IFLA
INTERNATIONAL FEDERATION
OF LANDSCAPE ARCHITECTS

RE:PUBLIC LANDSCAPE

IFLA WORLD CONGRESS 2022

Academic Sub-Sessions Abstract Book

AUG. 31 - SEP. 2, 2022
GWANGJU, KOREA

광주광역시 GWANGJU CITY
(사)한국조경학회 The Korean Institute of Landscape Architecture
(사)한국조경협회 Korean Society of Landscape Architecture
(재)환경조경발전재단 Environment and Landscape Architecture Foundation

RE : PUBLIC
LANDSCAPE

Academic Sub-Sessions of the 58th IFLA World Congress

Theme: RE:VISIT, RE:SHAPE, RE:VIVE, RE:CONNECT
Date & Time: PM 2:00 - 5:00, Aug. 31 and PM 1:00 - 5:00, Sep. 1, 2022
Venue: 2F, Conference Room, KDJ Convention Center, Gwangju, Korea
Room #208, 210, 211, 212, 213 for Oral Presentation
Room #214 for Poster Presentation

Timetable of the Oral Presentations

Date	Time	ROOM 208 Hyeyoung Choi	ROOM 210 Keunhyun Park	ROOM 211 Joonhyun Kim	ROOM 212 Jisoo Sim	ROOM 213 Jaeho Lee
Day 1 Aug. 31	PM 2 - 3	RE:CONNECT 076 Tingting Huang 077 Frederic Dellinger 078 Yang Liu	RE:SHAPE 032 Dong Kyu Lee 033 Ahmed Haron 034 Reem Alissa	RE:VIVE 057 Hwa-hyun Seo 058 Ga-yoon Choi 059 Ioana Tudora	RE:CONNECT 079 Chi Zhang 080 Xiaoyang OU 081 Kevin Benham	RE:CONNECT 088 Myungjin Shin 089 Jae In Oh 090 Huaiyue Liang
	PM 3 - 4	RE:VISIT 015 Yeongseok Park 016 Yun Hye Hwang 017 Haotian Mai	RE:SHAPE 035 Yingshuo Lyu 036 Taehyeon Moon 037 Jungbin Lee	RE:VIVE 060 Jieun Park 061 Jooho Lee 062 Angelo Paulo Mogul	RE:CONNECT 082 Karol Kruk 083 Amin Habibi 084 Meiqi Li	RE:CONNECT 091 Youngho Ko 092 Zhiruo Liu 093 Lin Yuan
	PM 4 - 5	RE:VISIT 018 Jung-Hwa Kim 019 Jung-Hee Min 020 Seolin Kim 021 Monica Pallares	RE:SHAPE 038 Huamei Shao 039 Yuedong Wang 040 Keunhyun Park	RE:VIVE 063 Yuxian Chen 064 Doeun Kim 065 Morvarid Kabiri	RE:CONNECT 085 Yanqi Chen 086 So-yeong Park 087 Leixi Qian	RE:CONNECT 094 Xin Ai 095 Yonghoon Son 096 John Adekunle
Date	Time	ROOM 208 Youngmin Kim	ROOM 210 Yumi Lee	ROOM 211 Youngjoon Choi		ROOM 213 Kanokwalee Suteethorn
Day 2 Sep. 1	PM 1 - 2	RE:VISIT 022 Eunshin Son 023 Xu Bo He 024 Haein Lee	RE:SHAPE 041 Mei-Yee Teoh 042 Chuzhen Wang 043 Zipeng Song	RE:VIVE 066 Catherine Combe 067 Changhyun Lee 068 Lilan Jin		RE:CONNECT 097 Frederic Dellinger 098 Tambin Cho 099 Jeong-Yeon Lee
	PM 2 - 3	RE:VISIT 025 Hyeyoung Choi 026 Lin Zhang 027 Jinsun Lee	RE:SHAPE 044 Min Kim 045 Dan Zhao 046 Frederic Dellinger	RE:VIVE 069 Joonhyun Kim 070 Jihee Park 071 Nazri Ishak		RE:CONNECT 100 Yilei Wang 101 Youngjae Shin 102 Clara Kwon
	PM 3 - 4	RE:VISIT 028 Yeonsu Hamm 029 Liu Siyu 030 Quying Wang	RE:SHAPE 047 Valia Wright Sánchez 048 Lin Jin 049 Yaoxue Li	RE:VIVE 072 Dan Zhao 073 So Young Kwon 074 Katerina Gkoltsiou		RE:CONNECT 103 Su In Kim 104 Huajun Li 105 Yuexi Lang
	PM 4 - 5	RE:CONNECT 109 Lise Strand Hellström 110 Bokyung Kim 111 Indra Purs	RE:SHAPE 050 Yumi Lee 051 Sumin Lee 052 Mary-Ellen Tyler	RE:SHAPE 053 Duncan Denley 054 Alicia Wellsan 055 Aishwarya Deshpande		RE:CONNECT 106 Baysok Jun 107 Margaretha Giftania Vonta Nigalolon 108 Bruno Marques

*It may be subject to change.

1. Oral Presentation

RE:VISIT

AUG. 31, 2022
ROOM 208, PM 3:00 - 5:00
Session Chair: Hyeyoung Choi, Sungkyunkwan University

15 **Re-Designing the Blackhawk Village in Yongsan Garrison, Seoul, into a Public Park**
Yeongseok Park, Jeong-Hann Pae
16 **'City in Nature' and Landscape Architecture in Singapore**
Yun Hye Hwang, Ronnie Khiaw Yong Tan
17 **When "Energy" Became "Landscape": A Review Under the Theme of Landscape and Energy**
Haotian Mai, Hyeyoung Choi
18 **Crafting Urban Park Archives and Writing Landscape Architecture History: The Case of the Seoul Namsan Park Archives**
Jung-Hwa Kim, Jihye Gil, Hyeyoung Choi, Hee-Soung Park, Young-Ai Seo, Sang-Min Lee
19 **The Meaning of Korean Modern Landscape History of National Projects in Park, Chung-Hee Era**
Jung-Hee Min
20 **The Formation and Transformation of Joseon-Style Parks in North Korea, 1945-2021**
Seolin Kim
21 **Broadening Our Understanding of Landscape Architectural Practice Around the World**
Mark Arigoni, Monica Pallares

SEP. 1, 2022
ROOM 208, PM 1:00 - 4:00
Session Chair: Youngmin Kim, University of Seoul

22 **Strategies for Conserving and Utilizing 'Negative Heritage' in Korea Through Preemptive Public Conflict Management**
Eunshin Son, Youngran Kwon, Chirlho Youm
23 **Conservation of University Campus Heritage Landscape (UCHL): A Case Study in China**
Xu Bo He, Nor Atiah Ismail, Sumarni Ismail, Noor Fazamimah Mohd Ariffin
24 **Study for Legislation of the Standard Contract for Landscape Architecture Design**
Haein Lee, Minwoo Lee, Younsun Hue
25 **The Importance of Archiving: Yongsan Family Park as the First Implementation of Yongsan Park**
Hyeyoung Choi, Jihye Gil, Jung-Hwa Kim, Hee-Soung Park, Young-Ai Seo, Sang-Min Lee
26 **Research on the Morphological Changes of Historical Towns and the Protection of Cultural Landscape Heritage on the Transnational Cultural of Wanli Tea Route Based on GIS**
Lin Zhang
27 **Towards More Efficient Translation of Design Into Construction: in the Case of Dongtan Park's Water Ribbon**
Jinsun Lee, Haein Lee
28 **Residents' Perception of the Purple Scenery of Banwol and Bakji Island**
Yeonsu Hamm
29 **Interpretation of City Beautiful Movement in China with a Perspective of Drosscape**
Liu Siyu, Hyeyoung Choi
30 **Future Proof Designed Urban Green Space in Perspective of Pandemic-Resilience City**
Quying Wang, Nerantzia Tzortzi

RE:SHAPE

AUG. 31, 2022
ROOM 210, PM 2:00 - 5:00
Session Chair: Keunhyun Park, University of British Columbia, Canada

32 **Strategies for Creating Net-Zero Villages to Respond to Climate Change**
Dong Kyu Lee, Byung Chul An

33 **The Role of Constructed Wetland Park in Reshaping Sewage Plant Green Belt Case Study of 10th of Ramadan City, Egypt**
Ahmed Haron, Hind Mostafa

34 **Conocarpus: A Holistic Assessment of This Monoculture in Kuwait's Urban Landscape**
Reem Alissa

35 **Influence of Forest Landscape Pattern on Flood Mitigation**
Yingshuo Lyu, Xi Zheng

36 **Coastal Landscape Preference of Offshore Wind Farms Using Virtual Reality**
Taehyeon Moon, Min Kim, Jinhyung Chon

37 **Dams at the Time of Climate Crisis: Redesigning Damscape Through 28 Dams in Korea**
Jungbin Lee, Haein Lee, Hoyoung Lee, Yeongcheol Byeon, Byunghun Son, Jaewook Lee

38 **Different Types of Green Infrastructure to Mitigate Urban Heat Island: A Bibliometric Analysis in CiteSpace**
Huamei Shao, Gunwoo Kim

39 **The Effects of Urban Impervious Surface on Heat-Related Threats: A Case Study in Seoul, South Korea**
Yuedong Wang, Guangxi Shen, Lei Zhu, Yingnan Li

40 **Re-Designing Suburbia with Nature: Evaluating Green Space Changes in Sprawl Retrofitting Projects in the U.S.**
Keunhyun Park

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Session Chair: Yumi Lee, Seoul National University

41 **Climate-Led Urban Landscape Planning: A Simulation Data-Driven Analytics, Design and Decision-Making Process for Ipoh, Malaysia**
Mei-Yee Teoh, Michihiko Shinozaki, Kei Saito, Ismail Said

42 **Green Space Optimization of Climate-Adaptive Campus Based on Accounts and Spatial Distribution of Carbon Source/Carbon Sink: A Case Study of Beijing Forestry University**
Chuzhen Wang, Xiong Li, Chi Zhang

43 **Quantifying Residential Quarters Greening Coverage Threshold from Thermal Comfort and Energy Saving Perspective**
Zipeng Song, Dongli Lin, Yuhan Zhang, Yingnan Li, Zhaowu Yu

44 **Coastal Landscape Planning for Reducing Flood Vulnerability**
Min Kim, Jiku Lee, Taehyeon Moon, Jinhyung Chon

45 **Role of Species and Planting Configuration on Microclimate for Urban Trees**
Dan Zhao, Weili Ji, Jun Cai

RE:SHAPE

46 **The Schools in Guadeloupe of the 1930s in a Tropical Situation, a Model of Resilience to Heat Waves and Natural Risks**
Frederic Dellinger

47 **La Duna Skatepark, New Sports Seedbed on the Northern Border, México**
Valia Wright Sánchez

48 **The Practices and Potentials of SITES Rating System for Landscape Design: A Case Study of Chicago Navy Pier**
Lin Jin

49 **Analysis of Effects of Sponge City Projects Applying the Geodesign Framework**
Yaoxue Li, Youngmin Kim

50 **Landscape Digital Twin as a Construction Platform that Connects Virtual and Real**
Yumi Lee

51 **Collaborative Process Using BIM Software in the Site Design Project**
Sumin Lee, Minyoung Cha, Yumi Lee

52 **Designing Ecohydrological Connectivity at a Regional Landscape Scale**
Mary-Ellen Tyler

SEP. 1, 2022
ROOM 211, PM 4:00 - 5:00
Session Chair: Youngjoon Choi, Seoul National University

53 **Designing Terra: The Sustainability Pavilion, Dubai EXPO2020**
Duncan Denley

54 **Ecology and Environmental Preservation Key Performance Indicator Analysis: Nusantara, Indonesia's New Capital City as a Case Study**
Alicia Wellsan, Zaki Maharani

55 **An Evaporating Buffer – Salt Pans Ecosystem of Mumbai**
Aishwarya Deshpande

RE:VIVE

AUG. 31, 2022
ROOM 211, PM 2:00 - 5:00
Session Chair: Joonhyun Kim, Gawon Landscape Architects

57 **Suggestions for Gardens of South Korea Cities in the New Normal Era**
Hwa-hyun Seo

58 **Mobility Change Around Neighborhood Parks and Green Spaces Before and After the Outbreak of the COVID-19 Pandemic**
Ga-yoon Choi, Yong-gook Kim

59 **Revive, Reuse, Recover – Communal Spaces and Gardening During the Pandemic in a Socialist Housing Neighbourhood: Drumul Taberei, Bucharest**
Alex Axinte, Ioana Tudora

RE:VIVE

60 **The Impact of Park Accessibility on the Sales of Commercial Districts During COVID-19 in Seoul, Korea**
Jieun Park

61 **Analysis of the Satisfaction and Importance of Urban Parks Post-pandemic Using Big Data – Focused on Seoul Forest**
Jooho Lee, Jessica Tavares Machado, Gunwoo Kim

62 **Planning Healthy & Efficient Cities Through the Healthy Urban Community Assessment Index**
Angelo Paulo Mogul

63 **Humanistic Interpretation of Community Open Space Revitalization: From Perspective of Everyday Aesthetics**
Yuxian Chen, Daixin Dai

64 **Perceived Naturalness Framework and Human Perception of the City Park: Case Study of Ansan City**
Doeun Kim, Yonghoon Son

65 **An Assessment on the Effects of the Environmental Psychology Characteristics of Urban Public Spaces on Users' Satisfaction During COVID-19 Pandemic, Focused on the Olympic Park**
Morvarid Kabiri, Gunwoo Kim

SEP. 1, 2022
ROOM 211, PM 1:00 - 4:00
Session Chair: Youngjoon Choi, Seoul National University

66 **Everyday Storytelling as a Design Tool for Daily Lives Places, Two Practical Examples**
Catherine Combe

67 **Analysis of Network Characteristics of Young People Who Migrated to Local Cities and Their Impact on Local Communities: Focusing on the Gongju City**
Changhyun Lee

68 **Perceived Urban Community Resilience Through Green Infrastructure Performance – A Case Study of Small-Scale Urban Regeneration Project**
Lilan Jin, Garam Kim, Junga Lee

69 **Sketching Trees and Landscapes: The Effect of Manual Drawing of Natural Landscape on Emotional Affinity Toward the Natural Environment**
Joonhyun Kim

70 **A Study on the Types and Spatial Characteristics of Running as a Daily Lesiure in Urban**
Jihee Park

71 **Putrajaya Steps: An Alternative for Healthy Urbanism in Embracing the Necessitate of The New Urban Lifestyle**
Wan Fakaruddin Wan Ab Aziz, Nazri Ishak, Muhammad Shamsul Ibrahim, Mohd Azmi Wan Sulong, Zamani Zulkifli

72 **Regression of Street Aesthetics: Urban Pedestrian Space Design Based on Machine Vision Recognition**
Dan Zhao, Jun Cai

73 **Developing SikMul MyeongSang, an Art-Based Interdisciplinary Public Program Using Plant Imagery Meditation**
So Young Kwon

74 **Landscape Architect's Approach Towards Greener and Healthier Cities: The European Case Study**
Katerina Gkoltsiou

RE:CONNECT

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ROOM 208, PM 2:00 - 3:00
Session Chair: Hyeyoung Choi, Sungkyunkwan University

76 **Exploring the Effects of Past Landscape Changes on Aesthetic Landscape Value in Beijing Shallow Mountainous Areas**
Tingting Huang, Wei Liu, Meiqi Li, Sha Li, Jianning Zhu

77 **An Operational Governance Tool to Manage Urban Brownfields in Saint-Etienne, France**
Frederic Dellinger

78 **The Construction and Practical Application of Rural Landscape Performance Evaluation Index System**
Yang Liu, Xi Zheng

AUG. 31, 2022
ROOM 212, PM 2:00 - 5:00
Session Chair: Jisoo Sim, Korea Research Institute for Human Settlements

79 **Research on Green Space Construction with High Carbon Sink Efficiency at Urban Edge Based on CFD (Computational Fluid Dynamics) Software Carbon Flow Simulation: An Example of Green Space at the Edge of Yizhuang New City, Beijing**
Chi Zhang, Xiong Li, Chuzhen Wang, Xinyan Huang, Jiaying Li, Fangzhi Zhan

80 **Integrated Multi-Hazard Risk to Social-Ecological Systems with Green Infrastructure Prioritization: A Case Study of the Yangtze River Delta, China**
Xiaoyang Ou, Yingshuo Lyu, Yang Liu, Xi Zheng

81 **Mile Long Burn: Increasing Biodiversity Through Disruptive Ecologies and the Act of Erasure**
Kevin Benham

82 **Learning from Parks**
Pascal Posset, Karol Kruk

83 **Applying BGIs Design Approaches to Reconnect Humans and Nature in Lost Spaces of a Residential Complex**
Ghazal Verdizadeh, Amin Habibi

84 **Construction of Township Green Space Pattern from the Perspective of Ecological Recreation**
Meiqi Li, Bin Shan

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85 **The Analysis of the Health Characteristic of Smellscape in Chinese Traditional Gardens**
Yiwei Chen, Yanqi Chen
86 **The Aesthetic Experience of Urban Street Trees**
So-yeong Park, Jeong-Hann Pae
87 **The Existence and Construction of Urban Wilderness from the Perspective of Human Settlements**
Leixi Qian

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Session Chair: Jaeho Lee, University of Seoul

88 **Using Q-Methodology as a Public Engagement Tool for the Yongsan Park Project in Seoul**
Myungjin Shin, Jung Hyun Woo, Hyeyoung Choi
89 **Green Gentrification and Redlined Neighborhoods in Major Cities of Midwestern United States**
Jae In Oh
90 **Enhancing the Bond Between the Land and Their People: Ancient Wisdom from Traditional Public Space System of Jinhua Area, China**
Huaiyue Liang
91 **The Age-Friendly Community for Korean Seniors: Policies & Practices**
Youngho Ko, Seungyeon Han
92 **Ecological Landscape Planning and Design Based on Natural Enemy Insect Habitat**
ZhiRuo Liu, Hao Yin
93 **Networking Approach for Historic Urban Landscape in the Porcelain Capital of China**
Ding He, Lin Yuan
94 **Multifunctional Green Infrastructure Planning Framework Based on Ecosystem Service Hotspot Identification in Miyun District, Beijing**
Xin Ai, Xi Zheng
95 **Exploring the Nature Appreciation in a City: Instagram Post Data Analysis**
Yonghoon Son
96 **Remote Sensing as a Tool for Socio-Cultural Diversity and Inclusiveness in Reconnecting Sub-Saharan Africa Protected Areas – Nigeria in Perspective**
John Adekunle, Xiao-lan Tang

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ROOM 213, PM1:00 - 5:00
Session Chair: Kanokwalee Suteethorn, Chulalongkorn University, Thailand

97 **Challenge of Conceiving a Botanical Garden in New Caledonia in a Post-colonial Context**
Frederic Dellinger, Anne-Cecile Romier
98 **Interpreting the 'Garden' in Singapore's Urban Development: Focusing on the Changing Slogans**
Tambin Cho, Jeong-Hann Pae

RE:CONNECT

99 **Measuring Aesthetic and Restorative Values of Ecological Landscape Using Eye-Tracking Technology**
Jeong-Yeon Lee, Qian Wang, Hyung-Sook Lee

100 **'Eight Sceneries' – Carriers of Inheriting Urban Context: Case Study of Luoyang City, China**
Yilei Wang, Chi Gao

101 **Tackling Green Inequity in Urban Neighborhoods: On Creating Empirical Green Network Plan in Southwest Seoul**
Youngjae Shin, Haein Lee, Hoyoung Lee, Byungdoo Youn, Uijun Song

102 **Navigating Race-Based Inequity Through Design: The City of Atlanta's First Municipal Food Forest Park**
Clara Kwon

103 **Optimization of Landscape Planning in Downtown Seoul Using Generative Design**
Su In Kim, Jeong-Hann Pae

104 **Furun Mini Natural Playground – A Nature-Friendly and Child-Friendly Design in High-Density Communities**
Huajun Li, Xiangdu Bu, Jian Liu, Xianfeng Li

105 **Rewilding the High-Density but Low-Accessibility Urban Open Space: Case Study in Beijing Core Area**
Yuexi Lang, Fei Xue, Ao Bian, Song Li, Chuyue Wang, Yue Cao, Chuyu Xia

106 **Understanding Segregation of Adjacent Village Residents' Perception of Upo Ramsar Wetland Based on Semi-Constructed Interview**
Baysok Jun, Yonghoon Son

107 **Inclusive Friendly Character Education: A Conceptual Framework Establishing Educational Diversity from the Cosmology of Javanese Traditional House**
Margaretha Giftania Vonta Nigalolon

108 **Envisioning Culturally-Oriented Therapeutic Landscapes within Hospital Settings**
Bruno Marques, Jacqueline McIntosh, Maisie Heckett

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ROOM 208, PM 4:00 - 5:00
Session Chair: Youngmin Kim, University of Seoul

109 **The Child's Rights Impact Assessment in City Planning**
Lise Strand Hellström

110 **Transforming a Solar Energy Power Plant into an Urban Park: Focusing on the 'Sun Garden' Project in Solaseado**
Bokyung Kim

111 **Visions and Innovations of Constructed Nature in Riga**
Indra Purs

2. Poster Presentation

RE:VISIT

113 **Topography as Urban Spectacle: A Critical Review of the Transformation of Mountainous Ferry Landscape in Old-Town Chongqing, China**
Liran Chen

114 **Landscape Change of War Memorial Parks in UK Analysis of Four Case Studies**
Yanjun Dong, Congwei Wang

115 **New Design Encoded Traditional Place**
Younghyun Noh, Hyobhin Lee, Moohan Kim

116 **Retrace the Scenery in Historical Memory: Study on the Landscape Image of West Lake Literature in "West Lake Novels" of Ming and Qing Dynasties**
Hao Wang, Huaiyue Liang

117 **Using the Data-Driven Method to Explore the Ambiguous Urban Landscape Heritage: 100 Urban Open Space Cases in Milan, Italy**
Mingze Chen, Ruilin Sun, Yaxin Wang, Yingwen Yu

RE:SHAPE

119 **Social Resilience Toward Urban Landscape: A Way to Sustain the Physical-Semantic Existence of the City**
Azarnush Amiri

120 **The Lawton-Collins Quay: Designing a Resilient Public Space to Manage Sea Level Rise Risks in Cherbourg-En-Cotentin (France)**
Céline Cherchar, Geoffrey Clamour

121 **Critical Review and Recommendations for Landscape Planning and Design of Coastal Cities**
SaMin Han

122 **A Study on the Optimization Design of Smart Infrastructure and Green Infrastructure that Can Respond to the Era of Climate Change**
Jaekyoung Kim, Zheongzun Yi, Junyoung Cho, Seunghun Baek, Junsuk Kang

123 **The Effect of Urban Forests on the Improvement of Atmospheric Environments Using Microclimate Simulation**
Ju-Eun Kim, Jeong-Min Son, Uk-Je Sung, Jin-Kyu Min, Jeong-Hee Eum

124 **A Study on Revitalizing the Urban Square with the Reinforced 'Interactivity' of the Media Art**
Lee-Kyung Kim, Hee-Eun Kim

125 **A New Workflow of Quantifying and Comparing Designed Streetscape Quality: Integrating Street View Imagery and Computer Vision Technology into Design Process**
Qiwei Song, Meikang Li

126 **Atribute to My Hometown**
Jingxi Liu

127 **Assessing Resilience of Stream Ecosystem to Rainfall: Comparing Water Quality System Performance Between Reference and Damaged Stream Ecosystems**
Yujin Park, Sang-Woo Lee, Se-Rin Park, Junga Lee

RE:SHAPE

128 **Online Assessment of Landscape Performance of Healthcare Related Plant Farms: Tool Availability and Accessibility**
Jihoon Song, MD Rakesur Rahman, Junga Lee

129 **Suitability Analysis for Green Infrastructure Planning Response to Fine Dust Pollution in Resilient Urban Areas**
Youngsun Seok, Eunju Ji, Junga Lee

130 **Island as Campus: Juxtapositional Urbanism of Guangzhou Xiaoguwei Island from 2000 to 2016**
Yuxuan Sun

131 **Development of an APP for Thermal Sensation Map Utilizing Citizen Participation**
Uk-Je Sung, Jin-Kyu Min, Ju-Eun Kim, Jeong-Min Son, Jeong-Hee Eum

132 **Touch the Water Promenade**
Mateo Yang

RE:VIVE

134 **Landscape Strategy to Maintain the Stability of Ecological Environment under the Condition of Climate Change – Taking the Measures on Climate Change in Sheffield City as an Example**
Yanjun Dong, Congwei Wang

135 **Critical Issues of Landscape Architecture from the Perspective of Public Health in the Post Epidemic Era**
Ming Gao, Xinting Cheng, Xun Zhu

136 **Media Strategies for Changing the Urban Landscape**
Morteza Hemmati

137 **Metaverse a Tool to Change Perceptions of Urban Audience**
Morteza Hemmati

138 **Educating Inventor/Designer for Smart Urban Design Linking to Invention of Patent: A Qualitative Study in Korean Undergraduate Landscape Design Program**
Myeong-Jun Lee

139 **Streetscape Renewal in Art Districts Based on Spatial Syntax: A Case Study in Beijing**
Ruiqi Pan, Xi Zheng

140 **Return to Nature**
Shixian Shen, Yang He

141 **Touching the Intangible Landscape Heritage: Revive Urban Lifestyles Based on Virtual and Augmented Reality Technologies**
Mingze Chen, Yingwen Yu, Yaxin Wang, Ruilin Sun

RE:CONNECT

143 **Benefits of a Wooded Campus: What is the Value of Trees at Kangwon National University, Chuncheon, Korea?**
Hyeong-Uk Ahn, Hye-Jin Jo, Yun-Eui Choi

144 **Spatial Analysis of Cultural Landscape of Markam Salt Field in Tibet from the Perspective of Landscape Ecology**
Chen Chen, Tong Xu

145 **Quantification and Evaluation: A Study on the Benefits of Urban Park Cultural Ecosystem Services Based on Social Media Text Mining**
Xinting Cheng, Ming Gao, Xun Zhu

146 **The Application of Ecosystem-Based Disaster Disaster Risk Reduction for Urban Storm and Flood Disasters in China**
Daixin Dai, Mingyang Bo, Junjun Mao

147 **A Study on the Change in Visitor Perception After Designating an Agricultural Heritage Using Big Data**
Jee Yoon Do, Myeong Cheol Jeong, Ki Chun Seo

148 **Assessing the Foundations of the Relationship Between Human and Nature in Ecology and Landscape Discipline**
Morteza Hemmati

149 **Changes on Ecosystem Services of Agricultural Area of Saemangeum**
Seungjoon Lee, Choonghyeon Oh

150 **Neighbour's Neighbor**
Su Jeong Lee, Moohan Kim

151 **Adaptational Landscape: Korean Traditional Agricultural Landscape of Uiseong-gun**
Yoo-Jick Lee, Seung-hye Lee

152 **New Urban Farms in Lyon to Develop Short Supply Chain and Provide Organic Vegetables for the Local Schoolchidren**
Anne-Cecile Romier, Frederic Dellinger

153 **Inheritance and Activation of Rice Paper Culture: Taking the Planning of Rice Paper Town in Anhui as an Example**
Shixian Shen, Liujun Yuan, Yang He

154 **Establishment and Application of an Analysis Scheme for Wind Corridor Forest Plans**
Jeong-Min Son, Ju-Eun Kim, Uk-Je Sung, Jin-Kyu Min, Jeong-Hee Eum

155 **A Study on the Connection Between Urban Agricultural Land and Green Space from the Perspective of Land Use Changes**
Mamiko Tanaka

156 **Belonging-Edge-Belonging**
Jong Eun Yang, Moohan Kim

1. Oral Presentation

RE:VISIT

Re-Designing the Blackhawk Village in Yongsan Garrison, Seoul, into a Public Park

After the decision in 2003 to relocate the United States Forces Korea(USFK) Yongsan Garrison to Pyeongtaek, which was followed by the announcement of the national urban park construction on the emptied site in 2005, the Special Act on the Creation of Yongsan Park was established in 2007. Yongsan Park Project is underway accordingly; the Park will convey historical, ethnical, and cultural significance while providing space for leisure and nature for all Korean citizens. After the Yongsan Park Scheme was finished in 2018, the Blackhawk Village, originally part of the United States Forces Korea Yongsan Garrison in Seoul, was returned to the Korean government as initial stage in the return process for the entire garrison site. It was subsequently opened for public access in August 2020.

The Blackhawk Village was used as housing for officers, with 18 buildings on 52,100m2 land. The design challenge was that although some structures were remodeled prior to public access, spatial programs and facilities for the public was not considered. With the previous residential functions terminated, this public space was opened without substantial planning. Although it received increased number of visitors after the site gained popularity on social networks.

Based on the 14-people Focus Group Interview and mobile-based survey of 1,000 participants, ideas for redesigning the site were collected. Based on the survey results, we redefined the buildings into visitor facility, exhibition space, open space, and four age-specific clusters. We also planned a community garden, the central green space, that can bridge the clusters.

The visitor facility provides guide program for the overall site, while the exhibition space shows the process of Yongsan Park Project and related historical events. Existing softball field will remain as open space for possible large-scale events in the future. Finally, we proposed spatial planning and programs for the clusters, each consisting of 3 individual C-shaped structures.

We designed ecological playground for the Children Cluster, community garden and gathering space for the Teen Cluster, and dog park and pop-up store plaza for the Youth Cluster. For the Senior cluster, we planned community lounge and pedestrian trail. These clusters are connected via the central community garden. The community garden stretches from the entrance to the site at the south corner and continues until the softball field at the north edge.

We connected the indoor and outdoor spaces into clusters for each age group and proposed outdoor environment and indoor programs as a set, accordingly. The site is the frontier and spatial platform for continuation of Yongsan Park Project; this plan invites the public to step into Yongsan Park Project site, the first national urban park in Korea, and inspire public interest, perhaps becoming advocates, for the rest of Yongsan Park Project that remains largely undetermined. Furthermore, the public's usage pattern of the site will be useful as a practical reference for designing and managing Yongsan Park design in the future.

Yeongseok Park Ph.D Student, Graduate School of Environmental Studies, Seoul National University
Jeong-Hann Pae Professor, Dept. of Landscape Architecture, Seoul National University

‘City in Nature’ and Landscape Architecture in Singapore

Despite being a 100% urbanized country on a small landmass, Singapore has been ranked one of the greenest cities in the world. This has been mainly the fruits of Singapore’s efforts to green up with consistent and robust greening policies since the nation’s early independence days, with a vision that has evolved from being a ‘Garden City’ (1963-2000) to a ‘City in a garden’ (2000-2020). ‘City in Nature’ is the latest vision with the view of restoring nature back into the city, being one of the pillars under the Singapore Green Plan 2030. This article investigates the views on the ‘City in Nature’ initiative from the landscape architecture profession, through online surveys to 51 SILA (Singapore Institute of Landscape Architecture) members that include Singapore-based designers, managers, educators, and researchers in landscape architecture. From the responses, we identified five areas of anticipated opportunities and growth on how the ‘City in Nature’ vision affects various aspects of landscape architecture practice – 1) Unique opportunities of landscape architecture in a tropical Southeast Asia city; 2) Trajectory of Transdisciplinary practice; 3) Necessity of urban ecology expertise; 4) Phygital Transformations, and 5) Social consensus. We concluded that the landscape architecture discipline is evolving with new techniques, tools, and knowledge domains. Out of which shifts existing theories and contents in landscape architecture education. Strategic engagements by landscape architectural leaderships with policymakers, directing synergistic efforts, and trans-territorial and trans-disciplinary competencies becomes critical for the successful application of the City in Nature. Moving forward, the ‘City in Nature’ model could be a prototype applicable beyond our shores, across South-East Asia, so that landscape architecture may make a difference with a possible trajectory towards a ‘World with Nature’.

Yun Hye Hwang Associate Professor, Department of Architecture, College of Design and Engineering, National University of Singapore

Ronnie Khiaw Yong Tan Lecturer, School of Design, Temasek Polytechnic, Singapore

When "Energy" Became "Landscape": A Review Under the Theme of Landscape and Energy

Global warming poses a significant threat to life on earth, including human beings, and addressing climate change has become an essential international political consensus. Sixty countries worldwide have committed to achieving zero carbon emissions by 2050, each having proposed specific phased plans. Considering China as an example, the active promotion of energy reform is the most critical issue for the Chinese government over the next decade. In 2021, the government established the goal to achieve the capacity of more than 1.2 billion kilowatts of wind power and photovoltaics by 2030, meaning that new energy facilities must generate 70–90 million kilowatts each year.

The establishment of a new energy system will lead to significant changes in the landscape. However, in constructing new energy facilities, landscape architects can hardly participate in the planning stage. Landscape architects cannot follow the development of a comprehensive theory to provide a reference for the deployment of energy facilities.

This article compiled more than 30 academic papers published since 1990 that contain the keywords "energy" and "landscape," extracted the research topic within the cross-field of energy and landscape, summarized and evaluated the development process of the theory, and emphasized the importance of landscape planning in the construction of a new energy system. Finally, it explored the research possibilities at the interface between landscape and energy. This paper categorized the development of energy and landscape research into four stages:

•1990–2001: The impact of new energy facilities on natural landscapes and built environments from a traditional perspective was the main topic, primarily discussing scholars' and the public's criticism of wind energy facilities and the visual aspects of facilities.

•2002–2009: This stage primarily focused on the methodological development of the decision-making process and optimization of overall efficiency in new energy and an exploration of public attitudes towards landscape changes.

•2010–2012: The concepts of "energy landscape," "landscape of energies," and "sustainable energy landscape" were proposed successively. These studies developed theoretical frameworks for the spatial planning and transportation system of biomass energy, the concept within the transition process of renewable energy, and design principles and structural procedures of the sustainable energy landscape, overcoming the limitations of traditional landscape perspectives.

•2013–present: The current cross-research on new energy and landscape follows three directions. Firstly, landscape visualization of the energy space, Secondly, attitude assessment toward the non-fossil energy landscape, and lastly, multi-dimensional value evaluation of the built landscape.

Landscape research on renewable energy systems must be expanded beyond the development context. There is a lack of discussion on large-scale energy storage facilities from a landscape perspective within the existing framework between energy and landscape. Furthermore, it is difficult to examine the genuine intention of respondents precisely due to concerns about economic, cultural, and cognitive aspects. Therefore, the study of landscape attitudes necessitates methodological innovation.

Haotian Mai Ph.D. Student, Sungkyunkwan University
Hyeyoung Choi Associate Professor, Sungkyunkwan University

Crafting Urban Park Archives and Writing Landscape Architecture History: The Case of the Seoul Namsan Park Archives

In recent years, following the digital turn, practitioners in the field of landscape architecture have been actively building archives to the point of "archive fever." For example, the Frederick Law Olmsted Papers were digitized and opened to the public in 2018. In addition, SAH Archipedia, an online encyclopedia of the U.S. built environment, including landscapes, was organized by the Society of Architectural Historians and the University of Virginia Press in 2017. Finally, in 2019, various European archives partnered to create the Network of European Landscape Architecture Archives.

These archiving initiatives raise several questions. What constitutes an archive in landscape architecture? What structure does it take? What epistemology does it perform? What kind of craft is archiving? Is it a database of the lives of star landscape architects? Is it a collection of records of the acts of designing? Focusing on a 2020 archiving project of Namsan Park in Seoul, which was a collaboration between the Green Seoul Bureau of the Seoul Metropolitan government and the Seoul Metropolitan Archives (SMA), this paper aims to address the ontological significance of the urban park archive and its relationship with landscape architecture history as a complex social and urban repository.

Namsan Park is a 289-hectare urban park centering on Namsan Mountain and the southern part of the Seoul City Wall. The Namsan Park collection held at SMA dated from 1954, when the Namsan area was designated a grand park after the Korean War. Through a review of Namsan Park's archiving process, this paper examines the types of records kept, the strategies for cataloguing and classifying documents, and the uses of the archive.

First, the Namsan Park collection shows the value of public records in forming the backbone of urban park archives that illustrate significant historical changes in urban parks. On the issue of public records being destroyed according to the document retention period, this paper discusses the preservation of valuable public records in the history of landscape architecture, including design plans and reports, toward the realization of a permanent repository.

Second, the archiving process of Namsan Park addresses the issue of how to structure metadata and authority data for urban park archives. While we used SMA's framework to catalogue and describe records, the municipal framework for cataloguing records was unable to fully illustrate the content and details of the urban park records. Therefore, this paper discusses the critical factors involved in creating metadata and authority data in the archives of urban parks.

Lastly, this research points out the significance of networking and collaboration in archiving. Public records of Namsan Park mainly focus on changes in the physical features of urban parks, such as park creation and maintenance and repairs. However, to create a rich archive, it is critical to developing strategies to collect supplementary records documenting the memories of users and citizens and the ideas of designers.

This paper contributes to the discussion about how urban park collections are crafted, with the goal of shaping the epistemological basis of landscape architecture history.

Jung-Hwa Kim 4A_Lab Fellow, Kunsthistorisches Institut in Florenz – Max-Planck-Institut, Germany

Jihye Gil Secretary, ICOMOS Korea

Hyeyoung Choi Associate Professor, School of Civil, Architectural Engineering, and Landscape Architecture, Sungkyunkwan University

Hee-Soung Park Research Professor, Institute of Seoul Studies

Young-Ai Seo Director, ESOO Landscape Architects

Sang-Min Lee Senior Research Fellow, Architecture & Urban Research Institute (AURI)

The Meaning of Korean Modern Landscape History of National Projects in Park, Chung-Hee Era

Modern landscape architecture in Korea began in earnest during the Park, Chung-Hee era. After appearing through the military coup in 1961, as a powerful ruler, he was inspired by the success and rapid growth of development projects that he authoritatively planned and led. In the 1970s, government projects were more actively planned and implemented, such as by introducing loans from international organizations. In this process, it is confirmed that he paid special attention and was involved in the creation of the landscape by not only presenting the basic plan of the development project, but also participating in the details of the project from the viewpoint of landscape design, such as the selection of planting species in key places.

At that time, the national land development project, including the landscaping sector, was actively carried out entirely under the leadership of the government. Considering Park, Chung-Hee was involved in the national project based on his "absolute power" at that time, it is reasonable to understand that his thoughts on landscape was absolutely reflected in the national project.

The national land development project since the 1970s has been carried out in large-scale forestry for the purpose of restoring damaged land following the rapid post-war reconstruction project in the 1960s, enhancing the nationalist view of the nation to strengthen the government system for the people, and improving the national image and foreign currency income by attracting foreign tourists. It begins to focus on greening projects, making major historic sites sanctuaries, and developing tourist complexes. In this process, The Korean Institute of Landscape Architecture(KILA) was established to prepare an academic foundation for landscape architecture (1972), and the landscaping expert training began with the establishment of a landscape architecture department at the university for the purpose of nurturing landscape experts at that time (1973).

The Gyeong-Ju Tourism Comprehensive Development Plan (1971) is a representative example reflecting the thoughts of Park, Chung-Hee as a spatial designer. Through the handwritten instructions contained at the beginning of the plan, he presented the basic plan for the development of Gyeong-Ju as a tourist city, suggested a concept of a tourist road connecting major viewpoints and tourist destinations, planned a tourist road network that connects several districts each includes major tourist destinations as a whole, and presented the main points of each tourist district. The following part of the plan contains detailed plans to put his ideas into practice. In particular, the road is regarded as an important tourist facility, and tree species are designated in consideration of the main use and aesthetics of each road.

In this study, by discussing the national land development projects in the 1970s, such as the Gyeong-Ju Tourism Comprehensive Development Plan and the sanctuary of major historic sites such as Hyeon-Chung-Sa. In this way, when looking back on the 50 years of Korean modern landscape architecture, it is intended to examine the significance of Korean modern landscape architecture in the Park, Chung-Hee era, and to suggest alternatives for a developmental future along with its limitations.

Jung-Hee Min The Doctor's Course, Seoul National University

The Formation and Transformation of Joseon-Style Parks in North Korea, 1945-2021

This study attempted to analyze the traditional style and contents represented in the 'Joseon-style park', a unique park style of North Korea. As a representative and first Joseon-style park, attention was paid to Chilseong Park in Anju-si. The study was conducted through content analysis of the North Korean literature and interviews with North Korean defectors who frequently visited Chilseong Park. In addition, through the art film "A Story of an Architect," the appearance of Chilseong Park in the 1980s was grasped, and information on the location and arrangement of Chilseong Park was acquired during the formation process of Anju-si. The results of the study are as follows.:
First, the emergence and spread of Joseon-style parks were analyzed through the collections of the supreme leader of North Korea. In his speech in December 1955, which can be seen as a bud of Juche ideology, Kim Il-sung's idea that "Joseon people should see the scenery of Joseon" is expressed. In the mid-1960s, when the term "Juche" began to be used, Eastern-style Park, a concept similar to Joseon-style park, appeared. In 1976, Kim Il-sung visited Chilsung Park in Anju city and came up with the basic principles of building a Joseon-style park, which led to the emergence of the concept of a Joseon-style park. Since Kim Jong-il's teaching in 1992, Joseon-style parks and amusement parks have spread throughout North Korea.
Second, after analyzing the concept and format of Joseon-style parks, in North Korea, they are classified according to their form as Western (Europe-style) parks, Eastern-style parks, and Joseon-style parks. Joseon-style parks refer to park style embodying socialist content in ethnic form. North Korean literature and newspapers refer to the following Joseon-style parks: Mangyeongdae, Moranbong Park, Gaesun Youth Park, Dong-Pyeongyang Gangan Park, April 15, Boys' Baekhwawon, Changgwangwon Park, Hamheung Dongheungsan Park, Wonsan Songcheon Park, Songdo Park, Anju Chilseong Park, and Sariwon Gyeongam Park.
Third, the analysis of the formation process of Chilsung Park shows that the Chilsung Park was overlaid with its location as a Chilseong Park by applying the unique style of Joseon-style Park to the layers of Chilseongji and Baeksangnu before the North Korean regime Inside Chilseong Park, there are seven islands within the pond and the pond, a bridge linking the islands, a pavilion on the island, and a promenade surrounding the pond. Chilseonggak, a noodle restaurant, is located within Chilseong Park, while Anju Theater, on the park's northern edge, so park serves as a multi-cultural center in Anju-si.

Seolin Kim Ph.D. Candidate, Interdisciplinary Program in Landscape Architecture, Seoul National University

Broadening Our Understanding of Landscape Architectural Practice Around the World

The project consists on the green areas along the Boulevard MEDIPORT that is located within the Veracruz harbour North Bay, in the Gulf of Mexico.
It is 2.5 km long with an approximate surface of 66,240 m². It is a coastal landscape.
The North Bay area is of recent creation and is the result of land reclaimed from the sea. At the west part of the site there is an area rich in biodiversity. Four ecosystems are found here: low deciduous forest, medium deciduous forest, medium semi-desiduous forest and an area of mangrove.
Due the environmental impact as consequence of the harbour's construction, one the offsetting recommendations was to keep this natural area with the legal status of Environmental Management Unit (EMU), named "Punta Gorda". It has a management programme and part of the activities developed there are: production of native plants of the existent ecosystems, environmental education programmes, constant monitoring of ecosystems.
At the south part of the site, there is a community of Causuarina cunninghamiana. This area also declared as an EMU. The Casuarina (native from Australia) tree was introduced in Mexico at the beginning of the 20th century by engineer Miguel Angel de Quevedo as they have the capability to function as green windbreak curtains. The Casuarina tree was planted all along the coast of the Gulf of Mexico and now we can find extensive communities integrated with this species, now associated with fauna and some native vegetation. They have adapted to the coastal system and protect the natural areas that still remain from the hard winds that occur there mainly during the winter season called "nortes".
The Boulevard represents a physical line that connects both areas: "Punta Gorda" and the Casuarinas' community.
Considering this characteristics we found the potentiality of creating a green corridor to connect both areas and generate a green infrastructure system.
A proposal for a landscape architecture project for the Boulevard with this characteristics was made to the Harbour Administration, instead of just a forestation programme.
Considering the importance of the flora of the existent ecosystems, in conjunction with the difficulties of being in a coastal landscape, and with the intention to contribute to biodiversity, the project poses in the generation of a corridor based on plantation modules attending to plant associations in the ecosystems. The plants are being produced at the EMU.
It is required to create windbreak screens in order to help the plant associations to have a good development. Modules of Casuarina trees alternate with modules of native plants. Also dune-fixing plants are part of the selected species to stabilize the sand areas.
At the moment the project is in the process of execution and we are monitoring the plants' adaptation.
This is a pioneer project in Mexico in which a landscape design is based on native plants use, revaluing the richness of our ecosystems and taking it as a reference to create a biological system with an aesthetic value.

Mark Arigoni Co-Chair Global JTA Steering Committee, CLARB, United States
Monica Pallares Committee Member - Global JTA Steering Committee, IFLA, Mexico

Strategies for Conserving and Utilizing 'Negative Heritage' in Korea Through Preemptive Public Conflict Management

Negative heritage is "a conflictual site that becomes the repository of negative memory in the collective imaginary" (Meskell, 2002: 558), that is, even though an object or building are a heritage with historical and cultural value, it reminds that the public of negatively perceived events or memories. In Korea, the modern cultural heritage of 1910-1945, during the period of Japanese colonial rule, is considered as representative negative heritage. In addition, the cultural heritage of the Korean War of 1950-1953 and the democratization movement of the 1970s and 1980s can also be. Until the 1990s, if it was taken for granted to demolish and erase buildings and legacies during the Japanese colonial period, but since the 2000s, a tendency to preserve negative heritages including those from the Japanese colonial period began to appear.

The causes of conflicts related to negative heritage in Korea examined through existing studies can be broadly divided into two categories. The first is that the groundwork on the concept and scope of negative heritage and modern cultural heritage is insufficient (Je, 2013; Kang and Bae, 2017), and the second, it is necessary to engage stakeholders and citizens to participate, communicate, and draw social consensus for preservation and utilization of negative heritage, as well as historical research and discovery of historical and cultural values such as existing 'positive' heritage (Jeon, 2008; Ahn, 2008; Han, 2017; Lee, 2018; Kim and Kim, 2020).

Modern cultural heritages with a large number of negative heritages are mainly managed as the 'registered cultural heritage'. In the Guidelines for State Registration of Cultural Heritage, registration can be withheld in the case of cultural heritages related to expropriation during the Japanese colonial period or pro-Japanese collaborators (Articles 7 and 8 of the Guidelines for State Registration of Cultural Heritage), so it can be said that the focus is blocking the conflict itself that may arise from negative heritage. The current status and operational direction are somewhat far from the suggestions of previous researchers, such as social consensus and communication related to negative heritage, the need for participation of victims and citizens, improvement of awareness, and vitalization of basic discussions.

This study intends to apply the concept of 'public conflict management' to the preemptive conflict management direction of negative heritage. 'Public conflict management' refers to preventing the deepening of division in conflict and providing a managing structure and conditions for the good functioning of conflict (Park et al., 2015: 30). If this concept is applied to negative heritage, it is not to fundamentally block the occurrence of conflict, but rather to recognize the possibility of conflict and to operate a system so that such conflict can lead to the discovery of the value of negative heritage or the process of social consensus. By applying this conflict management theory, this study intends to propose a participatory decision-making method for the preservation and utilization of negative heritage and the necessity of preemptive conflict management.

Eunshin Son Associate Research Fellow, Architecture & Urban Research Institute
Youngran Kwon Assistant Research Fellow, Architecture & Urban Research Institute
Chirlho Youm Senior Research Fellow, Architecture & Urban Research Institute

Conservation of University Campus Heritage Landscape (UCHL): A Case Study in China

All world-famous universities have been trying to conserve their University Campus Heritage Landscape(UCHL) due to their unparalleled significance and outstanding universal value. Nonetheless, they have not endowed themselves with what they deserve. Many problems need to be solved to achieve the conservation and preservation status. This study investigates the conservation of UCHL through three aspects: significance and value, current problems and potential risks, organizations, and individual universities' conservation tools. Aiming to clarify their conservation status and boost general cognition regarding their value and preservation, sort out various genres of UCHL and draw baselines for preservation, and incubate adaptive and creative solutions. This study applies qualitative approaches, including literature review, case study (UNESCO and Oxford), content analysis, site observation, interview, group discussion, and historic mapping research.

Results of this study inform that the significance and value lie in the origin and material carrier for civilization and science, reason of cities' existence and mock-up for their construction and development, the rationale for alumnus' donation, and a vital stimulation for recruiting students. There are mainly two aspects of problems: first, conservation workers in many developing countries are often distraught owing to copious artificial factors covering social unrest, backward public perception for heritages and their safekeeping, inadequate legal system, and challenging funding sources. Second, current conservation is mainly based on architectural facet consideration, whereas landscape, which is dramatically changing along with human beings' excessive exploitation, has often been undermined or overlooked. UNESCO has developed systematic and mature procedures, principles, and criteria for verification, nomination, evaluation, and approval for world university heritages. Council of Independent Colleges and Getty Foundation assists universities in implementing specific conservation work. Society for College University Planning advocated conservation through conferences, websites, and journals. It also works with Getty Foundation and treats conservation from an explicitly planning-oriented perspective. Standard conservation tools in individual universities comprise setting registration procedures, arranging government funding and constituting private foundations, enacting heritage laws, designating dedicated offices and staff, delimiting protected zones, entrusting multi-disciplinary experts and committees to evaluate and approve any intervention, formulating protection and development plans or strategy, developing science promotion and tourism and establishing databases. This research informs the importance of carefully revisiting what is still lacking inside our souls, collaborating globally and advancing heritage education in undeveloped countries, and proffering financial support to their unique UCHL therein. Otherwise, humankind will lose the values and spirit of the heritage campus cultural landscape forever. Furthermore, reacquaint and consolidate university campus heritage's landscape content, and cultivate qualified landscape professionals to steward every aspect.

Xu Bo He Phd Candidate, Landscape Architecture Department, Faculty of Design and Architecture, Universiti Putra Malaysia, Malaysia

Nor Atiah Ismail Associate Professor, Landscape Architecture Department, Faculty of Design and Architecture, Universiti Putra Malaysia, Malaysia

Sumarni Ismail Associate Professor, Architecture Department, Faculty of Design and Architecture, Universiti Putra Malaysia, Malaysia

Noor Fazamimah Mohd Ariffin Senior Lecturer, Landscape Architecture Department, Faculty of Design and Architecture, Universiti Putra Malaysia, Malaysia

Study for Legislation of the Standard Contract for Landscape Architecture Design

The industry of landscape architecture, both in construction and design, has grown continuously for the last few decades, yet landscape architecture lacks a publicly announced standard contract customized for its unique needs for design services. As a result, it is not uncommon to find that a loosely defined contract form is adopted without a careful review both by the clients and the designers, which easily fails to protect the designers, leads to unnecessary disputes, often effectively lowers professional fees for design, and eventually degrades the quality of services of landscape architecture design.

The purpose of this study is to establish a foundation for legislation of standard form contract of landscape architecture design services. Based on surveys and analysis of existing contracts, this study critiques the most ambiguous and problematic areas of the current conventions of contracts. Through comparative study of standard contracts for landscape architecture in other countries and for similar design professions in Korea including architecture and public design, the study will investigate what can be adopted and how they should be modified to better represents needs for landscape architects. Also, the research poses a question on the contemporary changes in landscape architecture that expands beyond its traditional realm of tasks, medium and the nature of services other than providing technical drawings.

Despite the limited scope of the research and the fact that the standard form may serve only as a guideline without legal reinforcement, initiating this discourse about contracts is indispensable to eradicate unfair provisions that have chronically undermined the professional development of landscape architecture and this study will provide a platform from which to work towards encouraging related researches, defining the scope of work and organizing a consolidated professional association to properly represents the voice of landscape architects.

Haein Lee Principal, HLD
Minwoo Lee Attorney at Law, YK Law Firm
Younsun Hue Principal, Dama

The Importance of Archiving: Yongsan Family Park as the First Implementation of Yongsan Park

The Yongsan Park Project aims to create a 300-hectare urban park on a former US army base that will be handed over to the Korean government in Seoul. The government stated in 2020 that the park's development had begun and that a portion of the park property had been accessible to the public. However, according to Seoul Metropolitan Archives (SMA) data, Yongsan Family Park, which opened in 1992, was the first implementation of the Yongsan Park.

The City Planning Bureau of Seoul Metropolitan City (SMC) announced the Yongsan Park design for the entire Yongsan army post in May 1989: it was a picturesque-style recreational space similar to New York Central Park, with a symbolic place for instilling national self-esteem. The Yongsan Park master plan, which includes a design for the golf courses (as a name of Family Park), is shown in the SMA document dated May 29, 1989.

The army golf courses were returned initially in 1990, owing to a Korean-US agreement, and Yongsan Family Park was planned. On June 23, 1990, SMC purchased a portion of the golf course property from the Ministry of National Defense, and the 'Yongsan Family Park Design Competition' was held, with the master plan being finalized on December 15, 1990. The Environment and Greenery Bureau, which was in charge of the development of Yongsan Family Park, verified the overall Yongsan Park plan per SMA's record dated November 14, 1990, to ensure design conformity.

On October 30, 1991, the master plan for Yongsan Family Park was approved. On April 9, 1991, however, the Cabinet determined that the state would secure the funding and lead the Yongsan Park project. The responsibility of SMC has been limited to the development of Yongsan Family Park.

The SMC opted not to build a park as intended by merely installing minimal facilities at a policy meeting on October 30, 1991, citing difficulty in relocating the heliport and US military sewage treatment plant, as well as a lack of assistance from the state. Because the US military opted to retain utilizing a portion of the site as a driving range and sports field in January 1992, Yongsan Family Park was temporarily opened in November 1992 with a reduced size. The Yongsan Family Park, however, was chosen as the new site for the National Museum of Korea by the President's directive in November 1993. The size of Yongsan Family Park has been decreased again. In a news statement dated September 23, 1997, the SMC announced that the park's use would be restricted beginning October 21, 1997, as the Ministry of Culture and Sports erected a new National Museum in Yongsan Family Park.

During the planning and design phase of Yongsan Park, the development process of Yongsan Family Park remained unclear. However, the Yongsan Family Park appeared to serve as a link between the early stages and the current Yongsan Park project, emphasizing the importance of archiving. By uncovering Yongsan Family Park records, the significance and direction of Yongsan Park could be reexamined.

Hyeyoung Choi	Associate Professor, Sungkyunkwan University, Department of Civil, Architectural Engineering, and Landscape
Jihye Gil	Secretary, ICOMOS Korea
Jung-Hwa Kim	4A_Lab Fellow, Kunsthistorisches Institut in Florenz – Max-Planck-Institut
Hee-Soung Park	Research Professor, Institute of Seoul Studies
Young-Ai Seo	Director, ESOO Landscape Architects
Sang-Min Lee	Senior Research Fellow, Architecture & Urban Research Institute (AURI)

Research on the Morphological Changes of Historical Towns and the Protection of Cultural Landscape Heritage on the Transnational Cultural of Wanli Tea Route Based on GIS

Wanli tea route connects the people to people and cultural exchanges between Asia and Europe, promotes the cross-border cultural and economic development of China, Mongolia and Russia, and promotes the development of cities and towns along the line.

Based on the investigation of the urban, architectural and landscape heritage along the current Wanli tea route, it is found that the cultural landscape heritage is disappearing in large numbers due to the historical changes and unprotected ancient towns and villages along the line. Although the national "one belt, one road" initiative has been strongly advocated, the academia has already paid attention to Wanli tea route and has made a series of research results. But our excavation of this area is still at its infancy. In the new era, Wanli tea route has been given a new historical mission and connotation, which requires us to study from a new perspective.

Based on the above problems, this topic mainly analyzes the historical cross-border cultural routes and cultural landscape heritage protection between China, Mongolia and Russia in the Qing Dynasty from three aspects: the Wanli tea route, the spatial form of historical towns on the cultural route, and the architectural characteristics of specific areas. In terms of research methods, combined with ancient books and historical materials such as local chronicles, field research and other methods, this paper explores the Wanli tea route in the Qing Dynasty. At the same time, in view of the current situation that the original route and surrounding landscape are damaged, GIS analysis software is assisted to restore the spatial form of the route, the urban space around the route and the architectural characteristics of specific protected areas. This topic wants to take this as a research perspective to analyze the historical urban form changes and cultural landscape heritage protection on the tea trade route between China, Mongolia and Russia in the Wanli tea route, in order to obtain a new understanding of the Wanli tea route.

Lin Zhang Post-Doctoral, Beijing University of Civil Engineering and Architecture, China

Towards More Efficient Translation of Design into Construction: In the Case of Dongtan Park's Water Ribbon

This session features a recently completed park project with an unprecedented 270-meter-long water feature, exploring the challenging endeavors of global design collaboration on the "international designer's garden" in the heart of Dongtan Yeoul Park, a central civic park for the new city of Dongtan. The invited international design firm GGN (Gustafson Guthrie and Nichol)'s design is distinguished in the powerful storytelling based on Korean culture and landscape, which is delicately transferred to detailed stone surfaces of a long water ribbon. This linear water feature of approximately 2~3 meter wide runs from the top of the bowl-shaped topography, runs around the hills and culminated to a large pond at the bottom.
A long water feature with a constant slope, optimized for particular effects and speeds, on a natural hilly topography poses a huge challenge not only in design of it, but also in its realization and the numerous aspects of communications that have to happen between the two. Working at the international site adds another layer of complexity due to differences in typical work scope, expectations, client-designer relationship, availability of materials, construction cost, and level of construction technology. HLD was a local landscape architect on board to bridge this gap and to carry on the construction documentation after GGN handed over the water feature design.
In reviewing the design, technical drawings, models, and other archives from mock-ups and construction, the session will investigate the effective use of 3D technologies for design, expression, calibration and eventually for the delivery of information. It will also share insights learned from trial and errors in finding local alternatives, seek for a more efficient way of adopting new technologies to streamline the design's translation into construction, suggest a few key innovations needed in order to reduce cost, refine the process of making a bidding document, and share the positive influences global collaboration embraces.

Jinsun Lee Associate, HLD

Haein Lee Principal, HLD

Residents' Perception of the Purple Scenery of Banwol and Bakji Island

Banwol and Bakji Island in Sinan-province are small islands of about 2km² each, with a total of 79 households living mainly in fishing. Shinan-province began color marketing in 2019 to create tourism by painting the island with one color through the "Island I Want to Visit" project. In the case of Banwol Island, "purple" was selected as the main color of the island, inspired by its native plants such as purple bellflower, honey grass, and lavender. As these landscape changes are evaluated as "dangerous but beautiful attempts," they were selected as the "World's Best Tourism Village" at the UNWTO's meeting in 2021, attracting many domestic and foreign tourists. In fact, Purple Island is visited by about 1,900 people as of the weekend despite the 2019 COVID-19 pandemic.

It is interpreted in the framework of the concept of 'cultural landscape' to understand the landscape changes that appear on Purple Island. Recently, the cultural landscape has been re-recognized from an elitist perspective with "excellence and speciality," focusing on conservation and management to a view that values everyday and universal landscapes and regional characteristics there. Therefore, efforts were made to discover the insider's identity and experience of the landscape. In this context, residents of Purple Island can be understood as sufficient subjects to speak out as producers and consumers who create landscapes. However, on the purple island, which is a tourist attraction landscape, they appear to exist on the outskirts of the landscape. Therefore, this study aims to find out the perception of the new landscape they feel by paying attention to 'residents' as the subject of the tourist landscape. Interview the residents to investigate their perceptions and distinguish their feelings from the part of the landscape itself and pride in the neighborhood. In addition, it was checked whether there was a difference between the spaces and places of memory that the village felt important before and after it turned into Purple Island. Considering that the residents are in their 7s and 80s, they did not seem to be very sensitive about the changes surrounding colors because the village was a living place and a familiar space. Rather, in the beginning, they felt awkward and strange about turning all purple, but attachment to the village gradually increased through positive external reactions. This was gradually changing into a positive landscape with the province's policy of providing purple household goods from house to house. In terms of space, important places near purple bridges and entrance of the village, which are frequented by tourists in the existing village shrine forests, village halls, and workplaces, have been added. However, the subject of new place memory was no longer a resident. However, for them, rather than changes in the visual landscape, aspects such as changes in the movement of life and invasion of privacy are approaching more. Who will be the owner of the island? It is worth considering whether the purple scenery of the island will be transformed into a space for visitors seeking a different experience.

Yeonsu Hamm Student, Seoul National University

Interpretation of City Beautiful Movement in China with a Perspective of Drosscape

The city beautiful movement in China flourished from the end of 20th century to the beginning of 21st century (Yu & Ji, 2000a; 2000b). Improved urban sanitation and optimized city image are positive effects of the movement. While neglecting the dynamics of the urban landscape, the movement focused on the visual effect of the large-sized space. The reckless development of urban spaces resulted in the wastage of land resources, in that drosscape was generated.

There are four distinctive characteristics of drosscape as follows; process, type, integrity, and identity. Drosscape is generated through the process of urbanization, horizontalization, and deindustrialization. Consequently, it generates waste land (such as wastewater, metal scrap, etc.), abandoned land, and wasteful land (excessive parking lots and repeatedly constructed large retail buildings). The "old respite landscape" is also categorized as drosscape, which could alleviate the problems of urban congestion and pollution caused by industrialization (Berger, 2006). However, due to the number of users for the old respite landscape decreased, it faced severe recession and disinvestment. In the formation of drosscape, the original social value is gradually disappearing. These areas turned the city into fragmented, disordered, scattered, and isolated areas, resulting in the discontinuity of urban historical context. The city lost its wholeness, objectivity, and public consciousness, becoming an anonymous land (Berger, 2006).

By 2050, China's urbanization rate will reach 80%. Due to the process of the urban sprawl, the drosscape has been generated. Dalian Xinghai Square (176 hectares) and Dayan Pagoda Cultural Square (67 hectares), the representative projects of China city beautiful movement, adopted geometric patterns for lawns and water bodies, highly aesthetic and magnificent. However, these cases belong to the categories of drosscape: wasteful land and old respite landscape respectively. In terms of integrity, Dalian Xinghai Square is not actively used by people, therefore, it became an empty space, emphasizing not a landscape as an operating urban infrastructure but the visual aspect. The Dayan Pagoda with a history of more than a thousand years has instead become the background of a luxurious cultural square, breaking of historical context. It also fragmented the city's organic layout due to its massive scale. Both projects emulated European design for the geometric layout, not considering the urban context of China.

However, the term drosscape also implies that dross or waste is removed or resurfaced, and reprogrammed by human intentions (Berger, 2006). The city beautiful movement in China is interpreted as the drosscape, which is the "interstitial landscape remains" formed in the city surface (Berger, 2006). The city beautiful movement testified to the previous achievement, but also posed the challenge for cities' continuance. As a strategy, drosscape provides an avenue for rethinking the role of the practitioners in the urban world, re-energizing and re-organizing the stagnant in-between realm. The drosscape, as a holistic concept has the potential to enhance economic value of the site, spatial functionality aesthetics, and historic landscape of the city.

Liu Siyu Sungkyunkwan University

Hyeyoung Choi Sungkyunkwan University

Future Proof Designed Urban Green Space in Perspective of Pandemic-Resilience City

After the outbreak of Covid-19, Many cities highlighted the problem of lacking basic capacity to respond to the emergencies and disasters. In the meanwhile, pandemics have already become the greatest threat to humanity in the present and future. Therefore, urban pandemic-resilience research becomes one of the most important issues.

Public green space, as the main place for outdoor activities during the Covdi-19, not only benefits residents' physical and mental health but could also be used for "temperature hospital", "temperature vaccine area" and "detection point", plays a key role to enhance urban pandemic resilience.

However, during the inevitable urbanization process, urban green spaces have often been substituted by other urban functions, such as commercial areas, residents, offices.

So far, amounts of papers already verified the correlation between public green space with urban pandemic resilience ability and health. Among them, the research on the urban open green space and epidemics are mainly divided into two directions: one is research on the features of public green space that are related to the epidemic, and the other is the relationship between health and the usage of green space during the epidemic. The urban green space planning and management responding to the epidemics in the urbanization progress are still lacking.

The outbreak of COVID-19 was first found in Wuhan, Wuhan was the most affected city until March 2020, with various urban green spaces, and the rapid urbanization process was selected to be studied in this research.

With the concept of future-proof design, this research use CA-Markov model to predict the future land use distribution, by comparing it with the vulnerable area that has a higher risk to get infection and effect, pointing out which green space shouldn't be missing or replaced and in which area we should propose more green space enhancing the urban pandemic-resilience for future. The research provides a general urban public green space development strategy from a future-evidence view, not only figuring out where is the epidemic vulnerability area, but also finding out how could the future-proof research change the design and management of public green space responding to epidemics.

Quying Wang PhD Candidate, Politecnico di Milano, Italy

Nerantzia Tzortzi Associate Professor, Politecnico di Milano, Italy

1. Oral Presentation

RE:SHAPE

Strategies for Creating Net-Zero Villages to Respond to Climate Change

With the Paris Agreement now effective, the world is now aiming towards Net-Zero by 2050 through congregating global efforts to minimize average global temperature increase for sustained survival of mankind. In accordance with such efforts, South Korean government has laid the foundation for its own future Net-Zero by establishing a long-term low greenhouse gas emission development strategy, a predesignated Nationally Determined Contribution based on 2050 Net-Zero scenarios. In attempt to effectively respond to such demands of the era, this study aimed to develop a model for a village –one of the most fundamental social units where any kind of human interaction occurs– that specifies planning factors and measures needed for its Net-Zero.

After selecting possible factors viable for introduction to the model through prior research analysis and theoretical studies, planning factors of a Net-Zero Village were derived through three-step verification process that utilized FGI, factor analysis and AHP techniques. Designating a rural village as a site of interest to represent non-urban areas, the Village Model was set to analyze different scenarios of Net-Zero conditions, each accommodating different planning elements. Carbon reduction was then calculated per unit as to determine each planning factor's effectiveness.

Sixteen factors were derived as a result and deemed effective, including utilization of renewable energy sources such as solar panels, afforestation of grasslands into carbon-offset-forest, building wetlands across floodplains created by dams and campaigns to promote Net-Zero lifestyles targeting local villagers. As such, analysis of different scenarios of factor implementation all indicated that in any case, given such factors are implemented to a moderate to ambitious level, confirmed the Net-Zero is possible in 2030 and 2050 in non-urban villages. And as a result of additional scenario analysis of the three control villages, it was found that Net-Negative-Emissions beyond Net-Zero were possible in all scenarios. The study further determined the amount of carbon reduction per unit for a general application, while also suggested financial measures required for Net-Zero-Village Models to be utilized alongside existing policies through calculating cost estimates for a Net-Zero-Village with reference to its scale.

The result of this study is promising in a sense that a Net-Zero-Village by 2050 is achievable through physical improvements of a village combined and its inhabitants' sustainable lifestyle; Application of this model on a national level, moreover, could invoke an additional 114.08% carbon reduction by 2050 than what is expected of today. Economically, if such surplus of carbon reduction were to be achieved and linked to carbon emission trading, it alone would generate value equivalent to approximately 1,315.7 billion KRW(1.1 billion USD), leading to a cycle that induces revitalization of villages, creates green jobs and expansion of the model application to a much larger, city-scale urban settings. This study assumes that the result will prove to be highly valuable as a basis and a reference for future Net-Zero technology developments.

Dong kyu Lee Ph.D, Dept. of Forest Landscape Architecture & Environment Science Institute, Wonkwang University

Byung Chul An Associate Professor, Dept. of Forest Landscape Architecture & Environment Science Institute, Wonkwang University

The Role of Constructed Wetland Park in Reshaping Sewage Plant Green Belt Case Study of 10th of Ramadan City, Egypt

Constructed wetlands are natural based solutions that have a wide range of effectively proven applications around the world and various environmental and economic benefits, especially in water management, wastewater treatment and reuse. In Egypt this technology still is in research phase and was experienced in several pilot projects. Globally this solution is considered as an effective tool to achieve multifunction landscape by integrating green and gray infrastructure within cities. Various potentials and benefits like water management, biodiversity, reduced urban heat island, and improving social amenity could be gained from these kind of projects. Also these techniques could provide sustainable solutions to mitigate climate hazards, upgrade the quality of life especially in new cities like the 10th of Ramadan, which suffers from many urban and environmental issues and is located in arid climate area in the north east of Cairo. This research examines the new approach of the first constructed wetland park in Egypt as tool to reshape sewage plant greenbelt in aired and semiarid areas and how The Water treatment and reuse could meet green areas water demands in the city by the integration between Gray and green infrastructure. The research highlights urban, environmental and economic benefits of reshaping sewage plants greenbelt in aired and semiarid areas.

Ahmed Haron Associate Professor & Head of Architecture Department, Cairo Higher Institute for Engineering and Computer Science and Management, Egypt

Hind Mostafa Assistant Lecturer, October University for Modern Sciences and Arts, Egypt

Conocarpus: A Holistic Assessment of This Monoculture in Kuwait's Urban Landscape

In the last few decades Kuwait's urban landscape has become consumed with the monoculture of the conocarpus lancifolius tree. The exorbitant extent to which the c. lancifolius is ubiquitously planted as a hedge or street tree in Kuwait's public and private landscapes suggests it is the most ideal, and perhaps, naturally occurring tree in Kuwait's desert environment – however, it is a naturally occurring swamp tree in Djibouti, Somalia, East Africa, and South Asia. Indeed, without a common name, it is arguably the only tree in Kuwait referred to by both landscapers and lay persons solely by its genus name, "conocarpus," further pointing to the fact that it is a newly established exotic species. The c. lancifolius is a controversial tree in Kuwait because on one extreme it is admired as local environmental activists argue for its abundant supply as critical in offsetting Kuwait's carbon footprint while others argue for it as a versatile evergreen tree that can withstand Kuwait's harsh arid climate and saline soil. On the other extreme it is critiqued as local ecologists warn of its detrimental effects on plant and wildlife biodiversity, and they reiterate its natural occurrence as a mangrove tree which leads to its unsustainable high watering requirements in Kuwait's desert environment. Furthermore, from a landscape architectural perspective, its single species application negatively standardizes the urban landscape's form and function with its demanding maintenance regime and destructive root behavior to below grade urban infrastructure. This proposal aims to move beyond this oscillation between the c. lancifolius as admired or critiqued towards a more balanced holistic assessment of its performance in Kuwait's urban landscape and seeks to technically answer the question - how can we continue to live with this tree sustainably in a desert environment and in the face of climate change? Through site visits and documentation, the consultation of social and scientific sources, as well as grounded interviews conducted with concerned experts, environmental activists and lay persons, this proposal unravels the history of how the c. lancifolius was introduced to Kuwait and became an established monoculture. The aim is to progress the practice of urban landscape design in Kuwait to one that is regenerative, ecologically sound, harmonious with the urban context, and synergistically promotes plant and wildlife diversity, and human livability.

Reem Alissa Assistant Professor, Kuwait University, Kuwait

Influence of Forest Landscape Pattern on Flood Mitigation

The landscape pattern and its change are important factors affecting surface runoff and spatial distribution and are also a resilient approach of managing urban rainfall flood and governing ecological environment. However, integrated spatial indices combining both composition and configuration to quantify this relationship in different areas requires further development. Taking one million mu of afforestation project in the plain area, Beijing as the background, the remote sensing data during the first round of afforestation time (2011, 2013, 2015, and 2017) were selected in this study. Defining the Third Ring Road, the Fifth Ring Road and the Sixth Ring Road in Beijing as the boundary, the plain area was divided into core area, central area, suburban area, and outer suburban area for analyzing the changes of landscape pattern of the whole and the partitioned forestland, respectively. SWAT model was used to simulate the impacts of different patterns on storm runoff in different regions, and explore the dominant forestland landscape index affecting runoff change. The results show that 1) the forestland area in plain area presents an increasing trend, with an increase of 12.96%. Apart from some parts in the core area and the central area, the forestland patches are more concentrated and more complex in shape. 2) One million mu of afforestation project plays a positive role in reducing the risk of rainfall flood in the plain area. However, due to the influence of urban construction and human activities, the effecting intensity of afforestation and construction expansion on the runoff mitigation in different areas are different. The effecting intensity of afforestation on runoff mitigation in the core area and central area is greater than the side effect of construction expansion on runoff, which is manifested as the case that the total runoff decreased, with the proportions of 1.98% and 4.29%, respectively. However, the situation is just on the contrary in the suburban area and outer suburban area: the total runoff increased by 0.09% and 6.82%. 3) The key forest landscape indices for different regions are different. The dominant forestland factors of runoff in core area are the number factors of patches and the shape factor; that for the central area is area factor; those for the suburban area are aggregation factor and shape factor; and those for the outer suburban area are area factor as well as aggregation factor. The control of dominant forestland factors will reduce the risk of rainfall flood more efficiently. Our findings allow a better understanding of the interactions between the spatial heterogeneity and the flood regulation function of landscapes and provides reference for mitigating rainfall flood during the next round of afforestation.

Yingshuo Lyu Student, School of Landscape Architecture, Beijing Forestry University, China

Xi Zheng Dean, School of Landscape Architecture, Beijing Forestry University, China

Coastal Landscape Preference of Offshore Wind Farms Using Virtual Reality

As carbon neutrality emerges as an important issue, the Korea government is focusing on wind power generation as one of the renewable energy sources. However, the construction of wind farms leads to coastal landscape deterioration, coastal ecosystem destruction, and noise, causing conflicts with residents. Particularly, the visual impact of offshore wind farms on the coastal landscape is the biggest problem, making it difficult to obtain local acceptance. In this context, research on how residents perceive the landscape changed by offshore wind farms should be preceded before constructing offshore wind farms. Therefore, it is necessary to study the effect of the visual impact on landscape preference. We selected the Tamna Offshore Wind Farm as the study site where 10 wind turbines have been built. The coastal landscape data was collected at 18 research points arbitrarily extracted by viewshed analysis in QGIS3. Then, we visited research points and took 360° photos and videos through Insta 360 Pro 2. We set the field of view based on the collected data by adjusting the photos considering the actual viewing angle. Using the modified photos, we analyzed the visual impact composed of 4 indicators: Visibility, Color, Fractality, and Continuity. First, Visibility was evaluated by the area ratio of offshore wind farms. In this step, we drew a diagram along the outline of the wind farm and calculated the area ratio by Affinity Photo and Image J software. Second, Color was measured by the degree of contrast between wind turbines and the surrounding area. By designating two random points inside and outside the wind turbine, the difference between the CIELAB color value at each point was calculated. Third, Fractality was analyzed by the extent to which a structure exceeds its base dimension to fill the next dimension using Affinity Photo and Fractal dimension calculator. Lastly, Continuity refers to how many times the silhouette of the surface line and wind farms changes. After experiencing the captured videos in virtual reality, landscape preference was evaluated through a questionnaire. The questionnaire consists of basic demographic questions, landscape preference, experience with the offshore wind farm, and attitude toward offshore wind farms. Finally, the relationship between the visual impact and landscape preference was analyzed. The results indicated that Visibility, Color, Fractality, and Continuity could significantly affect landscape preference. The higher the Fractality and the higher the Continuity, the lower the landscape preference. This study may lead to a better understanding of the relationship between visual impact and landscape preference on the coastal landscape with offshore wind farms, serving as a decision-making tool for resolving conflicts with residents.

Taehyeon Moon Graduate Student, Korea University
Min Kim Graduate student, Korea University
Jinhyung Chon Professor, Korea University

Dams at the Time of Climate Crisis: Redesigning Damscape Through 28 Dams in Korea

This session aims to uncover the problems dams and their immediate vicinities – the 'Damscape,' for the lack of a better word – in Korea and redefine the role of dam spaces at the time of Climate Crisis. Highlighting Damnogwon (Dam, dam's green garden), a landscape project siting 28 major dam spaces in Korea that will set the course for future dam destinations and related operations for the entire nation, it will venture upon the process of reshaping the identity of open spaces around dams.

Climate Crisis, as we have gotten used to calling it, calls for an all-out transition to a sustainable society on every aspect, down to any individual's lifestyle – the sheer scale of change that is nonadjacent and unapparent at status quo, however, is a major setback when designing a new, climate-conscious space upon a space that is conventionally thought to have a set purpose that defies the new one. Indeed, dams were valued primarily with their abilities to control water and/or provide spaces for recreation for decades. Shortly after their advent, dams became critical building blocks and foundation of any country's rapid industrialization and development. Due to increasing interest in environment and conservation over the last 50 years, however, many of these dams, the once-idolized powerhouse and icon of development, are now condemned as destructive ignorance to environment by their skeptics, as hastening climate change quickly renders them obsolete.

In such sense, this session covers the project's effort to critically assess the status quo of damscape in Korea and find out how adequate spatial interventions can not only change the physical user experience of the immediate surroundings, but also shed light on the immense possibility they can portray in providing new roles to dams as destinations for raising public awareness on sustainable lifestyle. Taking advantage of the irony of speaking of sustainability at a dam – a massive gray infrastructure – and utilizing the uncanny juxtaposition gray and green damscape conveys, it will elaborate on assigning new role and function to damscape through spatial interventions and operational suggestions for dams for recreation, and education – from facilitating pedestrian access to promoting sustainable usage and lifestyle through spaces such as: Dam Pavilions and Crest Avenues, Public Eco-piers, Study Forests, Energy Parks, Spillway Strips, Lake Stay @ Dams, water playgrounds, etc. It will also describe how facilities should also have a set design guidelines to be part of the climate change narrative and talk of their concepts, materials and applications.

The session will also provide a walk-through for the process and tools that were utilized, such as big data analysis, public surveys, quantitative approach and design assessment of the impact through 'Sustainability Matrix' for dams – identifying and enhancing sustainable use of resources at all phases of resources cycle – and planning factors that will help the site of interest achieve Net-zero.

Jungbin Lee	Associate, HLD
Haein Lee	Associate, HLD
Hoyoung Lee	Associate, HLD
Yeongcheol Byeon	General Director, Korea Water Resources Corporation
Byunghun Son	General Manager, Korea Water Resources Corporation
Jaewook Lee	Senior Manager, Korea Water Resources Corporation

Different Types of Green Infrastructure to Mitigate Urban Heat Island: A Bibliometric Analysis in CiteSpace

Urban Heat Island (UHI) is one of the most important issues due to growing urbanization worldwide (Koc, Osmond & Peters, 2018). Green infrastructure (GI) is popularly used for mitigating UHI (Norton et al., 2015). To better understand different types (urban parks, urban forestry, urban trees, green roof, green wall) of GI to mitigate UHI, what the functions of GI types and how the different types of GI provide the regulating ecosystem services in UHI. We used CiteSpace to analyze 1243 publications on the Web of Science database from 1990 to 2020. This bibliometric analysis will help new scholars and researchers to better understand the current status and trends in GI to mitigate UHI research, as well as identify further research needed in the field (Shao et al., 2021).

The historical review evaluated research according to publication amounts, keywords, journals, disciplines, countries, and institutions. The results show that, first, the different GI types to UHI research all had rapid growth since 2013, and the GR type has increased the fast. Second, the most ranking keywords are urban heat island/heat island, climate/climate change/microclimate, temperature/land surface temperature/air temperature. And the top four keywords with the strongest burst are "design", "vegetation", "quality" and "reduction". Third, the most published countries are Peoples R China, USA, Australia, Germany, and Italy. And the top three institutions are Chinese Acad Sci, Arizona State Univ, Natl Univ Singapore. Fourth, Landscape and Urban Planning, Building and Environment, Energy and Building, and Urban Forestry and Urban Greening, and are the most published journals based on the top 3 journals of different GI types. These findings indicate that GI types to mitigate UHI has developed significantly in the last 30 years, with a high probability for increased growth in the future.

Huamei Shao Phd Student, Hanyang University,
Gunwoo Kim Assistant Professor, Hanyang University

The Effects of Urban Impervious Surface on Heat-Related Threats: A Case Study in Seoul, South Korea

Analyzing man-made impervious surfaces helps us to understand urban development and human activity. However, the man-made impervious surfaces can also give rise to a more serious heat problem in urban regions including the heat island effect, which can threaten human health in various aspects. In this study, the man-made impervious surface has been seen as possible health-threatening anthropogenic factors and has been extracted using remote sensing data, and have been used as a proxy of possible threats to human health. Local correlations between the factors have also been analyzed. The main results are as follows: The total man-made impervious surface in the Seoul Metropolitan Region is 2,675.3 km2, which covers about 22.4% of the total area, while the proportion of man-made impervious surface is 63.3% for Seoul, 34.7% for Incheon, and 18.8% for Gyeonggi-do. For the grid unit, the spatial distribution pattern of man-made impervious surfaces in Seoul is more centralized, while those in Incheon and Gyeonggi-do are decentralized. The hot spots of man-made impervious surfaces mainly are distributed in the majority of regions of Seoul, Incheon, and some surrounding regions of Seoul in Gyeonggi-do such as Suwon-si and so on. In the Dong unit, 66.1% of the regions have a man-made impervious surface area ratio above 50% and 28.3% above 90%. The regions with a man-made impervious surface area ratio above 90% have a discrete distribution pattern. For the Dong unit, the hot spots of man-made impervious surfaces are concentrated in Seoul, while the majority of Gyeonggi-do is distributed with cold spots. The value of global Lee's L of man-made impervious surface, indicates a high positive spatial dependence between the two variables. The hot spots are mainly distributed in Seoul and some surrounding regions of Seoul, while the cold spots are mainly distributed in the peripheral Gyeonggi-do. For the Dong unit, the global Lee's L is 0.48, which shows a high positive bivariate spatial autocorrelation between the two variables. There is little spatial bivariate correlation between the man-made impervious surface area ratio and the concentration of non-accident mortality throughout the study area a global scale. However, at the local scale, we can see that hot spots are mainly distributed in Jongno-gu, Jung-gu, Dongdaemun-gu, Mapo-gu, etc. in Seoul, and Jung-gu in Incheon, while Hwaseong-si, Yongin-si, and some regions of Ansan-si show cold spots. Many regions in Seoul show a high man-made impervious surface area ratio but a low concentration of non-accident mortality, while peripheral Geyonggi-do mainly shows a low man-made impervious surface area ratio with a high concentration of non-accident mortality. The findings of this study may contribute to making decisions on urban planning that are related to human health.

Yuedong Wang Master Student, Jiangsu University, China
Guangxi Shen Master Student, Jiangsu University, China
Lei Zhu Researcher, Chungbuk National University, China
Yingnan Li Researcher, Seoul National University, China

Re-Designing Suburbia with Nature: Evaluating Green Space Changes in Sprawl Retrofitting Projects in the U.S.

Literature shows that urban sprawl causes negative outcomes for public health, society, the economy, and the environment. Recent efforts to fix those problems, often labelled as sprawl retrofitting, focus on increasing density, adding different land uses and diverse housing options, and improving walkability and environmental amenity. Preserving the natural environment and providing more green spaces are integral for sprawl retrofitting projects to achieve their goals.

But lacking is empirical evidence about if the projects have achieved their "re-greening" goals. Some studies even show a significant loss of green space during suburban densification.

This quasi-experimental study evaluates green space changes in 60 sprawl retrofitting projects in the U.S. completed between 2001 and 2016. The difference-in-differences analysis compares multiple green space measures, including changes in total green space, green space by types, percentage of impervious area, and park area, to those in nearby neighbourhoods. A regression model explains the relationships between green space changes and project and neighbourhood characteristics.

We expect to find more decrease (or less increase) in green space and impervious areas and more increase in park areas in sprawl retrofitting sites compared with adjacent areas. We also expect that green space increased more in larger projects, more affluent and advantaged neighbourhoods, and areas that are further from CBD. For the landscape architect audience, we will share the typology of re-designing suburbia with nature.

This study evaluates the efficacy of the regreening strategies in sprawl retrofitting. Our findings call for more dedicated and coordinated efforts to provide socially and ecologically functioning green spaces when retrofitting suburbia.

Keunhyun Park Assistant professor, University of British Columbia, Canada

Climate-Led Urban Landscape Planning: A Simulation Data-Driven Analytics, Design and Decision-Making Process for Ipoh, Malaysia

Restoring thermal resilience and comfort is essential for providing a safe and liveable urban environment in the era of climate change. However, the underlying approaches responsible for designing such a concept in existing urban design practices so far remain to be explored, posing challenges to implementation. Hence, through the lens of urban landscapes and greening potentials, the research proposed a climate data-driven design framework, subsequently referred to as "climate-led", as part of the planning basis for urban redevelopment in Ipoh, Malaysia. The entire framework was built on the integrated use of urban microclimate, human thermal comfort, and GIS modelling and simulation tools. Its structure and objectives were formulated mainly for analysis, design, evaluation, and decision-making in urban landscape planning. First, through thermal-spatial correlation analytics, the model reflected the impacts of Ipoh cityscape on urban comfort and resilience. Lessons revealed from these thermal-spatial relationships provided specific insights and inspiration for creating efficient urban landscapes to improve local microclimates and thermal comfort. Accordingly, several design scenarios were created and compared to gain more comprehensive design guidelines and recommendations for redevelopment. In this process, the authors first created possible greening prototypes and screened them based on green coverage ratios (GCRs). The selected prototypes were then replicated into the pilot models for simulation testing before they were applied into scenario study for evaluation in thermal performance and design integrity. Overall, the results supported that cooling magnitude is associated with green and tree coverage ratio (GCR/TCR), enhancing greening significance in urban thermal improvement. Nevertheless, based on the outcomes, the greening effectiveness largely depended on the nature of the site. The degree of thermal improvement was correlated to ΔGCR/TCR (the degree of implementation) in a non-proportional relationship, not direct to GCR/TCRs. In other words, the same/similar GCR/TCR will not have the same/similar cooling effect in different site contexts. Lastly, compared to existing design concepts for climate change solutions, the climate-led design concept and approach were relatively result-oriented, comprehensive, and context-based. It demonstrated a complete design roadmap on integrating thermal consideration into urban design and planning, with three significances. First, it acts more precisely in identifying site problems and problematic locations and offering specific insights to improve such a situation at the local scale. Second, integrated scenario modelling and simulation can better assist in testing hypothetical designs and provide evidence-based explanations for any design decisions. Third, the framework can be integrated with non-thermal objectives to enforce landscape positions in urban design, such as the considerations on pedestrian-oriented development and heritage tourism in this research. In conclusion, the climate-led approach is multi-dimensional, integrated and flexible in its implementation. The new approach is a far-reaching initiative to enhance urban landscape efficiency in response to urban warming, so to urban sustainability.

Mei-Yee Teoh Senior Lecturer, Universiti Teknologi Malaysia, Malaysia
Michihiko Shinozaki Professor Shibaura, Institute of Technology, Japan
Kei Saito Associate Professor, Tokyo City University, Japan
Ismail Said Professor, Universiti Teknologi Malaysia, Japan

Green Space Optimization of Climate-Adaptive Campus Based on Accounts and Spatial Distribution of Carbon Source/ Carbon Sink: A Case Study of Beijing Forestry University

In the face of increasingly severe climate change, how to create a climate-adaptive landscape is an important task for landscape architects. As a place where carbon emissions are concentrated and also the place where scientific and educational activities are held, a campus should get early consideration and play a demonstration role in creating a low-carbon and sustainable living environment. Taking Beijing Forestry University as an example, this paper uses basic calculation formula to calculate the annual carbon emission of campus buildings, traffic, breathing, solid waste utilization, at the same time uses National Tree Benefit Calculator and carbon density formula to calculate the annual carbon sink accounts generated by plants, soil, water. Then use ArcGIS to analyze the spatial distribution characteristics of carbon source/carbon sink accounts; Based on a comprehensively analyze of accounts and distribution characteristics, we find two facts: from the aspect of accounts, buildings are the main emission source of the campus; from the aspect of distribution, there is a spatial mismatch in the distribution of carbon source and carbon sink accounts. Based on the above analysis, three optimization strategies for campus green space are proposed from two levels: from the level of overall planning, we should optimize the pattern of campus green space to form a "wind corridor-green space" synergistic system to enhance the capacity of carbon storage of the campus; from the level of detailed planning, we proposed to explore the facade space to carry out a variety of three-dimensional greening and optimize the planting pattern of plants, Finally, based on the above strategies, we carry out optimization simulation of campus green space and evaluate the promoting results.

Chuzhen Wang Post Graduate, Beijing Forestry University, China
Xiong Li Phd&Professor, Beijing Forestry University, China
Chi Zhang Post Graduate, Beijing Forestry University, China

Quantifying Residential Quarters Greening Coverage Threshold from Thermal Comfort and Energy Saving Perspective

Residential quarters are important space for citizen' s daily life, however, the degradation of the thermal environment of residential quarters are affecting inhabitants' health. Greening has been recognized as an effective approach for regulating microclimate through evapotranspiration and intercepting shortwave radiation that heats ground surfaces. Previous studies have shown how to mitigate temperature in the different urban contexts, however, few studies focused on balancing its function on both energy-saving and human thermal comfort improvement. This study aims to investigate a threshold of greening coverage ratio in residential quarters in Nanjing. We selected three sites that can represent the typical types of layouts in Nanjing for in-situ measurement, furthermore, a numerical model was used for simulating the scenarios with different greening coverage. The results show that the residential quarters' layout influenced the cooling efficiency of greening, the amplitude of temperature reduction is greater in the residential quarter with lower buildings. Additionally, although a higher greening ratio indicates a lower temperature, the efficiency of human thermal comfort improvement and sensible heat reduction getting decreased in residential quarter with taller buildings. Finally, we suggest greening coverage for residential quarters with 33m height, 54 m height, and 100 m height, is 40%, 35%, 25%, respectively by considering the human heat sensation. The finding of this study has important implications in urban planning and landscape design at a neighborhood scale, especially contribute to making decisions on the code of urban Residential Areas Planning and Design.

Zipeng Song Master Student, Jiangsu University, China
Dongli Lin Master Student, Jiangsu University, China
Yuhan Zhang Undergraduate Student, Jiangsu University, China
Yingnan Li PhD. Candidate, Jiangsu University, China
Zhaowu Yu Researcher, Fudan University, China

Coastal Landscape Planning for Reducing Flood Vulnerability

Most coastal cities face a series of urban flood problems due to not only sea-level rise but also increases of urban landscape complexity. Lack of diversity, redundancy, and connectivity of coastal landscapes makes the cities vulnerable. A better understanding of the influence of coastal landscape patterns on flood vulnerability will be helpful to build spatial strategies for making the cities more resilient. The study aims to determine the key coastal landscape patterns on reducing flood vulnerability for planning resilient coastal landscape. First, we analyzed which areas are susceptible to floods by using the flood vulnerability index. Specifically, we made and evaluated flood vulnerability considering three indices (exposure, sensitivity, and adaptive capacity) to categorize coastal cities. Second, we analyzed whether landscape patterns would affect flood vulnerability based on the categorization of the coastal cities. In this paper, landscape pattern indicators include three categories as follows; landscape connectivity (patch density, edge density, landscape division index, aggregation index), landscape redundancy (clumpiness index), and landscape diversity (contagion, Shannon's evenness index, Shannon's diversity index). To determine the key landscape patterns according to coastal flood vulnerability, the regression models were then developed for each category. The key landscape pattern indicators were selected based on the step-wise approach. According to the results, the major landscape pattern of coastal cities is landscape connectivity. Based on the key landscape pattern, we derived the implication of coastal landscape planning that more connected and aggregated patterns of green space can significantly decrease the vulnerability of coastal flood and increase the resilience of the coastal community. Landscape ecology approach in coastal landscape planning may contribute to suggest a new way for environmental planning and management of coastal cities.

Min Kim Graduate School Student, Korea University
Jiku Lee Graduate School Student, Korea University
Taehyeon Moon Graduate School Student, Korea University
Jinhyung Chon Professor, Korea University

Role of Species and Planting Configuration on Microclimate for Urban Trees

The urban heat island (UHI) is a well-known phenomenon, which not only reduces the comfort level of the urban population, endangers their health, but also reduces urban biodiversity [1-3]. Facing the problems caused by UHI, the way of increasing the vegetation seems to be an important strategy to alleviate UHI [4, 5]. However, the influence of urban trees with different configurations on the urban thermal environment has not received enough attention. Herein we show how spatial arrangement and foliage longevity, deciduous versus evergreen, affect the urban microclimate. Our study analyzed the differences between meteorological parameters (air temperature, relative humidity, vapor pressure deficit) of 20 different species of urban trees (10 evergreen and 10 deciduous tree species), each of which had been planted in three configuration modes in a park and the campus green space in Xi'an. By manipulating physiological parameters, crown structure, and plant configurations, we explored how local urban microclimate could be altered. Results showed that: 1) Microclimate regulation capacity: group planting (GP) > linear planting (LP) > individual planting (IP). The diurnal variations of air temperature and relative humidity in the three configuration modes and the control sites all showed the shape of "U". 2) Deciduous trees (DT) regulated microclimate better than evergreen trees (ET). 3) Microclimate regulation capacity was ranked as group planting of deciduous (DGP) > linear planting of deciduous (DLP) > group planting of evergreen (EGP) > linear planting of evergreen (ELP) > isolated planting of deciduous (DIP) > isolated planting of evergreen (EIP). 4) Transpiration was not the only factor affecting the microclimate regulation capacity of urban trees but also depended on the structural factors of trees such as three dimensional green quantity (3DGQ) and leaf area index (LAI). 5) A microclimate regulation capability model of urban trees was constructed. The transpiration rate (E), stomatal conductance (GS), 3DGQ, and LAI could explain 96% variation of cooling effect, while E, GS, VpdL, 3DGQ and LAI could explain 89% variation of humidifying effect. This study demonstrated that the urban heat island could be mitigated by selecting deciduous broadleaf tree species and planting them in groups. Given the above research, more theoretical support can be provided for landscape designers in future planting design to reduce the negative impact of the urban heat island effect.

Dan Zhao Doctoral Candidate, College of Landscape Architecture, Beijing Forestry University, China
Weili Ji Professor, College of Landscape Architecture and Arts, Northwest A&F University, China
Jun Cai Professor, College of Landscape Architecture, Beijing Forestry University, China

The Schools in Guadeloupe of the 1930s in a Tropical Situation, a Model of Resilience to Heat Waves and Natural Risks

Guadeloupe is an archipelago and a French province located in the Caribbean. Today it has a population of four hundred thousand, of which about 4/5ths are descendants of slaves.
In 1928, a cyclone devastated this territory. The Ministry of Colonies decided to rebuild these islands according to the government standard of public facilities in mainland France. In 7 years, a hundred public buildings (schools, town halls, churches and courts) were built by the architect Ali Tur. He accompanied the territorial reorganization of the archipelago and the restructuring of the communes around small town centers, structured with a square and these new buildings. 90 years later, these buildings, often still in use, have withstood many cyclones and several earthquakes.
Between 2008 and 2021, the French government conducted a study with local economic actors (design offices) on the parasismic potential of schools, but also a scientific mission for a methodological approach to answer the same question. The local engineer proposed reconstruction, the research mission confirmed their earthquake resistant characteristics. It is a multidisciplinary university research work under the supervision of an architect-historian including an engineer-architect and a landscape architect.
Among the analysis criteria addressed by the research, we were interested in characterizing the local tropical situation in order to better understand the intelligence brought by the architect Ali Tur in the implantation of these buildings in their context. We know how much trees, like porous soils, contribute to the overall resilience of territories to violent winds and earthquakes. As a more qualitative aspect, we also worked on the climatic comfort of the work spaces in these schools.
Each of the schools studied corresponds to a geographical and microclimatic situation representative of Guadeloupe. Ali Tur set up the buildings in the best conditions for their users, reconciling both the urban and landscape links to the territory, the relationship to the slope and the exposure to trade winds. In a humid tropical climate, it is necessary to avoid low points (risk of flooding), and ridge lines so as not to fear cyclones. And at the same time, one must know how to capture winds and breezes, the main allies of climatic comfort. When we analyze the architect's drawings, we see that originally, the surroundings were integrated into the overall design. They were porous and wooded spaces, now waterproofed. Moreover, in the geological context of Guadeloupe, access to drinking water remains difficult, despite the abundance of rain. The architect used his roofs as an impluvium, a rainwater catch, which he stored in tanks integrated into the buildings. These water reservoirs, as well as the trees and the permeability of the soil, participated in the passive protection of these constructions.
The first results of the research show that these constructions are well adapted to the humid tropical situation exposed to natural risks and that the return to the initial state, before the successive interventions carried out since the 50's (waterproofing of the courtyards, removal of the trees...) would further increase their resilience.

Frederic Dellinger Senior Lecturer, ENSAG, France

La Duna Skatepark, New Sports Seedbed on the Northern Border, México

The Urban Improvement Program 2019 promoted by the Federal Government of Mexico through the Secretariat of Agrarian, Territorial, and Urban Development, in collaboration with the Faculty of Architecture of the UNAM, sought to contribute to the quality of life of the population in localities considered marginalized within the Mexican Republic.

One of the 16 cities served was Ciudad Juarez, Chih, Mex. where a public space located on the edge of the border city was intervened. In this underdeveloped area at the east of the city, the Tierra Nueva colony, characterized by being a popular housing area, el Parque Municipal Oriente is the recreational and sports meeting point that provides the necessary space for the development of various activities and facilities to serve more than 5,000 visitors.

With the task of complementing this offer, in the northern section of the park and under the commission of designing a neighborhood garden, the SEDATU work team allocated this space to include the population in various ways: one, to establish a space for contemplation and interaction for different generations with recreational and sports activities; which would characterize the functions of this area, would be skating, a sport that is taking interest among the youth of the City since in this area it has many followers and currently does not have nearby spaces to practice.

That's right, the multidisciplinary team headed by two landscape architects Valia Wright and Eduardo Peón, and which architects, urban planners skaters, and sociologists were integrated, established as the main objective, to understand the dynamics of the relationship between this section of the park with the colony, and at the same time bring a little of the natural context of the Chihuahuan Desert as a form of recognition of the natural heritage to its elements and environmental characteristics, which can be very aggressive for everyday life, but are a context-rich in raw materials that must be preserved for their value. The landscape of the Dunas de Samalayuca is the natural reference for the conception of this space as a continuous piece that lays on the ground.

The design of the skate track is divided into three sections, each one destined for the practice of the modalities of Skateboarding: the first for bowling, the second for the street style, and the third with varied obstacles for beginners in this sport, this area has an amphitheater where adults can rest while minors practice in the obstacles. Each of these sections is bordered by gardens with native desert plants, which will provide shade to the different areas when they have grown enough.

On the perimeter, the bike path extension connects this space with the rest of the park, integrating the Dune into the natural route of this recreational space. For the materialization of this space, concrete was selected whose color was integrated with the sand, material on the site, and surrounding this area of the city.

Valia Wright Sánchez Coordinator of the Career in Landscape Architecture at the Architecture Facuilty and professor, Licenciatura de Arquitectura de Paisaje, Facultad de Arquitectura, Universidad Nacional Autónoma de México, Mexico

The Practices and Potentials of SITES Rating System for Landscape Design: A Case Study of Chicago Navy Pier

Any landscape holds the possibility to be ecologically resilient places better able to both improve and regenerate the natural benefits and services of ecosystems. In this context, how we plan and design our landscape will play a significant role in the health and welfare of humans into the future. The Sustainable Sites Initiative was an interdisciplinary group effort which developed a rating system that identifies and advances best practices for landscape design. The system, called SITES, is presented as a systematic, comprehensive set of guidelines to incentives sustainable landscape practices by using an ecosystem services framework. In this paper, taking the SITES gold certified project Navy Pier in Chicago as a case study, the author aims to illustrate the utility, benefits, usefulness, and potential of the SITES rating system.

Methods
This Case study is primarily a literature review, based on public documents, reports and articles with the specific context of the Chicago Navy Pier. Running concurrently with the review of history, principles and purposes of the SITES system, a strategic search for the Chicago Navy Pier was firstly launched around this question: how to use SITE as the guidance to operate in the real project toward sustainable outcomes. Then I was deeply involved with the components and result of the scorecard for the Chicago Navy Pier. I singled out the scorecard-criteria which can be improved at the site and made suggestions for techniques and systems to better these.

Results
The Chicago Navy Pier used the SITES as a guiding principle and integrated the different design objectives into a comprehensive system solution. SITES informed much of design process of the Chicago Navy Pier, from access and circulation studies to plant and material specifications. It was an important tool that kept entire team accountable to a high standard of best practices and resulted in lots of benefits, such as 60% reduction in energy consumption.

SITES guides the project team to higher levels of sustainability by demonstrating the interrelationships and synergies within the rating system and outlining the connections between credits and performance criteria. The possibility of this site going from a Gold certificate to a Platinum would require an increase of at least 24 points (p) in the scorecard evaluation. The remaining missing credits could be divided into two different categories: credits to be gained from reconstruction and credits to be gained from policy changes. The final proposal is implementation of bioswales (5p), policies for green procurement (12p), a switch to electric tools during maintenance (2p), educational elements on the site (1p) and finally tree tubs (4p) for resilience against flooding.

Discussion
The SITES gold certified project-Chicago Navy Pier demonstrates advantages of SITES including its credibility, replicability, and scalability. Three potentials of SITES are also demonstrated in the context of contemporary landscape design practice: to 1) encourage rigorous and measured practices in landscape design, 2) facilitate successful implementation of sustainable landscape intent, 3) and drive innovation in sustainable practices through project work.

Lin Jin Student, Seoul National University

Analysis of Effects of Sponge City Projects Applying the Geodesign Framework

As the global economy grows and the population increases, urbanization accompanies adverse environmental impacts such as global warming, climate change, and heavy rainfall. Since the increase in rainfall intensity and the frequency of heavy rain have caused serious urban stormwater problems, various urban water cycle management solutions have been suggested internationally. In response to the increased water management risk, the Chinese government presented a new integrated urban water management strategy called "sponge city" in 2013. As sponge city received significant attention in academia and the planning practice, researchers have tried to prove its benefits more scientifically. However, it is necessary to consider that sponge city projects are not fully completed yet and are still ongoing. Most evaluation and simulation methods used in recent studies are optimized for evaluating the natural phenomena based on the current conditions, not the effects of unbuilt plans. In order to evaluate the ongoing planning process of sponge city, a new framework that can evaluate the projected effects of the planning and design alternatives is required. Based on these concerns, the objective of this study is to verify the effects of sponge city projects focusing on the capability of water pollutant and urban flood control applying the geodesign framework, an integrated planning and research method that can evaluate alternatives using a blend of science and value-based information.

This study analyzed the impacts of sponge city projects in Harbin, Quzhou and Sanya, China. Three LULC scenarios which are existing project(scenario 1), maximization of development (scenario 2), maximization of sponge city (scenario 3), are proposed based on the geographic design framework. And the spatial distribution and quantitative values are simulated by the InVEST NDR model and urban flood model study.

By comparing different scenarios, the study proved the current sponge project could improve the water pollutant control capability by 11–18% and the stormwater control capability by 0.4–6.3%. If the city-wide green infrastructure network is introduced with sponge projects, the water pollutant control capability can increase by 9–15% and the stormwater control capability can increase by 0.8–2.9%. These results show that the current sponge projects can improve the city's sustainability and be helpful strategies to fight climate change and global warming.

Yaoxue Li Student, University of Seoul

Youngmin Kim Professor, University of Seoul

Landscape Digital Twin as a Construction Platform that Connects Virtual and Real

Digital technologies and tools in landscape architecture can bring about drastic changes throughout the design and construction processes by making them interactive and efficient. However, these technologies and tools are not actively used in actual landscape architectural practice, and most cases of using digital technologies are to promote a design proposal. After the design phase, rapid disconnection of design and technology occurs in the construction phase. As a result, digital technologies and tools in landscape architecture have not yet contributed effectively to creating the "new landscape" that architecture has experienced in the past.

In this context, the article introduces exemplary field cases in which landscape projects used digital twins in the construction process. These cases utilize various digital technologies and tools, especially focusing on extended reality virtual and augmented reality, making landscape construction processes more efficient and accurate.

A digital twin is a virtual model or a system of real objects or spaces. It began in the manufacturing industry and now expanded to larger and more complex urban spaces and environments. A digital twin is a platform that we input the information and use throughout the life cycle of a space from its design to operation. A digital twin for land-scape plays a role of an integrated landscape design, construction, and management platform that conventional 3D models cannot replace. It has various applications depending on the program or platform that connects virtual and real spaces.

Using these diverse technologies and tools, digital twins support analytical design processes as well as efficient construction. Virtual Reality has the utilization in spatial design that controls interaction in space through coding. If virtual reality is valuable as a tool for simulation and representation of a design plan, Augmented Reality helps in-spect the construction process by projecting the design plan on the site.

Augmented Grounds is a new attempt to introduce Augmented Reality in the garden construction process. The design team determined the topography of the garden based on mathematical algorithms. In order to construct complex shapes and colors that are difficult to convey only with two-dimensional drawings, digital twin technologies were used to provide visitors with a unique experience of the collaboration between humans, nature, and digital technology. Augmented Grounds used augmented reality and digital twin communication platforms to realize fully-digital construction and observation. The 3D model of the design was projected onto the field in a holographic manner using Microsoft HoloLens and constructed using it as a 3D drawing. The design team and the construction team were connected remotely, communicating and supervising the entire construction process through the landscape digital twin.

Today's landscape architects face urgent challenges such as climate change, fine dust, urban regeneration, smart cities, and the recent pandemic. However, existing tools and perspectives alone have limitations in solving such rapidly changing urban and environmental problems. Beyond advancing from two-dimensional drawings to three-dimensional models, landscape architects need thinking that accepts the four and five-dimension including information and time in the four and five-dimensional perspectives.

Yumi Lee Associate Professor, Seoul National University

Collaborative Process Using BIM Software in the Site Design Project

BIM automatically performs design, process simulations, and estimate tasks using construction information. BIM helps designers to focus on design. Currently, BIM is used in projects in architecture and civil engineering actively. However, in the field of landscaping, the demand for BIM in large-scale projects is only just beginning to increase. Therefore, it is necessary to establish a process of using BIM in landscape architecture for collaboration between fields and efficient design processes.

This research studies the utility and connectivity of BIM through the design process that uses BIM software collaboratively. This research is based on the Site Design studio process at the Graduate School of Environmental Studies, Seoul National University, and uses Civil 3D, InfraWorks, and Navisworks of Autodesk.

In research, we analyze BIM workflow for each design stage of the terrain, drainage, pavement, and planting process. First, using Civil 3D, we do a terrain analysis and create a 3D surface. We analyze the slope, the direction of the slope, and the amount of earthwork volume. The 3D surface is created by inputting the grade point to the feature line based on the digital terrain map and survey data. The visualized analysis data of Civil 3D is helpful for flat land creation and circulation planning.

Second, we review and modify the 3D surface created by linking Civil 3D and InfraWorks. The 3D surface of Civil 3D modifies the detailed terrain after reviewing the elevation with the engineering view in Infraworks. Water Drop analysis in Civil 3D is for drainage and pavement planning. Third, we visualize the design of the pavement and planting plan through InfraWorks. Visualization of the pavement plan material customizes the basic data in InfraWorks according to the design intent. The planting plan visualizes in 'InfraWorks' through tree height control and arrangement density control functions. Fourth, we review from the user's point of view using Navisworks. The simulation of the final design proceeds with a review from a walking perspective.

This study shows that collaborative BIM design is possible through the interlocking of three software at each design stage. In addition, Civil 3D is highly useful in the terrain planning process through a three-dimensional study of the current situation. InfraWorks is highly useful in reviewing the terrain of the 3D surface and visualizing the design plan. Navisworks is highly useful in overall design review through walking simulation.

Among the collaborative uses of BIM conducted through this study, interworking between software for design changes and analysis of earthwork volume calculation are particularly helpful in the terrain design process. Moreover, this makes it easy to create a suitable design for the site and has a high degree of completeness. In addition, the use of BIM needs to be actively used in the landscape field as it helps to improve understanding of 3D space and smooth communication between team members.

Sumin Lee Student of Master's Degree, Graduate School of Environmental Studies, Seoul National University

Minyoung Cha Student of Master's Degree, Graduate School of Environmental Studies, Seoul National University

Yumi Lee Associate Professor, Graduate School of Environmental Studies, Seoul National University

Designing Ecohydrological Connectivity at a Regional Landscape Scale

This proposed presentation is consistent with IFLA's themes for the 2022 World Congress as it addresses the public leadership role of landscape architecture in re:shaping the earth through adaptive regional landscape design and re:connecting to nature by restoring landscape process through adaptive spatial design. Future practice in Landscape Architecture will include climate change adaptation at different scales of intervention in different social, ecological, and biogeoclimatic contexts.

Ephemeral drainage systems of glacial origin are part of the eastern side of the Calgary Metropolitan Regional area in Southern Alberta. This regional prairie pothole landscape involves an ecohydrology system of wetlands surface and sub-surface flows surface all of which involves significant ephemeral characteristics. Historically, these regional landscape features have provided critical ecohydrological processes in a cold semi-arid climate characterized by extreme seasonal temperatures and frequent drought conditions. The structure and function of this system is not well understood in municipal land use and development planning processes. However, the east side of the Calgary Metropolitan Region contains two of the three fastest growing municipalities in Canada over the last twenty years. As a result, the cumulative land use patterns created by agriculture, industrial, residential development, infrastructure servicing and road networks have spatially modified and disconnected these ancient ephemeral systems over time. This cumulative loss of ecohydrological function leaves the regional landscape vulnerable to climate change. Future regional projections indicate increasing drought conditions over the next twenty years.

The proposed presentation will illustrate two specific methods with on-the ground examples of the application of spatial analysis, landscape connectivity analysis, network analysis, and projective ecology, in re-shaping regional land use patterns to re-connect and create new ecohydrological structure and function at a large scale. This adaptive spatial design approach enables land use and development patterns maintain cross-scalar hydraulic connectivity and mitigate land use and climate change effects in a regional context.

The climate change science literature recommends regional scale interventions as the most effective scale of intervention and mitigation. Adaptive spatial design approaches can re-shape structural and functional processes at a regional landscape scale to help mitigate cumulative land use and climate change effects. The work to be illustrated in the presentation has been developed over the past six years in order improve ecohydrological performance in an arid regional landscape by re-shaping land use and development patterns.

Mary-Ellen Tyler Full Professor, University of Calgary, School of Architecture, Planning, and Landscape, Canada

Designing Terra: The Sustainability Pavilion, Dubai EXPO2020

This presentation explores desert INK's award-winning landscape design for Terra, The Dubai EXPO2020 Sustainability Pavilion. This pavilion successfully pioneered a resilient, climate sensitive and intelligent direction for designed landscapes in arid regions.
Dubai EXPO 2020 is arranged into three co-related thematic districts, each with a signature pavilion: Sustainability, Mobility and Opportunity. The Sustainability Pavilion's landscape is inspired by the forms of the natural habitats of the UAE; namely sand dunes, wadis and mountains. It simultaneously celebrates the water wise native flora that thrives in the harshest of conditions. Coupled with locally sourced materials, this landmark project provides a beautiful, working example of innovations previously thought unachievable.
The landscape design brought into cultivation more than 100 'native and adaptive' plant species, many of which were grown from seed collected from the UAE's natural environments. Through pioneering the cultivation of countless xerophytic plants, the design requires a fraction of the irrigation required by conventional landscapes and is far more resilient to the harsh conditions found in the region. Couple these drought tolerant species with highly efficient sub-surface irrigation for trees and palms which provides water into the roots rather than at the surface, and the project delivers further savings. Irrigation water is provided through the capture of the building's air conditioning condensate, combined with treated sewage effluent. Sewage from the pavilion and surrounding buildings is treated through a reedbed filtration system which visitors can explore via a sequence of boardwalks floating just above the surface. Cleaned water exiting the reedbed system is then fed into the irrigation system and re-used to irrigate the project's vegetation.
Terra's landscape design features countless innovations and trials of new materials which are set to inspire designed landscapes in the future to adopt and build upon these precedents. The use of bamboo composites in lieu of hardwoods and the development of a distinctive new paving material incorporating recycled glass and waste materials from the metal smelting industry are two such examples. This unique combination of innovations has managed to not only offer sustainable benefits, but likewise convince decision makers and the general public that sustainable landscapes can also be beautiful.

Duncan Denley Managing Director, Desert INK, United Arab Emirates

Ecology and Environmental Preservation Key Performance Indicator Analysis: Nusantara, Indonesia's New Capital City as a Case Study

Nusantara, Indonesia's new capital city urban development project is gaining a lot of attention recently from everyone around the world. The idea that there would be a city built on a land with one of the most biodiverse ecosystems on the planet have generated a public outrage. However, there are some backgrounds of this project that the public is yet to be aware of, and the great opportunity this project may bring towards this beautiful land could be remarkable, the success of this project could make Indonesia the pioneer in the concept of Forest City and climate resiliency. We aim to find out if the key performance indicators (KPI) provided is in accordance with the design implementation by qualitative data analysis. Sources of data used in this study is secondary data obtained from literature study and the consultant's plan and design guidelines. We have selected one of Nusantara's KPI, 'Ecology and Environmental Preservation', and highlighted the green infrastructure design and planning strategy that have a significant ecological influence on this project. First, this paper will shine a light on the importance of preserving Borneo's forest, as the project is located in an Industrial Plantation Forest where there has been a significant ecological degradation. Secondly, state the KPI's benefits when it is properly implemented. Finally, elucidate the environmental risks humanity will face if this initiative is not taken seriously. The paper concludes with a discussion of the insights that were provided and recommendations for future research that can be done to further strengthen the success of this project.

Alicia Wellsan Postgraduate Student, Monash University, Indonesia
Zaki Maharani Employee, Pt Studio Urban Rancang Selaras, Indonesia

An Evaporating Buffer – Salt Pans Ecosystem of Mumbai

'Ecology is the permanent Economy', a well-known slogan from Chipko Movement by Sunderlal Bahugana is still relevant in the present day and asks one to ponder upon while witnessing the growth of the infrastructural development of the nation. The persistent argument between the development and environment, and its implications in a developing country like India is obfuscated. On the other hand, globally, countries are going through a serious climate crisis and have already had observable effects on the environment including flooding.
In a densely populated city on India's west coast, Mumbai, a city formed by combining 7 islands of Bombay (now Mumbai),which then had varied landscapes ranging from low hills, tidal flats, mangrove forests, and salt pans still survives. One such interesting urban coastline landscape of Mumbai with a significant past is Salt pans.
Salt pans are spread across the edges of the city coast in the form of white formal rectangular flat landscapes. The solar radiation evaporates subsoil salt-water which eventually gives us the residues in the form of salt crystals. Salt has been a commodity that has been valued as a condiment and produced since antiquity. These Saltpans also generate employment and ensure livelihoods for some city population. The salt pan urbanity embraces an interesting wisdom of the natural landscape and its cycles, and acumen in harnessing the produced substance of immense value to human society highlighting its cultural value.
As per the Coastal Regulation Zone (CRZ) notification (2011), salt pan lands are ecologically sensitive & important areas falling under the category CRZ 1B where no development activity is allowed except exploration of natural gas and extraction of salts. Later, Because of Mumbai's space constraints, a concession was given under CRZ 2011 to redevelop the NDZ (Non- Development Zones) areas under public-private partnerships (PPP), having FSI norms complying to that of city by-laws for affordable housing. These eco-sensitive salt pans, which act as lungs for the over-congested city, were deemed to not be wetlands following a revision of the Wetlands (Conservation and Management) Rules in 2014. The latest 2022 announcement by authority re-modified these Salt pans into a NDZ area in order to protect them from urbanization.
The changing rules and regulations regarding this coastal cultural landscape has made Salt pans a sensitive subject matter. Ecologically, they act as a natural buffer to the monsoon floods, protecting the city like a productive coastal sponge. Along with mangroves, salt pans hold the seawater from entering the city and stop flooding. They are visited by several species of birds, having a greater ornithological importance and different types of insects thrive on them as well. In a time where these crafted tidal landscapes rich in biodiversity portraying the coastal cultural landscape of the city are being invisible in favor of urbanization, it's crucial to protect, conserve them and recognize its identity as a part of urban landscape of Mumbai and make the city coast Resilient by integrating it into the city landscape.

Aishwarya Deshpande Landscape Architect, Independent, India

1. Oral Presentation

RE:VIVE

Suggestions for Gardens of South Korea Cities in the New Normal Era

We living in the New Normal era are in a complex and uncertain situation. Accordingly, urban residents are pursuing interest in daily happiness and quality of life and focusing on the value of the green environment. According to the IKEA's Life at Home report (2021), growing plants through the COVID-19 period has become a meaningful activity and helped maintain mental and physical health. In addition, an important factor for the ideal house was that having a private garden or balcony (36%) was dominant, noting that it was prominent mainly in dense urbanized areas.

The garden has long been a daily place closely connected to the human residence and has maintained a solid relationship as a transition space that connects nature(Pae, 1998), Today, various garden policies and programs for urban residents are presented, but there are still many areas to discuss whether they are actively accepted in individual daily life. This is because the gardening in person provides a different level of experience than visiting a nearby park. Therefore, I would like to make some suggestions on the garden for urban residents.

First of all, it is suggested to look at the garden as an object of cultural movement. The garden is the realm of practice. Garden in modern cities is a place where 'participation' through 'cultivation behavior' is important, and its value is highlighted as an 'alternative green area' and a 'place to restore a community life'(Sim&Zoh, 2015). In terms of this practical gardening experience, a garden culture movement is needed to encourage individual experiences in gardening. It is not a grand event that creates a better environment to live in, but because it is in the small practice of each person.

Second, it is used as an infrastructure for the healing and social integration of urban residents. According to the National Arboretum of the Forest Service, continuous gardening activities have a positive effect on the physical and mental health of the socially disadvantaged. Contact with nature is in contact with humans' instinctive tendency to promote psychological stability, positively affects health and happiness, and triggers activities that are physically and mentally helpful. (Sung, 2014) Composing unused lands around residential areas as gardens for essential green infrastructure and providing opportunities for gardening by residents themselves will contribute to healing the happiness and tired life of urban residents. In addition, it will be possible to expand opportunities to meet and communicate with society through garden activities.

Finally, it is necessary to find a way to strengthen the accessibility of garden services for citizens. Elements and Status of the Garden Industry in 2020 refers to the current status of the absence of specialized businesses for gardens and mixed businesses without distinction of business areas. The lack of garden services that urban residents can easily access and obtain information can act as an obstacle to the actual increase in garden demand. It is time to find a way to make it easy to access in daily life before forcing urban residents to do gardening.

Hwa-hyun Seo PhD Student, GSES, Seoul National University

Mobility Change Around Neighborhood Parks and Green Spaces Before and After the Outbreak of the COVID-19 Pandemic

COVID-19 had a significant impact on the movement and activities of citizens. After the outbreak of COVID-19, the frequency of neighborhood parks and green space visitation surged dramatically, and the value and the function of neighborhood-level green amenities received more attention. In this regard, this study empirically analyzed how citizens' 'movement' and 'activities' of neighborhood parks and green space changed before and after the pandemic as well as the social and spatial characteristics that influenced these changes.

First, by using signal data from telecommunication carriers, we examined the change in mobility patterns in neighborhood parks and green spaces before and after the outbreak of COVID-19. Specifically, by analyzing the length of stay and amount of movement, we assessed the change in the extent of visits to parks and green space and citizens' mobility patterns. Furthermore, using correlation analysis and multiple regression analysis, we looked into social and spatial elements that influenced the number of visits to neighborhood parks and green space. Finally, through cluster analysis, the types of spatial scope of people's daily lives were classified from the perspective of supply and management of parks and green spaces service level, and directions for improving neighborhood parks and green spaces services by type were presented to cope with post-COVID-19 era.

The main research results are as follows. First, people's activities within walking distance, or 500m from their homes have increased after the outbreak. Length of stay and amount of walking movement within walking distance also increased in both 2020 and 2021. This suggests that there is an increased need to consider the walking distance to community amenities when planning and maintaining public infrastructure such as parks. Second, foot traffic to parks and green spaces showed an overall increase after the outbreak. In particular, we confirmed that both the amount of visits to neighborhood parks and green spaces located close to one's home and workplace increased significantly. Therefore, the post-COVID-19 era park policy should be promoted in the direction of discovering underprivileged areas, focusing on residential and workplace-intensive areas, and improving parks and green spaces service level in the area quantitatively and qualitatively. Third, we found that the higher the level of parks and green spaces service, the higher the amount of foot traffic. This indicates that people who have excellent pedestrian access to parks and green spaces walked more than those who do not. The criteria for securing parks needs to consider not only the relative size of the park but also indicators that contribute to the improvement of citizens' actual park and green spaces services such as pedestrian accessibility. Lastly, the result of cluster analysis presented five types of potential improvements that can be made regarding neighborhood parks and green spaces management after COVID-19. This suggests that it is essential to comprehensively consider characteristicms of socioeconomic status and the condition of parks and green spaces service in future park planning policies.

Ga-yoon Choi Assistant Research Fellow, Architecture & Urban Research Institute

Yong-gook Kim Associate Research Fellow, Architecture & Urban Research Institute

Revive, Reuse, Recover – Communal Spaces and Gardening During the Pandemic in a Socialist Housing Neighbourhood: Drumul Taberei, Bucharest

Based on a fieldwork research project, the presentation is focusing on the transformation of the public space and life in a post-socialist collective housing neighbourhood of Bucharest during the Covid-19 pandemic through individual and communal practices of informal gardening and bricolage. Developed in 2021, the OPEN Garage research project, used qualitative methods, from architectural ethnography, relational mapping, applied education, participative observation, which facilitates the coproduction of data and spatial activation.
Housing in socialist Romania was subordinated to the planning and industrialization processes. Within a system focusing on the fast production of living units, public space design and community equipment was always left behind. The inhabitants filled those: they transformed the nearby public domain, created ad-hoc community hubs and supported, designed and repaired the neighbourhoods' civic infrastructure.
The Drumul Taberei neighbourhood is one of the peaks of collective living in Romania, designed as an "ideal city", with its generous public spaces and green areas. At the same time, the neighbourhood has always been an unfinished place, fertile for opportunistic adaptations. As in most of the large collective housing neighbourhoods, the dwellers of this place have also developed a series of micro-interventions of negotiating and managing common spaces (Iaione & Foster, 2017; Stavrides, 2019) through collective practices.
The research has outlined how the informal practices of transforming and managing common spaces are both a manifestation, and a source of their attachment to the neighbourhood. These practices, based on collaboration and solidarity (De Angelis, 2017), were crystallised over time and have become, to some inhabitants, a way of being in the neighbourhood. They are landscaping gardens around the blocks of flats, where they build tables and benches, or raise vine bowers, they set up shelters for animals and gather round the garages, thus articulating an ecosystem of resources, spaces, practices, and shared knowledge. In this context, informal gardens take an important place, through their scale, complexity, and impact on the neighbourhood. Despite the stereotypes of the dominant narrative, centred on aesthetic incoherence, micro-communities of gardening neighbours are developing here.
The utility of community gardens has recently been validated during the Covid-19 pandemic and the lock-down, when the communal gardening practices get a new shift, acting like a direct response to the official measures of limiting the access to public spaces and parks. The informal gardening, based on bricolage and use of recovered materials, became one of the main resources for the communal and public life. Despite their social importance, the informal gardens are now facing the aggression of the local authorities that seek for their demolition based on arguments of aesthetic (lack of) value. Rather latent or implicit, little assumed and articulated, devalued in the dominant narratives and missing administrative support, these collective practices of managing common spaces in the city are not just interesting, but highly valuable in the context of today's multiple crisis. They have the potential to support places where the inhabitants can practice and contribute on the spot to a more resilient society, more inclusive and just.

Alex Axinte PhD student, Sheffield School of Architecture, University of Sheffield, Romania
Ioana Tudora Assistant Professor, University of Agronomical Sciences and Veterinary Medicine, Bucharest, Romania

The Impact of Park Accessibility on the Sales of Commercial Districts During COVID-19 in Seoul, Korea

The outbreak of COVID-19 has brought fundamental changes in people's daily lives across the world. In the case of South Korea, precautionary measures such as social distancing guidelines, restrictions on business hours, and people's tendency to avoid dense indoor space have significantly undermined the economy of a commercial district. However, in contrast to the depression of the commercial area, according to the "Community Movement Report" released by Google, the number of visits to outdoor green spaces such as mountains and parks increased during the pandemic in Korea. Based on previous studies, people consider urban nature as a refuge from stressful daily lives caused by the pandemic (Ugolini et al., 2020; Venter et al., 2020). Therefore, now it is time to pay more attention to the role and value of parks. Several previous studies have demonstrated the positive role of parks in the economic, social, and environmental aspects (Chiesura., 2004; Space, C. A. B. E., 2009 ; Blue Sky Green Space., 2011; Harnik and Crompton., 2014). Even so, it seems that the economic value of the park needs to be studied and re-evaluated in the current situation when the coronavirus is spreading and the local commercial district is in the downturn.

Therefore, this study aims to confirm the economic effect of parks on the nearby market district during the pandemic using the Difference-in-Differences approach. The research hypothesis is that parks near commercial areas provide a buffer against market sales decline during the coronavirus outbreak. To confirm this hypothesis, about 1,400 market districts in Seoul were examined by comparing card sales in the 2nd and 3rd quarters of 2019 and 2020 (before and after the outbreak of COVID-19). The dependent variable is card sales by the commercial district. The independent variables are the presence of coronavirus, the adjacency of the commercial area to a park, and the interaction variable between them. In this study, the adjacency between the park and the commercial area was operationalized by confirming whether the park intersects with the 400m (5-minute walk) Euclidean buffer from the commercial district boundary by using GIS. In addition, the size and density of the commercial district and other characteristics of the surrounding areas were set as control variables.

The study found that the extent of the decline in sales in commercial areas due to the COVID-19 was less severe in commercial areas adjacent to the park compared to areas that are not. As a result, it was possible to confirm the role of the park in lessening the impact of the economic downturn caused by the outbreak of COVID-19 in the nearby market district.

Jieun Park Ph.D. Student / Interdisciplinary Program in Landscape Architecture, Seoul National University

Analysis of the Satisfaction and Importance of Urban Parks Post-pandemic Using Big Data – Focused on Seoul Forest

The purpose of this study is to collect and analyze the experiences of various urban park users after the outbreak of COVID-19, using big data to identify the problems and points to be improved in the current urban park situation.

The fast urbanization of modern society has resulted in side effects such as the destruction of nature and a decrease of environmental quality. In light of this situation, the role and importance of urban parks are gaining more recognition by their characteristic of a public place that provides rest and comfort to citizens in a desolate urban environment. In particular, as indoor activities have become restricted since the outbreak of COVID-19, the number of citizens using urban parks with their friends or family is increasing significantly, and awareness of the necessity and benefits of urban parks is rising as well. In addition, since the mid-1990s, the tendency to enjoy healthy leisure has increased, and user's preferences such as sports activities, natural experiences, cultural experiences, and ecological observation have diversified, requiring new functions of the park (Choi, 2008). Now, it is impossible to create a space that users want with the past facility-oriented plans and non-characteristic designs, and various studies such as improving services and use programs of urban parks are needed to recognize this (Choi, 2008).

The analysis performed in this study focuses on Seoul Forest, a large-scale ecological park that is highly used by citizens for leisure and health activities. Through a literature review, the theory of Revitalization, limitations of existing studies and evaluation indicators to assess the satisfaction and importance of urban parks are derived. Then, data related to Seoul Forest is collected from blogs, news, and social media using the tool TEXTOM, to identify changes in the user's behavior before and after COVID-19. From the data collected, keywords are derived using text mining techniques, and the behavior changes and their relationships are analyzed by period. Based on the analysis result and the evaluation indicators, a survey using a 5-point Likert Scale is prepared and conducted with park users focusing on 4 indicators: Sense of place, Natural Environmental Characteristics, Usage Characteristics and Management Characteristics. Finally, the analysis of usage behavior according to demographic characteristics is conducted, and through the analysis and survey results, the function and role of Seoul Forest after COVID-19 are identified, and improvement measures are suggested.

Therefore, by analyzing the changes in the satisfaction and importance of urban parks post-pandemic, this study can have significant implications to help landscape professionals to understand the new behavior of urban park users, thus expanding the benefits of these green spaces while adapting to the new urban scenario post-pandemic.

Jooho Lee Master Student, Hanyang University
Jessica Tavares Machado Master Student, Hanyang University
Gunwoo Kim Assistant Professor, Hanyang University

Planning Healthy & Efficient Cities Through the Healthy Urban Community Assessment Index

According to Britannica Encyclopedia, urban sprawl is a development trend described as the rapid expansion of the geographic extent of cities and towns. These areas are primarily developed for private vehicle accessibility and lack an effective planning strategy for public transportation. Consequently, this usually leads to increased health risks to all kinds of users (residents, pedestrians, workers, students, and area) because these areas are plagued with energy use, pollution, and traffic congestion issues.

Theories and applications of transit-oriented developments (TODs) have been developed worldwide and are effective for reducing and mitigating urban sprawl. They have managed to integrate transit areas into the urban fabric while promoting active transit, healthy modes of transportation, and improved quality of spaces. These outcomes are consistent with what the Healthy Cities Initiatives (HCI) strives to achieve in showing the potential of cities to become places for integrating physical and social spaces as well as for improving the health of a community. The HCI is very crucial in our current global situation because of the pandemic and newfound awareness of the importance of open spaces. Equitable access and effectivity of these open spaces are crucial in bolstering the environmental health of the city and communities it serves.

This study formulates a people-centric approach or policy tool—through which the appropriate planning theories are made accessible, understandable, and usable to decisionmakers and stakeholders—can spread awareness about the value and benefits of TODs and HCI. Using a previous tool on the planning of TODs, the TOD Suitability Index (TSI), it was integrated with HCI concepts to facilitate planning decisions with HCI concepts in mind. To test the tool, this study focuses on the use of this newly formulated tool in a case study to determine its effectivity to identify the potential needs of the area. It is conducted by giving the tool to various stakeholders and allowing them to evaluate the location, where a new station of the national railway is currently being built.

This will ultimately lead to the integration of transit-oriented planning techniques with HCI can allow policymakers and planners to design healthy urban communities that are pedestrian-friendly, less dependent on private transport, conducive for physical activity or exercise, healthy, accessible, and inclusive.

Angelo Paulo Mogul Instructor, Bulacan State University, Philippines

Humanistic Interpretation of Community Open Space Revitalization: From Perspective of Everyday Aesthetics

In "post-epidemic" and "cyber" era, living space has been compressed and daily life alienated, manifested as the "atomization" of daily life subjects and the "pipelining" of daily life routines. The vitality, collective memory, communal belonging, and place attachment rooted in everyday life are eroding. Under the background of "urban stock optimization", the urban planning and design are lost in the performance engineering. Urban renewal has become a constructed "object" separated from "subjects" of everyday life. Attaching an overwhelmed importance to the renewal of physical spaces, the existing COSs (community open spaces) revitalization practices overlook the everyday life with "people" as the main "subject".

An in-depth analysis of the regeneration process and statues quo of the selected cases was conducted (Baixi Park, Dongming Community Garden, and Chuangzhi Farm in Shanghai, Freiraum-Viertel (open space quarter) project in Munich, Superblocks in Barcelona). It shows that a variety of everyday mass cultural activities (spontaneous or organized) have been emerging in COSs. This demonstrates the two dialectically unified concepts of "the aestheticization of everyday life": 1) Cultural services have been gone through the "De-eliteization", and are transforming from a unilateral display of "culture" to multilateral cultural experience, production, and identification that are rooted in everyday life of individuals. 2) Individual's demands of everyday life have been upgraded from material pursuits to the enjoyment of cultural services (including leisure and recreation, aesthetic experience, social interaction, health and well-being, and knowledge acquirement). It provides a humanistic-specific fulcrum for the revitalization of everyday life via COSs.

On the basis of social psychology, environmental behavior, and social ecology theories, it is posed that COS revitalization should be considered as a dynamic process of reshaping people's perception, cognition and identification of everyday life and space. It follows three steps: 1) to create various scenes of everyday life and opportunities of social interaction through cultural services, thus activating the perception of everyday life spaces. 2) to bond the "atomized" individuals and break the pipelined routines through the enjoyment of cultural services, thus helping to shape the individual's cognition of their "social role" in everyday life. And 3) to nurture the individual's unique identification of everyday life and space through reshaping interpersonal and human-land emotional bonding. In the end, three strategies for COS revitalization are proposed: domain construction, vital gathering, and bonding differentiation.

Yuxian Chen PhD Student, Tongji University, China
Daixin Dai Associate Professor, Tongji University, China

Perceived Naturalness Framework and Human Perception of the City Park: Case Study of Ansan city

The perception of landscapes aesthetics has developed differently in the East and the West cultures. Western studies on human perception and preference systematically organized human perception of the physical form of nature through the perception of evolutionary aspects and "Affect" of cultural aspects. In contrast, Oriental aesthetic studies emphasized "Meaning" as an ideal object of beauty and gave high value to an individual's thoughts and the meaning of an object. However, the common point is that the quality of landscape esthetics was divided into reading the comprehensive spatial context through the recognition of surrounded spatial sense, from the sensory perception to the emotional perception, according to the degree of experience and knowledge of the individual's nature.

This study set up a perceived naturalness framework based on landscape theory and investigated the difference in perception of 25 users of Ansan city park using the Q method. As a result of the study, the perception of natural landscapes in urban parks was categorized into six groups, which showed a big difference in the taste of nature appreciation.

The first group had the most influence on the naturalness using the five senses. The second group emphasized the importance of visual and auditory awareness. The third group showed an awareness of the seasonality and the historicity. The fourth group highly evaluated the naturalness of the landscape formed over a long time. The fifth group directly felt the natural space, such as spatial contrast, the openness of the field, and the refreshing feeling of the shade. And the sixth group has claimed stewardship is essential in the perception of naturalness.

This study found common sense in the landscape recognition from the perspective of perceived naturalness. As a result, the study found the awareness of naturalness has a common framework from the evolutionary perspective. However, it also can be recognized differently according to individual experience and intimacy with nature.

Doeun Kim Ph.D Course Interdisciplinary Program in Landscape Architecture, Seoul National University

Yonghoon Son Associate. Professor, Dept. of Environmental Landscape Architecture, Graduate School of Environmental Studies, Seoul National University,

An Assessment on the Effects of the Environmental Psychology Characteristics of Urban Public Spaces on Users' Satisfaction During COVID-19 Pandemic, Focused on the Olympic Park

The purpose of this study is to evaluate the effects of the most influential environmental psychology characteristics of urban public spaces on visitors' frequency, duration and quality of visit to these areas during the COVID-19 pandemic era. The study is focused on urban parks since they serve an important societal function as recreational spaces for diverse communities of people, with well documented physical and mental health benefits (Volenec, Joel, Becker, & Dobson, 2021).

This study shows that due to the numerous restrictions which were applied during the pandemic outbreak, the frequency and duration of visit to urban public spaces, especially urban parks has increased significantly while the quality of visit has also improved greatly among the urban dwellers. The factors which result in this are various, and the environmental psychology characteristics of urban public spaces that as an interdisciplinary field of study, focuses on relating physical environment to human behavior (Devlin, 2018) are a part of the list. Although these characteristics can be varied due to the cultural and social differences in each region, the strongest similarities are found among the world's largest cities (Whyte, 2001).

This study evaluates the influential environmental psychology characteristics of urban public spaces on users' visit, focused on the Olympic Park, Seoul, South Korea. In order to find the related environmental psychology characteristics, previous researches, studies and publications as well as similar cases were studied through literature review. The collected data would be organized and discussed with experts in three fields of landscape, social science and psychology. The purpose of the expert interview is to create a more solid framework for the study, as well as to develop the final questionnaire for the survey. The questionnaire survey would be conducted among the users of Olympic Park, an expansive urban park and one of the main urban public spaces in Seoul, South Korea through a direct visit to the site.

Sense of place, aesthetic, facilities, social functions and safety are few of the environmental psychology characteristics of urban public spaces which influence the users' visit. As quality of the environment in which people live, constitutes an important aspect to their quality of life (Pacione, 2003) identifying and evaluating the factors influencing the above characteristics, would result in a more sustainable urban public space that attracts visitors to spend a quality time there, while creating communities and maintaining both their mental and physical health.

With the considerably high possibility of pandemic outbreaks in the future, and given the fact that throughout history, pandemics have always shaped cities (Eltarabily & Elgheznawy, 2020) , the result of this study can be used in creating new framework for future sustainable urban public space designs and researches which suit such situations. Although the result of this research would not be applied to every urban settings, but it would give a perception on the most influential characteristics that affect the visit during the pandemic outbreak era.

Morvarid Kabiri Master Student, Hanyang University
Gunwoo Kim Assistant Professor, Hanyang University

Everyday Storytelling as a Design Tool for Daily Lives Places, Two Practical Examples

As pandemic was underway, people were restricted in their local districts and the need for inclusive public spaces did strongly arise among social tension.

The demand for places to exercise, for children to simply run and play games, and elderly people to seat outside became overwhelming. But people also wished for natural and "green" design and more comfortable outdoor spaces especially during the hotter months of summer.
Asking people for everyday stories linked to their neighbourhood was a way to redefine and anchor the new design in their lives and personal history, aiming to ensure a proper delivery and acceptance. These have been collected through on-site chats and formal consultation meetings.

Both sites are in the outskirt of the city of Lyon, France, both are working-class districts, with social tension and impoverished families. In both areas, there is still a strong feeling of belonging and a great reluctance to any change as well as a contradictory demand for a profonde mutation.
On both site, the main public buildings are the local schools (schoolchildren from age 3 to 16 years old).

1- "place Ennemond Romand" located in the suburban town of Vénissieux, completed 2021.

The told stories :
- How in the beginning of the last century, on a very warm summer week, grasshoppers invaded the local church, thus giving the square a new name "la place des sauterelles", the grasshoppers square.
- How children of all ages swarm the square from every direction, around noon and five pm, on their way back home from school.
- How on the quieter hours in the afternoon older people congregate to play informal "petanque" tournaments.

The resulting design :
- Workshops on lighting with schoolchildren, and on the playgrounds including grasshopper animations and games.
- A concrete bumpy ride, for older children to hop along, riding their scooters and skateboard.
- Quieter places under the trees shadow
- Workshops during the design process and on the construction site with disabled people to ease the use of the public space.

2 - "quartier Langlet Santy " : design still underway.

The told stories :
- How children of all ages pass through the narrow street, the small garden, in front of the housing for elderly people every week day, on their way back home from school and to the football pitch on week ends.
- How local elderly people play card game and chess in the shadow of the trees.
- How people used to grow roses at the end of the XIX° century.

The resulting design :
- A paved thread included in the pavement, along the school buildings, going through a playground underneath a climbing spider frame, passing in the meadows, underneath the trees, then across the street to the "urban sports salons" and the football pitch.
- Quieter places under the trees, to eat, play card games on scattered table and benches, with extensive perennials flowers and rose beds.

Catherine Combe CEO, Plan b Architectes Paysage Urbanisme, France

Analysis of Network Characteristics of Young People Who Migrated to Local Cities and Their Impact on Local Communities : Focusing on the Gongju City

Recently, young people prefer dematerialism such as individual personality, diversity, quality of life, and social values, not competition, status, organization, and effort. They go beyond simply the quality of goods and services and attach high value to the social relationships surrounding them and pursue unique experiences different from others. As young people's preference for de-materialism increases, young people are returning locally, aiming for a local direction to maintain their lifestyle by doing what they want to do.
Young people migrate to local cities(small-medium sized local) and work in alley industries, cultural industries, and creative industries focusing on locality. They are creating local industries and forming a local ecosystem by utilizing local culture and regional resource. And they are solving local problems by forming a network with youth group and local organization who are conscious of the local reality. In other words Young people are attracting attention as key players who solve local problems and lead local culture&values.
Recently, young people have settled in Junghak-dong, the original city center of Gongju-si, Chungcheongnam-do, and are building a local ecosystem. They are making changes in the local community by collaborating based on community networks with local residents and organizations.
The purpose of this study was to analyze the network of 33 organizations(16 youth groups, 17 local organizations) in a radius of 500m in Junghak-dong, Gongju-si, and the impact of youth organizations on the local community.
The results of the analysis are as follows.
First, in the original downtown area of Junghak-dong, a loose community was formed between youth groups and local organizations. Also urban regeneration projects and regional revitalization projects were being promoted under the leadership of youth groups.
Second, Some youth groups act as local intermediaries and local guides, introducing young people inside and outside the region, and forming a network of youth groups and local organizations.
Third, Youth groups strengthen the connection relationship of the entire community by forming a wider range of communities than local organizations.

Changhyun Lee Ph.d Student, Seoul National University

Perceived Urban Community Resilience Through Green Infrastructure Performance – A Case Study of Small-Scale Urban Regeneration Project

Residents of urban areas typically face a lack of green space, and this leads to a decline in their quality of life, increased vulnerability, and a weakening of urban resilience, with the latter being emphasized in dealing with environmental and social disasters. Given the well-being of city-dwellers, urban community resilience should become an essential part of urban resilience and help cope with and recover from change, uncertainty, and disaster while also maintaining community-based certain functionality (Berkes & Ross, 2013; Magis, 2010). Green infrastructure, including small-scale green space, can relieve environmental pressure caused by urbanization, improve quality of life, and support social networks that increase social cohesion, all of which can be considered ecological niches impacting urban community resilience (Herslund, 2018; Zuniga-Teran et al, 2020). Numerous previous studies have demonstrated that the human ability to perceive change and plan is critical for adaptability and urban community resilience (Haque, 2016; McLaughlin & Dietz, 2008). Understanding small-scale green infrastructure from varying perspectives can also help improve urban community resilience overall.
This study analyzed perceived urban community through green infrastructure performance in regard to a small-scale urban regeneration project: the 72 Hour Project. Since 2012, the Seoul city government has implemented urban regeneration projects using small-scale derelict spaces, built primarily by landscape architecture students with the involvement of multiple environmental experts and communities. However, citizens who benefit from those projects have not evaluated such green infrastructure performances openly to the public, though seeking understanding from different perspectives could help designers build greater urban community resilience.
We developed the following specific research question: First, do experts view green infrastructure performance as helpful in improving urban resilience? If so, in what ways? Second, do citizens consider green infrastructure performance as helpful in improving urban resilience? If so, in what ways? And third, how do experts and citizens view green infrastructure performance differently in terms of urban resilience? Based on those research questions, a survey instrument was developed, and most of its questions were derived from existing and validated questionnaires based on the sustainability indicator set for measuring green infrastructure performance regarding ecological, health, and socio-culture indicators. Data was collected using an online questionnaire administered to commuters, residents, and environmental sciences experts familiar with or in the area of the 72 Hour Project. The study relied on IBM SPSS Statistics, 2017 for all statistical analyses.
The findings confirmed the hypothesis that both experts and citizens generally agree that green infrastructure contributes to urban community resilience. However, multilevel analyses showed differences among green infrastructure performances between experts' and citizens' perspectives. In particular, in most of the finding, experts believe more than citizens that green infrastructure is more beneficial for urban resilience. In detail, significant effect modification was found for citizens who perceive urban resilience more in socio-cultural indicators than in ecological and health indicators. This study shows that small-scale green infrastructure performance can contribute to urban community resilience and play an essential role in healthier living based on ecological, health, and socio-culture approaches.

Lilan Jin Researcher, Korea University
Garam Kim Student, Korea University
Junga Lee Assistant Professor, Korea University

Sketching Trees and Landscapes: The Effect of Manual Drawing of Natural Landscape on Emotional Affinity Toward the Natural Environment

Driven manual sketching of vegetative landscapes could promote peoples' emotional affinity toward the natural environments. While such pieces of evidence are present, we still understand little about the role of manual sketching methods in enriching people's psychological affinity toward the natural environment. This study explores the positive influence of the hand-drawing of trees and landscapes on people's environmental sensitivity and affection. For this, we conducted a series of 'sketching landscape' workshops as a field experiment in the Seoul Olympic Park, one of the major ecological urban parks in Seoul, Korea. A total of thirteen participants participated in the field research. The programs of the field research consisted of 1) drawing various landscape scenes while walking along the park, 2) self-narrating interviews on mobile recording devices regarding their impressions and thoughts on the landscape sceneries that they encountered while walking along the park, and 3) semi-structured interviews regarding their notions of the natural environment before and after the landscape sketching workshop sessions. The collected data were landscape images in the user-generated drawings and verbal narratives. These data were inductively analyzed to find unique undertones, thought-flow patterns, and significant values associated with environmental affinity. The analysis results support our assumptions that drawing a vegetative landscape positively influences people's emotional affection toward the environment. Three conceptual categories that imply participants' affective attachment to the environment were identified: 1) experiencing an emotional bond with the natural environment after landscape drawing sessions, 2) understanding the ontological relationship between humans and nature, and 3) feeling a moral responsibility to protect the natural environment. These findings suggest that experiencing vegetative landscapes via manual drawing can enhance people's psychological connection to the natural environment and become an important driver of intention for environmental conservation. As the public has become desensitized to the deteriorated ecological state due to ever-decreasing contacts with the natural environment, various measures to promote awareness for the environment have been proposed. The results of the study point to a potential for combining arts, psychology, and environmental studies to develop a novel program for future environmental education.

Joonhyun Kim Director, Gawon Landscape Architects

A Study on the Types and Spatial Characteristics of Running as a Daily Lesiure in Urban

The reduction of working hours had a great influence on the development of leisure culture of the Korean people. To achieve so-called 'work-life balance' has become an important value in life, and active idols for personal happiness and satisfaction develop noticeably. In particular, it has become an era in which all generations want to participate in hobbies that promote health and physical strength, regardless of age or gender. Recently, in line with these social movements, the size of the sports market has expanded and health-related events have increased rapidly.

Running is an easy-to-access sport and does not require special equipment and skills. So it's becoming daily leisure in Urban area. There is an movement to create a community that wants to share the culture of running together and to experience and enjoy urban space more deep and actively through running.

However, compared to growing interest in running activites, there is a lack of research that identifies the phenomenon of running and analyzes urban spaces where running occurs. Inparticular, the study of Urban street is focused on walking, so it is necessary to analyze the space in terms of running. Therefore, this study aims to analyze the patterns of ruuning activities in urban area by utilizing GPS records that have substantiallly identified.

Using a running activity tracking application, 389 running sections in Seoul were derived. As a result of analyzing the distribution of this section to focus on the 'running' activity, it was found that the running section is located in various geographic locations such as downtown, rivers, mountains, and neighborhood parks. Therefore, as a result of deriving the horizontal space in which running occurs as an item that can be analyzed comprehensively, the slope, section width, street type, road pavement, road surface change, green rust rate, elevation, and section shape were set as the final analysis frame. Afterwards, a cluster analysis was conducted with the results of the analysis to identify aspects of the running segments in Seoul.

The four types classified as a result of cluster analysis are: (1)Steep slope-multi-change segments, (2)Continuous steep slope segments (3)Smooth slope-high convenience (4)Smooth slope and a high rust rate. Although running segments are most distributed in comfortable and convenient places, these segments can also be subdivided according to the latitude and shape of the segments. And the segments range varies depending on the purpose of running and the intensity of exercise. In addition to the accessibility and convenience of street spaces, various landscapes, high naturality, and colorful slopes were derived from spatial characteristics that affect running activities.

Using actual running activity data, the research is meaningful in that it spatially identified running that lack prior research and analyzed the street space where running occurs from various perspectives.

Jihee Park Researcher/ Doctor Student, Seoul National University

Putrajaya Steps: An Alternative for Healthy Urbanism in Embracing the Necessitate of the New Urban Lifestyle

As a city in a garden, Putrajaya has a vast open area, with almost 40% of the site designated as open spaces since its establishment in 1999. The Putrajaya Steps (Tangga Putrajaya) is another recent green infrastructure project in Putrajaya. The steps is 30 meters high. The project's purpose is to address the needs of urban dwellers in promoting a wellbeing and healthy lifestyle, especially during the pandemic. Prior to the development of Putrajaya steps, a content analysis study was conducted from various sources like Elsevier, SciRes, Taylor & Francis and published technical journals or data publication from the government, academic or technical agencies to gather findings that could be applied in the Putrajaya steps development. The analysis indicated three important variables relevant to this project: the healthy urbanism approaches, the uptrend urban park requirements for sustainable green infrastructure components, and planting materials in tackling the issues of pandemic atmosphere. In the case for Putrajaya Steps, the analysis found that climbing 199 steps could burn up to 43.78 calories for a set of flight steps, depending on body weight and climbing intensity. Besides, planting Tabebuia rosea shall contribute to cleaner surroundings because the plant has a high air pollution tolerance index (APTI) value. Therefore, appropriate outdoor exercises with leisure surroundings could be one of the best remedies for post-COVID patients with post-COVID Syndromes or 'Long COVID' which most of them were suffering from shortness of breath or resparotary issue. In this regard, Putrajaya Steps could be a lead by example project promoting healthy urbanism by re-enhancing the existing site elements and relevant landscape design to meet better urban living needs.

Wan Fakaruddin Wan Ab Aziz Associate Landscape Architect, Denai Ilham Sdn Bhd, Malaysia
Nazri Ishak Principal, Landscape Architect, Denai Ilham Sdn Bhd, Malaysia
Muhammad Shamsul Ibrahim Senior Researcher, Universiti Malaya, Malaysia
Mohd Azmi Wan Sulong Senior Landscape Designer, Denai Ilham Sdn Bhd, Malaysia
Zamani Zulkifli Senior Landscape Designer, Denai Ilham Sdn Bhd, Malaysia

Regression of Street Aesthetics: Urban Pedestrian Space Design Based on Machine Vision Recognition

Street space is a major carrier of public urban life, carrying the needs of communal life, social interaction, recreation, and other activities[1]. Streets perfectly integrate architecture, roads, and landscape, infuse the aesthetic concept of life, and form the most extensive and direct communication space and platform between people and society, which is indispensable for the development and continuation of urban civilization[2, 3]. A safe outdoor environment contributes to improving people's physical and mental health, and the real-time measurement of individual emotional feelings in the environment can objectively reflect people's satisfaction with the quality of the outdoor environment, to produce aesthetic feeling[4]. However, there are still few methods to measure emotional feeling in walking space, and they can not reach a wide range of efficient measurements. Machine vision recognition in the field of artificial intelligence can realize accurate recognition of dynamic facial expression features through video data[5]. Given the current urban planning, traffic space of the street simply as "garage guide" the phenomenon, this article from the street aesthetic space for a dynamic view of the significance of urban construction in Taiwan Taoyuan city vitality street north of the town - as the experimental site, based on convolution model, neural network algorithm by gathering a crowd when walking space experience facial video data and galvanic skin, deep learning algorithm, i.e. codec–SVM optimized model that can identify individual facial emotion in the outdoor environment was trained and tested, to construct the design strategy of urban pedestrian space. The principal results could be drawn as follows: 1) The accuracy of crowd emotion feeling measurement in the empirical experiment was 85.35%; 2) The model is more applicable to space with gorgeous crowd behaviors and wide vision. 3) Visual aesthetics and psychological feelings in the walking space experience can be obtained through people's facial emotions and physiological reactions. Consequently, the emotional feeling measurement of walking space based on machine vision recognition will serve to reveal the psychological state of people in environmental experience under the circumstance of a large site area and larger sample size and improve the effectiveness of landscape quality optimization strategy. Let the aesthetics of the street truly integrate and return to the life of the public, to shape the urban organic space with cultural identity and place belonging, which is also the source of vitality of walking urban space.

Dan Zhao Doctoral Candidate, College of Landscape Architecture, Beijing Forestry University, China
Jun Cai Professor, College of Landscape Architecture, Beijing Forestry University, China

Developing SikMul MyeongSang, an Art-Based Interdisciplinary Public Program Using Plant Imagery Meditation

In recent years, diverse array of art and humanities programs related to plants and gardens have been tried and tested in the art and commercial fields; with the pandemic, the demand for such programs have risen. However, research on landscape architecture and urban park public education programs have been insufficiently pursued in the last decade. Types of programs rarely stretch beyond generic ecological education and one-time events. More recently, one finds that experts have made comments about the lack of diversity and uniqueness in such programs.

Purpose of development SikMul Myeongsang (translates into plant meditation), an art-based meditation program using plant imagery, is two-folds. First, this program offers healing experience for mind and emotional stress for the participants. Second, the program sought to expand the program scope through interdisciplinary experiments by combining elements of art, humanities, and technology. This study focuses on the analysis of the latter. While most of the existing gardening programs focus on the communication of plant information such as olfactory and tactile sensory experiences, SikMul Myeongsang utilizes plant as medium for mediation.
The program is largely divided into three steps. The first step, the meditation, asks the participants to navigate from the exterior environment into one's own body through breathing and body scan meditation. The second step is 'Mindfulness Gardening', where participants experience plant through tactile senses. The final step is the 'Emotion Detox', where the participants undergo a series of procedures to define and interpret their own emotions. This study examines the program by focusing on the implementation of plant imagery during the program development.

SikMul MyeongSang is a plant-based interdisciplinary public program where the participant experiences the expansion of their interest and understanding for the fields of plant, garden and urban park beyond their conceptual boundaries. Using a novel plant-medium meditation, the participants can experience the process of examining one's inner self and emotions. This allows for an easier deliverance of the concept of 'self-awareness', an important concept in meditation practice. The participants who go through the program become more aware of the inner self and the state of their emotions. Sikmul Myeongsang is a public program that reaches beyond the existing plant-related program that demonstrates a potential of diverse and differentiated program development using plant imagery as medium.

So Young Kwon Doctoral Student, Graduate School of Environmental Studies, Seoul National University

Landscape Architect's Approach Towards Greener and Healthier Cities: The European Case Study

In the 21rst century, Landscape Architects face the challenge to protect the cultural and natural landscapes and to seek innovative ways to improve the resiliency and sustainability of society. In order to respond to the European Green Deal and to the New European Bauhous challenges, as well as to the United Nation's 2030 sustainable development goals, they seek to find new ways to ensure sustainability through the valuation of nature and ecosystem services, to provide qualitative and healthy landscapes, to preserve collective memory, heritage and culture, and to create places that anticipate social and economic well-being.
Over the last 50 years, European cities have seen dramatic improvements in terms of mobility, green areas and waste management, and this has contributed to a significant improvement in living standards (E.U., 2010). The Landscape Architect's approach is to develop green/blue corridors linking people and nature, encouraging physical activities, reducing ambient air temperatures, combating pollution, improving air quality, controlling run-off and drainage, whilst improving biodiversity, at local and neighborhood scales.
Climate change and Covid-19 have brought into very sharp focus many aspects of city life, not the least of which is the relationship between the green infrastructure of cities, the quality of life and the health and well-being of the residents.
The presentation analyses further the terms of "healthy" and "green" cities, the various initiatives in Europe towards European Green Cities and the landscape architecture approach through European examples.
Well known case studies present ways to amplify biodiversity, foster resilient communities, and promote the idea of the city as a landscape. It is important to understand the need for holistic planning as cities are at the center of economic growth and innovation, and their diversity and complexity makes them particularly vulnerable to social and environmental problems. Landscapes include complex, interactive systems that provide a wide range of goods and services and as such understanding the city as landscape creates the opportunity to conceptually revise current practices in urban interventions. Landscape Architects are recognizing the importance of the environmental dimension in the design and planning of our landscapes, as well as the natural processes and ideally provide leadership in developing cities that are alive. With understanding and experience of natural processes the landscape architect is ideally placed to provide leadership in developing cities that are alive
In conclusion, it is essential to focus on the linkages and connections between policies, reinforced by incentives and new structures and systems, to mobilize public debates and raise public awareness via environmental knowledge as E.L.C. preserves and to advocate the integration of environmental parameters in decision-making.

Katerina Gkoltsiou President, IFLA Europe, Greece

1. Oral Presentation

RE:CONNECT

Exploring the Effects of Past Landscape Changes on Aesthetic Landscape Value in Beijing Shallow Mountainous Areas

Understanding the effects of land use change on the aesthetic value of shallow mountainous areas is important for decision making and landscape planning. While most studies on the aesthetic value of landscapes have been conducted on a small scale and do not consider changes in the landscape, this study aims to analyze changes in the landscape aesthetic value of Beijing shallow mountainous area (BSMA) over three time periods from 1950 to 2010. The study first assesses people's landscape preferences for shallow mountainous area by inserting panoramic maps into a questionnaire, following which a Likert scale is used to calculate the preference score for each photo and select the corresponding landscape indicators to build a regression model. Secondly, the study establishes four distance visible areas for key observation points, generates visual maps in combination with land use, and uses linear regression to select eight landscape metrics to estimate the aesthetic value at the landscape level in the area. Then, the study establishes a regression model to link people's landscape preferences and visual landscape characteristics, and randomly creates 3750 viewpoints to map the aesthetic value within the study area for each viewpoint in 3 times. Finally, the temporal and spatial variation of landscape aesthetic values within the 15 landscape character types are calculated, and the effect of land use change on landscape aesthetic values is calculated. It is found that the highest landscape aesthetic values are located mainly in the lakes in the northern part of the shallow mountains and in the higher elevations in the south, while the lowest aesthetic values occur in the lower elevations in areas of intensive agriculture or dense settlement. From 1950 to 2010, aesthetic values gradually declined due to the expansion of urban construction, with lower elevations being more affected than higher elevations. The change in the aesthetic value of the landscape, however, has had a positive impact in some lower elevations due to the development of expanded cultivated land. This knowledge of the relationship between landscape change and aesthetic values can provide an important basis for developing management strategies for mountain landscapes.

Tingting Huang Doctoral Candidates, Beijing Forestry University, China
Wei Liu Teacher, Beijing Forestry University, China
Meiqi Li Candidates, Beijing Forestry University, China
Sha Li Teacher, China University of Mining and Technology, China
Jianning Zhu Professor, Beijing Forestry University, China

An Operational Governance Tool to Manage Urban Brownfields in Saint-Etienne, France

The Metropolitan area of Saint-Etienne is located in the center of France, on the eastern foothills of the Central Massif, west of the Rhone Valley, about 60 km from Lyon. It occupies a large industrial and mining basin and today has a population of approximately 400,000 inhabitants in fifty municipalities, including the central city of Saint-Etienne.
Since 2011, the metropolis has voluntarily and resolutely adopted a vast plan for the reception, protection and development of biodiversity within its territories. This includes the concrete implementation of the green and blue framework, but also the development of knowledge, training plans, the drafting of a metropolitan strategy for biodiversity and a toolbox for public services and local actors. Among the tools, the need for an operational management tool for urban wastelands quickly emerged. This tool is the subject of the present communication.
The territory of Saint-Etienne, which has been shrinking for many years, sees more and more urban wasteland appearing on the market every year.As in all regions in decline, with a private sector that is not very active, it is the community that is responsible for these abandoned lands and buildings. However, non-intervention is no longer an option, the last wastelands left without maintenance have become refuges for biodiversity, and therefore, not buildable anymore in the frame of French legislation.
In addition, as part of the ambitions of the metropolis towards biodiversity, this same municipality is looking for available land, both to reconstitute biodiversity reservoirs, but also corridors to connect them. The arrival of all this brownfields is therefore a great opportunity for its ecological ambitions. This is without counting the obligation of these public authorities towards future generations, to conserve and manage land in order to maintain constructability, especially near urban centralities and in sectors under pressure. This is therefore the main challenge of this operational tool, to help the community in the early stages, to identify the potential of a wasteland, in relation to the green infrastructure, and/or in relation to an immediate land need, and/or in relation to a potential future land need.
The tool developed is at the crossroads of ecological, landscape and urban planning issues. It works on an iterative interrogative mode allowing to propose a certain number of actions to be implemented in relation to the objectives for the studied parcel, objective also identified with the help of this tool. Before being used, the tool was tested on a dozen test sites chosen from among the brownfields already under the responsibility of the city.

Frederic Dellinger Senior Lecturer, ENSAG, France

The Construction and Practical Application of Rural Landscape Performance Evaluation Index System

Rural landscape is an external reflection of the characteristics of rural nature, geography, humanities and history. It plays an irreplaceable function in ecological maintenance, agricultural production and human life. Development with cities as the core is not enough to support regional sustainable development. However, sustainable development in rural areas is often neglected in developing countries. Landscape performance evaluation is considered to be an important way to guide, support and promote sustainable landscape design practice. Scientifically guiding the construction and promotion of rural landscape through quantitative evaluation of rural landscape performance is the key to the implementation of Rural Revitalization Strategy, which is of great significance to clarifying the future direction of rural landscape planning. In this study, according to the typical characteristics of Chinese villages and the needs of the rural public, we constructed a rural landscape performance evaluation index system from three levels of ecology, society and economy by means of questionnaire interviews, systematic literature review, and case analysis. On this basis, we have carried out practical application research on representative villages in different regions of China, and calculated and evaluated various indicators by combining digital technology, model simulation, mathematical formula, expert scoring and other methods to test the feasibility of the evaluation system operability. It is expected to provide scientific and efficient guidance and decision support for rural landscape protection planning, construction and maintenance management at different scales and levels.

Yang Liu PhD Student, Beijing Forestry University, China

Xi Zheng Professor /Dean of the School of Landscape Architecture, Beijing Forestry University, China

Research on Green Space Construction with High Carbon Sink Efficiency at Urban Edge Based on CFD (Computational Fluid Dynamics) Software Carbon Flow Simulation: An Example of Green Space at the Edge of Yizhuang New City, Beijing

Over the past century, the amount of carbon dioxide and other greenhouse gases has been rising year by year, and the world warming caused by carbon imbalance is threatening the survival of human beings. The discipline of landscape architecture should actively take up the responsibility and mission to study how to increase carbon sinks by means of landscape architecture, so as to relieve the pressure of urban carbon emissions, lead citizens to a healthy life, and ultimately form an organic connection and harmony among people, cities, and green ecological spaces.

This paper selects the green space in the edge of Yizhuang New Town in Beijing as the research object, and explores how it can enhance the carbon sink benefit in ecological aspect, capture, react and filter the urban carbon emission, and finally form a healthy and pleasant environment, and how it can provide a place for citizens to play and enjoy in landscape aspect.

The research is roughly divided into four steps. In the first step, the city is considered as a carbon source in the context of the current situation of the site, and the site is divided into three spatial levels of carbon sink, namely carbon capture zone, carbon reaction zone and carbon filter zone, according to the order of carbon flow to the site for exploration. In the second step, the spatial physical model of vegetation carbon sink under different plant community structures and different vertical topography conditions was established by the software Rhino, and then combined with the site wind speed, wind direction and other influencing factors, the CFD (Computational Fluid Dynamics) software Fluent was used to give the hydrodynamic definition to this physical model, set the computational parameters and simulate the carbon flow. In the third step, the air vortex cloud map, CO2 concentration cloud map and CO2 velocity vector map derived from Fluent simulation are analyzed to select the ecological space constructing mode with the best carbon sink benefit. The third step is to analyze the visualization results of air vortex cloud map, carbon dioxide concentration cloud map and carbon dioxide velocity vector map from Fluent simulation, and select the ecological space construction mode with the best carbon sink benefit. Finally, based on the ecological space with high carbon sink benefits, the layout of recreation types and the location of activity sites are completed, so that the site becomes a green space at the edge of the city with good carbon sink and recreation functions, which is environmentally friendly and open and shared by everyone.

Chi Zhang Graduate Students, Beijing Forestry University, China

Xiong Li Professor&Doctoral Supervisor, Beijing Forestry University, China

Chuzhen Wang Graduate Students, Beijing Forestry University, China

Xinyan Huang Graduate Students, Beijing Forestry University, China

Jiaying Li Graduate Students, Beijing Forestry University, China

Fangzhi Zhan Graduate Students, Beijing Forestry University, China

Integrated Multi-Hazard Risk to Social-Ecological Systems with Green Infrastructure Prioritization: A Case Study of the Yangtze River Delta, China

1. INTRODUCTION: The sustainable future of deltas is increasingly threatened due to natural ecosystem degradation and increasing climate change hazards (Sebesvari et al., 2016; Arto et al., 2019). Thus, the spatial prioritization of Green Infrastructure (GI) (Fritz, 2014) is of great importance for ecosystem conservation and climate adaptation. The existing GI prioritization methods (Hermoso et al., 2020; Barbosa et al., 2019; Domisch et al., 2019; Lanzas et al., 2019) in deltaic regions lack a systematic method of incorporating the state of vulnerability and risk.
2. METHODS: In this study, a novel method was developed for systematically prioritizing GI management zones based on the biodiversity and ecosystem services that addresses the clear relevance to multi-hazard risks to the social-ecological system (SES). The approach was demonstrated in the Yangtze River Delta, China. The conceptual structure of the proposed framework consists of three technical steps. First, the multi-hazard risk of the social-ecological systems was identified using an indicator library-based system, i.e., the GDRI (Hagenlocher et al., 2018). Second, the Marxan with Zones spatial conservation prioritization software (Watts et al., 2009) was used to identify a multifunctional GI design based on the different prioritization features and the multi-hazard risk. Finally, two scenarios were compared to assess how the inclusion of the multi-hazard risk affects the prioritization of the GI. The spatial pattern of the GI management zone in the multi-hazard risk scenario was constrained by the multi-hazard risk of the delta's SES through the definition of cost in the prioritization parameters.
3. RESULTS: Our approach effectively coordinates the configuration of the GI management zones based on the pre-evaluated output of the risk to the deltaic SES. Based on our results, the GI network with the multi-hazard risk included as a cost can allocate the sustainable use zone and available zone with higher exploitation intensities in relatively low-risk regions. In contrast, the core and conservation zones are placed in high-risk areas, effectively reducing the vulnerability.
4. DISCUSSIONS AND CONCLUSIONS: According to our results, integrating the multi-hazard risk of the SES can effectively coordinate the configuration of GI management zones. This supports our conclusion that the risk to the SES should always be considered during future GI prioritization to ensure the GI network`s resilience to multiple climatic changes. Our proposed framework will help guide future applications of GI in global deltas and the implementation of flexible conservation management in a multi-hazard context.

Xiaoyang Ou PhD Candidate, School of Landscape Architecture, Beijing Forestry University, China
Yingshuo Lyu PhD Candidate, School of Landscape Architecture, Beijing Forestry University, China
Yang Liu PhD Candidate, School of Landscape Architecture, Beijing Forestry University, China
Xi Zheng Professor, School of Landscape Architecture, Beijing Forestry University, China

Mile Long Burn: Increasing Biodiversity Through Disruptive Ecologies and the Act of Erasure

'Mile Long Burn' is a large-scale land art intervention that was conducted on August 29, 2019 when a group of firefighters joined with the National Park Service and the United States Department of Interior at the Tallgrass Prairie National Preserve to ignite a fire along a mile-long stretch of Highway 177 in Strong City, Kansas. The author will discuss 'Mile Long Burn' and this act of erasure through the lens of history, ecology, grassland management and land art as a means of reshaping our understanding of disruptive ecologies.

As a result of the regimen of using fire as a means of grassland management by the indigenous peoples, the settlers crossing the tallgrass prairie in the early 1800s were greeted by a seemingly endless landscape of vibrant and colorful wildflowers and grasses, one of the most diverse ecosystems on our planet. (Williams 2010) Today, only 4% of tallgrass prairie remains in the United States, with most of the prairie extant in the Flint Hills of Kansas and Oklahoma. (Sampson & Knopf 1994). This extremely limited acreage of surviving tallgrass prairie in the United States and difficulty in conducting controlled burns makes the land art piece 'Mile Long Burn' and the controlled burn that August afternoon in 2019, even more powerful as a symbolic gesture for the conservation of this fragile grassland ecology.

Part of that transformation was recorded as scientific data during the event that August day. While the controlled burn was occurring, the National Aeronautics and Space Administration (NASA) flew a jet over 'Mile Long Burn' to record and collect scientific data for energy produced by the burn as well as the chemical composition of the resulting smoke and gasses. The controlled burn that day will also contribute to the larger base of knowledge regarding the efficacy of prairie burns.
While 'Mile Long Burn' lies in that same trajectory of sculpture and land art from the 1960's and 70's that Rosalind Krauss eloquently discussed in her seminal essay, "Sculpture in the Expanded Field", the piece differs from the work of that era in that its essence lies within the processes of natural systems rather than as an object placed strategically within a larger field upon which forces are exerted. "The time of sculpture, usually, is limited to the perceptual experience." (Beardsley 2000). 'Mile Long Burn', in contrast, posits a new understanding of the boundaries of land art and sculpture in that it gains its power by supporting positive environmental change through a process of action that results in an increase in biodiversity. The power and magic of the 'Mile Long Burn' that warm day in August 2019 will continue to nourish the prairie for years to come and produce a rich tapestry of vegetation in a kaleidoscope of colors and textures. The event will remain as a fond memory for the few people who were lucky enough to observe the grandeur of such a large-scale intentional landscape intervention and will contribute to the biodiversity of the dwindling tallgrass prairies.

Kevin Benham Assistant Professor, Robert Reich School of Landscape Architecture, Louisiana State University, United States

Learning from Parks

Today more than half of the world's population lives in cities. It is a favorable time to ask a decisive question: What does a sustainable public space in the city of tomorrow look like?
The best way to answer this question is to learn from the topic that is reserved for us as landscape architects, which is designing parks. Therefore we will look back at the first park project that our office did: Zurich Arboretum (1984) and than reference it to our actual park projects.

-Understanding cities as a whole
In particular, our contextual way of thinking will allow us to play a crucial role in discussions about future urban landscapes.
The planning of the Zurich Lake shore (19th century) can be used as a model to understand this kind of approach. The most important achievement of the former planning was that the Zurich Lake shore were made accessible to the public. The Zurich Arboretum was built as part of an overarching plan.

-Continuing to build history
In addition, the history of a site is also relevant. Dealing with the history of a place makes us into people who understand the present time better. It is neither about conserving what is existing, nor about reconstructing the past.
A park maintenance program was the result of these kinds of considerations for the Zurich Arboretum. The program analyzed the design elements that constituted the park and developed them.

-The space's suitability for large groups
Good parks allow many diverse uses by people. They need to be accessible to everyone. This is why the piers in Zurich have an exemplary character. We can be moderators of the necessary discussions about urban public spaces. Over time, the Zurich Arboretum has developed into a recreational park. The space is suitable for large groups because of its generosity: This is shown in the clearing that encompasses all park spaces.

-Green instead of gray
The contrast to constructed components of cities with nature creates independent park environments. The park becomes a means of projecting citizens needs that cities as such can no longer fulfill.
The Zurich Arboretum's tree collection is an example for this aspect. The focus is on a park image that is made of natural diversity that lines up with an intuitive ideal of nature.

-Landscapes become parks
We can easily spend each weekend in nature. This has increasingly made landscapes into a new sphere of action for us.
When the Zurich Arboretum was constructed, the decision was made to reject the "Iron Ring" (railway-track). Zurich still benefits from that decision. In many of our projects we deal with embedding infrastructure systems in landscapes.

-Tomorrow's parks
The necessary content density for a future park space occurs if we intersect the aspects of the context, history, use, nature, and landscape. The Zurich Arboretum has shown us how we can achieve this. In several of our park project we applied the mentioned aspects (Helmut Zilk Park, Vienna / Thurgauerpark, Zurich / Park Harburg castle island, Hamburg).

Pascal Posset Landscape Architect, Hager Partner AG, Member of the Management, Switzerland
Karol Kruk Landscape Architect, Hager Partner AG, Switzerland

Applying BGIs Design Approaches to Reconnect Humans and Nature in Lost Spaces of a Residential Complex

During the recent decades, economic and industrial fields, alongside occupation and residence patterns, have been changed. Consequently, our natural environment and living open spaces, our breathing lungs, disappear or lose their importance by turning to dead places. These vacant spaces do not have positive impacts on the surrounding areas and their users; also, they have negative impacts on environmental pollution, health, safety, identity, participation, and social activities.

Besides urban public spaces, lost spaces can be found as worthless lands between mass and space in residential complexes. These lost spaces reduce residents living quality, health, and well-being, and they are stagnant gaps without activeness and vitality. Rapid residential complexes construction that provides quantitative needs of housing attracts many people in cities. Their main priority is financial and economic issues, and vital subjects like identity and subsequent sense of place are considered secondary priorities. As a result, there is no connection between humans and their homes, while residence should satisfy humans' needs, such as connecting with nature and spending their leisure time without going far away from their homes.

Blue-green infrastructures (BGIs) are a practical solution to urban development challenges by utilizing urban hydrological functions and vegetation systems. This article seeks to establish BGIs placement as a primary force that connects environmental, social, and economic factors to achieve sustainable development. Lost spaces in residential complexes are one of the urban challenges that can restore living and residence spaces.

It appears that BGIs can be a solution to sustainable development in the landscape design of lost spaces in residential complexes through providing ecosystem services and their potential of creating vitality, aesthetics, and a sense of place. Consequently, as a third-place reconnects humans with nature. Regarding the discussion, the purpose of this study is to restore lost spaces in residential complexes through the connection that BGIs can create between environmental, social-cultural, and economic factors.

This research focuses on the Goldasht residential complex which was built in the 70s of the 20th century, by a French company as modern and prefabricated housing in the north part of Shiraz districts (zone6). In this complex, lost spaces between residential buildings have reduced the life quality. In this research, this case study which is a vivid example where the research issues are readable is analyzed. Furthermore, to restore the lost spaces, the planning and design approach of BGIs are compiled.

Ghazal Verdizadeh Master Student Of Landscape Architecture, Shiraz University, Iran
Amin Habibi Assistant Professor, Shiraz University, Iran

Construction of Township Green Space Pattern from the Perspective of Ecological Recreation

Rapid urbanization has led to a series of ecological and environmental problems such as global warming, loss of biodiversity, deterioration of urban air quality, and increasingly serious urban heat island effect; the green space system, as an important component of green infrastructure, effectively inhibits urban sprawl and is the basis for ecological regulation and sustainable development of urban space. [1] The natural elements in it provide the main ecological products and services for urban residents. This paper explores the construction of township green space from the perspective of ecological recreation, combining domestic and foreign typical township ecological recreation case studies and relevant theoretical research data to summarize the connection between its green space distribution and ecological recreation positioning. At the same time, taking ZhangShanYing town in Yanqing district of Beijing as an example, we have a complete understanding of the green space background by analyzing the spatial categorization of ZhangShanYing town, including ecological background analysis, recreation space potential analysis and recreation activity potential analysis, etc. Finally, we construct ecological network system and recreation space system according to the characteristics of the background, and comprehensively build a green space pattern of ZhangShanYing town based on ecological recreation. The article hopes that through the above research, it will be possible to develop a green spatial pattern in Zhongshangying town based on ecological recreation. The article hopes that through the above research, the combination of ecological, production and leisure functions can be fully realized in the green space system under the scale of the town, and at the same time provide some reference for the construction of green space system in the town.

Meiqi Li Graduate Student, Beijing Forestry University, China
Bin Shan Graduate S tudent, Beijing Forestry University, China

The Analysis of the Health Characteristic of Smellscape in Chinese Traditional Gardens

Under the current background of the prevalence of covid-19, therapeutic gardens have been paid more and more attention, and the health benefits of scent plants have received lots of attention in academic circles. Although it seems like to a new topic, integrating the idea of health preservation in traditional Chinese Medicine into the construction and appreciation of gardens is a long-standing gardening tradition in China. A large number of historical documents have shown that Chinese gardens specialize in creating smellscape by using scent plants, making the garden a wonderful place where one can take care of the body and spirit.

This paper firstly investigates the description of scent plants in gardening monographs in ancient China such as Yuanye and Hua Jing, and corroborates it with a large number of garden records and garden pictures, leading to revealing the smellscape construction method in Chinese traditional gardens. Secondly, under the background of health preservation culture in traditional Chinese Medicine, and based on the health-preserving rule of 'nurture the body and spirit together, and keep the spirit as the foundation', this article analyzes the characteristics of Chinese traditional garden smellscape in terms of 'nurture the body' and 'nurture the spirit'. It is pointed out that lots of scent plants used in gardens have medicinal value. In terms of 'nurture the body', the ancients believed that plants' aroma has the effect of 'refreshing the spleen and relieving the stomach', which is beneficial to human health. In terms of 'nurture the spirit', the appreciation of good smell can satisfy the human nature, make the mood happy and the spirit comfortable. Moreover, through the vigorous fragrance of plants, the ancients could see the vitality of nature, realize the truth of life, enter a spiritual realm of absolute freedom, a 'free and easy wondering' state, which make well-being.

The construction and appreciation of smellscape in Chinese traditional gardens should be an enlightenment for reconnecting human and nature in modern healthy living environment construction practice.

Yiwei Chen Assistant Professor, South China Agricultural University, China
Yanqi Chen Postgraduate, South China Agricultural University, China

The Aesthetic Experience of Urban Street Trees

Urban street trees refer to trees located along urban streets that we pass by every day. Street trees planted in modern cities were introduced and legislated by European countries as a means of purifying the air and creating urban beauty during the period of modernization, industrialization, and urbanization. As street trees became common elements in cities, urban residents have lived in a tree-lined environment in their daily life. Urban street trees are arranged as semi-permanent physical infrastructure, and citizens experience them as a total environment rather than individual objects. Social discourses on street trees, such as criticism of excessive pruning of plane trees and recurring complaints about ginkgo nuts every autumn, prove that they are closely related in everyday life.

However, most of the existing literature on street trees has been conducted in the fields of applied science and technical engineering with an instrumental perspective. There has been an insufficient discussion of the experience of urban individuals related to street trees in real life. This study notes that humans and street trees form a common urban environment, relate to each other, and live in a specific world of life. Through a phenomenological and aesthetic approach to the environmental experience of urban street trees, we aim to reveal specific aspects of the relationship between urban individuals and street trees. For this purpose, the study is conducted in two phases: describing the environmental experience of urban street trees through qualitative interviews based on phenomenological perspective, and interpreting the descriptions through environmental aesthetics.

By investigating and interpreting the existential dimensions of environmental experiences of street trees in everyday urban life, this study exhibits a relational perspective on the urban environment and street trees beyond the instrumental epistemology and argues that street trees are the entities which interact with humans as well as the environment where interconnected human and non-human lives unfold. This study will provide foundations for considering human and plant life from a relational perspective as future policymakers continue to influence both entities through urban landscape policies.

So-yeong Park Graduate Student, Department of Landscape Architecture and Rural Systems Engineering, Seoul National University

Jeong-Hann Pae Professor, Dept. of Landscape Architecture, Seoul National University

The Existence and Construction of Urban Wilderness from the Perspective of Human Settlements

Urban wilderness refers to natural resources in cities that have low levels of human intervention and allow nature-led ecological processes to take place. The expansion and contraction of contemporary cities and the transformation of land use have created possibilities for the formation and development of urban wilderness. Urban wilderness shows the natural will and social process of the land, and has important potential in playing roles in the value of ecological services, responding to the needs of sustainable urban development, and inheriting and reconnecting the relationship between people and land. Combined with different causes and development goals, the urban wilderness is divided into primary wilderness that presents a natural state without visible human intervention, secondary wilderness that naturally takes over the control of human beings, interstitial wilderness that spontaneously forms in the urban gaps, and a completely man-made quasi-wilderness. On this basis, through literature analysis and practical case studies, the process of survival or construction of various types of urban wilderness is summarized and the relevant application paths are explained. (1) Target positioning is carried out through preliminary analysis, including the overall protection of primary wilderness ,the transformation of secondary wilderness, restoration, conservation and guidance of interstitial wilderness, and activation of quasi-wilderness; (2) Plan and establish overall strategies, using design to introduce and guide natural ecological processes; (3) Monitor dynamically and regulate through maintenance and management, and give proper organization of public participation. This paper provides new ideas and methods for the existence and construction of urban wilderness in natural ecosystems and urban human settlements.

Leixi Qian Student, Beijing Forestry University, China

Using Q-Methodology as a Public Engagement Tool for the Yongsan Park Project in Seoul

Yongsan Park Project is a 300-hectare national urban park plan that will replace the U.S. Army Garrison in Seoul. With countless stakeholders and unpredictable construction schedule, the complexity of the project calls for a thorough understanding of the public opinions. For this study, we used Q-methodology, a rank-based quantitative survey with predetermined Q-statements, followed by qualitative in-depth interviews. Our research purpose was two folds. First, we sought for a systematic understanding of the public opinion regarding the project. Second, we wanted to see whether Q-methodology can be adapted as a public engagement tool. We asked for participation from previous Yongsan Park Project public program participants and received 20 applications. The analysis categorized 19 participants into four groups. One participant could not be categorized into any of the categories.

First category, the 'Economic Sustainability' category, consisted of eight participants. These participants answered positively to profitable programs in the park, such as developing the underground space of the park for commercial purposes and connecting the space to the subway station. They also believed that designing a symbolic area in the park will be beneficial for the economic sustainability of the park. Second, the 'Green Park' category, consisted of three participants. They found traditionally nature-based sylvan park as the most important aspect in the project. It was important to create a continuous green corridor between the nearby green spaces such as the Han River and Namsan Mountain. In fact, to maximize the green space, one should consider underground pathway and demolish the existing structures. Four participants were grouped into the 'Activity' category. For this category, diverse facilities for cultural and sports programs were important. To accommodate such programs, the park requires ample amount of parking space and existing indoor spaces. Final category is the 'Public Participation' category, where public participation was valued higher in comparison to other categories.

Since the initial project announcement, public debate the historical and the ecological significance of the park has continued; as such, the past surveys also focused on this issue. However, our study showed that the participants recognized the importance of economic sustainability in the park project. As urban park policies in Korea limits the park from making any profits; one should consider in the future ways to update the policy to accommodate the public view in this regard.

Finally, we found that the Q-methodology is significant in terms of its process . The participants commented that the sessions were rare opportunity to contemplate over controversial issues. Yongsan Park Project has been suffering from unpredictable construction schedule, due to the project's dependency on the political situation in the Korean peninsula. Today, public advocacy seems to be the force that can in fact propel the project to next step. Hence, this project will benefit from the use of Q-methodology as public participation program by engaging the public to consider their opinions in-depth, paving way for greater public involvement in the future participation programs.

Myungjin Shin Ph.D Candidate, Graduate School of Environmental Studies, Seoul National University

Jung Hyun Woo DDES, City Form Lab, Dept. of Urban Studies and Planning, Massachusetts Institute of Technology, United States

Hyeyoung Choi Associate Professor, School of Civil, Architectural Engineering and Landscape Architecture, Sungkyunkwan University

Green Gentrification and Redlined Neighborhoods in Major Cities of Midwestern United States

Racial residential segregation is a fundamental cause of health disparity that persists in the United States. There is a growing consensus that the racially biased discriminatory zoning practice called 'redlining', implemented by the federal government during the 1930s, exacerbated the racial residential segregation (Nardone et al., 2021). Redlining discriminated against people of color and immigrants in mortgage lending. Specifically, Home Owners Loan Corporation (HOLC), created a color-coded map to classify neighborhoods based on the likelihood of default. Neighborhoods were classified into four categories (Grade A: "Best" ~ Grade D: "Hazardous") considering the level of mortgage lending risk and racial identity and ethnicity were key components in determining mortgage eligibility. Mortgage lending which favored Whites propelled 'white flight', a phenomenon indicating a large-scale migration of Whites in cities to newly developed single-family homes in the suburbs. On the contrary, Blacks had no choice but to live in declining urban areas with limited public resources and poor housing conditions (Massey & Tannen, 2018).

Although redlining practice officially repealed in 1968 by the Fair Housing Act, the lingering effects of redlining on public health, exposure to environmental harm, and green space disparity are clear. Emergency department visits due to asthma and preterm birth were higher from redlined areas compared to non-redlined areas (Krieger et al., 2020; Nardone et al., 2020), and the exposure to air pollution and urban heat increased gradually from zone A to D (Hoffman et al., 2020; Namin et al., 2020; Wilson, 2020). And the green space that can reduce exposure to those environmental threats are less available in historically redlined neighborhoods than non-redlined neighborhoods (Hoffman et al., 2020; Locke et al., 2021).

While creating more green space in redlined neighborhoods is expected to reducing health disparities prevalent in low-resourced communities, beneficiaries of new green space can often be newcomers with higher socioeconomic status, which in turn, exacerbates pre-existing green space inequality. This phenomenon is called "green gentrification" and describes an influx of people with high-income, often Non-Hispanic White, to previously underserved areas, following green space development or the restoration of underutilized space into green space. Previous green gentrification studies confirmed that neighborhoods located close to the urban core are more likely to gentrify following park development (Pearsall & Eller, 2020; Rigolon & Németh, 2020). This leads to the key hypothesis of my study, which assumes redlined neighborhoods located near the urban center are vulnerable to green gentrification following increase in green space.

To confirm the hypothesis, I analyzed the degree of green gentrification in historically redlined areas across the four cities in Midwestern United States by using logistic regression. In the case of Chicago, Illinois, results showed that redlined neighborhoods that experienced highest green space increase (based on quartile range) between 2011 and 2017 were 5.39 times more likely to face green gentrification compared to neighborhoods with the least green space increase. Findings of this study will help the local and federal government in making decisions on where to prioritize the allocation of affordable housings to mitigate displacement risk.

Jae In Oh Doctoral Student, North Carolina State University, United States

Enhancing the Bond Between the Land and Their People: Ancient Wisdom from Traditional Public Space System of Jinhua Area, China

Currently, how to unite people with different cultural background is a rising task for most of the places in the world. A possible approach to help people rise their awareness of the new citizen identity, may draw from the wisdom of ancient Jinhua area in China. The Jinhua region locates in the middle of Zhejiang Province. It is a place has long history of constant merging with people from other places since Han Dynasity (202BC-220AD). The people in this region were known as to be fond of the land, reluctant to move after settle down, content with their life even in poverty. And even more remarkable is that, in this region, there were much less cases of disputes or riots than surrounding regions. Therefore, there is reason to believe that this part of Chinese traditional agricultural society in history may provide a possible solution for the culture division in present days.

A historical research has been conducted on nineteen well-preserved traditional towns and villages in Jinhua region.The traditional form of those settlements and the social life within them at the late Qing dynasty (around year 1799-1912) are studied based on field survey, geographical analysis and review of historical documents including regional chronicles and local family clan book wrote in 19th century. It suggests that the traditional public space system of the region is most likely the key factor for the harmony of the society and the people's strong attachment towards the land. Five major categories of the traditional public space have been identified. It indicates that, with different serving radius and different degrees of commonality, those varied types of public space formed a complete regional public system connecting villages, towns and the central Jinhua city. Unlike the scenario in other surrounding areas, where villagers life were mostly trapped only in the family range, the public space system in Jinhua allows people to positively involve with neighbor villages and towns on a weekly basis, and encourages them to join in gathering activities during multiple festival occasions regardless of their origin.

A similar strategy, resembling to the traditional public space system in Jinhua, can contribute to the regional development of urban and rural area in current days. With a multi-layer public space structure, it is able to ease cultural conflicts, enhance the bond between the people and the place they stay, and reconnect their life with nature. Physical safeguard procedures and online social media are also made it possible for the post-pandemic era.

Huaiyue Liang Lecturer, Ph.D, Hainan University, China

The Age-Friendly Community for Korean Seniors: Policies & Practices

This study derived the Korean elderly's daily walking boundary and use of facilities and services through a GPS tracking survey of the elderly's outdoor activities in their communities. The socially inclusive urban policies and projects were proposed based on the study findings.
First of all, the policies and cases of countries with an aging society were reviewed. This study found that the US, Japan, and major European countries strengthened the access to health welfare and convenience facilities and services within the range of the elderly's daily walking boundary. Korean policies for creating such the elderly access friendly so to be age-friendly built environment were insufficient, despite the emphasis on improving welfare services for the elderly. This study derived implications for the necessity of strengthening the elderly's accessibility to facilities and services within the local daily walking boundary. In addition, it was confirmed that the necessity of demonstrating the daily life of Korean seniors in detail to reveal the characteristics of the elderly's daily walking area.
As the secondary spatial data analysis, using the Korea national geographic information map data, it was analyzed that the accessibility of major outdoor convenience facilities for the elderly within their local community boundary. This study found that the Korean elderly had to travel up to about 30% longer distances than the population of all age groups to use the outdoor facilities in their local communities. Using the raw data from the Korean national survey of the elderly living in 2017, it was also found that the Korean elderly showed dissatisfaction with the lack of daily convenience facilities in their current residence or low accessibility to the use of facilities.
This study then conducted a GPS tracking survey on the Korean elderly's daily walking movement to reveal their actual daily walking area with their daily convenience facilities use status. The daily waking movement of a total of 128 elderly samples (a total of 453,458 GPS points from July to September 2020) was collected. The senior participants were selected in 4 different case regions where had similar population aging ratios (15-17%) with similar socioeconomic environments. The case areas were differentiated mostly by their housing types (an apartment-dominant area group vs a single-detached houses dominant group).
This study proposed that Korean age-friendly urban policy should consider differences in the distribution of major housing types for elderly people in their community, and should strengthen access to services, food, health, culture and arts, religion, and educational facilities for the elderly.
This study also proposed the basic direction of Korean age-friendly urban policies related to creating an age-friendly built environment, especially within the daily walking area of the elderly. The necessity of designation of a model district for creating an age-friendly built environment, the main contents of the model district designation project, and improvement of related laws were proposed. The policy proposals for the creation of an age-friendly built environment at the daily walking area scale and the establishment of an age-friendly community network were suggested.

Youngho Ko Associate Researcher, Architecture & Urban Research Institute
Seungyeon Han Assistant Research Fellow, Architecture & Urban Research Institute

Ecological Landscape Planning and Design Based on Natural Enemy Insect Habitat

Using natural enemy insects to carry out biological control is an environment-friendly pest control model. Protecting the habitat of natural enemy insects is the most effective means to improve the control efficiency. With the development of the intersection of disciplines, the creation of natural enemy insect habitats through landscape planning has attracted more attention, that is, from the perspective of landscape, to manage landscape components and build habitat patterns to better protect natural enemies and achieve pest control. Taking Xixiaoying agricultural and forestry plots in Shunyi District, Beijing as an example, this paper determines the key species of natural enemy insects according to the crop fields, and summarizes 13 environmental factor indicators required for the habitat of natural enemy insects, including landscape pattern, natural factors and interference factors. The intersection between these factors and the habitat network constructed by the method of "source-connection structure-ecological complex", are further taken and optimized. Then, from the two levels of habitat planning and habitat design, the habitat construction strategy of natural enemy insects is proposed. Among them, habitat planning strategies include patch scale, spatial configuration planning of landscape elements, landscape connectivity and corridor construction, while habitat design strategies include specific design of the habitats of woodland, shrub, grassland, ditches, roads and farmland. Finally, the practical application significance of the natural enemy insect habitat construction method is summarized. This method of constructing natural enemy habitats from the perspective of landscape can effectively promote the shift of the focus of biodiversity conservation from species to landscape and even the entire ecosystem, which is beneficial to agricultural ecological security and sustainable development, as well as making the ecological service function better.

ZhiRuo Liu Phd student, Beijing Forestry University
Hao Yin Professor, Beijing Forestry University

Networking Approach for Historic Urban Landscape in the Porcelain Capital of China

This article presents “networking approach” as an alternative to “ layering model” in the issue of historic urban landscape [HUL] (UNESCO, 2011; Bandarin,2012,2015) , based on a research conducted in the historic city of Jingdezhen, the center of porcelain industry in China. This study points out that the existing HUL concept which can be traced back to the fundamental conceptual divisions set forth by western science tends to analyse the various elements of urban heritage (composed of Hybrid Natural-cultural Elements)by layers and ignore the nuanced connections and interweaving structure of various elements. Instead, the networking analysis approach can respond to the challenges of complex heritage networks, and to the difficulties that are often faced when modern schemes of looking and thinking of landscape(Cosgrove,1984; Bender,1993) in Eurocentric heritage model encounters local knowledge of Chinese settlement.

The field work in this paper examines the local language regarding place names and everyday uses of urban spaces, thereby highlighting heritage systems grounded in local life and indigenous knowledge. In the context of Chinese “Fengshui”, this paper demonstrates the local knowledge of nature and local intelligence of settlement location and design. This paper suggests that, industrial elements (kilns, molding rooms, piers, etc) and spiritual elements (temples for ceramic saints or water gods) are located in their intimate natural networks, and furthermore, the functional, spiritual and natural elements are perceived as a whole and evolve as an interactive system. This paper proposes a local and cognitive approach in heritage, which was initially developed in European Landscape Convention and historic landscape characterization projects (Fairclough and Herring, 2016), and yet seeks a more tentative and nuanced model based on urban ethnography in a Chinese city.

Ding He Associate professor, Beijing University of Civil Engineering and Architecture

Lin Yuan Master graduate student, Beijing University of Civil Engineering and Architecture

Multifunctional Green Infrastructure Planning Framework Based on Ecosystem Service Hotspot Identification in Miyun District, Beijing

Green ecological space in megacities fringe provides many ecosystem services(ESs) to the city and faces continuous threats from urban development. In this context, Beijing is promoting the policy of territorial spatial planning to coordinate the spatial conflict between green space and urban development needs in the urban fringe. There is a growing demand for multifunctional green infrastructure network planning in Miyun District and other districts within Beijing's ecological conservation zone to establish city-nature connections to protect critical ESs. Current green infrastructure spatial siting is typically based on specific public demand for green space. However, to some extent, there is a lack of city-scale approaches that systematically consider the trade-offs and synergies between social needs and ecological benefits to connect critical ESs protection areas and urban green spaces.

This paper aims to establish a framework for multifunctional green infrastructure planning based on ecosystem service hotspot identification: we selected representative ESs in Miyun District, such as regulating, supporting, and supplying services, to identify ESs hotspot areas as conservation features. We used the systematic conservation planning model Marxan to identify critical areas for priority conservation through setting conservation targets considering the trade-offs and synergies among ESs.We conducted simulation extrapolation to determine the green space sites with maximum ESs conservation efficiency. Large-scale patches with high conservation value optimized the current protected areas and served as ecological sources, while small patches served as "stepping stones" in constructed ecological corridors and became urban green spaces for public recreation. At last, a multifunctional green infrastructure network was constructed by identifying potential greenway sites among the patches.

Finally, 473.3km2 of green space was added, mostly clustered around existing nature reserves and natural scenic areas, maximizing the protection of ESs hotspots and connecting with urban green spaces to form an urban greenway network for public recreation, improving the multifunctional green infrastructure of Miyun District. The planning framework provides a replicable approach for planning green infrastructure so that it synergizes the ecological and social benefits, thus meeting the demand for multi-objective spatial planning. More broadly, it represents a spatial planning approach to protect ESs critical areas and has implications for formulating territorial spatial planning policies in other districts within Beijing's ecological conservation zone.

Xin Ai Beijing Forestry University, China
Xi Zheng Dean, Beijing Forestry University, China

Exploring the Nature Appreciation in a City: Instagram Post Data Analysis

Urban greenery provides people with the benefits of encouraging leisure opportunities, landscape appreciation, learning from nature, and observing living creatures. However, the qualitative value of green space in a city is challenging to quantify because it is quite individual and can be too subjective to be assessed. This study suggests the level of 'Appreciation of Nature' as a type of the relationship between human and environment in a city can be one of the indicators used to assess the quality of green space in that city. Focusing on the city of Cambridge, UK, the study aims to understand how people appreciate the variety of aspects of the natural environment uploaded on Instagram. The study retrieved photographs uploaded to Instagram with the defined location of the city of Cambridge. Word frequency and LDA Topic analysis were conducted with text data, including nature contents in pictures posted. After identifying topics that represent people's nature appreciation, the study performed a Content Analysis for pictures in each topic to deeply analyze people's appreciation of nature in the city.

As a result, the study found nature-related photos counted for around 10% of all Cambridge's Instagram photos retrieved. The River Cam has emerged as the most popular place for natural appreciation in the city. Rivers provide open spaces for people to enjoy. Well-managed rivers also provide beautiful riverside views. The floodplain of the River Cam is well preserved as a natural green area, and there are plenty of habitats for wildlife. In the riverside green areas, the culture of cattle grazing on common land remains today. This idyllic landscape in the city made tourists take pictures and share their photos on Instagram. Finally, the study discusses the photo data on Instagram as valuable cloud sourcing data with citizen participation that visually represents how people engage with the local green landscape.

Yonghoon Son Associate Professor, Graduate of Environmental Studies, Seoul National University

Remote Sensing as a Tool for Socio-Cultural Diversity and Inclusiveness in Reconnecting Sub-Saharan Africa Protected Areas – Nigeria in Perspective

An inclusive and diverse environment allows the integration of wider perspectives of people living together and developing new ideas in the development of a harmonious 21st-century resilient community. Remote sensing is a technique to observe the earth's surface or the atmosphere from out of space using satellites. Remotely sensed imagery helps in mapping land-use cover, agriculture, soils mapping, forestry, city planning, land cover changes, deforestation, vegetation dynamics, water quality dynamics, and urban growth, and this study analyzes the dominant vegetation in the selected areas for improved air quality. It is a landscape planning and management tool for socio-cultural diversity and inclusiveness in protected(reserved) areas through monitoring of the land-use changes, settlement/living patterns, predominant trades/socio-economic activities in the urban-rural locations and the demography in Sub-Saharan Africa. Considering the seventeen federal governments recognised nature re-serves in Nigeria being the giant of Africa regarding her green landscapes, rich biodiversity and human resources. Located in the West Africa subregion lying on Latitude: 9° 04' 39.90" N (9.077899) and Longitude: 8° 40' 38.84" E (8.677599), with an estimated population of over 220,000,000 people. This study adopted both quantitative and qualitative approaches for the analysis of the geospatial data and the updated aerial photographs gotten through the Landsat imageries (Google Earth Pro, 2022). This study aimed at exploring the application of remote sensing for reconnecting both the socio-cultural diversity and inclusiveness there-by posits the adoption of RS tools for transportation planning, land degradation and encroachment estimations. While exploring the geophysical ecology and biodiversity conservation of some selected protected areas in Nigeria, while also providing cost-effective alternatives for biodiversity monitoring and conservation strategy development. It is now feasible to obtain large details of the surface of the planet without conducting arduous field activities with the assistance of the availability of multi-resolution, multi-sensor aerial information covering the six sub-regional systems in Nigeria (the Sahel, Sudan, Guinea Savanah, Rainforest, Fresh Water Swamp and Mangrove). The relevance of RS (unmanned aerial vehicles/drones) in supporting environmentalists in characterizing and mapping the biologically rich zones, generating information on changes in biodiversity, modification, and distribution of species diversification. Economic and environmental issues raised by the discussed land-use changes are linked to the indigenous demographics' socio-economic developments, as well as, to some extent, population expansion in and around the area. This study, therefore, advocates for the immediate digitization of all national parks and nature reserves as an imperative for efficient and effective national planning, management, and development toward achieving the "United Nation's Sustainable Development Goal 15- Protecting Life on Land". The findings of this research illustrate the need for a holistic evaluation of human operations in nature reserves, as well as the ability to adapt sustainable management procedures such as strict monitoring in the geographical area and the regeneration of the already deteriorated and impoverished land areas to make more arable lands accessible. It is, therefore, feasible to analyze complicated phenomena such as biodiversity monitoring using smart remote sensing technologies in the reserved area's landscape dynamics representing them by multi-spectral remotely sensed data.

John Adekunle Student, College of Landscape Architecture, Nanjing Forestry University, Nanjing 210037, China
Xiao-lan Tang Professor, College of Landscape Architecture, Nanjing Forestry University, Nanjing 210037, China

Challenge of Conceiving a Botanical Garden in New Caledonia in a Post-colonial Context

In 2015, the Michel Corbasson Zoological and Forestry Park in Nouméa, New Caledonia, in the archipelago's southern province, launched a study of reflection and sketches for the development of a contemporary botanical garden of about ten hectares within its perimeter. New Caledonia is a French territory in the Pacific Ocean, with large autonomy, located about 1400 km north-east of Australia. It has a population of just under 300,000, about half of whom are Kanaks, the original inhabitants. The archipelago is the site of exceptional biodiversity of global importance, housing as many species as the whole of Europe, while the main island, 'Grande Terre', is only about 400 km long and 50 to 70 km wide.
For this mission, we were accompanied by a local technical and scientific committee, which as well as the management of the zoological park included botanists and representatives of local plant nurseries. Prior to this study, an initial sketch had been proposed by a major Parisian agency, with a high-quality layout, particularly in terms of design and facilities, which would allow this botanical garden to take its place amongst the contemporary, superior botanical gardens in the Pacific, such as that of Singapore or the latest realisations in Australia. It would display a wide range of the world's tropical flora acclimatized in technological and interactive facilities, corresponding to the most elegant landscape projects in France.
However, the work with the technical committee took the project in a completely different direction, notably thanks to the exchanges with the local experts and extensive hiking through the 'Grande Terre', leading to an understanding of local singularities. New Caledonia, like many territories, is literally overrun with a generic tropical flora, in private gardens as well as in public landscape developments. There is almost no production of local flora in plant nurseries, the sole exception being some native plants used to renature the 'Maquis Minier' landscape of the nickel mines after their exploitation. It became rapidly clear that this botanical garden should be entirely devoted to the endemic flora and landscapes of New Caledonia, which are too little known and valued by the inhabitants and economic actors of the archipelago. The question then remained of the garden's design, and through it, the narrative that this project could relate. The debate focused on the evocation, through the form and materiality, of the Kanak culture, rather than the modern international style closer to the descendants of the European settlers and expatriates. The choice was made to use forms that were more neutral, in line with local natural forms, and less culturally identifiable.
The purpose of this paper is to present these debates, the project they led to and the proposals they generated in terms of contemporary botanical gardens in a tropical, post-colonial situation, at the dawn of the sixth extinction of biodiversity.

Frederic Dellinger Senior lecturer, ENSAG, France
Anne-Cecile Romier Manager, Eranthis Landscape Architect, France

Interpreting the 'Garden' in Singapore's Urban Development: Focusing on the Changing Slogans

The 'garden' serves as an ideology, a metaphor, or a symbol concerning eco-friendly urban development in diverse countries. Especially in Singapore, the term has been consistently used as a core concept envisaging the direction of the government's urban development. This paper interprets Singapore's urban development policies focusing on the changes of national slogans with reference to the concept of the 'garden'. By examining how each policy practice is linked to the garden, thereby altering the city-nature relationship, and again how these changes are reflected back in the slogan, the authors illustrate three distinct phases of Singapore's urban development policy. The research is primarily based on official governmental documents, especially the National Archives of Singapore, and books, papers, and documents written and/or issued by relevant agencies or personnel.

The three phases not only display different slogans, but are also distinct in terms of policies, usage of the term 'garden', and understanding of the city-nature relationship. In early stages, efforts were made to achieve 'clean and green' Singapore under the slogan of 'Garden City'. Ideal urban sceneries were illustrated as 'camouflaged' with trees, hygienic, and disciplined. Nature was primarily an object that was, or had to be controlled and managed to be displayed 'ideal'. In this phase, the garden is interpreted as a decorative space, where humans cultivate and control nature for its appearance. The shift in the focus, from appearance to infrastructure, marks the second phase. In this second phase, urban greens and waterbodies were connected and approached as fields and infrastructures that function as a part of a comprehensive urban system. Along with this change, a new slogan of 'City in a Garden' was adopted. In the former slogan, the garden is a metaphor used to describe how an ideal city should look like, therefore Garden City is a city with the elements of a garden or a city that resembles the appearance of a garden. In the latter slogan, the garden is the foundation of the urban system. Here, it is no longer a mere decorative place, but rather a surface and a field where urban activities take place and where urban people connect with nature strengthening the relationship between the two. The last phase comes with a relatively recent slogan of 'City in Nature'. Expanding the garden to nature itself, the city crosses the middle ground, directly into nature. Unlike the previous phase where nature acquires meaning in the urban context as a resource or infrastructure, in this phase, urban life is life in nature and therefore nature is in itself urban. New emphasis is made on sustainability. The city located 'in' nature has become more responsive to the changes of nature and therefore sustainability is now an essential element in urban life as well.

The Singapore case exemplifies how the different garden concepts can be applied to overcome the dichotomous relationship between city and nature and presents the possibilities of the expansion of urbanity through nature and/or the expansion of nature through the city.

Tambin Cho Undergraduate, Seoul National University
Jeong-Hann Pae Professor, Dept. of Landscape Architecture, Seoul National University

Measuring Aesthetic and Restorative Values of Ecological Landscape Using Eye-Tracking Technology

Urban parks and public gardens provide a variety of benefits to urban dwellers and improve their quality of life as well as their health and well-being. Urban landscapes offer people a place to relax, socialize, and experience the aesthetic beauty of nature. Ornamental and manicured landscapes, a common landscape in urban areas, offer the benefit of aesthetic delight but have limits of high maintenance costs and low ecological qualities. There has been increasing interest in creating ecological and naturalistic landscapes that emphasize ecological function and biodiversity conservation potential. However, naturalistic landscapes in urban areas are often perceived by the public as messy, unmanaged and unsafe. Studies showed that aesthetic perception and preference are associated restorative quality but few studies have examined restorative quality of naturalistic landscapes and its relationship with aesthetic perception and preference. The purposes of our study, therefore, are to investigate the aesthetic perception, preference, and restorative effects of naturalistic landscapes and to examine the relationship among the variables. In addition, our study attempts to identify factors contributing to landscape preferences and restorative effects using eye-tracking technology. The hypothesis of this study is as follows. (a) There is a difference among ecological values, aesthetic perceptions, visual preferences, and restoration effects between ecological landscapes and manicured landscapes. (b) There is a correlation between the ecological value and aesthetic perception of the two landscapes (Hoyle et al., 2017). (c) In both types of landscapes, there is a positive correlation between restoration effects and visual preferences (Van den Berg et al., 2003). Eye-tracking and questionnaires were used to verify perception, preference, and restorative effect. Specifically, the questionnaire was constructed with the Perceived Restorativeness Scale (PRS) was used to measure the restorative effect, and the SD (Semantic Difference) was used to investigate the aesthetic value. The results of our study would help designers and planners in creating more ecological landscapes and sustainable parks in urban areas with enhancing aesthetic values.

Jeong-Yeon Lee PhD, Kyungpook National University
Qian Wang PhD, Kyungpook National University, China
Hyung-Sook Lee Professor, Kyungpook National University

‘Eight Sceneries’ – Carriers of Inheriting Urban Context: Case Study of Luoyang City, China

With the rapid urbanisation process, our cities are gradually losing their original characteristics. Urban context, as a cultural system for a city, is a unique characteristic that distinguishes one city from another, and of which Eight Sceneries are important components (Gao, 2015). In Chinese culture, Eight Sceneries generally refer to the most representative sceneries in a city, instead of eight generic sceneries. In addition to being a kind of material existence, they contain rich regional culture content. It is of great significance to inherit the unique context of a city and restore its most notable features by exploring the cultural values of Eight Sceneries.

This systematic research in which the object is Luoyang’s Eight Sceneries was conducted in two stages: desktop study and fieldwork. Firstly, an analysis of Luoyang’s Eight Sceneries was made by consulting county annals and ancient books. Secondly, we assessed the true feelings they generate through the field research, so as to deeply dig up the cultural values associated with the Eight Sceneries.

Luoyang’s Eight Sceneries include ‘longmen shanse’ (the Longmen Mountain scene), ‘masi zhongsheng’ (bell tolls from White Horse Temple), ‘jingu chunqing’ (the scenery of Jingu Ravine), ‘luopu qiufeng’ (views of the Luohe River), ‘tianjin xiaoyue’ (main traffic artery during the Sui and Tang periods), ‘pingquan zhaoyou’ (the ancient villa of Li Deyu, named after the prime minister during the Tang Dynasty), ‘mangshan wantiao’ (the Mangshan Mountain scene) and ‘tongtuo muyu’ (the trade market during the Sui and Tang periods) (Qian, 2014).

Carriers of inheriting urban context can be divided into the dominant carrier and recessive carrier (Wang, 1989). Dominant carrier refers to external urban characteristics that people can perceive. It can have a certain scales from the landscape to block and then architecture. Recessive carrier refers to the underlying cultural meaning of the dominant carrier that includes various carriers, such as politics, economics, religion, and social psychology.

This paper has introduced a new carrier for studying the urban context through researching Luoyang’s Eight Sceneries (Wu & Mao, 2013). During the process of planning an urban characteristic landscape system, original landscape contexts need to be studied in-depth for each city. The chosen Eight Sceneries are supposed to remind, protect and inherit important parts of a city’s memory and its urban cultural heritage(Wang, 2005). The process of developing the Eight Sceneries culture does not only concern understanding the content but also understanding the national, regional, historical cultures, and developing their contexts so as to promote the development of characteristic regional landscapes. Specifically, they need to restore the Eight Sceneries as much as possible according to historic textual research and make use of the historical significance of traditional attractions to highlight the regional context. Secondly, it is important to discover new Eight Sceneries worthy of a specific city to inherit to effectively protect them.

Yilei Wang PhD student, Dept. of Landscape Architecture, Huazhong Agricultural University, China
Chi Gao Professor, Dept. of Landscape Architecture, Huazhong Agricultural University, China

Tackling Green Inequity in Urban Neighborhoods: On Creating Empirical Green Network Plan in Southwest Seoul

Seoul has a good amount of natural green space within the city boundary, but in terms of its distribution and accessibility, there is a great disparity depending on neighborhoods. Particularly Southwest Seoul is suffering from its chronic shortage of green public spaces due to its low-rise/high-density urban fabric and a high concentration of light industrial use. Southwest Seoul does not have a large urban park that is comparable to Seoul Forest, and it's becoming more difficult to procure a large land for a park.

This session will explore Seoul City's recent effort to establish a green network for Southwest Seoul. To overcome the limitations of individual Gu(district)-based project that often ends up in fragmented and temporary improvements, this plan aims to develop a series of strategies that can be consolidated into a more persuasive and long-term vision. Based on a thorough analysis on existing open spaces, 14 initially selected project site candidates were re-examined and categorized into three groups.

'Sanjarak Park' is a plan to renovate urban mountain hillside comprehensively. To optimize the balance between ecological preservation and improvements as a public amenity, trails and program areas are located on the mountain foot on the periphery, while restoring and reconnecting fragmented green patches in the inner mountain area. While accommodating public programs in the already interrupted or neglected parcels adjacent to the mountain, barrier-free trails connect major pedestrian activity nodes of the neighborhood and the mountain.

'Green Injection' plan aims to provide green services in a low-rise/high-density district without adequate number of parks. It is divided into two distinctive yet complementary strategies. '100py Forest' is a small-scale intervention that implants sustainable urban forest with selective cultural programs. By adopting sustainable forestry strategies using indigenous species and improved soils, '100py Forest' becomes a place where residents can meet highly ecological nature within their neighborhood. 'Park Mobile' is a flexible, on-demand provision of green services that provide mobile/modular toolkits which support instant green services. "Park Mobile HQ", where the toolkits are to be stationed at, is a new type of public space that promotes new policies to citizens and functions as decent park of its own.

By utilizing urban infrastructures, 'Blue Anchor' plan focuses on strengthening pedestrian connection in the city while providing multiple public services based on the current and future needs of the neighborhood. 'Inter-Green', a key suggestion of the 'Blue Anchor' plan, transforms idle areas at intersection into a park that can accommodate public programs including rainwater garden, urban farming, and pet park.

Green inequity leads to other related inequity issues in many diverse aspects, such as disparities in cultural opportunities and social-welfare. While each city's inequity unfolds in different ways, these three groups of strategies will also be applicable to other urban areas with limited amount of public space with little opportunity to obtain a large patch of land, with relatively low cost and risks when accompanied with a carefully devised set of operation and programming strategies of Southwest Seoul's Green Network Plan.

Youngjae Shin Associate, HLD
Haein Lee Principal, HLD
Hoyoung Lee Principal, HLD
Byungdoo Youn Designer, HLD
Uijun Song Designer, HLD, United States

Navigating Race-Based Inequity through Design: the City of Atlanta's First Municipal Food Forest Park

Through the Rockefeller Foundation's 100 Resilient Cities program, the City of Atlanta initiated policy and implementation strategies to mitigate the effects of chronic environmental, social, and economic stress. Identifying food access as key to its resilience, the City of Atlanta Mayor's Office of Resilience hired its first urban agriculture director in 2015 with the goal of having local, healthy food within a 10-minute walk of 75% of Atlanta residents by 2020. The Lakewood-Browns Mill neighbourhood, a historically Black community with limited access to fresh food, was targeted for a pilot food forest project in 2017.

The project goals were to create a publicly accessible, edible park space within an existing forest setting with nut and fruit trees, berry shrubs, vegetable gardens and native plant restoration for pollinators and wildlife. It would become a centre for education on organic and permaculture gardening and food forest maintenance as well as green jobs training.

Clara Kwon formed a consultant team with an ecological designer and mycologist who were then engaged by the Office of Resilience to develop a community vision plan for the city's first municipally owned food forest. An extensive community engagement process highlighted entrenched race-based inequity where trust first had to be gained before the project would be adopted by the community. After completing the project, Clara was hired by the City of Atlanta Department of Parks & Recreation to be the Director of Parks Design. In her role within government, she navigated internal bureaucracy to finalize the purchase of the land as city park and negotiate maintenance terms.

In this presentation, Clara will discuss the design and community engagement process, the racial dynamics and history that brought added depth to this process and the roles that different City departments and non-profit partners have played in helping to bring the food forest to fruition.

Clara Kwon Founder, Principal, Stand Landscape Architecture LLC, United States

Optimization of Landscape Planning in Downtown Seoul Using Generative Design

Urban landscape planning field has developed landscape simulation techniques to represent the perspective of a person looking at the landscape. However, existing landscape simulation has limitations as it treats landscape as an image rather than considering the myriad of possibilities to extract the most appropriate option as the final version.
This study proposes the use of generative design to overcome such limitations in landscape simulation techniques. Generative design is a design methodology that performs optimization through algorithm automation. The nature of generative design, which evaluates countless variations, presents new alternatives for landscape simulation techniques. This study aims to present a set of designs that allow the user to find the optimal possibility according to the planning objectives by using generative designs method for landscape planning in downtown Seoul.
This study proposed the view simulation model using the view corridor, a planning technique for protecting the mountain landscape from a person's point of view. It conducted a simulation analysis using building coverage ratio and floor area ratio as planning factors. After conducting a landscape simulation analysis on Namsan Mountain in downtown Seoul, this study found that the landscape characteristic of downtown Seoul features semi-continuous view of mountains from a long distance, visible between the buildings from the street toward Namsan Mountain. However, the view decreases as high-rise buildings approach Namsan Mountain.
In particular, the high-rise buildings along the street may cause significant changes to the landscape depending on the planning regulation. Therefore, a simulation based on varying degrees of planning regulation was conducted on the street parcel of Samil-ro in downtown Seoul. According to the optimization simulation on Samil-ro, the height and floor area ratios of buildings had insignificant impact when viewing Namsan Mountain; however, the building coverage ratios of the top and base of the buildings had significant influence.
However, the street did not appear continuously due to the setback line at the base of the buildings. From these results, conditions for maximizing the view of Namsan Mountain and street continuity were determined and optimized, with the building coverage ratio at the base and top as variables and the height and floor area ratio as limiting conditions.
After performing optimization, this study was able to present an optimized design set based on the objective of landscape planning and the selected design options that best suit the Namsan's view and street continuity. As a result, in order to protect the landscape of Namsan Mountain in Samil-ro, the regulations for building setback line at the base and the top for individual parcels are deemed more effective in relation to the view of Namsan Mountain, rather than applying height regulations and building line regulations.
The study results can be applied to district unit plans or public deliberations by providing optimal guidelines for landscape planning regulations. However, in order to apply the generative design method to the actual landscape plan, further research is needed with regards to the viewpoint selection process or the procedural specifics of design selecting a design in generative design process.

Su In Kim Graduate Student, Seoul National University
Jeong-Hann Pae Professor, Dept. of Landscape Architecture, Seoul National University

Furun Mini Natural Playground—A Nature-Friendly and Child-Friendly Design in High-Density Communities

The lack of contact with nature and the lack of space for children's activities are common problems faced by urban communities such as Beijing. During the pandemic, social distancing rules have made the space for children in the community more necessary. Furun Mini Natural Playground is an exploration of improving children's activity space in high-density communities by upgrading the landscape design. Within a small area and with low investment, through the participation of children and residents, it promotes the nature-friendly and child-friendly construction of the community.

Furun Mini Natural Playground is located in a typical high-density community in Beijing, China. The project site was originally a piece of desolate green space. Although located in the center of the community, degradation of plants, the bareness of soil, and lack of clipped hedgerows made it barriers between nature and crowds. The area of the site is only 85 square meters, but it still creates many possibilities for free playing. The playground is an integrated functional area that revolved around free playing, as well as the development of children's senses of sport, art, construction, creation, etc. By cultivating native plants and exploiting natural materials such as wood and stone, it not only transforms the messy and desolate public green area into a playground close to nature, but also creates an outdoor green gallery, a place for public ecological education, and an open space for family communication.

"Furun Mini Natural Playground" is one of the few attempts in the natural education playground for young children in a high-density community in Beijing, and it is also the start point for the construction of child-friendly communities. The project focuses on participation and cooperation during the whole process. The administrative department of the community, the neighborhood committee, the property management, services providers, external experts, volunteers, and residents conducted many joint discussions and participatory workshops. The schematic design received 59 questionnaires from the residents and fully absorbed their suggestions.

The project not only solves the problem of the lack of children's space in the community but also builds a child-friendly social network through the participatory construction. The project embeds ecological education in the design and construction processes. By multilateral cooperation the project explores a new model of children's participation in community affairs, improving the sense of belonging of children and residents in the community, realizing comprehensive benefits in ecological environment, community integration, children welfare, and nature education to promote the construction of child-friendly communities.

Huajun Li PHD Student, China Agricultural University, China
Xiangdu Bu Design Director, Natureus Studio, China
Jian Liu Associate Professor, China Agricultural University, China
Xianfeng Li Professor, China Agricultural University, China

Rewilding the High-Density but Low-accessibility Urban Open Space: Case Study in Beijing Core Area

High-density build up environment is and will be the dominant space for our urban life. The high-intense spaces have not only provided effective and convenient social services by infrastructures, but also concealed the potential human demanding for healthy and pleasant nature. Inside the same place, there are still some low-accessibility urban open spaces which are isolated by speedy transportation or heterogeneous urban texture. These low-utilized spaces are neglected by busy daily life, at the same time, their potential opportunity for untouchable nature is severely underestimated. In this context, following problems are considered: 1) how to correctly recognize these low-accessibility spaces in high-density urban area? 2) how to evaluate both the existing and potential service of these open spaces? 3) how to change or accelerate the meet with the demanding by low-cost and low-maintenance design? 4) what feedback will happen or inspire for future planning and design? The concept of urban-rewilding (UR) helps to find an approach for better solution of the high-density but low-accessibility urban open spaces. The Nature-based solution (NbS) can be introduced for both research and practice, to create self-growing and self-managing spaces that are closer to native nature and provide diverse ecosystem services. We choose Beijing Core Area as our research objective, where is a typical high-density area and has about 92.5 square kilometres with more than 1.7 million's population. The high-resolution Google satellite remote sensing images are applied to recognize design site. Related open access Geo-date are used for analysis in ArcGIS. Firstly, the potential rewilding sites are identified, classified and selected through visual interpretation by remote sensing images with transportation and location analysis. The research sites are also certificated by field survey. Secondly, the indicators are chosen through related literature research to evaluate the sites, including area, grading, boundary, etc. Thirdly, 3 scenarios design modelings (no change, half-rewilding, complete rewilding) were made for typical sites, including plan drawing, 3D model rendering, and maintenance finance calculation. Finally, we interviewed site neighbor residents, professional designers or planners to collect the feedback for the scenarios of urban rewilding. The result shows different understanding from each site and scenarios by various stakeholders. It indicates the big gap of the perceive to the urban landscape, urban rewilding and urban nature. However, it received relatively approximate opinion form the financial indicator of the low-accessibility sits' maintenance cost. The most attractive topics are both the aesthetic and functional understanding of the design scenarios. Few interviewees know the corrected meaning of urban-rewilding, NbS or ecosystem service. It could not explain that people's consciousness of urban rewilding value is still in the primary stage. However, it shows potential important work for better relationship between citizens with urban nature, include the environment education, rewilding knowledge exhibition, and broader and deeper on-site research. (457)

Yuexi Lang Student, Beijing University of Technology, China
Fei Xue Associate Professor, Beijing University of Technology, China
Ao Bian Student, Beijing University of Technology, China
Song Li Student, Beijing University of Technology, China
Chuyue Wang Student, Beijing University of Technology, China
Yue Cao Assistant Professor, Tsinghua University, China
Chuyu Xia Assistant Professor, Beijing University of Technology, China

Understanding Segregation of Adjacent Village Residents' Perception of Upo Ramsar Wetland Based on Semi-Constructed Interview

According to identification of environmental degradation caused by rapid development and intensive land use, the government's unilateral conservation policy and regulations affect agricultural production, fishing rights, and livestock farming. Due to environment-oriented policies such as the nationalization of farmlands near protected areas, land use regulations, and eco-friendly agriculture demands, local residents' distrust in the government increases continuously, and segregation of residents' perception of the area develops.

Planners need to be aware of the perception of members of society about the surrounding environment for sustainable environmental planning and management. However, it takes relentless effort to devise a plan that reflects all opinions. The planner's role is to communicate non-biased professional advice and analysis results to decision-makers. Consequently, to understand the perception of members of society, sociated information collecting methods such as PPGIS and Q-methodology have been increasing.

This study aims to spatialize each village's limitations and needs that are difficult to solve due to communication disconnection and different perceptions in top-down projects. It also aims to utilize interview-based data that increases communication between local residents in each village and supports systematic planning in the decision-making process.

The research site is the Upo Ramsar wetland and its surrounding rural communities. The Upo wetland protected area (WPA) is 8.54㎢, and communities within 2km buffer around the WPA. There are 23 villages; they are highly dependent on onion, garlic, and rice production (crop rotation). From a perceptual perspective, the wetland and the rural communities have been deeply interconnected while being exposed to rapid development and conservation regulations.

The study conducted a semi-constructed interview to identify the communities' perception toward the wetland and their livelihood. Thereafter, semantic network analysis was performed to refine and interpret interview contents systematically. Subsequently, through factor analysis, the study classified the refined interview contents by keyword group type.

Consequently, three types of groups were derived having differences in levels of dependency on agricultural activities, disagreement about conservation policies of areas, and satisfaction with government subsidies. Communities near the protected area should be classified as clusters considering social and geographic characteristics and cognitive development stages. This study found some segregation of residents' perceptions based on various impacts each villager has experienced to maintain their living near the protected area. The results of this study may serve as valuable data for local government to implement and prioritize policies to conserve the protected wetland area considering various residents' perceptions.

Baysok Jun Ph. D Course Interdisciplinary Program in Landscape Architecture, Seoul National University
Yonghoon Son Associate. Professor, Dept. of Environmental Landscape Architecture, Seoul National University

Inclusive Friendly Character Education: A Conceptual Framework Establishing Educational Diversity from the Cosmology of Javanese Traditional House

Javanese culture is identical to the uniqueness of its traditional building. Joglo, as one of the traditional architectural buildings in Java, does not only function as a shelter. It is more like a place connecting humans as a microcosm unit with the Creator (macrocosm). This mythology then pioneered the emergence of the vertical grouping, which was according to the owner's social status, ranging from ningrat (aristocrats) to priyayi (ordinary people). As one means of forming national identity, Joglo holds various values of cultural wisdom and the Indonesian nation's philosophy of life, thick with cultural diversity. The main Joglo building consists of four main pillars named Soko Guru to support the structure of the building and intercropping in the form of an arrangement of beams supported by the pillars of the Soko Guru.

Joglo's architecture consists of several pillars and unifies into a solid traditional house symbolized by the author as a diversity of education that must permeate all parts of society without exception. The author uses data from the previous research by connecting the theory of symbolic meaning with Javanese traditionalism. The finding is that the local wisdom, which contains the nobility values of the ancestral heritage of Indonesia, can be used to foster character education. The value components include knowledge, awareness, and willingness. However, no research adequately addressed the cultural value of this traditional house architecture and its correlation with education, especially character education for inclusive people. Therefore, the author intends to create the concept of "Inclusive Friendly Character Education," focusing on Joglo as a cultural heritage being a medium for accommodating diversity in the educational field. This conceptual framework also aligns with Indonesia's mission: Inclusive Indonesia 2030. The nation wants to make sustainable cities and communities synonymous with inclusivity to equalize opportunities in various fields, whether politics, social culture, economics, or education.

In formulating the concept of "Inclusive Friendly Character Education," the author applies a combination of the inclusive approach and the dimensions of equality pedagogy. The author sees that the equality pedagogy dimension emphasizes multiculturalism and can facilitate students from various social class backgrounds and abilities in both physical and mental conditions. To make the concept more solid and right on target, the author decided to strengthen it by presenting an analysis of behavioural architecture theory. There are four variables used by the author, namely (1) space, (2) size and shape, (3) furniture and arrangement, and (4) colour. The author applied these four variables by connecting them with function, spatial, and circulation form.

The concept of "Inclusive Friendly Character Education" will be used as a school branding that aims to build character for students, such as nationalism, tolerance, cooperation, respect, sympathy, and empathy. The author wants to show that in the cultural diversity of Indonesia, there are noble values that can be ammunition for the next generation to face globalization. With an inclusive approach, the author wants to share a perspective that education deserves to be obtained by anyone with different backgrounds and physical and mental conditions.

Margaretha Giftania Vonta Nigalolon Student, University of Indonesia, Indonesia

Envisioning Culturally-Oriented Therapeutic Landscapes within Hospital Settings

Hospitals and other healthcare facilities constitute one of the most challenging places for people to be. Despite their physical setting, hospital environments are places where patients, visitors, and staff experience high stress. However, there has been an increase in awareness of creating healthcare environments that function as efficient, hygienic environments with stress-reducing characteristics. Since its inception by health geographer Wilbert Gesler in 1992, the term therapeutic landscapes have expanded from environments that foster a sense of place and healing to accommodate the material, affective and socio-cultural values and relationships that define experiences of health and wellbeing. The use and benefits of therapeutic landscapes have been understood to have healing benefits in healthcare environments. The benefits of implementing natural and therapeutic landscapes in hospital and healthcare design have been supported by studies indicating that creating a stimulating outdoor environment yields long term benefits, including shortened patient stays, reduced staff turnover and improved staff longevity. With most healthcare facilities usually under intense pressure to control and reduce costs while increasing the quality of care, it can be concluded that additional investments into outdoor spaces are financially viable. This paper focuses on establishing therapeutic outdoor spaces in Wellington Regional Hospital, New Zealand. It does that by delivering a roadmap to provide patient-centred outdoor spaces drawn from the importance of cultural and ecological resources enabling landscapes to be seen as therapeutic. The proposal introduces public spaces that link and connect users of the healthcare facilities and the surrounding residents and public to create a unified, not alienated, landscape.

Bruno Marques Associate Dean,Faculty of Architecture and Design Innovation, Victoria University of Wellington, New Zealand

Jacqueline McIntosh Senior Lecturer, Faculty of Architecture and Design Innovation, Victoria University of Wellington, New Zealand

Maisie Heckett Postgraduate Researcher, Faculty of Architecture and Design Innovation, Victoria University of Wellington, New Zealand

The Child's Rights Impact Assessment in City Planning

The Child's Rights Impact Assessment in city planning

On January 1st 2020, the convention (Convention on the Rights of the Child) became Swedish law, meaning new demands from various authorities and municipalities to include the child's perspective in all matters. Landscape architects need to take a leading role in transforming this into physical form, where we set the conditions for the children's well-being. To ensure the child's positive development it is essential to design the city so that the children not only pursue their interests, but also discover new places, experience the unexpected, and feel safe.

The issue has for many years been focus for the Swedish landscape architecture office Landskapslaget and already in in 2015 we introduced a new method called the Child's Rights Impact Assessment. The method is aiming at securing the child´s perspective early in the planning process and has been developed simultaneously and prototyped around Sweden. It has evoked big interest from municipalities, landscape architects and urban planners and has to date been implemented in around 20 projects. By its flexible design it is adoptable to different scales, phases, and stakeholders.

The method is built up by several steps where we look at various aspects together with the children, linked to urban planning such as; access and location of schools and preschools, everyday places, security, accessibility, independent movement, protection against traffic, physical literacy, ability to practice culture and sports, healthy environments, planning process and public participation. After a first analysis of the place, we conduct creative dialogues with children between 3 and 18 years from the area, on their view on the values, opportunities, and challenges of the place, to capture the child's perspective as a complement to the child's rights perspective. The method uses communication tools that are easy for children to use such as digital media, sketchpads, visualization, mental-mapping and social media.

Together with a focus group of stake holders such as for example clients, property owners and municipality, we present the result and conduct a workshop where we discuss and explain why the child´s perspective is important and what role each actor can play in connection to the specific site or development. We talk about the child's specific conditions and prioritize which aspects we should focus on. Through the method, we can monitor and calculate the consequences on the child's perspective just as methods for analyzing consequences for stormwater or ecology do. The method also clarifies what each stakeholder can contribute to the development process, and thus together transform our cities into good living environments for children.

In this presentation we will describe the method and its results as well as possibilities and challenges, and how a similar process can be used for other relevant topics such as gender equality and segregation. It is crucial to ensure the interconnection between the child's well-being, their personal development and the physical structure to creates a sustainable environment for our future generations.

Lise Strand Hellström Partner, Landskapslaget AB, Sweden

Transforming a Solar Energy Power Plant into an Urban Park: Focusing on the 'Sun Garden' Project in Solaseado

This study is based on the Sun Garden Design Project conducted in 2020. The Sun Garden is one of the nine hub gardens in Solaseado, an urban development project in Haenam-gun, Jeollanam-do, South Korea. The garden is located in the center of a large-scale solar energy power plant that was built to meet the new city's sustainable goal as part of its carbon neutral scheme. Since the Paris Climate Agreement in 2015, world's leading countries including South Korea prioritized the reduction of greenhouse gas emission by pursuing energy innovations. This innovative trend highlights solar energy as an alternative energy resource. However, most solar energy power plants in Korea are intensively developed to promote efficiency and profitability without considering nature and the surrounding environment. The careless development of solar energy power plants constantly engendered controversy between advocates and critics despite the important value of solar energy as a renewable energy source. Therefore, the purpose of this study is to examine how solar power plants are transformed into green infrastructure where energy, nature, and humans coexist through the Sun Garden Project, and to discuss the meaning and value of sustainable infrastructure development models in low-carbon green cities. The results of the design are as follows. First, the site was a reclaimed land that had been neglected for many years after the public water reclamation. However, after the creation of the Sun Garden, it was transformed into a unique cultural landscape that harmonizes the solar energy industry landscape and natural environment. Second, the Sun Garden currently occupies 10% of the entire solar power plant site and serves as a public park with neighborhood accessibility. Third, a system was established to locally produce and consume the power and garden materials required by the city. The "RE100" program, which covers 100% of the electricity used inside the city with renewable energy, has been set as the main agenda for power plants; in the meantime, nursery and flower gardens have been created to build a self-sustaining green infrastructure system. In the nurseries, region-specific tree species and strategic tree species grow by adapting to the sea breeze and salt of reclaimed land. These will be planted throughout the city in the future. The power plant scheme have been criticized in South Korea for conflicting with environmental values and urban aesthetics. This study is meaningful in that it presents an alternative solar power plant model that accommodates to urban aesthetics and environmental responsibility while enabling sustainable interaction between nature and humans.

Bokyung Kim Manager, Southwest Coast Enterprise City Development, Bosung Group

Visions and Innovations of Constructed Nature in Riga

Over the decades the world policies, commitments through conventions, resolutions, declarations, recommendations, action plans call to reconnect with nature in human habitats nevertheless we are still facing climate and health crisis and uncomfortable urban microclimates. The nature innovations have as long history as civilisation. With the goal to reimagine future outdoors of Riga, to put ambition to go forward, the paper revisits the inherited values, knowledge and achievements of landscape design and planning of the previous generations governing Riga city.
Riga, the capital of Latvia, has a long history of blue-green innovations. In 1813 by establishment of Committee of Suburban Greenery the breakout to contemporary landscape architecture discipline was achieved. Over the decades the masters of landscape design as J.H. Zigra, G Kuphaldt, A.Zeidaks were invited by Riga city governors and by financial and policy tools the contemporary solutions were realized. The urban culture in Riga was characterized as urban elegancy in design and lifestyle.
Latvians as a nation has pantheistic worldview. The biophilic relationship with nature was realized in streets, parks, blue-green belts, garden city. The love of flowers and sun was developed in planting design by A.Zeidaks. The landscape democracy was achieved through affordable, inclusive design of city parks and gardens. New urban lifestyle design was achieved by design acupuncture to support use of public blue green spaces.
Following the end of the 2nd World War the Soviet period brought modernism with large scale multistory neighborhood planning and design with "light, air and sun" together with the green construction movement.
The ideology, the changing political regimes, wealth of nation resulted in undervaluation of achievements. Now after over 30 years of independence of Latvia the matured conclusions of previous times might result in rooted decisions for future.
Accepting that identity and self-value has nature of changing character the definition of milestones of visions and innovations in design and planning of constructed nature or wider of landscape architecture the results of this study should support individuation of landscape architecture discipline in Latvia and inscribe Riga and Latvia within Europe's and World's landscape architecture narrative.

Indra Purs Chief Landscape Architect, Riga City Municipality, Latvia

2. Poster Presentation

RE:VISIT

Topography as Urban Spectacle: A Critical Review of the Transformation of Mountainous Ferry Landscape in Old-Town Chongqing, China

The regional characters of mountainous cities in China are deeply influenced by mountain-water topography, but in different eras, such regional characters had different connotations and were concretized in various forms, as in each era topography interacted with urban economy, urban life and urban cultural values differently. Chongqing is a typical mountainous city, with its old-town ferries on the riverfront slopes representing the city's cultural landscape blended in with mountain-water topography. In the 21st century, such ferry landscape underwent change during urban regeneration, which needs critical review. As Chongqing's old-town ferry landscape was first formulated in the city's modern era (1891-1949), this paper compares Chongqing's ferry landscape making in the 21st century with that in the modern era to offer reference to future Chongqing's ferry regeneration.

In the modern era, after Chongqing was opened up as a treaty port in 1891, waterway transportation thrived and grassroot laborers congregated in the ferries (Yang, 2018). They spontaneously built vernacular houses whose forms sensitively adapted to riverfront slopes and water level fluctuation, and such vernacular settlements accommodated mixed uses of riverfront dwelling, ferry market trade and waterway transportation. The laborers' building practice and everyday life pattern were closely intertwined with mountain-water topography, which defined the core feature of modern Chongqing's ferry landscape.

Chongqing's urban regeneration in the 21st century emphasized preserving old-town ferries' mountain-water topographic characters, but such top-down regeneration manifested and interpreted the ferries' topography primarily based on the elites' visions. For some ferries with iconic locations, the regeneration built large-scale monumental architecture and urban space whose forms were designed to abstractly symbolize mountain/river so as to express local government's political vision for development, in which topography was endowed with political significance and appropriated for ideological construction. Some other ferries were redeveloped into commercial areas and tourist attractions themed with "traditional mountainous cityscape", which ostensibly inherited old-town ferries' physical features but relocated the ferry residents, erasing the intertwined relationship between ferry residents' everyday life and topography. In both cases, regeneration transformed the ferries' mountain-water characters into static spectacle to serve the political/economic interests and cultural visions of specific elites (local government officials, developers, etc.), lacking broader social concerns and thus ignoring the intimacy between local residents' everyday practice and topography formulated in Chongqing's modern era.

The paper summarizes that in contrast with the modern era, during Chongqing's mountainous ferry landscape transformation in the 21st century, mountain-water topography was increasingly appropriated for the city's cultural promotion, the development of experience economy, and ideological construction, and detached itself from the masses' everyday life and bodily experience. Such transformation was rooted in the combination of an unchecked neoliberal market and a strong Chongqing local government. The paper argues that future Chongqing's mountainous ferry landscape preservation practice consider its social benefit more comprehensively, concerning not only the elites' interests but also the masses' everyday experience, and restoring the intimacy between the masses' everyday life and topography. To achieve this, a higher degree of public participation is needed for future Chongqing's riverfront regeneration.

Liran Chen Assistant Research Fellow, Faculty of Architecture and Urban Planning, Chongqing University; Key Laboratory of New Technology for Construction of Cities in Mountain Area, China

Landscape Change of War Memorial Parks in UK Analysis of Four Case Studies

The war memorial park is a unique memorial landscape, which is established in a complex social background. Most of them appeared after the first World War, carrying people's remembrance of the war losses and providing green open space and sports venues for people(Lambert 2014). These nearly 100-year-old parks are the cultural heritage that should be protected. Since the opening of the War Memorial Park, their landscape has been changing in terms of appearance and function. Generally speaking, landscape changes are caused by both natural and human activities (Skokanvoa et al. 2016). After these changes, the role of War Memorial Park in the city can be different from that in the beginning (as a memorial) which may threaten the memorial function of the park(Davidson 2014). The main purpose of this paper is to study the initial design of the War Memorial Park, landscape changes, the reasons for the changes, and the impact of these factors above. The research method comes from the theory of landscape change and the driving force. By comparing the development process of different parks, how the design elements and the change process impact on the current role of War Memorial Park can be found out. This will provide some references for the protection of War Memorial Park and the design of the memorial landscape.

Yanjun Dong Designer, New Naturalistic Design Landscape, China
Congwei Wang Designer, Tsinghua University, China

New Design Encoded Traditional Place

In general, a planar CAD drawing obtained through a landscape survey has a problem in that it is challenging to analyze space in three dimensions and precisely design. As an alternative to that, the 3D Lasers survey, which is used in cultural property-related sites, is helpful. The subject of this study, the Chunchungnam-do History Museum, was required to improve the environment due to aging. The Museum is a long-established building newly opened as the Gongju Branch of the National Museum of Korea in 1973. It was then promoted to the National Gongju Museum in 1975. It is showing its style as a representative public building in modern times. The old trees in front of the building have the symbolism of forming the traditional atmosphere of space, so preservation is required. In other words, the subject of this study will be a space that requires the preservation of historical values and new designs. This study conducted three-dimensional surveying and analysis using the Leica RTC360 3D laser scanner. Through it, we are deriving a design plan for objects with historical solid and spatial characteristics, so we would like to introduce it.

Younghyun Noh Student, Kongju National University
Hyobhin Lee Student, Kongju National University
Moohan Kim Assistant Professor, Kongju National University

Retrace the Scenery in Historical Memory: Study on the Landscape Image of West Lake Literature in "West Lake Novels" of Ming and Qing Dynasties

Hangzhou West Lake is located in Hangzhou City, Zhejiang Province, China. It is a key scenic spot to show the world the scenery of China's mountains and rivers. Its core landscape is the beautiful scenery along the West Lake. Since ancient times, the scenery around the West Lake has been an excellent scenic spot for many literati to express their love for the landscape . In 2011, Hangzhou West Lake Cultural Heritage was successfully applied and officially included in the World Heritage List, which indicates that the West Lake Cultural Landscape, as an important historical and cultural heritage in China, is showing the world the profound cultural connotations of traditional Chinese landscapes. As the core of West Lake cultural landscape, "West Lake Image" plays an increasingly important role in conveying the connotation of West Lake's scenery and appreciating its characteristics.

The research on the imagery of West Lake literary landscape is based on the regional literature of thirteen Ming and Qing "West Lake novels".Based on the grounded theory method and image analysis method, the sentences and paragraphs in the story with the West Lake in Hangzhou as the main place of the story or the scene of the West Lake are extracted, sorted out, analyzed and interpreted, and then creatively put forward the spatial element combination model of the representative literary landscape image of the West Lake.Because image is an artistic image created by objective things through people's emotional activities, and artistic conception is the connection between emotion and landscape, based on the spatial combination model of literary landscape image, combined with the landscape characteristics, landscape color, landscape structure, people's psychological feelings and garden activities in the literary landscape of West Lake analyzed by West Lake novels,the spatial combination of image is condensed into sixteen literary landscape poetic images that integrate rich emotions, landscape connotations and poetic imagery. And on this basis, it further explores the emotional realm and spiritual and cultural connotation conveyed by the West Lake literary landscape imagery, so as to accurately clarify people's cognition and value orientation of the West Lake landscape imagery in the Ming and Qing Dynasties.

Hao Wang Student, School of forestry, Hainan University, China
Huaiyue Liang Student, School of forestry, Hainan University, China

Using the Data-Driven Method to Explore the Ambiguous Urban Landscape Heritage: 100 Urban Open Space Cases in Milan, Italy

Urban public spaces are areas where urban residents can engage in daily activities and participate in social interactions (Ji & Ding, 2021). Milan is worldwide famous for its art and multiple cultures, which create a unique urban aesthetic. Milan's urban spaces are of significant heritage value. However, there is no clear method of whether they can be considered landscape heritage.

This essay will explore the ambiguous landscape heritage existing in the urban public space by establishing a new way to identify potential heritage values. Heritage values are recognized by the statutory designation and regulation of significant places, where a particular value, such as 'architectural or historical interest or 'scientific interest,' is judged to be 'special,' above a defined threshold of importance. The high-level heritage values range from evidential, which is dependent on the inherited fabric of the place, through historical and aesthetic, to communal values, which derive from people's identification with the place (Impey, n.d.). Evidential value derives from the potential of a place to yield evidence about past human activity. Historical value derives from how past people, events, and aspects of life can be connected through a place to the present. It tends to be illustrative or associative. Aesthetic value derives from how people draw sensory and intellectual stimulation from a place. Communal value derives from the meanings of a place for the people who relate to it or for whom it figures in their collective experience or memory.

We will investigate 100 typical urban spaces in Milan and collect review data from social media (Google Maps and TripAdvisor) according to coordinates. Then we will train the deep learning model to extract the searching keywords related to landscape heritage based on the semantic segmentation from the reviews datasets, which is an available way to gain the paragraph's main idea from visitors. It helps establish a principle to reclassify the urban public space into four categories: evidential heritage space, historical heritage space, aesthetic heritage space, and common public space (not enough related to heritage). Evidential space is expected to match the keywords like evidence, past, remains, record, traces, evolution, inherited, etc. Historical space is expected to match like history, perception, connections, experience, illustrated, etc. Aesthetic space is expected to show the words like stimulation, attractive, inspire, cultural, etc. This evaluation system will also contribute to the diversity and popularity level of the potential heritage space ranking and advises urban planners and heritage experts to explore such ambiguous landscape heritage values.

Mingze Chen Research Assistant, University College London, United Kingdom

Ruilin Sun Politecnico di Milano, Italy

Yaxin Wang Graduate School of Techno Design, Kookmin University (South Korea); Fujian College of Water Conservancy and Electric Power (China)

Yingwen Yu Politecnico di Milano, Italy

2. Poster Presentation

RE:SHAPE

Social Resilience Toward Urban Landscape: A Way to Sustain the Physical-Semantic Existence of the City

City as an integrated living system is a place that forms social interactions and provides an ambiance for the occurrence of urban events and the creation of collective memories of its citizens. City at its highest quality has a physical-semantic identity that connects the present life of its inhabitants to the past and future. Thus, many inhabitants are living in cities that are suffering from lacking social resilience which means, in the process of development and growth of these cities they are not able to adapt to the social changes, altering dynamic urban needs and transformation of human life. As a result, the older parts of these cities which generally contain their historic identity, eliminate from the everyday life of citizens and turn into excluded zones or reduce to the use of only limited social classes of people. Therefore, the city loses its integrated nature and becomes a collection of detached zones that is incapable of communicating with the historical identity of the city.
The abandonment of the city parts not only causes the semantic continuity of the city to disappear but sometimes, these parts become hazardous urban spaces for disadvantaged groups of society and act as a violent anti-society organ. Accordingly, organizing forgotten urban areas is neither an aesthetic matter nor a construction action but is a complex multi-dimensional subject that has intertwined with quantitative and qualitative features. Consequently, to percept its various aspects, it requires a holistic and comprehensive approach that can simultaneously respond to the needs of the cities. One way to answer this urban issue is to apply the concepts proposed by the social resilience approach. Hence, a social system is resilient when it can absorb temporary or permanent risks without losing its functions and adapting to rapidly changing conditions. Based on proposed models for the social resilience approach, the ability to face changes and risks, adaptation, training, and learning are the most important indicators of it.
This article seeks to develop a conceptual model of social resilience toward the urban landscape which considers the city as a whole and pursues these three goals for it: first, to be resilient facing changes and social tensions, and to maintain its social and physical existence, And secondly, it can act as a space for preserving and presenting its identity as well as revealing the identity of its inhabitants And thirdly, as a medium establishes a physical and semantic link between past, present, and future.

Azarnush Amiri Master of Landscape Architecture, University of Tehran, Iran

The Lawton-Collins Quay: Designing a Resilient Public Space to Manage Sea Level Rise Risks in Cherbourg-En-Cotentin (France)

The project ambition is to increase resiliency of the Lawton-Collins quay in the coastal city of Cherbourg (France) to adapt to risks associated with sea level rise.This project is the result of a collaboration between the engineering group Setec and the landscape architecture practice « Les Marneurs », in order to develop an innovative and experimental framework that could be replicated on other major cities of the Seine Valley.
Adapting an urban polder to submersion : The coastline of the Cherbourg-en-Cotentin harbour has evolved significantly since the 17th century: from the erection of the arsenal to the construction of the Mielles quay, on land reclaimed on sea. The artificialization of the coastline and the enclosure of the port have gradually removed the sea from the cityscape, loosing the connection with the tidal cycles.
Lawton Collins Wharf is the last place to offer direct contact with the water and a clear view of the sea horizon, in addition to its architectural and heritage value.
Like most of the Normandy coastline, projected rising sea levels make Cherbourg a particularly vulnerable city, facing a serious risk of submersion and therefore calling for the development of a resilience strategy; both in the development of public spaces, in existing and future buildings, but also on the awareness of the risk by local residents, future occupants and the public authorities.
Risk as a generator of urban projects : The team has developed an iterative dialogue between urban design, environmental issues and climate forecast up to the year 2100. The aim is to adapt to climate change risks rather than just protect against natural constraints.
Resilience through the environment : The project design is rooted in its maritime history, which all the local stakeholders wished to revisit. Revealing and enhancing the historical coastline brings a coherent sequencing of the quay, which is currently very fragmented.
An innovative methodology : The team has set up an original framework, proposing a large choice of adaptation measures, which ultimately allows us to predict the cost of resilience of a building or an operation, as a percentage of the amount of work.
The team has translated this work into a new kind of resilient architectural and landscape specification booklet, including a multi-criteria description of each solution, sections of technical principles on the scale of a building, implementation references in France and abroad, and an estimate of construction costs.
Resilience strategies for buildings and public spaces : An approach that requires to go as deep as possible into the architectural issue by planning from the design stage the implementation of a "modular" strategy, which allows to adapt the way buildings work according to the hazard intensity and the timescale.
A scientific approach : The integration of natural dynamics into the project matrix requires a long-term scientific expertise from Setec to ensure that the design of public spaces and architectural principles match the climate forecasts.

Céline Cherchar Head of the Urban Project Unit / Urban planner, SETEC, France
Geoffrey Clamour Architect and Urban planner, LES MARNEURS, France

Critical Review and Recommendations for Landscape Planning and Design of Coastal Cities

Every year, coastal communities in South Korea suffer from natural disasters such as typhoons, coastal flooding, landslides, and extreme weather events related to climate change. Government-built infrastructure has not sufficiently mitigated the effects of these hazards, nor appropriately reflected the continuously increasing risk they pose. Coastal conditions around Korea are highly differentiated, and thus a unified top-down plan cannot achieve coastal resilience in these uncertain times.

This study examines the current infrastructure recently installed by the Korean government to control the effects of natural disasters, offering a critical perspective based on field research. A strong central government and top-down planning culture have resulted in a significant disconnect between landscape designs and local conditions. Climate change response policies, research, and coastal design are handled by different actors and organizations who are not currently incentivized to collaborate. Local governments and residents are completely excluded from the design process; thus, designs do not incorporate locality. At the same time, local research does not affect national policy.

Moreover, although the Korean government has invested in advancing national research on climate change and conducted numerous vulnerability assessments, its adaptation strategies continue to be insufficient. Government policy has thus far focused on building uniform engineering structures such as dams, seawalls, breakwaters, levees, and embankments. The local Busan and Gangneung governments have replaced nearby shorelines and riversides with concrete walls and implemented numerous breakwaters.

Coastal hazard patterns are primarily related to the geographical features of South Korea. However, current national research and policies do not include regional diversity or geography's impacts on actual people. Government projects and infrastructure planning for very different cities tend to be the same: seawalls and breakwaters.

Resilient design can be achieved through an in-depth understanding of the complicated physical and socio-economic aspects of each region. More strategic and flexible designs and plans that are adapted to local characteristics are essential. By examining the current risks faced by and potential of individual coastal areas, Korea can better prepare for climate change and protect against damage from natural disasters. Using the lessons provided by advanced urban design projects and an in-depth analysis of local conditions, this research offers alternatives to the mainstream engineering approaches favored by the Korean government, thus helping to achieve more resilient and sustainable coastal communities.

SaMin Han Assistant Professor (Landscape Architecture Department), Mississippi State University, United States

A Study on the Optimization Design of Smart Infrastructure and Green Infrastructure that Can Respond to the Era of Climate Change

A smart city is a city model that is being pursued worldwide. Among the goals of smart cities, the core value is that it can mitigate the socio-economic damage that can occur due to climate change. In particular, as the world enters an aging society, mitigation plans are being prepared to reduce natural disasters that the vulnerable may experience. Representative smart cities in Korea include Siheung Living Lab, Busan Eco Delta City, and Daegu Use Case. Among them, Daegu Metropolitan City aims to reduce natural disasters in the city, and has detailed goals such as predicting the collapse of steep slopes, improving the urban water disaster system, and solving the heat wave problem. For mitigate the heat wave problem, green infrastructure and smart infrastructure are used in the city, and the representative facility of smart infrastructure is cooling fog. Cooling fog is a facility that lowers the air temperature by spraying water vapor by using nano-scale mist particles, and is building an automatic control and operation system in combination with an IoT system. In Daegu Metropolitan City, representative installation areas include Kim Gwang-seok Street, Indongchon Urban Regeneration Area, and Gukchaebosang Park. In this study, targeting the urban regeneration area of Indongchon where the elderly population is more than 80%, the vulnerability is analyzed and the optimal cooling fog arrangement is found. As the methodology, the temperature reduction effect that can be obtained was examined, when the cooling fog is installed. For analyzing the temperature reduction effect, Simcenter STAR CCM+, a Computational Fluid Dynamics program, was used. Simulation values were verified through monitoring of temperature, humidity, wind direction, and wind speed of the target site. The optimized cooling fog arrangement was able to reduce the temperature by about 10% when the cooling fog was operated compared to when the cooling fog was not operated at a temperature of 40 °C, a humidity of 40%, and a wind speed of 2 m/s. In this study, an optimized layout was designed to install cooling fog and green infrastructure facilities in the urban regeneration area of Indong-chon. In addition, an evidence-based design manual necessary for decision makers such as urban policymakers and planners to install cooling fog was presented. The design manual is provided in the form of graphs based on temperature, humidity, wind direction, wind speed and mist spray flow rate. This study can be used as mitigation data to respond to the era of climate change in the future, and it is expected to make a great contribution to the formation of a model that considers socioeconomic factors such as the AHP technique.

Jaekyoung Kim Ph.D. Course, Seoul National University
Zheongzun Yi Ph.D. Course, Seoul National University
Junyoung Cho Master Course, Seoul National University
Seunghun Baek Master Course, Seoul National University
Junsuk Kang Professor, Seoul National University

The Effect of Urban Forests on the Improvement of Atmospheric Environments Using Microclimate Simulation

Around the world, cities are facing environmental problems such as urban heat islands and air pollution due to dense development and urbanization. The poor microclimate environment of the city can lead to negative effects in residential areas such as reducing residents' thermal comfort and deteriorating urban air quality. In particular, the importance of the atmospheric environment in cities is becoming more important in Korea as social damage is increasing due to the recent increase in the number of days of high-concentration fine dust as well as heat waves and tropical nights. While various efforts are being made to improve the atmospheric environment, the creation of urban forests is being actively carried out. Urban forests are considered very important in the urban environment because they are effective in regulating microclimate by improving temperature and air quality. However, as there is a limit to securing new urban forests due to high-density development in current cities, it is necessary to maximize their effectiveness by considering the functions of urban forests for improving the atmospheric environment.

This study aims to evaluate the effects of various urban forest types on the improvement of atmospheric environments using microclimate simulation. A green space including an administrative center located in Areum-dong, Sejong Special Self-Governing City was selected for this study and six different greenery scenarios were designed; 1) current status, 2) trees, 3) grass, 4) wall and roof greening, 5) trees and grass, 6) trees, grass, wall greening, and roof greening. The ENVI-met model was used to find out the effects of each greenery scenario on improving the thermal environment (temperature and PET) and reducing fine dust (PM2.5). In order to establish spatial data for simulating, field surveys and satellite images were used. Meteorological information for simulating was collected from measurement data of an Automatic Weather Station (AWS) located near the study site. For fine dust analysis, data on average values of fine dust generation and traffic volumes of two-lane roads were used. The average human body condition according to ISO 7730 was adopted for PET (Physiologically Equivalent Temperature) analysis.

The results showed that effects on the atmospheric environment such as temperature, PET, and fine dust concentration were different depending on the types of urban forests. Overall, as the green space was created, the air/surface temperature and fine dust were reduced, and the thermal comfort was improved, showing a positive atmospheric environmental effect. However, by planting some trees and grass, it was observed that the wind stagnated and the temperature increased, and there were areas where the concentration of fine dust increased. This study can contribute to the creation of efficient urban forests by identifying the microclimatic effects of various urban forest types through scientific and quantitative analysis. In further studies, not only simulations in various environments but also research through actual data will be additionally performed by considering the complex field conditions.

Ju-Eun Kim Master's Student, Dept. of Landscape Architecture, Kyungpook National University
Jeong-Min Son Ph.D. Candidate, Dept. of Landscape Architecture, Kyungpook National University
Uk-Je Sung Ph.D. Course, Dept. of Landscape Architecture, Kyungpook National University
Jin-Kyu Min Master's Student, Dept. of Landscape Architecture, Kyungpook National University
Jeong-Hee Eum Associate Professor, Dept. of Landscape Architecture, Kyungpook National University

A Study on Revitalizing the Urban Square with the Reinforced 'Interactivity' of the Media Art

With the fast and steady development of new emerging display technologies, large-scaled digital screens can be easily seen in most urban spaces around the world exposing citizens to a variety of visual experiences. These days, most of the media walls and media façades in public sectors in Korea function as a static media canvas for showcasing digital artworks or supporting temporary events as a way of delivering a one-way message or commercial advertisements, which gradually reduces or limits the primary function of an urban square as in its placeness. It is a passive way of communication opposed to interactive communication between citizens.

Based on this stance, the study focuses on one of the characteristics of digital media, which is interactivity, investigating the domestic and international urban squares utilizing the media installations in which citizens enjoy space through digital artworks by engaging their voluntary participation. In this attempt, this study drastically endeavors to categorize different uses of media installations in urban squares to restore and revitalize the function of the squares that lead to active social-cultural communication between citizens based on place. This study can provide crucial clues to propose sustainable directions and practical strategies for urban squares to efficiently use media installations or media arts based on public spaces beyond the limits of current uses of one-way communication through human-to-place and human-to-computer interaction as well as human-to-human interaction.

Lee-Kyung Kim Researcher (Urban Landscape Planning and Design Lab), Seoul National University
Hee-Eun Kim Curator, SUUM Contemporary Art Project Limited

A New Workflow of Quantifying and Comparing Designed Streetscape Quality: Integrating Street View Imagery and Computer Vision Technology into Design Process

In recent years, the availability of new types of urban Big Data, such as Street View Imagery (SVI), has provided many new opportunities to quantitatively analyze the street qualities of the Urban Built Environment (UBE). Within other disciplines such as urban planning, there is a growing trend that scholars collect Street View Images as a data source for urban studies because of its good accessibility, open-source and time-saving nature, and high resemblance with eye-level visual perceptual quality. In the meantime, with the advancement in the-state-of-art Computer Vision (CV) and Machine Learning (ML) technology, researchers can train CV algorithms to segment and extract physical features semantically from Street View Images and thus be able to objectively measure subjective urban design qualities in a much larger geographical scale. However, because such techniques are better aligned with macro-scale analysis, we haven't seen much of these methods applied in small-scale landscape design. The scope of the current few studies in the landscape architecture discipline is limited to application in the existing built environment. However, designers are intuitively more interested in learning the potential effect of proposed design. From "Capability" Brown, we have been using before-after eye-level views to demonstrate design features and human experience. This paper aims to integrate SVI and CV into the landscape design process, using the new workflow to evaluate designed streetscape qualities. We also use a real-life landscape design project in Ontario (Canada) as a case study to discuss how this workflow can improve the traditional design process. We hope this paper can inform a pioneering explorative method that helps quantify the performance of proposed landscape design and strengthen design narratives in this new Big Data era.

Qiwei Song Landscape Architect / Project Manager, IBI Group, Canada
Meikang Li Landscape Architect, Public Work, Canada

Atribute to My Hometown

I am a student from mainland China who is pursuing a degree in landscape design in Hong Kong. The collection "a homage to my homeland," which includes five projects, is a present I offered to my passionately loved country, where I grew up. It may be a very immature gift from a year one undergraduate student without exquisite use of professional software or a large number of carefully used approaches and justifications, but design and art are more about natural and warmest cultural and humanitarian impulses. This collection of projects is sensitive to societal concerns and public requirements such as the elderly, people's psychological and physiological perceptions, the phubber, and so on……This is a tribute to my birthplace as a student with a long-held ambition to one day become a landscape designer.

Jingxi Liu Student, HKU, China

Assessing Resilience of Stream Ecosystem to Rainfall: Comparing Water Quality System Performance Between Reference and Damaged Stream Ecosystems

Climate changes have been increasing the variance of precipitations and causing extreme meteorological phenomena at various times and spaces, disturbing stream ecosystems and negatively impacting their performance (Lee., 2012). Resilience refers to the ability to quickly recover from degraded system performance without significantly lowering system performance in the event of disasters (Holling, 1973). Resilience can be delineated by estimating changes in system performance in response to various disasters (Kang et al., 2013). Particularly, water quality system performance (WQSP) provides a time-varying measure of how well stream ecosystems achieve a desired water quality criterion at a given time t (Tran et al., 2017). This study compares stability derived from varying precipitation conditions between reference and damaged streams and compares sensitivity between reference and damaged streams using WQSP. The study's rationale is that the WQSP does not deviate significantly from the average level, so stable water quality standards are maintained (Bruneau et al., 2003). Hypothetically, there will be no sensitive response to external disasters in the condition of high resilience. Using the Ministry of Environment's evaluation data of the health of stream ecosystems, 17 streams with A (Very Good) were selected as reference streams, and 22 streams with E (Very Poor) were selected as damaged streams in the Han River basin in South Korea. Biochemical Oxygen Demand (BOD) data for each stream from 2013 to 2019 were used to calculate their WQSPs. The WQSP was calculated through the integral value obtained by dividing the monthly average BOD value of these streams by the stable BOD standard values. The fluctuation range of streams was measured by computing the difference between the maximum and minimum values of each WQSP. Correlation analysis between following rainfall and WQSP and ARIMA time-series regression analysis were performed to compare the streams' sensitivity to rainfall. The correlation analysis shows that the reference streams were significantly correlated with rainfalls of previous three-four months, while the damaged streams correlated with rainfalls of previous 1-3 months. The fluctuation ranges of the 2013–2019 WQSP of the reference and damaged streams were 0.473 and 1.046, respectively. Time-series regression analysis revealed that only the precipitation value that followed four months later for the reference streams was significant. In contrast, the precipitation value 1 to 3 months later was significant for the damaged streams. The lower variability of the reference streams suggests that there were no sudden changes in WQSP due to rainfall, thereby providing a more stable stream ecosystem. The damaged streams are considerably affected by precipitation after 1 to 3 months. The damaged streams respond to the rainfall quickly and are affected for a more extended period, indicating that the WQSP of the damaged streams is more sensitive to rainfall. This result shows that the damaged streams are less resilient to extreme meteorological phenomena, more sensitive to rainfall, and do not maintain a stable ecosystem compared to the reference streams. Therefore, rapid coping strategies for extreme rainfall and long-term planning are necessary for continued stream health to improve resilience.

Yujin Park Phd Student, Graduate Program, Dept. of Forestry and Landscape Architecture, Konkuk University
Sang-Woo Lee Professor, Dept. of Forestry and Landscape Architecture, Konkuk University
Se-Rin Park Postdoctoral researcher, Dept. of Forestry and Landscape Architecture, Konkuk University
Junga Lee Professor, Division of Environmental Science and Ecological Engineering, Korea University

Online Assessment of Landscape Performance of Healthcare Related Plant Farms: Tool Availability and Accessibility

While sustainable development is becoming one of the most important and most manifested principles of global policy making, its scope is too complex to be concisely summarized and measured. However, measuring diverse dimensions of sustainability of developed projects or areas is inevitable to evaluate the projects and areas and thus to gear them toward more sustainable directions (Ozdemir et al., 2011). In this study, we aim to provide a review of online based sustainability assessment tools for healthcare related plant farms, introducing 'Landscape Performance,' a list containing extensive areas and sub-sections of sustainability. Croplands are a critical arena of many sustainability issues, such as resource depletion, greenhouse gas emissions, reduction in soil fertility, endangering biodiversity, and water scarcity (McMichael et al., 2007). Healthcare related plant farms are not exceptions. Controlled manufacturing environment, fertilizer application, and plant storage and packaging can be sources of the aforementioned sustainability issues. Moreover, healthcare related plant farms may result in interactions with visitors from other places, which make the issues more complicated. In this sense, sustainability assessment of healthcare related plant farms requires well-tailored criteria and approaches.

Landscape Performance, a set of criteria and metrics provided by Landscape Architecture Foundation, provides appropriate guidance for assessing sustainable aspects of healthcare related plant farms because this tool set is designed for relatively small scale observation, compared to other large scale indicators, and offers specific metrics that are applicable to healthcare related plant farms, including soil quality enhancement and potable water-use reduction. Landscape Performance has garnered widespread attentions from landscape architects, planners, and environmental/ecological engineers. (Arancibia et al. 2019; Kuo et al., 2021)

Though online assessment tools developed for farms can make sustainability assessment of healthcare related plant farms easier and more convenient, those tools often are often limited in terms of the areas one can assess and sometimes have insufficient precision problem. Therefore, it will be helpful for researchers, policy makers, and farm owners if we know which online tool can provide what kinds of assessment to which degree of precision. Our review will cover at least 19 tools listed in Arulnathan et al. (2020.) The current result found COMET-FARM, a tool developed and shared by USDA, was appropriate in terms of assessing greenhouse gas emissions.

Acknowledgement
This work was carried out with the support of "Cooperative Research Program for Agriculture Science & Technology Development (Project No. PJ0161992021)" Rural Development Administration, Republic of Korea.

Jihoon Song Research Professor, Ojeong Resilience Institute, Korea University
MD Rakesur Rahman MSc Student, Korea University
Junga Lee Assistant Professor, Korea University

Suitability Analysis for Green Infrastructure Planning Response to Fine Dust Pollution in Resilient Urban Areas

Green infrastructure adapts and responds to urban disasters and improves urban resilience (Gong et al., 2016; Qiu et al., 2017). Urban resilience means high exposure, sensitivity, and adaptive capacity to disasters (Brunetta and Salata, 2019). Green infrastructure is especially a solution to fine dust pollution, which is an environmental and social disaster (Deshmukh et al., 2019; Kang, 2020). Since the occurrence pattern of fine dust pollution varies from region to region, it is necessary to discover the areas vulnerable to fine dust pollution based on social and environmental infrastructure and plan green infrastructure in the region.

This study is based on the concept of urban resilience to fine dust pollution. The purpose of the study is to analyze the suitability of green infrastructure planning to improve urban resilience to cope with fine dust pollution. The objectives of the study are as follows: 1) to explore the indicators for exposure, sensitivity, and adaptive capacity concerning fine dust pollution regarding the social-ecological system in an urban area, 2) to assess social-ecological vulnerability to fine dust pollution in urban areas using these indicators, and 3) to propose suitable areas for green infrastructure planning. Suwon, Korea was selected as a study site. Suwon has the largest population among local governments in Korea and is trying out various measures to solve the problem of fine dust pollution. Regarding the research method, first, the evaluation index for the resilience of fine dust pollution was established based on the literature review. Second, data for spatial analysis were collected based on the resilience evaluation index against fine dust pollution and mapped using ArcGIS. Third, FRAGSTATS was used to confirm that there is a difference in the resilience of fine dust pollution according to the fragmentation of landscape by region.

As a result of the study, first, the indicators related to the resilience of fine dust pollution were largely divided into environmental and social factors, and the evaluation indicators consisted of exposure, sensitivity, and adaptive capacity. The environmental factors consisted of pollution concentration, road, and environmental resources. The social factors consisted of facilities, and services. Second, from spatial analysis, the areas with high exposure and sensitivity to fine dust pollution were found to have low fine dust pollution resilience, while the areas with high response adaptive capacity were found to have high fine dust pollution resilience. Finally, an area with low fine dust pollution resilience was derived from the target site. Accordingly, a green infrastructure plan was proposed to increase the elasticity of fine dust pollution.

The study is meaningful in suggesting a green infrastructure plan as a way to increase the resilience of urban areas vulnerable to fine dust pollution. Furthermore, green infrastructure provides various ecosystem services and can play a positive in improving people's perception. Although it is an area vulnerable to fine dust pollution, people may not be aware of the vulnerability. Therefore, research that can improve regional persistent resiliency is needed in the future, and we will conduct research related to this in the future.

Youngsun Seok Graduate Student, Dept. of Environmental Science and Ecological Engineering, Korea University

Eunju Ji Undergraduate Student, Division of Environmental Science and Ecological Engineering, Korea University

Junga Lee Professor, Division of Environmental Science and Ecological Engineering, Korea University

Island as Campus: Juxtapositional Urbanism of Guangzhou Xiaoguwei Island from 2000 to 2016

The research challenges the social and spatial implication of China's government centralized power and capital, and attempts to discover an alternative model for the dense core between two types of urbanization by reframing transitional space through resilient design.

A campus island—Xiaoguwei Island—greatly characterized by the Chinese urbanization process, was chosen as the research object. Before 2003, the island consisted of arable land with several natural villages. The government bulldozed all except four villages, which had a number of precious historic buildings. The informal villages became incredible places compared to newly built and well-polished school buildings. However, the juxtaposition of the island's two urban fabrics is not unique in the Pearl River Delta (where the island is) and other parts of China. The research contains three parts: firstly, the mechanism of the space production of the campus island is unfolded by investigating the infrastructure, the higher education reform in China and its spatial implications; second, a comparative study of the town-and-gown in Western cultures is probed to demonstrate that the university island in Guangzhou is the production of centralized power rather than an accumulation of time and culture; last, a resilient design is proposed to build a connection between the two urban fabrics, which focuses on the transitional space.

The study uses field investigation, archive studies, on-site interviews, topological quantitative analysis, and other methods to investigate and analyze the historical, social-economic background of the island and the everyday experience. Unlike the top-down or the bottom-up approach, the study is trying to find a third way of design strategies through the lens of reconsidering the transitional space. Specific sites with the potential to recall the collective memory, cultural imagination, and reality concerns are analyzed to design three conceptual walls.

Yuxuan Sun Assistant Researcher, Chongqing University, China

Development of an APP for Thermal Sensation Map Utilizing Citizen Participation

Thermal environment problems like heat waves and tropical nights in cities have worsened due to climate change. Because policies and measures to solve these problems are based on measurement and modeling data, street-level information on human thermal perception can be useful to establish effective policies and measures. This study aims to develop a mobile phone application (APP) for gathering information about people's heat perception and creating a thermal sensation map based on this information.

To achieve this purpose, this study consists of two parts; development of an APP system and the application of the APP through citizen participation. To develop the APP system, we investigated the characteristics of various mobile applications collecting thermal environment and discussed the composition and contents of the APP. In addition, we investigated various factors affecting human thermal comfort like spatial, meteorological, and demographic factors to establish the APP system. To gather people's heat perception using the developed APP, we adopted the living lab methodology and used the methodology for overall evaluation and feedback of citizens about the APP. Through citizen participation, we improved the user interface to make the APP usage easier and modified the thermal sensation map. The developed APP displays information on the human thermal perception of each citizen. The collected information can be used to evaluate spatial, meteorological, and demographic characteristics that affect the perceived heat of citizens. We also expect to establish high-resolution maps for effective policies and measures and to solve thermal environmental problems using the APP.

Uk-Je Sung Ph.D. Course, Dept. of Landscape Architecture, Kyungpook National University,
Jin-Kyu Min Master's Student, Dept. of Landscape Architecture, Kyungpook National University
Ju-Eun Kim Master's Student, Dept. of Landscape Architecture, Kyungpook National University
Jeong-Min Son Ph.D. Candidate, Dept. of Landscape Architecture, Kyungpook National University
Jeong-Hee Eum Associate Professor, Dept. of Landscape Architecture, Kyungpook National University

Touch the Water Promenade

While most 21st-century riverfront redevelopments are driven by the demands of urbanization, Touch the Water Promenade is distinct: it seeks to restore and regenerate the ecology of the North Saskatchewan River Valley, while also providing new opportunities for people to experience the water's edge and accommodating critical infrastructural functions. In a unique context within Canada's northernmost major city, the plan strikes a delicate balance between the needs of wildlife and those of Edmontonians who cherish the river, whose daily use of the space has increased dramatically since the onset of COVID-19.

A wilderness in the heart of the city, the riverfront is essential ecologically but also culturally and socially, representing an urban identity specific to Edmonton–as an Indigenous space, where gathering, hunting, fishing, and trading has occurred since time immemorial, and a former industrial space whose degradation is finally being addressed. The project responds to this layered history by preserving and enhancing existing character while inviting people to literally "touch the water."

Social and ecological goals are intertwined in every aspect of the plan. The team examined questions of access–which emerged as a priority in the public engagement process–from multiple angles. The resulting design solution reconnects the urban fabric to the river through a series of gateways at key nodes; navigates technical constraints including steep grade changes, variable water levels, and frequent icy conditions to provide access right at the water's edge; and slopes the majority of pathways to accommodate visitors of varied mobilities. To bring more people into the space in a manner that is compatible with its role as a critical wildlife corridor, the circulation design takes into account not only different modes of human transit, but also different avian, terrestrial, and aquatic species. This is achieved through the selection of plant species as habitat and food sources for birds, providing unbroken corridors for the movement of larger mammals, and improving feeding and spawning conditions for fish using planting, erosion control, and a softened riparian edge.

This approach was made possible by an interdisciplinary team representing alliances outside of the traditional design and engineering disciplines. The core design team (Dub Architects, Stoss Landscape Urbanism, and ISL Engineering) collaborated with a group of experts including fisheries biologists, environmental scientists, hydrologists, paleontologists, and archaeologists. Furthermore, engagement with Indigenous Nations and Communities as well as the general public was an essential component of the process. Over 430 respondents from the general public participated in an online survey, and the project team hosted live virtual sessions to answer questions from the community. Elders, Community members, Knowledge Keepers, and Technicians from 26 Indigenous Nations and Communities participated in three phases of engagement.

As cities across Canada consider how to manage their own river valley and ravine systems, the plan for Touch the Water Promenade is a national model for restoring, protecting, and coexisting with a complex landscape that forms a living part of our collective cultural identity.

Mateo Yang Sr Associate, Stoss, United States

2. Poster Presentation

RE:VIVE

Landscape Strategy to Maintain the Stability of Ecological Environment under the Condition of Climate Change — Taking the Measures on Climate Change in Sheffield City as an Example

Climate change has brought a series of impacts to the world, including extreme climate, species extinction, glacier melting, and sea-level rise. In this process, maintaining the stability of the ecological environment, which has great significance to humans and animals living on the earth, has gradually become challenging. In the subject of landscape, the ultimate effect of various design strategies is often not to reverse or stop the process of climate change but to make the environment adapt to climate change smoothly while slowing down the process. Sheffield, UK, has taken a series of measures after experiencing the flood disaster caused by climate change many times. This ensures that the city can retain and restore a good ecological environment under the condition of climate change.

This essay work on Sheffield city's efforts to respond the climate change on the landscape aspect. By analyzing the cases of Sheffield's urban sponge system, urban ecological corridor, and peak district National Park, the strategies to deal with climate change are summarized into three types: the establishment of the resilient water cycle, the protection, and restoration of vegetation, and the protection of biodiversity. These strategies enable the city to have strong adaptability to the coming new climate and extreme weather, to ensure that the ecological environment in this area will not collapse due to change.

Yanjun Dong Designer, New Naturalistic Design Landscape, China
Congwei Wang Designer, Tsinghua University, China

Critical Issues of Landscape Architecture from the Perspective of Public Health in the Post Epidemic Era

In the post epidemic era, people are gradually aware of the healthy performance of the natural environment, which has also become a hot spot in the field of landscape architecture research. To solve and alleviate the public health problem is expected to be in landscape architecture. The world will enter a new stage of public health development and predict future public health improvement and emergency requirements. Based on the action mechanism of landscape architecture to improve public health, this paper puts forward the hot topic framework of landscape architecture focusing on public health in the post epidemic era. Specifically, it includes three levels: (1)At the level of planning and design, it strengthens the urban park as the reserved space for epidemic prevention and emergency services. It optimizes the constraints and driving mechanism of Park spatial characteristics on perceived behavior. (2)At the level of maintenance and management, build an exemplary telephone management system for public health urban parks, and carry out a series of activities to improve public health care. (3)At the level of security mechanism, implement the benefit evaluation of public health rehabilitation and coordinate services and supply funds. Combined with the planning and design specifications of urban parks, and according to the characteristics of the built environment and social population, this paper puts forward the optimization strategy of active intervention to regulate public health. The research results will help alleviate people's physical, psychological and social health problems affected by the epidemic and help policymakers and urban planners identify and implement measures to improve health and welfare and promote the construction of health parks.

Ming Gao Doctoral Student, School of Architecture, Harbin Institute of Technology, Key Laboratory of Cold Region Urban and Rural Human Settlement Environment Science and Technology, China

Xinting Cheng Master Student, School of Architecture, Harbin Institute of Technology, Key Laboratory of Cold Region Urban and Rural Human Settlement Environment Science and Technology, China

Xun Zhu Professor, School of Architecture, Harbin Institute of Technology, Key Laboratory of Cold Region Urban and Rural Human Settlement Environment Science and Technology, China

Media Strategies for Changing the Urban Landscape

Urban landscape is a type of landscape presenting a new knowledge that has been a contemporary man's new interpretation of space. It defines space, not as a physical entity but a phenomenon with intertwined objective-subjective aspects. According to this definition, whenever the organization of the landscape is a matter of concern, both aspects are expected to affect this relationship. Despite the effect of each aspect on one another, a review of the urban landscape literature on landscape organization - the evolution of the interactive landscape relationship - has been limited to few actions or physical interventions which affect the objective aspect of the landscape. If the landscape is assumed to be the product of an interactive relationship between objectivity and subjectivity, theoretically speaking, this relationship might change by affecting the subjective aspect of the landscape. This research seeks to understand how the urban landscape can be transformed by a mental intervention rather than the physical one. It also attempts to provide a conceptual model that explains the mechanism of transforming the urban landscape by influencing the minds of citizens. This study seeks to develop a conceptual model using accepted concepts in the three domains; landscape knowledge, psychology, and media. This research employs logical reasoning to explain the relationship between logical propositions in these domains. Finally, this research introduces media strategies which can provide tools to transform the urban landscape.

Morteza Hemmati PhD Candidate, University of Tehran, Iran

Metaverse a Tool to Change Perceptions of Urban Audience

Cities are the most important places wherein contemporary human beings settle. For this reason, the changes affecting the urban landscape can influence the lives of most people. As the new media, the Metaverse can enable people to be present in the 3D virtual world through mediums. Since this technology will provide unparalleled communicative amenities, which did not use to be available to humans, it is expected to pave the way for dramatic changes in all human relations in societies. Given that the Metaverse seeks to reconstruct the world, the urban landscape, which is a product of the perceptual interactions between humans and the city, seems to be influenced by its emergence. This study seeks to answer this question: "What effects will the emergence of virtual cities versus physical ones, have on the perceptions of these cities, or more precisely, the urban landscape?" For this purpose, this study employs a qualitative method and uses bibliographic data to explain the concept of landscape from the perspective of experts and describe its various aspects. This study also attempts to introduce the fundamentals of the media and explain its impact on the urban landscape. The findings of this study show that the media, as an intervening tool, seeks to create a purposeful image of reality in the minds of the audience, and the Metaverse, as a tool presenting the world in three dimensions, can create more believable images than reality. This increases the likelihood of its reception by the audience more than ever. Thus, this media can present an image of the city that adds to the accumulations of the schemata of the audience. Therefore, in their confrontation with urban symbols, the schemata represent an association driven from the experiences in a reconstructed virtual world. Since in this process, the perceptions of the audience change, it can be acknowledged that the Metaverse can affect the urban landscape.

Morteza Hemmati PhD Candidate, University of Tehran, Iran

Educating Inventor/Designer for Smart Urban Design Linking to Invention of Patent: A Qualitative Study in Korean Undergraduate Landscape Design Program

Recently, there has been a growing interest in smart city and its design, as well as in various types of smart public furniture and urban system using advanced smart technologies. Accordingly, alternative landscape educational programs relevant to the smart urban design need to be explored. The process of patent application on design idea can stimulate students to achieve a sense of accomplishment in contribution to actual society. Therefore, it provides landscape teachers a potential effective pedagogical tool for smart urban design education. This study investigates Korean alternative undergraduate landscape educational program for smart public furniture and urban system linking to invention process for patent application. To this end, nine teams consisting of 41 undergraduate students majoring in landscape architecture at Hankyong National University were asked to generate creative design ideas of public furniture and urban system for smart city during a regular landscape design class for third-grade students. Next, I chose two teams comprising seven students among them to further develop their ideas for patent application by designing an extracurricular program during vacation time. In the regular and extracurricular classes, a patent agent gave me advice on how students' ideas could be effectively developed for patent application. During the vacation class in particular, I operated two-times design development workshops where the patent was invited. After patent application at Korean Intellectual Property Office, I conducted in-depth individual interviews comprising open-ended questions with seven students to elicit their honest opinions about the alternative design class liking to invention for patent application. Furthermore, I also interviewed the patent agent to hear about opportunities and limitations of the alternative design education from professional perspective. Through the analysis of the interview data, I discussed the findings on educational effects of invention process for patent application on smart public furniture and urban systems design for undergraduate students. First, the patent on design invention motivated students to actively focus on creative design ideation and development process in ways to provide students a sense of achievement on their contribution to changing actual society. Second, the alternative program enhanced students' academic performance to creatively generate specific forms of furniture structures by continuously developing their complex design details suitable to specific functions, according to the invention process for patent. Third, the patent application process applied to landscape design education enabled students to think landscape design related to various emerging smart technologies, thereby teaching students professional identity of landscape architecture that combines science and art. The results of the present study contribute to the Korean landscape design educational society—an area where smart public furniture design has rarely been addressed.

Myeong-Jun Lee Assistant Professor, Hankyong National University

Streetscape Renewal in Art Districts Based on Spatial Syntax: A Case Study in Beijing

Street space is the basic skeleton of urban space. As the most frequent place for public activities and an important object for people to obtain impressions and sustenance emotions of the area, streets in art districts are closely related to people's cultural life. Streetscape is the "soft" connection between streets and natural landscape, various artificial landscape, vital for showing the ecological and cultural environment of art districts. Building high-quality and vibrant streetscape in art districts will enhance people's sense of well-being and gain.

In recent years, art districts formed spontaneously by artists have been developed disorderly as a consequence of rapid urbanization and economy-oriented policies, which reveals the disadvantages of a chaotic street appearance, low-quality walking space and a lack of cultural symbols, resulting in the loss of artists and limiting the development of art districts. How to integrate the cultural memory of the site and the cultural life of residents into the street space, reuse and reconnect the abandoned space, and create high-quality streetscape in art distircts deserves in-depth study and consideration.

Taking Songzhuang, a representative art district in Beijing, as an example, we carried out the research on arts-led revitalization based on historical data, open source data and interview materials. Applying spatial syntax, we established an Axial Map and a Segment Map in Depthmap10 to analyze four morphological variables including connectivity, integration, intelligence and choice, and recognized the overall and local structure characteristics of the street space. Results demonstrated the accessibility of the street space. Then we proposed the following streetscape renewal strategies: 1) Carrying out overall planning of the district and creating ecological, healthy, inclusive and artistic street space; 2) designing a refined and continuous traffic system to shape a safe and friendly pedestrian environment; 3) breaking the boundary between buildings and streets to create shared public space that can be used by diverse groups of people for art creation, communication, exhibition, sales and festivals. 4) engaging artists and citizens in design, publicity and operation of the art district; 5) creating cultural brand and distinctive landmarks; 6) considering the public's need for safe social distance and disaster prevention to enhance the health service function of the street space and its resilience to emergencies to better cope with epidemics.

We concluded with suggestions for future planning and design of similar arts-led revitalization projects. Through streetscape renewal, the power of artistic emotion is translated into the street space. A more vibrant street interface will be created, making the street more humane and lifelike, and improving the life quality of people. The potential value of history and culture will be fully released, regenerating the area with site-specific elements and spirit, enhancing the cultural identity of residents and conveying aesthetic values of landscape. A synergistic development system between regional construction and artistic innovation will be established, revitalizing the creative industry and promoting the sustainable development of the art district. Finally we use art as a catalyst to promote urban regeneration, generating cultural and economic benefits on a larger scale.

Ruiqi Pan Graduate Student, Beijing Forestry University, China
Xi Zheng Professor, Beijing Forestry University, China

Return to Nature

Nature always gives children a broader and farther world, which is different from the family world given by parents, nor does it "steal" children's time like TV. On the contrary, she can enrich children's spiritual world. Today, a generation growing up in the environment of electronic products lacks contact with nature in life, leading to increased rates of obesity, attention disorders and depression. In the post-epidemic era, we should pay more attention to the return of children's life and recreation to nature.

Hangzhou Children's Park is located in the mountains and forests with a large vertical height difference and it is adjacent to the zoo. It was originally a classical garden with central axis symmetry. The designer mainly takes advantage of unpowered facilities, carries out low-cost and micro-renovation transformation with the purpose of returning children to nature. The first is to break the serious central axis, and make full use of the height difference to transform the large climbing steps into a natural experience axis composed of a series of climbing nets, climbing slopes, slides and wildflower slopes, so that children are no longer afraid of the hard work of mountaineering, instead, it is regarded as an interesting way of exploration; the second is to make full use of the mountain springs flowing down the mountain for landscaping, including the Water Theater, Butterfly Valley and Cold Spring Valley, so that children can stimulate their instincts and observe nature when they run and play in the water freely and catch butterflies and tadpoles; finally is to solve the problem of insufficient inhabitant space for small animals in the adjacent zoo. Therefore, a cute pet garden is designed using various small terraces on the hillside, allowing cute animals such as red pandas, fennec foxes, meerkat, tortoises to inhabit in natural habitats. Designers also consult animal experts for advice to reasonably design the viewing distance, which allows children to have close contact with small animals.

In short, the renovation of old parks is more difficult than building new ones, and it also shows the attitude and ability of designers. Through careful on-site investigation, designers sort out the existing site space, pipe network facilities and vegetation communities, face the current and future trends of the children's park, and carry out micro-renovation transformation with a pragmatic attitude. Make full use of the change of height difference, create a small-scale vivid space, and guide children to feel the interest of nature; reasonably retain the old nodes and facilities to continue the historical memory, but properly integrate into the new space scene, and even give them new functions. These are creative methods to discover a path to low-cost organic renewal of traditional parks and explore the development direction of children's parks that return to nature.

Shixian Shen Associate Professor, Vice Chairman of the Department of Landscape Architecture, China Academy of Art, The Design Institute of Landscape &Architecture China Academy of Art Co. Ltd., China

Yang He Design Director, The Design Institute of Landscape&Architecture China Academy of Art Co.,Ltd., China

Touching the Intangible Landscape Heritage: Revive Urban Lifestyles based on Virtual and Augmented Reality Technologies

This research aims to explore the situation and development of virtual and augmented reality in the landscape architecture discipline. Recently, VR/AR and related technology have an increasing trend in landscape heritage and making it tangible. This study will review the current research on applying such technology in heritage studies and conclude with a loop model. By investigating how technology is integrated into landscape heritage research, the article proposes classifying existing technologies into four categories: core, applied, integrated, and specific technologies, and discusses how these four types of interdisciplinary technologies impact the study of the world's landscape heritage from multiple perspectives. We identified 13 critical sub-categories of landscape heritage technologies and illustrated their application ways, scopes and impacts. The 13 sub-categories and their main application ways are below.
1. Virtual reality (VR): crowd involvement, digital museum, holographic virtual reality system (HVR), VR social platform, immersive narrative models.
2. Augmented reality (AR): digital narratives.
3. Mixed reality (MR): virtual applications, travel narratives, digital museum.
4. Holography: sustainable tourism.
5. 3D Models: digital museum, public discourse, education.
6. Mobile APP: education, storytelling.
7. Geographic Information System (GIS): public participation, spatiotemporal analysis.
8. Web platform: digital museum: digital museum, storytelling.
9. Building information modeling (BIM): digital community.
10. Chaco Research Archive (CRA): digital heritage resources.
11. 4.0 enabling technologies: digital narratives.
12. Digital art installation: scenographic ecology.
13. Animation: landscape narrative.
This essay will investigate the interdisciplinary techniques in landscape heritage and present data analysis and visualization of the influence and role of the relationship between the various categories.

Mingze Chen Research Assistant, University College London, United Kingdom

Yingwen Yu Politecnico di Milano, Italy

Yaxin Wang Graduate School of Techno Design, Kookmin University (South Korea): Fujian College of Water Conservancy and Electric Power (China)

Ruilin Sun Politecnico di milano, Italy

2. Poster Presentation

RE:CONNECT

Benefits of a Wooded Campus: What is the Value of Trees at Kangwon National University, Chuncheon, Korea?

Urban trees contain various social, environmental, and economic benefits, which can be measured. We must determine the exact morphological parameters of street trees and survey this information properly to assess their value (Millward & Sabir, 2011). We developed a new tree inventory system to help people understand the importance of street trees by estimating and presenting their value. We reviewed numerous previous studies about the morphological parameters of trees, inventory systems for tree management, and various value assessment. Our new tree inventory system includes decision-making of study sites, diverse morphological parameters of trees (i.e., height, height to crown base, crown width, diameter at breast height, crown health, crown light exposure, etc.), measure method and equipment of the parameter, detailed data processing methodology, and applications of the data to value assessment tool, etc. We used the tree inventory system to measure the value of services provided by street trees at Kangwon National University, Chuncheon-si, South Korea. The campus serves as a park, providing relaxation and recreation to the local residents as well as university members. The tree value assessment of this campus provides information to a variety of users and provides an opportunity to recognize the importance of trees in shared spaces. We measured the parameters of the trees using LiDAR and various instruments in March 2022 (Zhang, Zhou, & Qiu, 2015). In addition, we collected secondary data on the weather (temperature, wind direction, speed, precipitation) and pollution (particulate matter less than 2.5 microns (PM2.5), carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), sulfur dioxide (SO_2)), which are provided by the national statistical system to be used in the valuation of campus trees. We properly processed the data that was established directly or indirectly so that it can be used in i-Tree Eco, a tree value evaluation tool (Szkop, 2020). i-Tree Eco is a collection of urban and rural forestry analysis and benefits assessment tools (Raum et al., 2019). It was designed and developed by the United States Forest Service to quantify and evaluate ecosystem services provided by trees including pollution removal, carbon sequestration, avoided carbon emissions, avoided stormwater runoff, and more (Nowak et al., 2008). The new tree inventory system we developed was suitable for providing data applicable to i-Tree Eco. Through this study, we were able to build a campus street tree inventory. Moreover, we secured the annual benefits during 2022, the benefit-to-cost ratio, and the replacement value of the wooded campus. This work offers a procedure for tree management on campuses, providing a straightforward methodology for quantifying the value of nature in public urban spaces, particularly on wooded campuses. Further, this study can contribute to several attempts to evaluate how valuable the trees are on campuses and promote their value.

Hyeong-Uk Ahn Graduate Student, Kangwon National University
Hye-Jin Jo Undergraduate, Kangwon National University
Yun-Eui Choi Assistant professor, Kangwon National University

Spatial Analysis of Cultural Landscape of Markam Salt Field in Tibet from the Perspective of Landscape Ecology

The culture landscape of markam brine well salt at the intersection of sichuan, yunnan and Tibet provinces in China is a traditional productive place, It is a creative use of natural resources by the Naxi minority and Tibetan ancestors who have settled here for generations.
It organized for the center with the well salt production space, and finally presents a landscape of salt drying field that is staggered and reclaimed in line with the overhanging terrain. This research takes the Jiada Salt pan as the research sample and landscape ecology as the research method to analyze the landscape morphology, structure and function of the salt well salt pan. Based on the relationship between "well salt" production and environmental factors, the Jiada Salt Field is analyzed from three spatial dimensions.
1. Macroscopically, from the perspective of landscape morphology, the fusiform landscape structure of Jiada Salt Field is divided into three areas of " Cangu", "Tubulac" and " Cangou" according to morphological differences. The landscape network structure of the salt field landscape elements with the connection route (Route) as the skeleton is analyzed by the layered mapping method (Mapping).
2.From the perspective of mesoscale ,the productive function of salt well landscape elements is analyzed by the well salt production process. Based on the production transfer facility (Supply method of brine pool), and the difference in the operation mode of single brine transportation and multiple brine transportation, to explain the spatial combination mode of the markam brine well salt landscape elements and the internal structure of the landscape.
3. Microscopically, starting from the flow track of "well salt" in landscape space, focusing on the spatial application of well salt production in the case of salt field, restoring the spatial transformation of "well salt" in salt field space gathering from the center, transferring to the corners, and finally moving out of the salt field, revealing the micro-landscape features of salt field.

Chen Chen Beijing Forestry University, China
Tong Xu Beijing Forestry University, China

Quantification and Evaluation: A Study on the Benefits of Urban Park Cultural Ecosystem Services Based on Social Media Text Mining

Cultural ecosystem services are considered to reflect the relationship between individual and environmental factors, emphasizing the spiritual, perceptual and aesthetic benefits that humans acquire. While it has received extensive attention, there are still many challenges to be solved in terms of quantitative evaluation. Based on textual analysis of social media reviews, this paper classifies spontaneous text reviews of parks by users of Tripadvisor according to the Millennium Ecosystem Assessment's definition of cultural ecosystem services (review time: 2017-2019), to examine the representation, differences and impact mechanisms of cultural ecosystem services in urban parks of United States. The results show that the area, green space area and location of parks will affect the perception of cultural ecosystem services, and both artificial and natural landscapes have extremely significant positive correlations with the benefits of cultural ecosystem services. The specific performance is as follows: (1) The benefits of recreation and ecotourism of cultural ecosystem services in urban parks are the highest, followed by aesthetic values; there are also a high response to the benefits of social relations and sense of place; (2) Differences in urban park area lead to large differences in the benefits of aesthetic values, sense of place and cultural values of cultural ecosystem services; differences in green space area will affect the perception of aesthetic values and the benefits of recreation and ecotourism; different areas where the park is located will lead to differences in the perception of cultural values, educational values and inspiration; (3) The natural landscape in urban parks has a significant positive correlation with the aesthetic values and the benefits of recreation and ecotourism obtained by users, but with cultural values and educational values are negatively correlated; the artificial landscape mainly affects the inspiration of users, and its impact on the benefits of cultural ecosystem services is mainly concentrated in the functional facilities, such as benches, tables, and lights. In the future, the improvement and transformation of facilities based on area, green space, natural landscape and artificial landscape can be carried out according to the needs of cultural ecosystem services, to provide new ideas for urban planning managers and policymakers.

Xinting Cheng Master Student, School of Architecture, Harbin Institute of Technology, China
Ming Gao Doctoral Student, School of Architecture, Harbin Institute of Technology, China
Xun Zhu Professor School of Architecture, Harbin Institute of Technology, China

The Application Of Ecosystem-Based Disaster Disaster Risk Reduction for Urban Storm and Flood Disasters in China

China is a country with very serious natural disasters, complex environment, a variety of natural disasters. With China move towards the construction of ecological civilization, China's urban comprehensive disaster prevention has undergone a transformation from engineering disaster prevention to "adaptation and coexistence". At present, ECO-DRR, as an emerging concept, is still insufficiently researched in China's ecology, climate change, urban design and other fields. Therefore, this article will introduce two practical cases in solving stormwater disasters, and analyzes the cases from the perspective of traditional Chinese wisdom and the theory of ECO-DRR. This facilitates the international exchange of relevant case researches and provides some helpful experience and reference.

Daixin Dai Associate Professor, Tongji University, China
Mingyang Bo Master, Tongji University, China
Junjun Mao Planner, Shanghai Tongji Urban Planning & Design Institute Co.,LTD., China

A Study on the Change in Visitor Perception After Designating an Agricultural Heritage Using Big Data

Korean Important Agricultural Heritage System (KIAHS) is a place where cultural diversity is maintained based on the altruism of residents who value conservation rather than compulsory regulations and systems, and various programs and projects are being implemented to promote regional revitalization (Hong and Kim, 2018; Park, 2018). In addition, research on preservation and management has been constantly conducted (Lee and Seo, 2020), but research on the perception of visitors who actually visit and experience space is insufficient. Therefore, this study used online data to collect major keywords related to agricultural heritage from 2013, the time after designation of agricultural heritage, and conducted N-Gram analysis and emotional analysis to check the connection relationship between keywords. Through this, changes in perception after designation of agricultural heritage were identified, and the purpose was to provide basic data on how to utilize agricultural heritage in the future.

As a result of the study, new areas were designated every year for KIAHS, but keywords related to Cheongsando, Jeju, Damyang, Geumsan, and Hadong, which were registered as Global Important Agricultural Heritage Systems (GIAHS), were identified as the top keywords. In addition, as keywords related to social inclusion such as agricultural technology, traditional, value, importance, residents, conservation, and cooperatives appear as the top keywords, it can be seen that they are positively aware of inheriting the value of traditional knowledge. Similar to the frequency analysis of the N-Gram results, the connection relationship between GIAHS keywords was large, but in the case of Gurye Sansuyu Agriculture and Damyang Bamboo Field Agriculture, designated in 2014, the connection was weak due to agricultural heritage. However, it was confirmed through the keyword connection relationship that users perceived agricultural heritage as being designated due to the efforts of traditional farmers. Finally, as a result of emotional analysis, positive keywords were 81.88%, and as a result of examining negative keywords in detail, the rejection type was the highest at 34.8%, which is judged to be due to keywords such as difficult and convoluted. In other words, it can be seen that the value of agricultural heritage is recognized and preserved due to the efforts of the residents, but it is difficult and recognized as a convoluted system.

As a result of this study, visitors to the target area after designation of agricultural heritage know that rural areas are not simply spaces that meet the one-dimensional conditions of production and residence, but also have cultural diversity including tourism, education, and relaxation (Choi. et al., 2018). However, GIAHS awareness of various agricultural heritages is higher than that of KIAHS, indicating that a policy approach that is easy to understand and friendly is needed through the negative results of emotional analysis. Therefore, KIAHS can be interpreted as a space that needs to be approached from various perspectives because it is a place worth preserving ecologically and landscape as well as the transmission of traditional culture and knowledge.

Jee Yoon Do Researcher, National Institute of Agricultural Science, RDA
Myeong Cheol Jeong Researcher, National Institute of Agricultural Science, RDA
Ki Chun Seo Researcher, National Institute of Agricultural Science, RDA

Assessing the Foundations of the Relationship Between Human and Nature in Ecology and Landscape Discipline

Sustainability is a knowledge that restores the relationship between man and nature and tries to provide a set of concepts and methods that lead to better interaction between these two concepts. Ecological sustainability is one of the most well-known approaches of sustainability, which is based on the interpretation of ecology from the components of human-nature relationship, has provided solutions for the sustainable interaction of these two components. However, a review of the theoretical literature of ecology shows that this interpretation of the relationship between man and nature is based only on the physical aspects of this relationship and does not provide a basis for understanding their semantic dimensions. This research seeks to find the answer to the question: "What approach provides the most efficient human-environment relationship that has the ability to sustain the two sides of the relationship?". Therefore, this paper evaluates these two approaches with a pathology of how human-nature relationship in ecological knowledge and by making a comparison between how this relationship is explained in landscape discipline, with an analytical-descriptive method that is based on content and structure critique of both approaches. The findings of this paper indicate that ecological sustainability is not comprehensive in expressing all aspects of sustainability and because of its theoretical foundations can only describe and provide solutions to the objective aspects of sustainability. It can be acknowledged that the relationship between man and the environment, in addition to biological aspects, takes place in another dimension that is influenced by a perceptual process between these two components. On the other hand, landscape discipline is an attitude that provides a simultaneous explanation of the two physical and semantic dimensions of the relationship between man and the environment. Therefore, it seems that the conceptual model of sustainability, if formed by relying on the interpretation of the relationship between man and the environment, can provide a more accurate expression of the physical and semantic dimensions of sustainability and lead to more complete measures in this regard.

Morteza Hemmati PhD Candidate, University of Tehran, Iran

Changes on Ecosystem Services of Agricultural Area of Saemangeum

Saemangeum used to be a major coastal wetland of the west coast of the Korean Peninsula. However, it has gone through a drastic transition from wetland to farmland and urban area due to a large-scale reclamation project from the year 1990 to 2020. Before reclamation, Saemangeum provided a variety of ecosystem services but now the contribution from each ecosystem service has changed in many ways. This study aims to investigate what changes have been made in Saemangeum after reclamation and what needs to be conducted in order to enhance the contribution from each ecosystem service.

The subject of this study is the agricultural area of Saemangeum, which covers an area of 131.18㎢. Before reclamation, coastal wetland took up 125.35㎢ and the remaining 5.83 ㎢ was mountain. After reclamation, the existing wetland has changed into an agricultural area, which consisted of 112.04㎢ of rice paddy wetlands, 10.67㎢ of reservoirs, 2.64㎢ of villages, and 5.83㎢ of mountains.

Ecosystem services of the agricultural area of Saemangeum before and after reclamation have been assessed through the application of Rapid Assessment of Wetland Ecosystem Services(RAWES). A total number of 26 ecosystem service has been applied into the assessment.

Each land use type had different level of contribution in terms of ecosystem service. Rice paddy wetland scored 11.5 points, reservoir scored 7.5 points, village scored 1 point, mountain area scored 11.5 points, and coastal wetland scored 14 points. Each number was multiplied by the area of each land use type and was added up to calculate the relative value of ecosystem service of Saemangeum before and after reclamation.

The result showed that the relative value of ecosystem service of Saemangeum before reclamation was 1,690.77, while the value after reclamation was 1438.17. The relative value of provisioning service before and after reclamation were 262.36 and 299.26. The relative value of regulating service before and after reclamation were 524.72 and 322.12. The relative value of cultural service before and after reclamation were 390.63 and 492. The relative value of supporting service before and after reclamation were 518.89 and 321.63.

The overall contribution from ecosystem service of Saemangeum before reclamation was higher than the contribution after reclamation. The contribution from provisioning and cultural service has increased, but the contribution from regulating and supporting service has greatly diminished. The reason behind the degradation of regulating and supporting service of Saemangeum ecosystem is the loss of the existing coastal wetland. Therefore, quality of regulating and supporting service of semi-natural habitats such as rice paddy wetland should be boosted to restore the declined ecosystem service of Saemangeum.

Seungjoon Lee Dongguk University
Choonghyeon Oh Professor, Dongguk University

Neighbour's Neighbor

In the past, Korean schools were spaces where villagers and children crossed each other's spaces inside and outside the walls. School events were also village events, and children's playgrounds used to be closely connected to the school and every corner of the village. However, it is now easy to find schools isolated in the city as social awareness of children's safety and ties between schools and residents weaken. As a result, the social network's functions of resident activities in schools and spaces adjacent to the school have been no longer linked. This study proposes a design in which schools and villages are shared as a single community space by closely examining the confusing situation of schools and adjacent spaces using a 3D laser scanning and revealing the advantages of connecting the disconnected spaces. This study aims to derive a space connection suitable for each characteristic; neighbor, schools, and adjacent nature. First, it approached the three-dimensional survey using the Leica RTC360 3D laser scanner for an Elementary School located in Gongju-si, Chungcheongnam-do. In May 2021, alleyways, commercial spaces, and green areas around the school, including an Elementary School, were surveyed 30 times.
After matching the survey data, it made a survey model. Eight of the surveyed spaces were selected to examine the characteristics of two separate spaces by cutting cross-sectional views and designing six new spaces.

Six spaces (5878.3㎡) found through a 3D laser survey were classified into school and green area, school and village, school and commercial space. School and green areas used playground stands that were not well used in the past to design pavilions connected to green areas. School and village changed the existing fences to hedges and lowered the height to solve the physical disconnection between children and residents. School and commercial spaces demolished fences and created community spaces so that children could safely leave school without feeling threatened by vehicles.

By compensating for the lack of objective information on the target site through 3D laser surveying, information on the target site (expandable area, steps between schools and green areas, the height of fences, etc.) was classified and designed in three dimensions.

Su Jeong Lee Student, Kongju National University
Moohan Kim Assistant Professor, Kongju National University

Adaptational Landscape: Korean Traditional Agricultural Landscape of Uiseong-gun

Uiseong-gun is one of Korea's representative low-rain areas. The annual average precipitation between 1973~2020 was 985.9㎜, much less than the annual precipitation of 838㎜~1,263㎜ required for rice farming. In particular, a lot of water is required at once during the rice planting period, and the precipitation in Uiseong-gun is 54.9㎜~144.3㎜, which is very difficult to cultivate rice.

Uiseong-gun is a capital and military hub of the ancient country 'Jomunguk' and agricultural activities have been necessary since ancient times. Residents actively built irrigation facilities and reclaimed agricultural land with an altitude of more than 300m to overcome unfavorable agricultural environments. In addition, a separate irrigation community was organized to manage agricultural water. As such, Uiseong-gun has a unique agricultural landscape of irrigation facilities, irrigation communities, and agricultural activities that have been achieved while overcoming and adapting to the given environment.

Topography : Uiseong-gun has long expanded irrigation facilities for agriculture, with 9.7% (250 locations) of irrigation facilities nationwide recorded in 'Chosunji Data' located in Uiseong-gun in 1919. Today, a total of 6,227 irrigation facilities are distributed along with the 'Wicheon' water system that crosses Uiseong-gun from east to west. These irrigation facilities have different compositions depending on the terrain. In the 'Geumseong Mountain'area in the east of Uiseong-gun, mountain valley irrigation facilities(1,491 locations, 23.8%) were built with repeated hilly areas and plains. In addition, the area is 144.5㎡ smaller on average than the irrigation facilities in the western 'Angye' flat area, and the location is 61.4m higher on average. In addition, the irrigation facility consists of an irrigation passage "Soo-Tong" and an irrigation volume control device "Mot-Jong". Through this structure, the amount of water used is adjusted as necessary, and the surface water with high water temperature is supplied to the cultivated land to prevent damage from cold damage to crops, creating an agricultural landscape adapted to the climate and terrain.

Community : Uiseong-gun has developed an irrigation community early to achieve the common goal of securing agricultural water by gathering one village or several villages. Through this organization called the 'Mongrigye', insufficient agricultural water is secured, managed, and distributed fairly. 'Mongrigye' has 'Dogam' in charge of overall management, 'secretary' in charge of managing money, and 'Bunsookanggu' in charge of distributing agricultural water during the busy farming season. Currently, this tradition continues in Uiseong-gun, and a total of 213 irrigation communities manage 375 irrigation facilities (6.0% of all irrigation facilities), and 49,1% (4,759 households) of all farms participate.

Agricultural Activity : Uiseong-gun is a fifth-class soil that is disadvantageous for rice farming due to shallow soil depth and severe drainage. 71.0%(834.1㎢) of the total area of Uiseong-gun corresponds to this, so the overall agricultural environment is disadvantageous. In the case of Geumseong Mountain until the 1970s, Rice-Barley double cropping was mainly carried out, but since the 1980s, higher-income Rice-Garlic double cropping has been carried out. For the harvest and drying of garlic, the 'Garlic drying facility' is essential for harvesting and drying garlic, creating a unique agricultural landscape.

Yoo-Jick Lee Professor, Dept. of Landscape Architecture, Pusan National University
Seung-hye Lee Ph.D. candidate, Dept. of Landscape Architecture, Pusan National University

New Urban Farms in Lyon to Develop Short Supply Chain and Provide Organic Vegetables for the Local Schoolchidren

These new ecological urban farms projects aim to develop the short supply chains encouraging closer links between producers and consumers. They create also spaces of biodiversity in the cities (hedgerows with edible berries, agroforestry, permaculture) and organic production to provide a supply of fresh vegetables, berries and fruits for local schoolchildren, as well as for elderly people and all other inhabitants. They are not only urban farmlands but also real ecological corridors in the heart of big cities. This provides sensitive sustainable farming with natural resources management, the starting point being water resources.

Three different projects are developed by our landscape agency since 2019 (one year before the pandemic period) in the suburb of Lyon (France) :

The first one is located in the city of Pierre-Bénite in the south of Lyon, in a deprived neighbourhood. This is an 1 hectare urban farm that has been active for a year to provide school meals and also allows educational workshops. Public institutions manage the project (the City's Municipal Garden Services and a farmer) to compensate the (first) non-productive years and ensure decent living wages. A close collaboration is created between the different city departments (parks and gardens department, water department, …), the farmer but also the cook of the school cafeteria. They must work together to provide daily school lunches with a large variety of organics vegetables, fruits and berries.

The second project is located in Caluire, in the north of Lyon, in a mixed and more residential neighbourhood. This project of urban farms planned for 2024 will host over an area of 4 hectares, orchards and crop fields. A composting platform is implemented and reuses biowaste produced in the vicinity. Educational workshops are also planned with schools, gardening associations and inhabitants. The very short supply chains between production, food consumption and waste separation participate in preserving resources. The city of Caluire has already a strong orchards and crop fields farming tradition.

The third project is located in Rillieux-la-Pape (northern suburb of Lyon, district part of an urban renewal). The project is part of a largest urban park with playgrounds, sport areas, collective orchards and picnic areas, in the center of the city. This project will be implemented in 2023 to provide fruits, aromatic plants, vermicompost but also honey and eggs to the inhabitants. Some beehives, a henhouse and an educational building for workshops are integrated into the urban farm project. The expansion of existing kitchen gardens (a total of 3 000m^2) is also provided, to unify collective sharing actions and to ensure that the inhabitants are taking care of their own public spaces. A total area of 1,5 hectare will be cultivated and the all project is led by different associations. The project is subsidized by the State as part of the call for proposals : Quartier Fertile (« fertile area »).

Anne-Cecile Romier Manager, ERANTHIS Landscape architect, France
Frederic Dellinger Senior Lecturer, ENSAG, France

Inheritance and Activation of Rice Paper Culture: Taking the Planning of Rice Paper Town in Anhui as an Example

Cultural heritage, which is historical relics and experience summaries of human production and life, is shown in the water and soil where humans live and work. It is the responsibility and duty of contemporary landscape architects to protect, inherit and revitalize these cultural heritages. The culture in history has become a heritage because it incorporates natural landscapes, and the planning and design of this land can give the heritage a new vitality.

Rice paper "began in the Tang Dynasty and produced in Jing County". It has a history of more than 1500 years. China's ancient rice paper-making craft comes from the integration of the natural landscape and the wisdom of ancestors. It is deeply imprinted on the site where rice paper has been produced for thousands of years.

Taking the planning of Rice paper Town in Anhui as an example, this paper proposes a mode of inheriting and activating cultural heritage in the form of landscape planning and design led by landscape architects.In terms of industrial upgrading, the planning focuses on the extension and transformation from rice paper crafts to traditional calligraphy and painting arts, cultural and creative industries, and tourism, and enriches the characteristics of town life. In the spatial layout, taking the existing landscape resources related to the production process of rice paper as clues, and drawing on the artistic conception of the famous landscape painting "Creek and Mountain Traveling Map", we trace up the stream and use the existing streams, pools and valleys to arrange major functional blocks. From entering the village, wandering the park, to tracing stream, exploring the dock, and inhabiting the valley, the travel of tourists in Rice paper Town is just like experiencing a tour in a landscape painting. In terms of planting organization, the planning keeps the native plant tone, studies the plants in Chinese classics culture such as the Book of Songs, and chooses the plants that are suitable for local growth, such as awns, reeds, willows and tallows on the waterfront; sandalwood and hibiscus in Rice Paper Cultural Park, ginkgo and viburnum in Kongdan Cultural Park, Chinese sycamore and magnolia in the creative industrial park; Prunus, peach, and plum blossom in the Splendid Valley. The vegetation not only forms the spring and autumn colors of the town but also activates the cultural connotation of rice paper.

In the process of implementation, the government provides land use and policy convenience, and the rice paper factory is responsible for investment and construction. Beautiful environment and preferential policies attract painters, calligraphers, artists, designers, and cultural creative workers to live and work here, and further attract tourists to come here for sightseeing. Thus, a town with a beautiful environment and thriving industry will be created.

Shixian Shen Associate Professor, Vice Chairman of the Department of Landscape Architecture, China academy of Art, The Design Institute of Landscape &Architecture China Academy of Art Co., Ltd., China

Liujun Yuan China academy of Art, Associate Professor, China

Yang He Design Director, The Design Institute of Landscape &Architecture China Academy of Art Co., Ltd., China

Establishment and Application of an Analysis Scheme for Wind Corridor Forest Plans

Fine dust and heat waves due to high-density land use and human populations occur more frequently in urban areas than in suburban areas. Among various planning solutions, urban wind ventilation corridor has been adapted in Germany, Japan, as well as in South Korea. Wind ventilation corridor is one of the urban planning factors that contribute to a reduction of air pollution and improvement in the thermal environment. Wind ventilation corridor is a path of wind flowing into the city, which plays a role in improving air circulation by letting in "cool and fresh air (cold air)" generated in forests at night to development areas where the atmospheric and thermal environment is damaging. Since 2019, the Korean Forest Service has been promoting urban forest projects utilizing wind ventilation corridor functions, which are called 'wind corridor forests'. Wind corridor forests consist of three types of forests, i.e. wind-generating forests (WGF), wind-spreading forests (WSF), and wind-connecting forests (WCF).

This study aims to offer an analysis scheme for establishing wind corridor forests, which reflects the characteristics of target cities and enhances the wind ventilation corridor functions. For this purpose, the relationship between wind ventilation corridors and urban forests was analyzed, and establishment methods of WGF, WSF, and WCF were proposed. Finally, the analysis scheme was applied to four Korean cities like Daegu, Sejong, Gumi, and Pyeongtaek to examine the applicability of the scheme in cities with different urban characteristics.

The results of this study can be used as the foundation for guidelines of wind corridor forest plans, as well as for urban spatial and environmental plans. In addition, it is expected to support the systematic implementation of the wind corridor forest projects.

Jeong-Min Son Ph.D. Candidate, Dept. of Landscape Architecture, Kyungpook National University
Ju-Eun Kim Master's Student, Dept. of Landscape Architecture, Kyungpook National University
Uk-Je Sung Ph.D. Course, Dept. of Landscape Architecture, Kyungpook National University
Jin-Kyu Min Master's Student, Dept. of Landscape Architecture, Kyungpook National University
Jeong-Hee Eum Associate Professor, Dept. of Landscape Architecture, Kyungpook National University

A Study on the Connection Between Urban Agricultural Land and Green Space from the Perspective of Land Use Changes

Urban agriculture is a cultural landscape for Tokyo, and it remains even today in the highly urbanized city. Urban farmland is not just a place to supply food, but is also a valuable private green space and one of the main components of urban green space. It is also characterized by its high degree of openness compared to other green spaces. As valuable vacant land in the city, it contributes to the formation of a good urban environment by preventing the deterioration of the high-density residential environment and by functioning as a green space for disaster prevention.

As the roles of urban farmland are increasingly recognized, it has become a target for more active conservation and utilization in urban planning and systems have been enacted to ensure that farmland and its surrounding green spaces are planned and conserved in an integrated manner. Rural Residential Zone and Agricultural Scenic Area Development System in Tokyo are examples of such systems.

Although there have been some discussions on the legal system, there are few studies on the actual spatial connection between farmland and green space in the city. Clarifying the connection is significant for green space planning in terms of exploring ways to conserve and utilize farmland and green space in an integrated manner, and is also academically novel.

In this study, the Takamatsu district of Nerima Ward in Tokyo, which is designated as an agricultural scenic area, was selected as a target site. First, GIS spatial analysis was conducted to compare aerial photographs and maps of the past and present.By analyzing the changes in land use within the district, the current types of green space and open space were categorized, and the structure of the green space was clarified. Then, by using Google Street View to analyze how the boundaries of the former farmland changed with the current land use, the connection between farmland and the city was discussed.

The results revealed that the original agricultural landscape in the Takamatsu area consisted of a cyclical landscape of agriculture and inherited premiss forest, but now the types of green spaces are diversifying, and agricultural land is being converted into parking lots. By focusing on the site boundaries, it can be shown that while some green spaces and open spaces have closed boundaries, parking lots often have the same open boundaries as farmland, which improves the connection between the remaining landscape forest and farmland. This suggests that it is important to have such a boundary in order to plan farmland and green space in an integrated manner.

Mamiko Tanaka Ph.D. Student, Nara Women's University, Japan

Belonging-Edge-Belonging

The Republic of Korea is a mountainous country with 63 percent of forests. As the city expanded, the city and nature became at odds and are at odds in inevitable relationships. Instead of conquering each other's space, it is now necessary to come up with a way to coexist.

This study examined the space in which each object can coexist by precisely surveying through RTC360 3D laser scanning. About 130 sites were surveyed, including Bonghwangsan Mountain in Gongju-si, Chungcheongnam-do, South Korea, and some sections of Junghak-dong, the old city center that confronts it. The surveying data was subjected to a matching process to create a surveying model, and spatial analysis and spatial compartmentalization were performed through hexagonal grids.

Considering natural factors such as slopes, trees, shrubs, rocks, and hills revealed after the survey, available space in the mountain was found. A design plan to connect nature and the city was derived by matching the available spaces in the city.

In this study, the following advantages are confirmed through precise measurement. First, it was possible to frequently check what was missed in the field trip through the constructed data. Second, there was no need for additional exploration, so it was able to save money and time. In addition, advantages can be confirmed in the overall design process, from precise spatial design to spatial compartment in consideration of target site characteristics. This study proposes a design plan for each space.

Jong-Eun Yang Student, Kongju National University
Moohan Kim Assistant Professor, Kongju National University