Planning future cities for people and nature

Prof. Dr. Leonie Fischer

Universität Stuttgart
ILPÖ Institut für Landschaftsplanung und Ökologie
Ecolopes Talk, online / TUM, 05.03.2024

Planning future cities for people and nature

Prof. Dr. Leonie Fischer

EXCERPT FROM THE PRESENTATION SLIDES

Universität Stuttgart
ILPÖ Institut für Landschaftsplanung und Ökologie
Ecolopes Talk, online / TUM, 05.03.2024

Planning future cities for people and nature

The projects presented in the following were developed and done with many colleagues:
Kristen Jasktis, Eva Bender, Divya Gopal, André Mascarenhas (all ILPÖ), Pia Krause, Philip Leistner, Melina Wochner, Moritz Weckmann, Holger Röseler (all IABP / IBP Stuttgart), Hans Müller, Juliane Peterson, Julian Käß (all Helix Pflanzensysteme), Solène Guenat (ILPÖ, now WSL Birmersdorf), Fritz Kleinschroth, Yuyang Chang, Paloma Julia Martinez (all ETH Zurich), Sini Savilaakso (University of Helsinki), Ingo Kowarik (TU Berlin), Laura Wendling, Arto Laikari, Maria Dubovik (all VTT), Kaisa Mustajärvi (Ramboll Finnland Oy)

EXCERPT FROM THE PRESENTATION SLIDES

Universität Stuttgart
ILPÖ Institut für Landschaftsplanung und Ökologie
Ecolopes Talk, online / TUM, 05.03.2024

Planning future cities for people and nature

Current challenges:

- Urbanization
- Climate change
- Biodiversity crisis

Planning future cities for people and nature

Many pieces of a puzzle …

- Grey vs. green infrastructures
- Greening vs. biodiversity
- Cultural & social aspects
- …

Planning future cities for people and nature

Access to green and use of green

nature cities

Article

https://doi.org/10.1038/s44284-023-00020-6

Global disparities in urban green space use during the COVID-19 pandemic from a systematic review

Received: 16 August 2023

Accepted: 8 December 2023

Published online: 18 January 2024

Check for updates

Fritz Kleinschroth[1] ✉, Sini Savilaakso[2], Ingo Kowarik[3], Paloma Julia Martinez[1], Yuyang Chang[1], Kristen Jakstis[4], Jessica Schneider[1] & Leonie K. Fischer[4]

The COVID-19 pandemic disrupted urban resilience and challenged the use of urban green space (UGS). Previous studies lack consensus on whether UGS use increased or decreased during and after lockdowns and how this related to policy, economic conditions and UGS types. In a systematic review, we screened >3,000 articles in 5 languages, identifying 177 articles on UGS use changes in 60 countries. The cities studied show diverging changes in UGS use. Generally, decreases occurred where COVID-19 policies were stricter and the gross domestic product per capita was lower, including in most of the few studied areas of the Global South. All studies on private gardens and 60% on forests and other natural areas showed increases, while 77% of studies conducted on public parks indicated decreased use. The global disparity in UGS use was exacerbated during the COVID-19 pandemic, demonstrating the need to enhance green infrastructure for healthy cities and to extend it beyond public parks.

By 2050, the global urban population is projected to grow by 2.2 billion people[1], posing a challenge to creating green, healthy and resilient cities. While there is growing recognition that being outdoors benefits the physical and mental health of urban people[2–4], green spaces within and near cities are often under increasing pressure due to densification and accelerating urban growth. The unequal distribution of urban green spaces (UGS) within cities raises concerns about environmental inequity, as less privileged people often have less

Numerous local studies on UGS use during COVID-19 have revealed multidirectional changes, leading to elevated discussions about the importance of UGS[13]. Many studies reported that COVID-19 has profoundly impacted the use of green spaces in cities worldwide, with evidence for both decreased use during lockdowns[14,15] and increased use during and afterwards[16–18]. However, it remains unclear whether these changes were consistent across different world regions, user groups and types of public and private green space. In parallel, access

ILPÖ

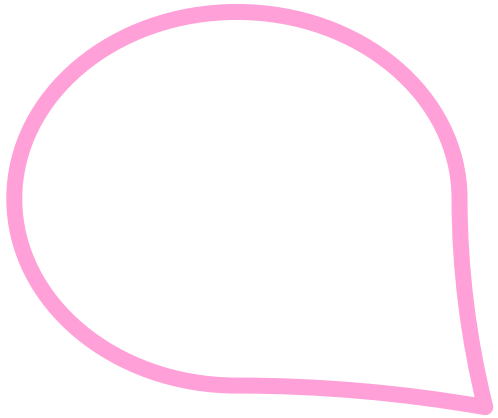
Planning future cities for people and nature

Green streets

Pop-up bike lanes, interim playgrounds, open streets, etc. during the pandemic

Planning future cities for people and nature

Green streets



Results in relation to greening:
People prefer trees and low landscaping elements.

UNaLab
URBAN NATURE LABS

Nature-based Solutions

Technical Handbook Factsheets

Download:
https://unalab.eu/en/documents/unalab-nbs-technical-handbook-factsheets

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement No. 730052 | **Topic: SCC-2-2016-2017: Smart Cities and Communities Nature based solutions**

Planning future cities for people and nature

Nature-based solutions

L. Fischer

Planning future cities for people and nature

Nature-based solutions

Received: 7 April 2022 | Accepted: 1 November 2022

DOI: 10.1002/pan3.10419

RESEARCH ARTICLE

Informing the design of urban green and blue spaces through an understanding of Europeans' usage and preferences

Kristen Jakstis[1] | Maria Dubovik[2] | Arto Laikari[2] | Kaisa Mustajärvi[3] | Laura Wendling[2] | Leonie K. Fischer[1]

[1]Institute of Landscape Planning and Ecology, University of Stuttgart, Stuttgart, Germany

[2]VTT Technical Research Centre of Finland, Espoo, Finland

[3]Ramboll Finland Oy, Impact assessment, Ecology, Tampere, Finland

Correspondence
Kristen Jakstis
Email: kristen.jakstis@ilpoe.uni-stuttgart.de

Funding information
Urban Nature Labs (UNaLab) - Horizon 2020, Grant/Award Number: N°730052: Topic: SCC-2-2016-2017

Handling Editor: Melissa Marselle

Abstract

1. In light of global climate change and the biodiversity crisis, making cities more resilient through an adjusted design of urban green and blue spaces is crucial. Nature-based solutions help address these challenges while providing opportunities for nature experiences, and providing cultural ecosystem services that support public health. The COVID-19 pandemic and its associated stressors highlighted the interrelated socio-ecological services provided by nature-based solutions like urban green and blue spaces.
2. This pan-European study therefore aimed to enhance the socio-ecological understanding of green and blue spaces to support their design and management. Using an online survey, green and blue space preferences, usage, and pandemic-related changes in greenspace visit and outdoor recreation frequencies were examined.
3. Greenspace visit and outdoor recreation frequencies were associated with respondents' ($N = 584$ from 15 countries) geographical location, dominant type of neighbourhood greenspace and greenspace availability during the pandemic, but not greenspace perceptions or sociodemographic background.
4. Greenspace visit and outdoor recreation frequencies were generally high;

UNaLab URBAN NATURE LABS

ILPÖ

Planning future cities for people and nature

Nature-based solutions

https://jetztklimachen.stuttgart.de/klima-innovationsfonds-projekt-klimaoasen

https://www.ilpoe.uni-stuttgart.de/forschung/projektuebersicht/Oasen/#

Green Office

The Nature Conservancy Europe

KLIMA INNOVATIONS FONDS

Planning future cities for people and nature

Nature-based solutions

Planning future cities for people and nature

Nature-based solutions

L. Fischer

KlimaOasen
Entwicklung eines resilienten Campus durch naturbasierte Lösungen

Planning future cities for people and nature

Projects: Biodiversity façade & WiKliWa

Funded by

Supported by

https://jetztklimachen.stuttgart.de/klima-innovationsfonds-projekt-klimawand
https://www.inuga.de/projekte/biodivfassade

www.ilpoe.uni-stuttgart.de/forschung/projektuebersicht/Die-wilde-Klimawand/
www.ilpoe.uni-stuttgart.de/forschung/projektuebersicht/Gruenfassadensystem-fuer-Biodiversitaet/
www.iabp.uni-stuttgart.de/forschung/Umweltgerechtes-Bauen-fuer-Menschen-Flora-und-Fauna/Innovative-Gruenfassaden/
www.helix-pflanzen.de/unternehmen/news/biodivfassade-die-wilde-klimawand

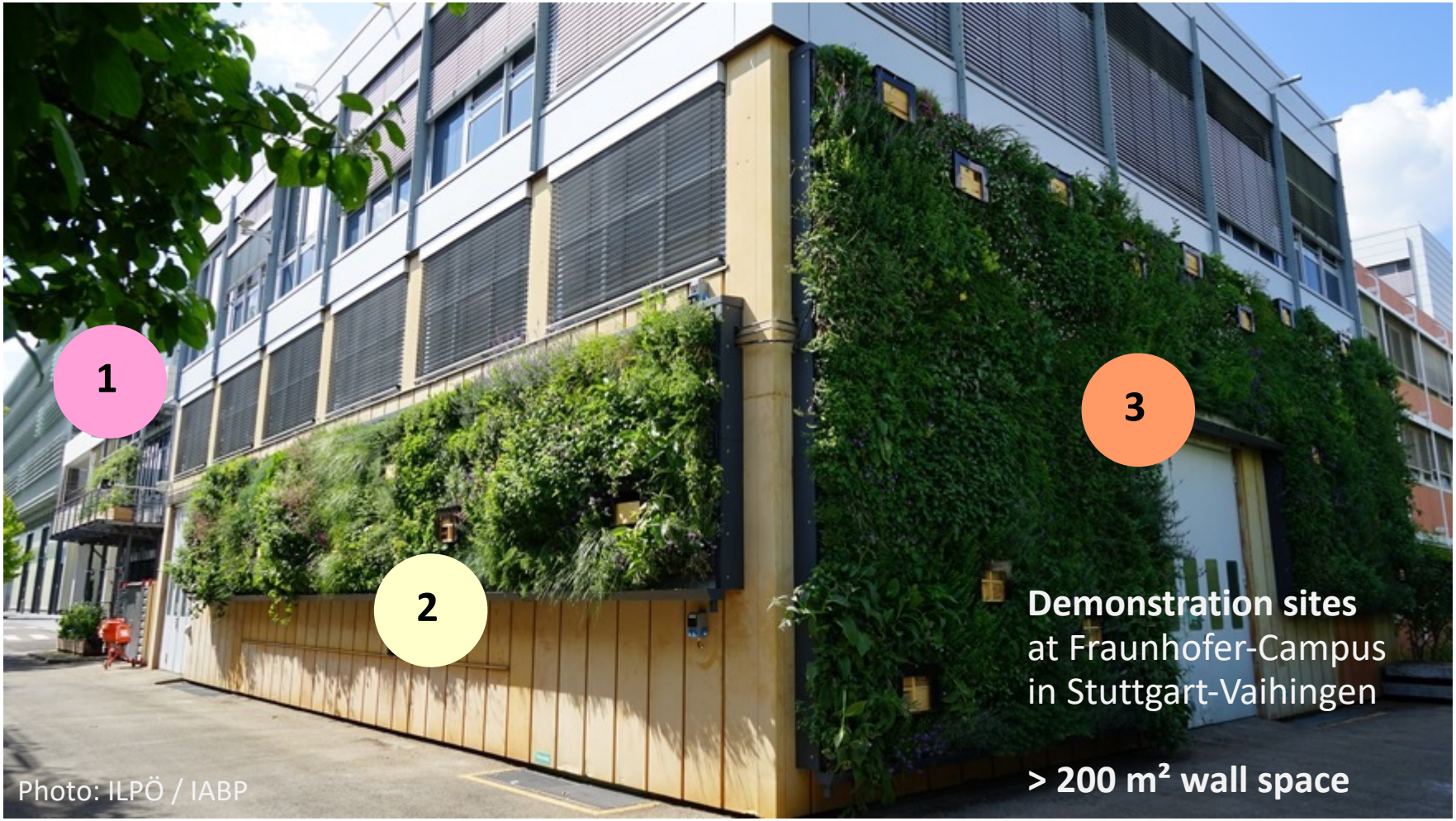
Planning future cities for people and nature
Projects: Biodiversity façade & WiKliWa

- To find out about the biodiversity potential of existing façades
- To develop a façade system that supports biodiversity

- Integrate the knowledge of:
  - Engineering / building physics (IABP / IBP, Fraunhofer)
  - Gardening practice (Helix Pflanzensysteme GmbH)
  - Landscape planning / urban ecology (ILPÖ)

Planning future cities for people and nature

Projects: Biodiversity façade & WiKliWa



Krause et al. 2023, Bauphysik and Röseler et al. 2024, Bauphysik-Kalender

ILPÖ

Planning future cities for people and nature
Conclusion

Starting point

How do we currently plan and design urban green spaces?

How should we plan them to make cities livable places for all?

Current challenges:

Urbanization
Climate change
Biodiversity crisis

Multifaceted aspecs:

Grey vs. green infrastructures
Greening vs. biodiversity
Cultural & social aspects, etc.

References

Fischer, L.K., Gopal, D. (2021) Streetscapes as Surrogate Greenspaces During COVID-19? Frontiers in Sustainable Cities 3, 710920.

Jakstis, K., Dubovik, M., Laikari, A., Mustajärvi, K., Wendling, L., Fischer, L.K. (2022) Informing the design of urban green and blue spaces through an understanding of Europeans' usage and preferences. People and Nature. DOI: 10.1002/pan3.10419

Kleinschroth, F., Savilaakso, S., Kowarik, I., Martinez, P.J., Chang, Y., Jakstis, K., Schneider, J., Fischer, L.K. (2024) Global disparities in urban green space use during the COVID-19 pandemic from a systematic review. Nature Cities. https://doi.org/10.1038/s44284-023-00020-6

Krause, P., Meier, L., Leistner, P., Eitle, A., Bender, E., Fischer, L.K., Müller, H. (2023) Entwicklung und Erprobung eines urbanen Grünfassadensystems für Mensch, Flora und Fauna. Bauphysik 45, H. 1, S. 44–54. https://doi.org/10.1002/bapi.202200039

Röseler, H., Krause, P., Leistner, P., Fischer, L.K., Bender, E., Guenat, S. (2024) Umweltgerechtes Bauen für Menschen, Flora und Fauna am Beispiel neuer Grünfassadensysteme. Bauphysik-Kalender, Verlag Ernst und Sohn.

Unalab NBS / Technical Handbook Factsheets (2022) https://unalab.eu/en/documents/unalab-nbs-technical-handbook-factsheets