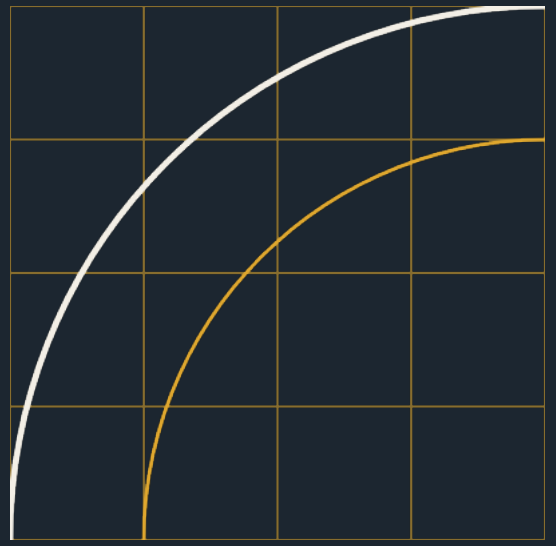
FOR THE NATIONAL UNION OF ARCHITECTS OF UKRAINE



Rebuild humanely

Ground Zero Projects: a regenerative kit of parts for Ukraine’s reconstruction, above and below ground

Andrew Cowan RIBA · Andrew Cowan Architects · October 2026

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INTRODUCTION

An architect who has worked in the region

London practice

Andrew Cowan Architects, RIBA and ARB registered. Housing, waterfront and cultural work, including Cinnabar Wharf and the Hermitage Sites social housing scheme.

Central and Eastern Europe

Warsaw office 1990–2005 through Poland’s transition; Polish Olympic Centre for the Polish Olympic Committee and the City of Toruń; Floating Opera, Dubrovnik.

Ukraine since 2022

Interviewed by Forbes on building back green (2023); community centres near Lviv; met the Union’s leadership in Kyiv in 2023 and October 2026.

Cowan-McFie

A new joint practice with Ivan McFie, acting as design consultant on sustainability, passive design and urban planning.

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THE SCALE OF THE TASK

Rebuilding at this scale needs a system, not one-off projects

$588bn

Estimated recovery and reconstruction need over ten years — almost three times Ukraine's 2025 GDP

14%

Of housing damaged or destroyed, affecting more than three million households

2026

Law 4778-IX: new housing, schools and hospitals cannot open without shelters

Sources: RDNA5, World Bank / EU / UN / Government of Ukraine, Feb 2026 (to 31 Dec 2025); Law No. 4778-IX, signed 6 Mar 2026 · © 2026 Andrew Cowan ·

GROUND ZERO PROJECTS

Landmark projects that show a better way of building

1 **Inclusive master plan**

Ukrainian-led, with local communities involved at every stage

2 **Build now**

Protected foundations and landscape first; lighter floors above when peace allows

3 **Work closely with Western partners**

Shared expertise, EU standards and international funding

4 **Zero corruption**

Open procurement, published costs and independent audit

Each project is sustainable and humane, and modest in size — around £20 million — so it can start quickly and set an example others follow.

Ground Zero Projects concept © 2024 Andrew Cowan Architects. All rights reserved

WHAT I SAW IN BORODYANKA

“Urgency versus long-term planning. This is a problem everywhere.”

Andrew Cowan, interviewed in Forbes, “A Marshall Plan for Building Back Green in Ukraine?”, February 2023

Shelters are not enough

Forty people died in one building’s basement shelter

Soviet blocks were easy targets

Lightweight façades fell away; one hit can cut power and heat to a whole district

People rebuild themselves

Residents carrying new windows into damaged homes — repairs need local, easy-to-fix parts

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SIX PRINCIPLES

One approach, six commitments

Humane

Light, dignity, community and calm, even in shelter

Passive

Buildings that stay warm when the grid fails

Modular

A kit of parts, made fast and assembled locally

Protective

Shelter built into the plan, above and below ground

Regenerative

Return more to land, water and people than is taken

Reuse first

Repair and recycle before building new

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HUMANE DESIGN

A shelter should feel like a room, not a bunker

People have spent nights in basements and metro stations for four years. What we build next must restore normal life, not just keep people alive.

Daylight and outlook

Light wells, courtyards and borrowed light, even below ground

Dual use every day

Protected spaces work as classrooms, clinics, studios and play spaces

Accessible to all

Step-free routes for older people, children and the injured

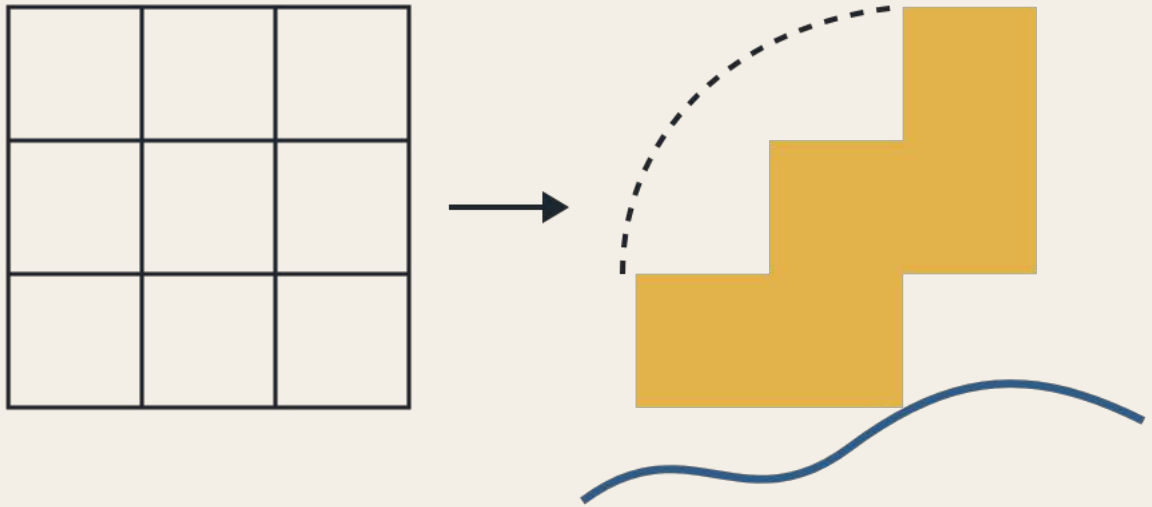
Shaped with residents

Communities choose layouts and finishes from the kit

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ORGANIC AND GEOMETRIC

A rational grid that allows a free form



Geometric — one structural module, repeated, keeps production simple and cost low.

Organic — modules step, curve and cluster to follow land, sun and existing streets.

Curved shells, roofs and landscape soften the grid so places feel made for people.

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PASSIVE DESIGN

Energy resilience is a form of protection

Fabric first

Thick insulation, airtightness and no thermal bridges, aiming at Passivhaus levels

Orientation and mass

Large openings south, small north; earth berms, planted roofs and mass hold heat

Local energy

Decentralised heat: solar, heat pumps, geothermal and batteries, so one strike cannot cut a district

When power stations are attacked, a home that stays above 15°C for days without heating is not a luxury.

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Five families of parts make every building

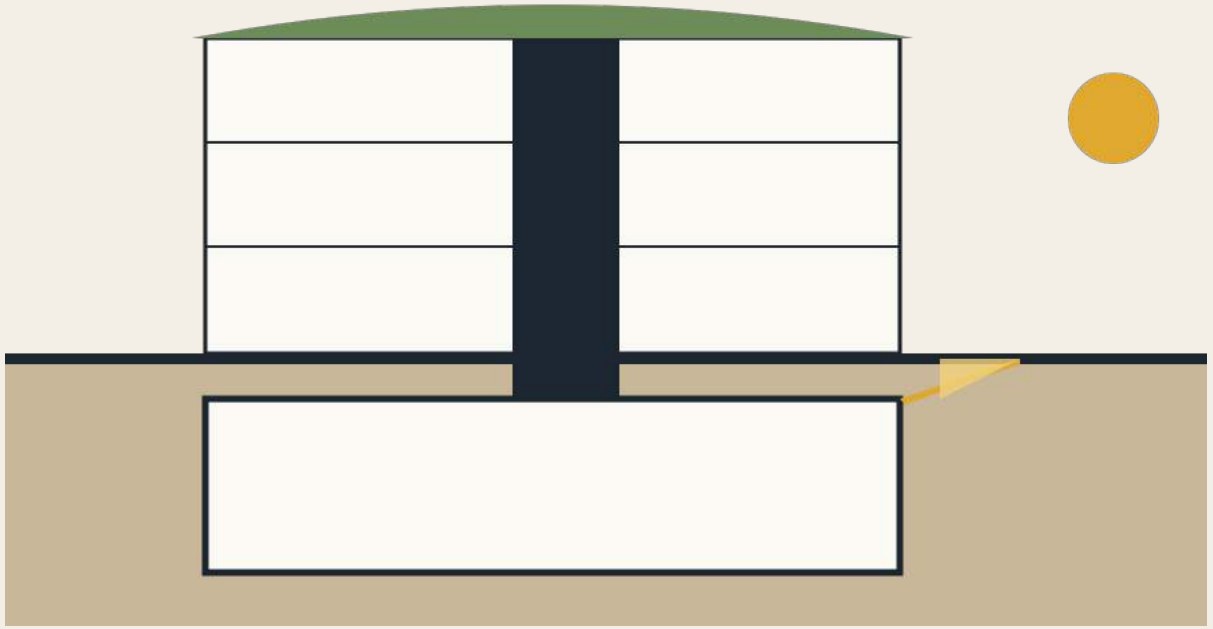
Family	What it is	Made from
1 · Protected core	Reinforced shelter, stair and services core	Recycled-aggregate concrete
2 · Frame	Standard columns, beams and floor cassettes	Timber, steel or reclaimed RC
3 · Envelope	Insulated wall and roof panels, windows	Wood fibre, mineral wool, timber
4 · Living modules	Kitchens, bathrooms, room pods	Factory finished
5 · Landscape	Earth berms, green roofs, water, play	Crushed rubble, soil, planting

Families 2–5 attach to the core by standard connections, so homes, schools and clinics share one system — and families can self-build with it.

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ABOVE AND BELOW GROUND

One section, from shelter to rooftop



Above — homes, school rooms or clinic, built from frame, envelope and living modules.

Core — protected stair and services join every level to the shelter in seconds.

Below — a dual-use shelter, daylit by a light well, used every day as a hall, gym or workshop.

Designed to DBN V.2.2-5:2023 with specialist blast and structural engineers.

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TIERED PROTECTION

Protection in tiers, as in earthquake design

TIER 1

Fully protected

Below-ground spaces and the core; inner safe rooms

TIER 2

Protects life

Blast-resistant walls on upper floors; damage repairable

TIER 3

Shelter nearby

Lighter buildings within reach of a shared shelter

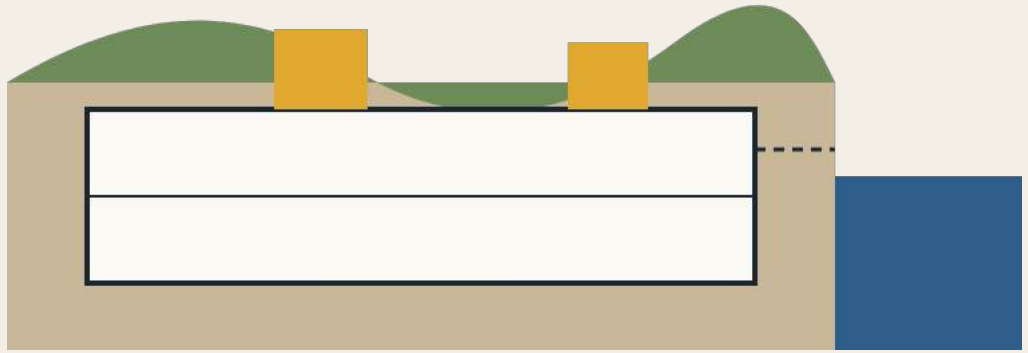
Basements with light. Ukraine already builds a basement under most houses for winter. Light reaches it through shuttered openings or indirectly from inner safe rooms.

Inner and outer rooms. As in Canadian cold-climate houses, inner rooms serve for winter and for safety; outer rooms open up in summer.

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PRECEDENT · WARSAW, 1990S

A Ground Zero building before the term existed



For the Polish Olympic Committee on the Vistula: a 200-bed hotel, offices, shops, gyms and a central square.

Two-thirds below ground, under a planted roof that undulates into the green belt.

Light and air through openings in the landscape; river-source heat pumps.

Phased: foundations and landscape first, building above later.

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PRECEDENT · LVIV REGION, 2023

Village community centres as the first Ground Zero buildings

Care
Medical and psychological support close to home

Resilience
Power and communal cooking when the grid is cut

Community
Culture and gathering while many residents are away

Villagers guided the brief; local councils worked together to form a network of cooperative spaces. Built from a kit of parts, the same model can spread quickly and cheaply.

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REGENERATIVE DESIGN

The rubble of war becomes the material of recovery

Assess
Survey, clear unexploded ordnance and asbestos

→

Deconstruct
Save slabs, beams, brick and steel whole

→

Crush on site
Mobile crushers make aggregate and fill

→

Rebuild
Cores, foundations, berms and landscape

Already under way in Borodianka, Kharkiv and Mykolaiv. The kit is designed to use this material from the start.

Sources: Rubryka; UNDP Ukraine; ENR / ETH Zürich research · © 2026 Andrew Cowan ·

RECYCLING EXISTING BUILDINGS

The greenest building is the one still standing

Many 1950s–70s precast blocks need renewal anyway. Where the structure is sound, the kit is designed to retrofit them — new skin, new core, new storeys — instead of replacing them.

New skin

Envelope panels wrap the old façade: warm, dry, safer glazing

New core

A protected core and lift added alongside, with a shelter beneath

New storeys

Light timber floors added on top where the structure allows

Residents stay

Work from outside, so communities are not dispersed again

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ZERO CORRUPTION IN PRACTICE

Built to meet what international funders ask for

Funders' shared principles	How a Ground Zero project responds
Ukrainians lead, national and local	The Union, municipality and residents set the brief
Transparent procurement	Kit components priced openly; costs published
Clear milestones, independent audit	Staged payments, each stage signed off
Build back better, in line with the EU	EU energy standards with DBN shelter rules
Grants first, private investment later	Small pilots attract grants; success draws investors

Source: Brookings, "Financing and governing the recovery… of Ukraine", Nov 2022 · © 2026 Andrew Cowan ·

BUILT OUTSIDE AND INSIDE UKRAINE

Start abroad, then move production home

PHASE 1

Made outside

Prototype parts made in Sweden, Poland and other partner countries, out of range of attack

PHASE 2

Shared

Light, high-value parts made abroad; heavy cores and landscape made locally from rubble

PHASE 3

Made in Ukraine

Licensed regional factories, Ukrainian jobs, Ukrainian architects adapting the kit

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PARTNERS

Architecture, industrial design and Ukrainian expertise

Andrew Cowan · Cowan-McFie

Author of the kit; architecture, passive design, urban planning, viability

Design partner · Sweden

Industrial designer: turning the parts into products that can be made, shipped and assembled

The Union’s members

Local design, code compliance (DBN), sites and communities

Sweden’s tradition of high-quality factory-built timber housing makes it a natural partner for the first prototypes.

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Detailed design

Detailed design and drawings follow a signed agreement

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WHAT WE PROPOSE

Four next steps with the Union

1 Choose a hromada together, where damage is heavy and restoration has not yet begun

2 Run the first Neighbourhood Heart design competition or workshop with the Union

3 Build a first prototype of the kit

4 Prepare a joint funding bid for a pilot of around £20 million with the municipality

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ДЯКУЮ · THANK YOU

Let us rebuild homes people are glad to return to

Andrew Cowan RIBA · aca@andrewcowanarchitects.com · andrewcowanarchitects.co.uk

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