

NEO-ECO UKRAINE PRESENTATION

September 2024





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**COMPANY
INTRODUCTION**

Kyiv

Mykolaiv

Kryvyi Rih

Lille (France)

We bring 16 years of expertise in industrial engineering solutions for waste recycling and advise companies on the creation of circular economy loops and know-how in the recovery of used materials, eco-design, and the setting up of waste and recovery channels.

Our mission is to offer new lives to used materials, with a simple vision: **A world without waste.** Neo-Eco Ukraine is a circular consultancy company that studies the production of an organisation's used materials in a transversal manner, in order to anticipate flows, characterize materials and develop solutions that will allow them to be reinjected into the territory in an operational and efficient way.

We propose CSR consulting, territorial, industrial, and recycling engineering, and the development of eco-products. We have vast experience in major infrastructure works, urban renewal plans (deconstruction and construction) with eco-materials, the recovery of dredged sediments, low-carbon solutions, and support for the management of used materials and waste.



OUR OFFER

Our company specialises in the efficient recycling of materials to reduce the negative impact on the environment, expand the market for secondary raw materials and develop new bio-based and eco-materials.

Neo-Eco Ukraine's range of services includes:

- Studies and Consultancy
- Project Management and Implementation
- Eco-materials



OUR SOLUTIONS

Consultancy

- Asbestos-containing materials
- Circular economy methods for bomb shelters and social infrastructure
- Training for territorial waste management

Project management and implementation

- Hostomel
- Design of a dual-use shelter created by children
- Pilot "Rubble cleaning by veterans" programme
- Renovation and revitalization of the Zelenyi Hai school
- Teplo project in Chernihiv region

Eco-materials

- Circular economy demonstration of low carbon cement and green concrete production in Ukraine
- Polyfloss insulation from plastic
- A bioenergy plant: containerised solution for distributed power generation

MEET OUR TEAM



Artem Sumara
Country Director



Kate Le Moignic
International Relations and
Fundraising



Bart Gruyaert
Project Director



Mathieu Morival
Project Manager



Natali Redko
Business Development



Dmytro Verovkin
Project Manager and IT



Lidiia Shymon
Project Manager, PR and Marketing



Victoria Caubet
Project Manager

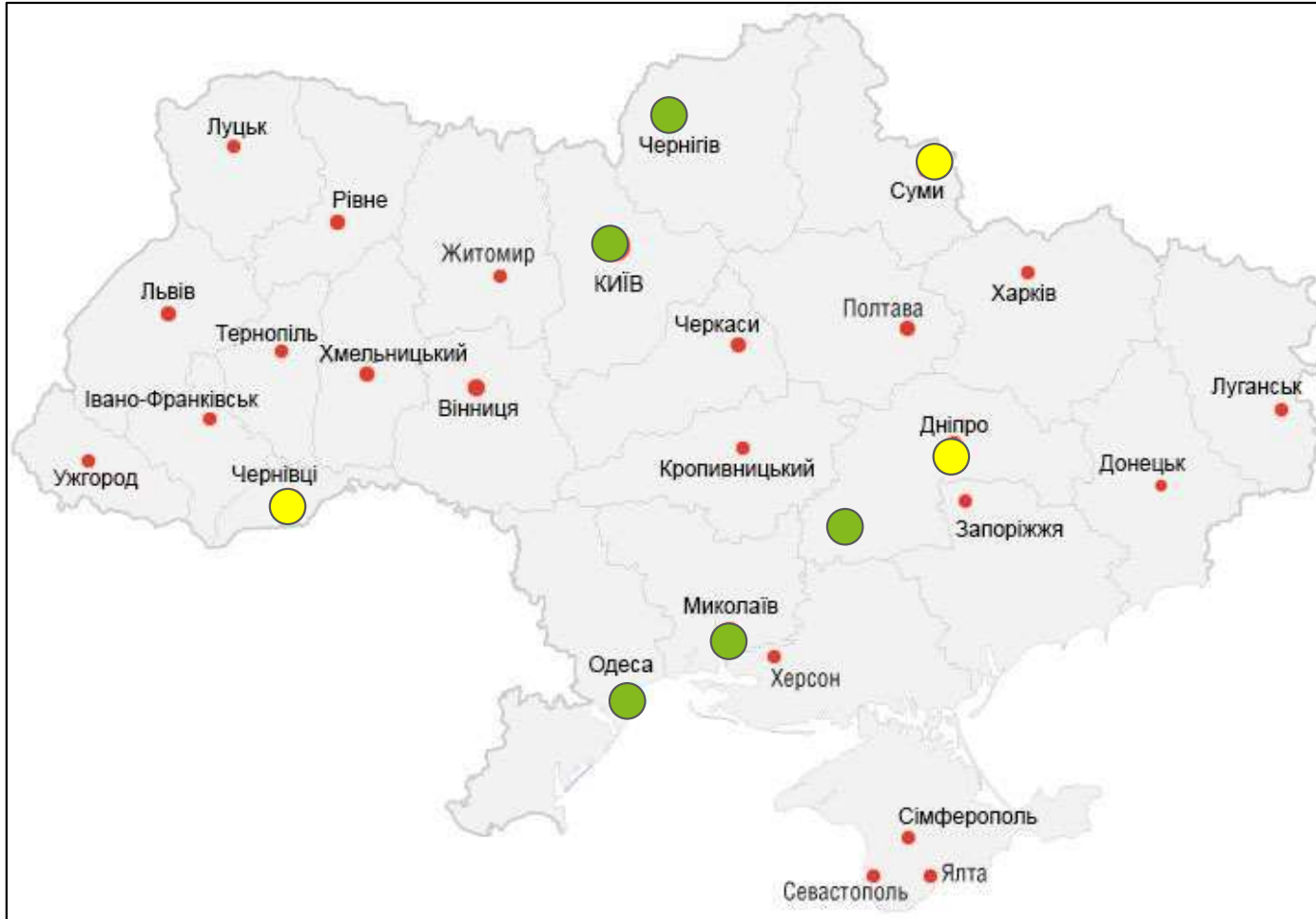


Iryna Avdeyenko
Finance and Administration
Manager



Valeriia Bondarenko
Project Manager

WHERE WE WORK



EXISTING OR COMPLETED PROJECTS

Kyiv

Mykolaiv

Kryvyi Rih

Odesa

Chernihiv

UPCOMING PROJECTS

Dnipro

Sumy

Chernivtsi

THE CHALLENGE

The background image shows a desolate urban landscape after conflict. In the foreground, there is a large pile of rubble and debris from a destroyed building. A man in a grey jacket and dark pants stands in the middle ground, pointing towards the left. In the background, several multi-story apartment buildings are visible, some with damaged windows and balconies. The sky is overcast and grey.

180,000 km² of land
(an area four and a half times
the size of Switzerland)
is contaminated with mines.

Excess greenhouse gas emissions
from the first year
of the war are estimated
to be similar to the annual
emissions of the country
of Belgium.

Current estimates (which fluctuates) put
the total amount of war debris
at approximately 800m tons. The total
area of damaged or destroyed
objects is 87 million m²

INTRODUCTION TO THE CIRCULAR ECONOMY



The **circular economy** is an alternative economic model to the traditional linear economy, which follows a "take, make, dispose" pattern. In contrast, the circular economy aims to create a closed-loop system where resources are continuously cycled back into the economy, minimizing waste and maximizing resource efficiency.

Principles of the circular economy

1. Reduce:

Reduction involves decreasing the amount of waste generated at the source by consuming less and adopting more sustainable consumption habits.

- Minimizes waste generation
- Reduces resource consumption
- Lowers greenhouse gas emissions associated with production and disposal

2. Reuse:

Reuse involves extending the lifespan of products and materials by finding new purposes for them instead of discarding them after single use.

- Reduces the demand for new products and materials
- Saves energy and resources required for manufacturing
- Minimizes waste sent to landfills or incinerators

3. Recycle:

Recycling involves collecting, processing, and converting waste materials into new products or raw materials that can be used in manufacturing processes.

- Conserves natural resources by reducing the need for virgin materials
- Saves energy compared to producing new materials from raw resources
- Reduces greenhouse gas emissions associated with resource extraction, manufacturing, and waste disposal



BENEFITS OF THE CIRCULAR ECONOMY APPROACH

ENVIRONMENTAL AND QUALITY

- 1** Reduces the use of raw materials
- 2** Reduces the volume of used materials sent to landfill
- 3** Quality is equal or superior to the linear economy

SOCIAL

- 6** Develop local industry and employment
- 7** Create a local dynamic around the project by integrating residents/local stakeholders

ECONOMIC

- 4** Not more expensive than the linear economy and creates value from your resources.





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EXAMPLE PROJECTS

PILOT PROJECT: HOSTOMEL

Promoting post-war reconstruction through the circular economy

Context

Ukraine is facing an invasion by Russia that has destroyed much of its infrastructure, particularly its residential buildings. It is estimated that around 25,000 buildings have been damaged in the Kiev region. The regional administration estimates that it will be necessary to destroy 20% of these buildings, which are structurally too unstable to be used, before rebuilding them. All this will generate millions of tonnes of waste that will need to be treated.

Missions

- **Upstream phase - deposit study**
- Visit to typical building and quantitative and qualitative assessment of materials from deconstruction
- Sampling of materials
- Scientific characterization of materials
- Drafting of technical clauses for deconstruction and recycling to be used for the typical building (CCTP)
- Drafting of an economic and environmental analysis report for the building
- **B. Downstream phase - implementing the methodology**
- Study of eco-product formulation
- Start of deconstruction and site supervision
- Feedback from the project on the model building and final validation of the CCTP
- Assistance to the Kiev region in deploying the methodology throughout the region
- Study of economic and environmental impacts on a regional scale



**Project
completed
2022 - 2023**

Estimated economic
balance compared with
a conventional
approach
- 135 000 €

Reducing
environmental
estimated impact by
**1 735
tonnes of
CO2**

7150 m3
landfill waste avoided

Formulation of C20/25
concrete for the
reconstruction of 450
housing units



ASBESTOS

Asbestos-containing materials

Neo-Eco Ukraine, together with its expert partners, finalized a comprehensive white paper on asbestos in January 2024. White Paper [Neo-Eco Ukraine for handling of asbestos containing materials January 2024.](#)

The document provides an insight into the complex state of historical and contemporary asbestos use, and provides sample guidelines and procedures for handling asbestos-containing materials to ensure a safer, more consistent and integrated approach to asbestos management.

Neo-Eco Ukraine has 600 pages of training materials and our training sessions can be conducted on-site, at companies in Ukraine or online in a MOOC style, individually for each organization, with a certificate of completion.

Neo-Eco Ukraine offers training for asbestos [Proposal for asbestos training in Ukraine](#)

ASBESTOS HANDLING AND MANAGEMENT

- Neo-Eco Ukraine is part of UNEP's working group on asbestos management and abatement in Ukraine.
- Ideally, we aim to provide asbestos training in Ukraine and set up a dedicated asbestos laboratory in 2024 to offer testing and eco-responsible asbestos neutralisation



PILOT RENOVATION PROJECT WITH ECO-MATERIALS

LIFE Panelka 2.0 in Chernihiv, Ukraine

Operation

The aim of this project is to empower the professional community of architects and engineers, as well as homeowners' associations, to facilitate comprehensive circular renovations. As there have been no examples of renovations based on prefabrication and bio-based materials in Ukraine, this project aims to pave the way for this approach. It will adapt technologies from other countries, notably Estonia, to the Ukrainian context, while identifying and eliminating existing obstacles. The project has two main aspects: technology transfer and piloting of a deep circular renovation of a panelka building in Chernihiv, Ukraine, which will serve as an exemplary model; and an educational aspect, whereby awareness-raising and capacity-building programs will be implemented on the basis of this model. The aim is to maintain their ability to operate and maintain the building after renovation, while demonstrating how a community of co-owners can organize and implement renovations. The demonstration renovation will use locally sourced bio-sourced materials such as compressed straw for insulation and particleboard made from type B recycled wood.

Tasks

- **Project management and coordination**
- **Technical evaluation of the demonstration building**
- **Workshop on local material options: straw, recycled wood, primary wood, etc.**
- **Study on B-wood ecoproducts: sampling, characterization, formulation of an experimental particleboard with a Ukrainian player, improvement of specifications.**
- **Monitoring thermal performance after renovation**



**Project in
progress
2023-2026**

In collaboration with
RO3KVIT (EU/UA),
RETHINK (UA) and MATEK
(EST)

Project amount
1 038 000 €
90% financed by the LIFE
program

28-month project
2023 – 2026



TEPLO PROJECT IN CHERNIHIV REGION



Neo-Eco Ukraine together with ReThink, MATEK AS, and Ro3kvit: Urban Coalition for Ukraine have launched a pioneering initiative dedicated to renovating a Soviet-era residential building in the Chernihiv region in Ukraine, using prefabricated biobased panels. The project is supported by the EU LIFE Programme, contributing to the EU's mission to achieve climate neutrality by 2050.

Our Rationale

- Energy inefficiency: Upgrading an outdated structure with prefabricated bio-based panels to maximize energy savings and resident well-being.
- Circular construction: Showcasing the potential of prefabrication and bio-based materials like straw insulation and recycled wood for a sustainable future.
- Community empowerment: Interactive workshops to promote knowledge exchange and resident participation in the renovation process.
- This project aims to showcase the untapped potential of prefabrication and bio-based materials, such as straw and recycled wood, in Ukraine. In addition, we aspire to equip architects, engineers, and homeowner associations (OSBB) with the knowledge and tools necessary to lead the charge toward circular renovations, fostering a sustainable and energy-efficient future.

THE MYKOLAIV DAMAGE ASSESSMENT REPORT

- Damage assessment report for **70 rural settlements** in Mykolaiv presented by Neo-Eco Ukraine, Mission East and UA Damage in June 2023
- An enabler for the efficient planning and execution of the region's reconstruction

RESULTS

- **2.5m tons** of debris
- **€11.6m** total savings using recycled materials
- **€24m** market value created thanks to recycling
- Creation of **400 jobs** over two years
- **4509 tons** of CO2 avoided

You can read the joint damage assessment report here:

[Mykolaiv Damage Assessment Report](#)



EXAMPLE OUTPUT IMAGES USING
UA DAMAGE'S TECHNOLOGY SHOWING
COLOURED CODED DAMAGED BUILDINGS



MACRO-ECONOMIC STUDY FOR RECONSTRUCTION



Shevchenkove Hromada, Mykolaiv Oblast, Ukraine

Operation

The Mykolaiv region is a strategic area in southern Ukraine, centrally located between the Black Sea and the mining and agricultural regions to the north. Shevchenkove Hromada is a community of 70 rural villages located 45 km from Kherson and 30 km from Mykolaiv, which has been heavily damaged by Russian shelling and firing from the front line.

Missions

- Collection of data from 70 rural municipalities on damage (debris volume, costs and recycling potential) using drone images
- Calculation of damage using an AI model
- Interviews with the local Chamber of Commerce and Industry UCCI, construction companies and recycling players in the region
- Sampling and laboratory analysis of the main waste streams
- Business model analysis of opportunities for creating recycling channels to support reconstruction
- Identification of priority recycling channels to be set up, and search for means of financing.



**Project
completed
during 2023**

52 219 buildings
analyzed,
6 436 are completely
destroyed and must be rebuilt

1,7 million of tonne
of deconstruction waste
generated by the war

**14 recycling
channels** identified as
priorities



References NEU

THE CIRCULAR ECONOMY IN SOCIAL INFRASTRUCTURE

Bomb shelters in Ukraine are a grim necessity due to the ongoing hostilities.

It is estimated that in 2024, Ukrainian cities and towns will allocate about UAN 10 billion for the construction and reconstruction of bomb shelters. Recent legislation (November 2023) has included new obligations for bomb shelter (re)construction including two exits, a ventilation system, and no communication pipes underfoot. In addition, the new directives necessitate the incorporation of shelters that are barrier-free and inclusive. Obligatory elements for shelters feature ramps, tactile navigation, and contrasting markings.

Local authorities, community leaders and residents are increasingly looking to the concept of dual-use bomb shelters which offer a range of benefits, including:

- Cost-Effectiveness
- Space Optimisation
- Community Resilience

Neo-Eco Ukraine offers training on shelter and civilian infrastructure

[Implementation of circularity for bomb shelters in Ukraine](#)

[Implementation of circular economy methods in the repair, restoration, and modernization of social infrastructure in Ukraine](#)

[Implementation of circular economy methods in the repair, restoration, and modernization of educational institutions in Ukraine](#)

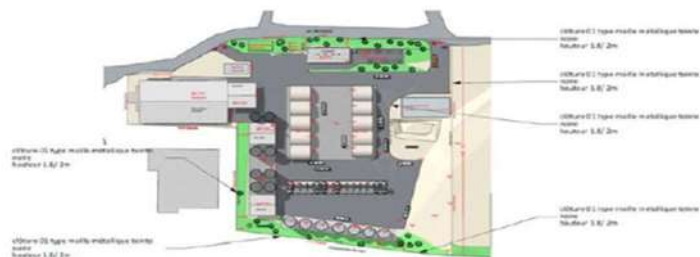


TERRITORIAL WASTE MANAGEMENT

1. Analysis of waste volumes and identification of stakeholders. We estimate the amount of waste and identify the main stakeholders involved in a particular area.
2. Identify waste disposal channels. We determine the local needs for materials in the territory by analyzing data from the local industry.
3. Operational and logistics organization. Based on our findings, we will develop the most effective method to improve the quality of waste processing by finding ways to better separate and test materials for contamination closer to the source, according to the location and specific needs of the community.
4. Regulatory support. Monitoring and compliance with regulatory requirements and making recommendations based on our proposed waste management measures, taking into account equipment, production capacity and storage requirements.
5. Microeconomic research (optional). Neo-Eco can also conduct economic impact analyses to support the gradual establishment of a regional waste management platform covering various technical, economic and administrative aspects.

Neo-Eco Ukraine offers training for territorial waste management

Proposal for Territorial Waste Management



CIRCULAR ECONOMY DEMONSTRATION OF LOW CARBON CEMENT AND GREEN CONCRETE PRODUCTION

Neo-Eco Ukraine in cooperation with Mission East are working on the project "Circular Economy Demonstration of Low Carbon Cement and Green Concrete Production in Ukraine". This project aims to establish a demonstration plant for the production of low-carbon cement and green concrete using recycled materials.

Demonstration plant for low carbon cement and green concrete in Mykolaiv started in September 2024 using slag.

- Production to be scaled and replicated, with the circular economy widely prioritized in rebuilding efforts
- 12,750 tons CO₂ emission avoided per year
- Crushes concrete for 70% of aggregates substitution
- Production of waste based low carbon cement (85% less CO₂) and cheaper than current 5000 Hrivnas per ton price for clinker cement
- Ready mix concrete with these ingredients



GREEN TRANSITION STRATEGY WITH KRYVYI RIH



KRYVYI RIH
CORNUCOPIA OF YOUR OPPORTUNITIES

- 600, 000 people pre-war
- Currently represents 20% of Ukraine's GDP
- Signing of MOU : 10/01/2024
- End February: Completed feasibility study on waste (Construction, household and industrial waste)
- March: Voted by the City Council
- April: Signature of PP (City owns the equipment, NEU will conduct implementation with local partners)
- September-October: Start of operations
- Key decisions:
 - No more acceptance of construction waste at land fills
 - KRIBI (KR Innovation and Business Incubator) to be set up
 - Multiple additional projects



RENOVATION AND REVITALIZATION OF THE ZELENY HAI SCHOOL AND BOMB SHELTER

In June 2024, Neo-Eco Ukraine, the Central Project Management Agency (CPVA, Lithuania) and the Mayor of Shevchenkove signed a cooperation agreement to rebuild a school and a bomb shelter in Zelenyi Hai, Mykolaiv, Ukraine, using a modular, sustainable approach and with public participation.

After the war devastation that the region has suffered, most schools are completely destroyed or are not safe for children due to lack of shelter. The need for education and development is a high priority for the children of the community. Together, the project aims to rebuild an ecological school, bomb shelter and community centre and shelter to new standards of inclusiveness and safety. Neo-Eco Ukraine aims to use local and recycled materials, which will reduce construction and logistics costs and help reduce construction waste emissions into the environment.



Zeleny Hai School – March 2022



Modular School Buildings - Wernick Buildings

NEO-ECO UKRAINE IS THE EXCLUSIVE AGENT FOR PONT-À-MOUSSON (SAINT GOBAIN GROUP)

Neo-Eco Ukraine concluded an agreement with Pont-à-Mousson (part of the Saint Gobain group) to be the company's exclusive agent in Southern and Eastern Ukraine for the distribution of its world-leading ductile coated water pipes, which conform to international standards including ISO 16631-2016, are guaranteed for up to 100 years and are compatible with drinking water distribution networks and irrigation systems.



ALKALI-ACTIVATED BRICKS MADE WITH MINING WASTE IRON ORE TAILINGS (IOT BRICKS)

Conventional brick production methods include fired **bricks** and **cement blocks**. However, conventional methods significantly contribute to environmental carbon emissions and therefore alternative brick production methods have caught the attention of several researchers. Furthermore, the waste generated in various industries can be a useful resource for the construction industry, and in particular, voluminous waste is generated during the beneficiation stage of iron ore concentrate, which can be integrated into the construction industry to achieve sustainable practice.

Neo-Eco Ukraine uses **innovative practices** to create new building materials that have a positive impact on the environment and uses local raw materials from **Kryvyi Rih** quarries. The innovative process of making eco-friendly bricks is new to the Ukrainian market, but has an evidence base and preliminary testing of the finished product



Preparation of bricks

- (a) dry and
- (b) wet mixing of raw materials,
- (c) ingredients before compaction, (d)
- manual compaction,
- (e) brick ejection,
- (f) final product

A BIOENERGY PLANT: CONTAINERISED SOLUTION FOR DISTRIBUTED POWER GENERATION

Neo-Eco Ukraine together with Fimus Kraft present a pilot project on a distributed solution for converting solid biomass into energy

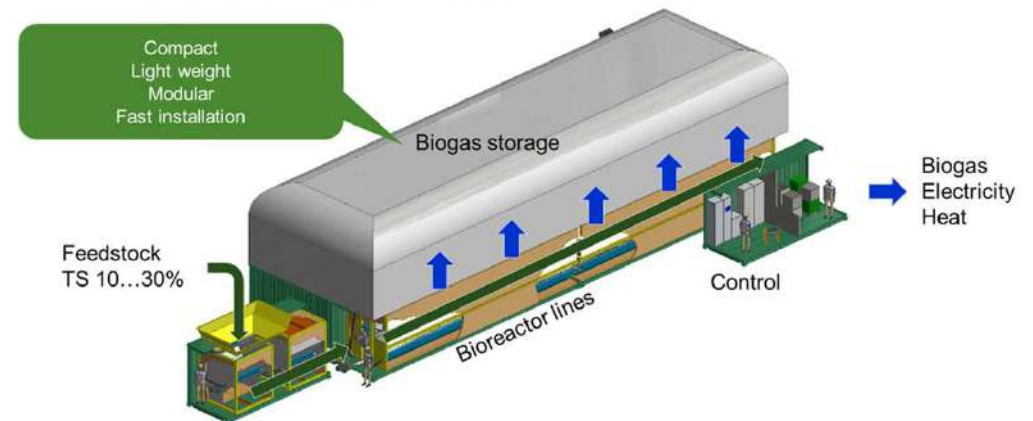
- Containerized biowaste and waste water handling
- Distributed energy production
- Modular and compact
- Light weight, plug and play enables fast deployment

Circular Economy Benefits:

1. Waste Reduction and Resource Recovery:
2. Efficient Resource Utilization
3. Local Energy Production
4. Modular and Scalable Design
5. Reduced Carbon Footprint
6. Fast Deployment and Reduced Environmental Impact
7. Economic and Environmental Synergies

Containerized bioreactor plant

Example plant with 3 lines for solid biomass to energy





3

SOCIETAL IMPACT



DESIGN OF A DUAL-USE SHELTER CREATED BY CHILDREN

Thanks to Crown Agents International Development (CAID) and UBS Optimus Foundation in partnership with Crown Agents in Ukraine, Neo-Eco Ukraine worked on a “**Design of a dual-use shelter created by children**” project in September 2023. The project aimed to create a decent, sustainable and safe future for children by creating a shelter design involving children from the Zeleny Hai community in Shevchenkova.

Through **creative workshops, psychological support and engagement with architects**, the children had the opportunity to implement their ideas on how they imagined a safe and comfortable shelter. The project was aimed not only at involving children in the design process, but also at assisting them to (re)socialise and receive psychological support. During the project, the children gained a basic knowledge of architecture and design, as well as developing their creativity and cooperation. They learned to express their thoughts and ideas, and consider other project participants’ needs and opinions.

PILOT "RUBBLE CLEANING BY VETERANS" PROGRAMME

Neo-Eco Ukraine is collaborating with Mission East to implement a social approach to circular economy projects, by prioritizing vulnerable groups such as veterans, who are in desperate need of post-traumatic healing. We hope that this project will not only contribute to the rebuilding of the Shevschenkova hromada, but also restore dignity, purpose in life, and help with healing both for the veterans and the community as a whole.

- Social Inclusion of Veterans
- Environmental Sustainability
- Community Development
- Expected Outcomes
- Restoration and reconstruction of infrastructure
- Creation of job opportunities for veterans and local residents
- Reduction in the volume of construction waste and environmental pollution
- Improvement in the well-being and socio-economic development of the community



A SELECTION OF OUR PARTNERS



MISSION
east



UBS



New European
Bauhaus 



Liberté • Égalité • Fraternité

RÉPUBLIQUE FRANÇAISE

CNU
Congress for the
New Urbanism



urban reform



WEYS



rethink



HOW TO WORK WITH US



How you can work with us:

- 1) Cooperation with Neo-Eco Ukraine LLC for business and commercial cooperation
- 2) Cooperation with our tax-exempt charitable foundation, Ukraine Resilience, which focuses on combining the best practices of the circular economy with elements of civic engagement, capacity building, art and community restoration to contribute to a Ukraine that is built better, by Ukrainians and for Ukrainians.

Code of Conduct

[DOWNLOAD](#)

Ukraine Resilience is governed by a code of conduct, adheres to checks and balances with our affiliate organizations, and routinely undergoes external auditing and due diligence.



Ukraine Resilience adheres to the principles in the World for Ukraine, Ukraine Focus and **CSIS** “Code of Conduct for Organisations Operating in Ukraine”.

Ukraine Resilience is Neo-Eco Ukraine’s registered charity foundation (Registered Charity Number: 45101493), which finances, and project manages certain green reconstruction and community regeneration projects in Ukraine. Ukraine Resilience is sensitive to the values, religion, customs, traditions, and culture of the Ukrainian communities we serve. In addition, Ukraine Resilience operates a strict code of conduct, which covers:

- Transparency (with recognised third-party external auditors)
- Organisational management and diversity
- Accountability
- Rigorous standards of practice
- Independence
- Zero-tolerance for corruption

You can find out more or donate to Ukraine Resilience here: ukraineresilience.com.ua



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