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REVIEW

Advancing the New European Bauhaus: Sustainable Mobility
and Resilient Urban Spaces for a Better Quality of Life
– the AdNEB project

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Abstract

The European Commission's New European Bauhaus initiative sets out to answer the question of where and how we should live in the future to achieve an ecologically sustainable, socially inclusive, as well as healthy and attractive development of urban areas. Today's cities are confronted with the need to simultaneously adapt to climate change, design attractive urban blue-green infrastructures and implement the urban mobility transition. The in-house research project of the German Environment Agency 'Advancing the New European Bauhaus: Sustainable Mobility and Resilient Urban Spaces for a Better Quality of Life – (AdNEB)' aims to provide a conceptual, methodical and interdisciplinary contribution to the vision of the New European Bauhaus. AdNEB will address urgent challenges of the urban environment and propose and discuss integrated solutions.

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Recent Developments

Advancing the New European Bauhaus: Sustainable Mobility and Resilient Urban Spaces for a Better Quality of Life – the AdNEB project

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1 Introduction and context

In Europe and beyond, cities continue to grow. As modern constructions are largely based on concrete and steel, they are responsible for high amounts of greenhouse gas emissions and environmental pollution.¹ Against this background, the European Commission's initiative New European Bauhaus (NEB) sets out to answer the question of where and how we will live in the future with a focus on construction and the building stock in Europe. The president of the European Commission, Ursula von der Leyen, presented NEB in 2020, addressing the fact that buildings and infrastructures are responsible for around 40 % of the greenhouse gas emissions in the EU.² NEB is part of the European Green Deal, the ambitious agenda of the European Union to achieve, among other goals, climate neutrality and substantially reduced environmental pollution.³ NEB strives to support this transformation to sustainability while fostering aesthetically pleasing and inclusive communities "connecting the European Green Deal to our daily lives and living spaces".⁴ NEB offers the crucial opportunity to promote the development of resource-saving technologies such as cycle-oriented and bio-based building materials and to make them more visible. It can thus become an important seed for a global transformation of the building sector that heralds the withdrawal from carbon-intensive, non-renewable building materials such as steel and concrete. In this context, NEB also addresses important aspects of the Zero Pollution Ambition which aims to further reduce pollutants in environmental media to levels safe for human health and natural ecosystems.⁵ NEB is also a cultural project that offers an interdisciplinary forum where future ways of living are shaped ecologically and socially inclusive through art, design, citizen participation, science and technology. It "aims at creating a new lifestyle that matches sustainability with good design, that needs less carbon and that is inclusive and

affordable for all, while respecting the diversity that we have in Europe and beyond".⁶

2 Advancing the New European Bauhaus: The AdNEB project

"To achieve the New European Bauhaus goals, the Commission will continue to build a movement of interested people and organisations."⁷ In order to contribute to the ongoing process of establishing the NEB, the German Environment Agency (Umweltbundesamt, UBA) initiated the AdNEB project to support and further develop the NEB by including urban spaces in their diverse nature into the vision. AdNEB stands for 'Advancing the New European Bauhaus: Sustainable Mobility and Resilient Urban Spaces for a Better Quality of Life'. It acknowledges that beyond the buildings, the surrounding urban space is of crucial importance for sustainable transformation, combining building and living, open and green spaces, health and well-being, climate change adaptation, environmental justice and active and sustainable mobility. An important strength of AdNEB is the possibility of bringing together knowledge of the various scientific divisions at UBA.

AdNEB is based on the idea that creating resilient urban spaces that are committed to a high quality of life and the environment can only be achieved if the sustainable development of the built environment is closely interlinked with the development of urban spaces. Urban spaces should be seen as a symbiosis of built space and open space in cities mutually influencing each other. Therefore, sustainable construction and renovation need to consider aspects of urban planning and mobility, climate adaptation, health, and environmental justice. To this end, new approaches must be found to the use of (blue-green) spaces, mobility and social issues in urban areas. Urban space must be relieved, its functions preserved, and additional space must be created for sustainable uses if building development as a whole is to be steered in a sustainable direction.

AdNEB also considers far-reaching dynamics such as social change, digitalization and the aftermath of the COVID-19 pandemic whose spatial repercussions are transforming entire cities. This change requires

¹ Andrew, 2018.

² von der Leyen, 2020.

³ According to the European Commission (2019), the European Green Deal is "a new growth strategy that aims to transform the EU into a fair and prosperous society, with a modern, resource-efficient and competitive economy where there are no net emissions of greenhouse gases in 2050 and where economic growth is decoupled from resource use".

⁴ European Commission, 2021c.

⁵ European Commission, 2021a.

⁶ European Commission, 2021d.

⁷ European Commission, 2021b.

adaptable, flexible urban spaces: resilient structures that are capable of change in the literal sense are needed. In order to meet the challenges to gain more adaptable, broadly resilient urban structures, we need to rethink functionalities in the city and its three-dimensional surface (vertical and horizontal surfaces). AdNEB acknowledges the necessity to investigate and elaborate how spatially and functionally flexible settlements and open space structures can contribute to improved resilience and thus to more environmentally sustainable urban development. With this approach, AdNEB will also demonstrate the extent to which the multifunctionality of grey and green infrastructure supports the goal of a more adaptable and flexible urban form.⁸ AdNEB consists of five work packages (WP):

WP 1 aims to further develop the NEB approach by combining it with the concept of triple inner development. The guiding principle of triple inner development has been developed by UBA and intends to make cities sustainable, climate resilient and (environmentally) equitable through multifunctionality. In doing so, the guiding principles of the New Leipzig Charter,⁹ a guiding document for the sustainable urban transformation adopted by the 27 European ministers responsible for urban development, have to be taken up and specified. These goals are based firstly on the planning and conversion of existing buildings, secondly on the planning and conversion of infrastructures, and thirdly on the densification and qualification of urban green spaces. In WP 1, resilient and multifunctional urban and open space structures will be explored, also against the background of the COVID-19 pandemic.

WP 2 focuses on current research questions in view of a climate-resilient, sustainable and health-promoting urban development. By evaluating data collected in the German Environmental Survey for Children and Adolescents 2014-2017 (GerES V), WP 2 provides quantitative, population-representative information on health-relevant living conditions and the residential environment of children and adolescents in Germany.¹⁰ As associations with the socioeconomic status and other sociodemographic parameters are also examined, conceptual contributions for a more sustainable mobility and resilient urban spaces will be developed with a special focus on environmental justice issues.

Compared to the Bauhaus of the 20th century, NEB is confronted with an enormously increased stock of urban spaces and structures. Dense settlement and overlapping infrastructures in German cities are increasingly prone to climate risks. In particular, heat

and heavy rainfall pose major challenges.¹¹ The ‘sponge city’ concept rethinks urban space with a focus on its ability to capture, hold back, and infiltrate precipitation water locally through the expansion and qualification of water bodies and green spaces. Besides mitigating flood risks and storm water pollution, green infrastructures of sponge cities can advance urban cooling, biodiversity restoration, as well as carbon capture, and they provide healthy public amenities.¹² WP 2 systematically explores the benefits of this concept for climate adaptation strategies. Different actor perspectives on climate change adaptation through the sponge city are analysed to foster synergies. Overall, potential pathways of a socio-technical transformation towards climate resilient sponge cities are carved out by specifying opportunities and barriers of this transformation.¹³

WP 3 will carry out a participatory, systematic testing of environmentally compatible forms of mobility. The European Commission is a strong advocate of a participatory approach in the New European Bauhaus, since it maintains that the participation of citizens plays a decisive role in the transformation process.¹⁴ Including the general public is crucial for the transformation of the mobility sector because changes in this area are strongly dependent on individual mobility behaviour choosing the most effective option.¹⁵ The redistribution of urban and street space is also often resisted by those affected by it, for example when parking facilities are reduced. Here, actions in the form of temporary interventions and living labs can help to explore the possibilities for changes on site. For the duration of a living lab, innovative transport solutions can be tried out. Living labs offer the opportunity to test new ideas with scientific support and thus to examine the effects of concrete change processes. Different ideas such as the (temporary) conversion of parking spaces and street spaces can be put into practice and offer citizens the opportunity to experience and evaluate concrete changes in their community. Thus, living labs can also help to involve civil society and to strengthen and investigate participation in change processes and thereby create context-specific system, target and transformation knowledge. The COVID-19 pandemic has led to a strong focus on the urban living environment and local mobility due to the increase of home offices and travel and contact restrictions, resulting in many different local temporary actions in the street space (e. g. play streets).

WP 4 focuses on construction: Construction in the existing building stock and energy renovations have

⁸ Hansen et al., 2018.

⁹ European Union, 2020.

¹⁰ Schulz et al., 2021.

¹¹ Kahlenborn et al., 2021.

¹² Chan et al., 2018; Wong & Brown, 2009.

¹³ Tozer et al., 2022.

¹⁴ European Commission, 2021b

¹⁵ Schlich & Axhausen, 2003.

been identified as key approaches to reducing the energy consumption of the building sector. The current renovation rate in Germany of 1%, of which only 10% account for ‘deep renovations’, is still far from what is necessary to reach its climate goals.¹⁶ Previous literature has found that intermediaries such as architects play a crucial but underestimated role in the proliferation of energy renovations.¹⁷ A further, under-studied factor that has been found to influence the decision to renovate is aesthetics.¹⁸ There has been an increasing call from experts for the development of ‘sustainable aesthetics’ to accompany the larger sustainability movement.¹⁹ Therefore, following the NEB’s call for projects that are “*beautiful, sustainable, and inclusive*”,²⁰ WP 4 will be investigating architects’ knowledge and perceptions of energy renovations and the possible barriers that hinder them from building within the existing building stock. We will also place a focus on the role of aesthetics, both as a motivator and possible detractor. Further, WP 4 will identify and highlight existing strategies, such as serial, prefabricated renovations²¹ and promote constructive dialogues between key stakeholders.

WP 5 serves to develop up-to-date contributions to the NEB initiative by bringing together scientific and political partners in Germany and Europe. A cross-thematic synthesis will document different objectives and thematic strands and formulate conclusions targeted to decision-makers.

3 Outlook

UBA’s AdNEB project was launched in March 2022 with support from the German Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV) and will run until September 2025. By comprising a multitude of activities such as workshops, webinars, publications and conferences, it will take up the idea of NEB and develop it further into other spaces conceptually, methodically and interdisciplinarily. AdNEB is relevant beyond Europe and the European Green Deal. The results of the project are also likely to contribute to reaching the Sustainable Development Goals (SDGs) of the 2030 Agenda for Sustainable Development of the United Nations. In particular, AdNEB will elucidate aspects of SDG 3 (Good health and well-being), SDG 9 (Industry, Innovation and Infrastructure), SDG 11 (Sustainable cities and communities), and SDG 13 (Climate action). More information on AdNEB can be found online at

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¹⁶ van der Schoor, 2022.

¹⁷ European Commission, 2019.

¹⁸ Sunikka-Blank & Galvin, 2016.

¹⁹ Hill, 2011.

²⁰ European Commission, 2021c.

²¹ see, e.g., Almeida et al., 2020.

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In many countries lawyers are working on aspects of environmental law, often as part of environmental initiatives and organisations or as legislators. However, they generally have limited contact with other lawyers abroad, in spite of the fact that such contact and communication is vital for the successful and effective implementation of environmental law.

Therefore, a group of lawyers from various countries decided to initiate the Environmental Law Network International (elni) in 1990 to promote international communication and cooperation worldwide. elni is a registered non-profit association under German Law.

elni coordinates a number of different activities in order to facilitate the communication and connections of those interested in environmental law around the world.

Coordinating Bureau

Three organisations currently share the organisational work of the network: Öko-Institut, Technische Hochschule Bingen (TH Bingen) and sofia, the Society for Institutional Analysis, located at the Darmstadt University of Applied Sciences. The person of contact is Prof. Dr. Roller at TH Bingen.

elni Review

The elni Review is an English language law review. It publishes articles on environmental law, focussing on European and international environmental law as well as recent developments in the EU Member States. elni encourages its members to submit articles to the elni Review (info@elni.org) in order to support and further the exchange and sharing of experiences with other members.

The first issue of the elni Review was published in 2001. It replaced the elni Newsletter, which was released in 1995 for the first time.

The elni Review is published by Öko-Institut, TH Bingen and sofia.

elni Conferences and Fora

elni conferences and fora are a core element of the network. They provide scientific input and the possibility for discussion on a relevant subject of environmental law and policy for international experts. The aim is to gather together scientists, policy makers and young researches, providing them with the opportunity to exchange views and information as well as to develop new perspectives.

The aim of the elni fora initiative is to bring together, on a convivial basis and in a seminar-sized group, environmental lawyers living or working in the Brussels area, who are interested in sharing and discussing views on specific topics related to environmental law and policies.

Publications series

elni publishes a series of books entitled "Publications of the Environmental Law Network International". Each volume contains papers by various authors on a particular theme in environmental law and in some cases is based on the proceedings of the annual conference.

elni Website: elni.org

The elni website www.elni.org contains news about the network. The members have the opportunity to submit information on interesting events and recent studies on environmental law issues. An index of articles provides an overview of the elni Review publications. Past issues are downloadable online free of charge.

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