SWISS NETWORK WITH UKRAINE

01/2025

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Version February 2025

Contents

Introduction

The Swiss Network with Ukraine is an association of academics and professionals in Switzerland who support the just reconstruction of Ukraine.

Vision

Through the deployment of our network and expertise, we are committed to supporting organisations and public entities engaged in sustainable and inclusive projects for the reconstruction of Ukraine. The needs of vulnerable people, including Internally Displaced Persons (IDPs) and veterans, are at the core of our activities. We work to strengthen civil society and quality of life in Ukraine during the war and post-war reconstruction.

Mission

The purpose of the Network is to support reconstruction in Ukraine in a broad sense, ranging from war-damaged and destroyed buildings, neighbourhoods, social and technical infrastructure, to natural and agricultural habitats. We integrate short-term relief with long-term development strategies in order to allow incremental re-development. The Network actively pursues creating real impact in Ukraine.

Activities

The Network's activities revolve around three pillars: expert-based project consulting and implementation; research and education; and the cultural activities of displaced communities. We take part in emergency actions and reconstruction projects, and engage in research and education related to these purposes. The Network offers fundraising and coordination support, as well as a platform to initiate new projects.

Based on a collaborative approach, our Network provides an open forum for both informal and formal, specialised exchanges between different actors directly or indirectly involved in the reconstruction of Ukraine. We promote open cooperation between our members, clusters and other initiatives, both Ukrainian and international.

The Network's activities are organised into eleven thematic clusters:

I. **IBA (Internationale Bauaustellung) in Ukraine**
An initiative to implement benchmark architecture and urban planning projects in Ukrainian cities. Currently, the City of Lviv is the first to start an IBA project.

II. **Spatial Planning**
Supports Ukrainian cities with spatial planning and process support.

III. **Housing**
Providing high quality and low-cost modular housing for emergency and (semi-) permanent use.

IV. **Circular (Re)Construction**
Providing building materials and equipment to refurbish damaged and abandoned buildings.

V. **Capacity Building**
Supporting Ukrainians at home and abroad by providing educational courses as well as sharing and exchanging expertise.

VI. **Mapping and Data**
Developing and utilizing a digital platform providing geo-referenced data related to the war in Ukraine.

VII. **Community and Culture**
Organising Ukrainian cultural events in Switzerland.

VIII. **Science and Education**

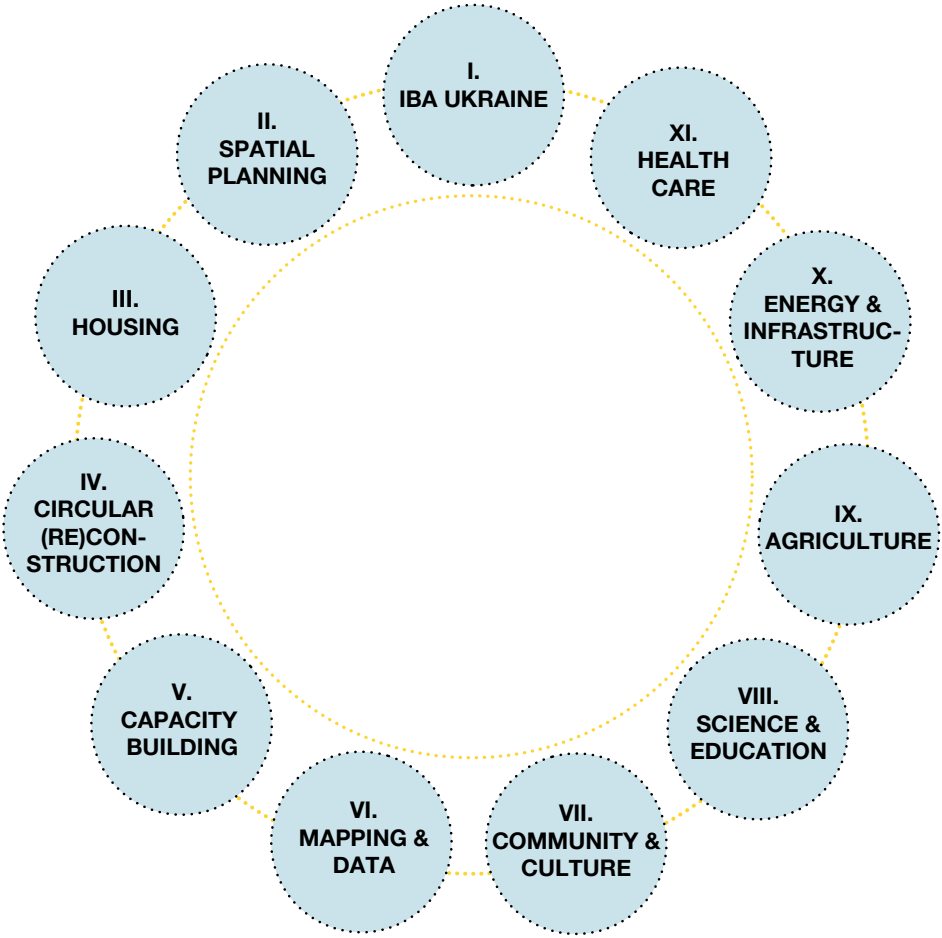
IX. **Agriculture**
Conducting research on the impact of war on agriculture and food security, and developing models for repair and resiliency.

X. **Energy and Infrastructure**
Conducting research on the impact of war on Ukrainian energy and infrastructure networks and developing solutions.

XI. **Health Care**

The Network is politically independent, does not pursue commercial purposes, and is non-profit.

Organigram


I.
IBA UKRAINE
II.
SPATIAL
PLANNING
III.
HOUSING
IV.
CIRCULAR
(RE)CON-
STRUCTION
V.
CAPACITY
BUILDING
VI.
MAPPING &
DATA
VII.
COMMUNITY &
CULTURE
VIII.
SCIENCE &
EDUCATION
IX.
AGRICULTURE
X.
ENERGY &
INFRASTRUC-
TURE
XI.
HEALTH
CARE

Join us!

Membership
Support our work for a just and sustainable reconstruction in Ukraine by becoming a member (forms.gle/pnq2kk82cqmmJ6DC9) or by making a donation.

Donations
via bank transfer:
CH54 0070 0114 9024 5423 2
Swiss Network with Ukraine
8006 Zurich

via Twint:

Contact
If you would like to support the network in a different way, don't hesitate to contact us at:
info@swissnetworkwithukraine.org

Partners

We are proud to count the following organisations as partners in our ongoing projects:

ETH zürich

Stadt Zürich
Stadtentwicklung

Kanton Zürich
Baudirektion
Hochbauamt

sia
schweizerischer ingenieur- und architektenverein
société suisse des ingénieurs et des architectes
società svizzera degli ingegneri e degli architetti
swiss society of engineers and architects

HELVETAS
Swiss Intercooperation

I. IBA Ukraine

The idea for IBA in Ukraine emerged at the Conference on Architecture and Building Culture Policies (ECAP 2022) in Prague. During the panel "Post-war Renewal of Ukrainian Cities?," Ukrainian and other European architects and urban planners discussed experiences of reconstruction in Kyiv, Pristina, Sarajevo, Tblisi, Rotterdam, and Berlin. This discussion resulted in the "Prague Charter," a list of ten policy recommendations for the post-war urban renewal of Ukraine. Among the list of recommendations was the suggestion to organise an International Building Exhibition, or Internationale Bauaustellung (IBA), in Ukraine. This recommendation was further elaborated in the "IBA Ukraine Concept Framework, May 2023".

What is IBA?

The International Building Exhibition (IBA) is a special German format of innovative urban development and architecture. An IBA is guided by a theme, such as reconstruction, transformation, or housing. Events such as exhibitions, conferences, publications, and other media coverage are vital components of an IBA.

IBA as a practice has moved beyond Germany with IBA Vienna, IBA Basel and IBA Melbourne. Currently, several IBAs are in preparation:

- 2017-2027 IBA City Region Stuttgart, on living, housing, and working.
- 2017-2050 IBA Melbourne, on affordable housing models for the state of Victoria.
- IBA 2034 Berlin-Brandenburg, on the metropolitan region around Berlin.
- IBA Munich Metropolitan Region, on sustainable mobility.
- IBA Impulse Region Leipzig, on climate change, energy, waste, circularity and social change.

Why IBA in Ukraine?

Russia's war against Ukraine has devastated large regions of the country and caused enormous damage to the (built) environment. Apart from countless human casualties, buildings, city districts, technical and social infrastructure, natural habitats, and agricultural lands have been damaged and destroyed. The war has disrupted Ukraine's social, economic and cultural life, causing many refugees to migrate domestically and internationally in pursuit of shelter, safety, and support.

In the meantime, large amounts of aid have been mobilized, including emergency housing and reconstruction projects. (Re-) development in Ukraine faces great challenges in terms of time, scale, financing, management and legislation. Ukraine's needs range from immediate emergency facilities to long-term sustainable rebuilding. We believe that reconstruction should never wait until a war is over but should immediately begin, creating a countermovement against destruction.

IBA Ukraine and Building Back Better

IBA Ukraine focuses on "Building Back Better". This approach, coined by the global donor community, promotes the recovery of infrastructure, built environments, and communities to not only restore what was lost but also address underlying vulnerabilities and strengthen resilience. "Building Back Better" means engaging affected communities, incorporating best practices and innovative technologies, and ensuring that recovery efforts are aligned with long-term development goals. IBA Ukraine's projects and goals address and engage in reconstruction, the reform of spatial planning systems, and the development of local capacities.

IBA objectives

The main objectives of IBA Ukraine include:

- model examples of post-conflict reconstruction, including repairing damaged buildings and infrastructure, and restoring community services.
- sustainable urban development and resilient urban planning to help mitigate the impacts of climate change and resource depletion.
- community-led regeneration, involving local stakeholders in urban development processes.
- education and capacity-building to enhance the skills of those involved.
- innovation in planning, design, and construction through the use of cutting-edge technologies, encouraging the use of digital tools, as well as data-driven and circular approaches.
- local economic development through job creation, entrepreneurship and investment.
- cultural heritage, preserving historic buildings, cultural sites, and traditional building techniques.
- international collaboration

and exchange, forging partnerships with international organizations, and hosting international events.

- adoption of EU standards in urban planning and construction, contributing to the sector's transparency and values.

Project types

Planned project types for IBA Ukraine include:

- local reconstruction plans and master plans
- reconstruction plans for critical infrastructure
- design and construction of housing for IDPs and other types of affordable housing
- repair of existing and damaged housing and other building stock
- design and (re)construction of medical, social & educational facilities
- capacity building and knowledge exchange: policy, legislation process and stakeholder management
- programming and management of architecture and urban design education

Implementation steps

IBA in Ukraine starts as a decentralized "swarm of projects", during which cities or regions develop their own IBA projects. As more projects emerge, coordination and cohesion in the form of events and media coverage will consolidate. This grassroots-IBA, which begins in one or two places, will slowly grow as more participants join. In the end, a few exemplary projects might be realized or a larger number of projects across a larger territory. The following projects have thus far been initiated under the umbrella of IBA Ukraine:

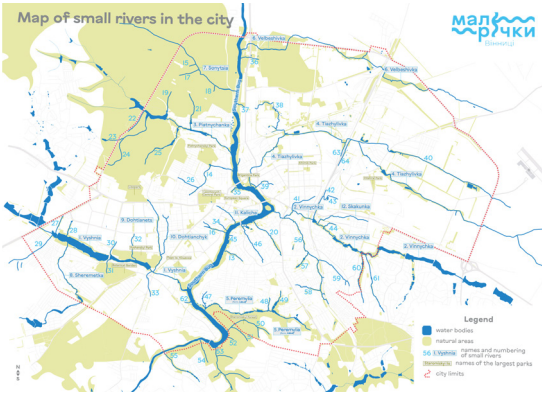
The City of Lviv is deploying IBA in Ukraine as a tool for innovative and integrated development in the Zboishcha district, one of the key development areas in the city. This area includes the campus of the Charitable Foundation Unbroken, which was established shortly after the start of the full-scale invasion to provide medical assistance and rehabilitation for war-afflicted people. In collaboration with the municipality and both local and international partners, Unbroken has developed a medical and rehabilitation infrastructure centred around the Lviv city hospital. The City of Lviv may use alternative planning tools to integrate development and consolidate projects

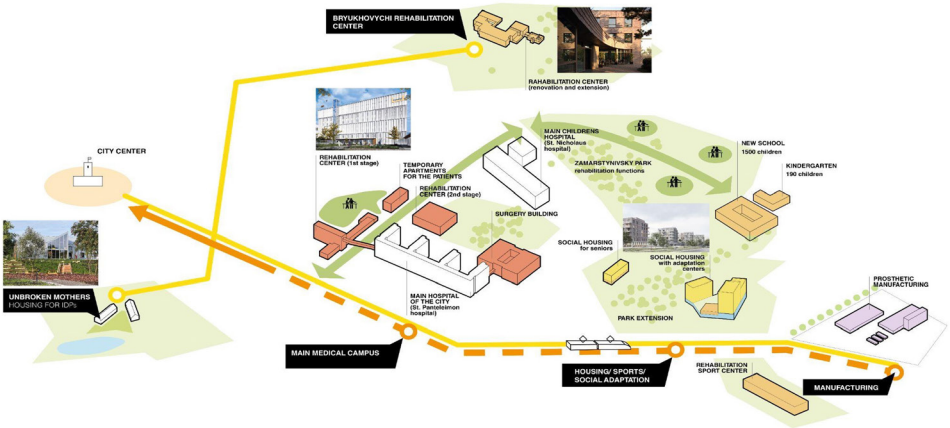
in Zboishcha. The City and Kanton of Zurich is working with the City of Lviv to develop and utilize the Swiss practice of test-planning in the district, as a way of better evaluating various development scenarios.

A second IBA project in Lviv centres around a vacant building near the old town of the city. This building will be refurbished by CO-HATY, an NGO that has refurbished several vacant buildings into housing for internally displaced persons (IDPs) in the West of Ukraine (see: Circular (Re)Construction cluster). This vacant building in Lviv was the subject of a week-long seminar at ETH Zurich and ensuing exhibit, titled "Bridging Borders with Reuse", held in October 2024.

The City of Vinnytsia is considering three potential IBA-projects: the revitalization of the city's Mistechko district, a tram- and public-space upgrade of Yuriya Klenya street, and the green-blue network "Small Rivers" project. The Digital Modular Multi Family House (DMMFH) (see: Housing cluster), may also be part of IBA in Lviv and/or Vinnytsia.

Several pairs of Ukrainian and German twin cities are also considering joint IBA projects. IBA Berlin, organised by the City of Berlin, may include a side-project in Ukraine. IBA Munich Metropolitan Region, organised by the City of Munich, is also hoping to develop an initiative in Ukraine. Talks are also ongoing between the cities of Hamburg, Leipzig, and Kyiv; Bremen and Odesa; Kiel and Kherson; Potsdam and Ivano-Frankivsk; as well as several other partnerships.





Cluster Members and Contacts

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II. Spatial Planning

The Spatial Planning cluster supports local and regional governments in Ukraine by introducing innovative and collaborative planning methods tailored to tackle the combined challenges of prolonged planning reforms and war. Drawing insights from the Swiss culture of "test planning", known for effectively addressing complex spatial challenges beyond the scope of general plans, the cluster endeavours to introduce the test planning method more broadly in Ukraine. The cluster's members voluntarily offer their expertise to help set up and guide pilot test planning procedures in Ukraine.

Why test planning?

Ukrainian spatial planning faces a complex array of challenges that result from prolonged planning reforms and the effects of the ongoing war. These challenges exhibit a dual character in regard to time, scale, and structures of management. Planners in Ukraine must deal with tensions between the urgent needs of frequent emergencies and visions of long-term, sustainable post-war renewal; the coexistence of micro-projects and meta-narratives; and the simultaneous effects of martial law's centralising forces and society's informal, situational practices. Effectively addressing these tensions requires flexible, adaptable and people-centred planning methods.

Test planning is a collaborative planning process streamlined to identify, understand and tackle significant spatial conflicts, challenges, and opportunities by engaging with various forms of agency. Its format invites all stakeholders (planning professionals, political decision-makers, investors, interest groups, and locals) to participate. It is a legally non-binding planning instrument that can effectively operate in dynamic contexts and uncertain situations. Testing and evaluating different strategies in the participative interplay of design and dialogue not only generates innovative ideas, but may also secure political consent. This, in turn, grants the planning process political legitimacy and makes its goals more feasible.

Key features of test planning

- Test planning is a discursive format aligned to work with uncertainty.
- Test planning works in dynamic contexts.
- Test planning connects informal practices with centralised planning.
- Test planning is a method

for tackling wicked problems and complexity.

- Test planning connects normative visions with models of realization.
- Test planning connects master planning to infrastructure projects.
- Test planning bridges the divide between concrete projects and more abstract planning and governance.

Techniques of test planning

An informal planning instrument with a supra-organizational structure

Test planning is characterized by an informal, supra-organizational structure (see organigram on the left). This, however, does not mean that the legally-binding formal planning system is suspended at any time during the process, or that the test planning would try to bypass it. However, members of the supra-organizational structure can act independently of the formal planning system for the duration of the project.

Testing several plans rather than declaring single winners

The goal of test planning is to identify and test multiple courses of action and their possible consequences. Therefore, the practice requires several plans to be tested with the participation of multiple planning teams. To enable the testing of plans and in order to identify potential problems, each planning team receives the same compensation for their work. No winner is announced. This approach ensures that the teams' work also reveals risks, potential failures, and new problems—outcomes as important as successful ideas. A dialogue emerges between the competing ideas. Findings from the process are debated and negotiated by all stakeholders. Finally, the process concludes with a set of recommendations that reflect the views of all stakeholders.

Three design cycles, mid-reviews, and participation

To address the complexity of the task and discuss potential actions with stakeholders, test planning is organized into three design cycles. During mid-review presentations, the status of the work is discussed, and new findings are recorded. The design teams and stakeholders gain new insights for the next cycle. It is crucial that all relevant topics are discussed in meetings between teams and stakeholders, as well as amongst the stakeholders themselves. This ensures that

everyone can respond effectively to emerging issues.

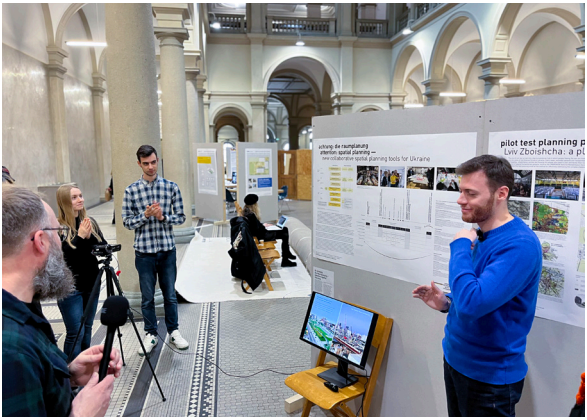
Work in Progress

The test planning method was introduced and presented at the exhibition "ETH with Ukraine – Exchanging Knowledge for a Sustainable and Resilient Future," which was held at ETH Zurich between January 24th and February 5th, 2024. Drawing experience from a test planning project in the city of Vinnytsia in 2018, the Cluster is currently setting up pilot projects in Lviv and Vinnytsia.

From October 26-29, a four-day workshop was held with the participation of planning experts from Lviv and Zurich, as well as members of the cluster. This workshop marked the beginning of preparations for test planning in Zboishcha, a territory on the northern fringe of Lviv. The goal of this test planning project is to address the city's long term planning challenges while responding to emergent wartime needs, from providing medical care and rehabilitation to integrating displaced communities.

In recent years, St. Panteleimon Hospital and St. Nicholas Children's Hospital have become central to the development of Zboishcha. In particular, with the outbreak of the full-scale invasion the hospital became the core of the UNBROKEN ecosystem, whose mission is to help rehabilitate those affected by Russian aggression. It aims to provide not only medical care, but also comprehensive solutions for the rehabilitation, integration and housing of war-affected people. This was the impetus for the development of a number of other projects within the UNBROKEN ecosystem.

Through the application of test planning, Lviv's City Council also strives to develop a collaborative local planning culture, bringing together diverse stakeholders and raising awareness about key issues in local development. In addition, the annual "Lviv Urban Forum" serves as a platform for sharing planning knowhow with other Ukrainian municipalities and the Ukrainian planning and design community.



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III. Housing

The Housing cluster brings together architects, urban planners, engineers, researchers, and builders to address Ukraine's housing crisis. Leveraging Switzerland's expertise in sustainable construction, advanced digital fabrication, and community-focused planning, and collaborating with innovative Ukrainian practitioners, the cluster balances Ukraine's immediate needs with its long-term urban regeneration.

Housing as a Cornerstone of Recovery

Housing is a fundamental human right and essential to societal resilience and economic stability. With over 2 million homes destroyed, Ukraine faces unprecedented demand for scalable, sustainable housing. The Housing cluster focuses on four key areas:

- Emergency Housing Solutions: Rapidly deployable, cost-efficient modular housing prioritizes speed without compromising livability, providing critical support to displaced families.
- Modular and Adaptive Housing Systems: Modular wooden systems offer scalability and adaptability for diverse needs, from single-family units to community housing. These designs integrate cultural and environmental considerations to create cohesive neighborhoods.
- Renovation of Vacant Buildings (see: Circular (Re)Construction cluster): Incorporating circular construction principles, the cluster transforms vacant buildings into functional housing, addressing immediate needs sustainably.
- Knowledge Sharing and Capacity Building (see: Capacity Building cluster): Empowering Ukrainian workers and architects through training and open-source tools, the cluster builds local capacity for self-sufficient housing production.

Achievements

Emergency Housing Production

The Swiss charitable foundation "Verein Ukraine Hilfe", led by Martin Huber, has successfully delivered over 120 modular wooden housing units across Ukraine, with more than 80 additional units under construction. These homes are produced locally by Divario Ukraine GmbH in Vinnytsia Oblast, using materials and techniques optimized for rapid deployment and durability.

These units include single-family homes and multi-story modular buildings, with configurations ranging from 19m² emergency shelters to 35m² residences. This diversity in housing types exemplifies the cluster's adaptability to different community needs and site conditions.

Collaborative Training and Local Empowerment (see: Capacity Building cluster)

A cornerstone of the housing cluster's success is its commitment to training Ukrainian workers and architects. Training programs in Switzerland and Ukraine equip local workers and architects with skills to produce and assemble modular units. The Swiss CAS course Rebuild Ukraine at Bern University of Applied Sciences strengthens knowledge sharing, fostering collaboration between Swiss and Ukrainian professionals. This approach not only enhances local economic resilience but also lays the groundwork for a sustainable, self-sufficient housing industry in Ukraine.

Work in Progress

Urban Integration and Community Prototypes (see: IBA Ukraine cluster)

Pilot projects in the cities of Vinnytsia and Lviv aim to create prototypes of 20–60 modular units integrated into broader urban frameworks. These initiatives showcase modular housing's potential to form cohesive neighborhoods with public spaces, green areas, and essential infrastructure.

Development of Digital Tools and Open-Source Solutions

Advanced digital tools like parametric scripts and CNC-based fabrication methods enable scalable and efficient housing production tailored to diverse urban layouts. Open-source tools ensure accessibility and adaptability.

Future Plans: Scaling Up and Diversifying Impact

Expansion of Production Capacity

Expanding manufacturing facilities in Ukraine will enhance production and reduce costs, efficiently meeting the growing housing demand.

Enhancing Urban Typologies

New projects will explore urban configurations such as block, ring, and meander layouts, which help to create inclusive, pedestrian-friendly neighbourhoods with green spaces.

Diversification of Modular Application

Modular systems are being adapted for schools, healthcare facilities, and community centers, broadening their impact beyond private housing.

Long-Term Vision for Urban Renewal

The cluster envisions modular construction as central to post-war urban renewal. Collaborating with Ukrainian authorities and communities, the cluster will focus on enhancing transport networks, renewable energy integration, and green infrastructure.

Digital Modular Multi-Family Housing (DMMFH) project

The Digital Modular Multi-Family Housing (DMMFH) project, led by Professors Fabio Gramazio and Matthias Kohler of ETH Zurich in collaboration with Martin Huber of Divario Ukraine GmbH, addresses Ukraine's housing crisis through sustainable and innovative solutions. Leveraging digital timber planning and fabrication methods, the project develops modular housing systems that are adaptable, cost-effective, and environmentally friendly. This project is currently supported by Swiss companies HHM (Hefti Hess Martignoni), Lanz Oensingen AG, Burckhardt Architektur AG, and Halter AG.

The project focuses on creating high-quality housing while reducing the Ukrainian construction sector's reliance on cast-in-situ concrete, which contributes significantly to global carbon emissions. By using timber—a renewable, low-carbon material—the project promotes sustainability and helps address the widespread destruction of 88.9 million square meters of housing during Russia's war against Ukraine, the largest loss of housing stock in Europe since World War II.

Advanced parametric design tools enable flexibility and customization, while Augmented Reality (AR) technologies guide workers during on-site assembly, addressing skill shortages and making timber construction accessible. These innovations decouple complexity from cost, allowing smaller industry players to compete effectively while fostering the growth of Ukraine's timber industry.

Demonstration projects will validate the research, showcasing how modular timber housing can meet urgent needs and foster a sustainable construction culture. The DMMFH project envisions a resilient future for Ukraine's housing sector, promoting environmental, economic, and social well-being through innovative prac-

tices and localized empowerment. It stands as a blueprint for sustainable post-conflict reconstruction.

Collaboration and International Solidarity

The cluster's work in modular housing is a collaboration between Huber Fenster AG and Uffer AG, the City and Canton of Zurich, and academic institutions such as ETH Zurich. Ukrainian partners, including city planners, administrators, and manufacturers, ensure solutions meet local needs.

Conclusion

The Housing Cluster equips emergency housing solutions with the comfort of permanent housing, and the strength of long-term urban planning. The cluster's work therefore leverages Swiss expertise to empower Ukrainian stakeholders. By integrating modular housing into broader urban strategies, the cluster is shaping resilient, sustainable communities and demonstrating the transformative potential of collaboration in addressing urgent housing challenges.

Members and Contact

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Industry Partners: ***Martin Huber, Divario GmbH Ukraine; HHM Gruppe; Lanz Oensingen AG; Burckhardt Architektur AG; Halter AG***

Academic Institutions: ETH Zurich: ***Chair of Architecture and Digital Fabrication****, led by Professors Fabio Gramazio and Matthias Kohler*

Non-Profit Organizations: ***Verein Ukraine Hilfe***

IV. Circular (Re)Construction

The Circular (Re)Construction cluster focuses on sustainable rebuilding efforts in Ukraine, combining innovative approaches to reconstruction with the principles of circularity—minimizing waste, maximizing resource efficiency, and promoting local community involvement. In the wake of war and displacement, the cluster aims to address urgent housing and infrastructure needs while fostering long-term environmental and social resilience. Central to this effort are two key initiatives: the NGO "RE-WIN" in Switzerland and the Charitable Foundation "CO-HATY" in Ukraine.

RE-WIN: Circular Solutions for Ukrainian Reconstruction

Mission and Activities

RE-WIN, a Basel-based NGO established in 2022, is committed to advancing circular construction practices and addressing humanitarian needs in Ukraine. Its primary initiative, "Windows for Ukraine," reclaims used windows from Swiss construction sites, shipping them to Ukraine for distribution by local partner NGOs. These windows enable communities to rebuild homes, providing immediate relief and fostering sustainable practices.

Achievements by 2024

Despite operating with a volunteer-driven model and limited personnel in Ukraine, RE-WIN has made significant contributions:

6,292 windows delivered, offering essential building materials for reconstruction.

3,150 homes restored, ensuring warmth and safety for displaced families.

884 tons of CO2 emissions avoided, highlighting the environmental benefits of reuse.

2.5 million CHF saved, reducing reconstruction costs for Ukrainian communities.

Beyond material aid, RE-WIN has raised awareness about circular reconstruction through exhibitions, workshops, and cultural exchanges with, among others, Ukrainian refugees, thus strengthening ties between Switzerland and Ukraine. These efforts have brought the organization closer to its goals of integrating reuse into regional crisis recovery strategies, fostering a culture of resource care, and promoting the preservation of natural resources.

Future Goals

In the coming year, RE-WIN aims to expand its focus to include additional reusable materials, establish circular material supply chains and build up capacity for circular de/reconstruction, while continuing to support Ukraine's recovery through:

Establishing reuse as a core component of reconstruction.

Promoting closed material cycles to reduce waste.

Advocating for sustainable practices in rebuilding efforts.

CO-HATY: Housing Solutions for Displaced Ukrainians

Mission and Context

CO-HATY, a social and affordable housing initiative by METALAB and Urban Curators, provides housing solutions for internally displaced persons (IDPs) in western Ukraine. By repurposing abandoned buildings rather than constructing new ones, CO-HATY ensures that reconstruction efforts are both sustainable and socially inclusive. The project not only provides shelter but also restores dignity and quality of life to those who have lost their homes due to war.

Approach and Impact

CO-HATY employs a circular approach to housing:

- Resource Efficiency: Furnishing homes with second-hand furniture, kitchen items, and other essentials donated by charities.
- Local Sourcing: Procuring materials locally to reduce carbon footprints and support the wartime economy.
- In-House Production: Utilizing METALAB's Makerspace "Pole" in Ivano-Frankivsk and local suppliers to produce or repair furniture and construction elements.

By repurposing materials and minimizing waste, CO-HATY saves nearly 50% of embodied energy compared to traditional construction methods. These efforts not only benefit the environment but also contribute to the economic recovery of local communities.

Achievements by 2024

The CO-HATY team has successfully completed seven dormitory-style projects, providing approximately 1,500 living spaces in the Ivano-Frankivsk and Khmelnytskyi regions. Currently, the team is working on two municipal social housing buildings with 40

apartments in the Khmelnytska and Vinnytska regions, as well as a groundbreaking project in the Ivano-Frankivsk region that will become the first affordable housing development with 50 apartments.

Planned Activities

Looking ahead, CO-HATY will focus on:

Fundraising: Securing resources to sustain operations and expand impact.

Educational Outreach: Engaging students and professionals in the development of innovative reuse solutions.

Research and Development: Conducting studies on Circular Construction, CO2 emissions and exploring new methods for material reuse.

Community Engagement: Strengthening ties between volunteers, residents, and local stakeholders through events and workshops.

Building a Sustainable Future for Ukraine

The Circular (Re)Construction cluster exemplifies the transformative potential of sustainable rebuilding. RE-WIN and CO-HATY demonstrate how circularity can address immediate needs while laying the foundation for long-term recovery and resilience in Ukraine. Together, these initiatives:

Highlight the importance of material reuse in reducing environmental impacts and reconstruction costs.

Support the integration of displaced individuals into communities, fostering social and economic recovery.

Promote collaboration between local and international partners to scale up sustainable rebuilding efforts.

By advancing these goals, the cluster not only contributes to Ukraine's recovery but also sets a global example of how circular reconstruction can bridge borders with care for people and the planet.




Members and Contact

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V. Capacity Building

CAS Rebuild Ukraine by Bern University of Applied Sciences BFH

The Certificate of Advanced Studies (CAS) Rebuild Ukraine was launched at the Bern University of Applied Sciences with the support of the Swiss State Secretariat for Economic Affairs (SECO) and in collaboration with other Swiss universities and involving Swiss leading businesses. It is a practically oriented advanced training program tailored for Ukrainian refugees, as well as Ukrainians who have been residing in Switzerland before the war, as well as for individuals affiliated with aid organizations that are eager to participate actively in the reconstruction of Ukraine.

Involving 25+ partners from diverse sectors, including business, science, research, and the public, the CAS Rebuild Ukraine program has accumulated comprehensive expertise, providing a robust curriculum that addresses the multifaceted challenges of post-war reconstruction. Among others, participants learn about sustainable approaches to reconstruction, the principles of circular construction, and energy efficiency in the reconstruction of Ukraine. They explore methods, tools, and software for assessing damages to houses and infrastructure, approaches for reusing war debris, and best practices in construction and architecture, with a focus on concepts like smart villages and smart cities.

CAS aims to prepare 'leaders of change' for post-war Ukraine, focusing on 'building back better' principles endorsed during the Lugano Recovery Conference (2022) and ensuring that participants acquire knowledge on sustainable and resilient reconstruction practices.

The unique approach of the CAS envisions participants co-designing real rebuilding projects for Ukraine with the support of Swiss private sector and universities and in collaboration with Ukrainian stakeholders. Participants of the CAS Rebuild Ukraine have already developed 17 projects focusing on housing, energy, water, and civil protection. These include decentralized recycling of war debris for circular reconstruction, energy efficiency and energy resilience in public buildings such as hospitals, decentralized energy solutions for clean water supply and wastewater treatment, multi-functional civil protection spaces and bomb shelters, and social and afforda-

ble wooden modular housing for internally displaced people (IDPs). Additionally, CAS is focusing on projects related to post-war nature restoration, including soil remediation in agricultural fields and the sustainable use of natural resources, such as forests and timber.

The program attracts highly educated professionals, leading to building a strong network of Ukrainians to support recovery of Ukraine. In October 2024, already the third cohort of CAS Rebuild Ukraine started their studies at BFH, bringing together professionals and experts from Switzerland and Ukraine to collaboratively develop innovative solutions for Ukraine's sustainable reconstruction and recovery.

A second phase (2024-2026) of the CAS Rebuild Ukraine is ongoing within Upscaling Ukraine's Capacity to Rebuild (Scale-Up) Project led by BFH and supported by the Swiss State Secretariat for Economic Affairs (SECO). It targets Ukrainians abroad and in the country by offering a possibility to learn on how to build «back better» by sharing best Swiss know-how and innovations via dedicated training courses involving the private sector in Switzerland and Ukraine.

CAS Rebuild Ukraine has evolved into a platform where Swiss and Ukrainian stakeholders come together to co-design real projects for post-war reconstruction.

For more information and collaboration opportunities, please visit: www.bfh.ch/de/weiterbildung/cas/wiederaufbau-ukraine/.

Members and Contact

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VI. Mapping & Data

The Mapping and Data cluster is organised around Mapping Ukraine (MU), a project founded at the Chair of Geomatic Engineering at ETH Zurich that uses digital and spatial technologies to document mappable data relating to the destruction and repair of Ukrainian natural and built environments. Through MU's mapping platform, the cluster also documents the SNU's activities and gathers the digital information necessary to support SNU projects wherever needed.

MU is developing a comprehensive digital platform that provides and will provide verified information on Ukraine's spatial context both during and after the war. By also integrating historic, pre-war data wherever possible, MU provides a multidimensional perspective on Ukraine's experience over time.

The MU platform is designed to assess damages, support sustainable reconstruction, facilitate scientific analysis, and investigate violations of international law.

In an era in which misinformation is rampant, MU will stand as a reliable resource for researchers, journalists, prosecutors, bloggers, and the public. By bridging the gap between data acquisition and practical use, MU will ensure that critical information is accessible, trustworthy, and actionable for all stakeholders involved in Ukraine's recovery and development.

Background

Recent advancements in 3D-reality-capture and environmental recording technologies have revolutionised the way we assess and document change in natural and built environments. These new technologies enable researchers and others to precisely and objectively evaluate war-related changes, providing accurate and actionable data.

Since the beginning of Russia's full-scale invasion of Ukraine, numerous initiatives have leveraged these technologies to document and visualise the war's effects. International organisations have produced extensive multimedia visualisations of alleged war crimes, private individuals have created 3D models of destroyed buildings, and local groups have worked on digitising cultural heritage sites. These valuable efforts, however, often operate in isolation, unaware of each other's work. This fragmentation leads to duplicated efforts and gaps in data coverage, hindering the overall effectiveness of documentation and reconstruction efforts.

Mapping Ukraine has successfully established the scientific and organisational foundations of its digital platform. Key achievements include:

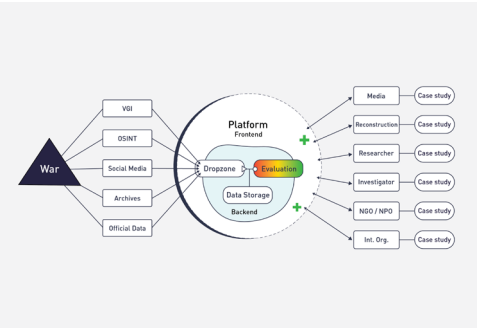
- Alpha Platform Launch: Introduced the alpha version of MU, showcasing functionalities for documenting property loss, facilitating resource-efficient reconstruction, and supporting restitution cases.
- Pilot Use Cases: Testing the platform in targeted geographical areas and thematic contexts, providing valuable insights into its versatility and practical applications.
- Collaborative Network Building: Engaging a diverse group of professionals and organisations as collaborators and advisors, including experts in geospatial technology, urban planning, legal analysis, and data science. These contributions are instrumental in refining and enhancing the platform.

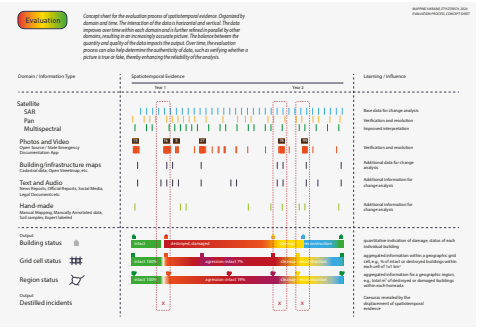
The abovementioned accomplishments have laid a solid groundwork for MU, demonstrating the platform's potential as an essential tool for stakeholders involved in Ukraine's recovery and development.

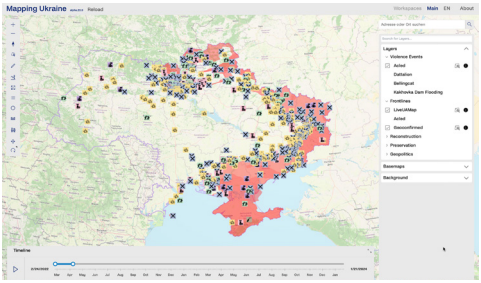
Future Plans

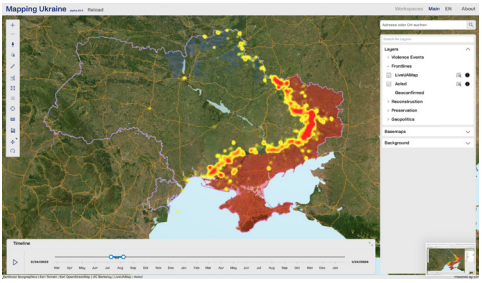
The next phase of MU aims to improve the platform's functionality and expand its reach by integrating advanced technologies. This involves enhancing how data is aligned and mapped to ensure accuracy, developing tools to automatically detect and describe changes in the environment, and creating systems to assess data quality and generate detailed reports. These improvements will allow MU to manage larger amounts of data, increase accuracy, and provide more information to its users.

MU is establishing strategic partnerships and utilising the expertise of its current network. The platform is growing organically through various projects. MU is collaborating with local authorities in the cities of Severodonetsk and Rubizhne to document and verify damage to the built environment, thus supporting Ukrainian municipalities in developing master plans for sustainable and efficient rebuilding. MU plans to build a comprehensive database recording evidence of attacks on Ukraine's civilian population, supporting legal and humanitarian efforts.









Members and Contact

www.mappingukraine.org, info@mappingukraine.org; ***Jonathan Banz,*** *Project Coordinator, Mapping Ukraine;* ***Pia Bereuter,*** *Lecturer for Geoinformation Sciences, University of Applied Sciences Northwestern Switzerland;* ***Jens Ingensand,*** *Head of the Geomatics Competence Group, University of Applied Sciences and Arts Western Switzerland;* ***Jürg Lüthy,*** *Director of Geomatics + Surveying, City of Zurich;* ***Basil Roth,*** *Project Coordinator, Mapping Ukraine;* ***Robert Weibel,*** *Professor, Geographic Information Systems University of Zürich;* ***Andreas Wieser,*** *Professor, Geosensors and Engineering Geodesy ETH Zürich*

VII. Community & Culture

2402forum

The 2402forum consists of four activists who engage in cultural and political resistance through art. Despite the inherent difficulty in discussing war and destruction, the collective keeps this dialogue alive through film screenings and discussions. The group's collaborative efforts involve not only the four activists but also supporting institutions, event venues, and all those who attend and support their events. In 2022, 2402forum received financial backing from the City of Zurich, enabling the organization to hold 19 film screenings in various locations across the city.

2402forum's events follow a consistent structure: each film screening begins with a critical introduction by a researcher, artist, or film team member. This introduction equips the audience with the knowledge and tools to better understand the film. During post-screening discussions, attendees share their impressions. Over time, the collective has successfully cultivated a warm and secure atmosphere during their screenings, in which people feel comfortable expressing their thoughts.

Additionally, for each film screening, the collective extends invitations to artists to document the evening in an artistic manner, adding an extra layer of creativity and depth to their initiatives.

2402forum's perspective on war extends beyond its military dimensions to encompass economic, informational, cultural, political, and ideological aspects. The collective firmly believes that the creation and contemplation of art serves as a powerful tool for discussing and understanding war. In essence, their aim is to create a platform that offers diverse experiences, encouraging open dialogue about the complexities of war.

Members and Contact

Website: www.2402forum.org, 2402forum@gmail.com, www.instagram.com/2402forum; ***Anna Bertram, Lilit Hakopyan, Sasha Lebid***

Ukrainian Association of Students and Academics in Zurich (UASAZ)

Zurich is home to many respected scientific and educational institutions. Ukrainians have been part of these institutions for ages, however, until October 2022, the Ukrainian academic community never had their own initiative. After the beginning of the full-scale war, even

more Ukrainians joined Swiss institutions and universities. These hard times highlighted the need to unite the Ukrainian academic community in Switzerland and represent Ukraine via various initiatives.

The Ukrainian Association of Students and Academics in Zurich (UASAZ) was established to facilitate the development of the Ukrainian academic community and promote Ukrainian culture in Switzerland. This community of like-minded people interested in Ukraine organizes educational, cultural, networking, and charity events. The Association actively promotes Ukrainian culture through photo exhibitions, film screenings, literature evenings, and musical workshops. UASAZ also hosts dialogues about Ukraine's role in world security. Finally, the Association organizes lectures and panel discussions dedicated to the consequences of the war in Ukraine and possible avenues of recovery.

UASAZ represents the Ukrainian student and academic community, amplifies their voices, and fosters connections within Ukrainians and with other parties. The Association utilizes various information channels to disseminate crucial information within the community and reach out to wider audiences with first-hand information about and related to Ukraine.

UASAZ is supported by contributions from members and sponsors, as well as by VSETH (Verband der Studierenden an der ETH) and ImpulsFabrik (part of the Association of Students of the University of Zurich VSUZH). Everyone can join UASAZ as a member or sponsor – more information is available at: https://uasaz.org/#membership

Members and Contact

www.uasaz.org, www.facebook.com/uasaz.ch; contact@uasaz.org; ***Oleh Kuzyk,*** *President, presidency@uasaz.org;* ***Mariia Svyrydenko,*** *Treasurer, presidency@uasaz.org;* ***Maryna Mazur,*** *Secretary, presidency@uasaz.org; Dr.* ***Anastasiia Shynkarenko,*** *Public Relations & Charity Manager, pr@uasaz.org; Dr.* ***Viktor Kovalov,*** *IT & Events Manager, it@uasaz.org;* ***Oleksandra Ortikova,*** *Design & Communications Manager, pr@uasaz.org;* ***Yuliia Berezovska,*** *Events Manager, events@uasaz.org;* ***Kseniia Shchrebak,*** *Events Manager, events@uasaz.org;* ***Maksym Vasylyk,*** *Communications & Events Manager, events@uasaz.org*

VIII. Science & Education

The Science and Education cluster brings together a diverse team of experts, including economists, financiers, regional studies experts, sustainability professionals, urban planners, architects, and micro- and nanoelectronic specialists.

The cluster's goal is to contribute to Ukraine's recovery through scientific research, conference presentations, and educational projects, and for expert members to actively engage in Ukraine's process of recovery.

Key Achievements:

In the Fall 2024-2025 academic semester, cluster members launched a joint master's program in "Electrical Engineering" between ETH Zurich and the Kyiv School of Economics (KSE). Currently, thirty Ukrainian students are enrolled in the program, attend all essential courses online, and are preparing to contribute to Ukraine in the micro- and nano-electronics field. A micro- and nanoelectronics laboratory has been established at KSE. During the first semester, five ETH Professors and six KSE professors taught courses in tandem. Understanding the importance of technology development in Ukraine and the need to rebuild this lost industry, private companies and government entities supported the launch of the programme, committing to provide students with opportunities for internships and practical training in companies such as Melaxis, Bosch, and Renesas.

Grant participation: Cluster members collaborated on a grant proposal for the European Union's EU COST Action Grant Application. This proposal, «Digital Resilience in Energy, Security and Climate for European Unity», was prepared with the participation of 55 experts from all over the world, including representatives from Kyiv National Economic University.

International Publications: As part of the global academic discourse on sustainable regional transformation, cluster member Dr. Prof. Vira Ohorodnyk published a research article on the future of agri-tourism in Ukraine in the Journal of Rural Studies, a leading international peer-reviewed journal specializing in rural development and sustainability. The article, "Envisioning the Future of Agri-tourism in Ukraine: From Minor Role to Viable Farm Households and Sustainable Regional Economies", explores the potential of agri-tourism to revitalize rural areas and foster economic resilience. In the context of Ukraine's recovery, such

research contributes to broader discussions about sustainable development strategies and the diversification of rural economies. The full publication is available at: www.sciencedirect.com/science/article/pii/S0743016724000871.

Presentation of Scientific Findings on Ukraine's Reconstruction Projects

- Involvement in Swiss Network with Ukraine Initiatives. Prof. Dr. Vira Ohorodnyk presented research findings about 'Institutional Barriers and Support Mechanisms for Agri-tourism in Ukraine' at the SNU's exhibition 'ETH with Ukraine—Exchanging Knowledge for a Sustainable and Resilient Future', held from January 24th to February 5th, 2024. The presented research delves into the landscape of agritourism in Ukraine, assessing the sector's potential to aid national advancement. Prof. Dr. Ohorodnyk studied available data on agriculture and tourism in Ukraine, including statistical data provided by the World Bank and Ukrainian authorities; conducted interviews with government officials and heads of agri-tourism associations; and analysed the regulation of agri-tourism activities within the framework of Ukraine's regional development and future recovery.
- International Forum Participation: Cluster experts participated in the First International Agglomeration Forum in Lviv, held October 17-18, 2024. During the panel "Agglomerations in Ukraine: Post-War Recovery Perspectives", members discussed climate-resilient development and Ukraine's "Green Recovery". They further discussed regional and community-level spatial planning, comprehensive development plans, and integrated approaches, emphasizing the importance of mobility in planning.
- Symposium Presentation: Cluster members participated in the international symposium, "Rebuilding a Place to Call Home: The Future of Spatial Planning in Ukraine", and presented the following paper: "Spatial Development of Territorial Communities in Ukraine in the Context of Postwar Recovery". This year's discussions addressed recovery challenges in governance, innovation in planning tools, and spatial plan-

ning education in Ukraine.

- Congress Presentation: Prof. Dr. Vira Ohorodnyk presented research findings on the institutional challenges and policy support mechanisms for the development of agri-tourism in Ukraine at the 17th EAAE Congress, held in Rennes, France. The congress, organized by the European Association of Agricultural Economists (EAAE), focused on key economic, policy, and sustainability issues in European and global agricultural systems, providing a platform for knowledge exchange and discussion among researchers, policymakers, and industry professionals.

5. Collaboration with International Companies and Agencies

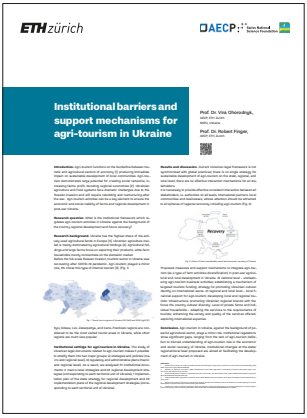
- Dobryansk, Donets, Obukhiv, Boiarka, Bakhmatska, and Ichnia territorial communities are engaged in joint initiatives aimed at local socio-economic recovery. Cooperation with the Science & Education cluster provides expert support, knowledge exchange, and facilitates the implementation of sustainable solutions for community development.
- Key areas of collaboration include restoring critical infrastructure, enhancing resilience to crises, and creating conditions for long-term economic growth.

Future Plans:

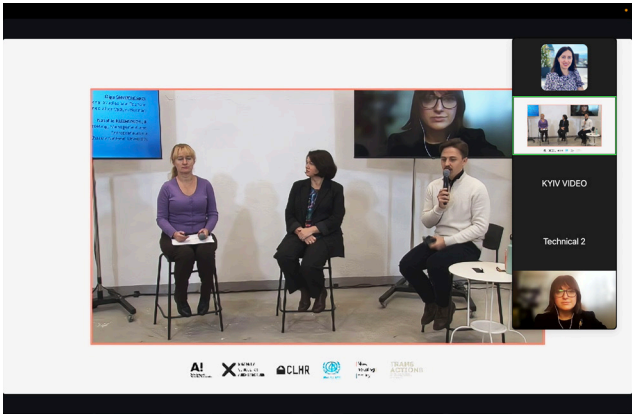
Collaboration with Ukrainian Association of Students and Academics in Zurich (UASAZ). We plan to collaborate between groups to create opportunities for Ukrainian researchers to present their work to an international audience and to draw further attention to Ukraine's recovery needs.

Grant Project Proposals: In their areas of expertise, cluster members will prepare grant proposals focused on innovative solutions, with outcomes aimed at supporting Ukraine's economic recovery in the future. These might include, for example, research on the sustainable recovery of Ukraine's energy infrastructure at regional and local levels.

Our cluster is committed to supporting Ukraine's recovery, sharing expertise, and building networks for impactful change.



Institutional barriers and support mechanisms for agri-tourism in Ukraine



Collaboration with Academic Institutions:

Kyiv National Economic University, Taras Shevchenko National University of Kyiv, Ivan Franko National University of Lviv, Lviv Polytechnic National University, Ivano-Frankivsk National Technical University of Oil and Gas

Collaboration with Professional associations

Association of Spatial Planners of Ukraine - Council of Urbanists of the National Academy of Sciences of Ukraine, ECTP-CEU – European Council of Spatial Planners

Members and Contact

Vira Ohorodnyk, *vohorodnyk@ethz.ch, Senior Researcher at ETH (2022-2023), academic program coordinator at ETH (from August 2024), Expert in Sustainable and Regional Development, as well as Socio-Economic Recovery of Ukraine;* ***Mariia Markina;*** *m.markina0333@gmail.com, architect, PhD candidate at the Department of Regional Studies and Tourism, KNEU, expert in spatial planning and strategic planning of Ukraine's regions;* ***Anna Gulko,*** *Ann.glko@gmail.com, architect, designer from Kyiv based in Zurich. Completed the CAS Rebuild Ukraine program at the University of Bern;* ***Roman Romanko,*** *romanko.roman@gmail.com, International Development Professional and Natural resources management Expert.*

IX. Agriculture

The Agriculture cluster unites researchers, agronomists, economists, and policymakers to support the development of Ukraine's agricultural sector. Leveraging Switzerland's expertise in sustainable farming, digital agriculture, and market development, the cluster fosters innovation and resilience in Ukraine's agri-food system.

Agriculture as a Driver of Economic Growth and Sustainability

Agriculture plays a crucial role in Ukraine's economy and global food security. With significant challenges caused by war, soil degradation, and disrupted supply chains, Ukraine needs innovative approaches to restore and modernize its agricultural sector. The Agriculture cluster focuses on key areas such as:

Sustainable Agricultural Practices

- Promoting agroecological approaches and organic farming.
- Enhancing resilience through sustainable land management and soil restoration techniques.

Digitalisation in Agriculture

- Implementing AI-driven decision-making tools for precision farming.
- Strengthening digital platforms for knowledge-sharing and market access.

Research and Knowledge Exchange

- Supporting studies on war-induced soil contamination and its remediation.
- Organizing international conferences, public lectures, and exhibitions to foster academic and industry collaboration.

Achievements

Conferences and Knowledge Exchange

- Presentation of research at the Food Day ETH (October 2024), the 98th Annual Conference of the Agricultural Economics Society (University of Edinburgh, March 2024), the 187th EAAE Seminar (FiBL, June 2024), and the 189th EAAE Seminar (Warsaw, September 2024).
- Participation in the ETH with Ukraine exhibition (January-February 2024), show-

casing research on the digitalisation of Ukrainian agriculture.

- Public lectures at ETH Zurich (October, 2023 - February, 2024) on environmental issues and resilience in agriculture.

SustainAgro Event

- Organised the "SustainAgro: Strengthening Economic Growth, Sustainability, and Innovation in Agriculture" event (February 5, 2024, Collegium Helveticum). The event featured keynote speeches and a panel discussion with leading experts in agricultural economics, policy, and innovation. Discussions focused on fostering cooperation, knowledge exchange, and progress in sustainable agriculture.

Soil Impact Research and Remediation

- Pioneering soil impact research in cooperation with Sumy National Agrarian University, Royal Agricultural University (England), and BFH HAFL (Switzerland).
- Development of a soil assessment protocol for farmlands affected by war, with samples analysed in Switzerland, the UK, and Ukraine.
- Secured financial support from The Halo Trust, Syngenta, Universities UK International, XTX Markets, and Institut für die Wissenschaften vom Menschen for soil remediation projects.
- Training programs conducted for over 50 individuals, including former soldiers and farmers, on soil analysis and contamination risks.
- National-scale impact: Testing of 3,000 soil samples across seven heavily affected regions to evaluate soil health and contamination levels.
- Development of remediation techniques for six farmers across five regions, providing tailored solutions for soil restoration.
- Creation of guidelines and manuals for farmers and agronomists to address soil restoration challenges.

Future Plans

- Developing a research project with Swiss and Ukrainian universities, farmers, and governments to advance sustainable agricultural practices

and policy-making.

- Teaching Ukrainian farmers about developing sustainable food systems to enhance resilience and long-term agricultural sustainability.
- Expanding research on soil compaction and moisture levels in de-mined areas to enhance sustainable farming post-war.
- Strengthening cooperation with Swiss and international institutions to scale digital agriculture solutions.
- Further development of interactive digital tools and mapping for precision farming and climate-smart agriculture.

The Agricultural Cluster aims to foster long-term resilience in Ukraine's agricultural sector by integrating Swiss expertise, digital innovation, and sustainable farming practices, ensuring a robust and adaptable food system for the future.

Call to action

We invite you to actively support the mission of the Agricultural Cluster. There are many ways to contribute to this important initiative, whether by providing research insights, engaging in policy discussions or sharing resources. Together, we can build a strong, collaborative network that promotes meaningful progress in Ukrainian agriculture and beyond.

Members and Contact

Prof. Dr. ***Maryna Nehrey,*** *marina.nehrey@gmail.com; Dr.* ***Olena Melnyk,*** *Zurich, olena.melnyk@bfh.ch;* ***Roman Romanko*** *(Bern).*

X. Energy & Infrastructure

The Energy & Infrastructure cluster was initiated based on the 2022-2024 ETH Zurich study "Assessment of the Impact of War on Ukraine's Energy and Critical Infrastructure and Calculation of the Renewable Energy Potential and More Suitable Territories for Sustainable Reconstruction of Ukraine," conducted by Senior Researcher Dr. Iryna Doronina (ISTP, ETH Zurich) in collaboration with Prof. Dr. Adrienne Grêt-Regamey (Institute for Spatial and Landscape Planning, PLUS, ETH Zurich), Tobias Schmidt (Professur für Energie- & Technologiepolitik D-GESS, ISTP ETH Zürich), Dr. Marcelo Galleguillos Torres (ETH), Vasyl Doronin (Ukrainian Hydrogen Association), and supported by The Swiss National Science Foundation (SNSF).

This applied research was based on best research practices in Switzerland and aimed to provide an understanding of how to rebuild Ukraine's energy sector in a low-carbon and conflict-resilient manner. As a result of the project, a unique database of all energy facilities in Ukraine (1700 units) was created and mapped. The suitability of territories was assessed using spatial analysis, and detailed potential for the implementation of clean technologies was assessed, including a breakdown at the local community level. In 2024, keyey aspects of the study were included in a peer-reviewed publication in the journal "Joule Cell". Practical aspects of the research were published in the article "How Ukraine can rebuild its energy system" featured on the ETH website in September 2024.

The results of the subsequent study "Impact Assessment of the War on Civil Infrastructure" were used by BABS (Swiss Federal Office for Civil Protection) in preparation for the 2023 conference dedicated to the impact of the war on the resilience of Ukrainian infrastructure and for preparing the official report to support new approaches for protecting Switzerland's civil infrastructure.

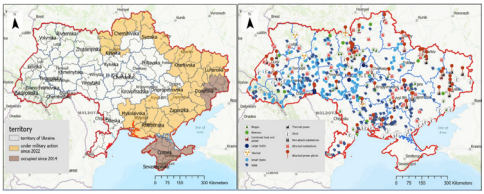
Based on her experience at ETH, Dr. Iryna Doronina participated in an International Energy Agency (IEA) report on the creation of a high-level roadmap for energy sector transformation and decentralization in Ukraine. Detailed calculations and maps of infrastructure damage were also used in reports by OSCE and Greenpeace.

To strengthen energy security, implement, and develop hydrogen infrastructure, the Ukrainian Hydrogen Association (part of the

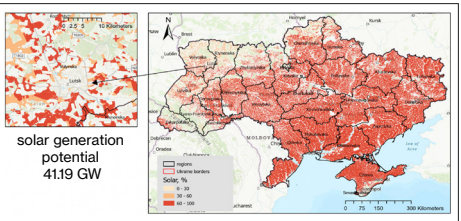
Energy & Infrustructure cluster since 2023) signed a Memorandum of Understanding with European industry organizations from Finland, Sweden, Estonia, Latvia, Poland, and Denmark, and is negotiating joint projects in Ukraine with Swiss energy companies. This MOU supports the integration of innovative and hydrogen projects in Ukraine, utilizing the country's export potential.

To exchange experiences, support project preparation, and provide specialized training for representatives of Ukrainian communities, the Ukrainian Hydrogen Association signed a cooperation agreement with the Zaporizhzhia Regional Development Agency. Collaboration with the NGO "YES" has been established to support decentralization reform and assist devastated communities in southern and eastern Ukraine. This collaboration supports initiatives aimed at improving the quality of project preparation and informs initiatives about the key requirements and principles of Ukraine's future sustainable reconstruction.

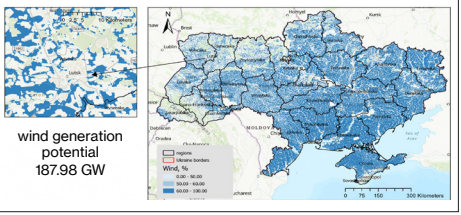
For preparing technological assessments on-site and supporting Swiss projects, a memorandum of cooperation was signed with TESLAENERGO LLC, a leading company in energy sustainable development in Ukraine. The collaboration is based on a transparent assessment of the impact of the war and spatial analysis, aiming to transform urban planning into more resilient models and support the private sector of Switzerland in the process of Ukraine's reconstruction.



Type	MW	Attacked generations	Damages and occupied
Nuclear	13 835	65%	43%
Thermal	25 172	100%	76%
Combined heat and power	3 837	100%	71%
Large Hydro	6 534	100%	45%
Wind	1 664	88%	37%
Solar	6 379		37%



solar generation potential 41.19 GW



wind generation potential 187.98 GW

Research and Industry Partners

ETH Zurich, TU Munich, Ivano-Frankivsk National Technical University of Oil and Gas, Igor Sikorsky Kyiv Polytechnic Institute, Ukrainian Hydrogen Association, PIROMIX LLC, TESLAENERGO LLC, YES

Members and Contacts

*Dr. **Iryna Doronina,** MPA, irynadoronina@icloud.com. Senior Researcher at ETH 2022-2024, expert on war impact assessment on infrastructure and project support for reconstruction; **Yuriy Kamelchuk,** Member of Parliament of Ukraine, Committee on Energy, Housing, and Utilities Services. PACE delegate, Innovative & Hydrogen Energy Ambassador, invited speaker at the ETH scientific symposium "Documenting the War in Ukraine" in 2023; **Vasyl Doronin,** MBA, former Coach "CAS Rebuild Ukraine (BFH)", president of the Ukrainian Hydrogen Association, graduate of the University of St. Gallen (CAS Sustainable Management) and UZH (CAS Sustainable Finance), expert of energy transformation working groups in the Ukrainian Parliament and the Cabinet of Ministers of Ukraine; **Eugen Rossikov,** ex-chief expert at the Ministry of Energy of Ukraine and delegate from Ukraine to the EU Energy Charter, Ukrainian Task Force for the Ukrainian Energy Sector Damage Assessment (European Commission), **Askad Ashurbekov,** a member of the Zaporizhzhia Regional Parliament, an expert on regional transformation and development, **Oleg Riyabykin,** Head of PIROMIX LLC, specializing in waste recycling and synthetic fuel and gas production, using "Power to X" and cogeneration units.*

XI. Health Care

The Medical cluster fosters collaboration between Swiss and Ukrainian institutions in the fields of medical care and innovation. It brings together key players from academia, the healthcare sector, medical technology and pharmaceutical industries, research institutions, and hospital and healing architecture.

As the war in Ukraine continues, the demand for comprehensive and accessible healthcare services—particularly in prosthetics and rehabilitation—has become increasingly urgent. Switzerland, renowned for its expertise in medical innovation and humanitarian efforts, is well-positioned to play a crucial role in addressing the needs of war-affected people in Ukraine.

ETH Zurich, one of the world's leading universities in science and technology, has been at the forefront of groundbreaking research in prosthetics. The cluster's coordination work could facilitate the practical application of existing ETH prosthetic prototypes in Ukrainian rehabilitation centres, where numerous veterans, civilians, and children are undergoing treatment for war-related injuries.

Collaborative research with Ukrainian polytechnic universities could also enable the transfer of technological expertise, paving the way for local production of advanced prosthetics. This initiative may have a tangible impact on those in need, while also fostering the development of spin-off companies and technology transfer initiatives to bring these innovations to the global market.

This cluster also focuses on optimizing capacity-building processes, scenario development, and the gradual introduction of a tailored and sustainable healthcare system with interconnected infrastructures in Ukraine. In this work, an emphasis is placed on knowledge transfer and the collection of donations, including medical supplies.

Serving as a neutral, well-coordinated service point, this facet of the cluster's work facilitates the implementation of large-scale projects, such as healthcare system planning for specific regions in Ukraine, alongside training programs for professionals managing these systems. In the future, the cluster may serve as an implementation partner for NGOs who wish to allocate funds for medical reconstruction and capacity building projects.

Images: Nickl & Partner Architekten / WWH – Worldwide Hospitals

Partners

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