questionnaire data to extract key environmental factors that best represent the characteristics of the recreation environment, which are superimposed with the environmental conditions, activity information and experience results of each spatial unit to divide the types of the recreation environment of river beach, based on which the research constructs a comprehensive recreation opportunity spectrum (ROS).
[Results] 1) The research identifies four types of recreation environments of river beach IGS (natural experience type, daily life type, humanistic characteristic type and urban tourism type) and corresponding characteristics. 2) The recreation opportunity spectrum and map of river beach IGS in the two rivers and four banks of Chongqing are constructed based on four environmental types and ten environmental factors. 3) This research proposes optimization strategies to improve the quality of the recreation environment of river beach from both the overall and classified dimensions.
[Conclusion] This research discusses the definition and characteristics of rive beach IGS in mountain city, identifies four types of recreation environments, including natural experience type, daily life type, humanistic characteristic type and urban tourism type, constructs the recreation opportunity spectrum of river beach IGS in Chongqing, and puts forward feasible suggestions for the planning, construction and management of river beach IGS in mountain city and surrounding areas from the perspective of improving recreation experience. This research is of important reference significance for

improving the blue and green space system of mountain city dominated by formal green space and supplemented by IGS, and also expands the application scope of IGS and the research on ROS.

Keywords: landscape architecture, informal green space (IGS), recreation opportunity spectrum, river beach, Chongqing

Schematic diagram of the river beach in mountain city

SHORT ORAL PRESENTATIONS
Building Bridges, Breaking Barriers: Education & Practice

Landscape planning pedagogy based on Chinese traditional landscape painting

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More and more new technologies allow landscape architects to use external equipment such as cameras and drones to enhance their ability to observe sites and gain an unprecedented range of vision. However, clear and accurate images or simulations do not equal a thorough understanding of the site,over-reliance on this kind of virtual experience will lose designers' keen observation and intuitive impulse. Contemporary humanist scholars reflect on the "Disenchantment" based on the mechanical view of nature and actively seek the "Re-enchantment" of nature. The teaching of this course introduces traditional Chinese landscape painting for teaching innovation and reform and attempts to inherit the Oriental philosophy of site investigation through the "Seven Observation Methods" by on-site walking and physical experience and to apply this integrity and uncertainty to planning and design. The course takes a scenic area of about 2 km2 in the West Lake Scenic Area in Hangzhou as the research object. The course lasts for 8 weeks and is divided into three stages of teaching. The first stage is "Landscape Painting Interpretation and Plan Translation", which uses plan translation to allow students to establish a preliminary connection between landscape painting and garden planning, and to interpret the density changes of contour lines from those undulating mountains. The second stage is the "Seven Observation Methods on-site experience", including "looking step by step", "looking at all aspects", "looking at one point", "looking far away", "looking closer", "axonometric projection", "combining six farness". The seven methods are interconnected and together constitute the overall perception of landscapes by ancient Chinese painters. Students try to use these observation methods to find the best landscape resources from nature, thereby clarifying the theme and functional positioning of the scenic spot, as well as the rhythm of spatial sequence, and finding reasonable experiential tour routes.
The third stage is "Planning into Painting", which guides students through technical planning and design, cleverly borrowing and optimally utilizing the site's scenic resources to create a picturesque scenery, and implement it on drawings and models in the form of traditional landscape painting expression. Landscape architecture has always been a discipline that integrates technology and art. The teaching of landscape architecture planning and design based on traditional Chinese landscape painting is a reflection and exploration of the inheritance of traditional culture and art. It uses the "Seven Observation Methods" to return to "Re-enchantment" and uses the approach of landscape painting to express the land investigation and planning results, and draws a natural landscape painting suitable for contemporary people's life and tourism.

Keywords: Re-enchantment, Landscape painting, Seven Observation Methods, Planning Pedagogy

Path of experiential learning education stimulating cultural services in rural-ecosystems

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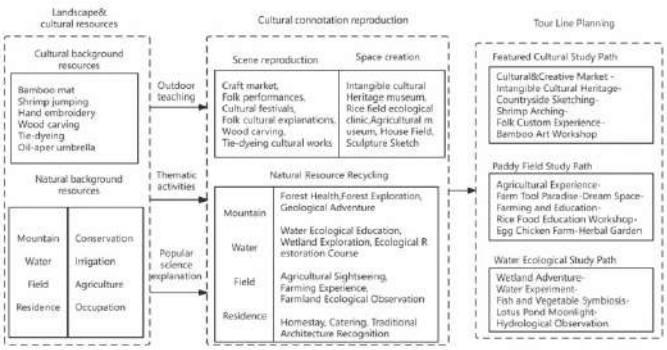
The rural ecological environment in China has formed a complex and overlapping relationship with traditional culture and modern civilization at different stages. Rural areas in China have great potential in improving the living ecological landscape. How to protect the rural ecological resources while using them as important carriers of cultural service value is an important practice for the revival of local culture. The revitalization and renewal of the value of rural cultural services can not only inherit cultural values, but also promote ecological protection and enhance the scientific literacy of villagers, achieving a harmonious integration of ecology and culture. Integrating child-friendly nature education and landscape architecture thinking, proposing strategies for revitalizing and renewing landscape resources in rural areas will be an important means to improve the living environment in rural areas in the future. Taking Daheping Village in Hunan Province as an example, this article conducts research on science popularization education practices in the context of rural landscape resource reconstruction. It examines the stock renewal of child-friendly experiential education from different perspectives such as cultural connotation, spatial pattern, basic supporting facilities, and tour route design. Combining educational and landscape architecture thinking, it provides new approaches to revitalizing and enhancing the value of cultural services in rural areas, serving as a new practical guidance paradigm for rural cultural revitalization.

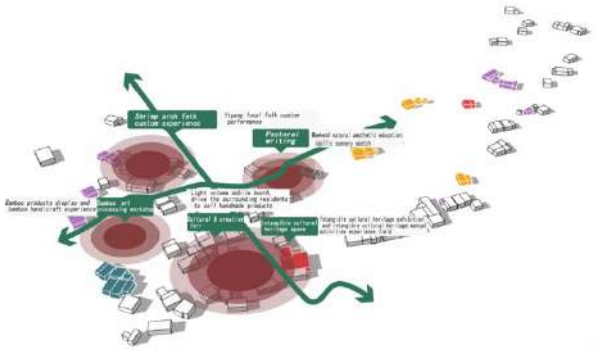
Keywords: Experiential Learning Education, Cultural Services, Rural Landscape

Analysis of Landscape and Humanistic Spatial Reconstruction Patterns

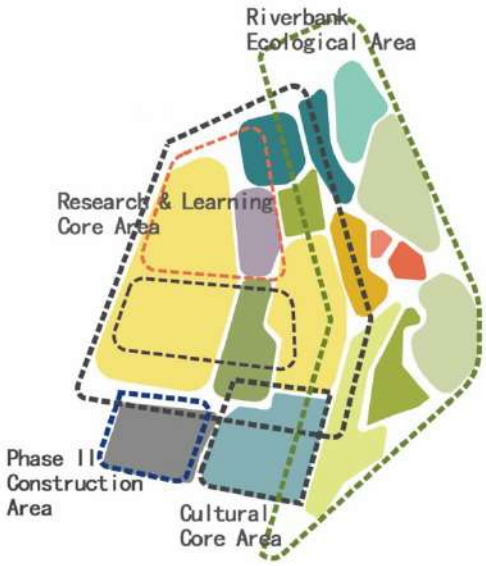


Architectural Strategy

Featured Cultural Study Path

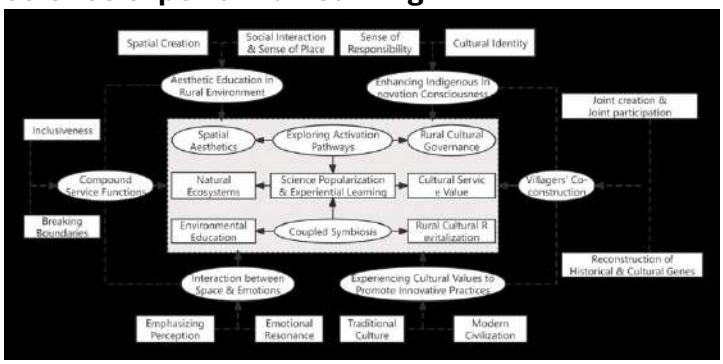


Functional Compound

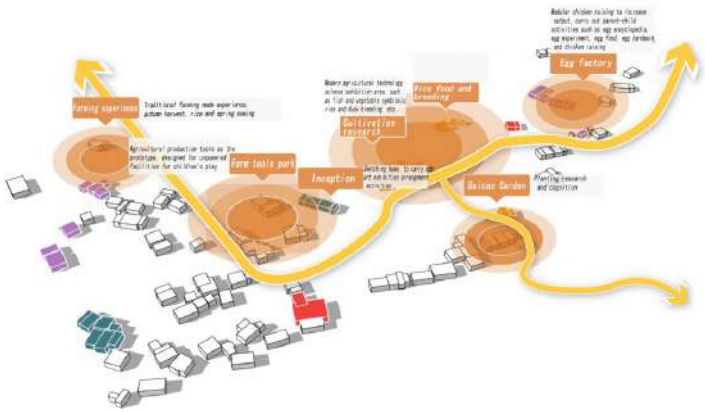


Functional Zone

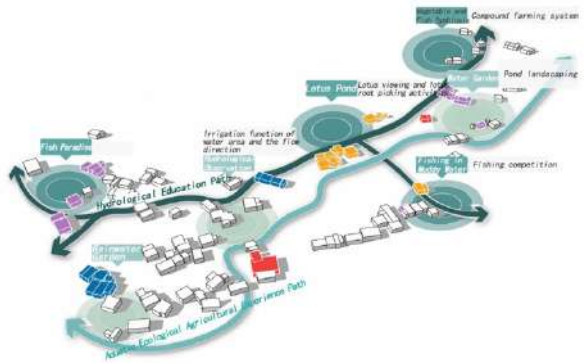
Mechanism for Activating the value of rural cultural services based on popular science experiential learning



Paddy Field Study Path



Water Ecological Study Path



Exploring the A&T Center through the "Phenomenology of Perception"

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This study is grounded in the " Phenomenology of Perception " and focuses on the Art and Technology Center of the National Taipei University of the Arts. In contrast to the conventional experiences in sensory design, we adopt Merleau-Ponty's viewpoint, recognizing that the meaning we attribute to the objective world varies based on individual spatial level and body experiences. Therefore, this research adopts a first-person perspective, experiencing space in its most primal state, and endeavors to alter the ontological spatial level within the same environment. This approach aims to perceive space from different orientations and derive meaning from these experiences.

Drawing on the four spatial perspectives of Phenomenology of Perception—spatial level, depth, motion, and subjective experience—we analyze and explore the impact of the Art and Technology Center's space, environment, and materials on users' spatial experiences.

By proposing different experiential approaches through altered spatial levels, this study aims to provide the Art and Technology Center with alternative perspectives on multisensory architecture and serve as a reference for future architectural design.

Keywords: Phenomenology of Perception, Sensory Design, Built Environment.

Potential of Antalya's urban landscapes regarding to environmental education

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While environment is regarded as all living and non-living components by which organisms are surrounded and effected; the environmental education is to provide that people appreciate the ecological system where they live in, broaden their concern how they can live in harmony with nature, actively participate in environmental problem solving.
The aim of this paper is to evaluate of landscape patterns in Antalya case, both on protected areas and urban green systems such as forests, natural macchia, sand dunes, wetlands, falezes classified in respect to their area size, accessibility, indicator plant species etc and to integrate in an environmental education by taking existing education programmes into account. An environmental education system that practically realised at site and based on nature protection will greatly support environmental awareness which would maintain conservation of nature and natural resources in long term.
As a methodology, literature review, field research and observation was conducted to evaluate the environmental education potential of Antalya's urban landscapes. By examining the existing literature containing the geographical, ecological and demographic characteristics of Antalya, a basic framework was created to understand what kind of opportunities the region offers in terms of environmental education. Then, environmental elements such as natural life, water resources, green areas and waste management was observed and documented by visiting different urban landscapes of Antalya. This stage would help to identify potential educational activities and analyse the current situation.
Based on the results of the study, it was concluded that Antalya's urban landscapes can play an important role in environmental education and contribute to the sustainable development goals. Moreover, it should be remembered that continuous evaluation, feedback and improvement processes are important for the success of an effective environmental education program. As a result, this study has created a basis for the evaluation of Antalya's urban landscapes in the field of environmental education and represented an important step for the protection and transmission of the region's natural and cultural heritage to future generations.

Keywords: Landscape, Environmental education, Antalya, Urban Landscape

Nature communication

Ana Ines Bajcura
Ana Ines Bajcura

NATURE – CULTURE – PRACTICE - COMMUNICATION – RESILIENCE
Every experience lived in nature during childhood remains forever. The importance of nature and culture contact.
Integrating past and present
Ancient knowledge.
Real and Virtual experiences.
Immediacy and nature time
Nature and technology.
Artificial inteligence.
Contact with nature, feeling it. Discover its colors, textures, smells, sounds, the transformation of the seeds....
The importance of encouraging nature learning depends on us.
Connecting with nature/Working with parents
What can we do for children learning?
Playing games, painting, storytelling stories, cultural walks, everything leads the awakening of the senses and deeper connection with human being... discovering preferences, we discover us.
Experience the sounds of the wind through nature.
Falling in love with nature
Parents, children and school.
Government policies/technological institutes/neigborhood, social club, school, religious community
Understanding the concept of the neigborhood landscape.
Between the orchard, mix and ornamental garden.
Latín american squares and football practice.
Urban landsdcape.
Rural landscape. Resilience and responsability for food.
Making bridges
Society and government. design and manage integrated programs: recreation, sports, garden practices, nature careness.
Culture of the place.
New generation of landscapers....

What next

Keywords: Nature, culture, practice, communication, resilience

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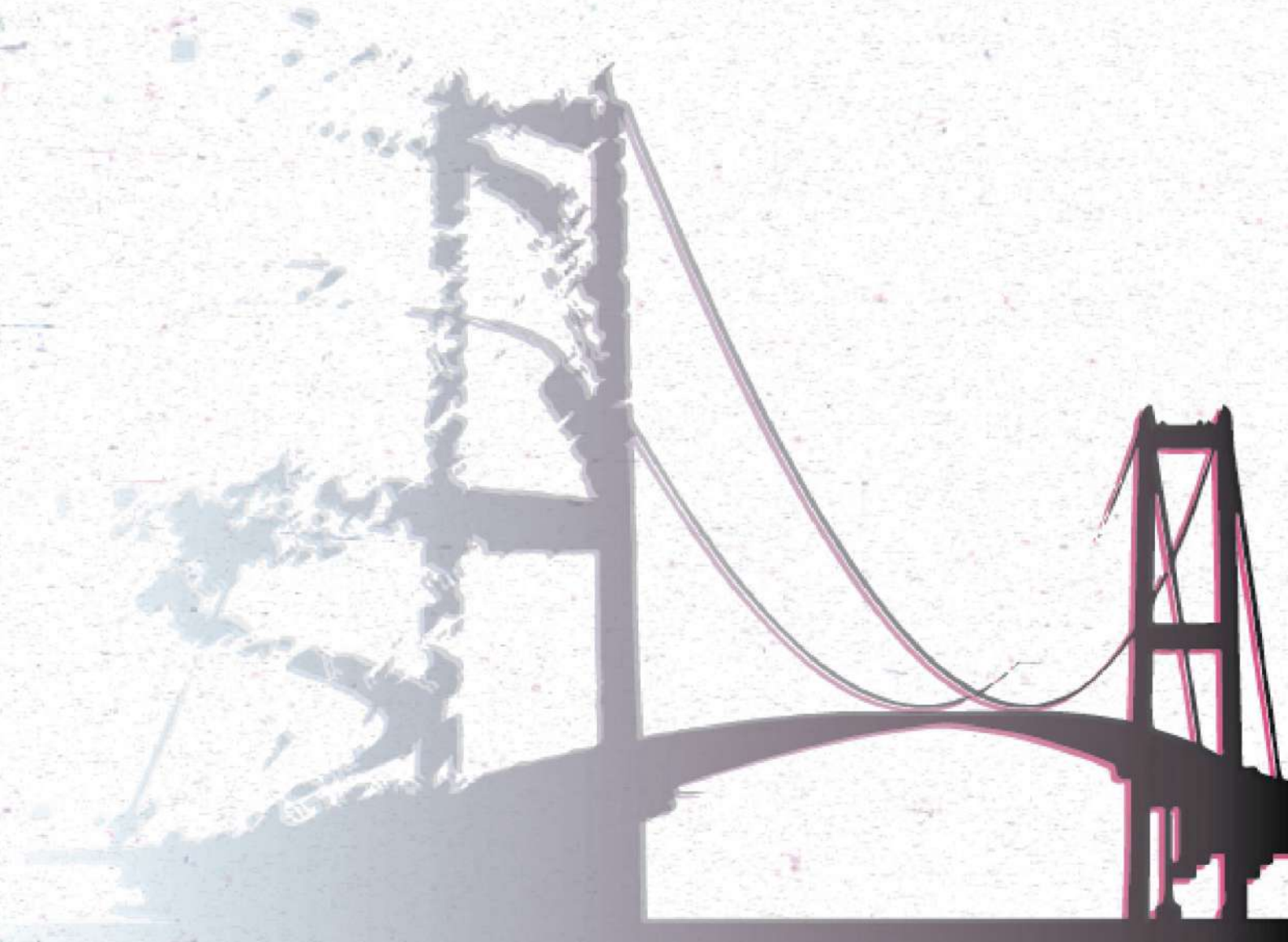

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