

SAVANNAH 2063





SUSTAINABLE CITIES: DESIGNING FOR THE FUTURE



WELCOME TO
YEAR 2063

The Future is Resilient. The Future is Now.



From the struggles of the past to the challenges of today, Savannah has always stood the test of time. Rooted in resilience, we rise together to build a future that lasts.

In 2063, the world has been reshaped by **climate change**, with **extreme weather events causing widespread damage and displacement**. Governments have invested heavily in disaster relief and climate adaptation, using AI to predict and manage emergencies. However, this technological revolution has centralized power in the hands of tech giants, eroding privacy and trust in institutions. While climate adaptation remains a priority, growing disparities and surveillance create tension, leading to **the rise of decentralized communities focused on privacy and equity**. Society now stands at a crossroads, balancing technological progress with the need to protect individual freedoms.



Defining Factors in 2063

- Extreme Weather Events
- Power Struggle
- Technological Revolution
- Social Mobility Gap
- Political Rifts
- Distrust in Government
- Job Growth Imbalance
- Funding Shortages

Key Events that shaped 2063

The Tybee Bomb Explosion (2041): A nuclear disaster in Wassaw Sound caused by an accidental detonation, forever changing the landscape and economy of Chatham County.

Hurricane Milton (2047): A Category 5 storm that devastated Savannah, causing catastrophic flooding, the loss of the city's iconic tree canopy, and widespread displacement.



The Bomb That Changed Chatham County: Rebuilding After the Blast

Written by Chets Han

August 2041 marked a turning point for Chatham County, Georgia, when a devastating nuclear explosion rocked Wassaw Sound. What was once a peaceful, thriving region became a battleground for survival and recovery after an accidental detonation of a long-forgotten weapon buried in the sands since 1958.

In a tragic twist of fate, treasure hunters unearthed the 7,600 lb Mark 15 hydrogen thermonuclear bomb, causing an explosion that reverberated across the coastal landscape. The bomb, originally ejected from a B-47 Bomber after a mid-air collision with an F-86 fighter jet, had been buried deep within the alluvial sands of Wassaw Sound for over 80 years.

In a tragic twist of fate, treasure hunters unearthed the 7,600 lb Mark 15 hydrogen thermonuclear bomb, causing an explosion that reverberated across the coastal landscape. The bomb, originally ejected from a B-47 Bomber after a mid-air collision with an F-86 fighter jet, had been buried deep within the alluvial sands of Wassaw Sound for over 80 years.

The loss was monumental: 15% of Chatham County's population perished either in the explosion or from radiation exposure. The ongoing effects of the fallout have taken their toll in ways that are still unfolding. Increased cancer rates, birth defects, and a dramatic 20% drop in fertility rates have left an indelible mark on the community.



"Chatham County Devastation," The Savannah Chronicle, Savannah, GA, August 2041. Photo by Anki Patis.

Solnit, referencing the work of disaster sociologist Charles Fritz, describes how, contrary to common expectations, such events don't ignite mass panic, but rather forge deeper bonds among the survivors. Though the bomb's age and depth of burial reduced the blast's power, the explosion's immediate impact was nothing short of catastrophic. Tybee Island was flattened, and its coastline remains unrecognizable. The once-vibrant community was erased in the blink of an eye. No reconstruction has occurred, and even basic infrastructure like bridges and roads remain absent.

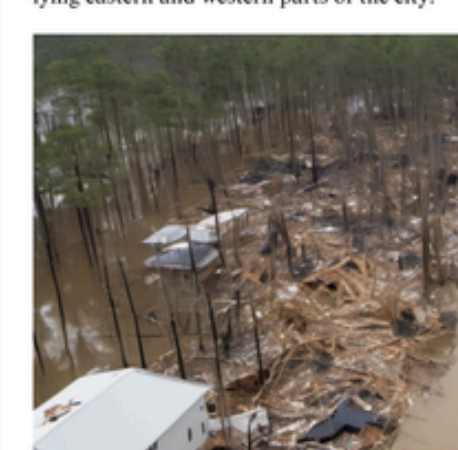


Nearby areas like Wilmington Island, Whitmarsh Island, and Thunderbolt faced destruction as well, with residential and commercial buildings wiped out in the blast radius. However, even amidst the devastation, Chatham County found its resilience. Much like the story told in Rebecca Solnit's A Paradise Built in Hell, the immediate response to the disaster fostered a new sense of solidarity among survivors. Yet, despite the profound tragedy, the people of Chatham County have come together in ways that no disaster could have predicted—transforming destruction into a renewed sense of unity and hope for the future.

The Storm That Changed Savannah: Hurricane Milton's Devastating Impact

Written by Chets Han

On July 28th, 2047, Savannah was struck by the full force of Category 5 Hurricane Milton, a deadly storm that caused irreversible damage to the city. With sustained winds of 195 mph and gusts reaching up to 210 mph, Milton made landfall during high tide, unleashing catastrophic flooding across the Historic District and permanently flooding the low-lying eastern and western parts of the city.



Skidaway Island, GA, July 2047. Photo by Anki Patis.

The once-thriving port was crippled, and over 20,000 low-wealth residents from these areas were displaced. Savannah, as we once knew it, could now only be approached from the south. The damage to the city's iconic tree canopy was equally devastating. Over 60% of the carefully nurtured Live Oaks were torn apart by the storm's fury, leaving a landscape stripped of its green heart.

In the wake of Hurricane Milton, Savannah's resilience was tested, but the price of survival was high: 20,000 displaced, and a city forever altered.

Skidaway Island, home to many of Savannah's wealthiest residents, was evacuated as rising floodwaters submerged low-lying areas, cutting off the connection between the eastern and western parts of the island.



Wilmington Island, GA, July 2047. Photo by Anki Patis.

Wilmington and Whitmarsh Island, which had only just begun to recover from the Tybee bomb explosion six years earlier, were not spared from the storm's wrath. Today, they too remain uninhabitable. The storm's destruction didn't stop at the coastline; it spread inland as well. Due to the rising cost of insurance, even inland areas like Pooler have been rendered unaffordable. The human cost of Hurricane Milton was staggering, with another 20% of Chatham County's population lost due to rising insurance costs and the exhaustion from constant hurricane preparations. Emergency response efforts were overwhelmed, leading to widespread protests and devastating fires on the Southside of Savannah. As the city begins to pick up the pieces, the damage left by Hurricane Milton is not just physical but deeply emotional, with the landscape and the spirit of Savannah forever changed.

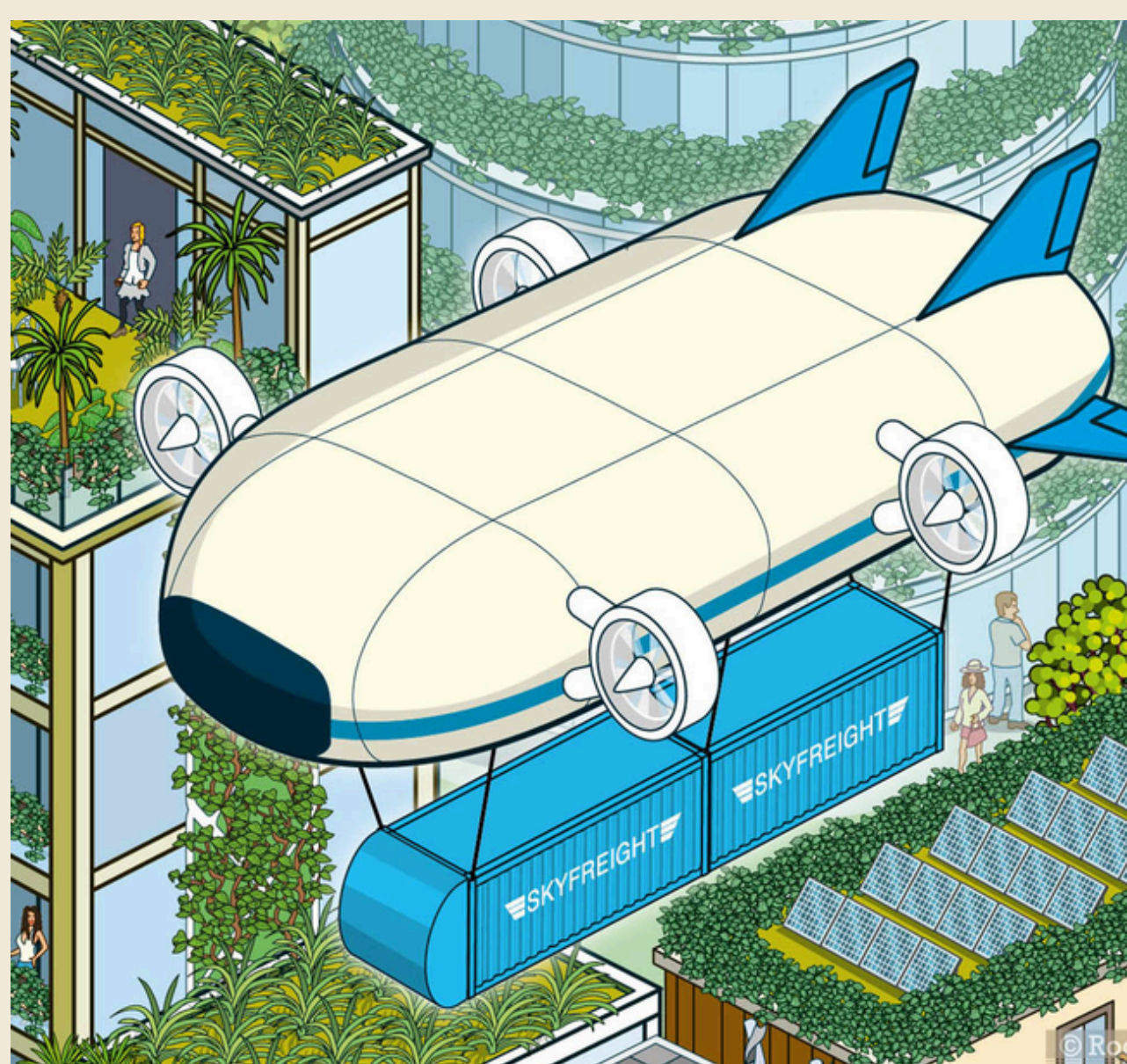
Designing for the Future

Cities must evolve to be resilient, inclusive, and environmentally conscious. By integrating smart technology, renewable energy, and green infrastructure, we can create urban spaces that thrive while protecting future generations



According to the Arcadis Sustainable Cities Index,

“Sustainable cities can be thought of as places that are planned and managed with consideration for social, economic, environmental impact, providing a resilient habitat for existing populations, without compromising the ability of future generations to experience the same.”



Building Sustainable Cities for the Future

Technological Innovation for Sustainability: AI and smart technologies optimize energy use, reduce waste, and improve urban planning for sustainable growth.

Renewable Energy Solutions: Cities shift to solar, wind, and geothermal energy to reduce reliance on fossil fuels and cut carbon emissions.

Green Infrastructure: Eco-friendly buildings, green spaces, and sustainable transportation create healthier environments and mitigate climate impact.

Inclusive Growth: Sustainable cities ensure affordable housing, access to resources, and opportunities for all social classes.

Environmental Protection and Restoration: Cities protect ecosystems, preserve water, and restore biodiversity to combat climate change. Fostering Community

Resilience: Local networks and adaptive housing help communities prepare for and recover from environmental challenges.

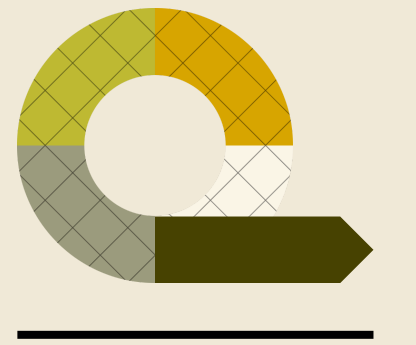
Introduction

The Ark Project is building the future of climate resilience, one neighborhood at a time. Through AI-driven scenario planning, circular economy solutions, and adaptive infrastructure, we transform communities into self-sustaining, future-ready hubs. The challenge isn't just surviving the next storm, it's thriving in the world of tomorrow.



MISSION

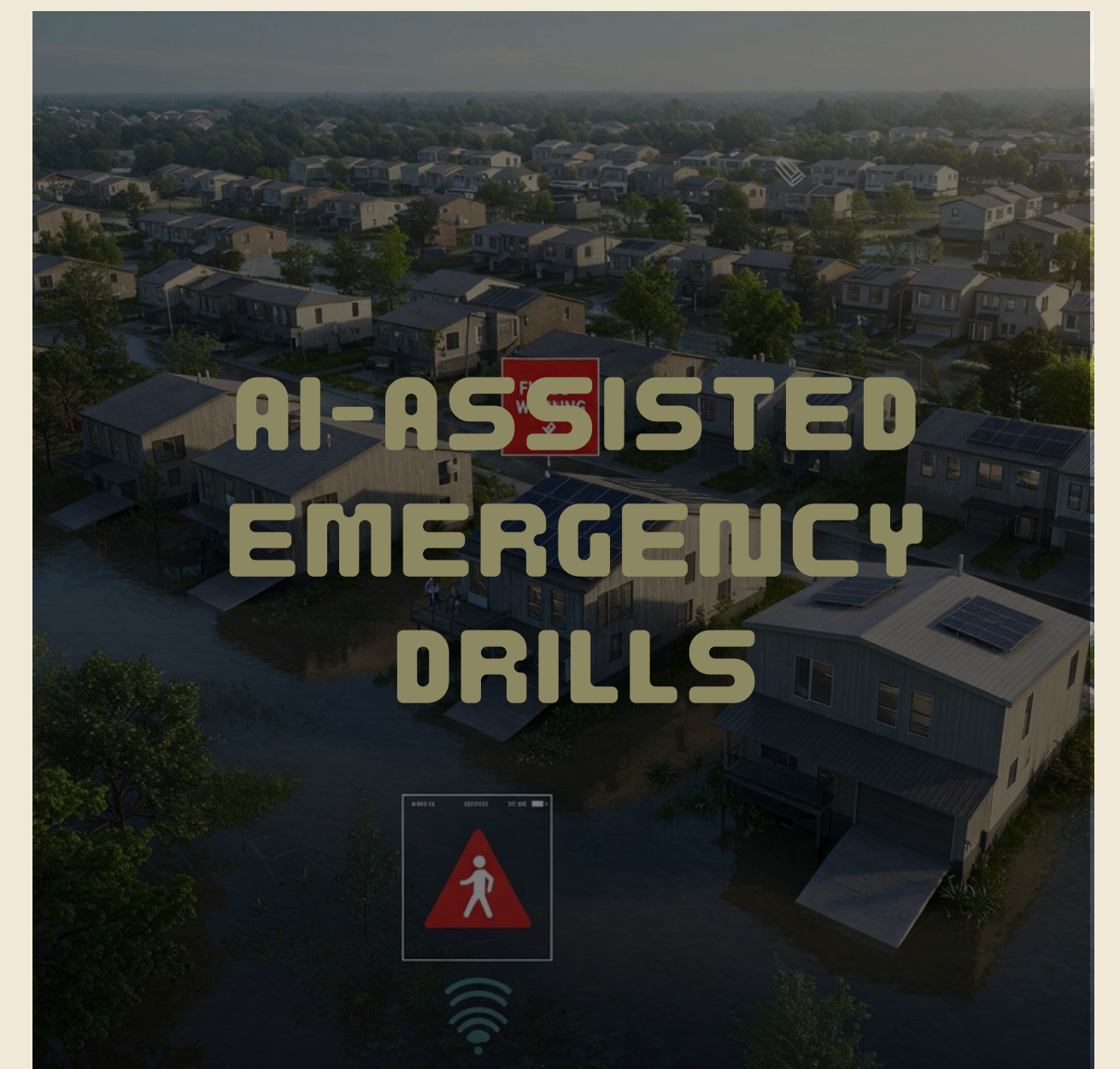
The Ark Project empowers communities in Chatham County, Georgia, to build climate resilience through localized, AI-driven planning, sustainable infrastructure, and community-led skill-sharing.



Transforming waste into community resources through AI-driven circular systems, decentralized manufacturing, and skill-sharing networks that empower local self-sufficiency.



Implementing flood-proof housing, amphibious retrofitting, and elevated survival bunkers to safeguard communities from rising sea levels and extreme weather.



Utilizing AI-driven simulations to create practical, reflexive climate response exercises that enhance community preparedness and decision-making.

SUSTAINED READINESS PLANS

Developing dynamic, AI-optimized maintenance strategies that continuously adapt to emerging climate risks, ensuring long-term resilience and resource efficiency.

VISION

We envision a future where every community is a thriving, self-sustaining hub of resilience—where waste becomes a resource, preparedness is proactive, and residents are empowered with the skills and infrastructure to navigate climate challenges with confidence.

THE ARK PROJECT REDEFINES RISK READINESS, ENSURING COMMUNITIES ARE EQUIPPED NOT JUST FOR THE NEXT STORM, BUT FOR THE CHANGING WORLD.

Climate Assessment

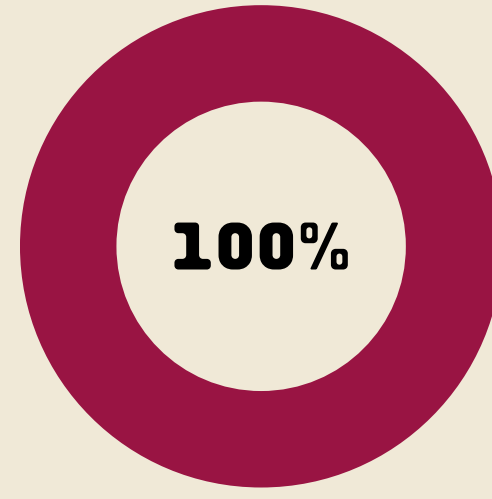
A detailed climate disaster risk assessment was conducted for the Cloverdale neighborhood in Savannah (zip code 31415) to determine the risk levels in various areas (flood, wind, heat, precipitation, fire, and drought).



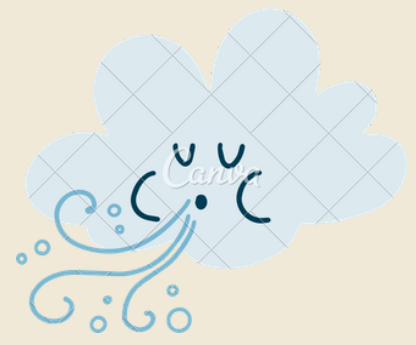
LOCATION: 1674 CLOVERDALE DRIVE, SAVANNAH, GA, 31415



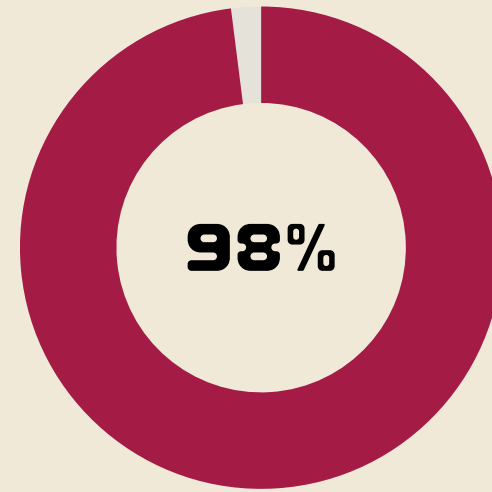
Flood
Extreme risk



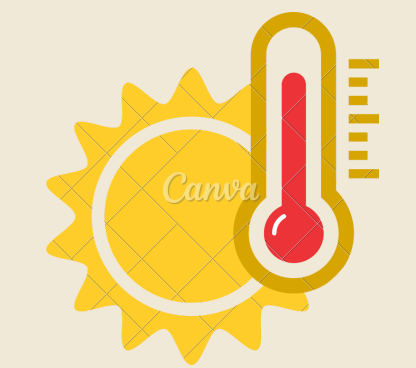
High-tide flood days



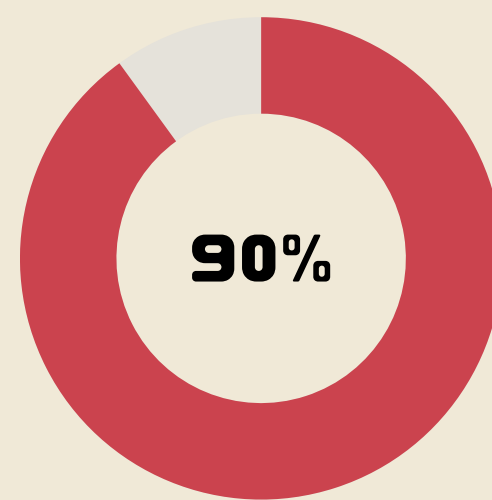
Wind
Extreme risk



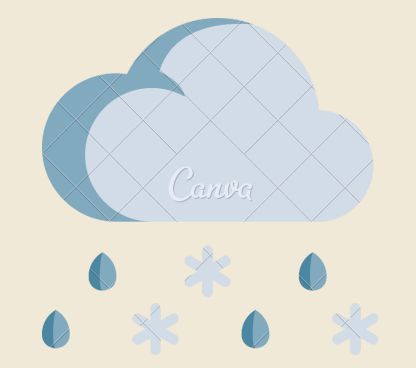
Gale force winds



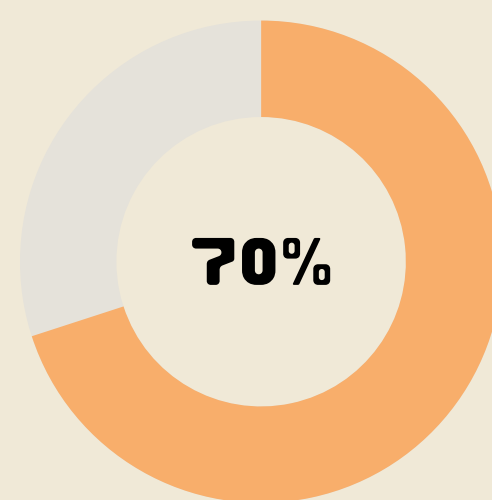
Heat
Extreme risk



Extremely hot days



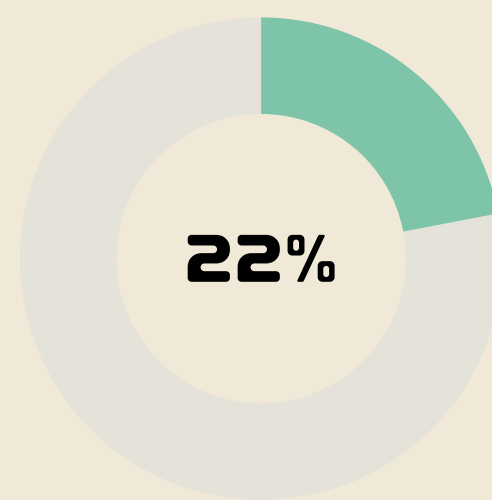
Precipitation
Very high risk



Rain in extremes (in.)



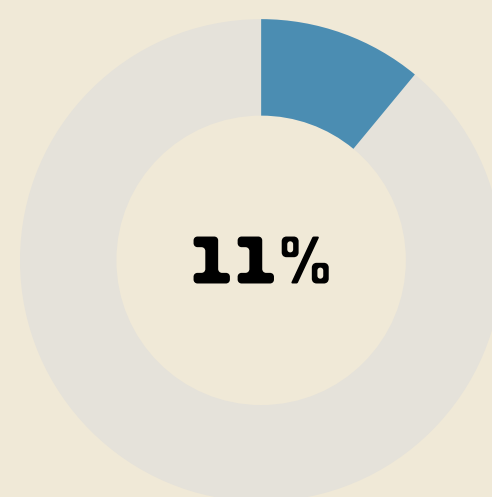
Fire
Significant risk



Fire weather days



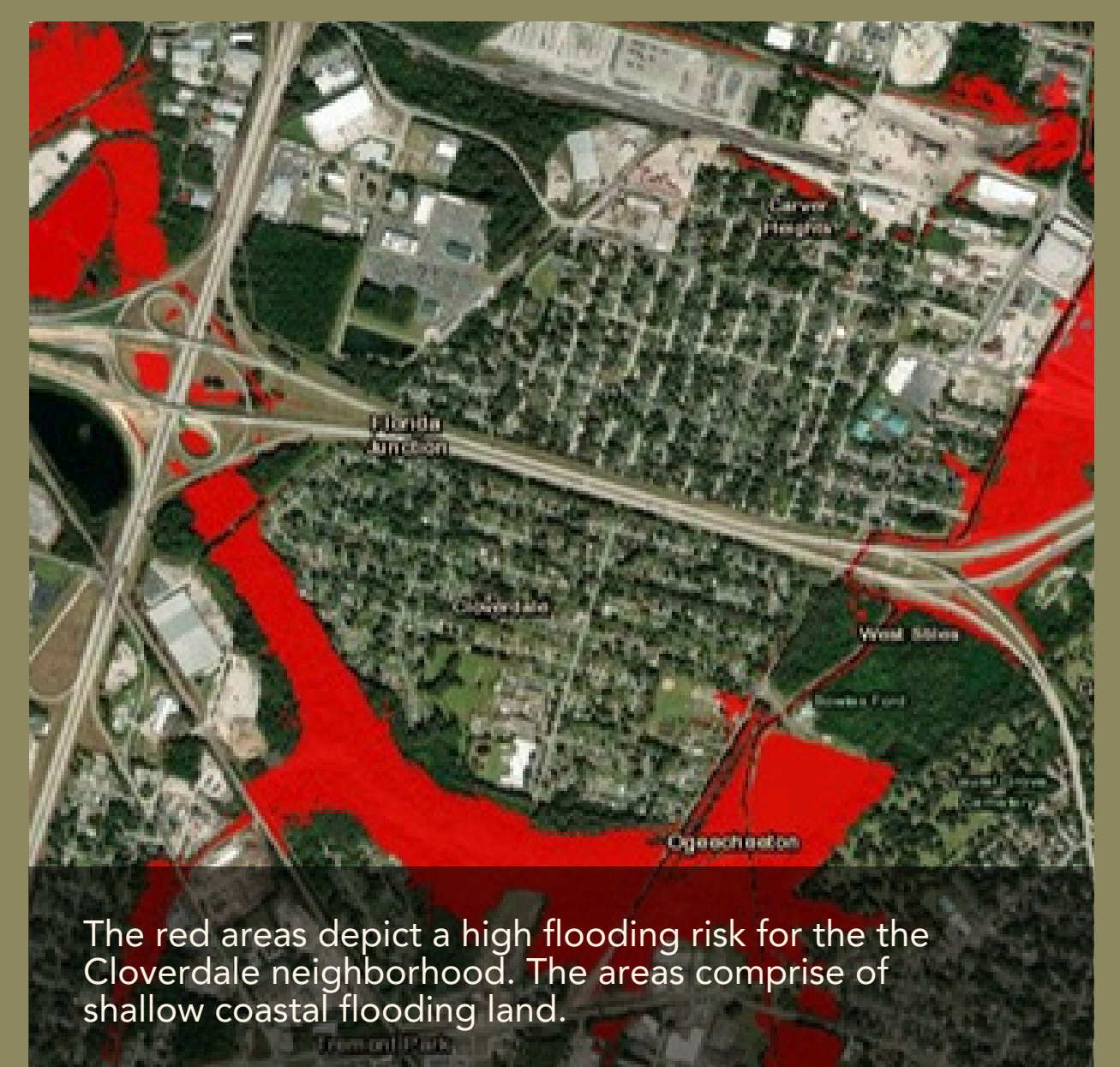
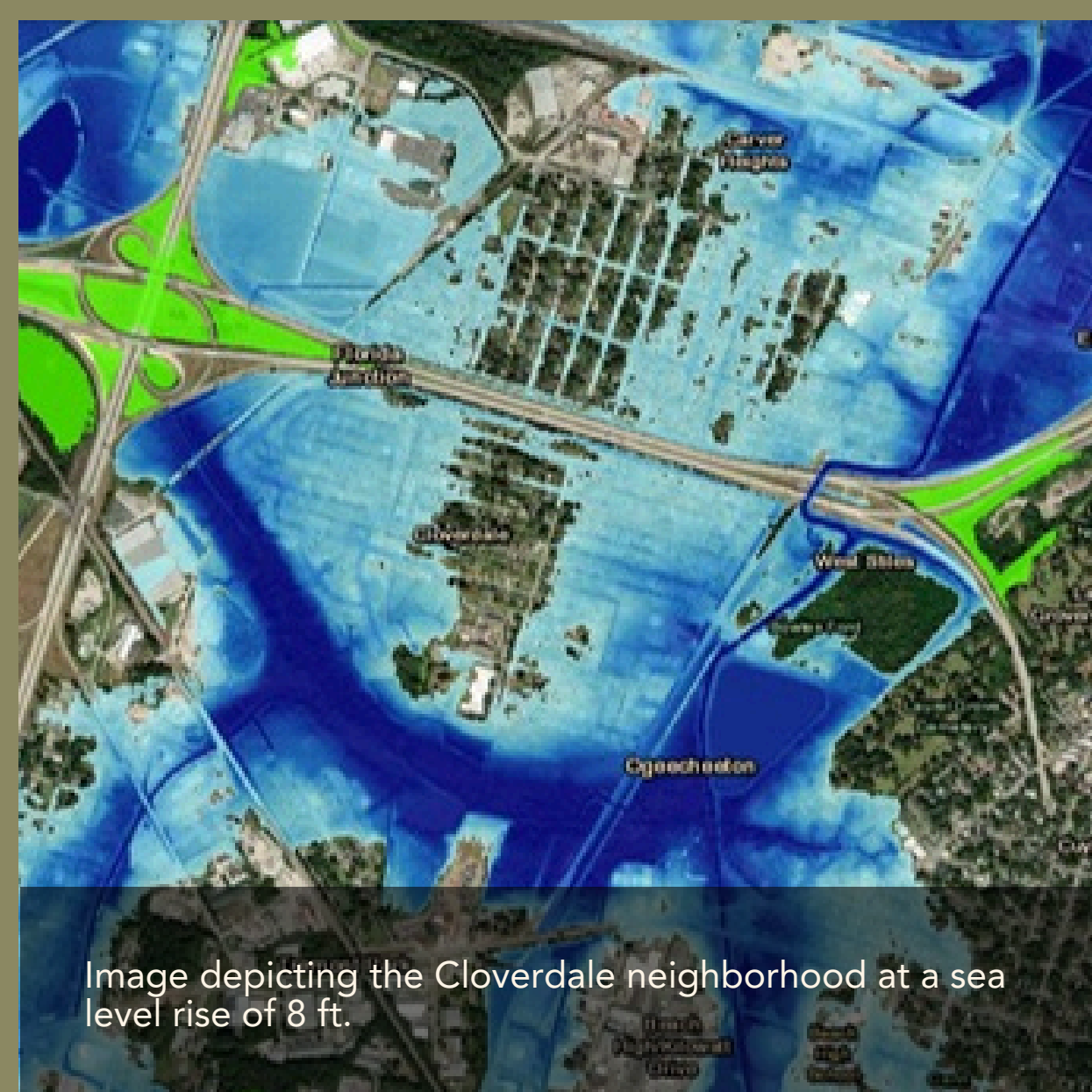
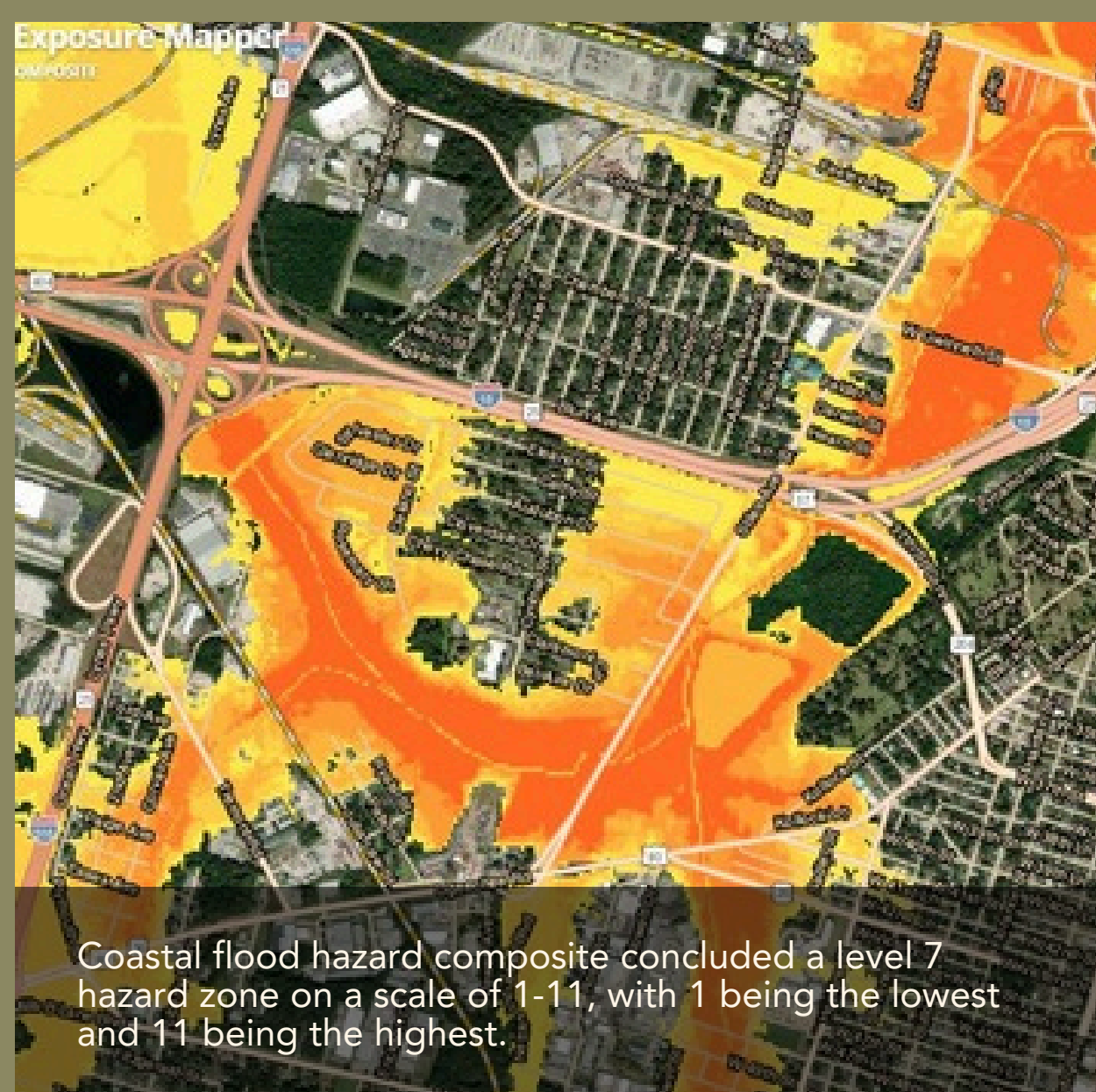
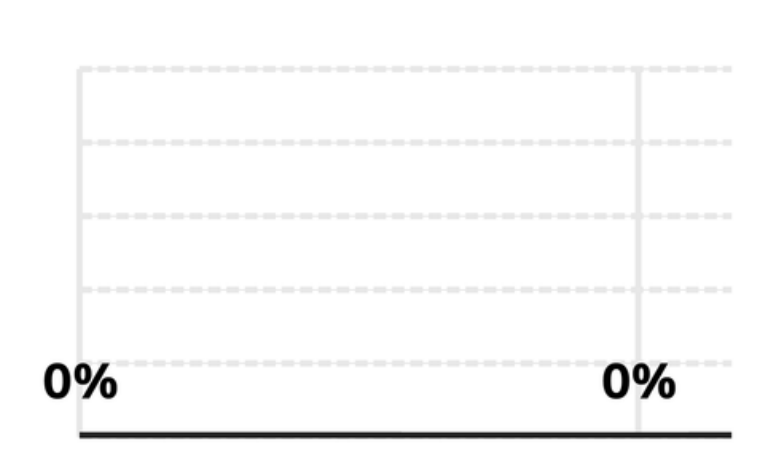
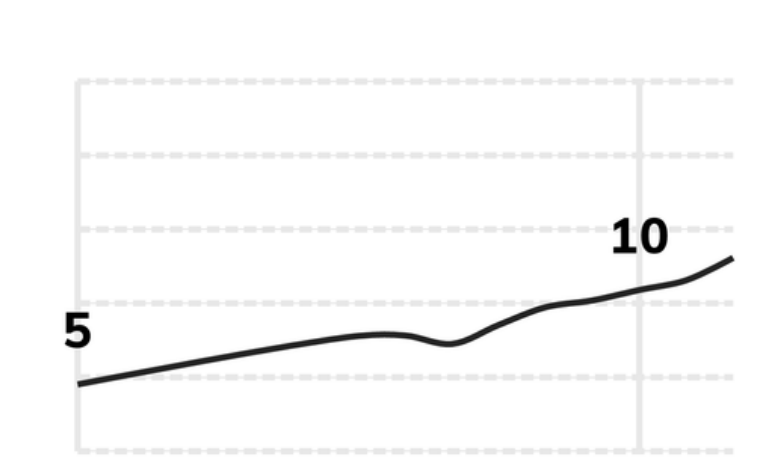
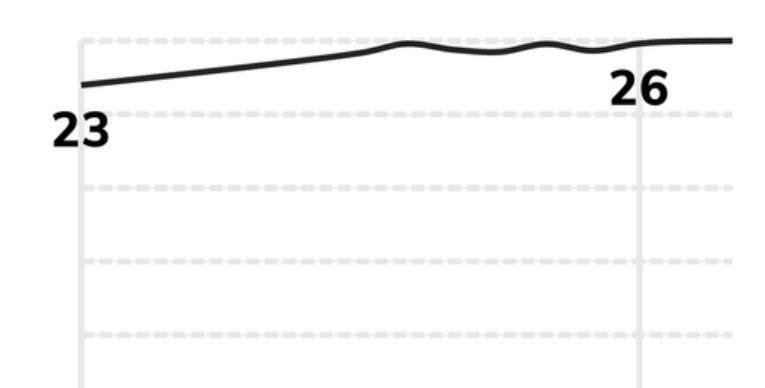
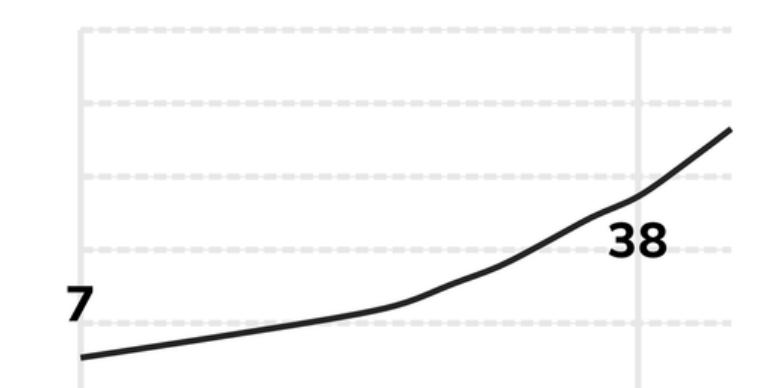
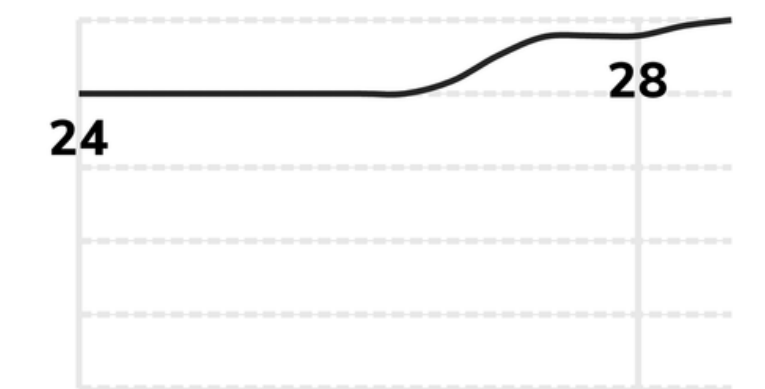
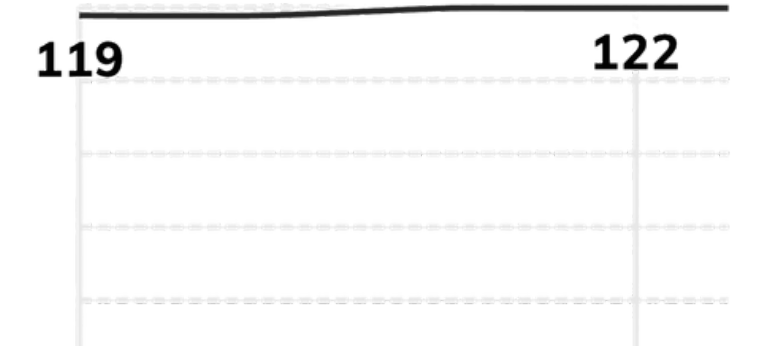
Drought
Relatively low risk



Water stress

Risk Ratings

2000 ————— 2050



Data Analysis

With rising sea levels, intensified hurricanes, and extreme heat events social and physical infrastructure is under threat. Transformative scenario planning is a critical tool to help the city proactively mitigate climate disasters and navigate systemic uncertainties.



Blindsided in the Storm

Business-as-usual



Treading Water

Resistance to Change



Breaking Point

Need for Adaptation



Race Against Time

Escalating Crises

At the confluence of **Need for Adaptation** and **Business-as-usual** practices, the future is bleak. The four scenarios above reflect possible futures that we must act upon. The first is **Treading Water**, where we make small adaptation efforts but fail to implement real change, leaving us constantly reacting to crises. The next is **Race Against Time**, where we confront escalating climate threats head-on with resilience and innovation, staying ahead of the damage

Breaking Point is the third, where worsening disasters overwhelm unprepared communities, leading to systemic collapse and widespread hardship and **Blindsided in the Storm** highlights how we ignore the warning signs and continue unsustainable practices, only to be caught unprepared when catastrophe strikes. The time for action is now—our future is not yet written, and we can transform it.



Living Laboratory
Residents share living lab bunkers where they create from waste using 3d printers, closing the loop for a circular economy



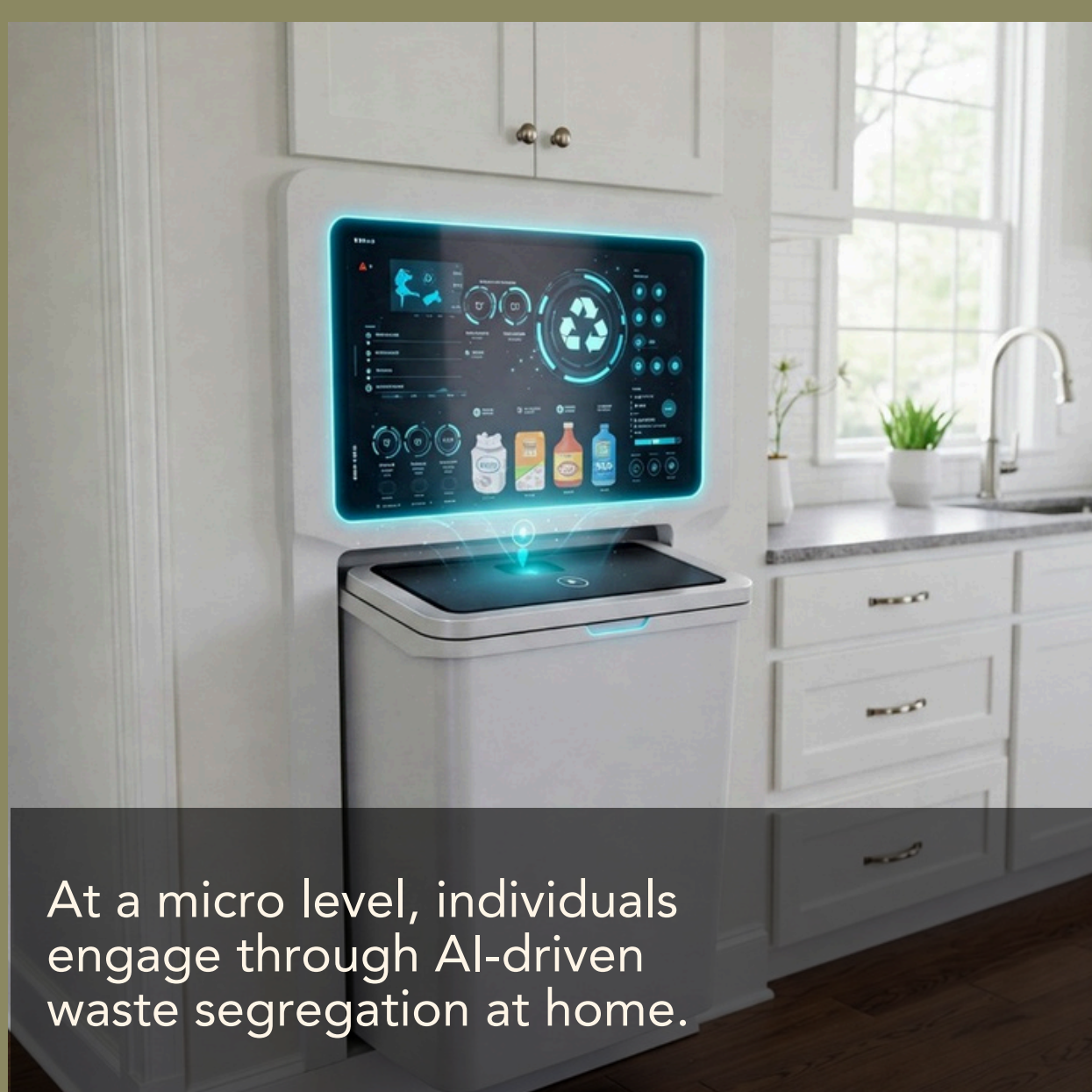
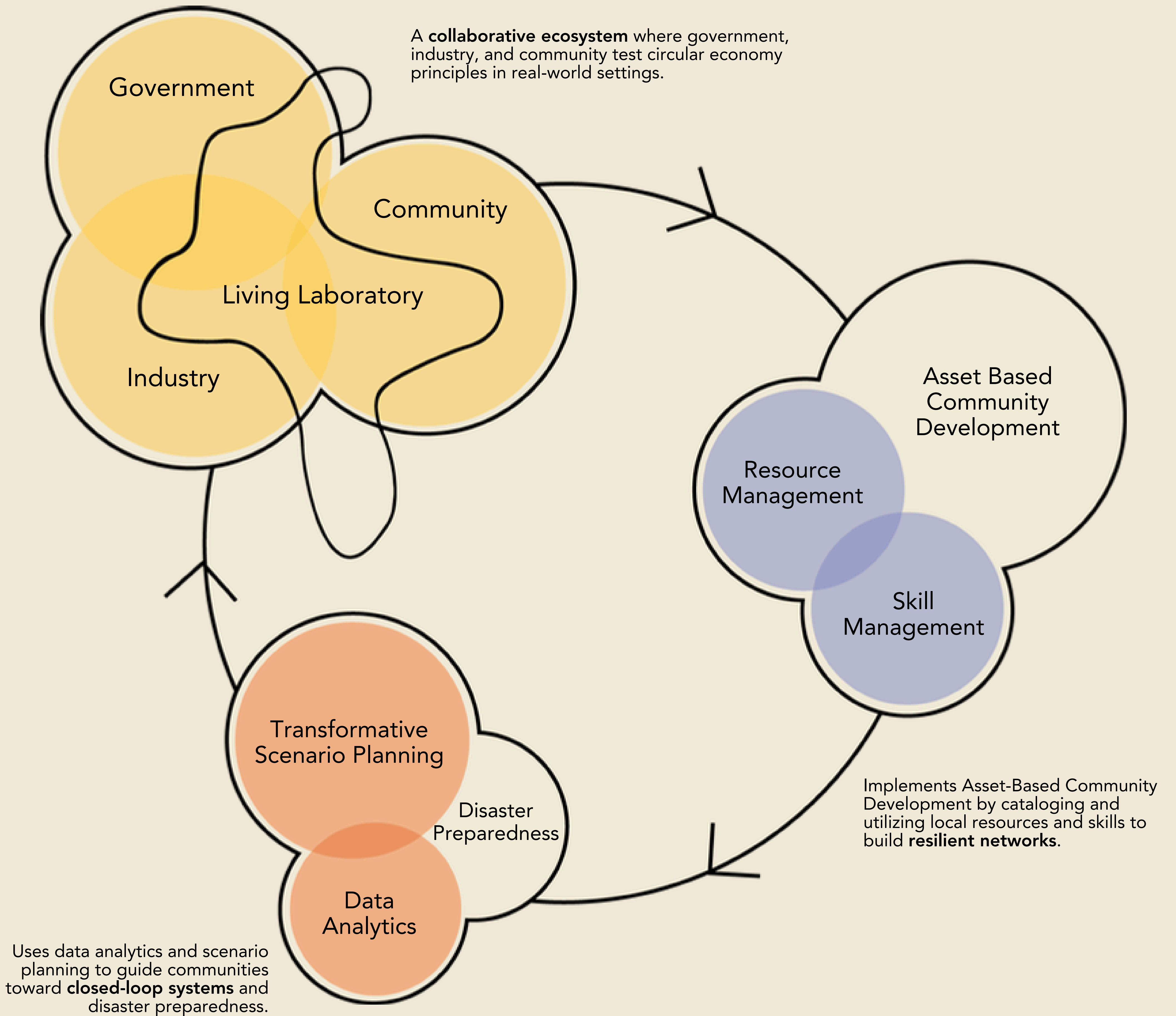
Infrastructure Solutions
Houses are retrofitted with sustainable energy sources and disaster resistant infrastructure.



Disaster emergency protocols
Residents receive emergency notifications via their devices and a home alert system with disaster protocol instructions.

Living Laboratory

A closed-loop, circular system, where all types of waste are metabolized within the community. Through community skill-share networks, residents share their expertise in different aspects of emergency response, fostering resilience and decreasing reliance on external systems.



At a micro level, individuals engage through AI-driven waste segregation at home.



The community stands at the meso level, leading local resource management and facilitate decentralization manufacturing loops.



At the macro level, industry and government bodies help with funds, subsidies, secondary segregation and access to tech.

The Ark Bunkers

Neighborhoods in Savannah feature climate-resilient bunkers located behind houses to protect residents from extreme weather events. The bunkers ensure safety during climate disasters by storing necessary items and ensuring connectivity through decentralization.



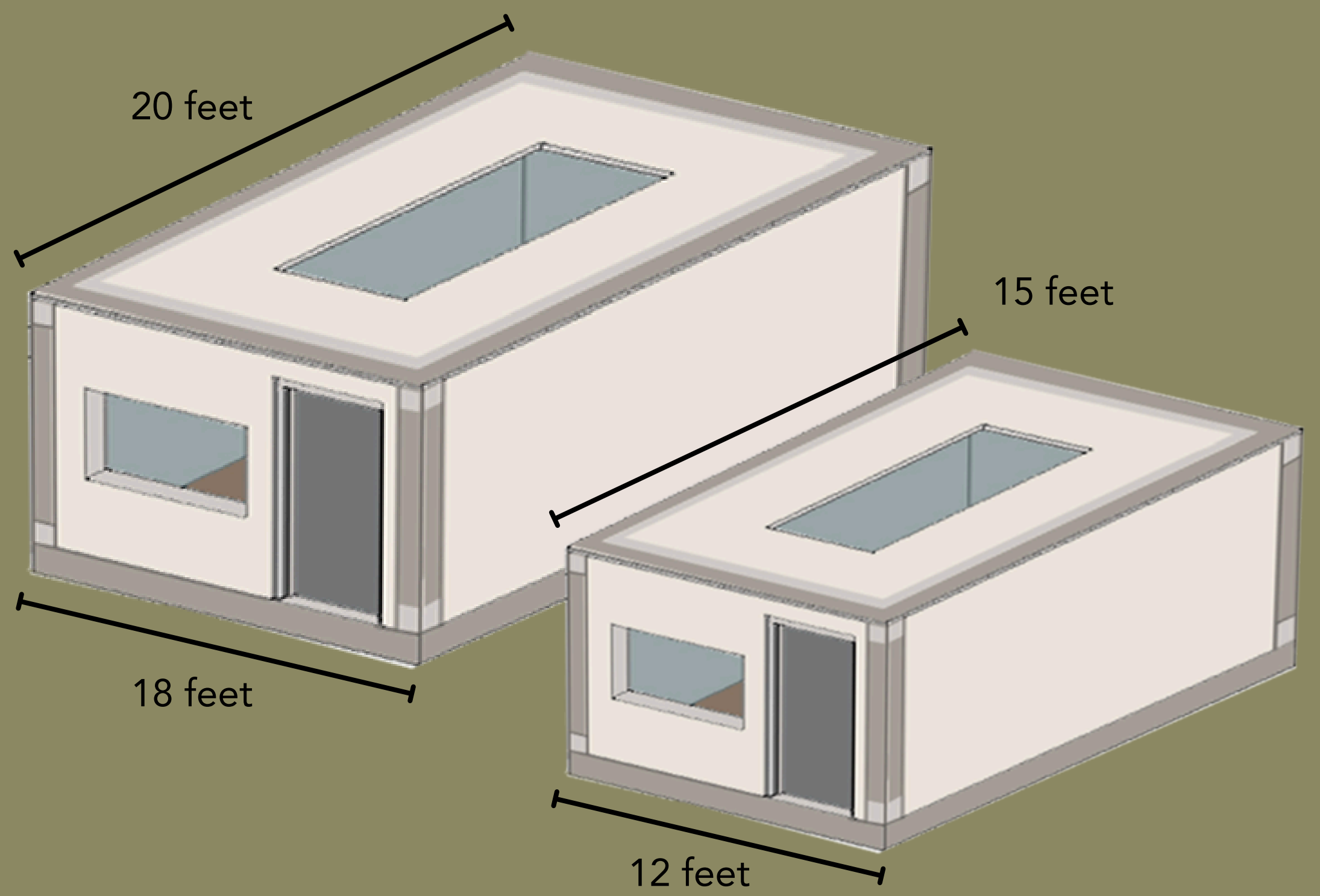
Legend

- Cloverdale Dr
- Houses
- Small Bunker
- Large Bunker
- Bunker Lane

Map of Cloverdale's houses with the Ark Bunkers in alleyways



Customization Options:
 Basic hydroponics module
 Emergency drone bay
 Secure digital document vault
 Foldable workspace for shared community use



Components of the large bunker

There are two options available for the bunkers that have different additional offerings for users who may need it. The essential provisions of food, water, data & other facilities remain the same.



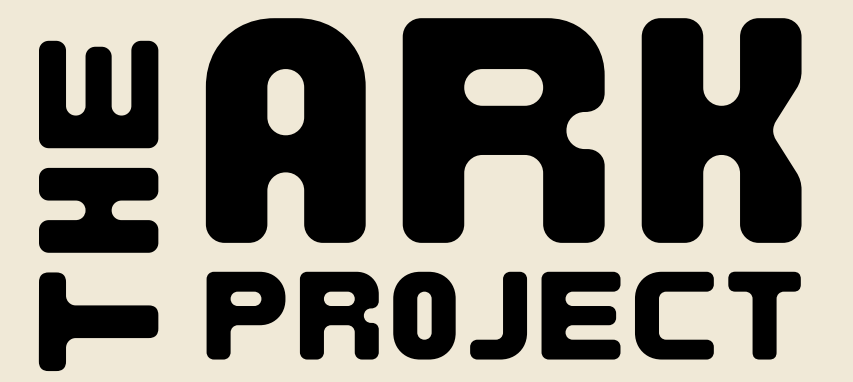
Shared resources for the community



Adaptive historic houses with bunkers on alleys

The Ark Bunkers

The design of the Ark Bunkers prioritizes modularity using low-impact materials, AI-powered storage management, and multi-use adaptability, allowing seamless transitions between daily use and disaster response.



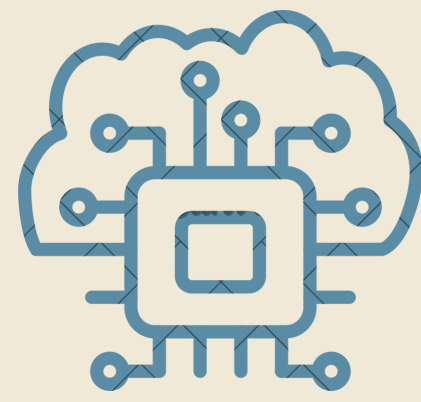
The Ark Bunkers are **hyper-localized climate resilience shelters**. Integrated into small community clusters in alleyways, these bunkers function primarily for **emergency disaster preparedness**. Some of the design features of the bunker are-

FEATURES OF THE BUNKER



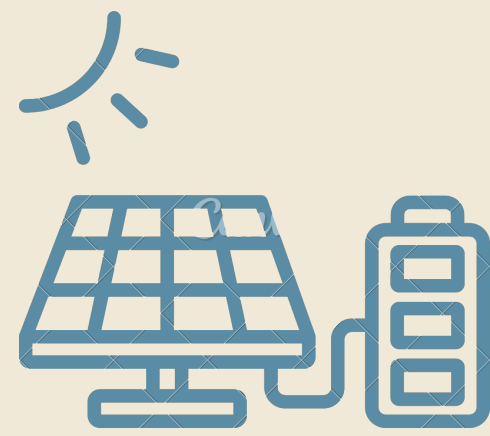
Modular Design

Scalable to fit small families or serve as neighborhood resource hubs.



AI-Optimized Storage

Smart tracking of emergency supplies and community-shared tools.

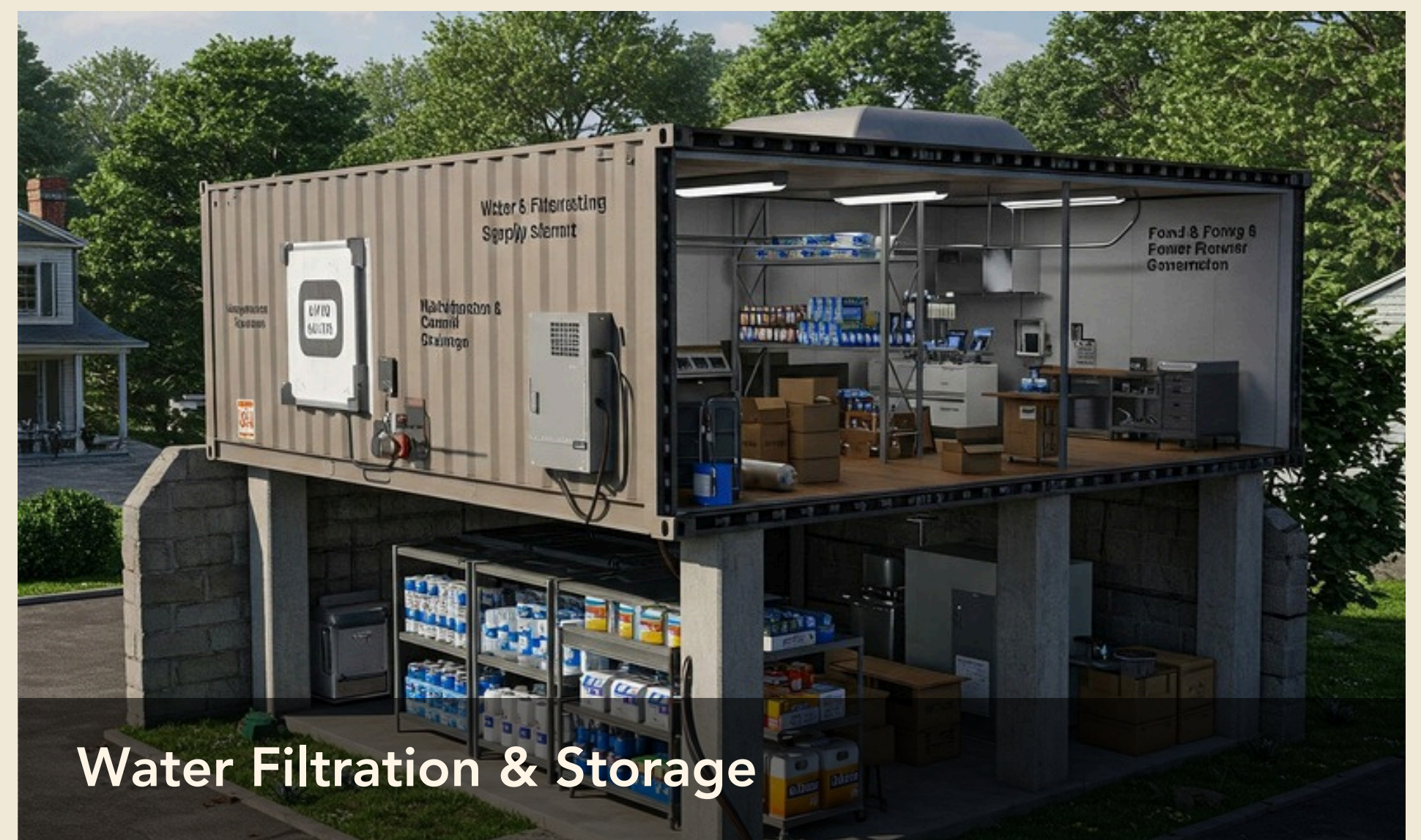


Off-Grid Resilience

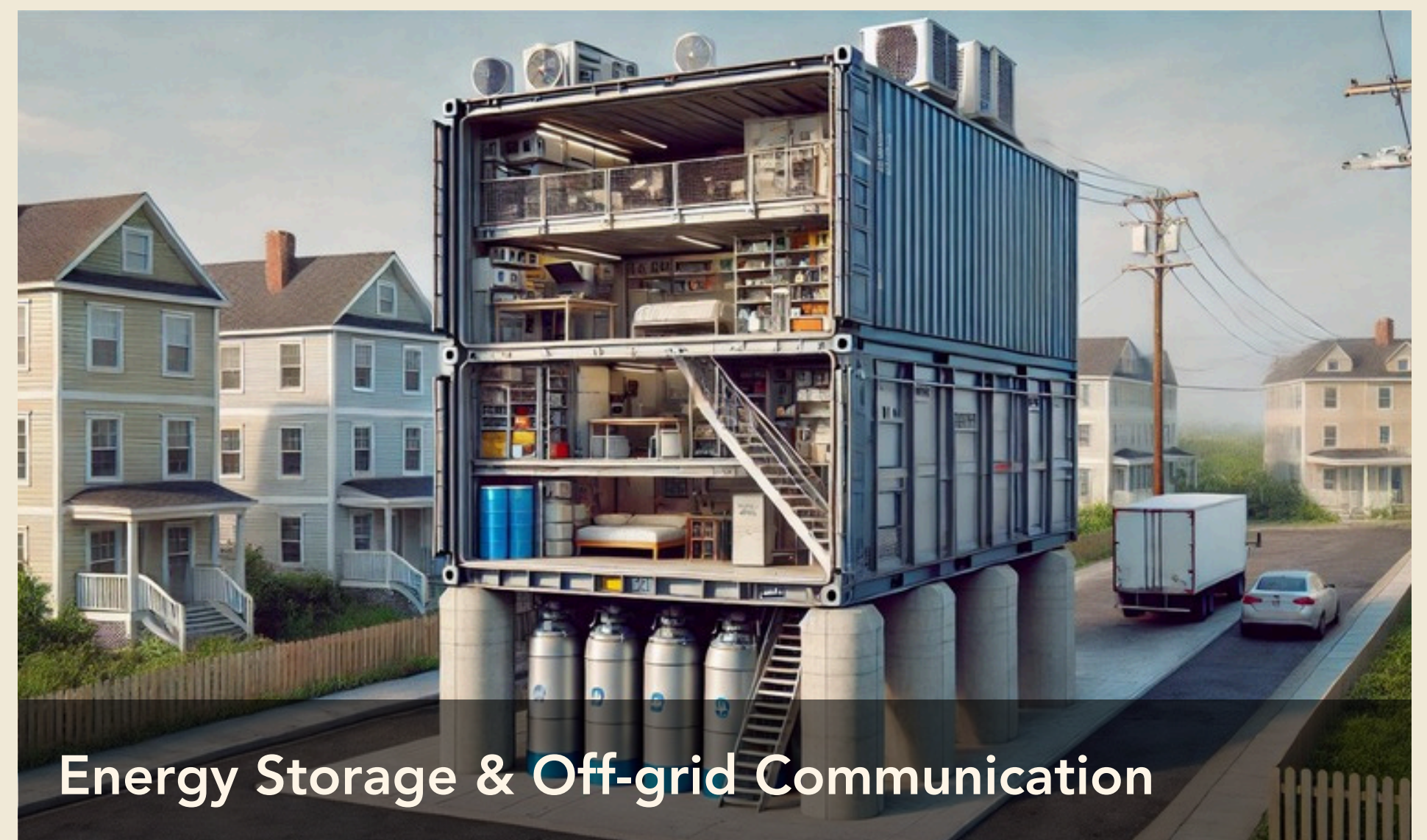
Solar-powered energy backup, water filtration, and vertical farming.



Dehydrated Food Storage & Preservation



Water Filtration & Storage



Energy Storage & Off-grid Communication

ALTERNATE USES FOR THE BUNKER

The bunkers also double as **Living Labs**, processing waste into resources via AI-driven sorting. They could also serve as **Maker Spaces** for repairs and skill sharing. As **Localized Energy Banks**, they also store solar power that can be withdrawn during emergencies. They also host **Emergency Response Training**, using VR simulations to prepare communities for climate disasters.



Skill & Resource Exchange Amongst Community



Waste-to-Resource Processing Living Labs

Climate-ready Architecture

As extreme weather events become more frequent, our homes must adapt to protect lives and livelihoods. These design solutions focus on flood preparedness, energy efficiency, and self-sustaining systems to ensure long-term resilience.



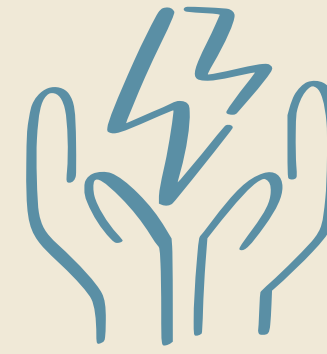
Savannah's charm lies in its historic architecture, but with rising climate challenges, these homes need protection. Our approach blends preservation with innovation, ensuring homes remain both beautiful and disaster-ready. **Some of the key design considerations are:**



Preserve Historic Aesthetics



Enhance Flood Protection



Boost Energy Independence



Promote Adaptive Living



Elevated Foundations & Flood Barriers



Waterproofing & Drainage Improvements



Storm-Resistant Doors & Windows



Rainwater Collection & Greywater Recycling



Energy Resilience with Solar & Battery Backup



Retrofitting for Passive Cooling & Ventilation

Strengthening these structures now prevents costly damage and preserves their legacy. Proactive upgrades ensure safety, sustainability, and resilience for future generations. **Prepared homes mean protected communities.**

Emergency Protocols

By combining real-time climate data with localized risk models, residents engage in dynamic simulations that adapt to their decisions, creating a feedback loop that reinforces effective responsive strategies. Through regular practice in responsive environments, residents develop reflexive actions for climate emergencies.



Real-time Data



AI-assisted Packing



Shared Resources

Community members use holographic displays showing **real-time emergency data**, enabling clear communication and collaborative decisions across generations. AI provides **personalized guidance** based on individual mobility needs while tracking and managing community-wide emergency supplies.

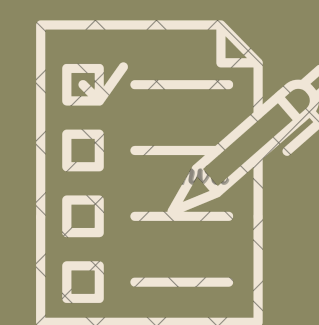
The system also offers **AI-guided packing assistance** for evacuation bags, helping residents understand what to **prioritize** based on different crisis types and protocols.



Visualize Invisible Threats



Personalize evacuation routes



Prepare ahead of time



Monitor real-time conditions



Evacuation Routes



Community Alerts



AR Headsets

Maintenance

The community develops a personalized 5-year plan for ongoing preparedness which establishes this system as a continuous process rather than a single event. This ensures that the community is prepared for far longer than tackling an immediate crisis.



Adaptive Resilience

The Ark Project has built a strong partnership with the Cloverdale community, implementing a five-year adaptive plan to assess infrastructure and ecosystem health. Community-led coalitions have integrated the Living Lab into daily life, developing regenerative practices through shared skills.

Knowledge Integration

As the community manages the Living Lab, check-ins with the Ark Project have shifted from formal reviews to knowledge-sharing sessions. Trained members rotate leadership roles, strengthening expertise, social cohesion, and identifying emerging champions in protocol maintenance.

A Crisis Response

A major climate event tests the community's resilience, activating emergency protocols and partial Bunker resource deployment. Their distributed leadership model enables a coordinated response, while ongoing reports capture critical data to inform future maintenance strategies.

System Validation

After the climate event, the community reviews response data while Ark members facilitate knowledge exchange. Resource trusts prove vital, bunker protocols are updated, and maintenance rituals become traditions that strengthen both resilience and social bonds.

Resilience Culture

Five years later, the community has achieved self-sustaining resilience, integrating maintenance into governance, education, and daily life. Members now report track thriving indicators like ecosystem regeneration, climate-adapted agriculture, and community well-being.



Future Black Swans

Maintenance of practices for resilience transforms communities into adaptive, thriving organisms capable of evolving beyond disaster response. In the face of a black swan event, these communities are prepared, not through prediction but through adaptive capacity. Ongoing reports detect subtle patterns, while regular practices embed crisis response into their cultural memory. The Ark prepares communities to embrace continuous evolution, preparing for transformation and enabling them to navigate the unknown and emerge stronger.