

# REDEFINING HOW THE WORLD BUILDS

3D CONCRETE PRINTING



**coral**

3DCP



When nature created this world,  
it started with a blank canvas.  
Just time, invention, intention, and freedom.  
Then came 300,000 years of humanity.  
We moved from stone to steel. From pyramids to prefab.  
And what have we, humans, really built?

As kids, we were told we could build anything.  
But somewhere, we stopped believing.  
Why do we follow someone else's template?  
Why do we build the same thing over and over again?

At Coral, we bring back the freedom to build anything.  
Without templates.  
And we are more than a building tool.  
We are a platform for a more creative future.  
A factory that moves.  
A lab that never sleeps.  
A codebase that evolves.

We are here to give form to your dream,  
and function to the aesthetics.

Because the next era won't be built by  
a few. It will be built by everyone.



Tomáš Vránek  
CEO and Founder at  
Coral Construction Technologies



HOW WE STARTED



4,000 BCE



16th CE



20th CE



21st CE



WHERE WE ARE HEADED



HAVE YOU IMAGINED  
A FUTURE  
MORE INSPIRING?



A FUTURE  
EVERYONE CAN  
BUILD?



# LEADERS UNITED TO BUILD DIFFERENTLY



A European leader in industrial automation with deep expertise in engineering, robotics, and digital solutions that transform manufacturing and production across industries. ICE has delivered more than 1,500 advanced automation and machinery projects in over 40 countries worldwide, giving Coral a unique technological edge.

Read more



The largest industrial holding group in the Czech Republic. MTX Group manages, finances, and directs strategic industrial operations globally across more than 39 companies. The Group employs over 2,620 people with reported revenues of EUR 2.3 billion in 2024.

Read more



One of Central Europe's leading general contractors, specialising in large-scale and complex developments. HSF System manages projects across the entire lifecycle — from design to completion. In 2024, they achieved turnover of EUR 86.1 million in Czechia, while the company in Slovakia attained record turnover of EUR 59.6 million.

Read more



PURPOSIA Group is an investment group that has grown from Czech foundations and today ranks among the leading European players in the fields of construction, real estate development, and technology investments. The group comprises a total of 43 companies focused on development activities, comprehensive construction execution, building production, property management, and premium private transportation services.

Read more





# A FUTURE EVERYONE CAN BUILD

We don't believe 3D concrete printing should be limited to boxes.

We envision a world where anyone, anywhere, can shape the future they imagine—and in doing so, reshape how humanity lives, works, and dreams.

That's why we didn't just build another 3D printer.

## WE BUILT AN ENTIRE PLATFORM FOR CONSTRUCTION





# A COMPLETE ECOSYSTEM FOR BUILDING

The industry has shared plenty of criticism about typical 3D printing. That's why today, we are reshaping construction with a complete 3D concrete printing system. From research and development to execution, we deliver innovations that redefine how buildings are designed, built, and delivered.

## CORAL 3DCP

You can build. We can build. And together, we create something extraordinary. We are more than a machine. We are a complete ecosystem for 3D-printed construction. By uniting technology, design, and execution, we are redefining architecture and how the world builds.



## CORAL ACADEMY

We help others to contribute to the future as well. With years of research and development in 3D construction printing, we share our know-how by training architects, engineers, and operators — building skills for the next generation of construction.

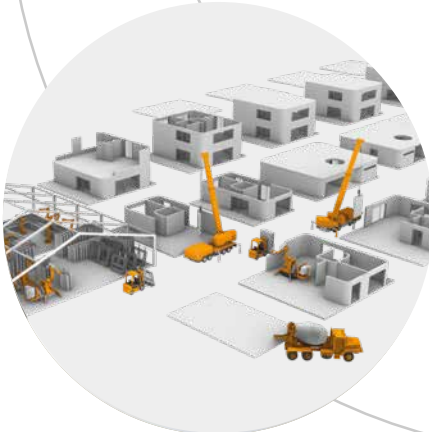


## HSF System

Delivers complex developments at scale, managing the full lifecycle of construction projects with proven expertise.

## CORAL ARCHITECTS

We design your dreams, give them form, and turn them into architecture with meaning and aesthetics. Our in-house team of architects and designers delivers complete 3DCP projects. By exploring the unique language of 3D printing, we create buildings that are unique, efficient, expressive, and in harmony with their surroundings.



## CORAL CONSTRUCTION FACTORY

On-site and off-site modular manufacturing. 3D printing enables industrialized processes with mass customization. We deliver modular homes and structures printed in sections, assembled on-site with locally sourced transport concrete — reducing waste, shortening timelines, and cutting transport costs.



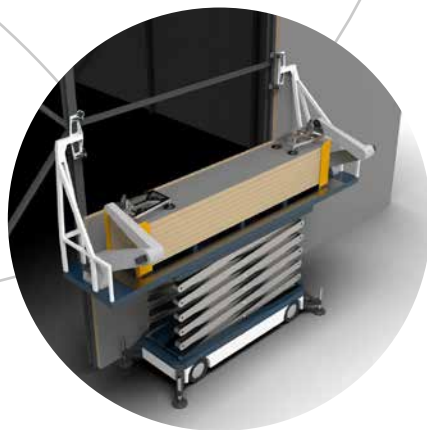
## ICE Industrial Services

Brings advanced robotics and digital solutions to industry. This expertise gives Coral a technological advantage that few in construction can match.



## PRINT AS A SERVICE

A multidisciplinary team covering the entire process from design to delivery. We can bring your concepts to life, or join your project at any stage to provide 3DCP expertise.



## CORAL TECH

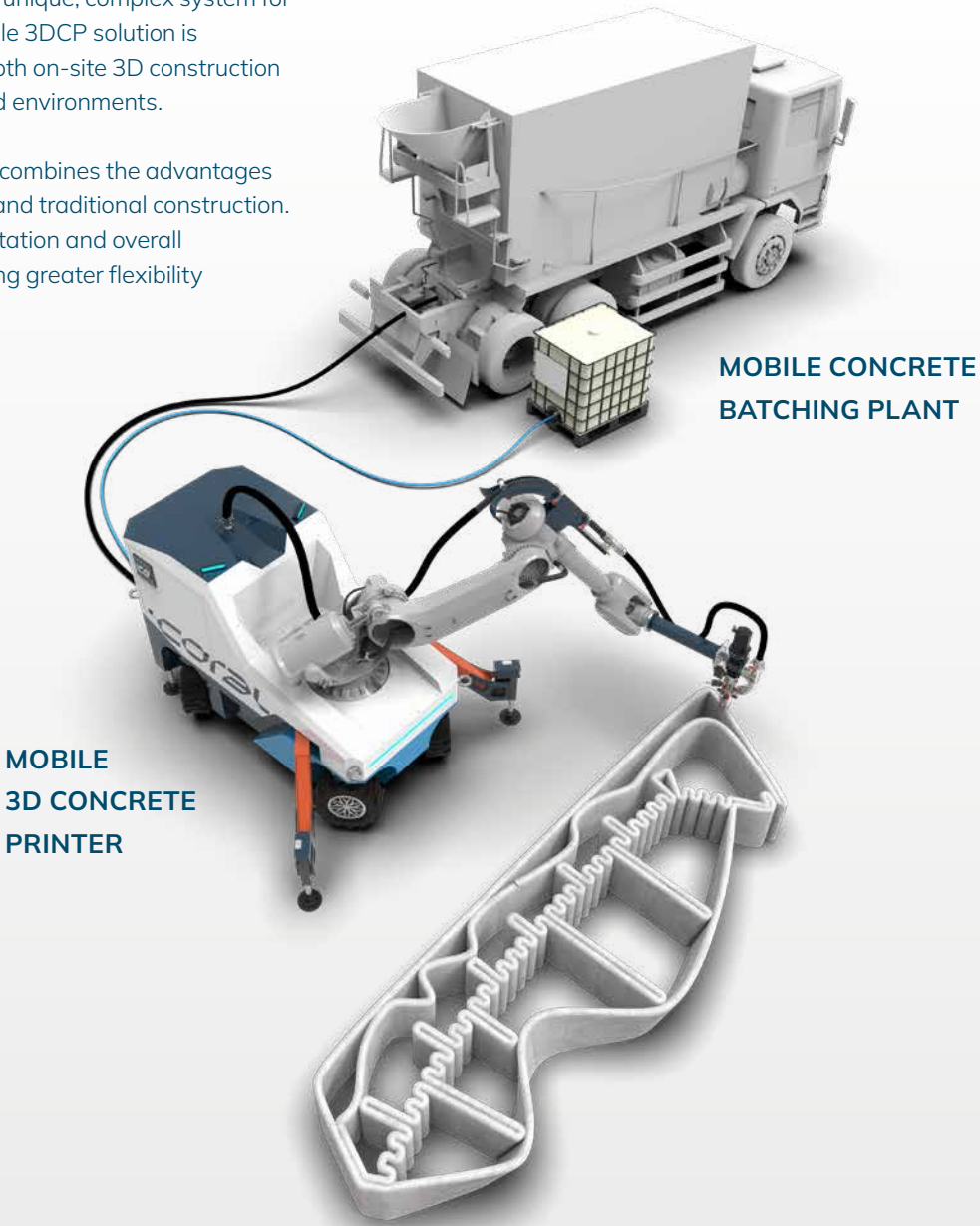
Thanks to our automation expertise, we have developed a unique 3D printing solution—and we keep pushing forward. Our technical team is constantly innovating, improving, and creating new models for 3DCP and automated construction concepts, tailored to client needs.



# A BREAK-THROUGH PRODUCT

We have developed a globally unique, complex system for 3D concrete printing. Our mobile 3DCP solution is a state-of-the-art choice for both on-site 3D construction and prefabrication in controlled environments.

By enabling on-site printing, it combines the advantages of 3D printing, prefabrication, and traditional construction. This synergy reduces transportation and overall production costs while providing greater flexibility in operation.



TRANSPORT  
CONCRETE



PATENTED  
PRINthead



INDUSTRIAL  
AUTOMATION



SOFTWARE  
ECOSYSTEM

# EQUIPMENT VERSATILITY



## CUSTOMIZATION

We design and build unique construction automation solutions tailored to the customer's requirements.



## ROBOTIZED CONSTRUCTION TECHNOLOGIES

The mixing head can be exchanged for other tools. Core drilling, milling and other works can be performed by the same machine.



## FRESH PRINT CURING

Nozzles are used to spray a variety of curing agents during the printing process to lower the evaporation rate and reduce concrete shrinkage.



## EDGE SMOOTHING

Up to 15% of the material for 3DCP can be saved by smoothing the edges of the print path. This can save approximately 30% of the surface treatment material compared to a traditional 3DCP surface.



## HORIZONTAL HEAD

Print in between floor and ceiling panels. The horizontal printhead allows printing in areas which would be inaccessible for the standard printhead.



# THE MOST ADVANCED 3D CONCRETE PRINTER IN THE WORLD



- Rugged mobile chassis with forklift pockets or your choice of rubber tracks / industrial wheels for true on-site agility
- Extreme site flexibility – drive across uneven terrain or factory floors, then park and level in minutes
- Quick-start deployment – from unloading to first layer in under 60 minutes, minimizing setup downtime
- On-site printing capability for foundations, walls, custom forms, and emergency structures without traditional formwork



## ENGINEERING HIGHLIGHTS

- **Modular printhead with automatic cleaning**  
Easy servicing, nozzle flushing, and additive dosing
- **External servo axis**  
For smoothing, reinforcement placement, and marking during printing
- **Adaptive printing intelligence**  
Automatic adjustment of speed, material flow, and additives
- **Mobility & power flexibility**  
180° rotating wheels, battery-powered movement, EU/US voltage ready
- **High-resolution non-planar printing**  
Advanced strategies for fine details and complex geometries



# UNIQUE SOLUTION FOR 3D CONCRETE PRINTING

## MECHATRONICS

Our 3D printer combines cutting-edge electronic mechanics — a unique integration that makes the system both powerful and precise.

## TRANSPORT CONCRETE

We are among the first in the world to print with locally available materials. Our unique print head mixes concrete with standard additives, ensuring fast setting and efficient material use.

## AUTOMATION

Lasers, scanners, sensors, and a world-class control system ensure ultimate quality. With decades of automation know-how, we have developed a truly unique machine for 3D concrete printing.

## CONSTRUCTIONS

Coral does not force new technology into old building habits. Instead, we shape our building elements to fit the possibilities of 3D concrete printing. This way, Coral creates a smarter, more natural and efficient system for modern construction.

## SOFTWARE

From design to final our software has the entire process under control. Our custom-built engine manages print data preparation, supports advanced features such as tilting, and allows real-time control of every print, each layer, inch by inch. From planning to execution.

## ARCHITECTURE

We approached 3DCP architecture from a new perspective, free from prejudices and established notions. Instead of copying the forms of log cabins or bungalows, we sought its own logic, rooted in digital design and robotic production. Thanks to our curiosity and ability to get to the core of the problem, we are able to design solutions that respect the material, the technology, and their true applications.



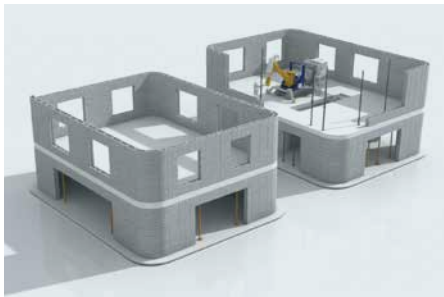
# YOUR SCALE OF THE FUTURE OF CONSTRUCTION



## HOUSING

Affordable, scalable, and flexible living solutions for communities of all sizes

- Social Housing – cost-effective homes for municipalities and NGOs
- Developments – modular neighborhoods and residential projects
- Tiny Houses – compact, energy-efficient living



## MULTI-STOREY HOUSES

Smart design and modern technologies for urban density

- Residential buildings with multiple floors
- Flexible layouts for cities and suburbs
- Scalable to different community needs



## LUXURY HOMES

Exclusive residences that blend individuality with premium design

- Villas – bespoke, high-end living
- Residences – elegant family homes
- Tailor-made concepts reflecting unique lifestyles



## INDUSTRIAL CONSTRUCTIONS

Durable and efficient buildings for industry and logistics

- Warehouses – optimized for storage and distribution
- Production Facilities – robust spaces for manufacturing
- Logistics Centers – scalable solutions for supply chains
- Noise Barriers – effective sound protection for infrastructure



## HIGH-TECH CONSTRUCTIONS

Unique structures hardly achievable with traditional methods

- Churches – symbolic architecture with innovative form
- Cable Car Stations – complex geometries built efficiently
- Zoo Pavilions – nature-inspired structures mimicking organic shapes



## URBAN STRUCTURES

Practical and creative solutions for modern cities

- Schools – modular, fast-to-build educational facilities
- Parks & Playgrounds – safe and engaging public spaces
- Small City Architecture – kiosks, pavilions, community hubs
- Bus Stops – durable and customizable mobility shelters
- Urban Defense Shelters – robust, protective structures for resilience



# STRUCTURES DESIGNED FOR 3DCP

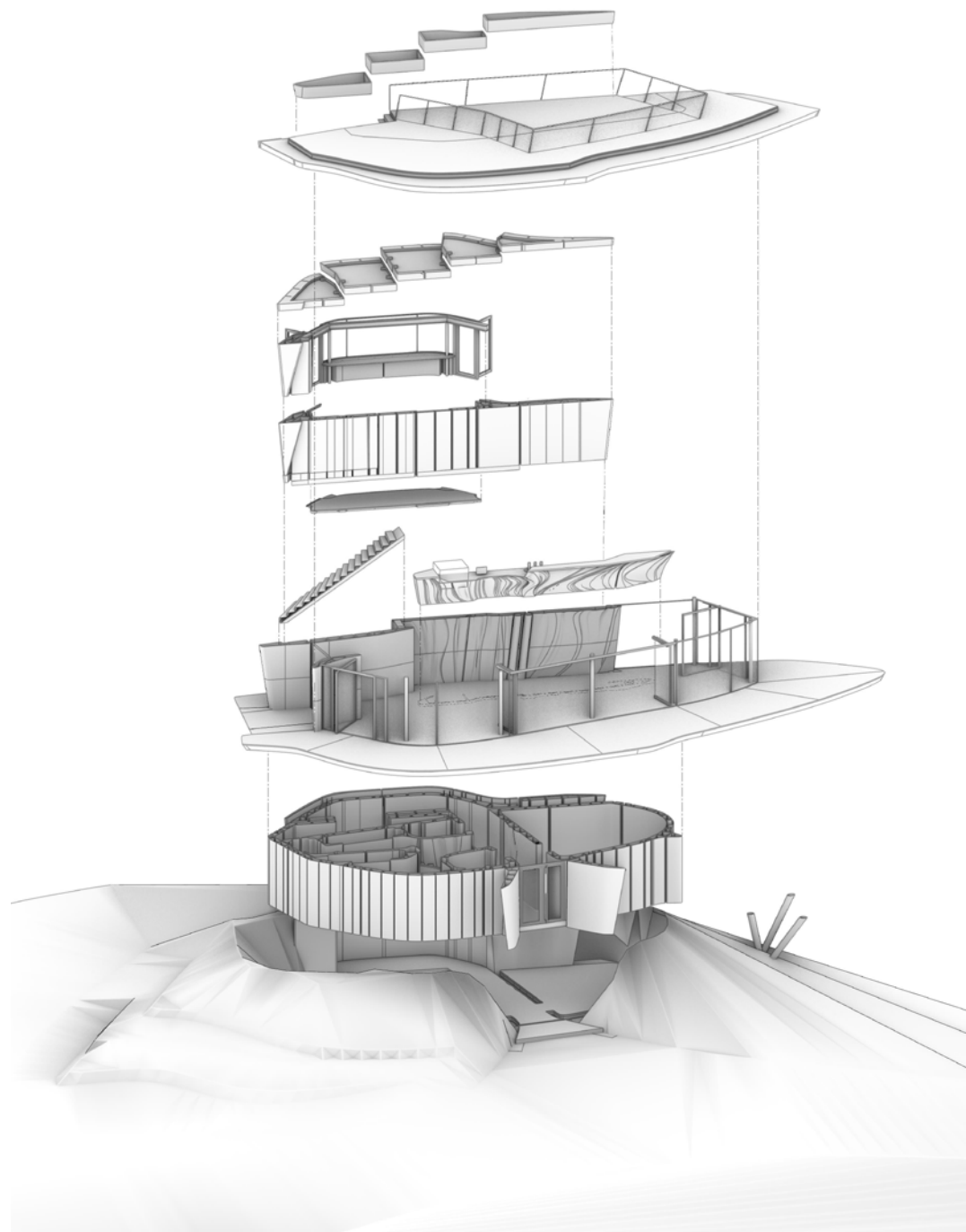
## 3DCP Construction Process

- Combines the advantages of parts prefabricated in the production hall and onsite production
- Custom prefabrication of integrated formwork
- Prefabrication of parts in controlled environments within three weeks
- Quick assembly onsite in extreme mountain conditions
- The printed part of the building consists of a total of 48 printed walls and 7 ceiling slabs





# THE FIRST 3D PRINTED RESTAURANT IN THE WORLD



*Ski Resort Kopřivná, CZ  
Design by Coral Architects, ATELIER3M*





# ENABLING DESIGN FOR ROBOTIZED CONSTRUCTION



## ARCHITECTURE NATIVE TO 3DCP

Coral printed a full house, not a box, on-site in five days with eight robot positions. A proof that 3D concrete printing delivers speed, freedom of form, and beautiful shapes once impossible.

Project Details

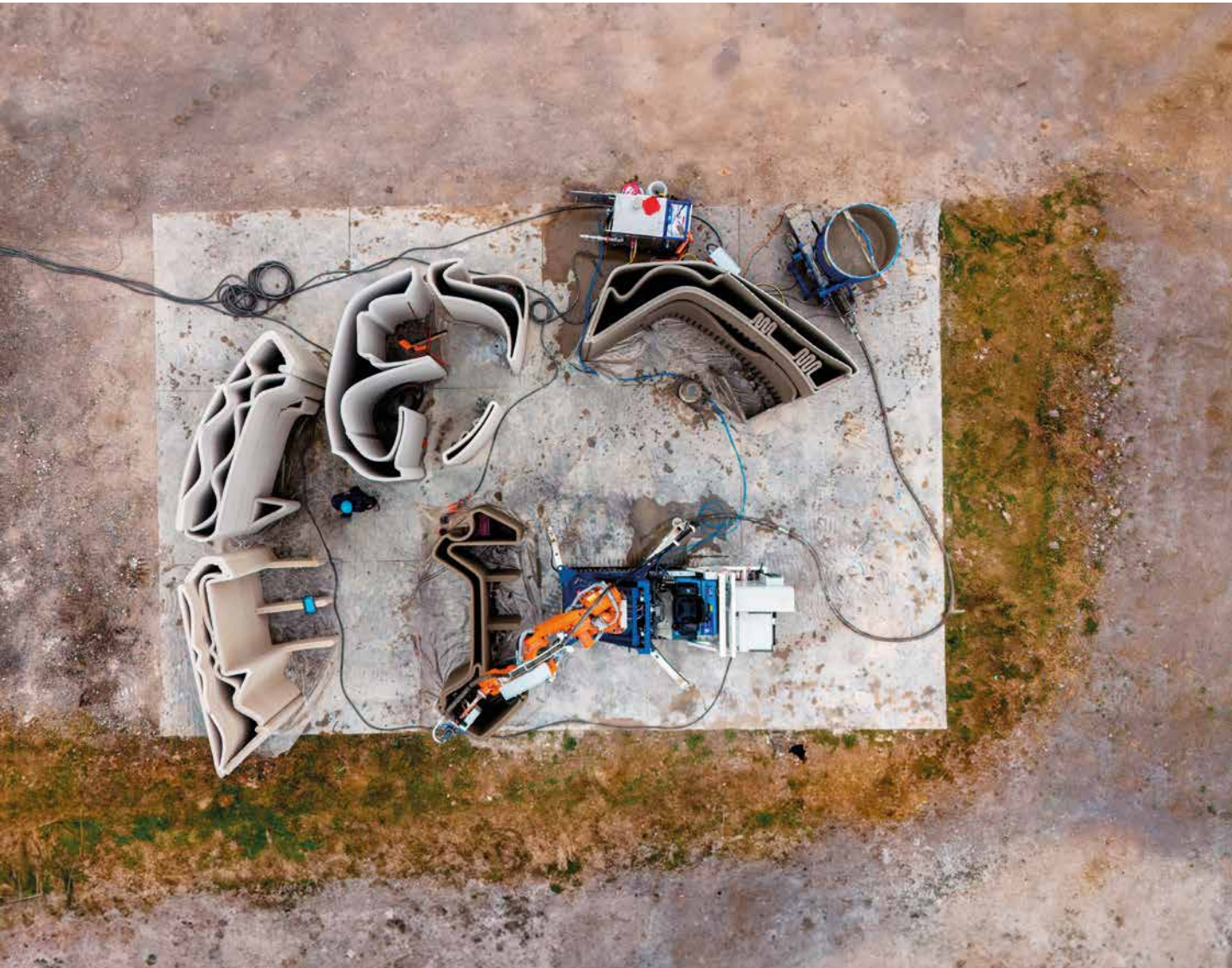
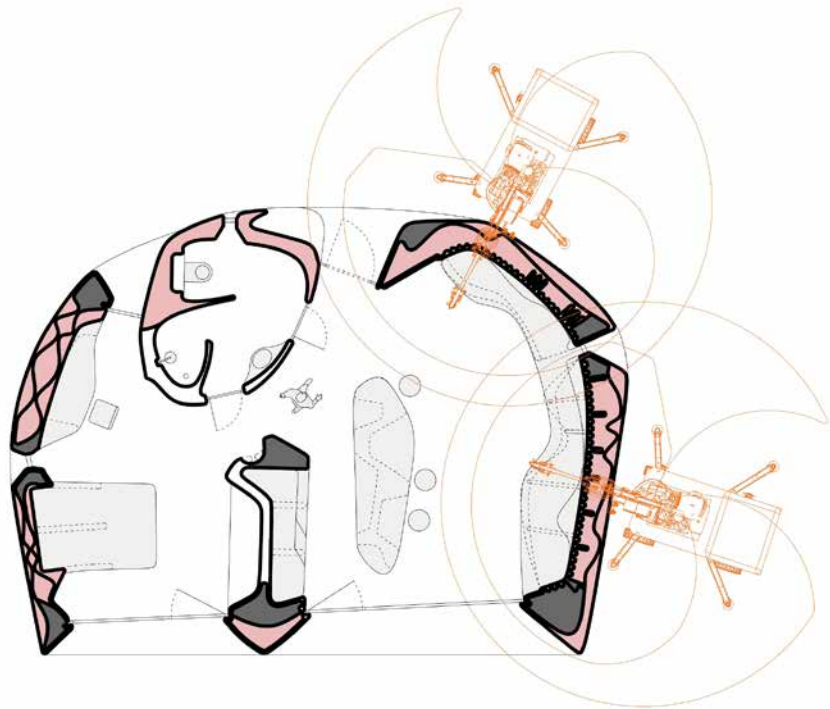
Built-up area: 84 m<sup>2</sup> / 905 ft<sup>2</sup>

Usable space: 69 m<sup>2</sup> / 743 ft<sup>2</sup>

3DCP material used: 16 m<sup>3</sup> / 565 ft<sup>3</sup>

Printing time: 16 hrs

Design by Coral Architects





# LUXEMBOURG'S FIRST 3D PRINTED HOME



## RETHINKING SPACE, SPEED & SUSTAINABILITY

*Project Details*  
*Location: Niederanven, LU*  
*Size: 56 m²*  
*Project: ODA Architects, M.Arch. Bujar Hasani*  
*Renderings and drawings: ODA Architects*

In the heart of Niederanven, Luxembourg's very first 3D printed tiny house has risen—proof that high-quality, climate-conscious living needn't take years or millions. Printed in just one month on an under-used micro-plot in Rammeldange, the 47 m² home pioneers a faster, cleaner way to build.





# PARAMETRIC DESIGN

## A 3D PRINTED BUS STOP



*Project Details*  
*Size: 7,3x2,5x3,3 m / 24x8x11 ft*  
*Printing time: 12h*  
*Number of parts: 4*  
*Integrated reinforcement and conduits*

### 3D PRINTED ARC

The 15ft wide bus stop was printed on a pre-printed mount. The whole object was assembled from four unique parts made using 3D printing technology.



Photo: BoysPlayNice



# ARCHITECTURE THAT REACHES THE SKY

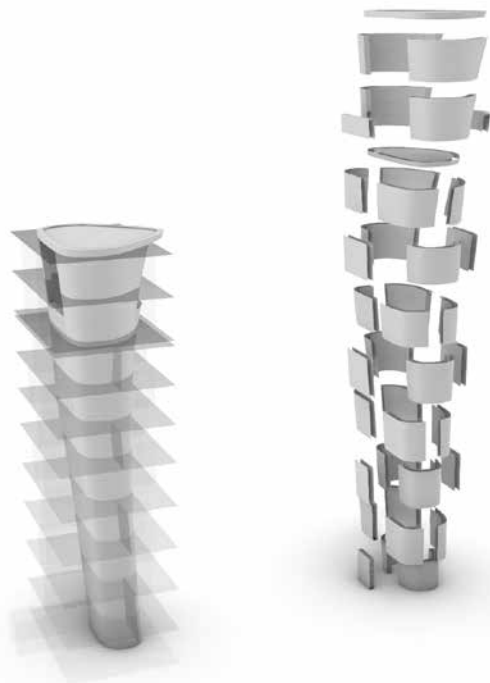
## THE NERATOVICE CHURCH CZ



Architecture: Zdeněk Fránek

### INNOVATIVE SACRED ARCHITECTURE SHAPED BY 3D PRINTING

The Neratovice church embraces cutting-edge 3D concrete printing to realize its unique double-shell geometry. This advanced method allows for precise, curved forms that would be costly or impossible with conventional techniques. It enables seamless integration of functional spaces within the structure while minimizing material waste and reducing construction time—bringing efficiency, sustainability, and architectural ambition together in one spiritual landmark.

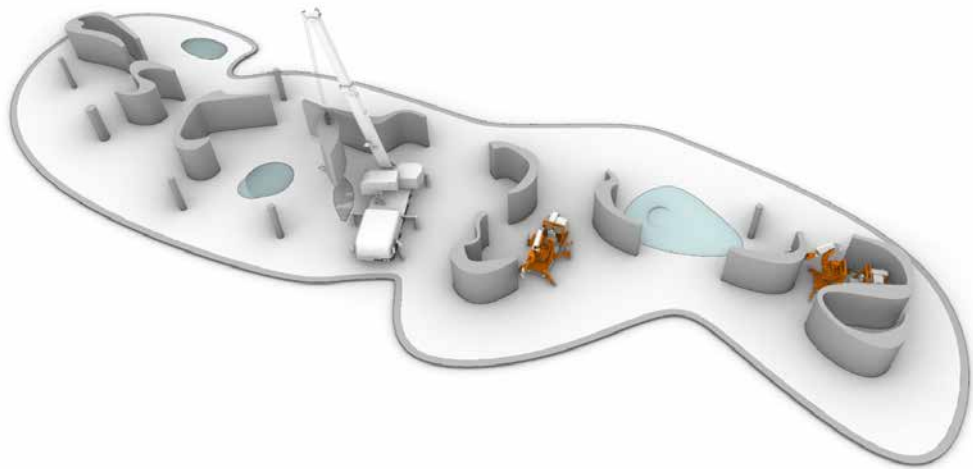




# A 3D PRINTED RESORT

## THE SEED COSTA RICA

The Seed is a visionary development in Uvita, Costa Rica, featuring 28 modern condominiums, 35 luxury villas, and 12 nature-inspired cabins where lush tropical nature and contemporary living blend seamlessly.



### ADVANCED TECHNOLOGY MEETS DESIGN FREEDOM

The Seed will be the world's first resort built in large part with 3D printing technology, especially in areas where traditional construction would be too complex or less efficient. This innovative approach blends advanced technology with design freedom, creating spaces of exceptional creativity, uniqueness, and richness for an experience found nowhere else in the world.



Filip Zak (PRO Development)  
Architects: Jeroen Bollen (Archibold),  
Iyeta Tesarova (Formafatal), Jan Mach,  
Jan Vondrak (Mjolk architects),  
Atelier Partero



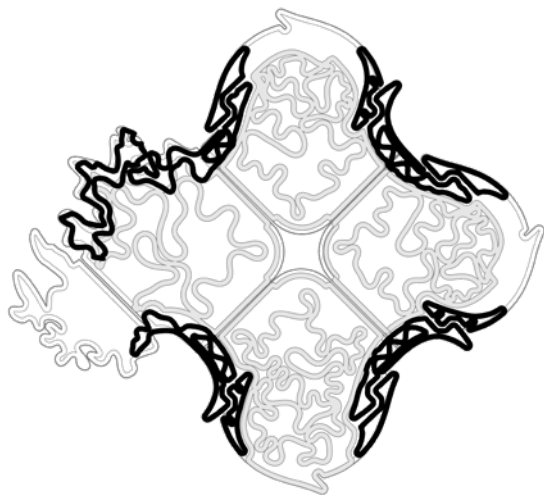
# UNPRECEDENTED UNIQUENESS

## THE PAVILION



*Project Details*  
*Size: 6x6 m / 20x20 ft*  
*Printing time: 20 h*  
*Printed material: 12 m³ / 423 ft³*  
*Number of parts: 16*  
*The pavilion has been designed to be modular and fully decomposable. We have already relocated and rebuilt the entire building several times.*

### AI GENERATED PATTERNS AND PARAMETRIC DESIGN



In 2023, the project was nominated for the Czech Architecture Award. It was selected by an international jury from a total of 241 entries.





# TINY HOMES

## FOR SUSTAINABLE LIVING



### REDEFINING URBAN LIVING WITH 3D PRINTED TINY HOMES

Trinity isn't just a single tiny house—it's a generative system that adapts to different needs, from individual homes to multi-unit clusters for communities, co-living spaces, and even classrooms or places of worship.

Project Details

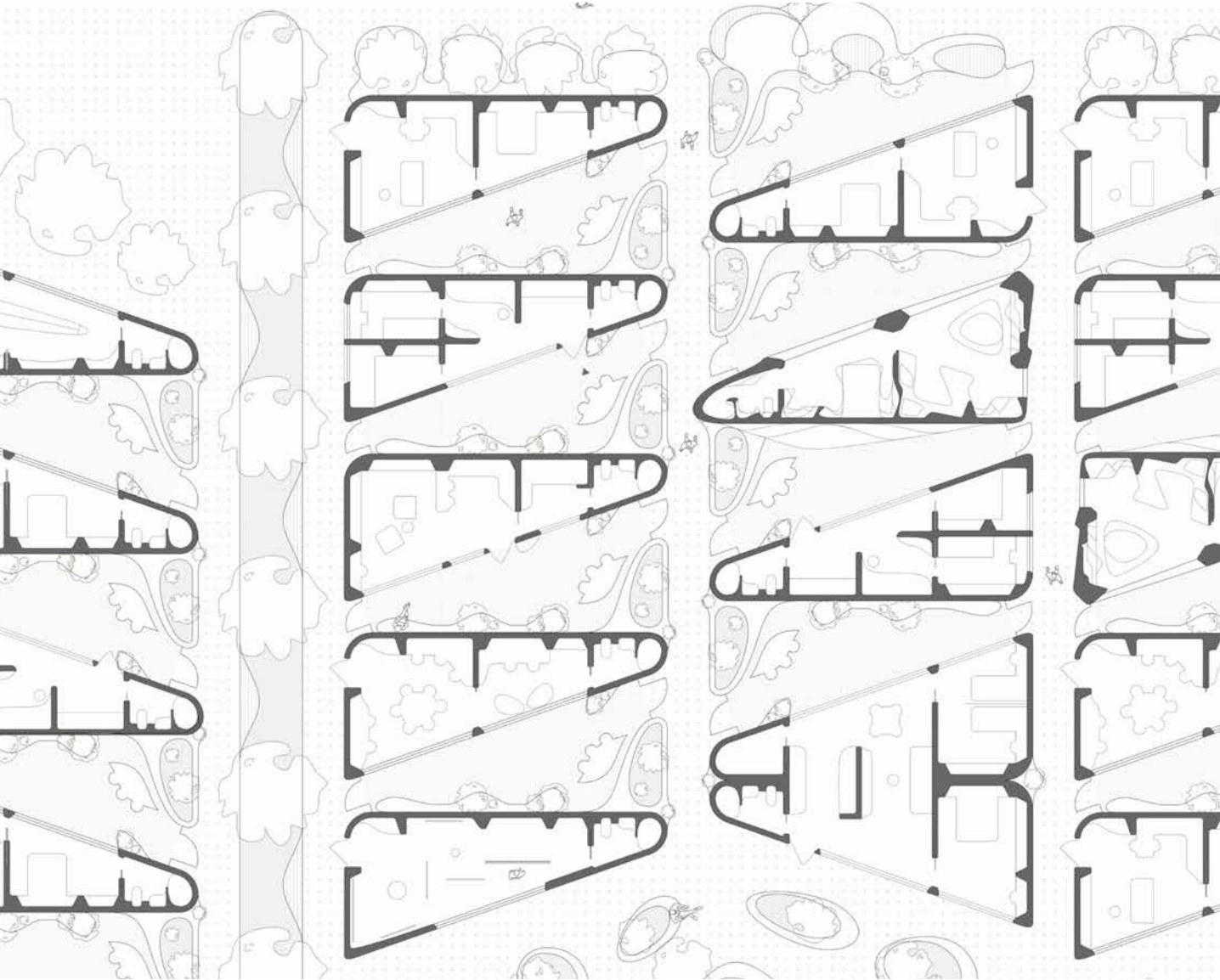
Print Area: capped at 100 x 38 ft

Estimated Price: \$99,000 per structure

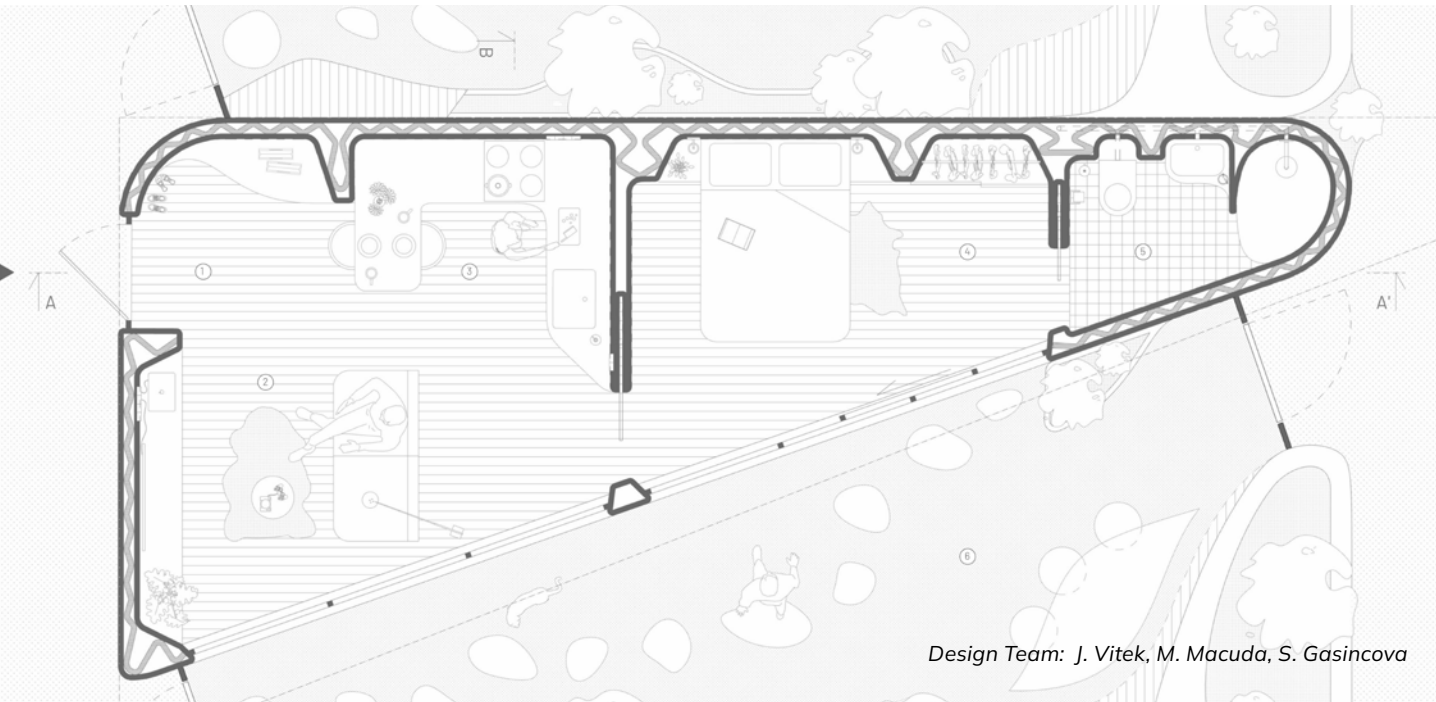
5 house-yard pairs (5BC) on a single print bed

Young couple / Single person unit, 390 sq ft

### EXAMPLE OF URBAN PLANNING



### FLOORPLAN



Design Team: J. Vitek, M. Macuda, S. Gasincova



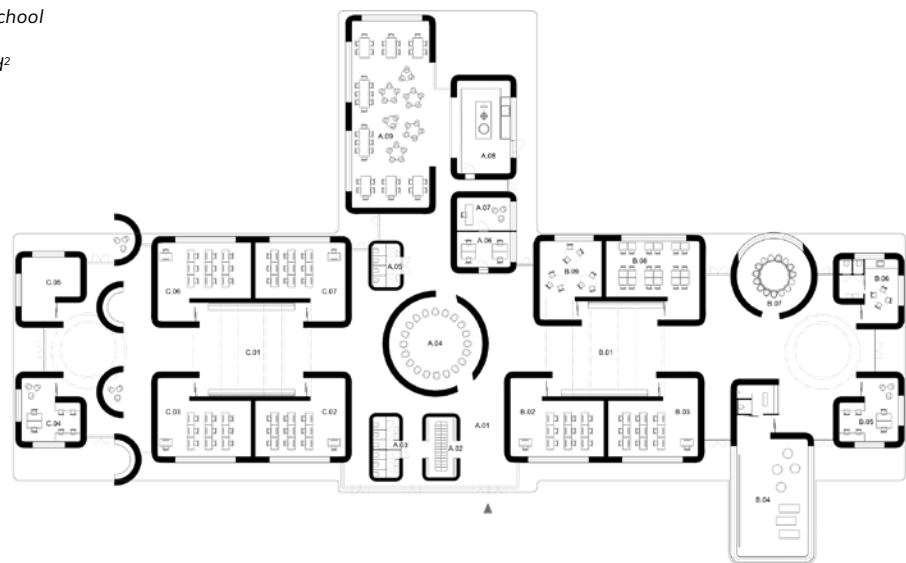
# 3D PRINTED MODULAR SCHOOLS



## FROM CUSTOMIZED PREFABRICATED MODULES

3D-printed modular buildings offer an effective and affordable solution with a high degree of design flexibility.

Project Details  
Project of 3D Printed Modular School  
Built-up area 2,750 m<sup>2</sup>/3,290 yd<sup>2</sup>  
140 students  
Design by Coral Architects





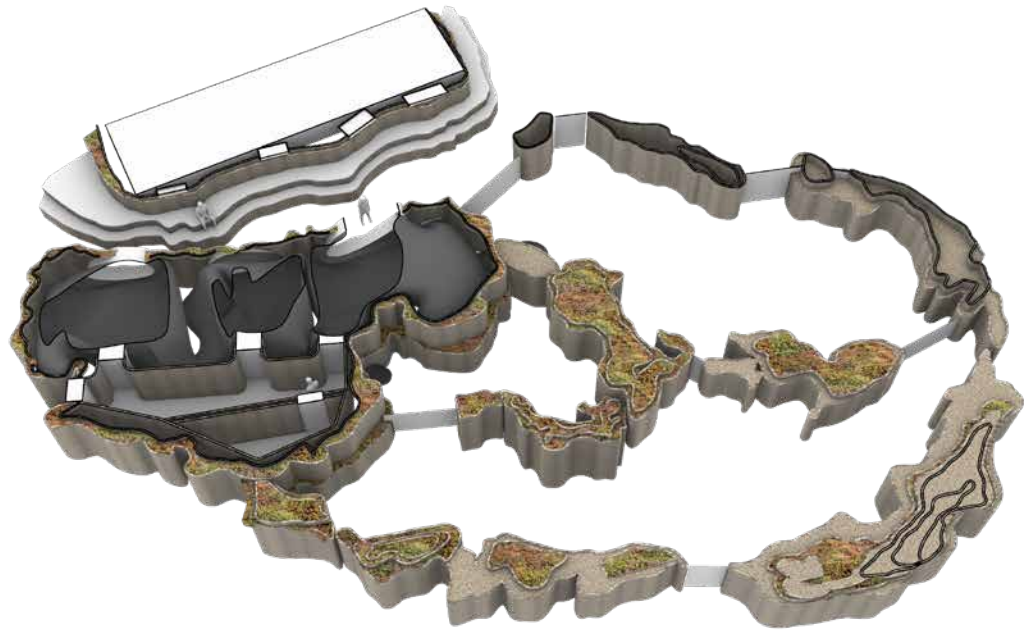
# PARKS & PLAYGROUNDS



## UNIQUE DESIGN IN DIFFERENT SCALES

- Design flexibility
- Resistance to external conditions
- Combination with other materials
- Surface treatments
- Hydrophobic coating

# WOMBAT ZOO PAVILION



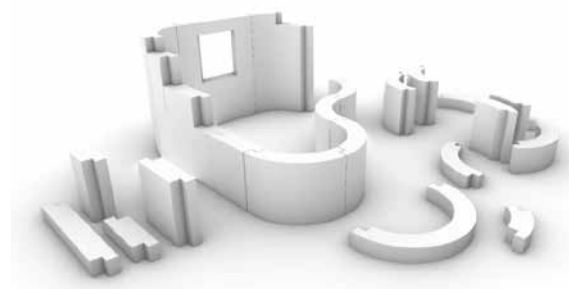
## LANDSCAPE ARCHITECTURE

- Customizable forms seamlessly integrate architecture into natural landscapes
- Complex shapes are easily created, enhancing authentic animal habitats
- Quick fabrication reduces construction disturbance in sensitive zoo environments

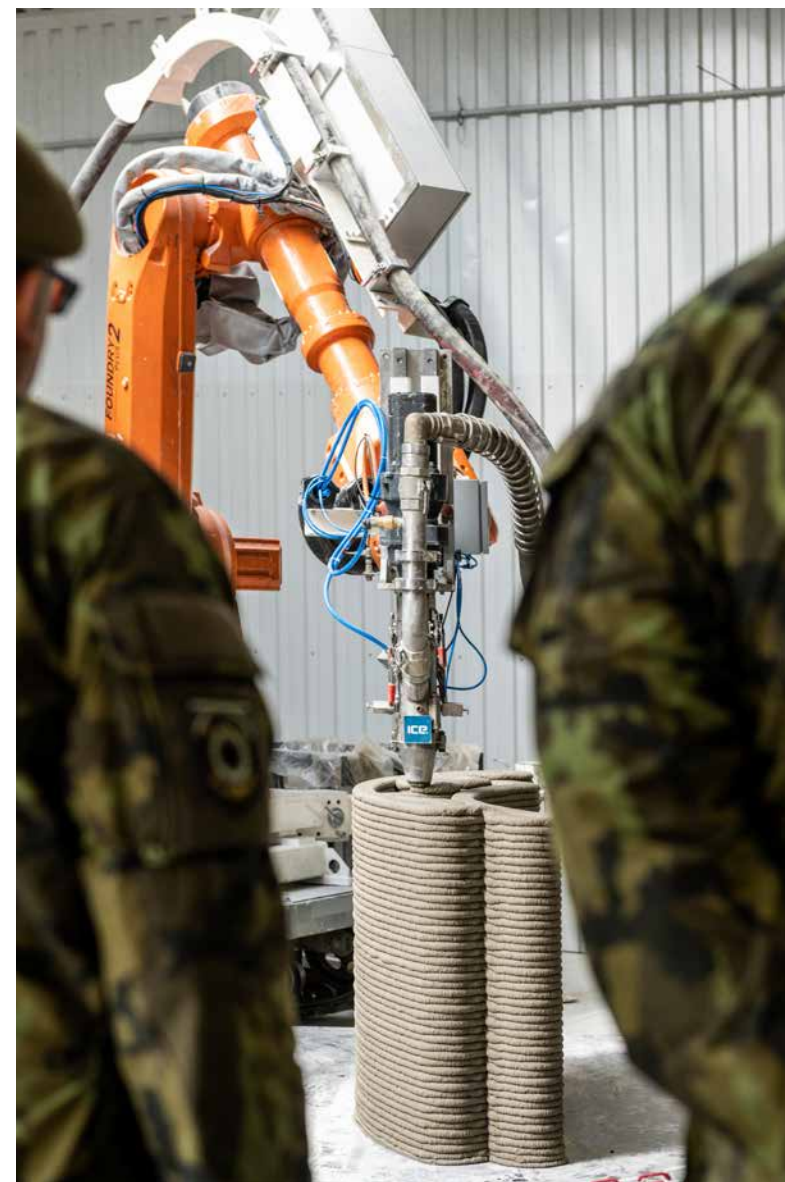


# MODULAR ARCHITECTURE

## FOR DEFENSE SYSTEMS



- Blocks can be combined in many variations
- Barracks modules, protective barriers, military training facility, control stations & check points
- New custom parts can be printed in minutes
- Inner structure & unique joining system
- Approved by NATO Ballistic Standards (STANAG)

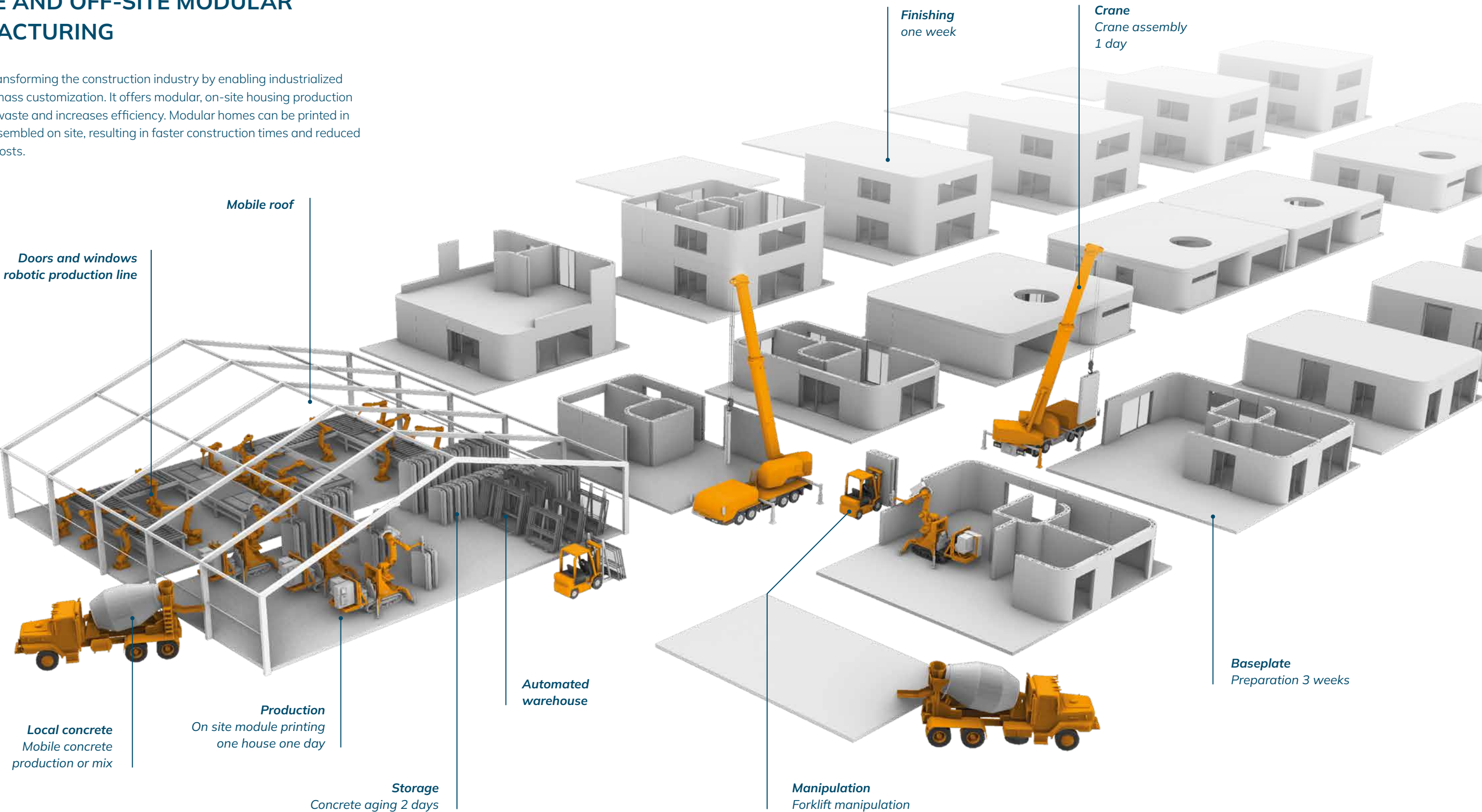




# THE FUTURE OF INDUSTRIALIZED CONSTRUCTION

## ON-SITE AND OFF-SITE MODULAR MANUFACTURING

3D printing is transforming the construction industry by enabling industrialized processes and mass customization. It offers modular, on-site housing production that minimizes waste and increases efficiency. Modular homes can be printed in sections and assembled on site, resulting in faster construction times and reduced transportation costs.





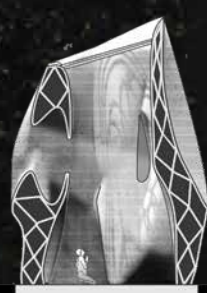
# TOWARDS NEW ARCHITECTURE

After the first two decades of the 21st century, it has become clear that architecture must find new answers for the challenges of our time. We need buildings that are not only efficient to produce, but also responsible in their material use, beautiful in form, durable in performance, and meaningful in purpose.

We challenge the century-old modernist model defined by Le Corbusier's Domino House. For the 22nd century, we propose Domino 4.0 — a vision shaped by advances in society, knowledge, and fabrication. Our approach replaces rigid, repetitive forms with smooth, continuous geometries, optimized for strength, efficiency, and elegance.

Using 3D Concrete Printing, folds and strips within the design enhance structural stability while reducing material consumption. This is not just a technical shift, but a conceptual one: a new architecture that does not mimic nature but participates in it, creating spaces in true synergy with their surroundings.

*Jiří Uran Vitek*  
*Lead of Coral Architects*



*Chapel of Convergence, Design by Coral Architects*



# KEEP BUILDING FROM TEMPLATES? OR BUILD DIFFERENTLY?

Build a much different future with our leading  
3DCP system. A breakthrough for the entire  
building ecosystem.



## **Coral Construction Technologies**

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Brochure Online

