
MANDALA
Design for
a Changing World
A Call to Collective Action
Innovative Solutions to the Modern Housing Crisis

About Mandala

Mandala serves as a coordination organization to industry experts, university / STEM programs, visionaries, artists, community, and public officials to collaborate on a collective goal of blend tradition with innovation and collectively solve societal and sustainability related issues such as housing, urban greenspaces, and renewable energy.

Nashville Urgently Needs Housing Solutions

From single occupancy to small families, the influx of out of town developers have pushed out lifelong residents with the lack of affordable housing options.

The Problem

Changing Climate

Longer Summers, record breaking heatwaves, and tornados are just the tip of the iceberg

Cost of Living

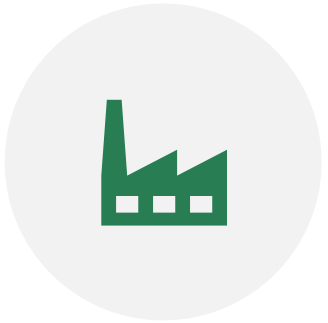
Many are struggling to keep up with the daily increasing costs groceries, utilities, and interest rates, just to survive

Affordable Housing

Out of town investors are buying up real estate to rebuild at unattainable prices for many local natives

Lack of Green Spaces

Flooding due to excessive rainwater runoff, excruciating heat from a non existent canopy



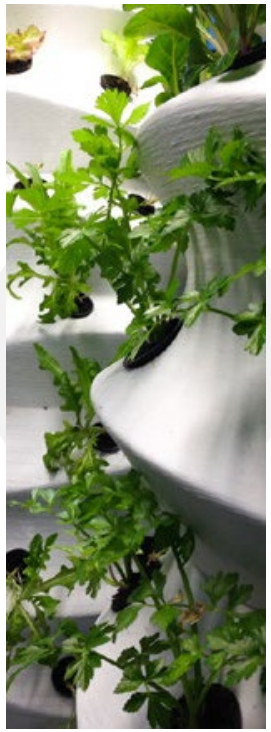
Industrial Impact

Landfills nearing capacity, deforestation from excessive logging

The Solution

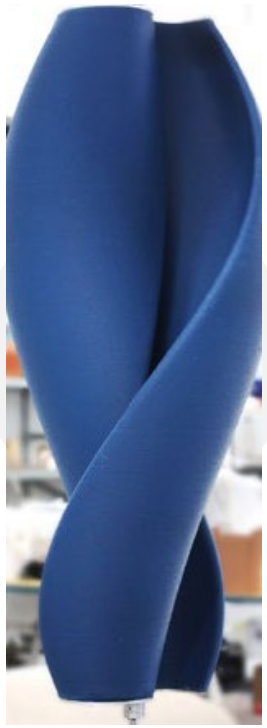
Innovative Building Solutions

3D printed structures offer an innovative solution to the modern housing crisis



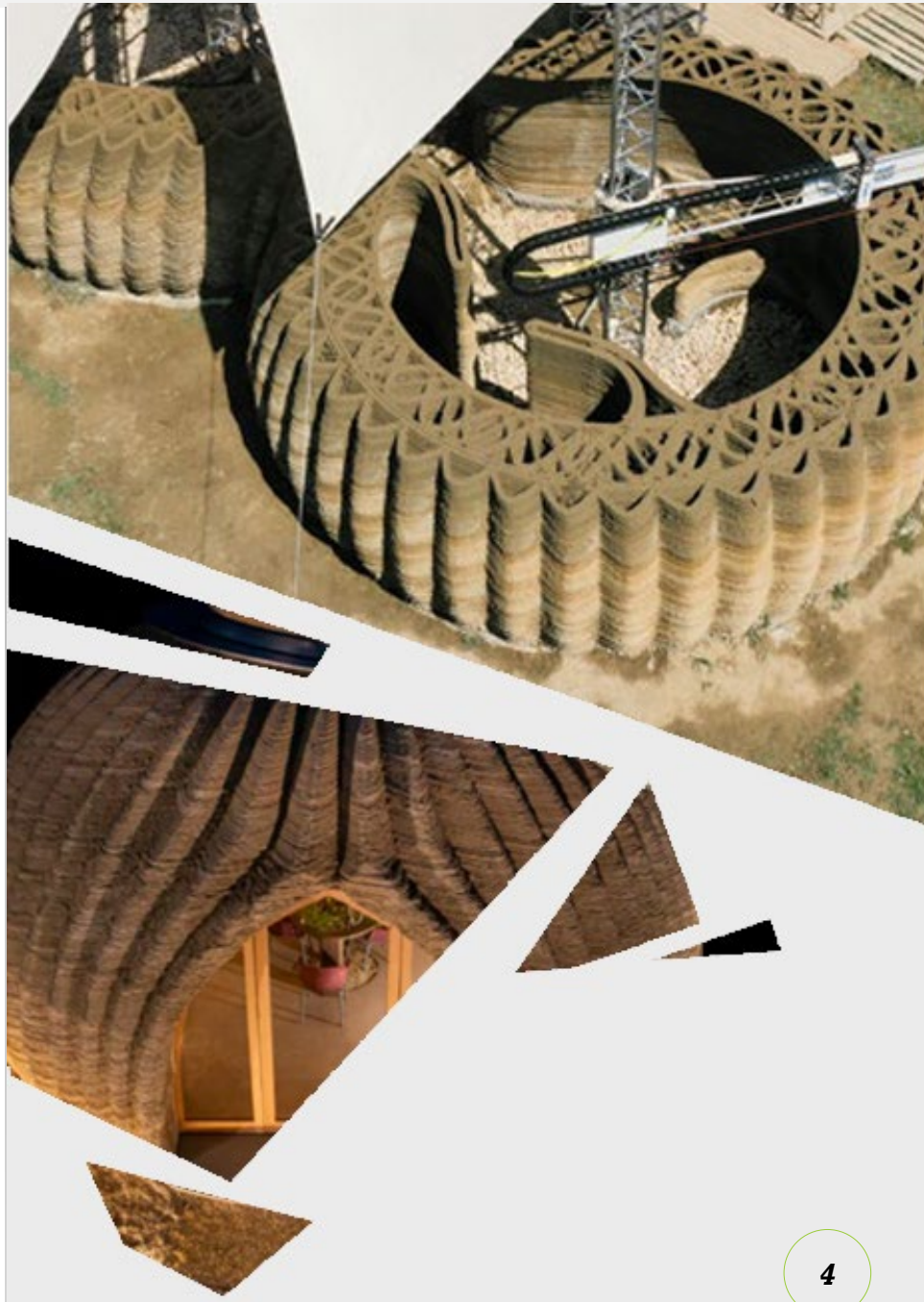
Integrated Agriculture

Hydroponic systems can be modeled and printed directly into the structure



Renewable Energy

As an added benefit 3D printed homes offers the opportunity to utilize renewable energy such as solar and wind



The 3D Printed Home

Low Impact Construction

Reduced labor needs

Reduced Material Needs

Shorter Construction Time

Scalable For Application

Site Specific

Potential to print in remote locations

Custom to Each Site

Endless possibilities for design

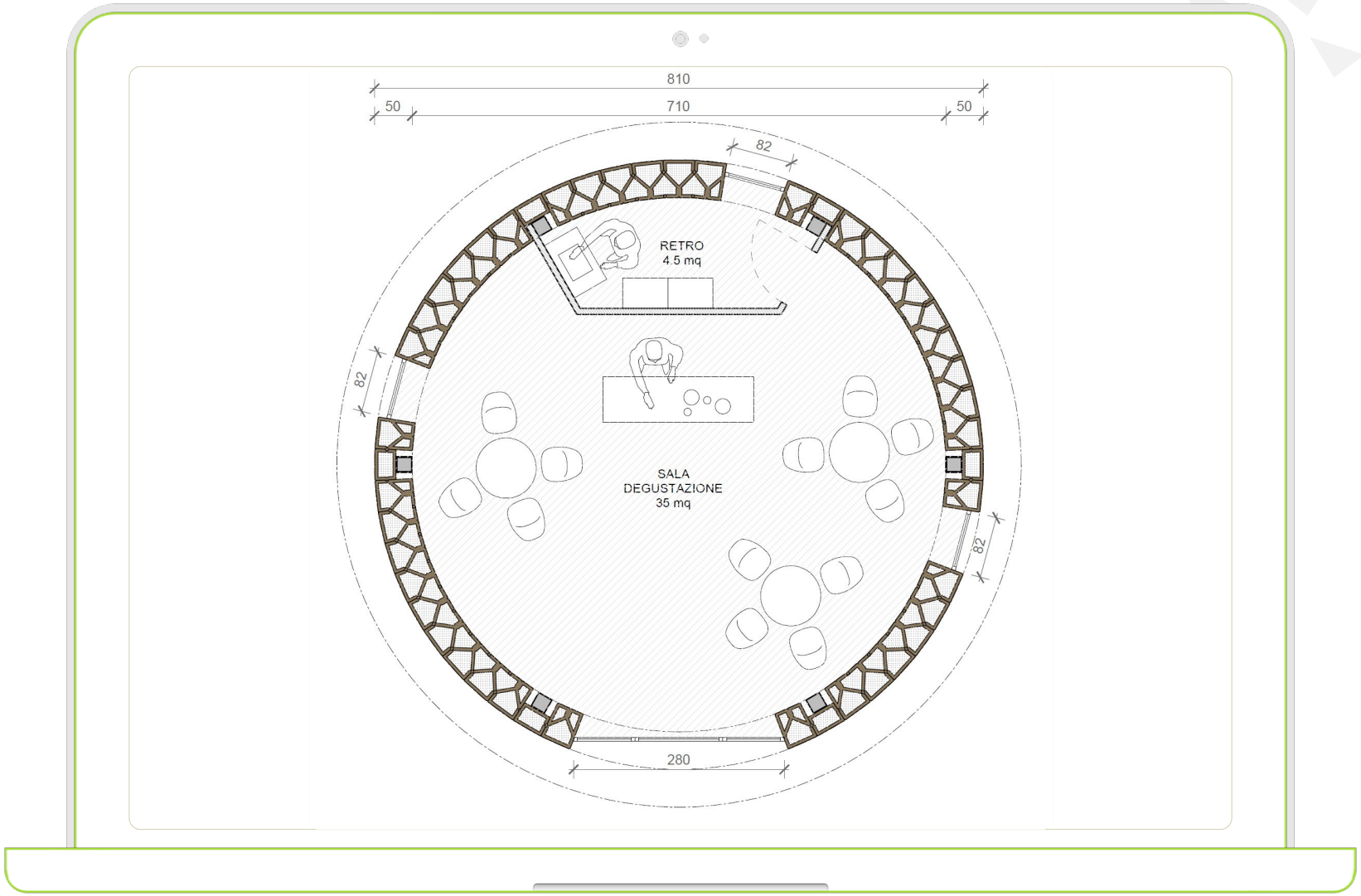
Seamless integration of hydroponics and wind turbines

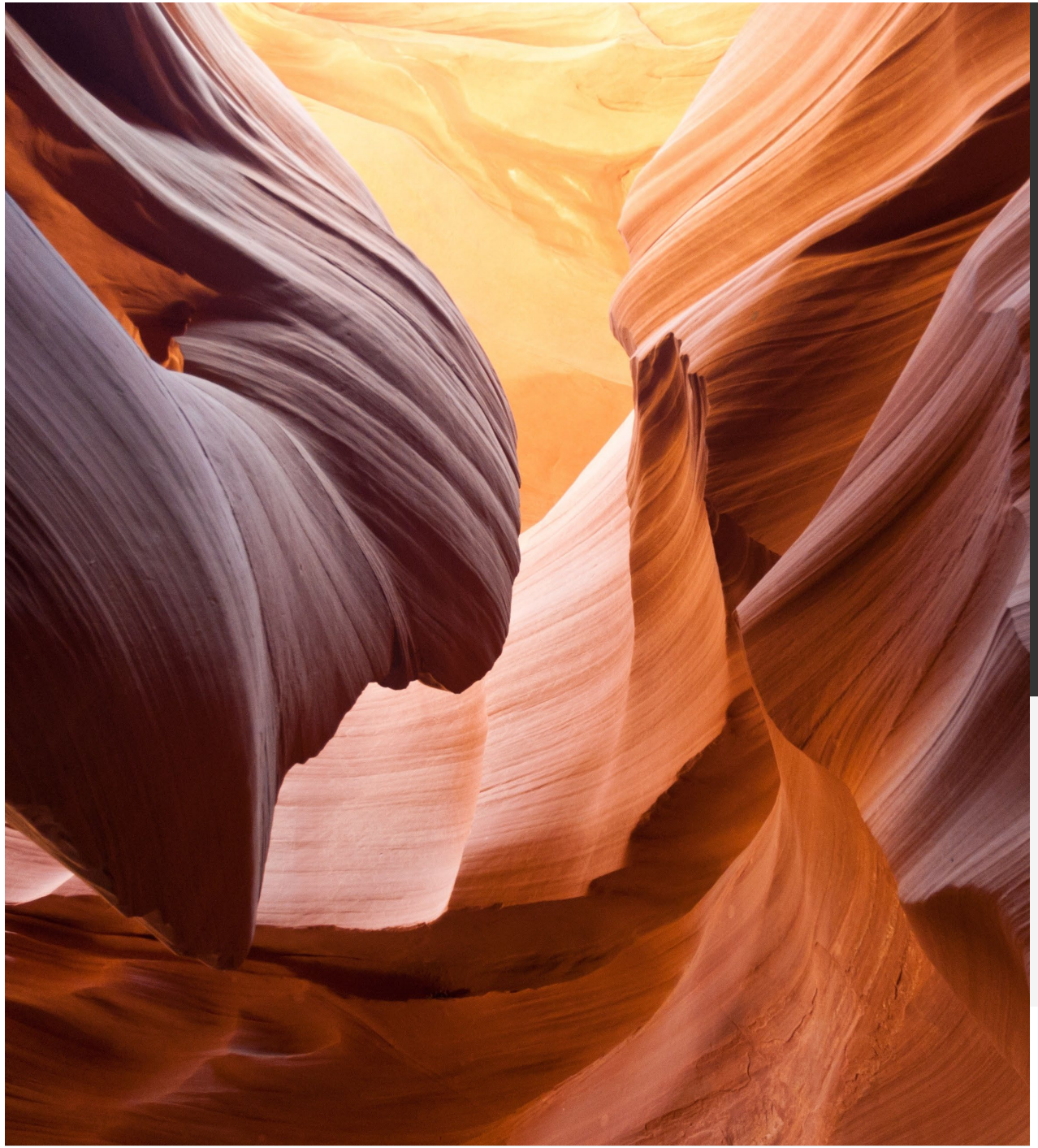
Digitally Modeled

Real World Application

Other benefits include

- 3D modeling allows us to emulate test structures in a digital space to experiment with form
- These enables to improve on concepts over time effectively
- The collaborative nature of this project allows partners to share and compare research over nationalities and regions.





Strategy

By combining objectives that span academic, industrial, technical, environmental, and socioeconomic disciplines, we aim to provide comprehensive research and an innovative approach to solve modern problems.

Multi-disciplinary Collaboration

Our strategy to accomplish this project will call upon industry experts from these fields

Engineering

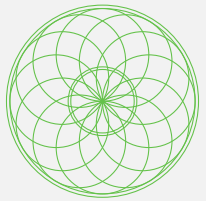
Oversight of the construction and material science aspect to ensure functionality and structural integrity

Architecture

The gateway between form and function, the intersect between aesthetic and application

Academic

The students and professors of STEM programs and universities to discover and implement new knowledge



Mandala

The collective connectors that catalyze collaboration and bind the spiritual / intellectual realms to the physical manifest

Production

Innovative companies such as WASP, COBOD, and ICON all offer automated construction solutions that we seek to partner with

Strategic Roadmap

How will we scale in the future

Phase 1
Research and Development

- Research Driven
- Collaboration between industry experts and academic departments
- Prototyping and testing to refine and streamline the process
- Suitable site selection

Phase 2
Pilot Project Implementation

- Integration of renewable energy sources and agriculture
- Monitoring and evaluating the performance
- Gather data on structural integrity, energy efficiency, food production, user satisfaction

Phase 3
Scaling and Replication

- Refinement based on the successes of the pilot program
- Expansion to other sites
- Ensure the scalability and adaptability to diverse communities

Forecasted Cost

$150K

- The Crane WASP 3D printer used in printing the Tecla Model seen in slide 4 retails at around $147k

$???

- We are in the process of connecting aligned partners assess the cost of completing a pilot project as a proof of concept

Research and Development

Industry Experts

- Bring to the table seasoned and professional perspectives that will lend to the success of this project
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Academic Innovation

- Establish partnerships with local universities and STEM programs to create comprehensive approach to understand and expand the field of this emerging technology
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