

German Environment Agency

Umwelt
Bundesamt 

AdNEB International Kick-off Conference, 15. September 2022

Advancing the New European Bauhaus

Sustainable Mobility and Resilient Urban Spaces for a Better Quality of Life

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I 2 / Department for Transport, Noise and Spatial Development

New European Bauhaus (NEB) as impulse for AdNEB

EU-Commission

- How and where do we live in future?
- NEB as bridge from the EU Green Deal to the people
- Sustainability, aesthetics and inclusion
- Science, architecture, art, design, citizens etc.



Quelle: EU KOM, https://europa.eu/new-european-bauhaus/index_en

UBA project „Advancing NEB“

- City as a whole: strategies for an integral approach to sustainable and resilient urban development
- Broaden the focus from built environment to open spaces, green spaces, streetscapes
- Strengthen international networks

Construction / Renovation

Environmental Justice

Sustainable
Mobility

**Urban
Transformation**

Public Health

Climate Adaptation

Green Infrastructure
and Urban Planning

Challenges addressed by AdNEB

Built environment



- Pollution from construction / buildings
- Infrastructural lock-in
- Aesthetics of sustainability

Environment



- GHG emissions
- Climate Change adaptation
- Health and recreation
- Habitat loss

Society



- Sedentary lifestyle
- Environmental justice (incl. for children)
- Opposition and fear of change

Urban spaces



- Unsustainable transport system
- Conflicting demands on space: housing, traffic, green space, resilience
- Missing human scale

UBA expertise

Science & Strategy

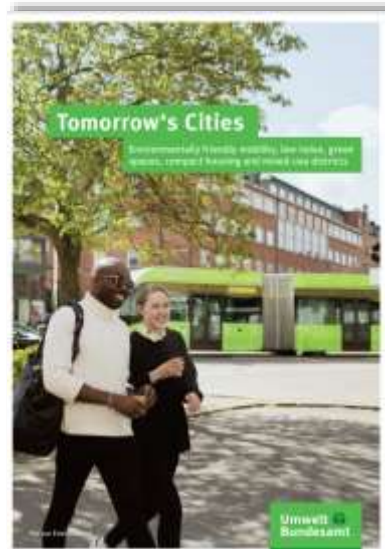
- German Environmental Survey (since 1985)
- Scientific Agenda Urban Environmental Protection (2018)
- Urban Green & Municipal Sustainability (2020-23)

Policy Advice

- Tomorrow's Cities (2017)
- Scientific Opinion Paper on Urban Greening Plans (2021)
- EXURB environmental (2021) Consulting German Environment Ministry on Legislation

Dialogue & Communication

- Coordination of European Mobility Week (since 2016)
- UBA Forum mobile & sustainable
- Federal Award „Environment & Construction“ and „Blue Compass“
- Information for various stakeholders



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Miriam Dross (Project leader), Jan Peter Glock (Coordination) / Sustainable Mobility in Urban and Rural Areas (I 2.6)

Petra Mahrenholz, Valentin Meilinger / KomPass - Climate Impacts and Adaptation (I 1.6)

Alice Schröder, Karl Eckert / Sustainable Spatial Development, Environmental Assessments (I 2.5)

André Conrad, Christiane Bunge / General Aspects of Environment And Health (II 1.1)

Katja Becken, Sarah DeTroy / Substance-related Product Issues (III 1.4)



AdNEB Structure



Expanding Bauhaus - Challenges



Land is a limited resource.

Whereas land in urban areas is sparse, land consumption of undeveloped areas must also be reduced.

Dynamic growth in cities, such as for housing, can take place at the expense of urban green structures.

At the same time, the demand for accessible and high quality green spaces increases, due to:

- Impacts of climate change (urban heat island effect, more frequent and/or extreme precipitations)
- Changing user demands, in part resulting from the pandemic
- Demand for healthy lifestyles and environments

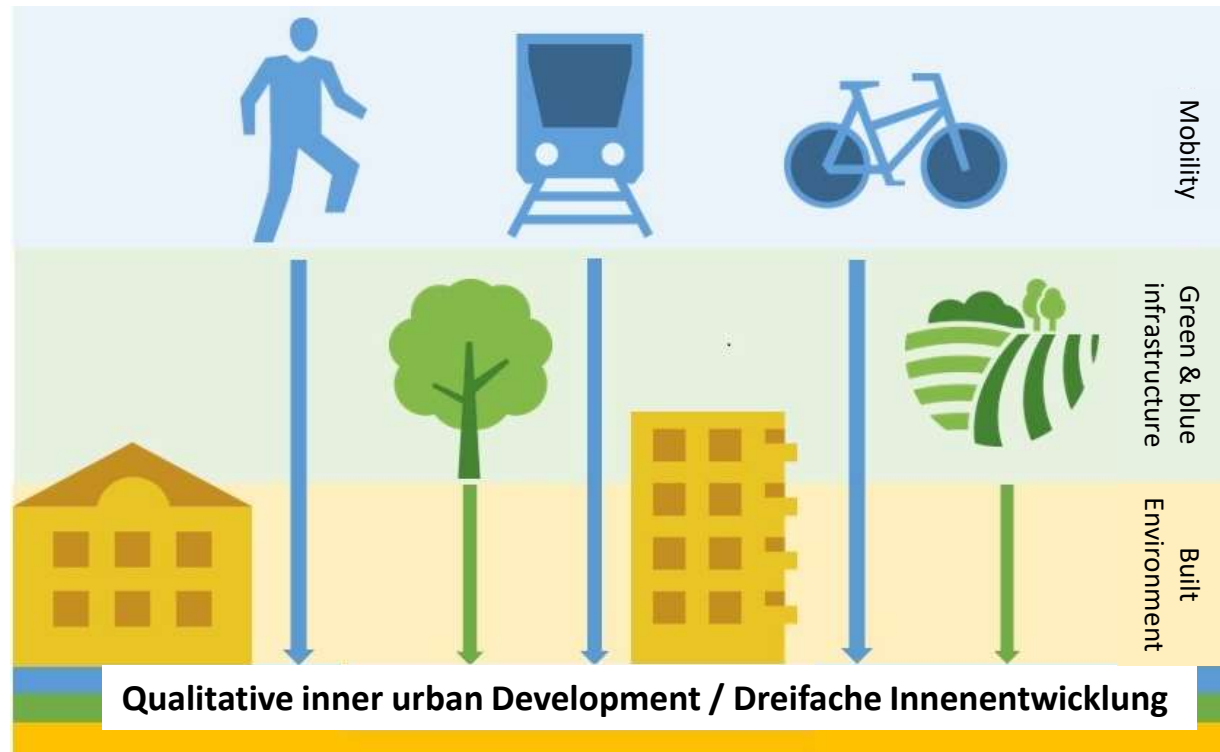
Photos: © Karl Eckert, Alice Schröder, UBA



Expanding Bauhaus – Approaches and Contribution

APPROACH

Conceptual interlinkage of compact building, green infrastructure and mobility options for an increased urban resilience (qualitative inner urban development)



ADNEB CONTRIBUTION

Analyse how flexible and multifunctional urban structures can improve resilience and contribute to sustainable urban development.

Goals of work package

- Develop a concept of “qualitative inner urban development” balancing spatial use by buildings, green spaces and transforming traffic areas
- Analyse the impacts of the corona pandemic on urban built and green spaces and the potentials for more resilience
- Identify implementation mechanisms for integrated urban planning processes, regulation and governance

Systematic literature review on urban resilience and multifunctional urban green and grey spaces. Address stakeholders with governance mechanisms and potential conflicting goals.

Graphic: Susanne Schubert

AdNEB Structure



Researching Bauhaus - Challenges



Living conditions and residential environment get insufficient attention in urban development.

Loss of qualified residential environment has effects on health and wellbeing.

- E.g. public green space helps reducing heat exposure and may improve air quality.

Quality of residential environment and access to beneficial urban infrastructure often differ by socio-economic aspects: environmental health disparities and environmental injustice.

- Transformation towards sustainability and resilience has to consider social aspects to unlock their full potential
- Quantitative information as basis for informed decision making is scarce.

Photo: palinska/ pixabay.com / CC0.



Researching Bauhaus – Approaches and Contribution

APPROACHES

Improving knowledge on environmental health disparities relevant for sustainable and just urban transformation.



● Sample points

Source: Robert Koch Institute



German Environmental Survey for Children and Adolescents 2014-2017 (GerES V)

- information on living conditions and the residential environment
- data on socio-economic factors

ADNEB CONTRIBUTION

Identifying the key building blocks of sustainable, livable, healthy and fair urban spaces?

Goals of this work package:

- To improve the **empirical evidence** on environmental health inequalities with a focus on urban settings, putting more emphasis on social aspects of the transformation of cities
- To develop conceptual contributions to the urban development discourse focusing on environmental justice issues

Researching Bauhaus: Challenges



European cities today:

- Largely paved areas
- High densities
- Overlapping infrastructures
- Development pressure on green spaces

Major climate risks in cities:

- Heavy rainfall and flooding
- Extreme heat
- Intensifying droughts

Necessity for a **transformation of the built environment and governance orders** to mitigate urban climate risks.

Photo: Wolter / pixabay.com / CCO.



Researching Bauhaus – Approaches and Contribution

APPROACH

Enhancing urban climate resilience through sponge cities increases the ability of urban space to capture, hold back, and infiltrate stormwater, mostly through **nature-based solutions** but also technical solutions.



ADNEB CONTRIBUTION

How can climate resilient, sustainable and livable sponge cities look like, and how can we design the transformation towards such cities?

Goals of work package

1. Definition of **key objectives for climate change adaptation in sponge cities**
 2. Analyze **blue-green infrastructure solutions for sponge cities** (possibilities of implementation, effectiveness, synergies and trade-offs with other sustainability goals)
 3. Identification of **key barriers and drivers of transformations** towards sponge cities in Germany
- Qualitative case study of mid-sized German city + interviews with representatives of relevant expert communities

Photo: © Miriam Dross

AdNEB Structure



Testing Bauhaus - Challenges



The urban fabric is dominated by the most **inefficient** mode of transport: motorised private transportation / cars

- Energy inefficiency (CO₂-Emission)
- Spatial inefficiency

Motorised private transportation is a **driver of health issues**

- Sedentary lifestyle
- Air and noise pollution
- Infrastructure amplifies CC impacts

Motorised private transportation is **excluding**

- Less well-off
- Children
- impaired

Powerful economic interests and individual privileges are a **barrier to change**.

Photo (top): Bain News Service, publisher. available from the US Library of Congress; Prints and Photographs division: digital ID ggibain.03232, / commons.wikimedia.org; (bottom): © Jan Peter Glock

Testing Bauhaus – Approaches and Contribution



APPROACH



ADNEB CONTRIBUTION

Explore and test the implementation of co-design-based, temporary living labs as approach to induce radical change of the urban transport system.

Goals of work package

We will give answers to the following questions:

1. What makes a an intervention a living lab”?
2. How does involving stakeholders help the structural transformation?
3. How can temporary change become permanent change

Systematic literature analysis and expert interviews feeding into guidelines, decision aids and an art based intervention in the EMW framework

Photos: “Open Street”: Johannes Schlaich / qimby.net CC0; others: © UBA

AdNEB Structure





Implementing Bauhaus - Challenges



An overlooked aspect of the housing and construction sector: *Embodied* energy and CO2-emissions

- The energy used and emissions emitted during the construction of buildings
- Account for 5-10% of the energy consumption in the EU
- Responsible for 11% of the CO2-emissions world-wide

Building within the existing building stock greatly reduce these impacts, however:

- Many existing buildings need energy renovations for continued use
- The rate of energy renovations is only at 1% in Germany, due to technical, financial, educational, and cultural barriers

Photos: Top: © AdobeStock;
Bottom: ©Ramona Heim, Fotolia.com



Implementing Bauhaus – Approaches and Contribution

APPROACH

Promote building within the existing building stock, with a focus on energy renovations, investigate barriers and identify solutions



ADNEB CONTRIBUTION

Goals of work package

1. Understand barriers facing building experts
2. Promote existing solutions such as serial renovations
3. Conceptualise healthy, human-centered and sustainable aesthetics and pioneer the discourse

Qualitative and quantitative interview-studies and dissemination through workshops, seminars, papers and public engagement.

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Bottom left: ©Kruse; Right: ©Simon La Prida, Fotolia.com

AdNEB Structure



Synthesis

Decision aids for stakeholders

Knowledge transfer from living labs

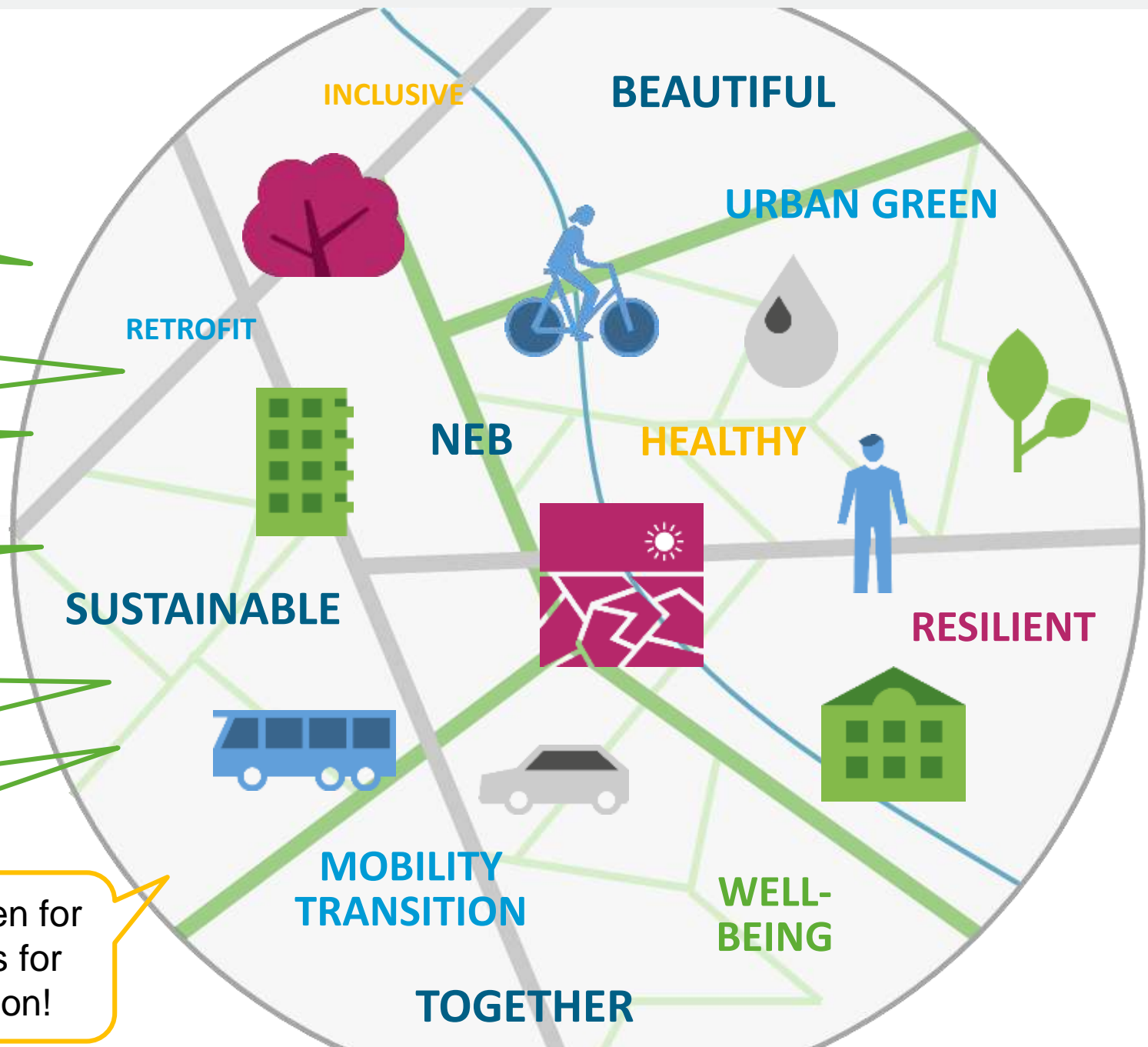
Workshop series and publications

Contributions to transformation beyond sectoral perspectives

Qualitative inner urban development

Informing the future research agenda of the Environment Agency and the Federal Ministry for the Environment (BMUV)

We are open for your ideas for cooperation!



Thank you.

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Spatial Development / I 2**

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