ANTI-RUIN by OZRUH

WORLD'S LARGEST 3D-PRINTED STONE STRUCTURE TO EVOLVE IN FUTURE PHASES

Photography by Lloyd S. Lee

A project by OZRUH in collaboration with ETH Zurich, ANTI-RUIN begins as a twofold debut at the 2025 Venice Architecture Biennale and sets out a long-term vision for architecture shaped by entropy, adaptability, and material reuse.

PROJECT MEDIA

Link to photography and film files of the project:
https://www.dropbox.com/scl/fo/55my2sfforr7ri4t3c0k3/ADgCXkl9Bx5txuViDE7NVPQ?rlkey=o10xgz7xf94y4c2aqsmgfcoix&st=6gc6xqqs&dl=0

PROJECT INFORMATION

OZRUH, the London-based design studio founded by Levent Ozruh, launches ANTI-RUIN with a dual presence at the 19th Venice Architecture Biennale — as a monumental installation at the Pavilion of Türkiye and as a featured documentary film in Intelligens CANON, the main exhibition curated by Carlo Ratti.

This marks Phase 1 of a long-term architectural experiment that will continue across multiple stages. Currently, early 3D-printed maquettes are also exhibited at the Royal Academy Summer Exhibition in London. Phase 2, a new full-scale structural prototype, will be unveiled at the World Design Congress — hosted by the UK Design Council at the Barbican Centre in September 2025 — as part of their support for emerging talent within the Design Expert cohort, of which Levent Ozruh is a member. Phase 3, to be realised in 2026, will physically merge the components of Phase 1 and Phase 2 into a unified structure — embodying ANTI-RUIN's premise of architecture as recomposition rather than replacement.

Essentially a work of 3D-printed stone architecture, ANTI-RUIN proposes a sustainable architectural vision shaped by entropy and material reuse — where ancient becomes future, and future becomes ancient.

Currently the world's largest 3D-printed stone structure, the project was developed through an experimental collaboration between OZRUH and ETH Zurich, led by Dr. Pietro Odaglia. It pioneers a novel application of binder jetting adapted for stone: layers of discarded marble dust — a byproduct nearly equal in volume to the marble extracted from the Lasa Marmo Quarry in South Tyrol — are selectively bonded by a liquid binding agent, forming freestanding architectural elements without molds or support structures. Crucially, the process uses no toxic binders or post-processing, demonstrating a materially grounded and scalable alternative to conventional building systems.

While marble dust is the project's starting point, ANTI-RUIN envisions a broader future where any geological or construction-derived dust — from stone fragments to brick and demolition waste — can be resurrected into new architectural matter. It proposes a holistic material economy rooted in regeneration rather than depletion. The resulting architectural language operates across multiple scales: from the fine granularity of dust particles to larger block-like modules that aggregate into evolving spatial patterns. This layered grain, both geological and computationally crafted, establishes a dynamic continuity — a system designed not to withstand entropy but to thrive through it, strengthening through reconfiguration and recomposition.

Although ANTI-RUIN first appears as a familiar architectural gesture — a traditional gate of two columns and a spanning slab — a closer examination reveals a radical rethinking of structural logic. One of the columns stands entirely independent, never touching the slab or adjacent supports. Engineered by formDP, the slab itself rests only on an off-centered column, challenging conventional notions of balance and load-bearing. This asymmetric stability is made possible through the freedoms offered by 3D-printed stone: by hollowing and reconfiguring the internal geometries of each printed component, ANTI-RUIN shifts the center of gravity within each element. The result is not a singular monument but two

autonomous substructures in tension and dialogue — an architecture of federated clusters, where independent parts coexist within a larger system without rigid dependency.

Accompanying the installation is a twenty-minute documentary film that follows ANTI-RUIN's evolution from initial concept through fabrication, transport, and assembly. Filmed on location at the Lasa Marmo Quarry and at ETH Zurich, the documentary offers an intimate view of the material experiments, technological breakthroughs, and philosophical frameworks that shaped the project. Premiering within the Artificial section of the main exhibition curated by Carlo Ratti at Arsenale, the film extends OZRUH's broader agenda: to create an architecture that is materially grounded, philosophically open, and radically adaptive to the disorder of time.

Rather than being a completed object, ANTI-RUIN operates as an open-ended system — a fragment in continuous negotiation with its surroundings. Its design allows it to grow, split, mutate, and recombine across contexts and timeframes. In Phase 3, scheduled for 2026, the original components of Venice and the Barbican will be brought together into a single, unified structure — not as a conclusion, but as a recomposition that embodies the core ANTI-RUIN principle of gaining value through aggregation, not replacement.

Discussions are already underway for adapting the ANTI-RUIN system to larger-scale, site-specific architectural applications. The project is not speculative; it is materially viable today — an architecture that evolves through disorder, adapts over time, and resists obsolescence by design.

KEY NOTES

OZRUH debuts ANTI-RUIN at the 19th Venice Architecture Biennale:

/ Installation at Pavilion of Türkiye
/ Film at Intelligens CANON (curated by Carlo Ratti)
/ Early 3D-printed maquettes on view at Royal Academy Summer Exhibition
/ Phase 2 to be unveiled at the Barbican Centre for the World Design Congress (Sept 2025)
/ Phase 3 to follow in 2026, physically merging Phases 1 and 2 into a single evolving structure

Vision
Architecture shaped by entropy, adaptability, material reuse — where ancient becomes future

Themes
Natural + artificial intelligence → collective intelligence
Stone dust regeneration linked to soil and earth intelligence

Innovation
Collaboration between OZRUH and ETH Zurich (Dr. Pietro Odaglia)

Geopolymer binder jetting using marble dust (Lasa Marmo Quarry)
No toxic binders or post-processing

Systemic Material Future
Applies to stone, brick, demolition dust
Proposes a regenerative material economy

Architecture
From dust granules to modular blocks to spatial systems
Thrives through entropy; strengthens by recomposition

Federated Structural Clusters
Independent structural elements within a unified system
Enabled by internal hollowing and gravity shifts
Substructures in tension and dialogue

Film
Filmed at Lasa Marmo Quarry and ETH Zurich
Premieres at “Artificial” section of the Main Exhibition of the Biennale

Dates
Pre-opening: 8–9 May 2025
Exhibition: 10 May – 23 November 2025

ABOUT LEVENT OZRUH

Levent Ozruh is a London-based architectural designer, founder of OZRUH, and a Design Council Expert. His past work spans teaching at The Bartlett (UCL), research at MIT’s Senseable City Lab, and the design of a lunar habitat commissioned by the European Space Agency. His work has been previously exhibited at the Venice Architecture Biennale, London Design Festival, and the Royal Academy of Arts.

CONTACT

Website
www.ozruh.co.uk

Instagram
@ozruh_official

PROJECT CREDITS

ANTI-RUIN is a project by OZRUH LTD who owns all the IP related to the project.

The project is fabricated by Digital Building Technologies at ETH Zurich with the guidance and leadership of Dr. Pietro Odaglia.

1) ANTI-RUIN Structure at the Türkiye Pavilion at Arsenale:

Architectural Design
OZRUH

Fabrication & Material Development
Dr. Pietro Odaglia – Senior Researcher at Digital Building Technologies, ETH Zurich
Benjamin Dillenburger – Chair at Digital Building Technologies, ETH Zurich

Structural Engineering (Installation)
formDP

Structural Engineering (Platform)
BKSD

Photography
Lloyd S. Lee

2) ANTI-RUIN FILM at the Intelligens CANON Exhibition at Arsenale

Directors
Troy Edige & Beyza Mese

Director of Photography
Troy Edige

Editor
Beyza Mese

Producer
OZRUH

Filming Locations
Lasa Marmo Quarry (Italy)
Digital Building Technologies, ETH Zurich (Switzerland)